

ELECTRICAL SAFETY SOLUTIONS





## **ELECTRICAL SAFETY SOLUTIONS**

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COMEX CONTROL STATIONS

1

CONTROL PANELS

2

PRESSURIZED CONTROL PANELS

3

INSTALLATION SYSTEMS

4

SWITCHES

5

CABLE ENTRIES AND LINE BUSHINGS

6

SIGNALLING DEVICES

7



## CONTENT

---

### COMEX CONTROL STATIONS

---

Actuating elements for Zone 1 and 21, 05-0003-00...	12 - 16
Switch module with terminals for rail-mounted installation, 07-3321-1.00	17 - 18
Lamp module with terminals for rail-mounted installation, 07-3351-11.0	19
Lamp module Ex i with terminals for rail-mounted installation, 07-3351-14.0	20
Illuminated button with terminals for rail-mounted installation, 07-3361-1..0	21
Illuminated button Ex i with terminals for rail-mounted installation, 07-3361-1..0	22
Potentiometer with terminals for rail-mounted installation, 07-3371-1D.0	23
Control switch installation module, 4-pole, 07-3331-1...	24 - 25
ComEx <sup>flex</sup> Switch module for local control stations and control panels, 07-3323-4.00	26 - 27
ComEx <sup>flex</sup> Lamp module for local control stations and control panels, 07-3353-41.0	28
ComEx <sup>flex</sup> Lamp module Ex i for local control stations and control panels, 07-3353-44.0	29
ComEx <sup>flex</sup> Illuminated button for local control stations and control panels, 07-3363-4..0	30
ComEx <sup>flex</sup> Illuminated button Ex i for local control stations and control panels, 07-3363-4..0	31
ComEx <sup>flex</sup> Potentiometer for local control stations and control panels, 07-3373-4D.0	32
ComEx <sup>flex</sup> Junction box for local control stations and control panels, 05-0042-0050	33
Actuating elements, Accessories	34
Control stations for Zone 21 and 22, 07-351.-....	35 - 39
Actuating elements, Accessories for complete enclosure	40
Control switch complete device 4-pole, 07-3512-10G.....	41 - 42
Control stations Stainless steel, 07-3.32.	43 - 44

## CONTROL PANELS

---

Local control stations for Zone 1 and 21, 07-3...-	46 - 47
Local control stations for Zone 2 and 22, A7-3...-	48 - 49
Flameproof enclosures EJB Ex d IIB+H2, Aluminium & Stainless steel	50 - 53
Flameproof enclosures EJC Ex d IIC, Aluminium	54 - 55
Flameproof enclosures GUB Ex d IIC, Aluminium & Stainless steel	56 - 58
Flameproof Enclosures TNCD	59 - 60
Flameproof Enclosures TNBCD	61 - 62
Flameproof Enclosures DE8BC	63 - 65
Medium Voltage Switchgear 8SN7, 8SN7-VC...	66 - 67
Flameproof control unit Ex d for Zone 1 and 2, 07-4230-11	68 - 69
Tubular Flameproof Enclosures TNXCD/TNXCC, Ex d IIC/Ex de IIC	70 - 71
Control, regulating and display devices, 07-61...-...	72 - 73
Potentiometer max. 4 W with individual leads, 07-661.-.11.	74 - 75
Potentiometer max. 8 W with cable tail, 07-662.-.1..	76 - 77
Limit Monitor, 07-31.1-..../900.	78 - 79
Customer requirements Control stations	80 - 83

## PRESSURIZED CONTROL PANELS

---

APEX Ex p Control units for Zones 1 and 21	86
SILAS Ex p Control units for Zones 2 and 22	87
Motor purge controller for Zones 1, 21 and 2, 22	88
APEX/SILAS Ex p Control units for Zones 1, 21 and 2, 22 – MV/CF/HP	89
APEX <sup>px</sup> control unit Model I and II, 07-37A2-2211/.5.0	90 - 91
APEX <sup>py</sup> control unit Model I and II, 07-37A2-2211/.5.0	92 - 93
APEX 2003.00I control unit, 07-3711-1200/.099	94
APEX 2003.00 control unit, 07-3711-121./082	95
APEX 2003.002x control unit, 07-3711-1216/.107	96
APEX <sup>cf</sup> control unit - Continuous flow -, 07-37A2-2211/.725	97
APEX 2003.SI control unit - Continuous purging -, 07-3711-4213/.001	98
APEX <sup>dp</sup> control unit - Dynamic pressure -, 07-37A2-2211/.720	99
APEX 2003.SI control unit - High-pressure system -, 07-3711-3223/.003	100
APEX <sup>mv</sup> control unit, 07-37A2-2211/.730	101
APEX 2003.MV control unit, 07-3711-2213/.000	102
SILAS <sup>pz</sup> control unit Model I and II, A7-37S2-2111/.5.0	103 - 104

SILAS control unit, A7-3741-1110/.00.	105
SILAS <sup>mv</sup> control unit, A7-37S2-2111/.730	106
APEX <sup>mpc</sup> motor purge controller Zones 1 and 21, 07-37A2-2211/.M5.	107
SILAS <sup>mpc</sup> motor purge controller Zones 2 and 22, A7-37S2-2211/.M5.	108 - 109
Motor Purge Valve MPV for MPC System, 17-51P3-3.03	110
p Operator Panel, 17-51P5-.111	111
Sensor box	112
p Operator panel Sensor module, 17-51P2-..00	113
Accessories Pressure monitor module/Purge gas valves	114 - 116
Pressurised enclosure solutions	117 - 118
Customer request Specification sheet request for Ex p	119 - 120

## INSTALLATION SYSTEMS

---

Enclosures and distribution boxes	122
Polyester enclosures/distribution boxes, 07-51..-.../....	123 - 128
Terminal box, 07-5311-....	129
Polyester distribution boxes for Zone 1 and 21, 07-51..-.../...., 07-5103-960.	130 - 133
Polyester distribution boxes preassembled for Zone 1 and 21, 07-5103-960.	134 - 135
Polyester cabinets/-distribution boxes with door, 07-51..-.00./0...	136 - 137
Aluminium enclosures/distribution boxes for Zone 1/21 and 2/22, 07-51..-.../....	138 - 148
High quality stainless steel enclosures, distribution boxes, cabinets for Zone 1 and 21, 07-56..-....	149 - 152
Terminal Boxes TNCN	153 - 158
Medium voltage distribution boxes 6 to 10 kV, 07-5H9.-.../....	159
Accessories for empty enclosures and distribution boxes	160
High Voltage Cabinets TNHV	161 - 162
Ex rail-mounted terminals	163
Protective conductor terminals and PE terminals	164
Mini terminal, 07-9702-0.20/.	165 - 166
Terminal block, 07-9721-0..0	167 - 168
ExDrive Hot Connect USB Drive for Zone 1 and 2	170
Plug connection 16 A, 3-pole, 4-pole and 5-pole, 07-831.-....	171 - 172
Plug connection 32 A, 4-pole and 5-pole, 07-832.-....	173 - 174
Plug connection 63 A, 4-pole and 5-pole, 07-833.-....	175 - 176
Customer requirements Terminal Boxes	177 - 178

## SWITCHES

---

Insert switch/limit switch, 07-511-.../..	180 - 183
Miniature insert switch/limit switch, 07-501-.../..	184 - 185
Limit switch plastic encapsulated, 07-2961-1.62/..	186 - 187
Limit switch metal encapsulated, 07-295-..30/..	188 -189
Position switch Aluminium, 07-291.-1.../..	190 - 191

## CABLE ENTRIES AND LINE BUSHINGS

---

Metal cable glands for Zone 1/21 and 2/22	194 - 195
Cable gland, 03-606.-0...	196
Screw plugs, 03-5210-00..	197
Line bushings, 07-9...-.../..	198 - 205
Bushing conductor studs, TOS.....A...V-..	206 - 210
Optical fibre bushing, 57-91..-....	211 - 212
Electrode line bushing explosion-proof and pressure-sealed, 37-9405-123./1000	213
Bushing explosion-proof and pressure-sealed, 07-96.-.../..	214
Cable entries, 07-9...-.../..	215 - 219
Bushings and cable entries/ Nonthreaded line bushings, pressure and vacuum sealed non explosion-proof, 37-910.-.../7..., 37-920.-.../7...	220 - 225
Cable entries - submersible, 37-9208-.0../2000	226
Bushing conductor studs pressure and vacuum tight, 37-9119-A019/70E.	227
Electrode line bushings, 37-9A05-125./1000	228
Special versions	229
Customer requirements Cable entries/line bushings	230 - 231

## SIGNALLING DEVICES/WORK LIGHT

---

Signal horn, 07-4602-1.12	234
Ex de Flashing lamp 15 J, 07-4838-31..	235
Flashing beacon TNFCD/TNFCDM	236 - 237
Lighting TNCLS Backlight for level gauges	238 - 239

## MOTORS

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**Flameproof electrical motors series 4KTC**

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**Flameproof brake motors series BM 4KTC**

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**NEMA explosion-proof motors series 4KTU**

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**Submersible motors series 4KTS**

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**Mining motors series 4KTCR and 4KTCP**

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For further details  
and ordering numbers  
please see

**BARTEC VARNOST**  
catalogue

**ELECTRICAL MOTORS**  
[www.bartec-varnost.si](http://www.bartec-varnost.si)

## Individual solutions are our standard

BARTEC VARNOST has been developing and manufacturing explosion-protected electric motors for over 55 years. Besides standard solutions in drive technology we also satisfy individual needs from design, development, testing, to certifying and manufacturing.

Our experience in hazardous areas and our flexibility permit us to answer the most special requirements for different applications of flame-proof motors. To choose the ideal motor for your particular application, you can benefit from our experts' knowledge. All over the world, our engineers can advise and assist you from the idea to the implementation of your flame-proof motor project.

### Explosion protection

Marking	<ul style="list-style-type: none"> <li>⊕ II 2G Ex de II CT4 Gb or</li> <li>⊕ II 2G Ex d II CT4 Gb</li> <li>⊕ II 2D Ex tb IIIC T85°C</li> <li>Class I division 1, Group C and D, T4-T6</li> <li>Class II, division 1 and 2, Groups E, F and G</li> <li>⊕ I M2 Ex de I Mb or</li> <li>⊕ I M2 Exd I Mb</li> </ul>
Certification	ATEX, IECEx, CSA, EAC, KOSHA, PESO, DNV-GL...
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	

### Technical data

Frame size	63 mm to 355 mm
Power	0.05 kW to 400 kW
Voltage	up to 1100 V
Standard polarity	2, 4, 6 and 8
Double speed motors	
Frequency	50 Hz or 60 Hz
Insulation class	F or H
Mechanical protection	IP 54 to IP 68
Ambient temperature	-50 °C to +85 °C

### Motor frame

Gray cast iron frame size 63 to 280 mm
Welded frames frame size 315 to 355 mm
Modular implementation of frames allows <ul style="list-style-type: none"> <li>- screw-on flanges of various dimensions</li> <li>- screw-on feet</li> <li>- rotation of terminal box in intervals of 90°</li> </ul>
Ball bearing solidly fixed on AS side

### Terminal box

Choice between Ex d or Ex e terminal box
Terminal box positioning at 90°, 180° and 270°
Metric entry threads, Pg, NPT and ISO 7/1
12 terminals
Direct cable entry without terminal box

### Additional options

Temperature sensors in windings or bearings PTC, PTO or Pt100
Anti-condensation heaters
Temperature class T5 and T6
Insulated bearings from frame size 160 and above
Additional bearing lubrication
SPM provision for frame size above 100
Usage with frequency regulator up to 100 Hz without additional certification
Additional forced cooling for frequency-regulated drives at low frequencies
Add- on Ex encoder
Special version for hard working conditions in chemistry
Motors for marine industry with certificates: GL, LRS, BV, ABS, DNV, RMRS etc.
IP 68 submersible flameproof motors 4KTS
Flameproof motors with brake BM 4KTC



## COMEX CONTROL STATIONS

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A large number of variants and versions of actuating elements are available for the ComEx control and indicator units. All actuating elements are made of high-quality thermoplastic and conform to the IP 66/IP 67 type of protection. To complete the actuating elements, there are useful accessories such as e. g. label holders, marking tags, metal shroud or nut wrench. Actuating elements for increased resistance to oil are available too. The actuating elements are mounted quickly and easily onto the ComEx control and indicating devices. Use in Zone 1 and 21 is certified.

- Easy installation
- Certified for Zone 1 and 21
- High IP degree of protection


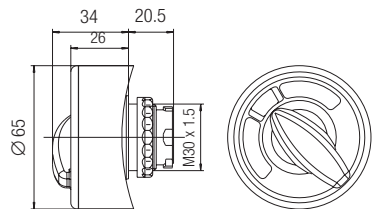

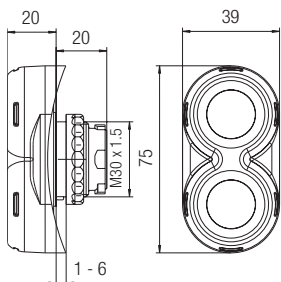

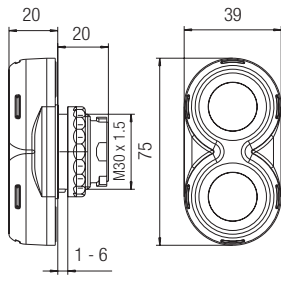
#### Explosion protection

Marking ATEX	II 2G Ex eb IIC Gb II 2D Ex tb IIIC Db
Certification	CML 13 ATEX 3010 U
Marking IECEx	Ex eb IIC Gb Ex tb IIIC Db
Certification	IECEx CML 14.0005 U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient and operating temperature range	-55 °C to +70 °C

#### Technical data


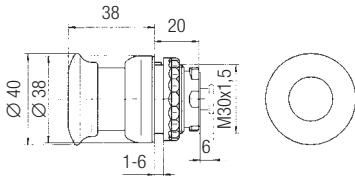

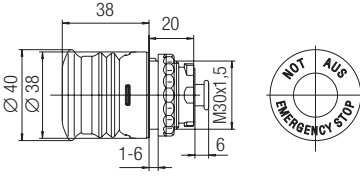

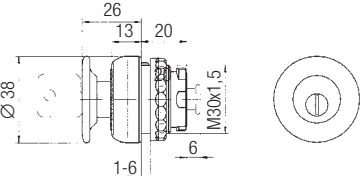

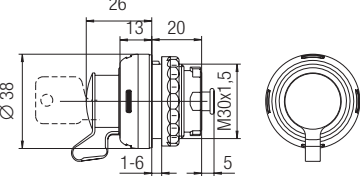
Storage and transport temperature	-55 °C to +70 °C
Protection class	min. IP 66
Weight	see table
Impact resistance	7 Nm (Lamp actuators 4 Nm)
Material	Enclosure thermoplastic
Fastening	Installation in enclosures with wall thickness of 1 mm up to 6 mm (threading M30 x 1.5). Suitable for through-holes 30.3 <sup>+0.3</sup> mm

**Ordering Information**

Illustration	Dimensions	Description	Order no.	
	for ComEx enclosure 	Position selector switch black, with 2 or 3 switch positions with protective collar, lockable <sup>1</sup> only for switch module (2-pole)		
		0 - I	for control unit (flat) 05-0003-007001 for ComEx enclosure 05-0003-007101	
		I - II	for control unit (flat) 05-0003-007002 for ComEx enclosure 05-0003-007102	
		I - 0 - II	for control unit (flat) 05-0003-007203 for ComEx enclosure 05-0003-007303	
		HAND - 0 - AUTO	for control unit (flat) 05-0003-007224 for ComEx enclosure 05-0003-007324	
		MAN - 0 - AUTO	for control unit (flat) 05-0003-007225 for ComEx enclosure 05-0003-007325	
		Weight	74 g	
			<sup>1</sup> 3 boreholes in the protective collar to fit padlocks the switch position 0 (I) or to customer specifications.	
		for ComEx enclosure 	Double pushbutton actuator 5 labels red, green, yellow, white, black, supplied loose	
			for ComEx enclosures	05-0003-007500 05-0003-007500BN*
		for control units	05-0003-007400 05-0003-007400BN*	
		Weight	52 g	
	for Control unit/ComEx 316L 	Pushbutton 5 labels red, green, yellow, white, black, supplied loose		
			05-0003-000700 05-0003-000700BN*	
		Weight	24 g	

\* with special sealing for increased resistance to oil


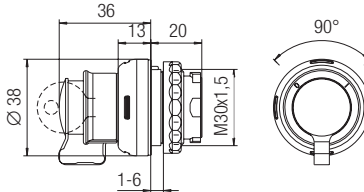

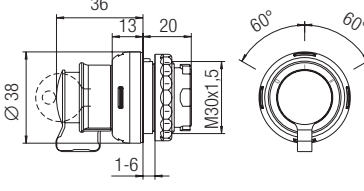
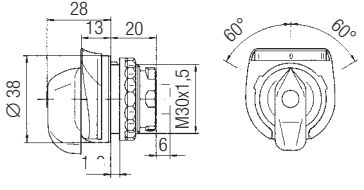
**Ordering information**

Illustration	Dimensions	Description	Order no.
		Mushroom pushbutton black, unlabelled	05-0003-001800 05-0003-001800BN*
		red, unlabelled	05-0003-001802 05-0003-001802BN*
		Weight	74 g
		EMERGENCY STOP slam button	
		Pushbutton with imprint "NOT-AUS EMERGENCY STOP" "Pull to Release"	05-0003-000800 05-0003-000800BN*
		Pushbutton with imprint "ARRET"	05-0003-000802 05-0003-000802BN*
		Pushbutton yellow, unlabelled	05-0003-000801 05-0003-000801BN*
		Pushbutton black, unlabelled	05-0003-000803 05-0003-000803BN*
		Pushbutton red, unlabelled	05-0003-000804 05-0003-000804BN*
		DIN EN 60204-1: 2007 DIN EN 60947-5-1: 2005 (VDE 0660 Teil 200)	
		Weight	46 g
		Locking mushroom pushbutton	05-0003-001203 05-0003-001203BN*
		push in without key, unlock with key, DOM lock 4 A 185	
		Weight	70 g
		Lock DOM lock 4 A 185	
		Lockable in both positions, key retractable in both positions	05-0003-001200
		Lockable in depressed position, key retractable in depressed position	05-0003-001201
		Tip lock lockable in initial positions, key retractable in initial positions	05-0003-001202
Weight	70 g		

\* with special sealing for increased resistance to oil

Technical data subject to change without notice.


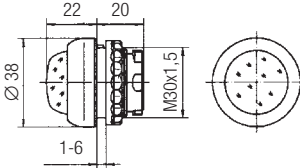

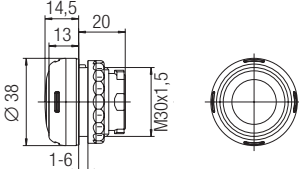

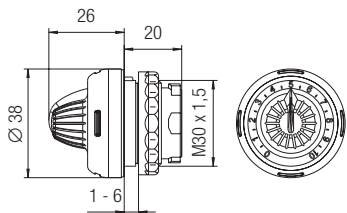

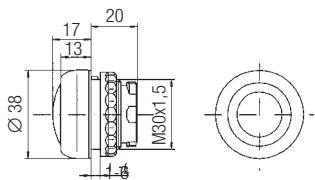

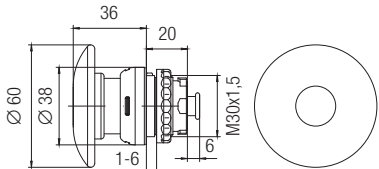
**Ordering information**

Illustration	Dimensions	Description	Order no.	
	<p>2 switching positions</p> 	Key-operated switch** RONIS lock 455, with 2 or 3 switching positions, turned 90° for ComEx enclosures		
		0 - I, latching, key retractable	for control units	05-0003-007700
			for ComEx enclosures	05-0003-007800
		0 - I, momentary contact Position I, key not retractable	for control units	05-0003-007701
			for ComEx enclosures	05-0003-007801
		0 - I, latching, Position I key not retractable	for control units	05-0003-007702
			for ComEx enclosures	05-0003-007802
		I - 0 - II (I + II latching) key retractable	for control units	05-0003-007900
			for ComEx enclosures	05-0003-008000
		I - 0 - II (I + II momentary contact) Position I + II key not retractable	for control units	05-0003-007901
	for ComEx enclosures	05-0003-008001		
	Weight	49 g		
	<p>2 switching positions</p> 	Position selector switch, black, with 2 or 3 switching positions		
		0 - I (latching)	for control units	05-0003-000900
				05-0003-000900BN*
			turned 90° for ComEx enclosures	05-0003-000901
				05-0003-000901BN*
		I - 0 - II (I + II latching)	for control units	05-0003-001000
				05-0003-001000BN*
			turned 90° for ComEx enclosures	05-0003-001100
			05-0003-001100BN*	
	I - 0 - II (I + II momentary)	for control units	05-0003-001001	
			05-0003-001001BN*	
		turned 90° for ComEx enclosures	05-0003-001101	
			05-0003-001101BN*	
	<p>3 switching positions</p> 	I - 0 - II (I latching, II momentary contact)	for control units	05-0003-001002
				05-0003-001002BN*
			turned 90° for ComEx enclosures	05-0003-001102
			05-0003-001102BN*	
I - 0 - II (I latching, II momentary contact)		for control units	05-0003-001003	
			05-0003-001003BN*	
		turned 90° for ComEx enclosures	05-0003-001103	
			05-0003-001103BN*	
0 - I (momentary)	for control units	05-0003-000902		
		05-0003-001003BN*		
	turned 90° for ComEx enclosures	05-0003-000903		
		05-0003-001103BN*		
	Weight	33 g		

\* with special sealing for increased resistance to oil

Technical data subject to change without notice.

**Ordering information**

Illustration	Dimensions	Description	Order no.
		Lamp module actuator	
		red	05-0003-001300 05-0003-001300BN*
		green	05-0003-001400 05-0003-001400BN*
		yellow	05-0003-001500 05-0003-001500BN*
		white	05-0003-001600 05-0003-001600BN*
		blue	05-0003-001700 05-0003-001700BN*
		Weight	19 g
		Illuminated button actuator	
		red	05-0003-006500 05-0003-006500BN*
		green	05-0003-006600 05-0003-006600BN*
		yellow	05-0003-006700 05-0003-006700BN*
		white	05-0003-006800 05-0003-006800BN*
		blue	05-0003-006900 05-0003-006900BN*
		Weight	19 g
		Potentiometer actuator, black, durable and abrasion-resistant, Scale gradation from 0 to 10	05-0003-007600 05-0003-007600BN*
		Weight	28 g
		Blanking plug, to cover unused holes in the cover	05-0003-001900 05-0003-001900BN*
		Weight	20 g
		Mushroom pushbutton, black with pushbutton label "START"	05-0003-008200 05-0003-008201
		Weight	24 g

\* with special sealing for increased resistance to oil

Technical data subject to change without notice.



- High flexibility
- Easy installation
- High IP protection type

The ComEx switching module can be used in almost all potentially explosive areas where machine functions need to be triggered by a button or a switch. ComEx switching modules are flexible in use and offer a range of actuator elements. All contacts of the switching module are self-cleaning, and NC contacts have positive opening. The conductor is connected using terminals with increased safety on the back of the module. The simple installation of the actuator elements, without the use of tools, guarantees the high IP protection type.

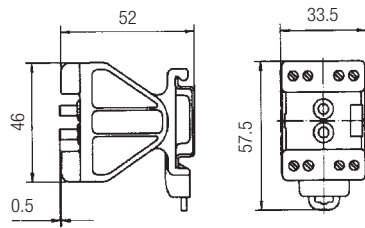
**Explosion protection**

Marking ATEX	⊕ II 2G Ex db eb IIC Gb ⊕ I M2 Ex db eb I Mb
Certification	CML 17 ATEX 1105U
Marking IECEx	Ex db eb IIC Gb Ex db eb I Mb
Certification	IECEx CML 17.0045U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-55 °C to +60 °C

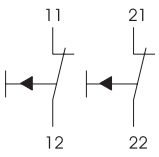
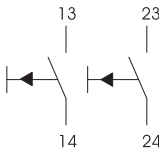
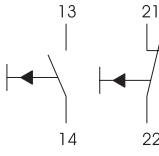
**Technical data**

Protection class	determined by the actuating element and ComEx enclosure, min. IP 66, terminals IP 20		
Rated insulation voltage	690 V		
Rated voltage	400 V	400 V	110 V
			24 V
Utilization category	AC-12	AC-15	DC-13
			DC-13
Rated operating currents	16 A	10 A	0.5 A
			1 A
Conventional thermal current $I_{the}$	16 A/+40 °C, 11 A/+60 °C		
Contact options	contacts with positive break operation (self-cleaning) 1 NC and 1 NO or 2 NC or 2 NO		
Contact material	AgSnO <sub>2</sub>		
Enclosure material	thermoplastic		
Connection	terminals 2.5 mm <sup>2</sup> , fine stranded		
Mechanical life	10 <sup>6</sup> switching cycles		
Storage and transport temperature	-55 °C to +70 °C		
Weight	approx. 70 g		
Mounting	on mounting rail NS 35 x 7.5		
Shock resistance	DIN EN/IEC 60068-2-27, 30 g 18 ms		

**Dimensions**



**Ordering information**

Type of contacts	Code no.	Actuating element	Code no.
2 NC 	1	Pushbutton	0700
		Double pushbutton actuator	7400
		Emergency stop NOT-AUS	0800
		Selector switch 0 + I latching, 2 positions	0900
		Selector switch I + II latching, 3 positions	1000
2 NO 	2	Selector switch I + II momentary-contact, 3 positions	1001
		Selector switch I latching, II momentary-contact, 3 positions	1002
		Selector switch I momentary-contact, II latching, 3 positions	1003
		Mushroom pushbutton, black	1800
		1 NC + 1 NO 	4
Lockable in the depressed position, DOM lock	1201		
Lockable in the initial position, DOM lock	1202		
Locking-type mushroom pushbutton	1203		

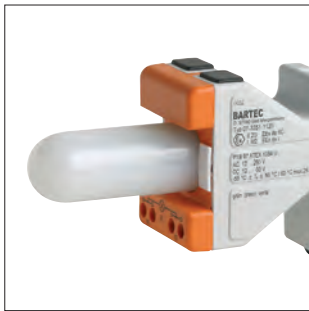
Complete order no.

**Switch module** without actuating element 07-3321-1  00

**Actuating element**

- Standard 05-0003-00
- Increased oil resistance 05-0003-00     BN

Please enter code number. Other actuators available see following.  
 Technical data subject to change without notice.



- One module for all fields of application
- Illumination 180°
- High flexibility thanks to the junction box
- Easy installation
- High IP protection type

The ComEx lamp module signals command modes by means of a light signal. It is suitable for use in almost all potentially explosive areas in which the functional status of machinery needs to be visibly displayed. The lamp modules are executed according to the requirements of type of protection “e increased safety” and “d flameproof enclosure”. The lamp module can be combined with various lamp module actuators. A junction box is provided for the safe and convenient installation of the module in a control panel. Conductors are connected using terminals with increased safety on the back of the module. The simple installation of the lamp module actuators, without the use of tools, guarantees the high IP protection type.

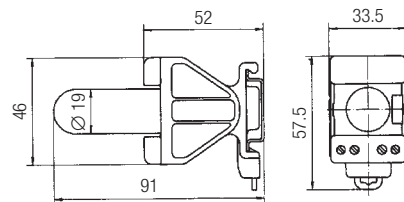
**Explosion protection**

Marking ATEX	II 2G Ex db eb IIC Gb I M2 Ex db eb I Mb
Certification	CML 17 ATEX 1106 U
Marking IECEx	Ex db eb IIC Gb Ex db eb I Mb
Certification	IECEx CML 17.0046U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-55 °C to +50 °C +60 °C (AC/DC 12 V to 24 V)

**Technical data**

Protection class	determined by the actuating element and ComEx enclosure, min. IP 66, terminals IP 20
Rated insulation voltage	300 V
Rated operating voltage	AC 12 V to 250 V ( $T_a \leq +50\text{ °C}$ ) DC 12 V to 60 V ( $T_a \leq +50\text{ °C}$ ) AC/DC 12 V to 24 V ( $T_a \leq +60\text{ °C}$ )
Power consumption	$\leq 1\text{ W}$
Lamp	LED red, green, yellow, white, blue
Illumination	very bright, visible angle over 180°
Enclosure material	thermoplastic
Connection	terminals 2.5 mm <sup>2</sup> , fine stranded
Electrical life	$>10^5$ running hours
Storage and transport temperature	-55 °C to +70 °C
Weight	approx. 90 g
Mounting	on mounting rail NS 35 x 7.5
Shock resistance	DIN EN/IEC 60068-2-27: 30 g 18 ms

**Dimensions**



**Ordering information**

Wiring diagram	Colour LED	Code no.	Colour actuator	Code no.
	red	1	red	3
	green	2	green	4
	yellow	3	yellow	5
	white	4	white	6
	blue	5	blue	7

Complete order no.

**Lamp module** without actuating element 07-3351-11  0

**Actuating element** Standard 05-0003-001  00

Increased oil resistance 05-0003-001  00BN

Please enter code number.  
Technical data subject to change without notice.



- One module for all intrinsically safe application areas
- Long service life
- Excellent luminosity

The ComEx Ex i lamp module indicates command modes by means of a light signal lighting up or going out. It is suitable for use in almost all hazardous (potentially explosive) areas in which a visual indication of a machine's functional status is required. The lamp modules are designed to conform to the requirements of the "e increased safety", "d flameproof enclosure" and "i intrinsic safety types of protection". They may be activated by intrinsically safe circuits. The lamp module can be combined with various lamp module actuators. Each lamp module actuator is fitted into a mounting hole in a control console or a control panel. The respective lamp module is intended for fitting onto a mounting rail. Conductors are connected using terminals with increased safety on the back of the module. The lamp module actuators can be fitted easily, without the use of tools, which ensures conformance to the high IP degree of protection.

**Explosion protection**

Marking ATEX	Ⓔ II 2G Ex db eb IIC Gb Ⓔ I M2 Ex db eb ia I Mb
Certification	CML 17 ATEX 1106 U
Marking IECEX	Ex db eb IIC Gb Ex db eb I Mb
Certification	IECEX CML 17.0046U
Other approvals and certificates, see www.bartec.de	
Ambient temperature	-55 °C to +60 °C

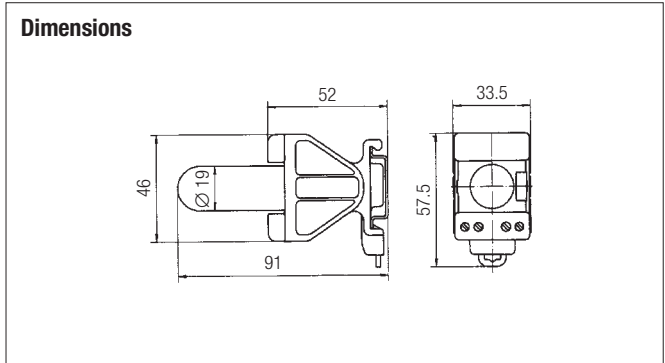
**Technical data**

Protection class	determined by the actuating element and control unit enclosure, min. IP 66, terminals IP 20
Rated operating voltage (U <sub>e</sub> )	AC/DC 10 to 30 V
Frequency range	with AC supply 30 to 100 Hz
Power consumption	≤ 0,5 W
Lamp	LED, red, green, yellow, white, blue
Illumination	very bright, visible angle over 180°
Enclosure material	thermoplastic
Type of connection	terminals 2.5 mm <sup>2</sup> , fine-stranded
Service life	>10 <sup>5</sup> running hours
Storage and transport temperature	-55 °C to +70 °C
Weight	approx. 90 g
Fastening	onto TS 35 x 7.5 mounting rail
Shock resistance	DIN EN/IEC 60068-2-27, 30 g, 18 ms DIN EN/IEC 60068-2-6, 4 g, 1.6 mm

**Intrinsically safe parameters**

Input voltage (U <sub>i</sub> )	30 V
Input current (I <sub>i</sub> )	150 mA
Input power (P <sub>i</sub> )	1 W
Inductance (L <sub>i</sub> )	negligible
Capacitance (C <sub>i</sub> )	negligible

**Dimensions**



**Ordering information**

Wiring diagram	Colour LED	Code no.	Colour actuator	Code no.
	red	1	red	3
	green	2	green	4
	yellow	3	yellow	5
	white	4	white	6
	blue	5	blue	7

Complete order no.

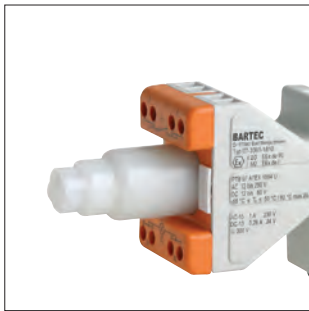
**Lamp module** without actuating element 07-3351-14  0

**Actuating element** Standard 05-0003-001  00

Increased oil resistance 05-0003-001  00BN

Please enter code number.

Technical data subject to change without notice.



- One module for all fields of application
- Excellent Illumination
- Easy installation
- High IP protection type

The ComEx illuminated button signals command modes by means of a light signal. It is suitable for use in almost all potentially explosive areas in which the functional status of machinery needs to be visibly displayed. The illuminated buttons are executed according to the requirements of type of protection “e increased safety” and “d flameproof enclosure”. The illuminated button can be combined with various lamp module actuators. Each illuminated button actuator is inserted in a mounting hole on a control console or control panel. The respective illuminated button is designed for installation onto a mounting rail. The conductor is connected using terminals with increased safety on the back of the module. The simple installation of the illuminated button actuators, without the use of tools, guarantees the high IP protection type.

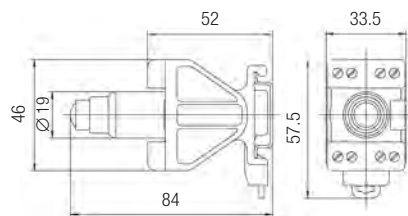
**Explosion protection**

Marking ATEX	II 2G Ex db eb IIC Gb I M2 Ex db eb I Mb
Certification	CML 17 ATEX 1106 U
Marking IECEX	Ex db eb IIC Gb Ex db eb I Mb
Certification	IECEX CML 17.0046U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-55 °C to +50 °C +60 °C (AC/DC 12 to 24 V)

**Technical data**

Protection class	determined by the actuating element and ComEx enclosure, min. IP 66, terminals IP 20	
Rated insulation voltage	300 V	
Rated operating voltage	AC 12 V to 250 V	(T <sub>a</sub> ≤ +50 °C)
	DC 12 V to 60 V	(T <sub>a</sub> ≤ +50 °C)
	AC/DC 12 V to 24 V	(T <sub>a</sub> ≤ +60 °C)
Power consumption	≤ 1 W	
Lamp	LED: red, green, yellow, white, blue	
Illumination	very bright, visible angle over 180°	
Contacts	1 NC or 1 NO as snap switch element	
Switching capacity	AC-15	1 A/230 V
	DC-13	0.25 A/24 V
Enclosure material	thermoplastic	
Type of connection	terminals 2.5 mm <sup>2</sup> , fine stranded	
Service life	>10 <sup>5</sup> running hours	
Mechanical life	>10 <sup>5</sup> switching cycles	
Storage and transport temperature	-55 °C to +70 °C	
Weight	approx. 110 g	
Fastening	onto mounting rail TS 35 x 7.5	
Shock resistance	DIN EN/IEC 60068-2-27, 30 g, 18 ms	

**Dimensions**



**Ordering information**

Type of contact	Code no.	Colour LED	Code no.	Colour actuator	Code no.
	7	red	1	red	5
		green	2	green	6
		yellow	3	yellow	7
	8	white	4	white	8
		blue	5	blue	9

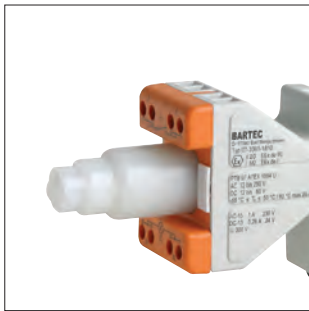
Complete order no.

**Illuminated button** without actuating element 07-3361-1   0

**Actuating element** Standard 05-0003-006  00

Increased oil resistance 05-0003-006  00BN

Please enter code number.  
Technical data subject to change without notice.



- One module for all intrinsically safe application areas
- Long service life
- Excellent luminosity

The ComEx Ex i illuminated button indicates command modes by means of a light signal lighting up or going out. It is suitable for use in almost all hazardous (potentially explosive) areas in which a visual indication of the machine's functional status is required. The illuminated buttons are designed to conform to the requirements of the "e increased safety", "d flameproof enclosure", and "i intrinsic safety types of protection". They may be activated by intrinsically safe circuits. The illuminated buttons can be combined with various lamp module actuators. Each illuminated button actuator is fitted into a mounting hole in a control console or a control panel. The respective illuminated button is intended for fitting onto a mounting rail. Conductors are connected using terminals with increased safety on the back of the module. The lamp module actuator can be fitted easily, without the use of tools, which ensures conformance to the high IP degree of protection.

**Explosion protection**

Marking ATEX	⊕ II 2G Ex db eb ia IIC Gb ⊕ I M2 Ex db eb ia I Mb
Certification	CML 17 ATEX 1106 U
Marking IECEx	Ex db eb ia IIC Gb Ex db eb ia I Mb
Certification	IECEx CML 17.0046U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Umgebungstemperatur	-55 °C bis +60 °C

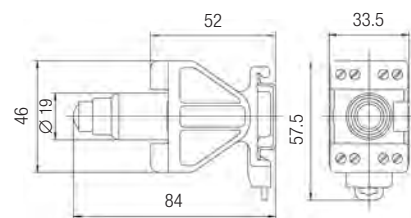
**Technical data**

Protection class	determined by the actuating element and ComEx enclosure, min. IP 66, terminals IP 20
Rated operating voltage (U <sub>0</sub> )	AC/DC 10 to 30 V
Frequency range	with AC supply 30 to 100 Hz
Power consumption	≤ 0.5 W
Lamp	LED, red, green, yellow, white, blue
Illumination	very bright, visible angle over 180°
Contacts	1 NC contact or 1 NO contact as snap-action switching elements
Switching capacity	DC-13 0.25 A/24 V
Enclosure material	thermoplastic
Type of connection	terminals 2.5 mm <sup>2</sup> , fine-stranded
Service life	> 10 <sup>5</sup> running hours
Mechanical life	> 10 <sup>5</sup> switching cycles
Storage and transport temperature	-55 °C to +70 °C
Weight	approx. 110 g
Fastening	onto TS 35 x 7.5 mounting rail
Shock resistance	DIN EN/IEC 60068-2-27, 30 g, 18 ms DIN EN/IEC 60068-2-6, 4 g, 1.6 mm

**Intrinsically safe parameters**

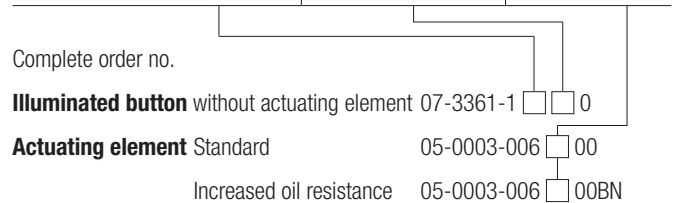
Input voltage (U <sub>i</sub> )	30 V
Input current (I <sub>i</sub> )	150 mA
Input power (P <sub>i</sub> )	1 W
Inductance (L <sub>i</sub> )	negligible
Capacitance (C <sub>i</sub> )	negligible

**Dimensions**



**Ordering information**

Type of contact	Code no.	Colour LED	Code no.	Colour actuator	Code no.
	5	red	1	red	3
		green	2	green	4
		yellow	3	yellow	5
	6	white	4	white	6
		blue	5	blue	7



Please enter code number.  
 Technical data subject to change without notice.



- Easy and exact setting of the desired value
- Easy installation
- High IP rating

The ComEx potentiometer is used in virtually all hazardous (potentially explosive) locations where machine functions are controlled by means of adjustable voltage distributors. The module can be combined with a potentiometer actuator (scale graduation 0 to 10). Conductors are connected via of terminals on the back of the module which have an increased safety level. The easy installation of the potentiometer actuating element without the need for the use of tools ensures conformance to the high IP degree of protection.

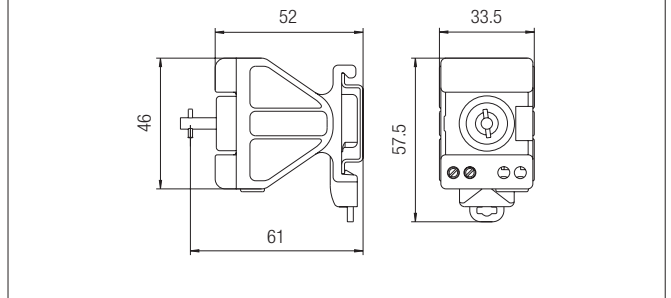
**Explosion protection**

Marking ATEX	⊕ II 2G Ex db eb IIC Gb ⊕ I M2 Ex db eb I Mb
Certification	CML 17 ATEX 1119 U
Marking IECEx	Ex db eb IIC Gb Ex db eb I Mb
Certification	IECEx CML 17.0057U
Other approvals and certificates, see www.bartec.de	
Ambient temperature	-55 °C to +60 °C

**Technical data**

Protection class	determined by the actuating element and ComEx enclosure, min. IP 66, terminals IP 20
Rated insulation voltage	500 V
Max. rated voltage	AC/DC 230 V
Resistance	1 kΩ to 10 kΩ
Curve shape	linear
Resistance tolerance	± 20 %
Rated output	max. 1 W at $T_a \leq +40\text{ °C}$
Resistor material	carbon film on ceramics
Rotation	mech. 285° to -5° electr. about approx. 250°
Torgue (beginning)	0.5 to 1.5 Ncm
Torgue (end stop)	≥ 100 Ncm
Enclosure material	thermoplastic
Connection	double terminals 2 x 2.5 mm <sup>2</sup> , fine stranded
Mechanical life	25.000 sinusoidal cycles
Storage and transport temperature	-55 °C to +70 °C
Weight	ca. 71 g

**Dimensions**



**Ordering information**

Wiring diagram	Resistance	Code no.
	1 kΩ	4
	2.2 kΩ	5
	4.7 kΩ	6
	10 kΩ	7

Other resistances on request.

Complete order no.

**Potentiometer** without actuating element 07-3371-1D

Please enter code number.

Technical data subject to change without notice.

**Actuating element**

Standard (scale 1 to 10) Order no. 05-0003-007600  
 Increased oil resistance (scale 1 to 10) Order no. 05-0003-007600BN

**Notes for installation and inspection:**

At rated voltage:  
 ≤ AC 50 V/≤ DC 120 V  
 (protection low voltage in accordance with DIN VDE 0100 T. 410)  
 potentiometer drive shaft can be operated without actuating element.

At rated voltage:  
 ≥ AC 50 V to max. AC/DC 230 V  
 potentiometer drive shaft can only be operated with actuating element or has to be deenergized.



- Contacts with positive break operation
- Latched and momentary-contact positions

This control switch has been designed to solve the variety of problems encountered in chemical and petrochemical plants and on explosion-proofed electrical machinery. Four switch contacts as opening and closing elements in different permutations permit a variety of functions. The opener has a positive break operation. The switch actuator offers latched and momentary-contact positions with different switch positions. The control switch can be installed quickly and directly into double or triple ComEx enclosures, or in combination with other command devices in control units.

**Explosion protection**

Marking ATEX	II 2G Ex db eb IIC Gb I M2 Ex db eb I Mb
Certification	CML 17 ATEX 1105 U
Marking IECEx	Ex db eb IIC Gb Ex db eb I Mb
Certification	IECEx CML 17.0045U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-55 °C to +60 °C

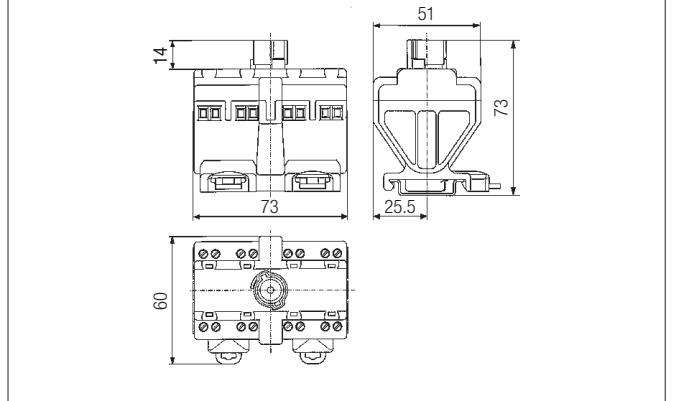
**Technical data**

Connection	terminals 2.5 mm <sup>2</sup> , fine stranded	
Contact material	AgSnO <sub>2</sub>	
Enclosure material	thermoplastic	
Installation	on TS 35 x 7.5 mounting rail	
Switch function	max. 4 switch contacts different NC/NO contact assemblies latching and momentary-contact functions with different switch positions	
Contacts	contacts with positive break operation (self-cleaning)	
Installation	in ComEx double and triple enclosures and in control units as floor mounting and front-panel mounting	
Switch isolator	DIN EN 60947-3 (main motor switch)	
P/AC-3/AC-23 A	AC-3	AC-23
230 V	3 ph/3 kW	1 ph/2.2 kW
400 V	3 ph/5.5 kW	1 ph/3 kW
	I <sub>g</sub> = AC-23/400 V/10 A	
Control switch according to DIN EN 60947-5-1 (auxiliary circuit switch)		
AC-15	400 V	10 A
AC-12	400 V	16 A
DC-13	24 V	1 A

**Electrical data**

Rated insulation voltage	U <sub>i</sub> = 690 V
	U <sub>e</sub> = 400 V
Rated impulse strength	U <sub>imp</sub> = 6 kV
Conditional rated short-circuit current at 400 V	I <sub>e</sub> = 4 kA
Short-circuit current (general-purpose l.v.h.b.c back-up fuse for the protection of cables and circuits)	max. 16 A
Nominal thermal current	(+40 °C) I <sub>the</sub> = 16 A
	(+60 °C) I <sub>the</sub> = 11 A

**Dimensions**



**Ordering information**

Contact arrangement of control switch	Code no.	Contact arrangement of control switch	Code no.
	A01		C06
	A02		C07
	A03		E08
	A04		E09
	H05		L01
Contact arrangement of switch-isolator			
	N01		N02

Further contact versions are available upon request.

Complete order no. 07-3331-1     
 Please enter code number.  
 Technical data subject to change without notice.

**Ordering information**

Illustration/Dimensions	Description	Order no.	
for ComEx enclosure 	Black position selector with protective collar, lockable* only for 4-pole switch		
	0 - I	for ComEx enclosure für Control unit (flat)	05-0003-006201 05-0003-006301
for control unit/ComEx 316L 	I - II	for ComEx enclosure für Control unit (flat)	05-0003-006202 05-0003-006302
	I - 0 - II	for ComEx enclosure für Control unit	05-0003-006203 05-0003-006303
	0 - I - II	for ComEx enclosure für Control unit (flat)	05-0003-006204 05-0003-006304
	0 - I - II - III	for ComEx enclosure für Control unit (flat)	05-0003-006205 05-0003-006305
	0 - I - II - III - IV	for ComEx enclosure für Control unit (flat)	05-0003-006206 05-0003-006306
	HAND - 0 - AUTO	for ComEx enclosure für Control unit (flat)	05-0003-006209 05-0003-006309

\* As standard, there are 3 boreholes in the protective collar to fit padlocks. If no further details are given on which switching position is to be locked, the boreholes are provided in the switch position 0 (I), others to customer specifications.



- One module for all fields of application
- Large selection of actuating elements
- High flexibility thanks to the junction box
- Low installation depth

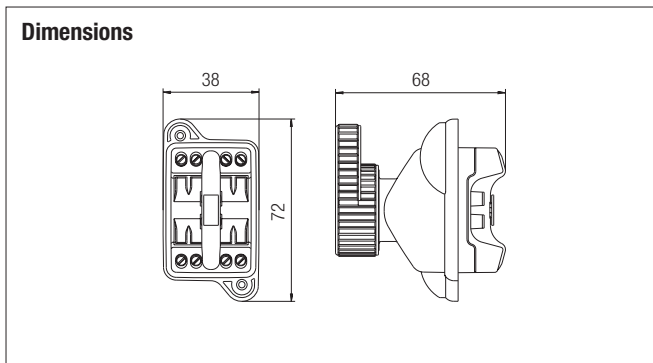
The ComEx<sup>flex</sup> switch module is used in almost all hazardous areas where machine functions are activated by means of a button or a switch. The ComEx<sup>flex</sup> is flexible and in addition to a large number of actuating elements it offers a junction box to facilitate a safe and convenient installation of the module into a control panel. All contacts in the switch modules are self-cleaning and the opening contacts have positive opening operation. The conductors are connected by means of terminals on the back of the module which have an increased safety level. The easy installation of the actuating elements, without the use of tools, ensures conformance to the high IP degree of protection.

### Explosion protection

Marking ATEX	II 2G Ex db eb IIC Gb I M2 Ex db eb I Mb
Certification	CML 17 ATEX 1105 U
Marking IECEx	Ex db eb IIC Gb Ex db eb I Mb
Certification	IECEx CML 17.0045U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-55 °C to +60 °C

### Technical data

Protection class	determined by the actuating element and control station enclosure, min. IP 66, terminals IP 20 (IEC 60529).			
Rated insulation voltage	690 V			
Rated operating voltage	400 V	400 V	110 V	24 V
Utilization category	AC-12	AC-15	DC-13	DC-13
Rated operating currents	16 A	10 A	0.5 A	1 A
Conventional thermal current $I_{the}$	16 A/+40 °C, 11 A/+60 °C			
Contact options	contacts with positive-break operation (self-cleaning) 1 N/C and 1 N/O or 2 N/C or 2 N/O			
Contact material	AgSnO <sub>2</sub>			
Enclosure material	thermoplastic			
Connection	terminals 2.5 mm <sup>2</sup> , fine-stranded			
Mechanical life	>10 <sup>6</sup> switching cycles			
Storage temperature	-55 °C to +70 °C			
Weight	approx. 110 g			
Mounting	locked, bayonet lock			
Shock resistance	DIN EN 60068-2-27, 30 g 18 ms			



**Ordering information**

Type of contacts	Code no.	Actuating elements	Code no.
	1	Pushbutton	0700
		Double pushbutton actuator	7400
		Emergency stop NOT-AUS	0800
		Selector switch 0 + I latching, 2 positions	0900
		Selector switch I + II latching, 3 positions	1000
		2 NO	2
	Selector switch I latching, II momentary-contact, 3 positions	1002	
	Selector switch I momentary-contact, II latching, 3 positions	1003	
	Mushroom pushbutton, black	1800	
	Lockable in both positions, DOM lock	1200	
	1 NC + 1 NO	4	
	Lockable in the initial position, DOM lock		1202
	Locking-type mushroom pushbutton		1203

Complete order no.

**Switch module** without actuating element 07-3323-4  00

**Actuating element** Standard

05-0003-00

Increased oil resistance 05-0003-00     BN

Please enter code number. Other actuators available see following.

Technical data subject to change without notice.

1



- One module for all fields of application
- Illumination 180°
- High flexibility due to junction box
- Low installation depth

The ComEx<sup>flex</sup> lamp module indicates command modes by means of a light signal lighting up or going out. It is suitable for use in almost all explosive areas in which a visual indication of a machine's functional status is required. The lamp module can be combined with various lamp module actuating elements. A junction box is available to facilitate a safe and convenient installation of the module into a control panel. The conductors are connected by means of terminals on the back of the module which have an increased safety level. The lamp module actuating elements can be fitted easily, without the use of tools, which ensures conformance to the high IP degree of protection.

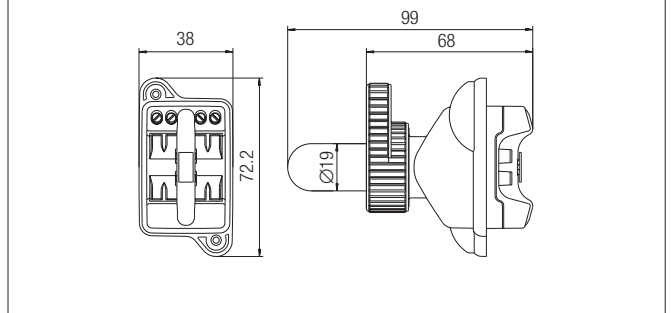
**Explosion protection**

Marking ATEX	⊕ II 2G Ex db eb IIC Gb ⊕ I M2 Ex db eb I Mb
Certification	CML 17 ATEX 1106 U
Marking IECEx	Ex db eb IIC Gb Ex db eb I Mb
Certification	IECEx CML 17.0046 U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-55 °C to +60 °C

**Technical data**

Technical data	determined by actuating element and control station enclosure, min. IP 66, terminals IP 20 (IEC 60529).	
Rated insulation voltage	300 V	
Rated operating voltage	AC 12 V to 250 V	(T <sub>a</sub> ≤ +50 °C)
	DC 12 V to 60 V	(T <sub>a</sub> ≤ +50 °C)
	AC/DC 12 V to 24 V	(T <sub>a</sub> ≤ +60 °C)
Power consumption	≤ 1 W	
Lamp	LED, red, green, yellow, white, blue	
Illumination	very bright, visible angle over 180°	
Enclosure material	thermoplastic	
Connection	terminals 2.5 mm <sup>2</sup> , fine-stranded	
Electrical life	>10 <sup>5</sup> running hours	
Storage and transport temperature	-55 °C to +70 °C	
Weight	approx. 110 g	
Mounting	locked, bayonet lock	
Shock resistance	DIN EN 60068-2-27, 30 g 18 ms	

**Dimensions**



**Ordering information**

Wiring diagram	Colour LED	Code no.	Colour actuator	Code no.
	red	1	red	3
	green	2	green	4
	yellow	3	yellow	5
	white	4	white	6
	blue	5	blue	7

Complete order no.  \_\_\_\_\_

**Lamp module** without actuating element 07-3353-41  0

**Actuating element** Standard 05-0003-001  00

Increased oil resistance 05-0003-001  00BN

Please enter code number.  
 Technical data subject to change without notice.



- One module for all intrinsically safe application areas
- Illumination 180°
- High flexibility due to junction box
- Low installation depth

The ComEx<sup>flex</sup> Ex i lamp module indicates command modes by means of a light signal lighting up or going out. It is suitable for use in almost all hazardous (potentially explosive) areas in which a visual indication of a machine's functional status is required. The lamp modules are designed to conform to the requirements of the "e increased safety", "d flameproof enclosure" and "i intrinsic safety types of protection". They may be activated by intrinsically safe circuits. The lamp module can be combined with various lamp module actuators. A junction box is available to facilitate a safe and convenient installation of the module into a control panel. Conductors are connected using terminals with increased safety on the back of the module. The lamp module actuators can be fitted easily, without the use of tools, which ensures conformance to the high IP degree of protection.

**Explosion protection**

Marking ATEX	⊕ II 2G Ex db eb ia IIC Gb ⊕ I M2 Ex db eb ia I Mb
Certification	CML 17 ATEX 1106 U
Marking IECEx	Ex db eb ia IIC Gb Ex db eb ia I Mb
Certification	IECEx CML 17.0046U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-55 °C to +60 °C

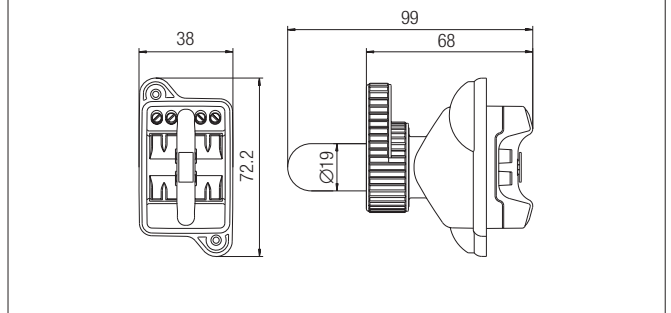
**Intrinsically safe parameters**

Input voltage (U <sub>i</sub> )	30 V
Input current (I <sub>i</sub> )	150 mA
Input power (P <sub>i</sub> )	1 W
Inductance (L <sub>i</sub> )	negligible
Capacitance (C <sub>i</sub> )	negligible

**Technical data**

Protection class	determined by actuating element and control unit enclosure, min. IP 66, terminals IP 20 (IEC 60529).
Rating operating voltage (U <sub>e</sub> )	AC/DC 10 to 30 V
Frequency range	with AC supply 30 to 100 Hz
Power consumption	≤ 0.5 W
Lamp	LED, red, green, yellow, white, blue
Illumination	very bright, visible angle over 180°
Enclosure material	thermoplastic
Type of connection	terminals 2.5 mm <sup>2</sup> , fine-stranded
Electrical life	>10 <sup>5</sup> running hours
Storage and transport temperature	-55 °C to +70 °C
Weight	approx. 110 g
Fastening	locked, by bayonet lock
Shock resistance	DIN EN 60068-2-27, 30 g, 18 ms DIN EN 60068-2-6, 4 g, 1.6 mm

**Dimensions**



**Ordering information**

Wiring diagram	LED colour	Code no.	Actuator colour	Code no.
	red	1	red	3
	green	2	green	4
	yellow	3	yellow	5
	white	4	white	6
	blue	5	blue	7

Complete order no.

<b>Lamp module</b> without actuator	07-3353-44	□ 0
<b>Actuating element</b> Standard	05-0003-001	□ 00
Increased oil resistance	05-0003-001	□ 00BN

Please insert correct code.

Technical data subject to change without notice.



- One module for all fields of application
- Excellent luminosity
- High flexibility thanks to the junction box
- Low installation depth

The ComEx<sup>flex</sup> illuminated button is used in almost all hazardous (potentially explosive) areas where machine functions are activated by pressing a button and the corresponding functional status is to be indicated visually. ComEx<sup>flex</sup> is flexible and in addition to a large number of illuminated button actuators it offers a junction box to facilitate a safe and convenient installation of the module into a control panel. The module contacts are designed as snap-action contact elements. The conductors are connected by means of terminals on the back of the module which have an increased safety level. The easy installation of the lamp module actuating elements, without the use of tools, ensures conformance to the high IP degree of protection.

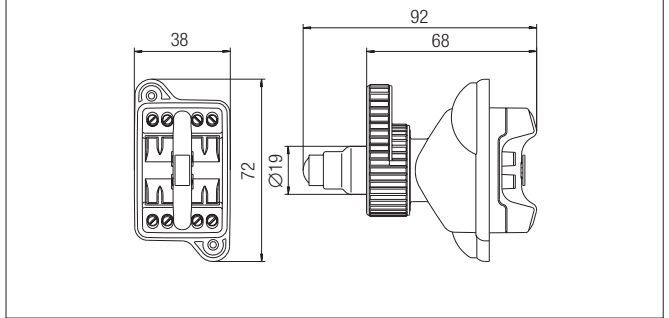
**Explosion protection**

Marking ATEX	II 2G Ex db eb IIC Gb I M2 Ex db eb I Mb
Certification	CML 17 ATEX 1106 U
Marking IECEx	Ex db eb IIC Gb Ex db eb I Mb
Certification	IECEx CML 17.0046U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-55 °C to +60 °C

**Technical data**

Protection class	determined by the actuating element and control station enclosure, min. IP 66, terminals IP 20 (IEC 60529).	
Rated insulation voltage	300 V	
Rated operating voltage	AC 12 V to 250 V	(T <sub>a</sub> ≤ +50 °C)
	DC 12 V to 60 V	(T <sub>a</sub> ≤ +50 °C)
	AC/DC 12 V to 24 V	(T <sub>a</sub> ≤ +60 °C)
Power consumption	< 1 W	
Lamp	LED, red, green, yellow, white, blue	
Illumination	very bright, visible angle over 180°	
Contacts	1 N/C or 1 N/O as snap switch element AC-15 1 A/230 V DC-13 0.25 A/24 V	
Enclosure material	thermoplastic	
Type of connection	terminals 2.5 mm <sup>2</sup> , fine-stranded	
Electrical life	>10 <sup>5</sup> running hours	
Mechanical life	>10 <sup>5</sup> switching cycles	
Storage and transport temperature	-55 °C to +70 °C	
Weight	approx. 110 g	
Mounting	locked, bayonet lock	
Shock resistance	DIN EN 60068-2-27, 30 g 18 ms	

**Dimensions**



**Ordering information**

Type of contact	Code no.	Colour LED	Code no.	Colour actuator	Code no.
 1 NC	7	red	1	red	5
		green	2	green	6
		yellow	3	yellow	7
 1 NO	8	white	4	white	8
		blue	5	blue	9

Complete order no.			
<b>Illuminated button</b> without actuating element	07-3363-4	<input type="checkbox"/>	<input type="checkbox"/> 0
<b>Actuating element</b> Standard	05-0003-006	<input type="checkbox"/>	<input type="checkbox"/> 00
Increased oil resistance	05-0003-006	<input type="checkbox"/>	<input type="checkbox"/> 00BN

Please enter code number.  
Technical data subject to change without notice.



- One module for all intrinsically safe application areas
- Excellent luminosity
- High flexibility due to junction box
- Low installation depth

The ComEx<sup>flex</sup> Ex i illuminated button is used in almost all hazardous (potentially explosive) areas where machine functions are to be activated at the touch of a button and the corresponding functional status is to be visually displayed. The illuminated buttons are produced in conformance to the requirements for the “e increased safety”, “d flameproof enclosure”, and “i intrinsic safety types of protection”. They may be activated by intrinsically safe circuits. ComEx<sup>flex</sup> is flexible and in addition to a large number of illuminated button actuators, it offers a junction box to facilitate a safe and convenient installation of the module into a control panel. The module’s contacts are designed as snap-action switching elements. Conductors are connected using terminals with increased safety on the back of the module. The illuminated button actuators can be fitted easily, without the use of tools, which ensures conformance to the high IP degree of protection.

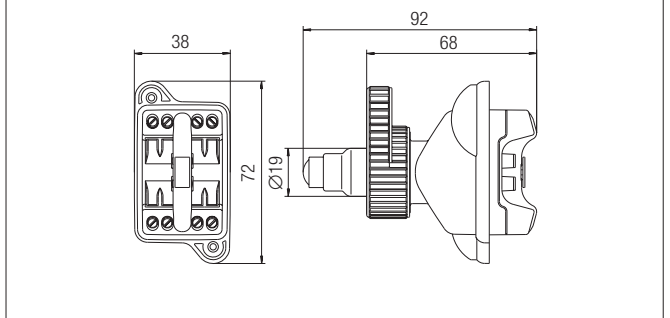
**Explosion protection**

Marking ATEX	⊕ II 2G Ex db eb ia IIC Gb ⊕ I M2 Ex db eb ia I Mb
Certification	CML 17 ATEX 1106 U
Marking IECEx	Ex db eb ia IIC Gb Ex db eb ia I Mb
Certification	IECEx CML 17.0046U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-55 °C to +60 °C

**Technical data**

Protection class	determined by actuating element and control station enclosure, min. IP 66, terminals IP 20 (IEC 60529).
Rated operating voltage (U <sub>e</sub> )	AC/DC 10 to 30 V
Frequency range	with AC supply 30 to 100 Hz
Power consumption	≤ 0.5 W
Lamp	LED, red, green, yellow, white, blue
Illumination	very bright, visible angle over 180°
Contacts	1 N/C or 1 N/O as snap switch element DC-13 0.25 A/24 V
Enclosure material	thermoplastic
Type of connection	terminals 2.5 mm <sup>2</sup> , fine-stranded
Electrical life	>10 <sup>5</sup> running hours
Mechanical life	>10 <sup>5</sup> switching cycles
Storage and transport temperature	-55 °C to +70 °C
Weight	approx. 110 g
Mounting	locked, bayonet
Shock resistance	DIN EN 60068-2-27, 30 g, 18 ms DIN EN 60068-2-6, 4 g, 1.6 mm

**Dimensions**



**Intrinsically safe parameters**

Input voltage (U <sub>i</sub> )	30 V
Input current (I <sub>i</sub> )	150 mA
Input power (P <sub>i</sub> )	1 W
Inductance (L <sub>i</sub> )	negligible
Capacitance (C <sub>i</sub> )	negligible

**Selection chart**

Type of contact	Code no.	Colour LED	Code no.	Colour actuator	Code no.
1 NC 	5	red	1	red	3
		green	2	green	4
		yellow	3	yellow	5
1 NO 	6	white	4	white	6
		blue	5	blue	7

Complete order no.

<b>Illuminated button</b> without actuating element	07-3363-4	□	□	0
<b>Actuating element</b> Standard	05-0003-006	□	□	00
Increased oil resistance	05-0003-006	□	□	00BN

Please enter code number.

Technical data subject to change without notice.



- One module for all fields of application
- High flexibility thanks to the junction box
- Low installation depth

The ComEx<sup>flex</sup> potentiometer is used in almost all hazardous (potentially explosive) areas where machine functions are controlled by means of adjustable voltage distributors. The module can be combined with a potentiometer actuator (scale graduation 0 to 10). A junction box is available as a safe and convenient means of installing the potentiometer in a control panel. The conductors are connected by means of terminals on the back of the module which have an increased safety level. The easy installation of the potentiometer actuating element without the need for tools, ensures conformance to the high IP degree of protection.

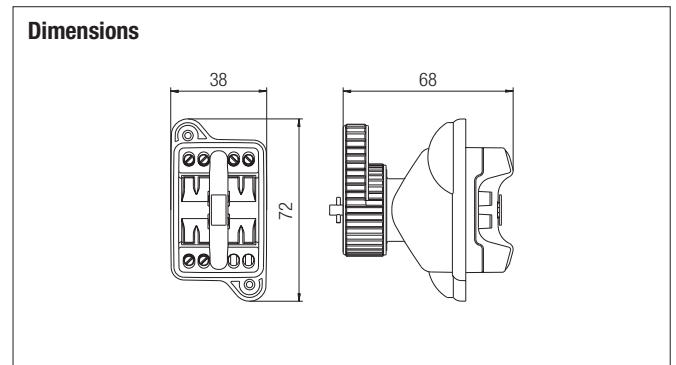
### Explosion protection

Marking ATEX	II 2G Ex db eb IIC Gb I M2 Ex db eb I Mb
Certification	CML 17 ATEX 1119 U
Marking IECEX	Ex db eb IIC Gb Ex db eb I Mb
Certification	IECEX CML 17.0057U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-55 °C to +60 °C

### Technical data

Protection class	determined by the actuating element and control station enclosure, min. IP 66, terminals IP 20 (IEC 60529).
Rated insulation voltage	500 V
Max. rated voltage	AC/DC 230 V
Resistance	1 kΩ to 10 kΩ
Curve shape	linear
Resistance tolerance	+ 20 %
Rated output	max. 1 W for $T_a \leq +40\text{ °C}$
Resistor material	carbon film on ceramics
Rotation	mech. 285° to 5° electr. approx. 250°
Torque (beginning)	0.5 to 1.5 Ncm
Torque (end stop)	≥ 100 Ncm
Enclosure material	thermoplastic
Connection	double terminals 2 x 2.5 mm <sup>2</sup> , fine-stranded
Mechanical life	25,000 sinusoidal cycles
Storage and transport temperature	-55 °C to +70 °C
Weight	approx. 110 g

### Dimensions



### Ordering information

Wiring diagram	Resistance	Code no.
	1 kΩ	4
	2.2 kΩ	5
	4.7 kΩ	6
	10 kΩ	7

Other levels of resistance on request.

Complete order no.

**Potentiometer** without actuating element 07-3373-4D  0

Please enter code number.

Technical data subject to change without notice.

### Actuating element

Standard (Scale 1 to 10) Order no. 05-0003-007600  
 Increased oil resistance (Scale 1 to 10) Order no. 05-0003-007600BN

### Notes for installation and inspection

At rated voltage:  
 ≤ AC 50 V / ≤ DC 120 V  
 (Safety extra low voltage in conformance to DIN VDE 0100 T. 410)  
 The potentiometer drive shaft can be operated without actuating element.

At rated voltage:  
 ≥ AC 50 V to max. AC/DC 230 V  
 Potentiometer drive shaft must be operated with an actuating element or it must be deenergized.



BARTEC offers a junction box to facilitate the use of ComEx<sup>flex</sup> in a control console or a control panel. The junction box features a cable gland and can be combined with various function modules. The junction box allows the connection of a conductor, which can be assembled either to order or by the customer.

ComEx<sup>flex</sup> junction boxes with function modules



**ComEx<sup>flex</sup> junction boxes**

in conjunction with ComEx<sup>flex</sup> function modules

**Explosion protection**

Marking ATEX	⊕ II 2G Ex db eb IIC T6 Gb
	⊕ II 2G Ex db eb ia IIC T6 Gb
	⊕ II 2D Ex tb IIIC T80 °C Db
	⊕ II 2D Ex tb ia IIIC T80 °C Db

Certification	CML 17 ATEX 1117 X
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Marking IECEx	Ex db eb IIC T6 Gb
	Ex db eb ia IIC T6 Gb
	Ex tb IIIC T80 °C Db
	Ex tb ia IIIC T80 °C Db

Certification	IECEx CML 17.0055X
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Other approvals and certificates, see [www.bartec.de](http://www.bartec.de)

Ambient temperature	55 °C to +40 °C / +50 °C / +60 °C
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Approved for Zone	1/21 and 2/22
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**Technical data**

Protection class	Function module with junction box and actuating element min. IP 66
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Weight	approx. 40 g
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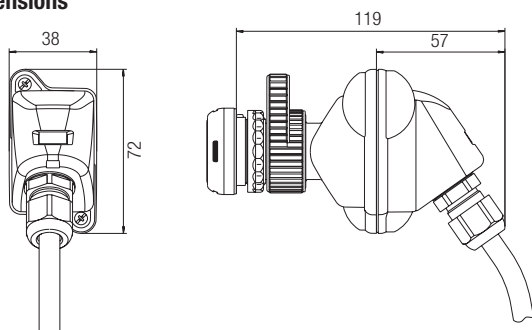
Clamping range	4 to 9 mm
	5 to 10 mm

Enclosure material/ manufacturing process	Thermoplastic/injection moulding
--	----------------------------------

Sheathed leads available on request	BETAflam 145-flex UL
	ULstyle 4486

Switch module	4 x 1.5 mm <sup>2</sup>	BK, BU, BN, GY
Lamp Module	2 x 0.75 mm <sup>2</sup>	BU, BN
Illuminated button	4 x 0.75 mm <sup>2</sup>	BK, BU, BN, GY
Potentiometer	3 x 0.75 mm <sup>2</sup>	BK, BN, GY

**Dimensions**











**Ordering information**

Version	Order no.
Junction box	05-0042-0050

Technical data subject to change without notice.

**Ordering information**

Illustration	Description	Order no.
	Fixing nut M 30 to fix the actuating elements in the mounting wall of enclosure resp. in the enclosure	05-1138-0009
	Printed pushbutton labels 6 loose pushbutton labels 1 x green marked START, ON, I 1 x red marked STOP, OFF, O	05-0091-0019
	Spanner	05-1191-0001
	Label holder Label holder for actuating elements with label insert	05-0044-0001 03-5412-0056
	Contrast plate for EMERGENCY-STOP impact switch yellow Ø 90 mm	05-2144-1097
	Label unmarked, for device information	03-3600-0021
	Marking tag for an additional label, for all actuating elements	05-1105-0020
Examples 	Label (without marking) for marking tag Labelling to your specifications (see examples)	03-5412-0060

Technical data subject to change without notice.



- 3 standard enclosures
- Easy to install
- Extremely flexible
- Customer-tailored solutions

ComEx is a flexible system offering standard as well as customer-specific local control and indicating units. You have the choice between three standard enclosures which can accommodate up to three different control and indicating devices. Combinations of up to three ComEx enclosures are possible. Electrical connection can be established by using plastic or metal cable glands M20 x 1.5 and M25 x 1.5. The plastic glands require no lock nuts. Metal glands are screwed into a metal earth plate sheet inside of the enclosure. Maximum amount of cable glands: two M20. To ensure easier operation on site, each enclosure can be equipped with an individual info-label. For offshore applications special oil-resistant versions are available.

### Explosion protection

Marking ATEX  $\text{Ex II 2G Ex d e IIC T6 Gb}$  or  $\text{Ex II 2G Ex d e ia IIC T6 Gb}$  or  $\text{Ex II 2D Ex tb IIIC T80°C Db}$

Certification CML 14 ATEX 3073 X

Marking IECEx  $\text{Ex db eb IIC T6 Gb}$   
 $\text{Ex db eb ia IIC T6 Gb}$   
 $\text{Ex tb IIIC T80°C Db}$

Certification IECEx CML 14.0029X

Other approvals and certificates, see [www.bartec.de](http://www.bartec.de)

Ambient temperature up to  $-55\text{ °C} \leq T_a \leq +60\text{ °C}$

Product printing Standard: ATEX and IECEx marking.  
 Other markings on request.  
 Please specify in plain text.

### Technical data

Connection terminals 2.5 mm<sup>2</sup>

PE conductor terminals 4 x 2.5 mm<sup>2</sup>

Rated insulation voltage max. AC 690 V

Nominal current max. 16 A

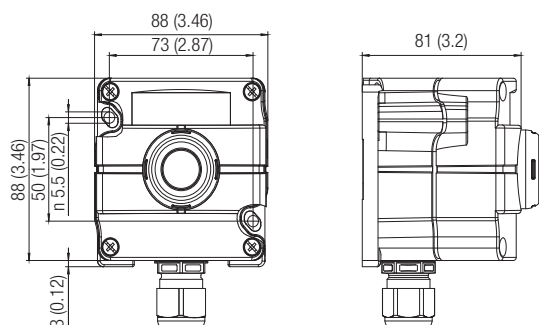
Cable entry M20 x 1.5 for cable Ø 7 to 13 mm  
 M25 x 1.5 for cable Ø 12 to 17 mm  
 M25 x 1.5 for cable Ø 14 to 18 mm

Enclosure glass fibre reinforced plastic

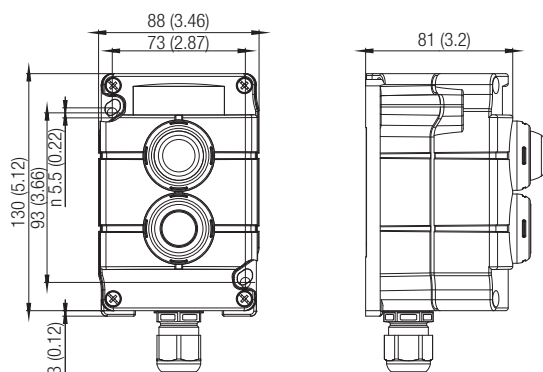
Protection class up to IP 66/IP 67

Technical data subject to change without notice.

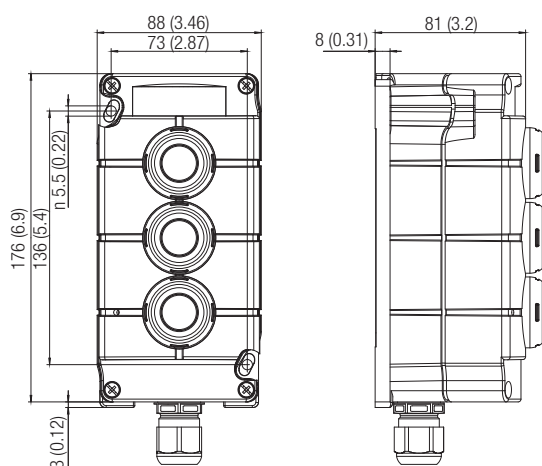
Control unit, single Type 07-3511-....



Control station, double Type 07-3512-....



Control station, triple Type 07-3513-....



**Ordering information** Actuator elements

Illustration	Description	Code no.
	Pushbutton with rubber membrane 5 loose labels: red, green, yellow, white, black	P7
	Double pushbutton with rubber membrane 5 loose labels: red, green, yellow, white, black	P2
	Emergency/Stop marked 'NOT/AUS EMERGENCY/STOP'	N8
	Locking mushroom push button pushed in without a key unlocked with a key DOM lock 4 A 185	K3
	Mushroom pushbutton, black	P8
	Position selector switch 2 positions, 0 + I latching	S9
	Position selector switch 3 positions I-0-II I + II latching I + II momentary-contact I latching, II momentary-contact I momentary-contact, II latching	S0 S1 S2 S3

Technical data subject to change without notice.



Ordering information Actuator elements

Illustration	Description	Code no.
	Lock (DOM) lockable in both positions key retractable in both positions lock 4 A 185	K0
	lockable in depressed position, key retractable in depressed position lock 4 A 185	K1
	lockable in initial position, key retractable in initial position lock 4 A 185 (tip lock)	K2
	Lock (RONIS) Lock 455  2 switching positions 0-I latching, key retractable	E0
	2 switching positions 0-I momentary contact, position I key not retractable	E1
	3 switching positions I-0-II latching on both sides, key retractable	E2
	Lamp red green yellow white blue	LR LG LY LW LB
	Illuminated button actuator red green yellow white blue	TR TG TY TW TB
	Blanking plug black, to cover unused holes in the front panel	B1
	Potentiometer actuating element black, scale 1 - 10	D0

Technical data subject to change without notice.

Ordering information Modules

Illustration	Description	Code no.	
	Switch module		
	1 NC/1 NO	4	
	2 NC	1	
	2 NO	2	
	Indicator light		
	red	R	
	green	G	
	yellow	Y	
	white	W	
	blue	B	
	Illuminated button		
	red 1 NO	RB	
	green 1 NO	GB	
	yellow 1 NO	YB	
	white 1 NO	WB	
	blue 1 NO	BB	
	red 1 NC	RA	
	green 1 NC	GA	
	yellow 1 NC	YA	
	white 1 NC	WA	
	blue 1 NC	BA	
		Potentiometer	
		Resistance values	
		1 kΩ	4
2.2 kΩ		5	
4.7 kΩ		6	
	Terminal block	6	
	with 6 modular terminals 2.5 mm <sup>2</sup> , Ex e II		

Complete order no.

Actuator element resp. Lamp module operator



Switch module resp. Indicator light or Terminal block



Measuring instrument



Please insert code number.

Control unit, single Ex e 07-3511-10/Ex i 07-3514



Control unit, double Ex e 07-3512-10/Ex i 07-3515



Control unit, double Ex e 07-3512-10/Ex i 07-3515



Control unit, triple Ex e 07-3513-10/Ex i 07-3516



Control unit, triple Ex e 07-3513-10/Ex i 07-3516



Technical data subject to change without notice.

**Ordering information** Accessories

Illustration	Description	Order no.
	<p>Cable gland</p> <p>permanent entry of cables and leads</p> <p>Ex e, black domed cap nuts</p> <p>Ex i, blue domed cap nuts (intrinsically safe circuit)</p> <p>see capture Installation systems/Cable glands</p>	<p>03-6062-01..</p> <p>03-6065-00..</p>
	<p>Locking device</p> <p>(without padlock) for ComEx enclosure</p> <p>NIRO frame, transparent hood of high-quality thermoplast</p>	
	<p>Protective metal shroud</p> <p>for emergency stop actuating element</p> <p>to prevent accidental actuation</p>	
	<p>External earth stud</p> <p>for outside-connection</p>	
	<p>Conduit adapter</p> <p>tested adapter for ComEx enclosure</p> <p>with NPT internal thread</p> <p>Thread 1/2" NPT</p> <p>Thread 3/4" NPT</p>	
	<p>Earth plate ComEx</p> <p>for earthing of metal cable glands</p> <p>Thread 1 x M20</p> <p>Thread 2 x M20</p> <p>Thread 1 x M25</p>	<p>05-0012-0114</p> <p>05-0012-0115</p> <p>05-0012-0116</p>
	<p>Installation kit for control switches</p> <p>in control units</p> <p>for enclosures with wall thicknesses of 1 to 2 mm</p> <p>for enclosures with wall thicknesses of 2.5 to 5 mm</p>	<p>05-0091-0187</p> <p>05-0091-0188</p>

Technical data subject to change without notice.



- For Zone 1/21 and 2/22
- Positive break operation
- Latched and momentary-contact positions
- Easy installation
- Customer-specific solutions

This control switch has been designed to solve the variety of problems encountered in chemical and petrochemical plants and on explosion-proofed electrical machinery in zones 1 and 2 and in Zone 21 and 22. Four switch contacts as opening and closing elements in different permutations permit a variety of functions. The opener has a positive break operation. The switch actuator offers latched and momentary-contact positions with different switch positions. The control switch is supplied in double or triple ComEx enclosures, or in combination with other command devices, in control units. The actuating element can be locked with up to max. 3 padlocks.

### Explosion protection

Marking ATEX	Ⓜ II 2G Ex de IIC T6 Gb Ⓜ II 2G Ex de ia IIC T6 Gb Ⓜ II 2G Ex tb IIIC T80°C Db
Certification	CML 14 ATEX 3073 X
Marking IECEx	Ex db eb IIC T6 Gb Ex db eb ia IIC T6 Gb Ex tb IIIC T80°C Db
Certification	IECEx CML 14.0029X
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	up to -55 °C ≤ T <sub>a</sub> ≤ +60 °C (-20 °C to +60 °C for Zone 21 and 22)
Product printing	Standard: ATEX and IECEx marking. Other markings on request. Please specify in plain text.

### Technical data

Connection	terminals 2.5 mm <sup>2</sup>									
Conductor terminals	4 x 2.5 mm <sup>2</sup>									
Rated insulation voltage	max. AC 690 V									
Rated current	max. 16 A									
Cable entry	Standard version: M20 x 1.5 for cables with Ø 7 to 13 mm  Special version: M25 x 1.5 for cables with Ø 7 to 12 mm M25 x 1.5 for cables with Ø 10 to 17 mm									
Enclosure material	glass fibre reinforced plastic									
Protection class	IP 66/IP 67									
Contact material	AgSnO <sub>2</sub>									
Switching function	4 switch contacts  NC/NO in different switch permutations  Latching and momentary-contact functions with different switch positions									
Contacts	contacts with positive break operation (self-cleaning)									
Switch isolator (main motor switch)	DIN EN 60947-3  <table border="0"> <tr> <td>P/AC-3/AC-23 A</td> <td>AC-3</td> <td>AC-23</td> </tr> <tr> <td>230 V3</td> <td>3 ph/3 kW</td> <td>1ph/2.2 kW</td> </tr> <tr> <td>400 V3</td> <td>3 ph/5.5 kW</td> <td>1ph/3 kW</td> </tr> </table> I <sub>e</sub> = AC-23/400 V/10 A	P/AC-3/AC-23 A	AC-3	AC-23	230 V3	3 ph/3 kW	1ph/2.2 kW	400 V3	3 ph/5.5 kW	1ph/3 kW
P/AC-3/AC-23 A	AC-3	AC-23								
230 V3	3 ph/3 kW	1ph/2.2 kW								
400 V3	3 ph/5.5 kW	1ph/3 kW								
Control switch according to DIN EN 60947-5-1 (auxiliary circuit switch)	<table border="0"> <tr> <td>AC-15</td> <td>400 V</td> <td>10 A</td> </tr> <tr> <td>AC-12</td> <td>400 V</td> <td>16 A</td> </tr> <tr> <td>DC-13</td> <td>24 V</td> <td>1 A</td> </tr> </table>	AC-15	400 V	10 A	AC-12	400 V	16 A	DC-13	24 V	1 A
AC-15	400 V	10 A								
AC-12	400 V	16 A								
DC-13	24 V	1 A								

### Electrical data

Rated insulation voltage	U <sub>i</sub> = 690 V U <sub>e</sub> = 400 V
Rated impulse strength	U <sub>imp</sub> = 6 kV
Conditional rated short/circuit current at 400 V	I <sub>e</sub> = 4 kA
Short circuit current (general-purpose l.v.h.b.c. back-up fuse for the protection of cables and circuits)	max. 16 A
Nominal thermal current	(+40 °C) I <sub>the</sub> = 16 A (+60 °C) I <sub>the</sub> = 11 A
Dimensions	See dimensions for complete device

**Selection chart**

Labelling	Code no.	Labelling	Code no.	Switching arrangement of control switch	Code no.	Switching arrangement of control switch	Code no.
0 - I	01	SENKEN - HEBEN	14		A01		C06
I - II	02	REMOTE - LOCAL	15				
I - 0 - II	03	AUS - BETRIEB - EIN	16		A02		C07
0 - I - II	04	AUS - 0 - EIN	17				
0 - I - II - III	05	AUF - 0- AB	18		A03		E06
0 - I - II - III - IV	06	OUT - OFF - HAND	19				
AUS - EIN	07	LOCAL - REMOTE - AUTO	20		A04		E09
OFF - ON	08	STOP - 0 - START	21				
HAND - 0 - AUTO	09	AUS - AUTO - EIN	22		H05		L01
HAND - 0 - AUTO - EIN	10	OFF - AUTO - ON	23				
HAND - BETRIEB - I	11	0 - IN -START	24	Other variants available.		Switching arrangement for switch isolator	
STOP - START	12	ENTRIEGELT - VERRIEGELT	25				N01
HAND - AUTO	13						N02

Complete order no.      Control unit, double 07-3512-10G     

Control unit, triple 07-3513-10G     

Labelling position selector     

Switching arrangement     

Switch module or indicator light     

Other labellings and switching arrangements on request.

As standard, there are 3 bore holes at the protective shroud for padlocks.  
Where no further information is given on the end position,  
bore holes are drilled in the position 0 (I) or as requested.

Technical data subject to change without notice.



- Standard enclosures
- Corrosion resistance
- Customer-tailored solutions

This series features control, signalling and display units fitted into stainless steel standard enclosures. The enclosures are certified for use in Zone 1/21 and Zone 2/22. The equipment is highly corrosion resistant due to high quality stainless steel grades. Either plastic or metal glands are used for electrical connection. On request, BARTEC will equip the enclosures with corresponding control, signalling and display units and cable glands and supply the required labels.

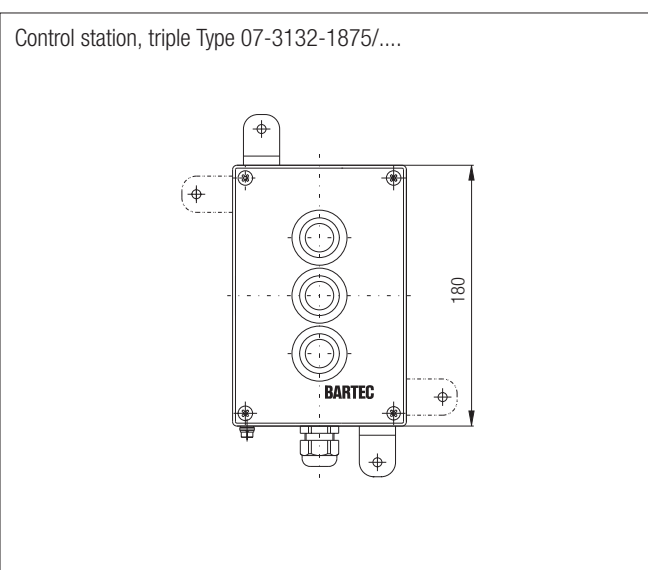
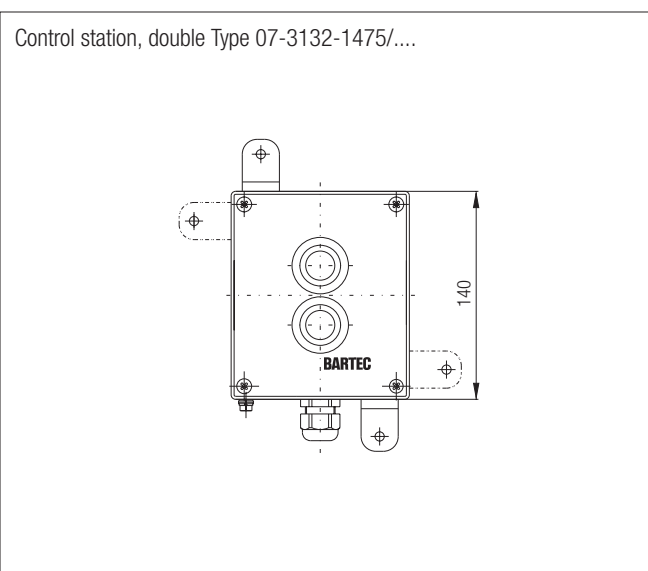
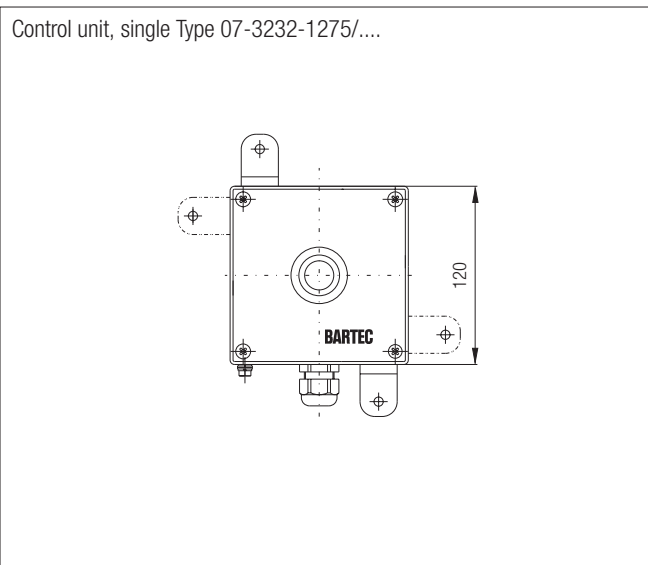
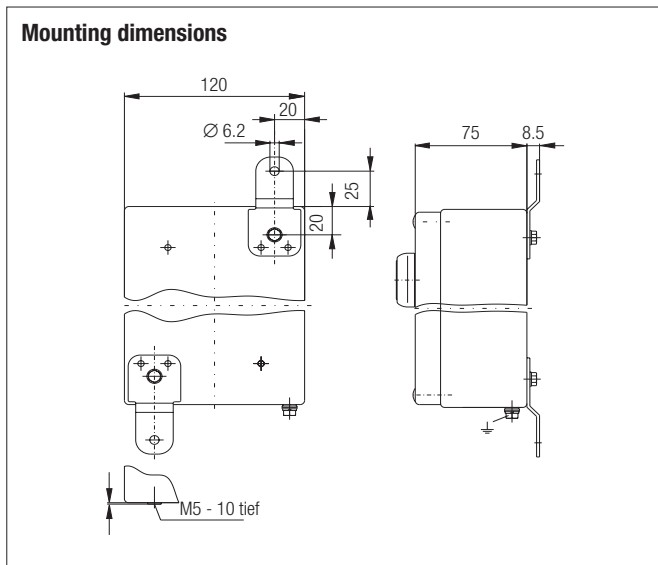
### Explosion protection

Marking ATEX	II 2G Ex de IIC T6 Gb II 2D Ex tb IIIC T80 °C Db
Certification	IBExU 12 ATEX 1099
Marking IECEx	Ex de IIC T6 Gb Ex tb IIIC T80 °C Db
Certification	IECEx IBE 12.0031
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Permissible ambient temperature	-20 °C to +40 °C -55 °C to +60 °C (depending on the fitted components)
Product printing	Standard: ATEX and IECEx marking. Other markings on request. Please specify in plain text.

### Technical data

Connection	Terminals 2.5 mm <sup>2</sup>
Bore hole for bushings	standard version: 1 x M20 x 1.5  special versions: 2 x M20 x 1.5 up to max. 1 x M40 x 1.5
Enclosure	Edelstahl 316 L, 312 L
Protection class	IP 65/IP 66

Technical data subject to change without notice.



## CONTROL PANELS

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- The right size/material enclosure
- Optimum functionality thanks to the great variety of components
- Customised planning and implementation
- Certified to many standards

BARTEC produces local control stations for use in areas with flammable gases and dusts. Depending on the application area, the control stations are designed with the type of protection “Increased safety” or “Protection by enclosure”. The explosion-protected local control stations are available in aluminium, polyester or stainless steel. When selecting the version, you can choose between a cabinet with door and an enclosure with screw cover. Control, signalling and display devices and remote I/O systems are installed according to customer specifications. The installation of industrial standard equipment in controls for Zone 21, type of protection tb “Protection by enclosure” is possible. The control elements can also be mounted on a mounting rail or in the front wall. Free installation areas can be designated for the subsequent installation of BARTEC control and signalling devices, which are then sealed using blanking plugs. All explosion-protected local control stations are supplied prewired on terminals

**Fields of application**

Chemical and petrochemical industry, process and plant engineering, pharmaceutical and food industry, OFF SHORE areas.

**Explosion protection**

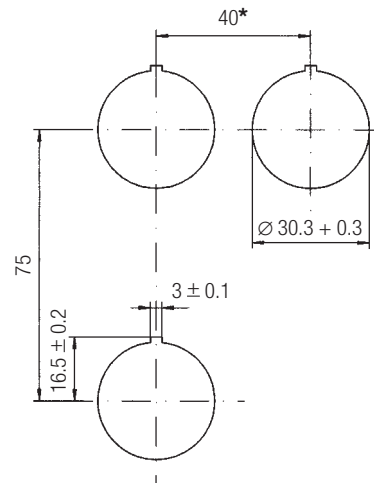
Marking (depending on the components installed)		
for Zone 1	⊕ II 2 G	Ex db eb ma/mb op is q ia/ib [ib] IIA, IIB, IIC, T6, T5, T4, T3 Gb
	⊕ II 2(1) G	Ex db eb ma/mb op is q ia/ib [ia Ga] IIA, IIB, IIC, T6, T5, T4, T3 Gb
for Zone 21	⊕ II 2 D	Ex tb op is [ib] IIIA, IIIB, IIIC T80 °C, T100 °C, 130 °C Db
	⊕ II 2(1) D	Ex tb op is [ia Da] IIIA, IIIB, IIIC T80 °C, T100 °C, 130 °C Db
Ambient temperature (special design on request)	-20 °C to +40 °C -55 °C max. +80 °C (depending on fixtures)	
Certification	IBExU 12 ATEX 1099 IECEx IBE 12.0031	

**Technical data**

Material	Type 07-3.01 with lid aluminium ALSi 12, pressure or chill casting RAL 7001 silver grey
	Type 07-3.03 with lid glass-fibre reinforced polyester RAL 9005, deep black
	Type 07-3.09 mit door glass-fibre reinforced polyester RAL 9011, graphite black
	Type 07-3.13 with door High-quality stainless steel 1.4301 (304)
	Type 07-3.32 with lid High-quality stainless steel 1.4404 (316L) Enclosure with lid
Seals	EPDM (Standard) -20 °C to +85 °C
	PU (Standard at 07-3109) -20 °C to +80 °C
	Silicone -55 °C to +100 °C
Mechanical strength (acc. to DIN EN 60079-0)	Impact energy 7 Nm
Protection class (higher degree of protection on request)	EN/IEC 60529 max. IP 66
<b>Electrical data</b>	
Rated voltage	up to 1000 V
Rated current	max. 160 A depending on devices fitted

**Mounting dimensions**

for switching and light elements according to EN 60947-5-1



\* Recommended distance for mushroom pushbutton, emergency switch as well as position selector with protective shroud: 100 mm.

2

**Configuration data for control stations**

Type of enclosure	07-3 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> -
Dimensions	Width _____ Height _____ Depth _____
Nominal voltage	AC _____ V DC _____ V
Threaded glands	_____

Technical data subject to change without notice.



- The right size/material enclosure
- Optimum functionality thanks to the great variety of components
- Customised planning and implementation
- Certified to many standards

BARTEC produces local control stations for use in areas with flammable gases and dusts. Depending on the application area, the control stations are designed with the type of protection “Increased safety” or “Protection by enclosure”. The explosion-protected local control stations are available in aluminium, polyester or stainless steel. When selecting the version, you can choose between a cabinet with door and an enclosure with screw cover. Control, signalling and display devices and remote I/O systems are installed according to customer specifications. The installation of industrial standard equipment in controls for Zone 22, type of protection t “Protection by enclosure” is possible. The control elements can also be mounted on a mounting rail or in the front wall. Free installation areas can be designated for the subsequent installation of BARTEC control and signalling devices, which are then sealed using blanking plugs. All explosion-protected local control stations are supplied prewired on terminals.

**Fields of application**

Chemical and petrochemical industry, process and plant engineering, pharmaceutical and food industry, OFF SHORE areas.

**Explosion protection**

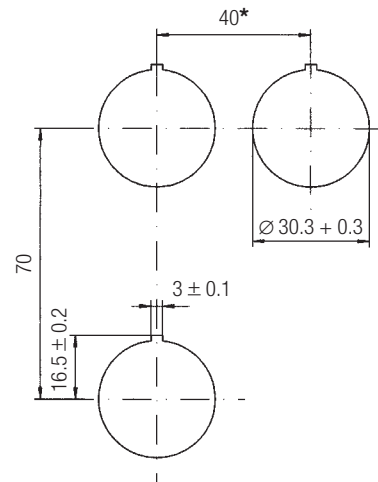
Marking (depending on the components installed)	
Zone 2	Ⓜ II 3 G Ex db/dc eb/ec ma/mb/mc op is opsh q ia/ib/ic [ic] IIA, IIB, IIC, T6, T5, T4 Gc Ⓜ II 3(2) G Ex db/dc eb/ec ma/mb/mc op is opsh q ia/ib/ic [ib Gb] IIA, IIB, IIC, T6, T5, T4 Gc Ⓜ II 3(1) G Ex db/dc eb/ec ma/mb/mc op is opsh q ia/ib/ic [ib Ga] IIA, IIB, IIC, T6, T5, T4 Gc
Zone 22	Ⓜ II 3 D Ex tc op is [ic] IIIA, IIIB, IIIC T80 °C, T100 °C Dc Ⓜ II 3(2) D Ex tc op is [ib Db] IIIA, IIIB, IIIC T80 °C, T100 °C Dc Ⓜ II 3(1) D Ex tc op is [ia Da] IIIA, IIIB, IIIC T80 °C, T100 °C Dc
Ambient temperature (special design on request)	-20 °C to +40 °C -55 °C max. +80 °C (depending on fixtures)
Certification of RL-2014/34/EU	further approvals on request IBExU 14 ATEX B002 IECEx IBE 14.0028

**Technical data**

Material	Type A7-3.01 with lid aluminium ALSi 12, pressure or chill casting RAL 7001 silver grey
	Type A7-3.03 with lid glass-fibre reinforced polyester RAL 9005, deep black
	Type A7-3.09 mit door glass-fibre reinforced polyester RAL 9011, graphite black
	Type A7-3.13 with door High-quality stainless steel 1.4301 (304)
	Type A7-3.32 with lid High-quality stainless steel 1.4404 (316L) Enclosure with lid
Seals	EPDM (Standard) -20 °C to +85 °C
	PU (Standard at 07-3109) -20 °C to +80 °C
	Silicone -55 °C to +100 °C
Mechanical strength (acc. to DIN EN 60079-0)	Impact energy 7 Nm
Protection class (higher degree of protection on request)	EN/IEC 60529 max. IP 66
<b>Electrical data</b>	
Rated voltage	up to 1000 V
Rated current	max. 160 A depending on devices fitted

**Mounting dimensions**

for switching and light elements according to EN 60947-5-1



\* Recommended distance for mushroom pushbutton, emergency switch as well as position selector with protective shroud: 100 mm.

**Configuration data for control stations**

Type of enclosure	A7-3 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> -
Dimensions	Width _____ Height _____ Depth _____
Nominal voltage	AC _____ V DC _____ V
Threaded glands	_____

Technical data subject to change without notice.



Aluminium



Stainless steel

Flameproof enclosures BARTEC B or EJB series are designed to be installed in industrial plants, where potential hazardous atmospheres occur. These areas are either classified as zone 1 and 2 or as zone 21 and 22.

These enclosures are designed to contain regular industrial electrical components or equipment on the mounting plate like fuses, transformers, circuit breakers, relays, PLC etc. and to be fully integrated in the hazardous area as control- or distribution panel.

Depending on the installed components; observe the specifications on the type label.

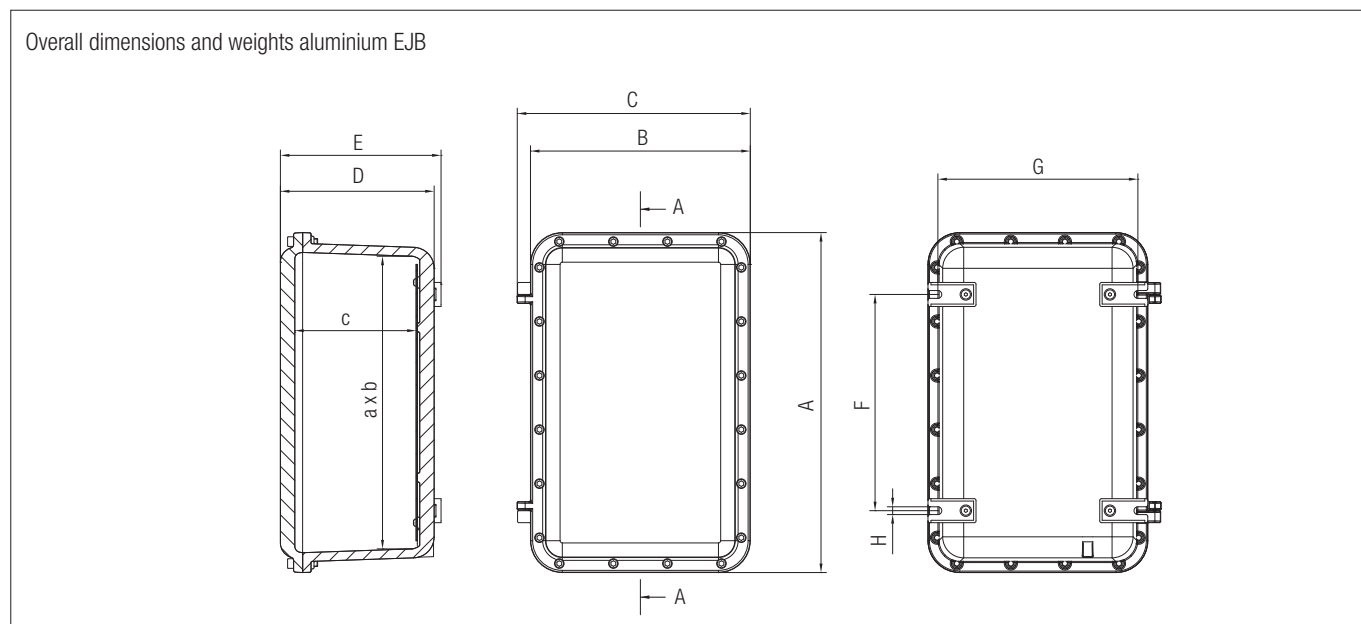
According to EN-IEC 60079-0,-1

### Explosion protection

Marking ATEX	Ⓜ II 2G Ex d IIB+H <sub>2</sub> T6 to T3 Gb Ⓜ II 2D Ex tb IIIC T80°C to T130°C Db
Certification	DEKRA 13 ATEX 0209
Marking IECEx	Ex II 2G Ex d IIB+H <sub>2</sub> T6 to T3 Gb Ex II 2D Ex tb IIIC T80°C to T130°C Db
Certification	IECEx DEK 13.0075
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	Depending on the installed parts; observe specifications on the type label.  -20 °C to +40 °C standard -40 °C to +55 °C optional -55 °C to +80 °C maximum for some applications
Approved for zones	1, 2 and 21, 22

### Technical data

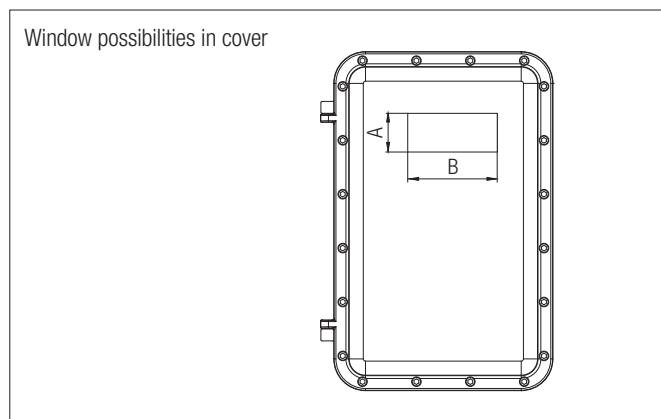
Protection class (acc. to IEC 60529)	max. IP 66
Enclosure material	Copper free aluminium alloy (< 0.1% copper) Stainless steel AISI 316L
Surface treatment	External powder type painted RAL9006 (cast aluminium version) unpainted (stainless steel version)  Internal anti-condense painting RAL 2004 (optional)
Earthing and bonding	Internal and external earth bolt (M6)
Enclosure lid	Bolts in stainless steel SS304 for aluminium and SS316 for stainless steel enclosures
Mounting plate	Aluminium enclosure: Galvanized Steel Stainless steel enclosure: Stainless Steel
Mounting brackets	Black epoxy painted aluminium Galvanized steel for EJB 7. / 9.
Hinges	Casted on long side (standard) Aluminium hinges on the short side (optional)
Windows	Windows available in the cover of the enclosure according to below table



**Ordering information**

Name	Dimensions (mm)										Mountingplate mm
	B	A	C	b	a	c	G	D	H	Kg	
EJB11ACMXA0A0A	175	175	132	115	115	91	78	173	13	4	100 x 100 x 2
EJB21ACMXA0A0A	245	285	179	180	220	121	245	160	13	13	140 x 180 x 2
EJB22ACMXA0A0A	200	300	234	135	235	175	188	195	13	10	120 x 220 x 2
EJB23ACMXA0A0A	260	310	207	200	250	155	240	195	13	15	170 x 210 x 2
EJB30ACMXA0A0A	315	415	178	251	351	114	295	294	13	20	220 x 320 x 2
EJB31ACMXA0A0A	315	415	259	251	351	195	295	294	13	24	220 x 320 x 2
EJB51ACMXA0A0A	366	566	269	300	500	201	336	360	13	36	260 x 460 x 3
EJB63ACMXA0A0A	470	670	245	400	600	180	440	500	13	49	340 x 540 x 3
EJB61ACMXA0A0A	470	670	372	400	600	305	440	500	13	58	340 x 540 x 3
EJB73ACMXA0A0A	542	742	311	456	656	213	580	520	16	90	400 x 600 x 3
EJB71ACMXA0A0A	542	742	439	456	656	332	580	520	16	111	400 x 600 x 3
EJB93ACMXA0A0B	660	963	305	544	844	193	650	700	16	145	500 x 800 x 3
EJB91ACMXA0A0B	660	963	472	544	844	347	650	700	16	190	500 x 800 x 3

Technical data subject to change without notice.



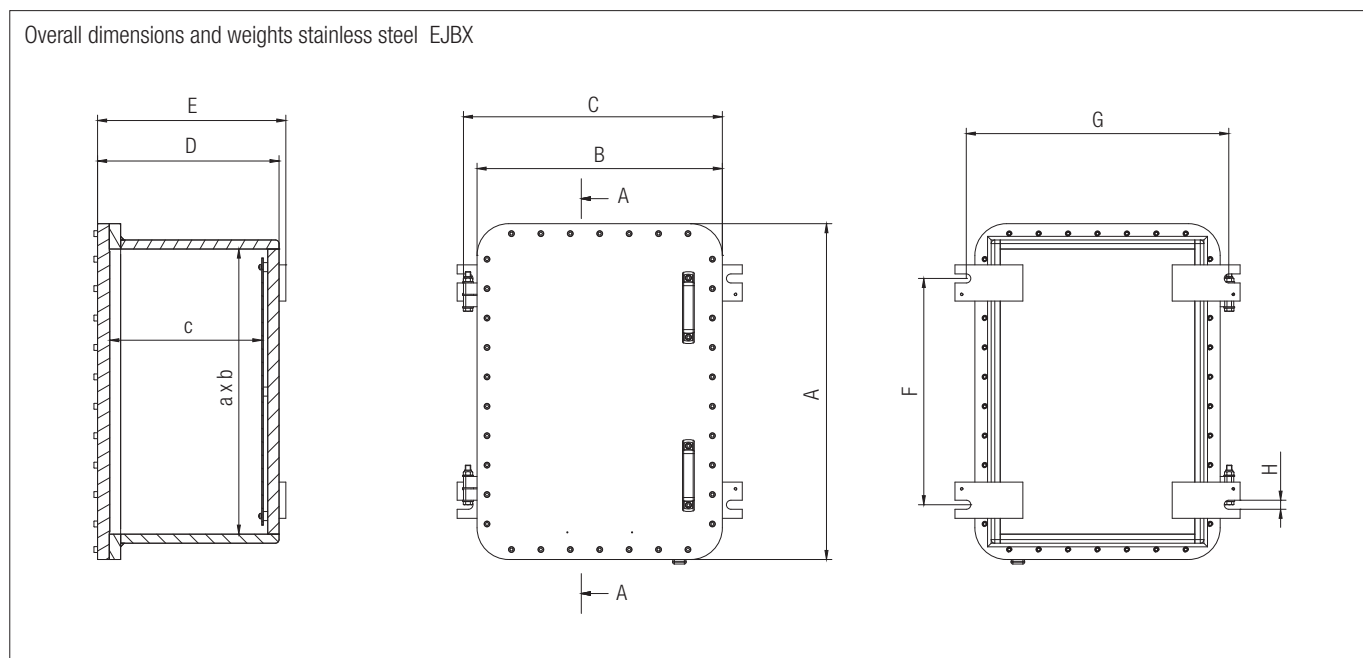
**Window simbology**

FR1ST up to FR4ST Reduced window  
 F1ST up to F9ST Standard window  
 F8 and F9 Standard window with fixing frame  
 It's possible to have other kind of window sizes (not standard) when keeping maximum size as above as restriction

**Selection chart**

Dimensions (mm)

Window code	EJB11	EJB12	EJB21	EJB22	EJB23	EJB30	EJB31	EJB51	EJB61/63	EJB71/73	EJB91/93	A	B
FR1ST	√	√	√	√	√	√	√	√	√	√	√	48	48
FR2ST			√	√	√	√	√	√	√	√	√	48	96
FR3ST			√	√	√	√	√	√	√			48	150
FR4ST					√	√	√	√	√			48	200
F1ST	√		√	√	√	√	√	√	√	√	√	60	60
F2ST			√	√	√	√	√	√	√	√	√	75	75
F3ST			√	√	√	√	√	√	√	√	√	75	110
F4ST			√	√	√	√	√	√	√			75	150
F5ST						√	√	√	√			150	150
F6ST								√	√			75	300
F7ST								√	√			150	300
F8									√			300	300
F9									√			300	450

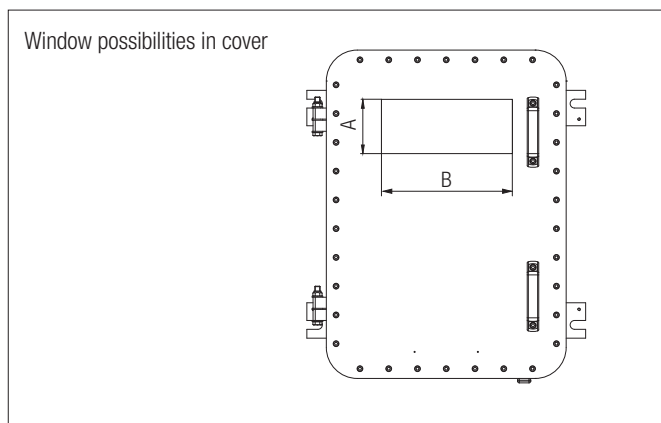


Technical data subject to change without notice.

**Selection chart**

Name	Dimensions (mm)										Mountingplate mm
	B	A	C	b	a	c	G	D	H	Kg	
EJB11X	175	175	132	115	115	91	78	173	13	14	100 x 100 x 2
EJB21X	245	285	179	180	220	127	245	160	13	32	140 x 180 x 2
EJB22X	200	300	234	135	235	175	188	195	13	34	120 x 220 x 2
EJB23X	260	310	207	200	250	152	240	195	13	38	170 x 210 x 2
EJB30X	315	415	178	251	351	114	295	294	13	52	220 x 320 x 2
EJB31X	315	415	259	251	351	195	295	294	13	64	220 x 320 x 2
EJB51X	366	566	269	300	500	207	336	360	13	95	260 x 460 x 3
EJB63X	470	670	245	400	600	307	440	500	13	127	340 x 540 x 3
EJB61X	470	670	372	400	600	180	440	500	13	155	340 x 540 x 3
EJB73X	542	742	308	456	656	210	580	520	16	200	400 x 600 x 3
EJB71X	542	742	429	456	656	335	580	520	16	280	400 x 600 x 3
EJB93X	660	960	305	544	844	200	650	700	16	573	500 x 800 x 3
EJB91X	660	960	462	544	844	360	650	700	16	618	500 x 800 x 3

2



**Window simbology**

FR1ST up to FR4ST Reduced window  
 F1ST up to F9ST Standard window  
 F8 and F9 Standard window with fixing frame  
 It's possible to have other kind of window sizes (not standard) when keeping maximum size as above as restriction

**Selection chart**

Window code	Dimensions (mm)											A	B
	EJB11X	EJB21X	EJB22X	EJB23X	EJB30X	EJB31X	EJB51X	EJB61X	EJB63X	EJB71/73X	EJB91/93X		
FR1ST	√	√	√	√	√	√	√	√	√			48	48
FR2ST		√	√	√	√	√	√	√	√			48	96
FR3ST		√	√	√	√	√	√	√	√	√	√	48	150
FR4ST		√	√	√	√	√	√					48	200
F1ST	√	√	√	√	√	√	√					60	60
F2ST	√	√	√	√	√	√	√					75	75
F3ST	√	√	√	√	√	√	√	√	√			75	110
F4ST		√	√	√	√	√	√	√	√			75	150
F5ST				√	√	√	√	√	√			150	150
F6ST							√	√	√			75	300
F7ST									√			150	300
F8								√	√			300	300
F9								√	√			300	450



Flameproof enclosures BARTEC C or EJC series are designed to be installed in industrial plants, where potential hazardous atmospheres occur. These areas are either classified as zone 1 and 2 or as zone 21 and 22.

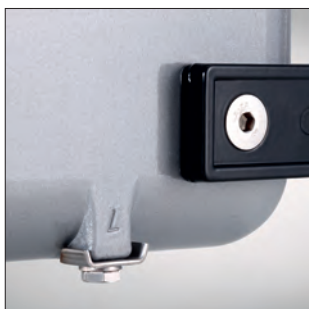
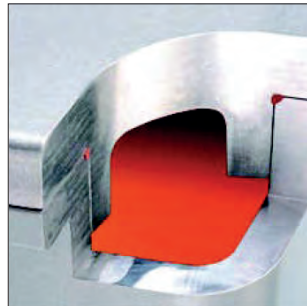
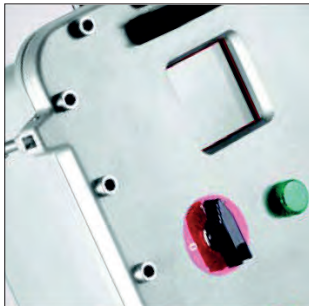
These enclosures are designed to contain regular industrial electrical components or equipment on the mounting plate like fuses, transformers, circuit breakers, relays, PLC etc. and to be fully integrated in the hazardous area as control- or distribution panel.

Depending on the installed components; observe the specifications on the type label.

According to EN-IEC 60079-0,-1

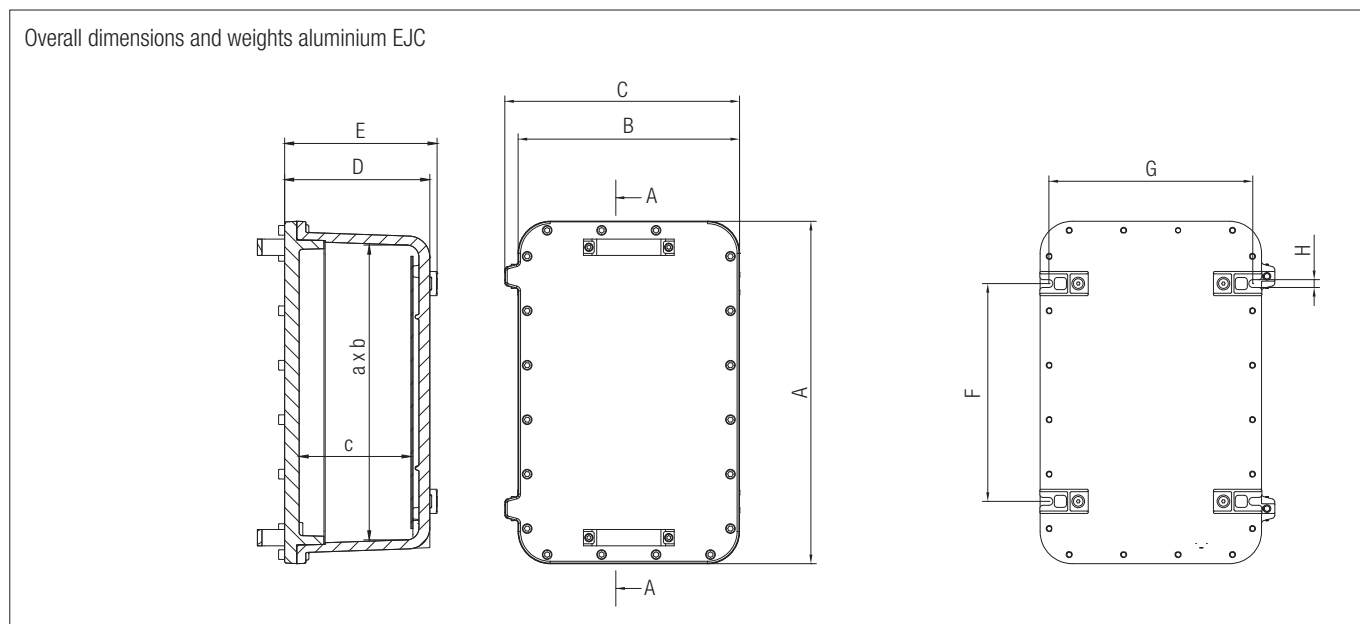
**Explosion protection**

Marking ATEX	Ⓜ II 2G Ex d IIC T6..T3 Gb Ⓜ II 2D Ex tb IIIC T85°C..T150°C Db
Certification	DEKRA 13 ATEX 0209
Marking IECEx	Ex II 2G Ex d IIC T6..T3 Gb Ex II 2D Ex tb IIIC T85°C..T150°C Db
Certification	IECEx DEK 13.0075
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	Depending on the installed parts; observe specifications on the type label.  -20 °C to +40 °C standard -40 °C to +55 °C optional -55 °C to +80 °C maximum for some applications
Approved for zones	1, 2 and 21, 22



**Technical data**

Protection class (acc. to IEC 60529)	max. IP 66
Enclosure material	Copper free aluminium alloy (< 0,1% copper)
Surface treatment	External painted RAL 9006 (standard) Internal anti-condense painting RAL 2004 (optional)
Earthing and bonding	Internal and external earth bolt (M6)
Enclosure lid	Bolts in stainless steel SS304
Mountingplate	Galvanized steel
Mounting brackets	Black epoxy painted aluminium
Hinges	Casted on long side
Windows	Windows available in the cover of the enclosure according to below table
Enclosure design	International patent n° PTC/EP2010/054076



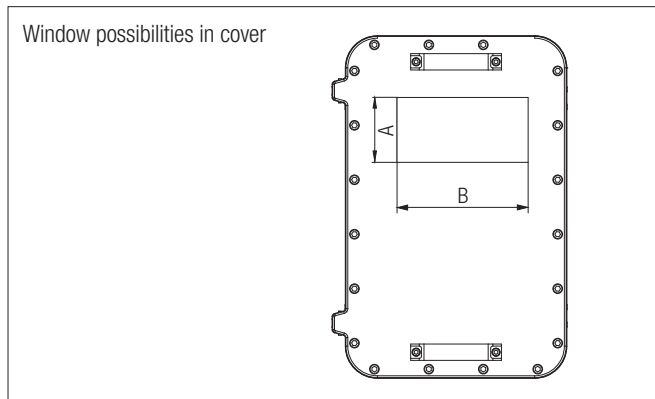
**Selection chart**

Name	Dimensions (mm)									Kg	Mountingplate (mm)
	B	A	C	b	a	c	G	D	H		
EJC21ACMXA0A0B	285	245	179	220	180	119	245	160	13	15	140 x 180 x 2
EJC30ACMXA0A0B	315	415	176	251	351	125	295	294	13	22	220 x 320 x 2
EJC31ACMXA0A0B	315	415	257	251	351	206	295	294	13	23	220 x 320 x 2
EJC51ACMXA0A0B	366	566	268	500	300	207	335	360	13	40	260 x 460 x 3
EJC63ACMXA0A0B	470	670	247	402	602	180	438	500	13	53	340 x 540 x 3
EJC61ACMXA0A0B	470	670	372	402	602	307	438	500	13	62	340 x 540 x 3

**Selection chart**

Dimensions (mm)							
Window code	EJC21	EJC30	EJC31	EJC51	EJC61	EJC63	
							A B
FR1ST	√	√	√	√	√	√	48 48
FR2ST	√	√	√	√	√	√	48 96
FR3ST	√	√	√	√	√	√	48 150
FR4ST	√	√	√	√	√	√	48 200
F1ST	√	√	√	√	√	√	60 60
F2ST	√	√	√	√	√	√	75 75
F3ST	√	√	√	√	√	√	75 110
F4ST	√	√	√	√	√	√	75 150
F5ST	√	√	√	√	√	√	150 150
F6ST				√	√	√	300 75
F7ST				√	√	√	300 150
F8ST					√	√	300 300
F9ST					√	√	450 300
FR1ST *	√						48 48
F1ST *	√						60 60

Technical data subject to change without notice.



**Window simbology**

FR1ST up to FR4ST Reduced window  
 F1ST up to F9ST Standard window  
 F8 and F9 Standard window with fixing frame  
 It's possible to have other kind of window sizes (not standard) when keeping maximum size as above as restriction



Aluminium



Stainless steel

Flameproof enclosures BARTEC C or GUB series are designed to be installed in industrial plants, where potential hazardous atmospheres occur. These areas are either classified as zone 1 and 2 or as zone 21 and 22. These enclosures are designed to contain regular industrial electrical components or equipment on the mounting plate like fuses, transformers, circuit breakers, relays, PLC etc. and to be fully integrated in the hazardous area as control- or distribution panel.

Depending on the installed components; observe the specifications on the type label.

According to EN-IEC 60079-0,-1

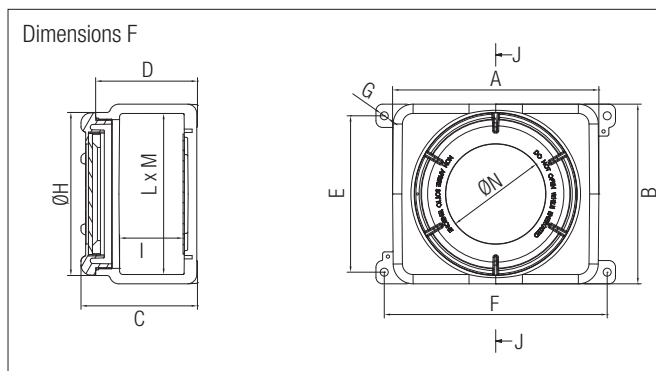
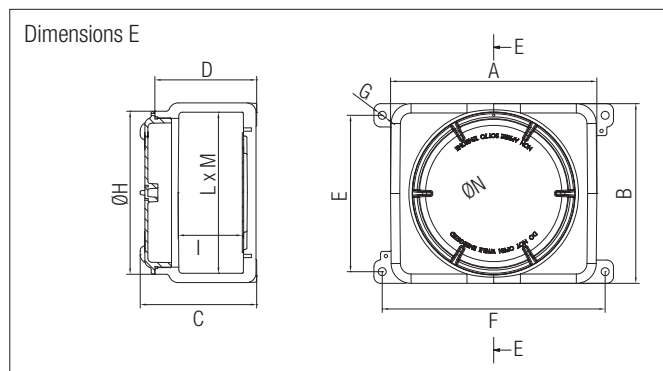
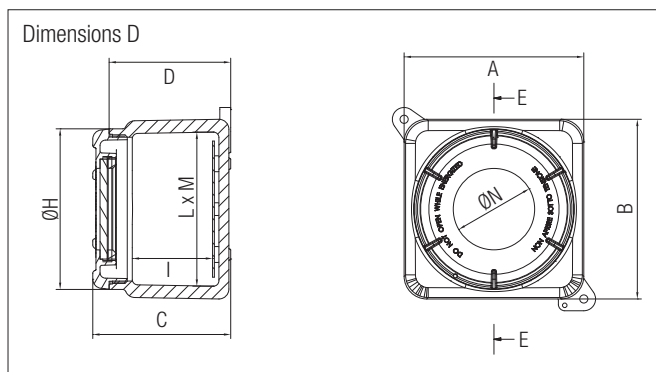
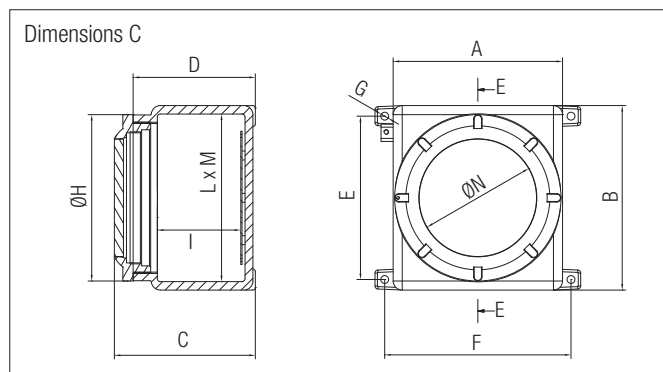
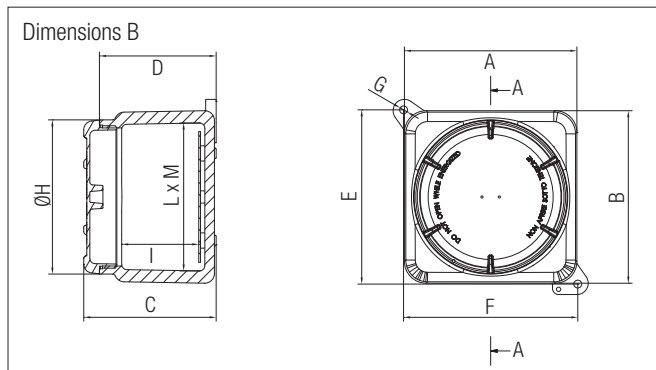
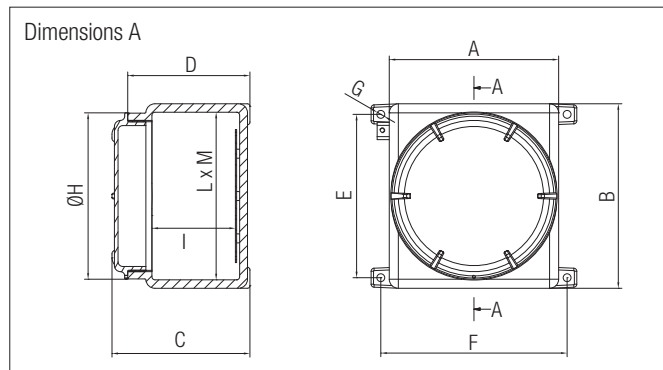
**Explosion protection**

Marking ATEX	ⓧ II 2G Ex d IIC T6 to T3 Gb ⓧ II 2D Ex tb IIIC T85°C to T200°C Db
Certification	DEKRA 13 ATEX 0209
Marking IECEx	Ex II 2G Ex d IIC T6..T3 Gb Ex II 2D Ex tb IIIC T85°C..T200°C Db
Certification	IECEx DEK 13.0075
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	Depending on the installed parts; observe specifications on the type label.  -20 °C to +40 °C standard -40 °C to +55 °C optional -55 °C to +80 °C maximum for some applications
Approved for zones	1, 2 and 21, 22

**Technical data**

Protection class (acc. to IEC 60529)	max. IP 66
Enclosure material	Copper free aluminium alloy (< 0,1% copper) Stainless steel 316
Surface treatment	External powder type painted RAL9006 (cast aluminium version) unpainted (stainless steel version)  Internal anti-condense painting RAL 2004 (optional)
Earthing an bonding	Internal and external earth bolt (M6)
Hardware	Stainless steel SS304 for aluminium and SS316 for stainless steel enclosures
Mountingplate	Aluminium enclosure: Galvanized Steel Stainless steel enclosure: Stainless Steel
Mounting brackets	Casted / welded
Windows	Windows available in screw cover

Overall dimensions and weights Aluminium GUB



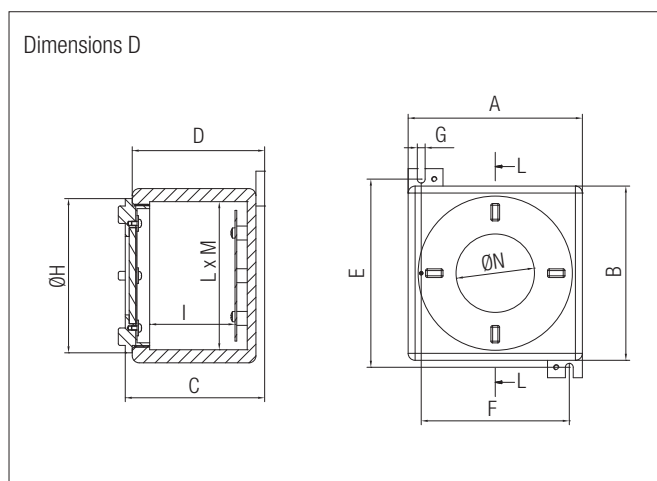
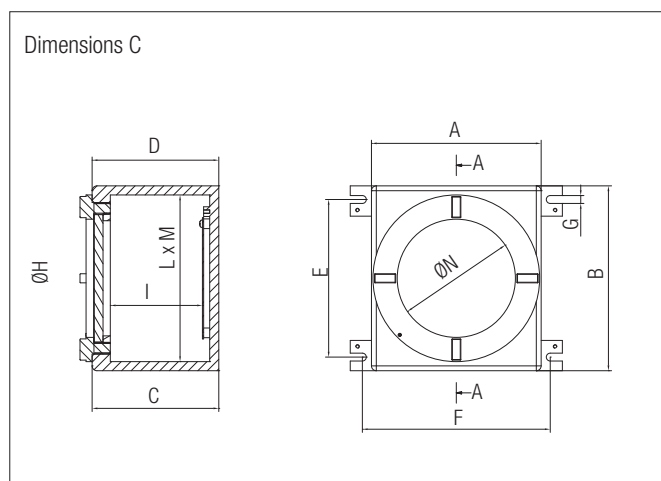
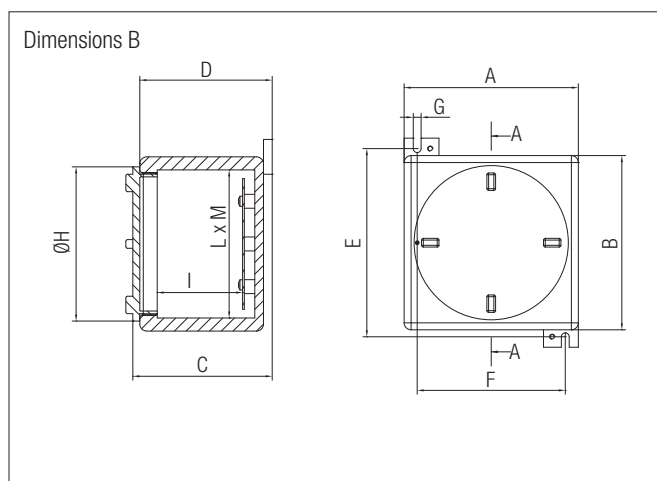
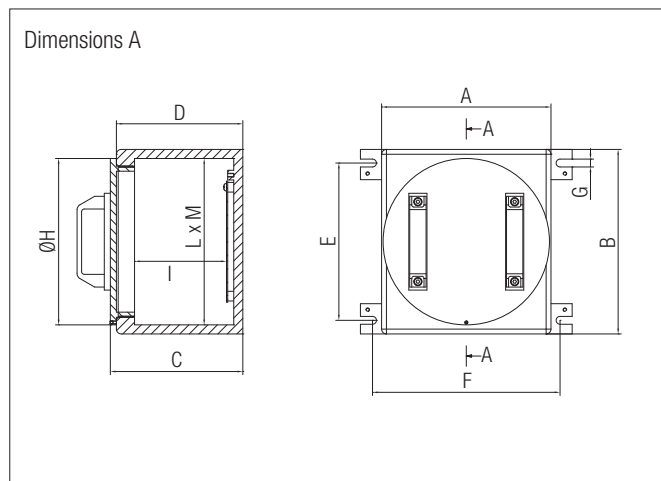
2

Selection chart

Name	Dimensions (mm)										kg	lay-out	Window mountingplate	
	A	B	C	E	F	I	L	M	Ø H	Ø glass (mm)				
GUB00A0A0	135	135	111	110	150	50	110	110	113	2	C	80 x 80 x 2		
GUB0A0A0	168	168	145	172	172	97	137	137	154	4	C	110 x 110 x 2		
GUB1A0A0	198	198	152	200	200	88	170	170	176	5	C	150 x 150 x 2		
GUB03A0A0	280	305	228	270	308	133	248	270	275	13.5	A	200 x 220 x 2		
GUB23A0A0	270	310	174	315	275	100	243	283	244	9.8	E	180 x 180 x 2		
GUB4A0A0	420	420	281	380	460	147	384	384	410	31.7	A	280 x 280 x 2		
GUB5A0A0	600	600	382	545	460	208	550	550	580	105.6	A	490 x 490 x 3		
GUBW1A0A0	198	198	152	200	200	88	170	170	176	5.1	D	90	150 x 150 x 2	
GUBW030A0	280	305	228	270	308	133	248	270	275	14.2	B	195	200 x 220 x 2	
GUBW23A0A0	270	310	174	315	275	100	243	283	244	10.3	F	150	180 x 180 x 2	
GUBW4A0A0	420	420	281	380	460	147	384	384	410	30	B	230	280 x 280 x 3	

Technical data subject to change without notice.

Overall dimensions and weights Stainless steel GUB INX



Selection chart

Name	Dimensions (mm)												kg	lay-out
	A	B	C	D	E	F	Ø G	H	I	L	Ø M	Ø N		
GUE1 INX AISI316	135	135	100	92	152	105	7	113	47	111	111	-	7	B
GUB0 INX AISI316	170	170	141	133	185	145	9	154	82	140	140	-	13	B
GUB1 INX AISI316	200	200	160	152	216	170	9	177	98	170	170	-	19	b
GUB03 INX AISI316	280	310	219	209	260	310	13	275	152	250	280	-	50	A
GUB23 INX AISI316	310	270	165	157	235	350	12	224	110	290	250	-	32	B
GUB4 INX AISI316	420	420	234	226	380	460	13	405	148	390	390	-	83	A
GUB5 INX AISI316	600	600	320	310	550	630	13	600	203	550	550	-	280	A
GUBW1 INX AISI316	200	200	160	152	216	170	9	177	98	170	170	90	19	d
GUBW03 INX AISI316	280	310	219	209	260	310	13	275	152	250	280	195	50	C
GUBW23 INX AISI316	310	270	165	157	235	350	12	224	110	290	250	150	32	D
GUB4 INX AISI316	420	420	234	226	380	460	13	405	148	390	390	230	83	C



## Features

- Flexible product range with many standard sizes
- IP 66 ingress protection as standard
- Wide temperature ranges
- Flexible certification
- May be used with Ex e/Ex i connection box
- Optional window on lid, sides or back
- High operational reliability
- Non invasive maintenance schedule

## Typical applications

- Motor starter
- Alarm panel
- Intrinsically safe circuits
- Transformer
- Charging unit
- Terminal boxes

## Options

- Ex d enclosure with windows in lid
- lamps or switches in lid or base, for Ex d enclosure, as well as Ex e enclosure

The TNCD range of enclosures is designed to meet the harshest of environments and are ideal for any rugged application where a potentially explosive atmosphere may be present. Our range is comprised of many standard sizes, all manufactured in 316L/CF3M stainless steel providing long term corrosion resistance. The enclosures allow for the use of standard electrical components inside. Thus subsequent replacement and maintenance is easy and may be performed by skilled electricians. If required, several enclosures may be assembled on a framework with separate or common Ex e/i connection boxes. The enclosures are supplied empty with component certification or as assembled turn-key systems.

## Explosion protection

Marking            Ⓔ II 2G, II 2(1)G, II 2D and EPL Gb/Db  
 Ex d [Ia Ga][Ib Gb][op is Ga] IIC T6-T4 Gb  
 Ex tb [Ia Da][Ib Db] IIIC T85°C - T135°C Db

Certification  
 ATEX            NEMKO 03ATEX263U  
                     TÜV 12ATEX102320X

IECEX            IECEX NEM 10.0001U  
                     IECEX TUN 12.0018X

INMETRO        DNV 16.0018U  
                     DNV 16.0019

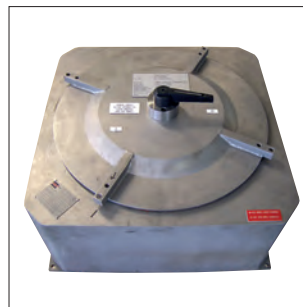
EAC              TC RU C-NO.Г508.В.02029

Directives        EN/IEC: 60079-0, 60079-1, 60079-31

Other approvals and certificates, see [www.bartec.de](http://www.bartec.de)

## Technical data

Material	Stainless steel 316L/CF3M
Protection class	IP 66
Temperature	-20 °C to +40 °C optional -50 °C to +60 °C
Surface treatment	Shot blasted and acid pickled



Control and indication equipment can be fitted directly into the cover of an Ex d enclosure, or in the optional Ex e box.



**Viewing window for TNCD**

TNCD	max. diameter
1919xx	Ø 65 mm
2828xx	Ø 100 mm
3838xx	Ø 100 mm
5757xx	Ø 154 mm

The window is placed in centre of the lid. Windows (Ø 65 mm) can also be placed on the sides or back wall.

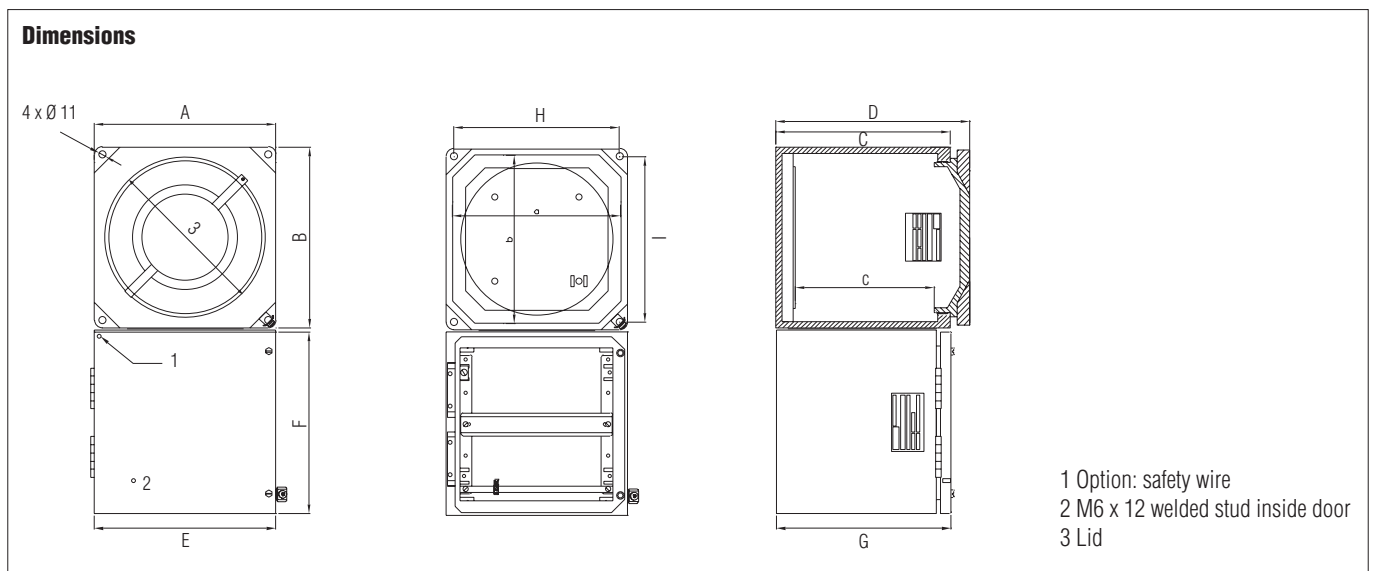
Measurement table for **Ex d IIC Explosion proof enclosures** (mm)

External dimensions						Internal dimensions			Weight (kg)	Fixing dimensions	
TNCD	Width A	Height B	Depth C	Total depth D	Lid aperture	Width a (mm)	Height b (mm)	Depth c (mm)		H	I
191918	190	190	180	205	M 152	167	167	134	16	166	166
282827	280	280	270	295	M 237	257	257	225	37	256	256
383827	380	380	270	295	M 337	357	357	225	60	356	356
575727	570	570	270	300	M 500	550	550	213	125	546	546

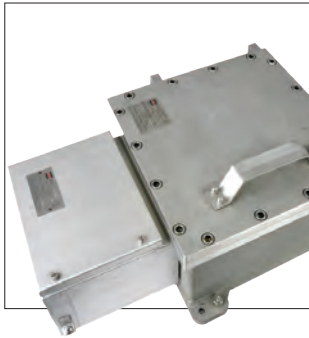
Other sizes upon request.

Measurement table for **Ex e connection boxes**

External dimensions				Weight (kg)
TNCD	Width E (mm)	Height F (mm)	Depth G (mm)	
191918	190	190	180	3.0
281927	280	190	270	4.4
282827	280	280	270	6.6
381927	380	190	270	4.6
383827	380	380	270	10.5
571927	570	190	270	9.6
573827	570	380	270	13.4
575727	570	570	270	19.7



Technical data subject to change without notice.



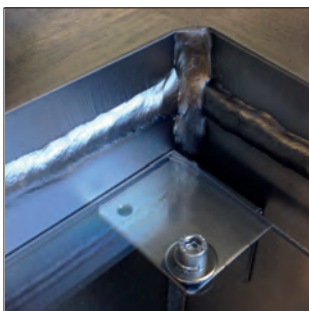
The TNBCD range of enclosures is designed to meet the harshest of environments and are ideal for any rugged application where a potentially explosive atmosphere may be present. Our range is comprised of many standard sizes, all manufactured in 316L stainless steel providing long term corrosion resistance. The enclosures allow for the use of standard electrical components inside. Thus subsequent replacement and maintenance is easy and may be performed by skilled electricians. If required, several enclosures may be assembled on a framework with separate or common Ex e/i connection boxes. The enclosures are supplied empty with component certification or as assembled turn-key systems.

## Features

- Flexible product range with many standard sizes
- IP 66 ingress protection as standard
- Wide temperature ranges
- Flexible certification
- May be used with Ex e/i connection box
- Optional window on sides or lid
- High operational reliability
- Non invasive maintenance schedule
- Atex, IECEx and TR-CU approvals

## Typical applications

- Motor starter
- Alarm panel
- Intrinsically safe circuit
- Transformer
- Charging unit
- Terminal boxes



## Options

- Ex d enclosure with windows in lid or base
- Lamps or switches in lid or base, for Ex d enclosure, as well as Ex e enclosure
- Left, right hinged or without hinges, enclosures without hinges are supplied with a support below the lid

## Explosion protection

Marking	⊕ II 2G, II 2(1)G, II 2D and EPL Gb/Db Ex d [ib Ga][ib Gb][op is Ga] IIB T6-T4 Gb Ex tb [ia Da][ib Db] IIIB T85°C to T135°C Db
Certification ATEX (Component/System)	NEMKO 03ATEX264U TÜV 12 ATEX 101309X
IECEx (Component)	IECEx NEM 10.0003U IECEx TUN 12.0014X
EAC (Component)	TC RU C- NO.ГБ08.В.01606
Directives	EN/IEC: 60079-0, 60079-1, 60079-31
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	

## Technical data

Material	Stainless steel 316L/CF3M
Protection class	IP 66 (IP 67 and IP 68 upon request)
Temperature	-20 °C to +40 °C optional -50 °C to +60 °C
Surface treatment	Shot blasted and acid pickled

Control and indication equipment can be fitted directly into the cover of an Ex d enclosure, or in the optional Ex e box.



**Viewing window** for TNBCD

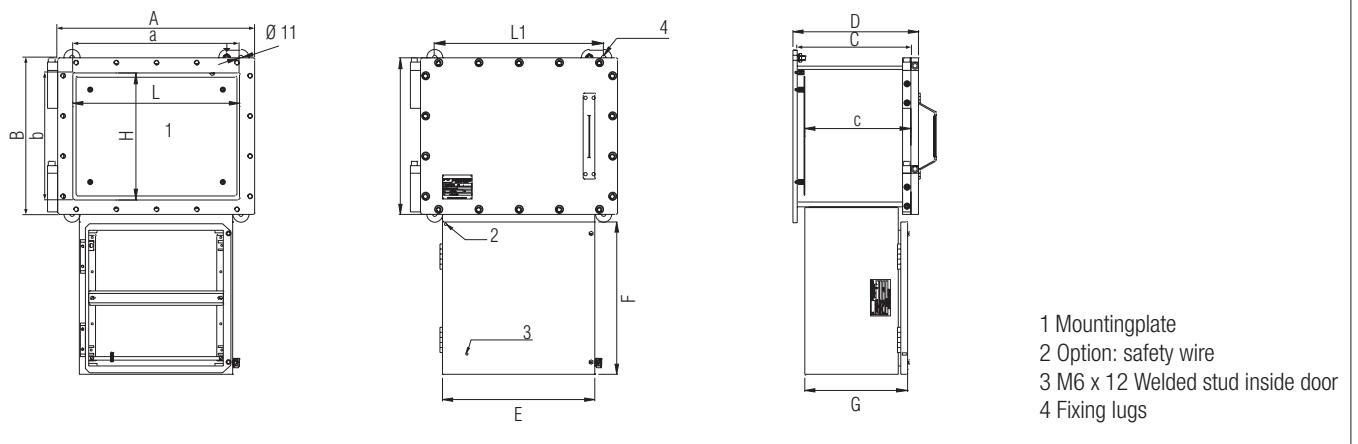
Type	view area	diameter
2526xx	136 mm x 136 mm	Ø 154 mm
3233xx	206 mm x 206 mm	Ø 154 mm
3545xx	236 mm x 336 mm	Ø 154 mm
3857xx	266 mm x 364 mm	Ø 154 mm

**Measurement table** for Ex d IIB Explosion proof enclosures (mm)

External dimensions						Internal dimensions				Fixing dimensions		Mounting plate	
TNBCD	Width A	Height B	Depth C	Total depth D	Window depth	Width a	Height b	Depth c	Weight (kg)	L1	H1	L	H
262531	300	290	280	312	65/100	226	216	262	49	230	290	210	196
323321	360	370	180	212	65/100	286	296	163	57	360	300	266	280
453535	490	390	320	352	65/100/154	416	316	303	94	420	390	400	296
573835	615	420	320	352	65/100/154	541	346	303	122	545	420	525	326

Other sizes upon request.

**Dimensions**



Technical data subject to change without notice.



**Features**

- Flexible product range with many standard sizes
- Protection class IP 66
- Suitable for demanding environments
- Wide temperature range (-40 °C to +60 °C)
- Several earthing alternatives
- May be used with a Ex e/Ex i connection box
- Window in lid/door may be fitted
- Simplified inspection routines with extended intervals

The DE8BC range comprises many standard sizes of enclosures manufactured in stainless steel 316L. The enclosures allow for utilization of standard electrical components inside. Thus subsequent replacement and maintenance of the installed components is easy, and may be performed by skilled electricians. If required, several enclosures may be assembled on a framework, with separate or common Ex e/Ex i junction boxes. The enclosures can be delivered empty with U-component certificate or supplied fully assembled according to client demands.

**Explosion protection**

Marking	⊕ II 2 G/D or 2[1]G/D and EPL GG/Db Ex d IIB +H2 T4 to T6 Gb Ex d [ia] IIB +H2 T6 Gb Ex tb IIIC T85 °C to 135 °C Db
Certification ATEX	INERIS 09ATEX9017U INERIS 09ATEX0061X
IECEX	IECEX INE 13.0001U IECEX INE 13.0088X
INMETRO	DNV 16.0017/DNV 16.0016 U
EAC	TC RU C- NO.ГБ08.В.02030
Directives	EN/IEC 60079-0, EN/IEC 60079-1, EN/IEC 60079-31

Other approvals and certificates, see [www.bartec.de](http://www.bartec.de)

**Technical data**

Material	Stainless steel 316L
Protection class	IP 66
Temperature	-40 °C to +60 °C
Surface treatment	shot blasted
Earthing	M10

**Applications**

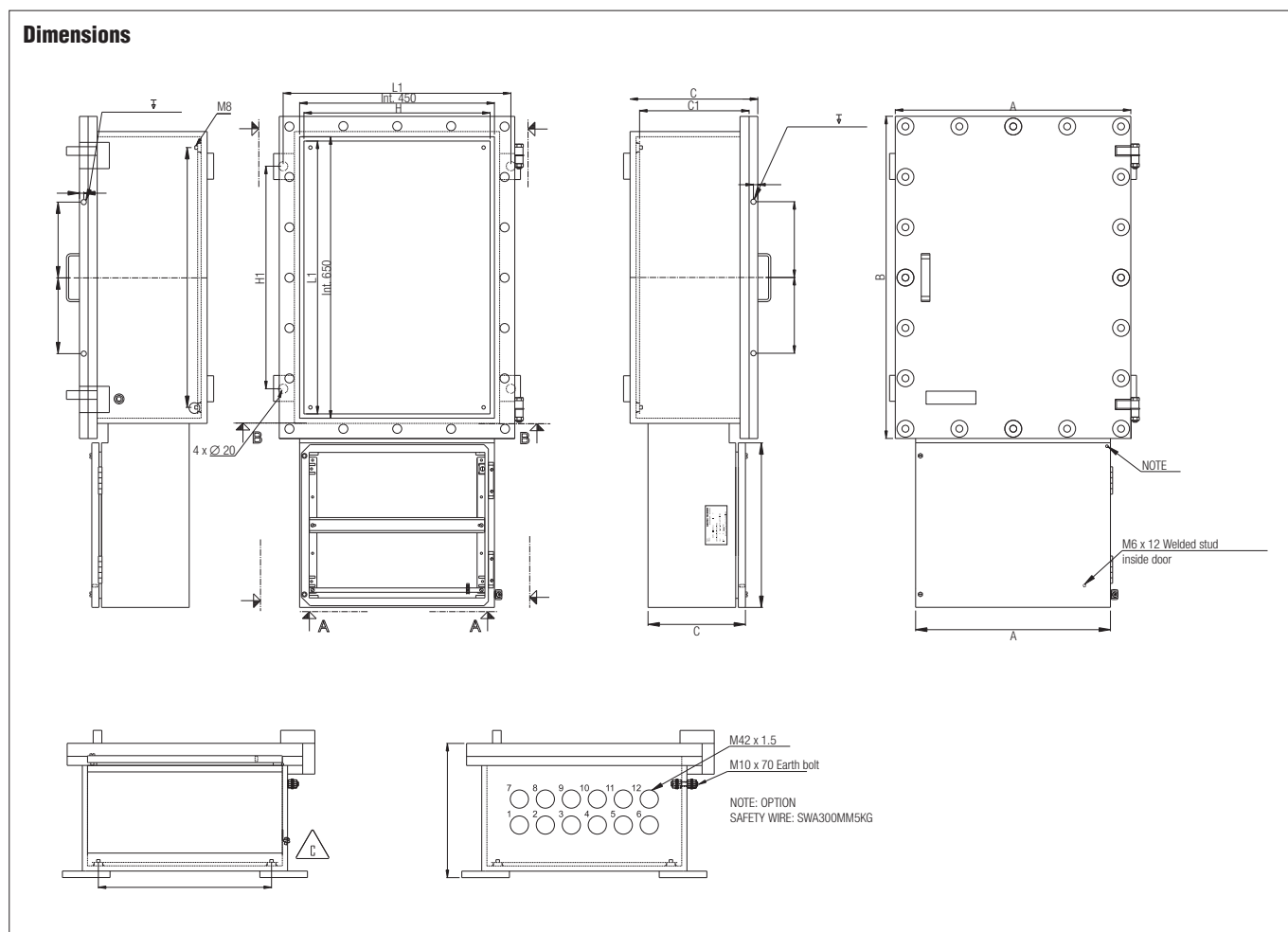
Junction box, control station, uninterrupted power supply, transformer, distribution board, motor starter, umbilical splitter box



## External dimensions Ex d IIB Explosion proof enclosures

DE8BC..	Width A (mm)	Height B (mm)	Depth C (mm)	Usful depth C1 (mm)	External fixing H1 x L1 (mm)	Fixing holes (mm)	Base plate useful surface H x L, fixing holes (mm)	Max. heat dissipation W (mm)	Weight (kg)
DE8BC32I	338	438	261	192	234 x 326	Ø 12	230 x 330	250	74
DE8BC351I	358	478	261	192	274 x 346	Ø 12	255 x 380	250	85
DE8BC43I	438	538	321	252	334 x 426	Ø 12	330 x 430	380	122
DE8BC44I	548	548	323	252	334 x 526	Ø 20	430 x 430	380	155
DE8BC54I	548	648	323	252	414 x 526	Ø 20	430 x 530	410	180
DE8BC64I	548	748	323	252	514 x 526	Ø 20	430 x 630	470	205
DE8BC75I	668	868	332	253	614 x 630	Ø 20	530 x 730	600	319
DE8BC86I	768	968	378	297	714 x 734	Ø 20	630 x 830	600	447
DE8BC107I	868	1168	400	294	908 x 868	Ø 20	730 x 1030	1200	660
DE8BC108I	868	1168	445	339	908 x 868	Ø 20	730 x 1030	1400	675
DE8BC148I	944	1594	509	417	1200 x 900	Ø 20	780 x 1430	2000	1110

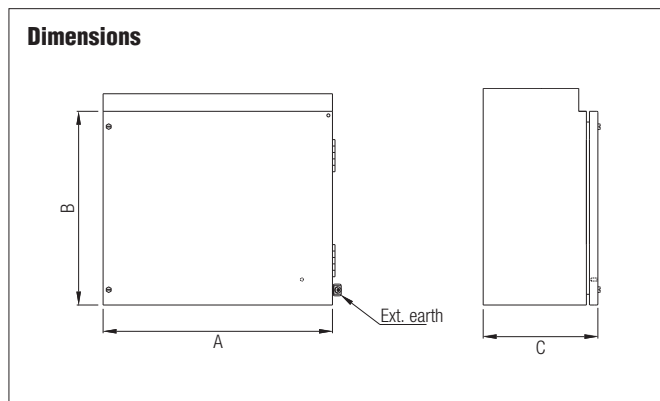
Dimension tolerance: ± 5 mm



## External dimensions Ex e II Increased safety enclosures

TNCN	Width A (mm)	Height B (mm)	Depth C (mm)	No. of command/signal unit	No. of Ammeter	Max. heat dissipation W (mm)	Weight (kg)
354522	350	450	200	9	2	25	6
453822	450	380	220	18	4	42	8
575727	570	570	270	40	4	72	13
767632	760	760	300	108	5	120	22

Dimension tolerance:  $\pm 5$  mm

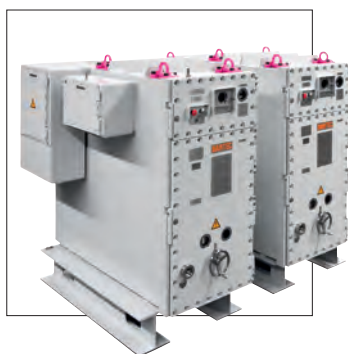


## Assembly possibilities between DE8BC and TNCN

TNCN	DE8BC..									
	43	44	54	64	75	86	107	108	148	
354522	X	X	X	X	X	X	X	X	X	X
453822		X	X	X	X	X	X	X	X	X
575727						X	X	X	X	X
767632							X	X	X	X

X: possibility of combination

Technical data subject to change without notice.



- Max. rated voltage 11kV
- External 800 A busbar system
- Medium voltage and control system separated from each other in two independent Ex d compartments
- Setting all parameters from outside without opening the door

8SN7 is the BARTEC medium voltage switchgear up to 11 kV suitable for hazardous areas like offshore, chemical industries or power plants. Each 8SN7 panel consists of a single unit which can be equipped with a withdrawable circuit breaker or contactor, earthing switch, as well as with all the accessories for conventional units. 8SN7 switchgear is designed for free outdoor standing. On request special accessories like base frame or canopy are available.

The enclosure is in three versions available:

- Carbon steel painted/gap surfaces protected with MOLYKOTE®
- Body with carbon steel painted and gap surfaces with stainless steel (316L)
- Stainless steel complete painted or unpainted

### Explosion protection

Marking ATEX	⊕ II 2G Ex d IIB T5 Gb
Certification	BVS 14ATEX E 143X
Marking IECEx	Ex II 2G Ex d IIB T5 Gb
Certification	BVS 17.0002X

### Electrical data

	Vacuum circuit breaker	Vacuum contactor
Operational voltage	up to 11 kV	up to 7.2 kV
Rated current, bus bar	800 A	
Derated current, VCB	630 A (50 °C)	
Rated current, devices	1250 A	400 A
Rated short time withstand current	33 kA/3 s	
Frequency	50 Hz	50 Hz

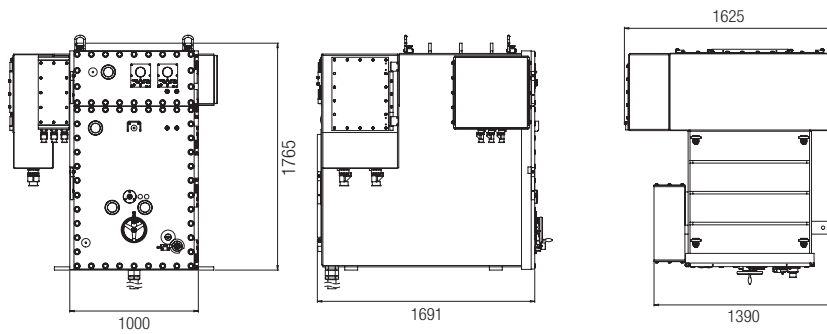
### Mechanical data

Dimension (H x W x D)	1.7 x 1.0 x 1.7 m	1.7 x 0.85 x 1.7 m
Weight	3500 kg	3200 kg
Protection class	IP 66	IP 66
Ambient temperature	0 °C to +50 °C	0 °C to +50 °C
Relative humidity	100 % with space heater	100 % with space heater
Crane eyes	4	4

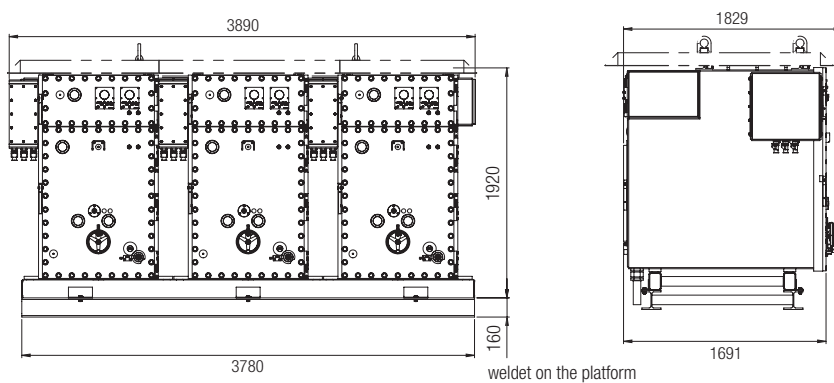
### Options

Base frame	X	X
Canopy	X	X

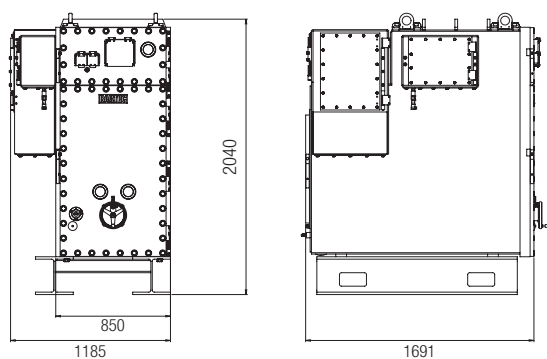
**Dimensions** Single Switchgear Vacuum Circuit Breaker



**Dimensions** Ring Main Unit



**Dimensions** Single Switchgear Vacuum Contactor



**Ordering information**

Version	Order no.
Single Switchgear Vacuum Circuit Breaker	8SN7-VCB-...
Single Switchgear Vacuum Contactor	8SN7-VC-...

Technical data subject to change without notice.



- Variety of covers
- Variety of connection possibilities
- Bushings can be fitted on all sides
- Flange surfaces for mounting enclosures
- Low weight

As flameproof control unit, this Ex d enclosure from BARTEC provides a compact solution for the installation of standard industrial products, whereby components such as contactors and relays are installed in a flameproof enclosure. The enclosure is light, flexible with respect to wiring systems, may be flange mounted and can be equipped with electrical or mechanical line bushings on the sides and in the lid. The different versions of lids enable the installation of display units or devices with control buttons. The installation of Ex i assemblies is also permitted.

### Types of connection

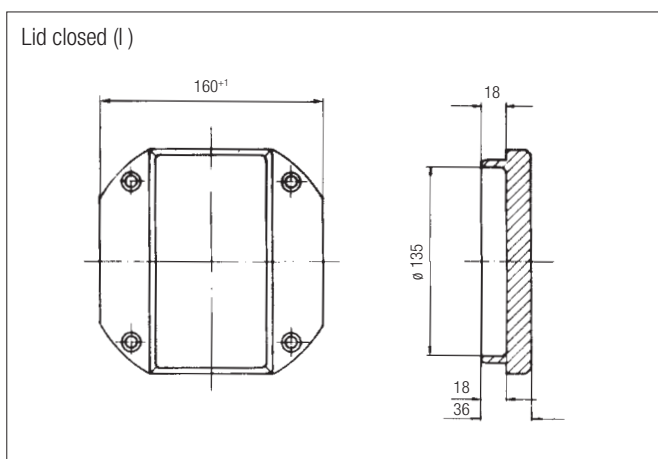
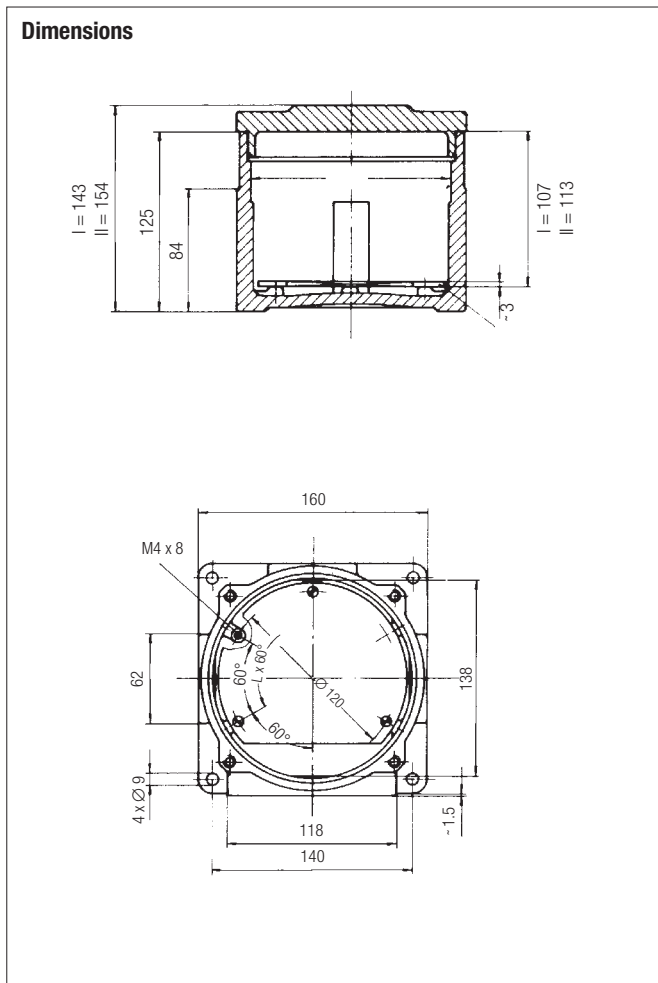
Flameproof control units may be connected either with direct cable entry by means of Ex d cable glands or indirectly using an Ex e junction box. The electrical connection between Ex d and Ex e area takes place using Ex d line bushings with terminals. Control devices and display units can be installed in the junction box

### Explosion protection

Marking max.	Dependent on the installed components; Observe the information on the type label.
Marking ATEX	Ⓢ II 2G Ex db eb ia/ib [ib] IIA, IIB resp. IIC T6, T5 resp. T4 Gb  Ⓢ II 2(1)G Ex db eb ia/ib [ia] IIA, IIB resp. IIC T6, T5 resp. T4 Gb
Certification	PTB 03 ATEX 1138
Ambient temperature	Dependent on the installed components; Observe the information on the type label.
Operating temperature	-20 °C to +55 °C
Approved for	Zone 1 and 2

### Technical data

Power dissipation	max. 67 W (depending on version and type of protection)
Protection class	max. IP 54 (EN/IEC 60529)
Rated cross-section of conductor	max. 16 mm <sup>2</sup>
Weight	approx. 4 kg (depending on the version)
Enclosure material	aluminium
Rated voltage	max. 690 V
Rated current	max. 104 A



Versions to specification, please give particulars in pain text.

**Ordering information**

Version	Order no.
Flameproof control unit Ex d	07-4230-11

Technical data subject to change without notice.



The TNXCD/TNXCC range of Ex d IIC/Ex de IIC enclosures are manufactured in SS316L/CF-3M and are designed as slim, compact, multipurpose tubular enclosures.

**Features**

- Laser distance measuring
- Laser gas spectrum analysis and detection
- Global positioning receiver antenna
- Omni directional radio antenna
- Pan-Tilt-Zoom camera
- Static camera
- Xenon Flood light
- Motion Reference Unit (MRU)
- Flameproof rotating axel

**Explosion protection**

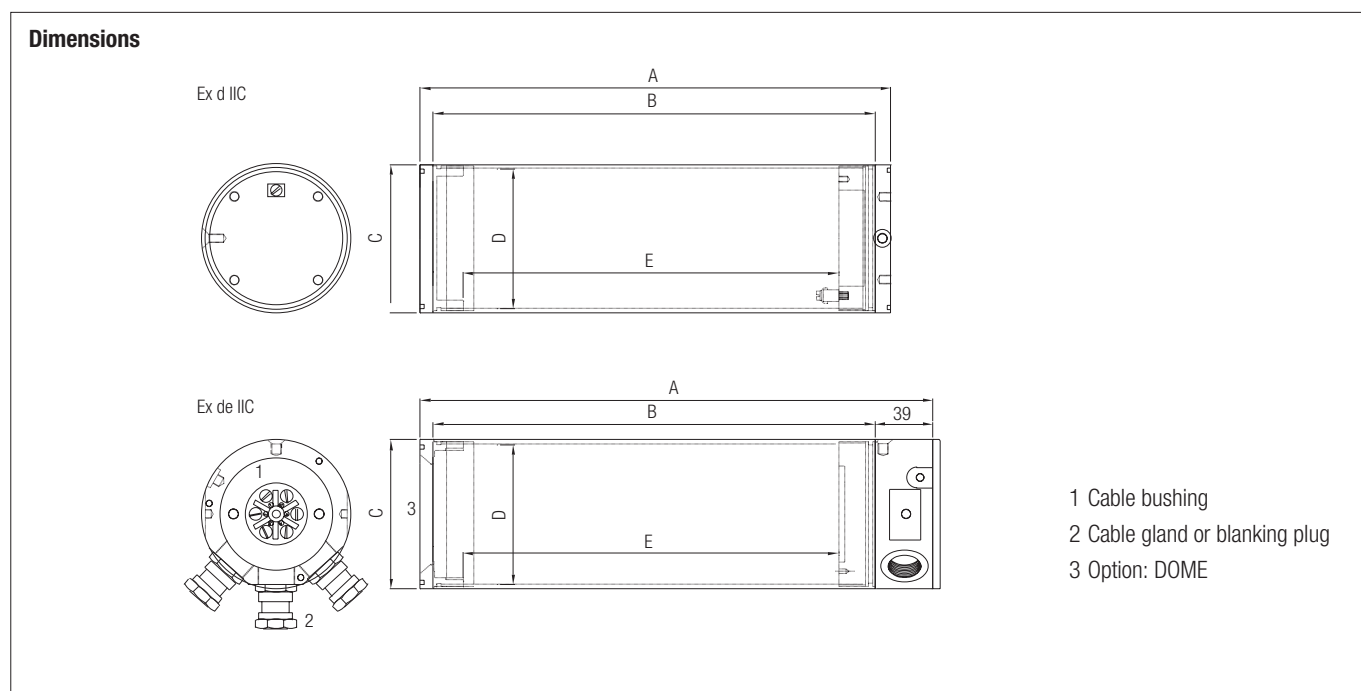
Marking Empty enclosure	⊕ IIC2G/D and EPL Gb/Db Ex d IIC Gb/Ex d e IIC Gb
Certification ATEX	DNV-2003-OSL-ATEX-0436U TUV 12 ATEX 101150U DNV-2004-OSL-ATEX-0115
IECEX	TUN 12.0013U
Directives	EN/IEC 60079-0, EN 60079-1, EN 60079-7, EN 50281

Other approvals and certificates, see [www.bartec.de](http://www.bartec.de)

**Technical data**

Material	acid resistant stainless steel 316L/CF-3M
Protection class	IP 66 (IP 67 and IP 68 on request)
Ambient temperature	max. -50 °C to +60 °C
Entries	Ex e glands and Ex d bushings, or Ex d glands only
Standard Ex e gland size	M25
Ex d gland size	according to specification
Ex d bushing	max. M42, number and core size according to specification





**Ordering information** TNXCD, Ex d IIC

TNXCD	Total length A (mm)	Tube length B (mm)	Diameter C (mm)	Internal diameter D (mm)	Internal length E (mm)	Junction box F (mm)	Weight (kg)	Window/Dome (mm)
XCD1003200	217	193	101	95	155	N/A	3.3	Ø 68
XCD1003360	384	360	101	95	315	N/A	4.1	Ø 68
XCD1303100	120	100	132	126	55	N/A	4.0	Ø 95
XCD1303200	220	200	132	126	155	N/A	5.3	Ø 95
XCD1303360	380	360	132	126	315	N/A	7.0	Ø 95
XCD1553184	194	184	158	149	134	N/A	7.0	Ø 112
XCD1953290	310	290	195	187	238	N/A	13.0	Ø 155

**Ordering information** TNXCD, Ex de IIC

TNXCD	Total length A (mm)	Tube length B (mm)	Diameter C (mm)	Internal diameter D (mm)	Internal length E (mm)	Junction box F (mm)	Weight (kg)	Window/Dome (mm)
XCD1002200	248	193	100	95	155	39	3.9	68
XCD1002360	415	360	100	95	315	39	4.8	68
XCD1301100	161	100	130	126	55	45	5.6	95
XCD1301200	261	200	130	126	155	45	6.9	95
XCD1301360	421	360	130	126	315	45	8.6	95
XCD1551184	257	184	158	149	134	59	10.2	112
XCD1951290	389	290	195	187	238	59	17.1	155

Technical data subject to change without notice.



BARTEC offers two type series of explosion proof encapsulated enclosures for using electric components in hazardous (potentially explosive areas). Within the scope of the EC model test certification, these can be fitted with industrial standard units, such as e.g. small-type motors, printed circuit boards and cameras. The mounted parts are evaluated by BARTEC, fitted into a suitable housing and provided as a complete device with the corresponding ATEX marking. This housing series offers optimum solution approaches for control, regulating and display devices in Zone 1 and zone 21 hazardous areas.

**Explosion protection**

Marking ATEX	Typ 07-61**-****/**** Ⓜ II 2G Ex db eb op is ia/ib [ib] IIC T6...T4 Gb Ⓜ II 2(1)G Ex db eb op is ia/ib [ja Ga] IIC T6...T4 Gb Ⓜ II 2D Ex tb op is ia/ib [ib] IIIC T80°C, T95°C, T130°C Db Ⓜ II 2(1)D Ex tb op is ia/ib [ja Da] IIIC T80°C, T95°C, T130°C Db
Certification	EPS 14 ATEX 1696 X
Marking IECEx	Typ 07-61**-****/**** Ex db eb op is ia/ib [ib] IIC T6...T4 Gb Ex db eb op is ia/ib [ja Ga] IIC T6...T4 Gb Ex tb op is ia/ib [ib] IIIC T80°C, T95°C, T130°C Db Ex tb op is ia/ib [ja Da] IIIC T80°C, T95°C, T130°C Db
Certification	IECEx EPS 14.0042 X
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	

**Technical data**

Protection class	min. IP 54/IEC 60529
Enclosure material	Aluminum, stainless steel or brass
Surface	bare, electro-plated or varnished









**Ordering information**

Version	Order no.
Control, regulating and display devices	07-61.1-... 07-61.2-...

Technical data subject to change without notice.

The control, regulating- and display devices are assembled out of the following modules to suit the required function. The size of the equipment depends on the components, power dissipation and the required housing volume.

**Ordering information**

Front flange	Enclosure	Rear flange
<p>closed</p> <p>e. g. for vibration measuring instrument or printed circuit board installation</p> 	<p>Ø 30 mm to max. 25 cm<sup>3</sup> volume                      Ø 45 mm to max. 100 cm<sup>3</sup> volume                      Ø 60 mm to max. 200 cm<sup>3</sup> volume                      Ø 90 mm to max. 1000 cm<sup>3</sup> volume                      Ø 120 mm to max. 2750 cm<sup>3</sup> volume                      Ø 140 mm to max. 8625 cm<sup>3</sup> volume                      Ø 160 mm to max. 8625 cm<sup>3</sup> volume                      Ø 180 mm to max. 8625 cm<sup>3</sup> volume                      Ø 200 mm to max. 8625 cm<sup>3</sup> volume</p>	<p>with multicore tube encapsulated directly in the housing</p> <p>only up to a maximum 60 mm housing diameter</p> 
<p>with shaft bushing</p> <p>e. g. for small motors, rotary encoders or switches</p> 		<p>with cable entry</p> 
<p>with inspection glass</p> <p>e. g. for cameras, optoelectronic units Displays</p> 		<p>with Ex d screwed cable gland</p> <p>not suitable for gas subgroup IIC when sparking parts have been fitted.</p> 
		<p>Flange with Ex e connection housing</p> 



- High IP-protection class
- Small design
- Simple installation

These up to 4 W potentiometers show that Ex potentiometers can be small and compact. The external dimensions are approximately the same as those of standard industrial potentiometer enclosures. Central fixing in a single hole and the standard size of shaft have been included. From the variety of resistors on the market we have chosen cemented wire-wound resistors and carbon film resistors and developed a standard-program range. The metal Ex d enclosures are tailored to the dimensions of the resistors and feature a standard 30 mm diameter. The potentiometers have been designed so that the stated nominal capacities can be fully exploited at temperature class T6 or T5 and be deployed in zones 1 and 2. The potentiometer is fitted into an enclosure that meets the requirements of an approved type of protection in conformance to IEC/EN 60079-0.

**Explosion protection**

Marking ATEX	 
Certification	PTB 03 ATEX 1025 U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-55 °C to +40 °C/+60 °C/+80 °C

**Technical data**

Protection class	min. IP 54 EN/IEC 60529
Enclosure	nickel-plated brass (CuZn)
Tightning torque	200 Ncm (for nuts)
Resistance characteristic	linear
Electrical connection	cores 4GAF - 0.75  GNYE

**Cemented wire-wound resistors**

Resistance values/ power ratings	see ordering information
Resistance tolerance	± 5 %
Linearity tolerance	max. 3 % of final value
Insulation resistance	≥ 100 MΩ
Rotation	electr./mech. 250°/270°
End stop strength	30 Ncm
Weight	180 g (with cores (0.5 m))

**Carbon-film resistors on ceramic**

Resistance values/ power ratings	see ordering information
Insulation resistance	≥ 100 MΩ
Rotation	electr./mech. 270°
End stop strength	100 Ncm
Weight with cores (0.5 m)	200 g

**Precision wire-wound resistors**

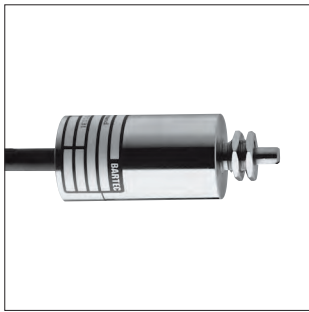
Resistance values/ power ratings	min. IP 54 EN/IEC 60529
Insulation resistance	≥ 1000 MΩ
Resistance tolerance	± 5 %
Linearity tolerance	to 500 Ω ± 1 % > 500 Ω ± 0.5 %
Rotation	electr./mech. 320°
End stop strength	100 Ncm
Weight	170 g (with cores (0.5 m))

Dimensions (mm)	Ordering information				Temperature class/ power rating	Complete order no. (indicate resistance values in plain text)
Cemented wire-wound resistors for high power ratings  	Resistor type/ standard resistance values <b>(stock items printed bold)</b>					
	Cemented wire-wound resistors higher power ratings					
Carbon-film resistors Precision wire-wound resistors  	10 Ω	68 Ω	<b>470 Ω</b>	3.3 kΩ	<b>T6/2,5 W</b> resp. <b>T4/4 W</b>	07-6612-□ 111
	12 Ω	82 Ω	<b>560 Ω</b>	3.9 kΩ		resp.
15 Ω	<b>100 Ω</b>	<b>680 Ω</b>	<b>4.7 kΩ</b>			
18 Ω	120 Ω	820 Ω	<b>5.6 kΩ</b>			
22 Ω	150 Ω	1 kΩ	<b>6.8 kΩ</b>			
27 Ω	180 Ω	1.2 kΩ	8.2 kΩ			
33 Ω	<b>220 Ω</b>	1.5 kΩ	<b>10 kΩ</b>			
39 Ω	<b>270 Ω</b>	1.8 kΩ				
47 Ω	<b>330 Ω</b>	<b>2.2 kΩ</b>				
56 Ω	390 Ω	<b>2.7 kΩ</b>				
	Carbon film resistors					
	100 Ω	1 kΩ	10 kΩ	100 kΩ	<b>T6/2 W</b>	07-6612-□ 113
	220 Ω	2.2 kΩ	22 kΩ	220 kΩ		
	470 Ω	4.7 Ω	47 kΩ	470 kΩ 1 MΩ		
	Precision wire-wound resistors					
	10 Ω	100 Ω	1 kΩ	10 kΩ	<b>T6/0.5 W</b>	07-6612-□ 112  Lead length: 100 mm to 1000 mm In 100-mm steps 5 = standard 500 mm
	20 Ω	200 Ω	2 kΩ	20 kΩ		
	50 Ω	500 Ω	5 kΩ			
	Special versions - please indicate particulars in plain text					
	<ul style="list-style-type: none"> <li>• Anti-rotation pin on front of enclosure</li> <li>• Threaded holes on front of enclosure</li> <li>• Side entry of leads</li> <li>• Other resistance values</li> </ul>					

Accessories/Order no.

Rotary knob shaft Ø 6 mm Order no. 03-5401-0001  	Pointer knob shaft Ø 6 mm Order no. 03-5401-0002  	Scale 0 to 100 Order no. 05-0144-0112 (270°) Order no. 05-0144-0127 (320°)  	Slip clutch adjustable to 50 Ncm, shaft Ø 6 mm Order no. 03-5600-0001  
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Technical data subject to change without notice.



- High IP-protection class
- Simple installation
- No further approvals required

This standard range of up to 8 W potentiometers with wire-wound resistors show that Ex potentiometers can be small and compact. The external dimensions are approximately the same as those of standard industrial potentiometer enclosures. Central fixing in a single hole and the standard size of shaft have been included. From the variety of resistors on the market we have chosen the most commonly used types and developed a standard program range. The metal Ex d enclosures are tailored to the dimensions of the resistors and feature a standard 30 mm diameter. The potentiometers have been designed so that the stated nominal capacities can be fully exploited at temperature class T6 or T5 and be deployed in zones 1 and 2. In addition to the standard models all other versions such as tandem potentiometers, potentiometers with microswitches, non-standard shafts or larger resistor diameters can be encapsulated in enclosures of up to 120 mm diameter.

**Explosion protection**

Marking ATEX	II 2G Ex db eb IIC T6 bzw. T5 Gb II 2D Ex tb IIIC T80 °C resp. T95 °C Db
Certification	EPS 14 ATEX 1696 X
Marking IECEx	Ex db eb IIC T6 bzw. T5 Gb Ex tb IIIC T80 °C resp. T95 °C Db
Certification	IECEx EPS 14.0042 X
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-20 °C to +70 °C

**Technical data**

Protection class	min. IP 54 EN/IEC 60529
Enclosure	metal
Tightening torque	200 Ncm (for nuts)
Resistance characteristic	linear
Electrical connection	cable H05VV-F4G 0.75

**Cemented wire-wound resistors**

Resistance values/ power ratings	see ordering information
Resistance tolerance	± 5 %
Linearity tolerance	max. 3 % of final value
Insulation resistance	≥ 100 MΩ
Rotation	electr./mech. 250°/270°
End stop strength	30 Ncm
Weight	2.5 W 6 W 8 W (with cable (1 m)) 250 g 320 g 550 g

**Carbon-film resistors on ceramic**

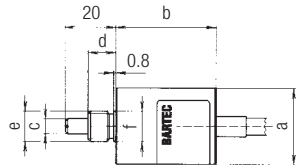
Resistance values/ power ratings	see ordering information
Isolationswiderstand	≥ 100 MΩ
Rotation	electr./mech. 270°
End stop strength	100 Ncm
Weight	240 g (with cable (1 m))

**Precision wire-wound resistors**

Resistance values/ power ratings	see ordering information
Resistance tolerance	1 turn ± 5 %/10 turns > 50 Ω ± 3 %
Linearity tolerance	1 turn to 500 Ω ± 1 % > 500 Ω ± 0.5 % 10 turns potentiometer ± 0.25 %
Insulation resistance	min. 1 000 MΩ
Rotation	electr./mech. 1 turn 320° ± 2° 10 turns 10 x 360° +10°
Weight	1 turn 210 g/10 turns 300 g (with cable (1 m))
End stop strength	1 turn 100 Ncm/10 turns 30 Ncm

Technical data subject to change without notice.

**Dimensions (mm)**



**Ordering information**

Resistor type/  
standard resistance values  
(stock items printed bold)

Temperature  
class/  
power rating

Complete  
order no.  
(indicate resistance values  
in plain text)

a	b	c	d	e	f				
Ø 30	55	Ø 6	11	M12 x 1.5	Ø 12	Cemented wire-wound resistors higher power ratings			
						10 Ω    180 Ω    3.3 kΩ	to	<b>T6/2,5 W</b>	07-6622- □ 111
						12 Ω    220 Ω    3.9 kΩ	10 k Ω	resp. <b>T5/3 W</b>	resp.
						15 Ω    270 Ω    4.7 kΩ			07-6623- □ 111
						18 Ω    330 Ω    5.6 kΩ			
Ø 45	90	Ø 6	11	M12 x 1.5	Ø 12	22 Ω    390 Ω    6.8 kΩ			
						27 Ω    470 Ω    10 kΩ	to	<b>T6/5 W</b>	07-6624- □ 111
						33 Ω    560 Ω    12 kΩ	20 k Ω	resp. <b>T5/6 W</b>	resp.
						39 Ω    680 Ω    15 kΩ			07-6625- □ 111
						47 Ω    820 Ω    18 kΩ			
Ø 60	87	Ø 6	11	M12 x 1.5	Ø 12	56 Ω    1 kΩ    20 kΩ			
						68 Ω    1.2 kΩ    22 kΩ	to	<b>T6/7 W</b>	07-6626- □ 111
						82 Ω    1.5 kΩ    27 kΩ	30 k Ω	resp. <b>T5/8 W</b>	resp.
						100 Ω    1.8 kΩ    30 kΩ			07-6627- □ 111
						120 Ω    2.2 kΩ			
Ø 30	45	Ø 6	11	M12 x 1.5	Ø 12	150 Ω    2.7 kΩ			
						Carbon-film resistors	<b>T6/2 W</b>	07-6622- □ 113	
						100 Ω    1k Ω    10 k Ω    100 k Ω			
						220 Ω    2.2 k Ω    22 k Ω    220 k Ω			
						470 Ω    4.7 k Ω    47 k Ω    470 k Ω			
						1 M Ω			
						Precision wire-wound resistors			
						<b>T6/1,2 W</b>	07-6622- □ 112		
						10 Ω    100 Ω    1 kΩ    10 kΩ			
						20 Ω    200 Ω    2 kΩ    20 kΩ			
						50 Ω    500 Ω    5 kΩ			
Ø 38	50	Ø 6.35	8	3/8-32	Ø 10.3	10 turns potentiometer*			
						<b>T6/2 W</b>	07-6624- □ 102		
						20 Ω    500 Ω    10 kΩ	Lead length: 100 mm to 1000 mm In 100-mm steps 5 = standard 500 mm		
						50 Ω    1 kΩ    20 kΩ			
						100 Ω    2 kΩ    50 kΩ			
200 Ω    5 kΩ    100 kΩ									

\* Max. wall thickness for installing a switch panel = 2.5 mm

Special versions, Please indicate particulars in plain text

- Anti-rotation pin on front of enclosure
- Threaded holes on front of enclosure
- Side entry of cable
- Other resistance values

**Accessories/Order no.**

Rotary knob shaft Ø 6 mm Order no. 03-5401-0001	Pointer knob shaft Ø 6 mm Order no. 03-5401-0002	Scale 0 - 100 Order no. 05-0144-0112 (270 °) 05-0144-0127 (320 °)	More turn drive* shaft Ø 6.35 mm Order no. 03-5425-0001	Slip clutch, adjustable to 50 Ncm, shaft Ø 6 mm Order no. 03-5600-0001



The limit value transmitters of Types 07-31...-.../... are deployed in conjunction with pneumatic actuators on valves and fittings. They serve to signal the "open/closed" status of a fitting. This end position is communicated by means of up to a maximum of 6 limit switches in the "Ex d" type of protection or by means of 6 proximity initiators in conformance to NAMUR in the "Ex i" type of protection. In intrinsically safe proximity initiators there is a choice of slot initiators or V3 initiators. The limit monitors are available in polyester, aluminium and stainless steel. The metal versions can be used in temperatures down to -60 °C – depending on the fitted components. To ensure mechanical adaptability to the pneumatic actuators, we supply 4 consoles according to VDI/VDE 3845. The BARTEC limit monitors can be used in hazardous (potentially explosive) areas in Zone 1 and 2 in accordance with the certified explosion sub-groups IIA, IIB and IIC and the temperature classes T5/T6 and in Zone 21 and 22 in accordance with the certified max. surface temperature.

**Explosion protection**

Marking max.	dependent on the installed parts
Marking	⊕ II 2G Ex db eb mb ia resp. ib IIC T6 or T5 Gb ⊕ II 2(1)G Ex db eb ia/ib [ia]
Certification	IBExU02ATEX1126 IECEX IBE 13.0038
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-20 °C to max. +40 °C option -60 °C to max. +70 °C

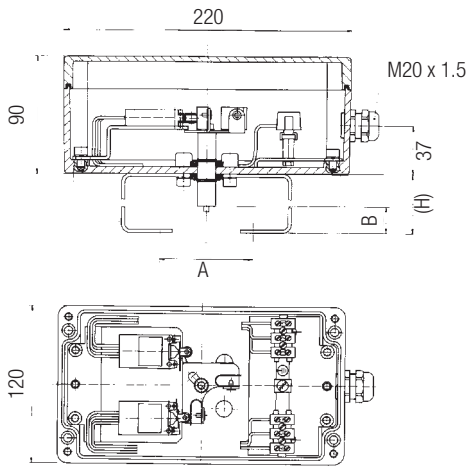
**Technical data**

Protection class	Enclosure IP 65/67 according to EN/IEC 60529
Material	Type 07-31A cast aluminium Type 07-31B polyester black Type 07-31D high quality stainless steel
Mounting console and connection dimensions	according to DIN EN ISO 5211 F05 resp. VDI/VDE 3845
Cable entry	Ex cable glands M20 x 1.5 (7 to 13)

**Ordering information** for Standard-Limit Monitors

				Console Dimensions (mm)			
				A	B	H	
	<b>Aluminium enclosure</b>	black	(220 x 120 x 90 mm)	for Zone 1 + 2 and 21 + 22			Order no.
<b>Ex ed</b> Picture 1	Console VDI/VDE 3845			130	50	75	07-31A1-2209/9005
	Console VDI/VDE 3845			130	30	55	07-31A1-2209/9004
	Console VDI/VDE 3845			80	30	55	07-31A1-2209/9003
	Console VDI/VDE 3845			80	20	45	07-31A1-2209/9002
	Connection dimensions DIN EN ISO 5211 F05			without console			07-31A1-2209/9001
	<b>Polyester enclosure</b>	black	(220 x 120 x 90 mm)	for Zone 1 + 2 and 21 + 22			
<b>Ex ed</b> Picture 1	Console VDI/VDE 3845			130	50	75	07-31B1-2209/9004
	Console VDI/VDE 3845			130	30	55	07-31B1-2209/9003
	Console VDI/VDE 3845			80	30	55	07-31B1-2209/9002
	Console VDI/VDE 3845			80	20	45	07-31B1-2209/9001
	Connection dimensions DIN EN ISO 5211 F05			without console			07-31B1-2209/9007
	<b>Polyester enclosure</b>	black	(110 x 75 x 55 mm)	for Zone 1 + 2 and 21 + 22			
<b>Ex ed</b> Picture 2	Console VDI/VDE 3845			130	50	75	07-31B1-1105/9005
	Console VDI/VDE 3845			130	30	55	07-31B1-1105/9004
	Console VDI/VDE 3845			80	30	55	07-31B1-1105/9003
	Console VDI/VDE 3845			80	20	45	07-31B1-1105/9002
	Connection dimensions DIN EN ISO 5211 F05			without console			07-31B1-1105/9001
	<b>Stainless-steel enclosure</b>		(150 x 150 x 80 mm)	for Zone 1 + 2 and 21 + 22			
<b>Ex ed</b> Picture 3	Console VDI/VDE 3845			130	50	75	07-31D1-1508/9006
	Console VDI/VDE 3845			130	30	55	07-31D1-1508/9005
	Console VDI/VDE 3845			80	30	55	07-31D1-1508/9004
	Console VDI/VDE 3845			80	20	45	07-31D1-1508/9003
	Connection dimensions DIN EN ISO 5211 F05			without console			07-31D1-1508/9002

Picture 1



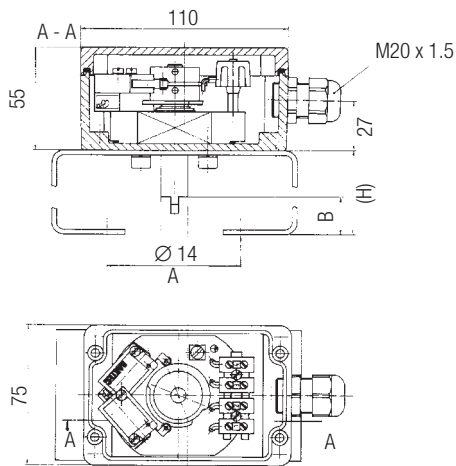
Aluminium enclosure 220 x 120 x 90 mm  
 Polyester enclosure 220 x 120 x 90 mm

Built-in  
 2 microswitches  
 Ex protection type Ex e d IIC  
 Switching function changeover contact

Cable connection via Ex e modular terminals.

The version with enclosure dimensions 220 x 120 x 90 mm optionally provides additional terminals for the connection of a magnetic valve.

Picture 2

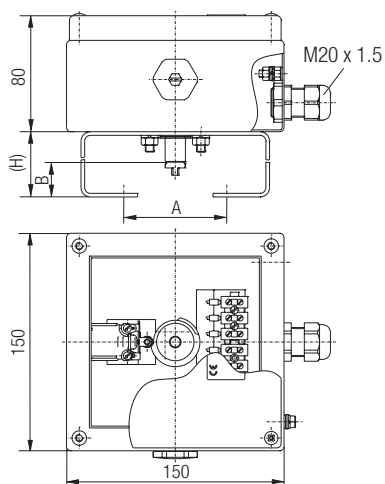


Polyester enclosure 110 x 75 x 55 mm

Built-in  
 2 micro-switches  
 Ex protection type Ex e d IIC  
 Switching function NO contact

The cable is connected to Ex e-rail-mounted terminals.

Picture 3



Stainless-steel enclosure 150 x 150 x 80 mm

Fitted components  
 2 microswitches  
 Ex protection type Ex e d IIC  
 Switching function Changeover contact

The cable is connected to Ex e-rail-mounted terminals.

Technical data subject to change without notice.

## Customer requirements Control stations

### Customer

Company

Street

Zip code/city

Country

Contact person

E-mail

Phone

Fax

### BARTEC (to be filled by BARTEC staff)

Sales employee

Offer  Order

Project name/application number

Customer number

Order value

Deadline Offer

Delivery

### System options

Please fill in the appropriate form

Flameproof control station  Form 1

Local control station  Form 2

Enclosures for small control, regulating and display devices  Form 3

Was a similar system already supplied?  Yes  No

Description

Available documents

Wiring diagram  Technical description

Drawings/pictures  I/O list

### Technical informations

Neutral phase  Yes  No

Rated current A

Frequency Hz

Power kW

Rated voltage V  DC  AC

### Certification

ATEX

IECEx

TR-CU

INMETRO

Others

NEC 500 Class I  Div. 1  Div. 2

NEC 505 Class I  Zone 1  Zone 2

### Area of application

Gas  Zone 1 (2G)  Zone 2 (3G)

Temperature class  T3  T4  T5  T6

IP rating  54  65  66  \_\_\_\_\_

Dust  Zone 21 (2D)  Zone 22 (3D)

Maximum surface temperature  80 °C  95 °C

Sub Ex area  IIA  IIB

IIB + H2  IIC

Temperature range  -20 °C to +40 °C

Other °C

Installation area  Indoor  Outdoor

**Flameproof control stations**

Enclosure sizes (mm)

Length                      Width                      Height

or max. available installation dimensions (mm)

Length                      Width                      Height

Direct cable entry       Yes                       No

Ex e/Ex i connection range       Yes                       No

Material Ex d               SS316                       Alu RAL 9006

Circuit breaker operatable from outside       Yes                       No

Markers for internal wiring       Yes                       No

Cable diameter available       Yes                       No

Kind of cable                       armoured                       unarmoured

In case of Ex de solution

Actuators to be placed in       Ex d section                       Ex e section

Material Ex e                       SS316       GRP       Alu

**Installations/customer provision**

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**Installations/customer provision/free delivery**

Quantity	Manufacturer	Type	Dimensions (mm)	Power dissipation (W)	Data sheet

**Direct cable entry - Terminals**

Quantity	Nominal cross section (mm <sup>2</sup> )	Ex i or Ex e

**Direct cable entry - Cable glands**

Quantity	Thread size	Clamping range

**Ex e/Ex i connection range - Terminals**

Quantity	Nominal cross section (mm <sup>2</sup> )	Ex i or Ex e

**Ex e/Ex i connection range - Cable glands**

Quantity	Thread size	Clamping range	Ex i or Ex e

**Local control station**

**Enclosure sizes** (mm )

Length                                  Width                                  Height

---

or max. available installation dimensions (mm)

---

Length                                  Width                                  Height

---

**Material**

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- Polyester
- Stainless steel V2A
- Stainless steel V4A
- Aluminium

**Installations/Customer provision**

Quantity	Manufacturer	Type	Dimensions (mm)	Power dissipation (W)	Data sheet

**Pneumatic connections**

Quantity	Nominal cross section (mm <sup>2</sup> )

**Terminals**

Quantity	Nominal cross section (mm <sup>2</sup> )	Ex i or Ex e

**Cable glands**

Quantity	Thread size	Clamping range	Ex i or Ex e

**Enclosures for small control, regulating and display devices**

**Type**

<input type="checkbox"/> 07-61.1..	$V \leq 100 \text{ cm}^3$
<input type="checkbox"/> 07-61.2..	$100 \text{ cm}^3 \leq V \leq 8625 \text{ cm}^3$

**Enclosure material**

<input type="checkbox"/> Aluminium bare	RAL colour
<input type="checkbox"/> Aluminium varnished	
<input type="checkbox"/> Stainless steel V2A	
<input type="checkbox"/> Stainless steel V4A	

**Mounting type**

<input type="checkbox"/> Front-mounted
<input type="checkbox"/> Rear flange for floor-/wall-mounting
<input type="checkbox"/> Special request:
_____
_____
_____
_____

**Information about mounting parts**

**Rotating electrical machines**

e. g. Motors/power-wheel instruments

Max. rotation	U/min
Max. voltage	V
Power input	A
Power consumption	W
Shaft version	<input type="checkbox"/> like examples <input type="checkbox"/> like drawings
Fittings exchangeably	<input type="checkbox"/> yes <input type="checkbox"/> no

**Transmitter/Receiver**

Max. voltage	V
Power input	A
Power consumption	W
Radiation intensity	
Inspection glass, size	mm

**Instruments without spindle/inspection glass**

(e. g. vibration measuring instrument)

Max. voltage	V
Power input	A
Power consumption	W



## PRESSURIZED CONTROL PANELS

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Housing model 1



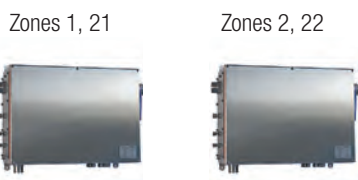
Housing model 2



APEX Control unit	APEX <sup>dx</sup>	APEX <sup>dy</sup>	APEX <sup>dx</sup>	APEX <sup>dy</sup>	APEX 2003
Power supply	DC 24 V to 44 V or AC 100 V to 240 V	DC 24 V to 44 V or AC 100 V to 240 V	DC 24 V to 44 V or AC 100 V to 240 V	DC 24 V to 44 V or AC 100 V to 240 V	DC 24 V, AC 115 V or AC 230 V
Safety integrity level	SIL 2	SIL 2	SIL 2	SIL 2	SIL 2
Inputs	3 x PT100/1000 Bypass Main switch 1 x 4 – 20 mA [Ex ib] 1 x 4 – 20 mA [Ex ia]	3 x PT100/1000 Bypass Main switch 1 x 4 – 20 mA [Ex ib] 1 x 4 – 20 mA [Ex ia]	3 x PT100/1000 Bypass Main switch 1 x 4 – 20 mA [Ex ib] 1 x 4 – 20 mA [Ex ia]	3 x PT100/1000 Bypass Main switch 1 x 4 – 20 mA [Ex ib] 1 x 4 – 20 mA [Ex ia]	Temperature switch Bypass Main switch
Outputs	1 x release 1 x release, 4 NO 2 x signal relays, CO 1 x inlet valve 1 x outlet valve	1 x release 1 x release, 4 NO 2 x signal relays, CO 1 x inlet valve 1 x outlet valve	1 x release 1 x release, 4 NO 2 x signal relays, CO 1 x inlet valve 1 x outlet valve	1 x release 1 x release, 4 NO 2 x signal relays, CO 1 x inlet valve 1 x outlet valve	1 x release 2 x signal relays, 1 CO, 3 NO 1 x inlet valve 1 x outlet valve
Interface	Ethernet	Ethernet	Ethernet	Ethernet	–
Valve control	Proportional or digital	Proportional or digital	Proportional or digital	Proportional or digital	Proportional or digital
Additionally required system components	Sensor box Pressure monitor Purge gas valve Valve fuse Pressure reducer	Sensor box Pressure monitor Purge gas valve Valve fuse Pressure reducer	Pressure monitor Purge gas valve Valve fuse Pressure reducer	Pressure monitor Purge gas valve Valve fuse Pressure reducer	Purge gas valve Pressure reducer
Pressure measurement	Separate 0 to 25 mbar 0 to 300 mbar	Separate 0 to 25 mbar 0 to 300 mbar	Integrated 0 to 25 mbar 0 to 300 mbar	Integrated 0 to 25 mbar 0 to 300 mbar	Integrated 0 to 25 mbar
Display	Optional	Optional	Optional	Optional	Integrated
Ambient temperature	-25 °C to +70 °C	-25 °C to +70 °C	-25 °C to +70 °C	-25 °C to +70 °C	-20 °C to +40 °C
Application	Gas, dust	Gas, dust	Gas, dust	Gas, dust	Gas
Approvals	ATEX, IECEx	ATEX, IECEx	ATEX, IECEx	ATEX, IECEx	ATEX, IECEx, EAC-Ex, Koshu, CSA
Additional components (optional)	p operator panel Polaris SMART HMI	p operator panel Polaris SMART HMI	p operator panel Polaris SMART HMI	p operator panel Polaris SMART HMI	–
Variants					Various models
Type	07-37A2-2211/x510	07-37A2-2111/x510	07-37A2-2211/x520	07-37A2-2111/x520	07-3711-12xx/xxxx
Dimensions	W x H x D 250 mm x 250 mm x 130 mm	W x H x D 250 mm x 250 mm x 130 mm	W x H x D 250 mm x 300 mm x 130 mm	W x H x D 250 mm x 300 mm x 130 mm	Depends on the version
Product status	Market launch Q1 2018	Market launch Q1 2018	Market launch Q1 2018	Market launch Q1 2018	Product discontinuation 12/2018



SILAS Control unit	SILAS <sup>pz</sup>	SILAS <sup>pz</sup>	SILAS
Power supply	DC 24 V to 44 V or AC 100 V to 240 V	DC 24 V to 44 V or AC 100 V to 240 V	DC 24 V, AC 115 V or AC 230 V
Inputs	3 x PT100/1000 Bypass Main switch	3 x PT100/1000 Bypass Main switch	Bypass jumper (internal)
Outputs	1 x release 1 x release, 4 NO 2 x signal relays, CO 1 x inlet valve	1 x release 1 x release, 4 NO 2 x signal relays, CO 1 x inlet valve	1 x release relay 1 x alarm relay 1 x inlet valve
Interface	Ethernet	Ethernet	–
Valve control	Proportional or digital	Proportional or digital	Digital
Additionally required system components	Sensor box Pressure monitor Purge gas valve Valve fuse Pressure reducer	Pressure monitor Purge gas valve Valve fuse Pressure reducer	Purge gas valve Pressure monitor Pres- sure reducer
Pressure measurement	Separate 0 to 25 mbar 0 to 300 mbar	Integrated 0 to 25 mbar 0 to 300 mbar	Integrated 0 to 25 mbar
Display	Optional	Optional	Integrated
Ambient temperature	-25 °C to +70 °C	-25 °C to +70 °C	-20 °C to +60 °C
Application	Gas, dust	Gas, dust	Gas, dust
Approvals	ATEX, IECEx	ATEX, IECEx	ATEX, IECEx, EAC-Ex, Kosha, CSA, INMETRO
Additional components (optional)	p operator panel Polaris SMART HMI	p operator panel Polaris SMART HMI	–
<b>Variants</b>			
Type	A7-37S2-2111/x510	A7-37S2-2111/x520	A7-3741-1110/x00x
Dimensions	W x H x D 250 mm x 250 mm x 130 mm	W x H x D 250 mm x 300 mm x 130 mm	W x H x D 90 mm x 120 mm x 60 mm
Product status	Market launch Q1 2018	Market launch Q1 2018	



MODEL	APEX <sup>mpc</sup>	SILAS <sup>mpc</sup>
Power supply	DC 24 V to 44 V or AC 100 V to 240 V	DC 24 V to 44 V or AC 100 V to 240 V
Inputs	3 x PT100/1000 Bypass Main switch	3 x PT100/1000 Bypass Main switch
Outputs	1 x release 1 x release, 4 NO 2 x signal relays, CO	1 x release 1 x release, 4 NO 2 x signal relays, CO
Interface	Ethernet	Ethernet
Purge gas valve	Digital purge gas valve (purging)  Proportional valve (leakage compensation)	Digital purge gas valve (purging)  Throttle valve, mechanical (leakage compensation)
Pressure measurement	Integrated 0 to 25 mbar 0 to 300 mbar	Integrated 0 to 25 mbar 0 to 300 mbar
Display	Optional	Optional
Ambient temperature	-25 °C – +60 °C (standard) -50 °C – +60 °C (high-temperature)	-25 °C – +60 °C (standard) -50 °C – +60 °C (high-temperature)
Application	Gas, dust	Gas, dust
Approvals	ATEX, IECEx	ATEX, IECEx
Additional components (optional)	p operator panel Polaris SMART HMI	p operator panel Polaris SMART HMI
<b>Variants</b>		
Type	07-37A2-2211/xM5x	07-37S2-2111/xM5x
Dimensions	W x H x D 550 mm x 400 mm x 250 mm	W x H x D 550 mm x 400 mm x 250 mm
Product status	Market launch Q1 2018	Market launch Q1 2018



APEX for analysis systems (containment systems)

APEX (separate unit)



MODEL	APEX <sup>cf</sup>	APEX <sup>hp</sup>	APEX 2003.SI	APEX <sup>mv</sup> /SILAS <sup>mv</sup>	APEX 2003.MV
	Continuous purging cf = continuous flow	High-pressure system dp = dynamic pressure		Separate equipment mv = with valve	Separate equipment mv = with valve
Power supply	DC 24 V to 44 V or AC 100 V to 240 V	DC 24 V to 44 V or AC 100 V to 240 V	DC 24 V, AC 115 V or AC 230 V	DC 24 V to 44 V or AC 100 V to 240 V	DC 24 V, AC 115 V or 230 V AC
Safety integrity level	SIL 2	SIL 2	SIL 2	SIL 2	SIL 2
Inputs	3 x PT100/1000 Bypass Main switch 1 x 4 to 20 mA [Ex ib] 1 x 4 to 20 mA [Ex ia]	3 x PT100/1000 Bypass Main switch 1 x 4 to 20 mA [Ex ib] 1 x 4 to 20 mA [Ex ia]	Temperature switch Bypass Main switch	APEX: 3 x PT100/1000 Bypass Main switch 1 x 4 to 20 mA [Ex ib] 1 x 4 to 20 mA [Ex ia] SILAS: 3 x PT100/1000 Bypass Main switch	Temperature switch Bypass Main switch
Outputs	1 x release 1 x release, 4 NO 2 x signal relays, CO	1 x release 1 x release, 4 NO 2 x signal relays, CO	1 x release 2 x signal relays, 1 CO, 3 NO	1 x release 1 x release, 4 NO 2 x signal relays, CO	1 x release 2 x signal relays, 1 CO, 3 NO
Interface	Ethernet	Ethernet	–	Ethernet	–
Valve control	Proportional, integrated	Proportional, integrated	Proportional or digital	Proportional, integrated	Proportional, integrated
Pressure measurement	Integrated 0 – 25 mbar	Integrated 0 – 300 mbar	Integrated 0 – 25 mbar	Integrated 0 – 25 mbar 0 – 300 mbar	Integrated 0 – 25 mbar
Display	Optional	Optional	Integrated	Optional	Integrated
Ambient temperature	-25 °C to +70 °C	-25 °C to +70 °C	-20 °C to +40 °C	-25 °C to +70 °C	-20 °C to +40 °C
Application	Containment system Gas, dust With constant flow rate during the operating phase Separate unit for p volume of up to 70 litres	Containment system Gas, dust With dynamic $\Delta p$ regulation Separate unit for p volume of up to 70 litres	Containment system Gas	Gas, dust Separate unit for p volume of up to 70 litres	Gas Separate unit for p volume of up to 70 litres
Approvals	ATEX, IECEx	ATEX, IECEx	ATEX, EAC-Ex, KTL, CSA	ATEX, IECEx	ATEX, EAC-Ex, KTL, CSA
Additional components (optional)	p operator panel Polaris SMART HMI	p operator panel Polaris SMART HMI	–	p operator panel Polaris SMART HMI	–
Type	07-37A2-2211/x725	07-37A2-2211/x720	07-3711-x2x3/xxxx	07-37A2-2211/x730	A7-37S2-2111/x730
Dimensions	W x H x D 400 mm x 300 mm x 130 mm	W x H x D 400 mm x 300 mm x 130 mm	W x H x D 400 mm x 250 mm x 120 mm	W x H x D 400 mm x 300 mm x 130 mm	W x H x D 255 mm x 250 mm x 120 mm
Product status	Market launch Q1 2018	Market launch Q1 2018	Product discontinuation 12/2018	Market launch Q1 2018	Product discontinuation 12/2018



- Black box system
- Automatic calculation of the purge time
- WEB interface
- 3 x PT100/1000 inputs
- Modular design
- Safety-related control system
- Separate purge gas input and output

The APEX<sup>px</sup> Ex p control unit controls and monitors the pre-purge and operating phase of pressurised enclosure equipment protected in accordance with ignition protection type px. Digital or proportional purge gas valves can be used as purge gas valves. The parameters can be set using the integrated WEB interface or the optionally available p operator panel. The APEX<sup>px</sup> features two release relays; one which is energised and one which has floating contacts. Two signal relays with one changeover contact each are additionally available. Three PT100/1000 inputs are available to monitor the temperature of the Ex p-protected equipment. Up to three switch values can be assigned to them. Model I comes complete with separate pressure measurement.

The following components are additionally required to set up a complete control system:

- Sensor box<sup>px</sup>
- Pressure monitor
- Purge gas valve, proportional or digital
- Valve fuse
- Pressure reducer
- There is the option to connect a p operator panel

**Explosion protection**

ATEX marking	Ⓜ II 2(1)G Ex eb mb ib [ib pxb] [ja Ga] IIC T6, T5, T4 Gb Ⓜ II 2(1)D Ex tb [ib pxb] [ja Da] IIIC T80 °C, T95 °C, T130 °C Db
Certification	BVS 17 ATEX...
IECEX marking	Ex eb mb ib [ib pxb] [ja Ga] IIC T6, T5, T4 Gb Ex tb [ib pxb] [ja Da] IIIC T80 °C, T95 °C, T130 °C Db
Certification	IECEX BVS 17. ...
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	In storage -20 °C to +60 °C During operation -25 °C to +70 °C

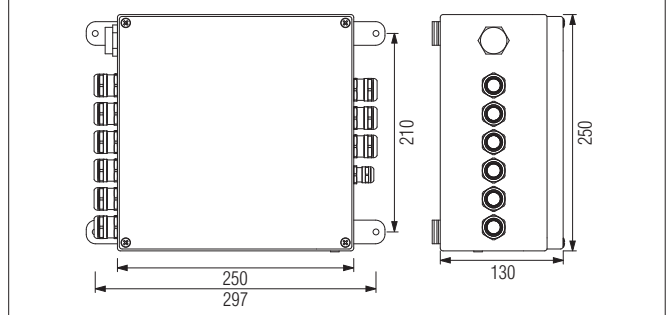
**Technical data**

Directives	Directive 2014/30/EU Directive 2014/34/EU
Structure	Ex e protective housing with integrated Ex mb/ib-protected p control system
Housing material	V4A stainless steel
IP rating	IP 66
Terminals	Ex e: 0.08 to 2.5 mm <sup>2</sup> , fine-wire, tension spring Ex i: 0.2 to 1.5 mm <sup>2</sup> , fine-wire, push-in
Pressure measurement range	0 to 25 mbar (standard) or 0 to 300 mbar (on request)
Pre-purge time	0 to 120 min
Weight	5.8 kg
Safety integrity level	SIL 2

**Electrical data**

Supply voltage	24 V DC to 44 V DC, ±10% or 100 V AC to 230 V AC, ±10%
Power consumption	Pv = approx. 19 watts
Normally open contacts	K1 (SIL) release, max. 5 A (AC1) K2 (SIL) release, floating, max. 230 V AC/4.5 A (AC1) K3 and K4 signal relays, floating, changeover contact, max. 5 A (AC1)
Inputs	3 x PT100/1000 1 x bypass 1 x main switch 1 x 4 to 20 mA [ib] – pressure sensor 1 x 4 to 20 mA [ja] – pressure sensor
Vibration	0.7 g/1 mm, 5 Hz to 500 Hz in all three axes
Shock	15 g/11 ms in all three axes

**Dimensions**



**Ordering information**

	Code no.
24 V DC to 44 V DC, ±10 %	1
100 V AC to 230 V AC, ±10 %	2

Complete order no. 07-37A2-2211/  510

Please enter code number.

The accessories and order information can be found on the accessory pages. Technical data subject to change without notice.



- Black box system
- Automatic calculation of the purge time
- WEB interface
- 3 x PT100/1000 inputs
- Modular design
- Safety-related control system
- Separate purge gas input and output

The APEX<sup>px</sup> Ex p control unit controls and monitors the pre-purge and operating phase of pressurised enclosure equipment protected in accordance with ignition protection type px. Digital or proportional purge gas valves can be used as purge gas valves. The parameters can be set using the integrated WEB interface or the optionally available p operator panel. The APEX<sup>px</sup> features two release relays; one which is energised and one which has floating contacts. Two signal relays with one changeover contact each are additionally available. Three PT100/1000 inputs are available to monitor the temperature of the Ex p-protected equipment. Up to three switch values can be assigned to them. Model II comes complete with integrated pressure measurement. The following components are additionally required to set up a complete control system:

- Pressure monitor
- Purge gas valve, proportional or digital
- Valve fuse
- Pressure reducer
- There is the option to connect a p operator panel

**Explosion protection**

ATEX marking	Ⓜ II 2(1)G Ex eb mb ib [ib pxb] [ia Ga] IIC T4 Gb Ⓜ III 2(1)D Ex tb [ib pxb] [ia Da] IIIC T80 °C, T95 °C, T130 °C Db
Certification	BVS 17 ATEX...
IECEX marking	Ex eb mb ib [ib pxb] [ia Ga] IIC T4 Gb Ex tb [ib pxb] [ia Da] IIIC T80 °C, T95 °C, T130 °C Db
Certification	IECEX BVS 17. ...
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	In storage -20 °C to +60 °C During operation -25 °C to +70 °C

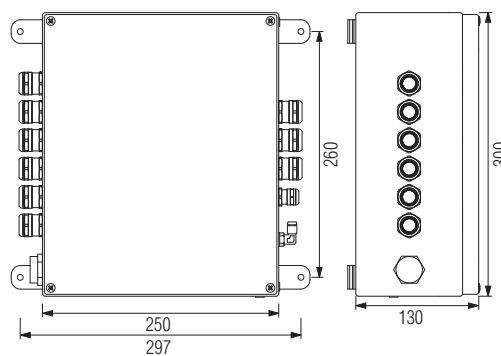
**Technical data**

Directives	Directive 2014/30/EU Directive 2014/34/EU
Structure	Ex e protective housing with integrated Ex mb/lb-protected p control system
Housing material	V4A stainless steel
IP rating	IP 66
Terminals	Ex e: 0.08 to 2.5 mm <sup>2</sup> , fine-wire, tension spring Ex i: 0.2 to 1.5 mm <sup>2</sup> , fine-wire, push-in
Pneumatic connections	2 x hoses, 4 mm dia.
Pressure measurement range	0 to 25 mbar (standard) or 0 to 300 mbar (on request)
Pre-purge time	0 to 120 min
Weight	6.8 kg
Safety integrity level	SIL 2

**Electrical data**

Supply voltage	24 V DC to 44 V DC, ±10 % or 100 V AC to 230 V AC, ±10 %
Power consumption	Pv = approx. 19 watts
Normally open contacts	K1 (SIL) release, max. 5 A (AC1) K2 (SIL) release, floating, max. 230 V AC/4.5 A (AC1) K3 and K4 signal relays, floating, changeover contact, max. 5 A (AC1)
Inputs	3 x PT100/1000 1 x bypass 1 x main switch 1 x 4 to 20 mA [ib] – pressure sensor 1 x 4 to 20 mA [ia] – pressure sensor

**Dimensions**



**Ordering information**

	Code no.
24 V DC to 44 V DC, ±10 %	1
100 V AC to 230 V AC, ±10 %	2

Complete order no. 07-37A2-2211/  520

Please enter code number.

The accessories and order information can be found on the accessory pages. Technical data subject to change without notice.



- Black box system
- Automatic calculation of the purge time
- WEB interface
- 3 x PT100/1000 inputs
- Modular design
- Safety-related control system
- Separate purge gas input and output

The APEX<sup>py</sup> Ex p control unit controls and monitors the pre-purge and operating phase of pressurised enclosure equipment protected in accordance with ignition protection type py. Digital or proportional purge gas valves can be used as purge gas valves. The parameters can be set using the integrated WEB interface or the optionally available p operator panel. The APEX<sup>py</sup> features two release relays; one which is energised and one which has floating contacts. Two signal relays with one changeover contact each are additionally available. Three PT100/1000 inputs are available to monitor the temperature of the Ex p-protected equipment. Up to three switch values can be assigned to them. Model I comes complete with separate pressure measurement. The following components are additionally required to set up a complete control system:

- Sensor box<sup>PK</sup>
- Pressure monitor
- Purge gas valve, proportional or digital
- Valve fuse
- Pressure reducer
- There is the option to connect a p operator panel

**Explosion protection**

ATEX marking	Ⓜ II 2(1)G Ex eb mb ib [ib pyb] [ia Ga] IIC T6, T5, T4 Gb Ⓜ II 2(1)D Ex tb [ib pyb] [ia Da] IIIC T80 °C, T95 °C, T130 °C Db
Certification	BVS 17 ATEX...
IECEX marking	Ex eb mb ib [ib pyb] [ia Ga] IIC T6, T5, T4 Gb Ex tb [ib pyb] [ia Da] IIIC T80 °C, T95 °C, T130 °C Db
Certification	IECEX BVS 17. ...
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	In storage -20 °C to +60 °C During operation -25 °C to +70 °C

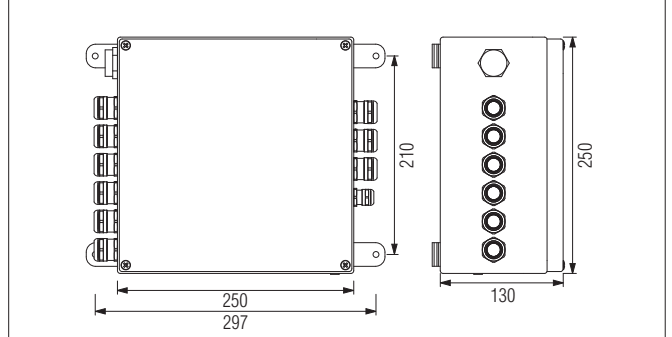
**Technical data**

Directives	Directive 2014/30/EU Directive 2014/34/EU
Structure	Ex e protective housing with integrated Ex mb/ib-protected p control system
Housing material	V4A stainless steel
IP rating	IP 66
Terminals	Ex e: 0.08 to 2.5 mm <sup>2</sup> , fine-wire, tension spring Ex i: 0.2 to 1.5 mm <sup>2</sup> , fine-wire, push-in
Pressure measurement range	0 to 25 mbar (standard) or 0 to 300 mbar (on request)
Pre-purge time	0 to 120 min
Weight	5.8 kg
Safety integrity level	SIL 2

**Electrical data**

Supply voltage	24 V DC to 44 V DC, ±10 % or 100 V AC to 230 V AC, ±10 %
Power consumption	P <sub>v</sub> = approx. 19 watts
Normally open contacts	K1 (SIL) release, max. 5 A (AC1) K2 (SIL) release, floating, max. 230 V AC/4.5 A (AC1) K3 and K4 signal relays, floating, changeover contact, max. 5 A (AC1)
Inputs	3 x PT100/1000 1 x bypass 1 x main switch 1 x 4 to 20 mA [ib] – pressure sensor 1 x 4 to 20 mA [ia] – pressure sensor
Vibration	0.7 g/1 mm, 5 Hz to 500 Hz in all three axes
Shock	15 g/11 ms in all three axes

**Dimensions**



**Ordering information**

	Code no.
24 V DC to 44 V DC, ±10 %	1
100 V AC to 230 V AC, ±10 %	2

Complete order no. 07-37A2-2111/  510

Please enter code number.

The accessories and order information can be found on the accessory pages. Technical data subject to change without notice.



- Pressure monitor
- Purge gas valve, proportional or digital
- Valve fuse
- Pressure reducer
- There is the option to connect a p operator panel
- Separate purge gas input and output

The APEX<sup>py</sup> Ex p control unit controls and monitors the pre-purge and operating phase of pressurised enclosure equipment protected in accordance with ignition protection type py. Digital or proportional purge gas valves can be used as purge gas valves. The parameters can be set using the integrated WEB interface or the optionally available p operator panel. The APEX<sup>py</sup> features two release relays; one which is energised and one which has floating contacts. Two signal relays with one changeover contact each are additionally available. Three PT100/1000 inputs are available to monitor the temperature of the Ex p-protected equipment. Up to three switch values can be assigned to them. Model II comes complete with integrated pressure measurement. The following components are additionally required to set up a complete control system:

- Pressure monitor
- Purge gas valve, proportional or digital
- Valve fuse
- Pressure reducer
- There is the option to connect a p operator panel

**Explosion protection**

ATEX marking	Ⓜ II 2(1)G Ex eb mb ib [ib pyb] [ia Ga] IIC T6, T5, T4 Gb Ⓜ II 2(1)D Ex tb [ib pyb] [ia Da] IIIC 80 °C, T95 °C, T130 °C Db
Certification	BVS 17 ATEX...
IECEX marking	Ex eb mb ib [ib pyb] [ia Ga] IIC T6, T5, T4 Gb Ex tb [ib pyb] [ia Da] IIIC T80 °C, T95 °C, T130 °C Db
Certification	IECEX BVS 17. ...
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	In storage -20 °C to +60 °C During operation -25 °C to +70 °C

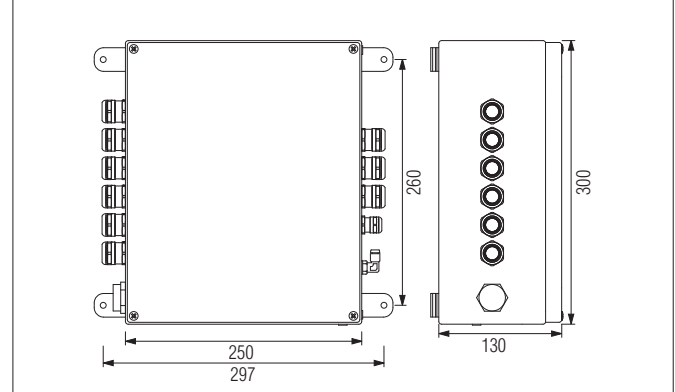
**Technical data**

Directives	Directive 2014/30/EU Directive 2014/34/EU
Structure	Ex e protective housing with integrated Ex mb/lb-protected p control system
Housing material	V4A stainless steel
IP rating	IP 66
Terminals	Ex e: 0.08 to 2.5 mm <sup>2</sup> , fine-wire, tension spring Ex i: 0.2 to 1.5 mm <sup>2</sup> , fine-wire, push-in
Pneumatic connections	2 x hoses, 4 mm dia.
Pressure measurement range	0 to 25 mbar (standard) or 0 to 300 mbar (on request)
Pre-purge time	0 to 120 min
Weight	6.8 kg
Safety integrity level	SIL 2

**Electrical data**

Supply voltage	24 V DC to 44 V DC, ±10 % or 100 V AC to 230 V AC, ±10 %
Power consumption	Pv = approx. 19 watts
Normally open contacts	K1 (SIL) release, max. 5 A (AC1) K2 (SIL) release, floating, max. 230 V AC/4.5 A (AC1) K3 and K4 signal relays, floating, changeover contact, max. 5 A (AC1)
Inputs	3 x PT100/1000 1 x bypass 1 x main switch 1 x 4 to 20 mA [ib] – pressure sensor 1 x 4 to 20 mA [ia] – pressure sensor

**Dimensions**



**Ordering information**

	Code no.
24 V DC to 44 V DC, ±10 %	1
100 V AC to 230 V AC, ±10 %	2

Complete oder no. 07-37A2-2111/ □ 520

Please enter code number.

The accessories and order information can be found on the accessory pages. Technical data subject to change without notice.



- Four floating contacts
- Three-line LCD
- LED status indicator
- Modular design
- Safety-related control system
- Separate purge gas input and output
- Separate display

The APEX 2003.00I Ex p control unit controls and monitors the pre-purge and operating phase of pressurised enclosure equipment protected in accordance with ignition protection type px. Digital or proportional purge gas valves can be used as purge gas valves. The parameters are adjusted using rotary switches and keys. The control unit features two programmable relays and one non-floating release contact. The control unit is designed for internal installation in p-protected equipment, and the following components are required to set up a complete control system:

- Sensor module
- Pressure monitor
- Purge gas valve, proportional or digital, depending on the version
- Pressure reducer

**Explosion protection**

ATEX marking	II 2(1)G Ex d e ib [ja Ga px] IIC T6 Gb
Certification	DMT 99 ATEX E 082
IECEX marking	Ex de ib [ja Ga pxb] IIC T6 Gb
Certification	IECEX BVS 13.0039
Other approvals and certificates, see www.bartec.de	
Ambient temperature	During operation -20 °C to +40 °C

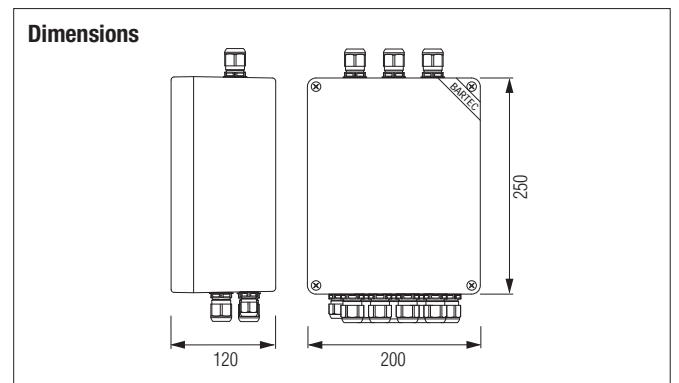
**Technical data**

Directives	Directive 2014/30/EU Directive 94/9/EC
Structure	Ex e protective housing
Housing material	Fibreglass-reinforced polyester
IP rating	IP 65
Terminals	2.5 mm <sup>2</sup> , fine-wire
Pressure measurement range	0 to 25 mbar (standard)
Pre-purge time	0 to 99 min, 5 sec dropout delay
Weight	3.8 kg
Safety integrity level	SIL 2

**Electrical data**

Supply voltage	230 V AC (115 V AC), ±10 % or 24 V DC, ±10 %
Power consumption	Pv = 8 watts
Normally open contacts	K2/3, 5 A when cos φ = 1, K4 and K54, floating

**Dimensions**



**Ordering information**

		Code no.
9 W version	230 V AC	1
	115 V AC	2
	24 V DC	4

Complete oder no. 07-3711-1200/  010  
Please insert code number.

**Ordering information**

		Code no.
15 W version	230 V	1
	115 V	2

Complete oder no. 07-3711-1200/  099  
Please insert code number.  
Technical data subject to change without notice.



- Four floating contacts
- Three-line LCD
- LED status indicator
- Modular design
- Safety-related control system

The APEX 2003.00 control unit controls and monitors the pre-purge and operating phase of pressurised enclosure housings. Digital or proportional purge gas valves can be used to input purge gas. The parameters are adjusted using rotary switches and keys. There is the option to transmit the parameters via an RS485 interface. The control unit features two programmable relays and one non-floating release contact.

**Explosion protection**

ATEX marking	⊕ II 2(1)G Ex d e ib [ja Ga px] IIC T4 Gb
Certification	DMT 99 ATEX E 082
IECEX marking	Ex d e ib [ja Ga px] IIC T4 Gb
Certification	IIExEx BVS 13.0039
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-20 °C to +40 °C

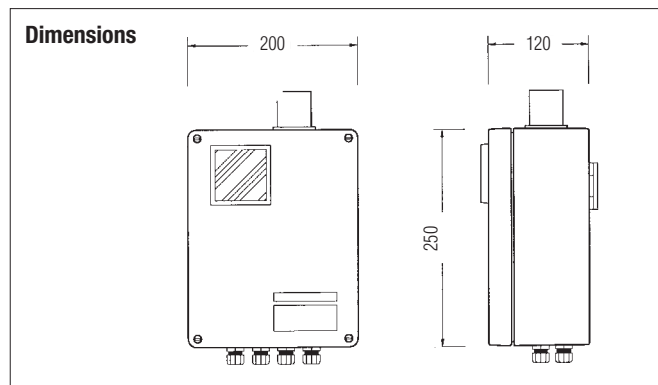
**Technical data**

Directives	Directive 2014/30/EU Directive 94/9/EC
Structure	Ex e protective housing with viewing pane in the cover
Housing material	Fibreglass-reinforced polyester
IP rating	IP 65
Terminals	2.5 mm <sup>2</sup> , fine-wire
Pressure sensors	MIN. A/B = 0 to 25 mbar MAX. = 0 to 25 mbar DIFF. A/B = 0 to 25 mbar
Pre-purge time	0 to 99 min; 5 sec dropout delay
Weight	4.3 kg
Safety integrity level	SIL 2

**Electrical data**

Supply voltage	230 V AC (115 V AC) ±10 % 24 V DC ±10 %
Power consumption	$P_v = 15 \text{ W}/230 \text{ V}$
Normally open contacts	K 2/3, 5 A when $\cos \phi = 1$ K 4 and K 5; floating
Temperature switch value (optional)	0 °C to +80 °C
Bypass key switch (optional)	

**Dimensions**



**Ordering information**

9 W version	Orifice plate	Code no.	Version	Code no.
	12 mm	4	230 V AC	1
	15 mm	5	115 V AC	2
	18 mm	6	24 V DC	4

Complete oder no. 07-3711-121□ / □ 000  
Please insert code number.

**Ordering information**

15 W version	Orifice plate	Code no.	Version	Code no.
	12 mm	4	230 V	1
	15 mm	5	115 V	2
	18 mm	6		

Complete oder no. 07-3711-121□ / □ 082  
Please insert code number.

Technical data subject to change without notice.



- Four floating contacts
- Three-line LCD
- LED status indicator
- Modular design
- Safety-related control system

The APEX 2003.002x control unit controls and monitors the pre-purge and operating phase of pressurised enclosure housings. Digital or proportional purge gas valves can be used to input purge gas. The parameters are adjusted using rotary switches and keys. There is the option to transmit the parameters via an RS485 interface. The control unit features two programmable relays and one non-floating release contact.

**Explosion protection**

ATEX marking	⊕ II 2(1)G Ex d e ib [ja Ga px] IIC T4 Gb
Certification	DMT 99 ATEX E 082
IECEX marking	Ex d e ib [ja Ga px] IIC T4 Gb
Certification	IECEX BVS 13.0039
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-20 °C to +40 °C

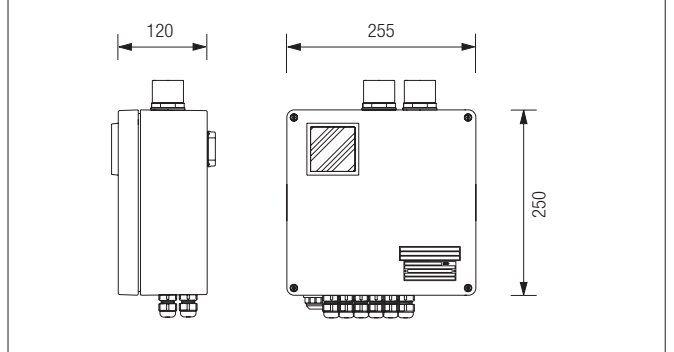
**Technical data**

Directives	Directive 2014/30/EU Directive 94/9/EC
Structure	Ex e protective housing with viewing pane in the cover
Housing material	Fibreglass-reinforced polyester
IP rating	IP 65
Terminals	2.5 mm <sup>2</sup> , fine-wire
Pressure sensors	MIN. A/B = 0 to 25 mbar MAX. = 0 to 25 mbar DIFF. A/B = 0 to 25 mbar
Pre-purge time	0 to 99 min; 5 sec dropout delay
Weight	7.5 kg
Safety integrity level	SIL 2

**Electrical data**

Supply voltage	230 V AC (115 V AC) ±10 % 24 V DC ±10 %
Power consumption	P <sub>v</sub> = 15 W/230 V
Normally open contacts	K 2/3, 5 A when cos φ = 1 K 4 and K 5; floating
Temperature switch value (optional)	0 °C to +80 °C
Bypass key switch (optional)	

**Dimensions**



**Ordering information**

		Code no.
9 W version	230 V AC	1
	115 V AC	2
	24 V DC	4

Complete oder no. 07-3711-1216/  017  
Please insert code number.

**Ordering information**

		Code no.
15 W version	230 V AC	1
	115 V AC	2

Complete oder no. 07-3711-1216/  107  
Please insert code number.  
Technical data subject to change without notice.



- Black box system
- Automatic calculation of the purge time
- Adjustable continuous flow, automatically adjustable
- WEB interface
- 3 x PT100/1000 inputs
- Safety-related control system

### Explosion protection

ATEX marking	Ⓜ II 2(1)G Ex eb mb ib [ib pxb] [ja Ga] IIC T4 Gb Ⓜ II 2(1)D Ex tb [ib pxb] [ja Da] IIIC T80 °C, T95 °C, T130 °C Db
Certification	BVS 17 ATEX...
IECEX marking	Ex eb mb ib [ib pxb] [ja Ga] IIC T4 Gb Ex tb [ib pxb] [ja Da] IIIC T80 °C, T95 °C, T130 °C Db
Certification	IECEX BVS 17. ...
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	In storage -20 °C to +60 °C During operation -25 °C to +70 °C

### Technical data

Directives	Directive 2014/30/EU Directive 2014/34/EU
Structure	Ex e protective housing with integrated Ex mb/ib-protected p control system
Housing material	V4A stainless steel
IP rating	IP 66
Terminals	Ex e: 0.08 to 2.5 mm <sup>2</sup> , fine-wire, tension spring Ex i: 0.2 to 1.5 mm <sup>2</sup> , fine-wire, push-in
Pneumatic connections	2 x pipe connections, 10 mm dia.
Pressure measurement range	0 to 25 mbar
Continuous purging	Adjustable, 0 to 20 l/min
Orifice plate size	8 mm
Max. flow rate	6000 l/h
Pre-purge time	0 to 120 min
Weight	6.8 kg
Safety integrity level	SIL 2

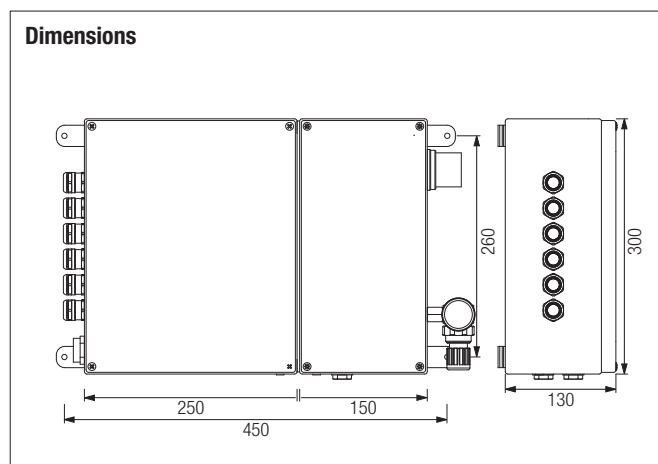
The APEX<sup>cf</sup> Ex p control unit controls and monitors the pre-purge and operating phase of pressurised enclosure equipment with integrated containment, protected in accordance with ignition protection type px, and additionally features an adjustable continuous flow during the operating phase. The parameters can be set using the integrated WEB interface or the optionally available p operator panel. The APEX<sup>cf</sup> features two release relays; one which is energised and one which has floating contacts. Two signal relays with one changeover contact each are additionally available. Three PT100/1000 inputs are available to monitor the temperature of the Ex p-protected equipment. Up to three switch values can be assigned to them. The design of the APEX<sup>cf</sup> means that all components required for the pressurised enclosure are located in the control unit. The equipment to be monitored is connected to the Ex p control unit by means of a pipe, which allows a maximum purge volume of 70 litres, maintains overpressure and performs constant purging with a defined volume of purge gas. The following components can also be connected:

- There is the option to connect a p operator panel

### Electrical data

Supply voltage	24 V DC to 44 V DC, ±10 % or 100 V AC to 230 V AC, ±10 %
Power consumption	Pv = approx. 19 watts
Normally open contacts	K1 (SIL) release, max. 5 A (AC1) K2 (SIL) release, floating, max. 230 V AC/4.5 A (AC1) K3 and K4 signal relays, floating, changeover contact, max. 5 A (AC1)
Inputs	3 x PT100/1000 1 x bypass 1 x main switch 1 x 4 to 20 mA [ib] – pressure sensor 1 x 4 to 20 mA [ia] – pressure sensor

### Dimensions



### Ordering information

	Code no.
24 V DC to 44 V DC, ±10 %	1
100 V AC to 230 V AC, ±10 %	2

Complete order no. 07-37A2-2211/□ 725

Please insert code number.

The accessories and order information can be found on the accessory pages. Technical data subject to change without notice.



- Four floating contacts
- Three-line LCD
- LED status indicator
- Safety-related control system
- Integrated multiport valves for purge gas inlet

The APEX 2003.SI control unit controls and monitors the pre-purge and operating phase of Ex p-protected analysis systems with integrated containment.

**Additional function:**

During the pre-purge phase, the maximum purge gas flow rate is 4100 NL/h. During the operating phase, continuous purging at a rate of 5 litres/minute is set via a bypass. The control unit features two freely programmable relays and one non-floating release contact.

**Explosion protection**

ATEX marking	Ex II 2(1)G 2(1) G Ex d e ib [ja Ga px] IIC T4 Gb
Certification	DMT 99 ATEX E 082
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-20 °C to +40 °C

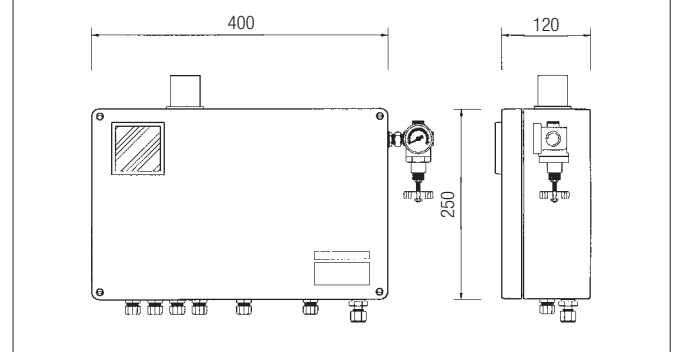
**Technical data**

Directives	Directive 2014/30/EU Directive 94/9/EC
Structure	Ex e protective housing
Housing material	Fibreglass-reinforced polyester
IP rating	IP 65
Terminals	2.5 mm <sup>2</sup> , fine-wire
Purge gas connection	10 mm dia.
Pressure measurement range	0 to 25 mbar (standard)
Pre-purge time	0 to 99 min; 5 sec dropout delay
Weight	11 kg
Safety integrity level	SIL 2

**Electrical data**

Supply voltage	230 V AC (115 V AC), ±10 % or 24 V DC, ±10 %
Power consumption	P <sub>v</sub> = 15 W
Normally open contacts	K 2/3, 5 A when cos φ = 1 K 4 and K 5; floating

**Dimensions**



**Ordering information**

Version		Code no.
	230 V AC	1
	115 V AC	2

Complete order no. 07-3711-4213/  001  
Please insert code number.  
Technical data subject to change without notice.



- Black box system
- Automatic calculation of the purge time
- Adjustable dynamic pressure feed
- Option to connect separate pressure sensors
- WEB interface
- 3 x PT100/1000 inputs
- Safety-related control system

### Explosion protection

ATEX marking	Ⓜ II 2(1)G Ex eb mb ib [ib pxb] [ia Ga] IIC T4 Gb Ⓜ II 2(1)D Ex tb [ib pxb] [ia Da] IIIC T80 °C, T95 °C, T130 °C Db
Certification	BVS 17 ATEX...
IECEX marking	Ex eb mb ib [ib pxb] [ia Ga] IIC T4 Gb Ex tb [ib pxb] [ia Da] IIIC T80 °C, T95 °C, T130 °C Db
Certification	IECEX BVS 17. ...
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	In storage -20 °C to +60 °C During operation -25 °C to +70 °C

### Technical data

Directives	Directive 2014/30/EU Directive 2014/34/EU
Structure	Ex e protective housing with integrated Ex mb/ib-protected p control system
Housing material	V4A stainless steel
IP rating	IP 66
Terminals	Ex e: 0.08 to 2.5 mm <sup>2</sup> , fine-wire, tension spring Ex i: 0.2 to 1.5 mm <sup>2</sup> , fine-wire, push-in
Pneumatic connections	2 x pipe connections, Ø 10 mm
Pressure measurement range	0 to 300 mbar
Adjustable differential pressure	Adjustable, 0 to 300 mbar
Orifice plate size	8 mm
Max. flow rate	6000 l/h
Pre-purge time	0 to 120 min
Weight	6.8 kg
Safety integrity level	SIL 2

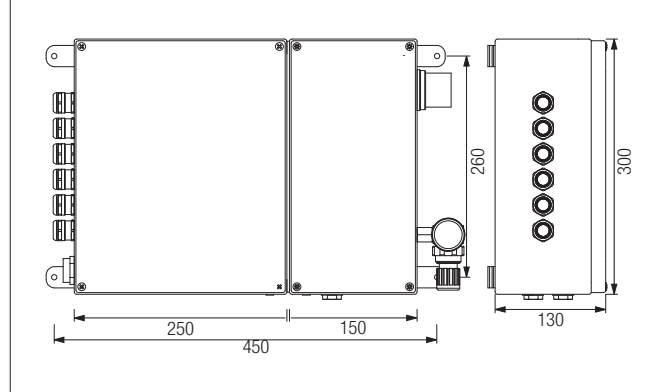
The APEX<sup>dp</sup> Ex p control unit controls and monitors the pre-purge and operating phase of pressurised enclosure equipment with integrated containment, which is protected in accordance with ignition protection type px, and additionally maintains the internal pressure of the protected equipment by  $\Delta p$  regulation during the operating phase. Connecting additional pressure sensors allows the pressure inside the housing to be regulated to a higher value than that of the measurement gas using a proportional valve. The parameters can be set using the integrated WEB interface or the optionally available p operator panel. The APEX<sup>dp</sup> features two release relays; one which is energised and one which has floating contacts. Two signal relays with one changeover contact each are additionally available. Three PT100/1000 inputs are available to monitor the temperature of the Ex p-protected equipment. Up to three switch values can be assigned to them. The design of the APEX<sup>dp</sup> means that all components required for the pressurised enclosure are located in the control unit. The equipment to be monitored is connected to the Ex p control unit by means of a pipe, which allows a maximum purge volume of 70 litres. The following components can also be connected:

- There is the option to connect a p operator panel
- Pressure sensors

### Electrical data

Supply voltage	24 V DC to 44 V DC, $\pm 10$ % or 100 V AC to 230 V AC, $\pm 10$ %
Power consumption	Pv = approx. 19 watts
Normally open contacts	K1 (SIL) release, max. 5 A (AC1) K2 (SIL) release, floating, max. 230 V AC/4.5 A (AC1) K3 and K4 signal relays, floating, changeover contact, max. 5 A (AC1)
Inputs	3 x PT100/1000 1 x bypass 1 x main switch 1 x 4 – 20 mA [ib] – pressure sensor 1 x 4 – 20 mA [ia] – pressure sensor

### Dimensions



### Ordering information

Version	Code no.
24 V DC to 44 V DC, $\pm 10$ %	1
100 V AC to 230 V AC, $\pm 10$ %	2

Complete order no. 07-37A2-2211/  720

Please enter code number.

The accessories and order information can be found on the accessory pages. Technical data subject to change without notice.



- Four floating contacts
- Three-line LCD
- LED status indicator
- Modular design
- Safety-related control system
- Integrated multiport valves for purge gas inlet and outlet
- Option to connect separate pressure sensors

The APEX 2003.SI control unit controls and monitors the pre-purge and operating phase of Ex p-protected analysis systems with integrated containment.

**Additional function:**

Connecting additional pressure sensors allows the pressure inside the housing to be regulated to a higher value than that of the measurement gas using a proportional valve. During the pre-purge phase, the maximum purge gas flow rate is 4100 NL/h at a pressure of 50 mbar inside the housing. The control unit features two freely programmable relays and one non-floating release contact.

**Explosion protection**

ATEX marking	Ex II 2(1)G Ex d e ib [ia Ga px] IIC T4 Gb
Certification	DMT 99 ATEX E 082
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-20 °C to +40 °C

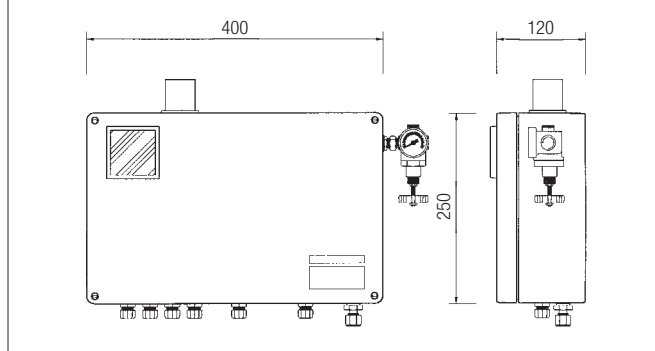
**Technical data**

Directives	Directive 2014/30/EU Directive 94/9/EC
Structure	Ex e protective housing with viewing pane in the cover
Housing material	Fibreglass-reinforced polyester
IP rating	IP 65
Terminals	2.5 mm <sup>2</sup> , fine-wire
Purge gas connection	10 mm dia.
Pressure sensors	MIN. A/B = 0 to 300 mbar MAX. = 0 to 300 mbar DIFF. A/B = 0 to 25 mbar
Pre-purge time	0 to 99 min; 5 sec dropout delay
Weight	11 kg
Safety integrity level	SIL 2

**Electrical data**

Supply voltage	230 V AC (115 V AC) ±10 %
Power consumption	P <sub>v</sub> = 21 W/230 V
Normally open contacts	K 2/3, 5 A when cos φ = 1 K 4 and K 5; floating
Temperature switch value (optional)	0 °C to +80 °C
Bypass key switch (optional)	

**Dimensions**



**Ordering information**

Version		Code no.
	230 V AC	1
	115 V AC	2

Complete order no. 07-3711-3223/  003  
 Please insert code number.  
 Technical data subject to change without notice.



- Black box system
- Automatic calculation of the purge time
- WEB interface
- 3 x PT100/1000 inputs
- Safety-related control system

**Explosion protection**

ATEX marking	Ⓜ II 2(1)G Ex eb mb ib [ib pxb] [ja Ga] T4 Gb Ⓜ II 2(1)D Ex tb [ib pxb] [ja Da] IIIC T80 °C, T95 °C, T130 °C Db
Certification	BVS 17 ATEX...
IECEX marking	Ex eb mb ib [ib pxb] [ja Ga] IIC T4 Gb Ex tb [ib pxb] [ja Da] IIIC T80 °C, T95 °C, T130 °C Db
Certification	IECEX BVS 17. ...
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	In storage -20 °C to +60 °C During operation -25 °C to +70 °C

**Technical data**

Directives	Directive 2014/30/EU Directive 2014/34/EU
Structure	Ex e protective housing with integrated Ex mb/ib-protected p control system
Housing material	V4A stainless steel
IP rating	IP 66
Terminals	Ex e: 0.08 to 2.5 mm <sup>2</sup> , fine-wire, tension spring Ex i: 0.2 to 1.5 mm <sup>2</sup> , fine-wire, push-in
Pneumatic connections	2 x pipe connections, 10 mm dia.
Pressure measurement range	0 to 25 mbar
Orifice plate size	8 mm
Max. flow rate	6000 l/h
Pre-purge time	0 to 120 min
Weight	6.8 kg
Safety integrity level	SIL 2

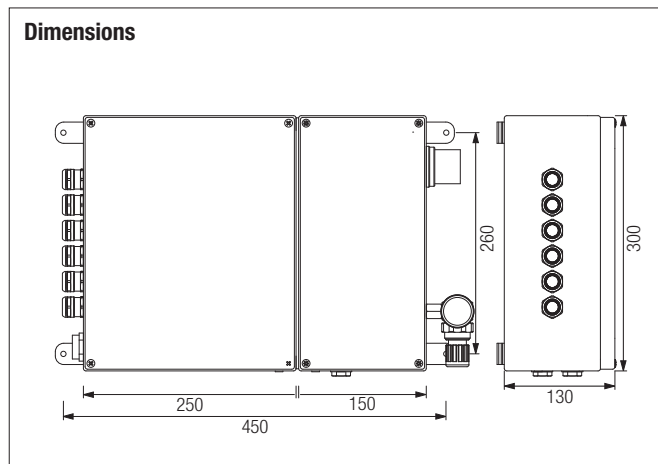
The APEX<sup>mv</sup> Ex p control unit controls and monitors the pre-purge and operating phase of small, separate, pressurised enclosure equipment protected in accordance with ignition protection type px. The parameters can be set using the integrated WEB interface or the optionally available p operator panel. The APEX<sup>mv</sup> features two release relays; one which is energised and one which has floating contacts. Two signal relays with one changeover contact each are additionally available. Three PT100/1000 inputs are available to monitor the temperature of the Ex p-protected equipment. Up to three switch values can be assigned to them. The design of the APEX<sup>mv</sup> means that all components required for the pressurised enclosure are located in the control unit. The equipment to be monitored is connected to the Ex p control unit by means of a pipe, which allows a maximum purge volume of 70 litres. The following components can also be connected:

- There is the option to connect a p operator panel
- Pressure sensors

**Electrical data**

Supply voltage	24 V DC to 44 V DC, ±10 % or 100 V AC to 230 V AC, ±10 %
Power consumption	Pv = approx. 19 watts
Normally open contacts	K1 (SIL) release, max. 5 A (AC1) K2 (SIL) release, floating, max. 230 V AC/4.5 A (AC1) K3 and K4 signal relays, floating, changeover contact, max. 5 A (AC1)
Inputs	3 x PT100/1000 1 x bypass 1 x main switch 1 x 4 to 20 mA [ib] – pressure sensor 1 x 4 to 20 mA [ja] – pressure sensor

**Dimensions**



**Ordering information**

Version	Code no.
24 V DC to 44 V DC, ±10 %	1
100 V AC to 230 V AC, ±10 %	2

Complete order no. 07-37A2-2211/  730  
 Please enter code number.

The accessories and order information can be found on the accessory pages. Technical data subject to change without notice.



- Four floating contacts
- Three-line LCD
- LED status indicator
- Safety-related control system
- Integrated multiport valve

The APEX 2003.MV control unit controls and monitors the pre-purge and operating phase of small, separate, pressurised enclosure housings with a maximum internal volume of 70 litres. The parameters are adjusted using rotary switches and keys. There is the option to transmit the parameters via an RS 485 interface. The control unit features two freely programmable relays and one non-floating release contact.

## Explosion protection

ATEX marking	Ex II 2(1)G Ex d e ib [ia Ga px] IIC T4 Gb
Certification	DMT 99 ATEX E 082
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-20 °C to +40 °C

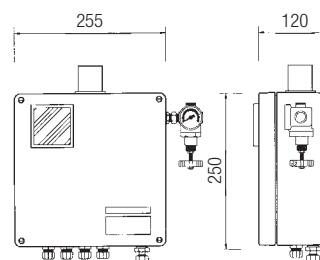
## Technical data

Directives	Directive 2014/30/EU Directive 94/9/EC
Structure	Ex e protective housing with viewing pane in the cover
Housing material	Fibreglass-reinforced polyester
IP rating	IP 65
Terminals	2.5 mm <sup>2</sup> , fine-wire
Purge gas connection	10 mm dia.
Pressure sensors	MIN. A/B = 0 to 25 mbar MAX. = 0 to 25 mbar DIFF. A/B = 0 to 25 mbar
Pre-purge time	0 to 99 min; 5 sec dropout delay
Weight	5.9 kg
Safety integrity level	SIL 2

## Electrical data

Supply voltage	230 V AC (115 V AC) ±10 %
Power consumption	$P_v = 15 \text{ W}/230 \text{ V}$
Normally open contacts	K 2/3, 5 A when $\cos \phi = 1$ K 4 and K 5; floating
Temperature switch value (optional)	0 °C to +80 °C
Bypass key switch (optional)	

## Dimensions



## Ordering information

Version		Code no.
	230 V AC	1
	115 V AC	2

Complete order no. 07-3711-2213/  000  
Please insert code number.  
Technical data subject to change without notice.



- Black box system
- Automatic calculation of the purge time
- WEB interface
- 3 x PT100/1000 inputs
- Modular design
- Separate purge gas input and output

**Explosion protection**

ATEX marking	 
Certification	BVS 17 ATEX...
IECEX marking	Ex ec mc ic [ic pzc] IIC T6, T5, T4 Gb Ex tc [ic pzc] III C T80°C, T95°C, T130°C Db
Certification	IECEX BVS 17. ...
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	In storage -20 °C to +60 °C During operation -25 °C to +70 °C

**Technical data**

Directives	Directive 2014/30/EU Directive 2014/34/EU
Structure	Ex e protective housing with integrated Ex mc/ic-protected p control system
Housing material	V4A stainless steel
IP rating	IP 66
Terminals	Ex e: 0.08 to 2.5 mm <sup>2</sup> , fine-wire, tension spring Ex i: 0.2 to 1.5 mm <sup>2</sup> , fine-wire, push-in
Pressure measurement range	0 to 25 mbar (standard) or 0 to 300 mbar (on request)
Pre-purge time	0 to 120 min
Weight	5.8 kg

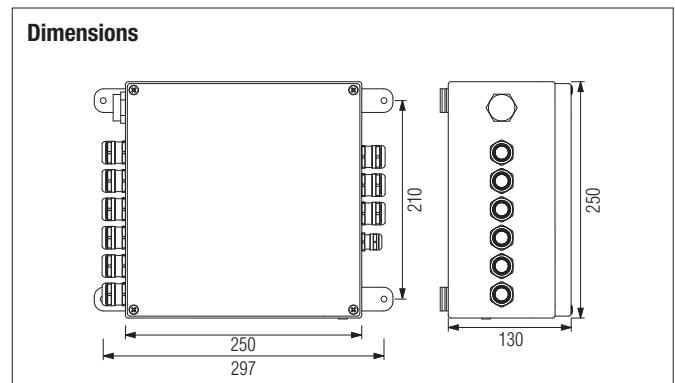
The SILAS<sup>pz</sup> Ex p control unit controls and monitors the pre-purge and operating phase of pressurised enclosure equipment protected in accordance with ignition protection type pz. Digital or proportional purge gas valves can be used as purge gas valves. The parameters can be set using the integrated WEB interface or the optionally available p operator panel. The SILAS<sup>pz</sup> features two release relays; one which is energised and one which has floating contacts. Two signal relays with one changeover contact each are additionally available. Three PT100/1000 inputs are available to monitor the temperature of the Ex p-protected equipment. Up to three switch values can be assigned to them. Model I comes complete with separate pressure measurement. The following components are additionally required to set up a complete control system:

- Sensor box<sup>pz</sup> 25 mbar
- Pressure monitor
- Purge gas valve, proportional or digital
- Valve fuse
- Pressure reducer
- There is the option to connect a p operator panel

**Electrical data**

Supply voltage	24 V DC to 44 V DC, ±10 % or 100 V AC to 230 V AC, ±10 %
Power consumption	P <sub>v</sub> = approx. 19 watts
Normally open contacts	K1 release, max. 5 A (AC1) K2 release, floating, max. 230 V AC/5 A (AC1) K3 and K4 signal relays, floating, changeover contact, max. 5 A (AC1)
Inputs	3 x PT100/1000 1 x bypass 1 x main switch

**Dimensions**



**Ordering information**

Version	Code no.
24 V DC to 44 V DC, ±10 %	1
100 V AC to 230 V AC, ±10 %	2

Complete oder no. A7-37S2-2111/  510  
Please enter code number.

The accessories and order information can be found on the accessory pages. Technical data subject to change without notice.



- Black box system
- Automatic calculation of the purge time
- WEB interface
- 3 x PT100/1000 inputs
- Modular design
- Separate purge gas input and output

**Explosion protection**

ATEX marking	Ⓜ II 3G Ex ec mc ic [ic pzc] IIC T4 Gb Ⓜ II 3D Ex tc [ic pzc] IIIC T80 °C, T95 °C, T130 °C Db
Certification	BVS 17 ATEX...
IECEx marking	Ex ec mc ic [ic pzc] IIC T4 Gb Ex tc [ic pzc] IIIC T80 °C, T95 °C, T130 °C Db
Certification	IECEx BVS 17. ...
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	In storage -20 °C to +60 °C During operation -25 °C to +70 °C

**Technical data**

Directives	Directive 2014/30/EU Directive 2014/34/EU
Structure	Ex e protective housing with integrated Ex mc/ic-protected p control system
Housing material	V4A stainless steel
IP rating	IP 66
Terminals	Ex e: 0.08 to 2.5 mm <sup>2</sup> , fine-wire, tension spring Ex i: 0.2 to 1.5 mm <sup>2</sup> , fine-wire, push-in
Pneumatic connections	2 x hoses, 4 mm dia.
Pressure measurement range	0 to 25 mbar (standard) or 0 to 300 mbar (on request)
Pre-purge time	0 to 120 min
Weight	5.8 kg

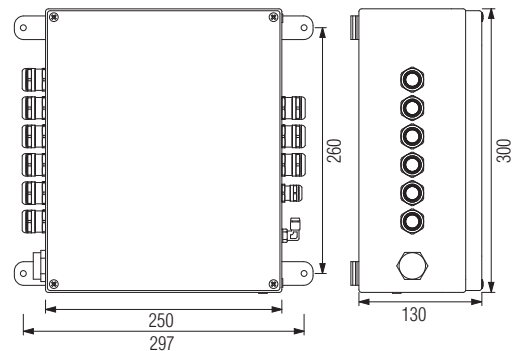
The SILAS<sup>pz</sup> Ex p control unit controls and monitors the pre-purge and operating phase of pressurised enclosure equipment protected in accordance with ignition protection type pz. Digital or proportional purge gas valves can be used as purge gas valves. The parameters can be set using the integrated WEB interface or the optionally available p operator panel. The SILAS<sup>pz</sup> features two release relays; one which is energised and one which has floating contacts. Two signal relays with one changeover contact each are additionally available. Three PT100/1000 inputs are available to monitor the temperature of the Ex p-protected equipment. Up to three switch values can be assigned to them. Model II comes complete with integrated pressure measurement. The following components are additionally required to set up a complete control system:

- Pressure monitor
- Purge gas valve, proportional or digital
- Valve fuse
- Pressure reducer
- There is the option to connect a p operator panel

**Electrical data**

Supply voltage	24 V DC to 44 V DC, ±10 % or 100 V AC to 230 V AC, ±10 %
Power consumption	Pv = approx. 19 watts
Normally open contacts	K1 release, max. 5 A (AC1) K2 release, floating, max. 230 V AC/4.5 A (AC1) K3 and K4 signal relays, floating, changeover contact, max. 5 A (AC1)
Inputs	3 x PT100/1000 1 x bypass 1 x main switch

**Dimensions**



**Ordering information**

	Code no.
24 V DC to 44 V DC, ±10 %	1
100 V AC to 230 V AC, ±10 %	2

Complete order no. A7-37S2-2111/  520

Please insert code number.

The accessories and order information can be found on the accessory pages. Technical data subject to change without notice.



- Small design
- Easy to use
- Separate purge gas input and output

The SILAS control system is used to monitor electrical equipment constructed in accordance with the method of "pressurised enclosure with leakage loss compensation". Consisting of a SILAS control unit type A7-3741-1110/\*000 and a pressure monitor type 17-51P3-1604, this is a complete safety device. The following components are additionally required to set up a complete control system:

- Pressure monitor
- Purge gas valve, digital (gas application)
- Pressure reducer

**Explosion protection**

Marking/ambient temperature	
ATEX marking	Ⓜ II 3G Ex nA nC [pzc] IIC T4 Gc Ⓜ II 3G Ex nA nC [pzc] IIC T6 Gc Ⓜ III 3D Ex tc [pzc] IIIB T85 °C Dc
Certification	TÜV 09 ATEX 553359 X
IECEX marking	Ex nA nC [pzc] IIC T4 Gc Ex nA nC [pzc] IIC T6 Gc Ex tc [pzc] IIIB T85 °C Dc
Certification	IECEX TUN 10.0030 X
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Approved for	Zone 2 and Zone 22
Ambient temperature	In storage -20 °C to +60 °C During operation -20 °C to +60 °C/T4 -20 °C to +40 °C/T6

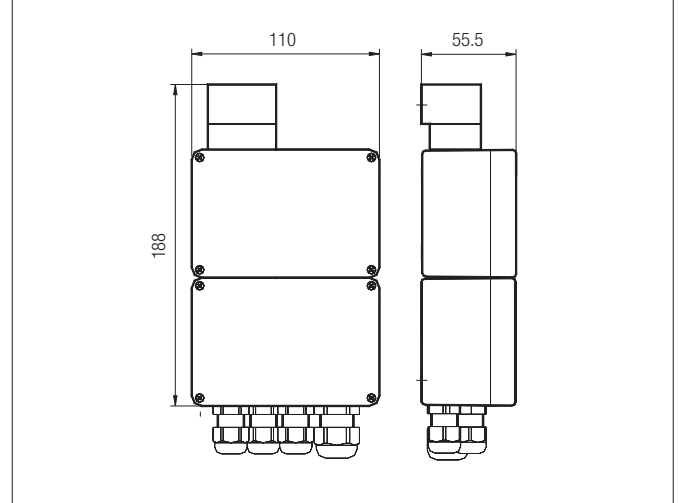
**Technical data**

Directives	Directive 2014/30/EU Directive 2014/34/EU
Structure	Protective housing with or without viewing pane
Housing material	Polyester, fibreglass-reinforced
IP rating	IP 54
Terminals	0.08 to 2.5 mm <sup>2</sup> , fine-wire, tension spring
Pressure measurement range	0 to 25 mbar (standard)
Pre-purge time	0 to 60 min
Weight	1.2 kg

**Electrical data**

Supply voltage	24 V DC, ±10 % 115 V AC, ±10 % 230 V AC, ±10 %
Power consumption	8 watts
Normally open contacts	Release relay, floating Alarm relay, floating Control relay Purge valve

**Dimensions**



**Ordering information**

Supply voltage	Code no.	Version	Code no.
230 V AC, ±10 %, 50 Hz – 60 Hz	1	Without viewing pane	0
115 V AC, ±10 %, 50 Hz – 60 Hz	2	With viewing pane	2
24 V DC, ±10 %	4		

Complete order no. A7-3741-1110/  00   
 Please insert code number.  
 Technical data subject to change without notice.



- Black box system
- Automatic calculation of the purge time
- WEB interface
- 3 x PT100/1000 inputs

The SILAS<sup>mv</sup> Ex p control unit controls and monitors the pre-purge and operating phase of small, separate, pressurised enclosure equipment protected in accordance with ignition protection type pz. The parameters can be set using the integrated WEB interface or the optionally available p operator panel. The SILAS<sup>mv</sup> features two release relays; one which is energised and one which has floating contacts. Two signal relays with one changeover contact each are additionally available. Three PT100/1000 inputs are available to monitor the temperature of the Ex p-protected equipment. Up to three switch values can be assigned to them. The design of the SILAS<sup>mv</sup> means that all components required for the pressurised enclosure are located in the control unit. The equipment to be monitored is connected to the Ex p control unit by means of a pipe, which allows a maximum purge volume of 70 litres. The following components can also be connected:

- There is the option to connect a p operator panel

**Explosion protection**

ATEX marking	Ⓜ II 3G Ex ec mc ic [ic pzc] IIC T4 Gb Ⓜ II 3D Ex tc [ic pzc] IIIC T80 °C, T95 °C, T130 °C Db
Certification	BVS 17 ATEX...
IECEX marking	Ex ec mc ic [ic pzc] IIC T6, T5, T4 Gb Ex tc [ic pzc] IIIC T80 °C, T95 °C, T130 °C Db
Certification	IECEX BVS 17. ...
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	In storage -20 °C to +60 °C During operation -25 °C to +70 °C

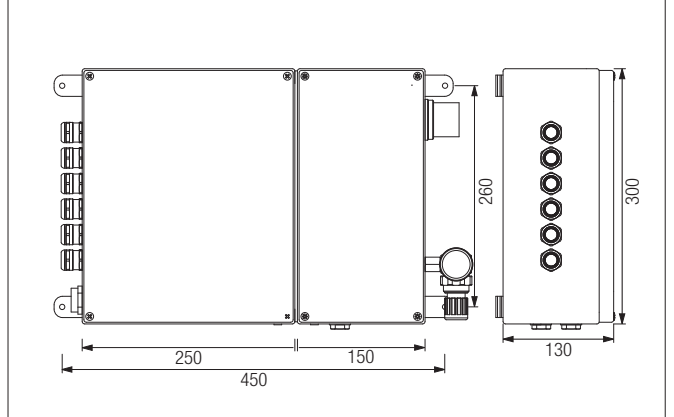
**Technical data**

Directives	Directive 2014/30/EU Directive 2014/34/EU
Structure	Ex e protective housing with integrated Ex mc/ic-protected p control system
Housing material	V4A stainless steel
IP rating	IP 66
Terminals	Ex e: 0.08 to 2.5 mm <sup>2</sup> , fine-wire, tension spring Ex i: 0.2 to 1.5 mm <sup>2</sup> , fine-wire, push-in
Pneumatic connections	2 x pipe connections, 10 mm dia.
Pressure measurement range	0 to 25 mbar
Orifice plate size	8 mm
Max. flow rate	6000 l/h
Pre-purge time	0 to 120 min
Weight	6.8 kg

**Electrical data**

Supply voltage	24 V DC to 44 V DC, ±10 % or 100 V AC to 230 V AC, ±10 %
Power consumption	Pv = approx. 19 watts
Normally open contacts	K1 release, max. 5 A (AC1) K2 release, floating, max. 230 V AC/4.5 A (AC1) K3 and K4 signal relays, floating, changeover contact, max. 5 A (AC1)
Inputs	3 x PT100/1000 1 x bypass 1 x main switch

**Dimensions**



**Ordering information**

	Code no.
24 V DC to 44 V DC, ±10 %	1
100 V AC to 230 V AC, ±10 %	2

Complete order no. A7-37S2-2111/  730  
 Please insert code number.

The accessories and order information can be found on the accessory pages. Technical data subject to change without notice.









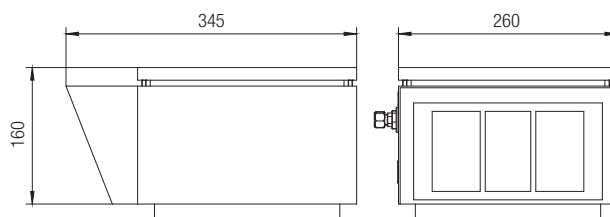
- Mounting position independently

The motor purge control system consisting of an MPC Motor Purge Controller and an MPV Motor Purge Valve (outlet valve) is a unit which allows the safe operation of electric motors in hazardous environments. The explosion protection is ensured by means of a pressurised enclosure with leakage loss compensation. The Motor Purge Control System monitors, controls and regulates the supply of purge gas to the Ex p motor. Any faults that arise within the system or during the supply of purge gas will be reliably reported and deactivated by a safe disconnection of the Ex p motor.

### Technical Data

Construction	valve-controlled outlet for MPC
Varnish	RAL 7035
Enclosure material	Sheet steel (stainless steel on request)
Protection class	IP 65
Pressure relief	integrated, opens at 50 mbar
Connections	2 x pipe connection 10 mm
Mounting	horizontal or vertical
Flying spark and particle barrier	integrated
Flow rate	0 to 180 m <sup>3</sup> /h at MPV 2 with MPC 2 0 to 450 m <sup>3</sup> /h at MPV 3 with MPC 3
Connection flange	DIN2633 NW 50 PN16 (MPV 2) DIN2633 NW 100 PN16 (MPV 3) (Dimensions and details see Operating Instructions)
Ambient temperature	-30 °C to +60 °C

### Dimensions



### Ordering information

Description	Variant	Code no.
System MPC	MPV 2	8
	MPV 3	9

Complete order no. 17-51P3-3  03

Please enter code number.

Technical data subject to change without notice.



- Optional expansion p control system
- Plain text display
- Visual pressure information via LED
- Menu operation
- Status screens
- Three versions: Front panel mounting, front panel installation, or mobile use

**Explosion protection**

ATEX marking	Ex II 2G Ex ib IIC T4 Gb
Certification	BVS 17 ATEX...
IECEX marking	Ex ib IIC T4 Gb
Certification	IECEX BVS 17. ...
Other approvals and certificates, see www.bartec.de	
Ambient temperature	In storage -20 °C to +50 °C During operation -25 °C to +60 °C

**Version I – Mobile unit**

Connection	Plug connector, 2m cable One matching part for control unit included in the delivery
Weight	Approx. 2.5 kg (depending on the version)

**Version II – Front panel mounting**

Connection	4 x 0.5 mm <sup>2</sup> , 2 m cable Fixed connection on the control unit
Weight	Approx. 2.5 kg (depending on the version)

**Version III – Front panel installation**

Connection	4 x 0.5 mm <sup>2</sup> , 2 m cable Fixed connection on the control unit
Weight	Approx. 2.5 kg (depending on the version)

The p Operator panel is designed for optional use with the new generation of Ex p control systems. It displays and visualises system-specific pressures, and displays parameters, plain text messages and system statuses. The p operator panel can be directly connected to the Ex p control unit, which supplies it with the required intrinsically safe voltage. Three versions of the p operator panel are available:

**Version I – Mobile unit**

The mobile unit is equipped with an Ex-protected plug connector. When using multiple Ex p control units, in order to carry out maintenance, the mobile unit can be connected to the Ex p control unit and removed again once the work is complete. The flanged socket required is securely installed on the control unit and is enclosed when the shipment is first ordered.

**Version II – Front panel mounting**

The front panel mounting version is secured to doors or adjacent walls, for example, using the mounting brackets fitted to the protective housing. The connection between the p operator panel and Ex p control system can be 2 m long.

**Version III – Front panel installation**

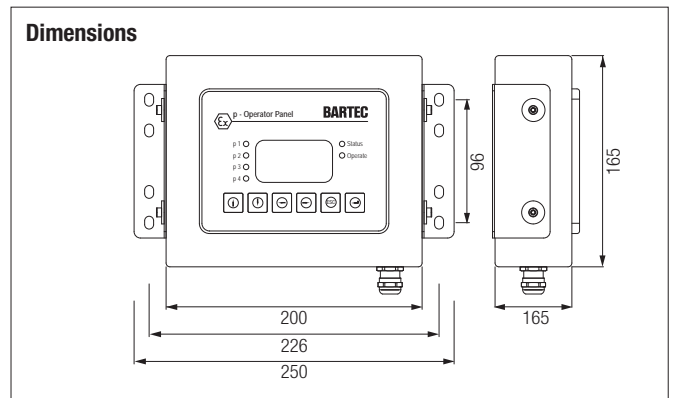
The front panel installation version has no protective housing and can be installed directly in the door of the p-protected equipment, for example.

**Technical specifications**

Directives	Directive 2014/30/EU Directive 2014/34/EU
Housing material	V4A stainless steel (variant)
IP rating	IP 66

**Electrical data**

Supply voltage	3.3 V DC (internal)
Power consumption	P <sub>v</sub> = approx. 2 watts



**Ordering information**

	Code no.
Version I – Mobile unit	0
Version II – Surface-mounted	1
Version III – Installed version	2

Complete order no. 17-51P5-□ 111

Please insert code number.

The accessories and order information can be found on the accessory pages. Technical data subject to change without notice.



The sensor box is for APEX px/py or SILAS<sup>pz</sup> Ex p control units, model I. This contains the measuring card to measure the pressures inside the Ex p equipment and to convert them into an electrical signal. The maximum length between the Ex p control unit and the sensor box is 2 m.

**Explosion protection**

<b>Zone 1</b>	
ATEX marking	⊕ II 2G Ex ib IIC T4/T6 Gb
Certification	BVS 17 ATEX...
IECEX marking	Ex ib IIC T4/T6 Gb
Certification	IECEX BVS 17. ...
<b>Zone 2</b>	
ATEX marking	⊕ II 3G Ex ic IIC T4/T6 Gb
Test certificate	BVS 17 ATEX...
IECEX marking	Ex ic IIC T4/T6 Gc
Test certificate	IECEX BVS 17. ...
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	In storage -20 °C to +50 °C During operation -25 °C to +60 °C

**Technical data**

Directives	Directive 2014/30/EU Directive 2014/34/EU
Housing material	V4A stainless steel (variant)
IP rating	IP 66

**Electrical data**

Supply voltage	3.3 V DC (internal)
Power consumption	P <sub>v</sub> = approx. 2 watts
Terminals	Ex i: 0.2 to 1.5 mm <sup>2</sup> , fine-wire, screw terminal

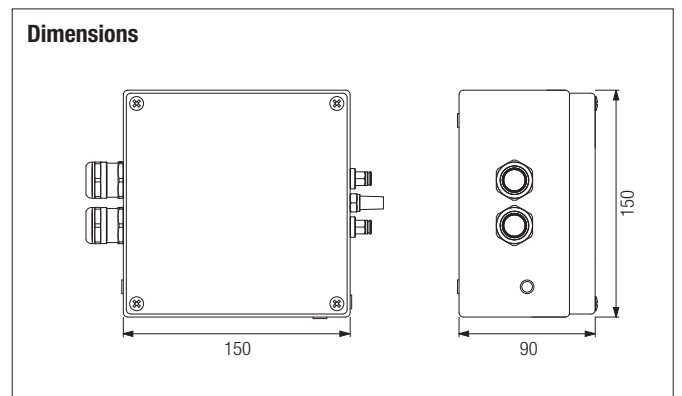
**Pneumatic data**

Pneumatic connections	2 x hoses 4 mm
Pressure measurement range	0 to 25 mbar (standard) or 0 to 300 mbar (on request)

**Versions**

SENSOR BOX <sup>px</sup>	For APEX <sup>px</sup> Ex px control system, model I
SENSOR BOX <sup>py</sup>	For APEX <sup>py</sup> Ex py control system, model I
SENSOR BOX <sup>pz</sup>	For SILAS <sup>pz</sup> Ex pz control system, model I

**Dimensions**



**Ordering information**

Version	Order number
SENSOR BOX <sup>px</sup>	05-xxxx-xxxx
SENSOR BOX <sup>py</sup>	05-xxxx-xxxx
SENSOR BOX <sup>pz</sup>	05-xxxx-xxxx

Technical data subject to change without notice.



- Easy to install
- Easy to use

The sensor module is designed to be used in APEX control systems. It measures the system-specific pressures and displays parameters and pressure values. The sensor module is directly connected to the APEX control unit, which supplies it with the required intrinsically safe voltage. Measured signals are forwarded to the APEX control module in an intrinsically safe manner. The sensor module is connected by single conductors or a hose line, depending on the version.

### Explosion protection

ATEX marking	⊕ II 2G Ex ib IIC T4
Certification	DMT 99 ATEX E 108 X
IECEX marking	Ex ib IIC T4, T6
Certification	IECEX BVS 09.0055X
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Approved for	Zones 1 and 2

### Technical data

Mounting	Screw attachment on mounting plate, front mounting with mounting frame	
Housing materials	Plastic housing with metal front panel	
IP rating	Min. IP 20	
Displays	LCD in the front of the housing	
Controls	Membrane push-buttons	
Weight	1.0 kg	
Ambient temperature	In storage	-20 °C to +60 °C
	During operation	-20 °C to +60 °C

### Electrical data

Power consumption $P_V = 1.2 \text{ W}$		
Ex i circuits	Supply circuit	$U_i = 30 \text{ V}$ $C_i = 50 \text{ nF}$ $L_i = \text{negligible}$
	LCD supply circuit	$U_i = -7.5 \text{ V}$ $I_i = 10 \text{ mA}$ $P_i = 20 \text{ mW}$ $C_i = \text{negligible}$ $L_i = \text{negligible}$
Signal current circuits		$U_i = 7.5 \text{ V}$ $C_i = 1 \mu\text{F}$ $L_i = \text{negligible}$
	Interconnected supply circuits and signal current circuits Maximum total current = 250 mA Maximum total power = 1.2 W	
Option	T6 special design available on request	

### Ordering information

T4 sensor module	Version	Code no.	Pressure range	Code no.
	Installation	1	0 to 25 mbar	1
	Mounting	2	0 to 300 mbar	2

Complete oder no. 17-51P2-□□00

Please insert code number.

T6 available on request.

Technical data subject to change without notice.



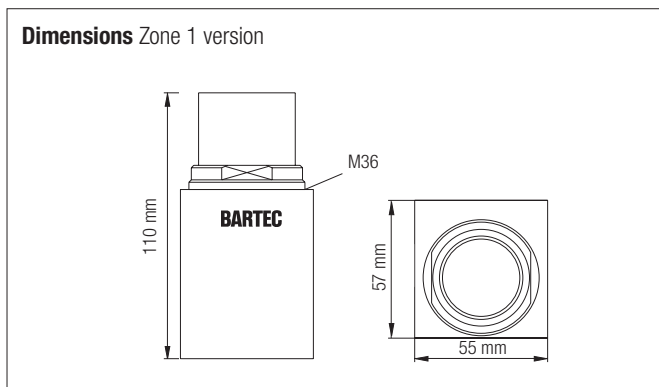
The pressure monitor module forms part of pressurised enclosure control systems. Various versions are available for applications in Zones 1, 21 and 2, 22.

**Function of pressure monitor module for Zones 1, 21**

- Overpressure monitor
- Taps for flow rate measurement

**Function of pressure monitor module for Zones 2, 22**

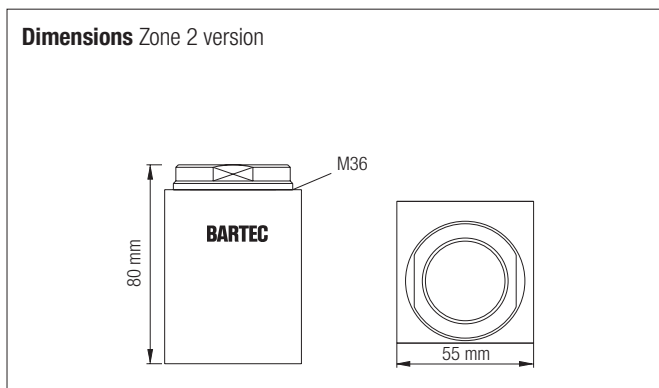
- Overpressure monitor
- Flow valve



Pressure monitor module for Zones 1, 21

**Technical data**

Temperature range	-20 °C to +80 °C
Installation	In Ex px/py equipment
Mounting hole	Ø 37 mm
Connection	Quick connector for hose
Flying spark barrier	x 3
Installation position	Plastic body inside Ex p equipment
Opening pressure	3 mbar
IP rating	IP 65



Pressure monitor module for Zones 2, 22

**Technical data**

Temperature range	-25 °C to +80 °C
Installation	In Ex pz equipment
Mounting hole	Ø 37 mm
Flying spark barrier	x 2
Installation position	Plastic body inside Ex p equipment
Opening pressure	3 mbar
IP rating	IP 54

**Ordering information**






Version		Order number
Zone 1 module	Orifice plate, 5 mm	17-51P3-1203
	Orifice plate, 8 mm	17-51P3-1303
	Orifice plate, 12 mm	17-51P3-1403
	Orifice plate, 15 mm	17-51P3-1503
	Orifice plate, 18 mm	17-51P3-1603
Zone 2 or 22 module		17-51P3-1604

The accessories and order information can be found on the accessory pages. Technical data subject to change without notice.

Ordering information

Figure	Description	Order number
	<p><b>Purge gas valve with integrated leakage air compensation</b>                      Ex Zone 1, Ex px/py control systems                      Operating principle: Open/closed; 2/2-way; closed in the idle position                      Nominal size: 13 mm                      Material: Brass                      Line connection: G3/8 bushing                      Power consumption: 9 watts                      Cable length: 3 m                      Items supplied: Valve, 2 x purge air nozzles with no holes</p>	
	<b>Types</b>	
	230 V AC	05-0056-0071
	110 V AC	05-0056-0072
	24 V DC	05-0056-0073
	<p><b>Purge gas valve – Proportional</b>                      Ex Zone 1, Ex px/py control systems                      Operating principle: Proportional; 2/2-way; closed in the idle position                      Nominal size: 6 mm                      Material: Brass                      Line connection: G3/8 bushing                      Power consumption: 15 watts                      Cable length: 3 m                      Items supplied: Valve, 2 x purge air nozzles with no holes</p>	
	<b>Types</b>	
	230 V AC	05-0056-0077
	110 V AC	05-0056-0078
	24 V DC	05-0056-0081
	<p><b>Purge gas valve with integrated leakage air compensation</b>                      Ex Zone 2, Ex pz control systems                      Operating principle: Open/closed; 2/2-way; closed in the idle position                      Nominal size: 13 mm                      Material: Brass                      Line connection: G3/8 bushing                      Power consumption: 9 watts                      Cable length: 3 m                      Items supplied: Valve, 2 x purge air nozzles with no holes</p>	
	<b>Types</b>	
	230 V AC	03-5110-0081
	110 V AC	03-5110-0082
	24 V DC	03-5110-0083
	<p><b>Valve fuse</b>                      Back-up fuse for purge gas valves</p>	
	1.0 A for digital purge gas valve	05-0080-1016
	1.6 A for proportional purge gas valve	05-0080-1017

**Ordering information**

Figure	Description	Order number
	<p><b>Pressure reducer</b>                      Ambient temperature: -10 °C to +60 °C                      Medium temperature: -10 °C to +40 °C                      Controls: Handwheel with locking mechanism                      Any installation position is possible                      Pressure regulation range: 0.5 to 6 bar</p> <p>Items supplied: Pressure reducer with installation material</p>	
	<p><b>G ¼" pressure reducer</b>                      Max. inlet pressure: 16 bar                      Connection: G ¼"                      Nominal flow rate (QN): 1000 l/min</p>	05-0056-0007
	<p><b>G ½" pressure reducer</b>                      Max. inlet pressure: 25 bar                      Connection: G ½"                      Nominal flow rate (QN): 2200 l/min</p>	05-0056-0041
	<p><b>Pressure maintenance valve</b> Zones 21, 22                      With installation material for pressure reducer</p>	05-0056-0062 05-0056-0007
	<p><b>Programming switch</b>                      For the new generation of APEX/SILAS</p>	05-0003-0089
	<p><b>Programming jumper</b> for APEX 2003</p>	05-0012-0193
	<p><b>Rain/dust cap</b>                      The rain/dust cap for the pressure monitor output protects against rain or dust deposits. This can be used as an optional accessory for pressure monitors with an internal orifice plate of up to 15 mm.</p>	05-0032-0011

Technical data subject to change without notice.



**APC APEX** pressurised cabinet for Zone 1  
**SPC SILAS** pressurised cabinet for Zone 2 or 22

The need for complex automation functions for processes in the chemical, pharmaceutical, oil and gas sectors is constantly increasing.

Flexible, reliable and low-maintenance solutions are required for measurement, control, regulation and visualisation, especially in potentially explosive atmospheres.

Complete control systems and switchgears, drives, pumps, large displays and industrial monitors, including keyboard and printer, must be prepared for use in Ex areas.

The Ex p pressurised enclosure is one of the most flexible Ex solutions for many applications.

This type of ignition protection makes it possible to operate non-ex-capable devices in potentially explosive atmospheres in Zones 1/21, 2/22. The idea behind this is to prevent a potentially explosive atmosphere from entering a sealed protective housing by generating constant overpressure compared to the surrounding atmosphere.

BARTEC offers a completely new Ex solution for controlling and automating devices, machines and systems in Zones 1/21, 2/22 in the form of the pressurised enclosure Ex p systems.

Depending on the application, non-Ex-protected control units and switching devices, as well as complete automation systems, are installed in the housing. Modern, ready-for-operation Ex solutions – including the required ATEX or IECEx certification – are created on the basis of BARTEC's modular, ATEX-certified pressurised enclosure. The overpressure as a result of the purge gas is produced by compensating for the leakage losses. The pressurised enclosure solution is designed for a large range of ambient temperatures in temperature classes T3 to T5.

The main focus is on maintenance and availability of Ex devices and systems. The experts at BARTEC have many years of experience in explosion protection applications and in designing complete systematic solutions for automation.

This expertise is the basis for developing reliable and efficient solutions, from engineering, manufacturing and procurement, through to commissioning and approval.

The Ex p solutions are designed from sheet steel or stainless steel, with air conditioning, with different coatings, seawater-resistant or drip-resistant, depending on the application.

### Custom solutions

BARTEC offers custom pressurised enclosure solutions for

- Devices
- Printers
- Operating terminals
- Control systems
- Frequency converters
- Monitors

### Air conditioning

BARTEC can also provide you with various solutions for the air conditioning of Ex p systems on request

- Heating during operation
- Heating when stationary
- Air cooler
- Air conditioning

### Accessories

- Purge gas filter systems
- Release contactor
- Isolating relay for data lines
- Bypass key switch



**Explosion protection**

**APC marking**

ATEX	Ⓜ II 2G Ex px IIC T3 to T6 Gb Ⓜ II 2G Ex px ib IIC T3 to T6 Gb
Certification	BVS 11 ATEX E 144
IECEX	Ex px IIC T3 to T6 Gb Ex px ib IIC T3 to T6 Gb
Certification	IECEX BVS 13.0049
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	

**SPC marking**

ATEX	Ⓜ II 3G Ex pz IIC T3 to T6 Gc Ⓜ II 3G Ex pz ib IIC T3 to T6 Gc
Test certificate	BVS 11 ATEX E 145
IECEX	Ex pz IIC T3 to T6 Gc Ex pz ib IIC T3 to T6 Gc
Test certificate	IECEX BVS 11.0070
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	

**Technical data**

Directives	Directive 2014/30/EU Directive 2014/34/EU
Structure	Standard housing or custom solution
Housing material	Stainless steel, sheet steel
Ambient temperature	-20 °C to +60 °C (application-dependent)
IP rating	Application-dependent, at least IP 54
Housing volume	Up to 6336 litres
Purge gas	Purified compressed air or inert gas, Tmax = +40 °C
Purge gas inlet pressure	3 to 25 bar
Operating pressure	Version-dependent, between 2 and 4 mbar
Purge pressure	Version-dependent, between 1 and 20 mbar
Pre-purge time	Application-dependent

**Electrical data**

Supply voltage	Max. 690 V AC
Power consumption	Application-dependent

**We would be happy to provide a pressurised enclosure solution on request.**

Please use the specification sheet below for your request.  
 Technical data subject to change without notice.

## Customer request Specification sheet request for Ex p

### Customer

**BARTEC** (to be completed by BARTEC employee)

Company	Sales employee
Street	Project name
Town/postcode	Request number
Country	Deadlines
Contact	Submission of quote
E-mail	Telephone

### Documents provided

<input type="checkbox"/> Wiring diagrams	<input type="checkbox"/> Parts list
<input type="checkbox"/> Drawings	<input type="checkbox"/> Data sheets
<input type="checkbox"/> Other	

### Area of application

<input type="checkbox"/> Zone 1 (2G)	<input type="checkbox"/> Outdoors
<input type="checkbox"/> Zone 2 (3G)	<input type="checkbox"/> Indoors
<input type="checkbox"/> Zone 21 (2D)	<input type="checkbox"/> Cleanroom
<input type="checkbox"/> Zone 22 (3D)	<input type="checkbox"/> Other:
<input type="checkbox"/> ATEX-certified	<input type="checkbox"/> IECEx-certified
<input type="checkbox"/> Explosion group:	
<input type="checkbox"/> Temperature class	<input type="checkbox"/> T4 <input type="checkbox"/> T6

### Operating voltage

<input type="checkbox"/> 400 V AC	<input type="checkbox"/> 24 V DC
<input type="checkbox"/> 230 V AC	<input type="checkbox"/> Power consumption:
<input type="checkbox"/> 115 V AC	<input type="checkbox"/> Other:

### Material and "pressurised cabinet" design

Housing size (mm): Width                      x Height                      x Depth

<input type="checkbox"/> V2A stainless steel (1.4301, AISI 304)
<input type="checkbox"/> V4A stainless steel V4A (1.4401, AISI 316L)
<input type="checkbox"/> Sheet steel, coating according to RAL:
<input type="checkbox"/> Single-door
<input type="checkbox"/> Two-door
<input type="checkbox"/> Multi-door

### Temperatures

Internal power loss	W
Max. outdoor temperature	°C
Min. outdoor temperature	°C
Max. indoor temperature	°C
Min. indoor temperature	°C

### Activation

<input type="checkbox"/> Direct activation via control unit, max. L/N, 5 A
<input type="checkbox"/> Indirect activation via Ex d contactor
<input type="checkbox"/> Activation from non-Ex zone
<input type="checkbox"/> Manual activation, for Zone 2 only

<input type="checkbox"/> Base, height:	mm
<input type="checkbox"/> Sun canopy	
<input type="checkbox"/> Lifting brackets	
<input type="checkbox"/> Viewing pane, size	W                      mm
	H                      mm
<input type="checkbox"/> Mounting plate provided	
<input type="checkbox"/> Wiring by BARTEC MGH	

## Customer request Specification sheet request for Ex p

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### Interfaces used

---

Two-wire

PROFIBUS

Ethernet

Four-wire

PROFINET

Other:

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### Controls

---

HMI, Type:

---

x push-button(s)

Contact type:

x indicator light, colour:

---

x illuminated push-button(s)

Contact type, colour:

x key switch

Contact type:

x selector switch(s)

Contact type:

x Emergency stop

Contact type:

---

### Cable glands

---

Quantity

Size

Ex i

---

Quantity

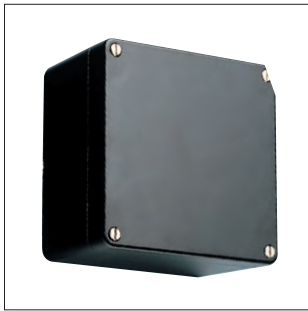
Size

Ex i

---

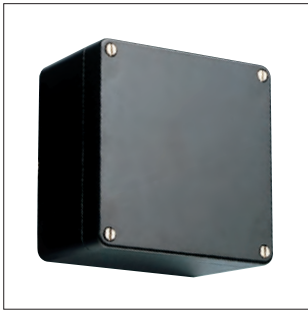
## INSTALLATION SYSTEMS

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- Zones 1/21 and 2/22
- Wide range of sizes
- SS, GRP, AC

Enclosures	Polyester	Aluminium	High-quality stainless steel
Fields of application	Chemical and Petrochemical industry OFF-SHORE Mechanical engineering Refineries	Chemical and Petrochemical industry OFF-SHORE Mechanical engineering Refineries	Chemical and Petrochemical industry OFF-SHORE Mechanical engineering Refineries Food industry Navigation
Functions	Electrical distributions/controls Sensor/actuator terminal box Local control stations and bus connections within the Ex area	Electrical distributions/controls Sensor/actuator terminal box	Electrical distributions/controls Sensor/actuator terminal box Local control stations and bus connections within the Ex area
Requirements	Ex area Zone 1 and 2 International approvals chemical-resistant High protection class for mounted components Seawater-proof Flame-retardant Halogen-free, UV-resistant High temperature resistant corrosion-proof	Ex area Zone 1 and 2 International approvals chemical-resistant High protection class for mounted components Flame-retardant Halogen-free, UV-resistant Special varnishes	Ex area Zone 1 and 2 International approvals chemical-resistant High protection class for mounted components Seawater-proof Flame-retardant Halogen-free, UV-resistant Suitable for installations outdoors and in aggressive atmospheres



- Zones 1/21 and 2/22
- Chemical resistance
- Wide range of sizes

Polyester enclosures have proven their worth in many industrial plants. They offer safe protection even when they are used under extremely unfavorable conditions, on exposure to aggressive chemical media or hard mechanical conditions. The inside base of the enclosure has at its sides, threaded bushings for the fastening of mounting rails or panels. The enclosure is mounted by means of insulated screws outside of the lid seal.

**Explosion protection**

Ex enclosure black Type 07-5185-..../....	
Marking ATEX	⊕ II 2G Ex e IIC Gb ⊕ II 2D Ex tb IIIC Db IP 66
Certification	PTB 08 ATEX 1062 U
Marking IECEx	Ex e IIC Gb Ex tb IIIC Db IP 66
Certification	PTB 09.0008U
Ex enclosure grey Type 07-5184-..../....	
Marking ATEX	⊕ II 2G Ex e IIC Gb
Certification	PTB 08 ATEX 1062 U
Marking IECEx	Ex e IIC Gb
Certification	PTB 09.0008U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	

**Technical data**

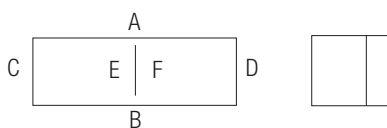
Material	glass-fiber reinforced polyester, EN 60079-0, halogen-free black surface resistance < 10 <sup>9</sup> Ω grey surface resistance > 10 <sup>12</sup> Ω
Colour	black: RAL 9005 grey: RAL 7000/RAL 7001
Lid screws	stainless steel cross-head (+ -) (other models on request)
Standard seal	EPDM -20 °C to +95 °C optional Silicone -55 °C to +100 °C
Mechanical resistance	impact energy 7 Nm (EN/IEC 60079-0)
Protection class	IP 66 EN/IEC 60529

**Ordering information** Empty enclosure

External dimensions (L x B x H) mm	Polyester black, IP 66	Polyester grey, IP 66
	Order no.	Order no.
80 x 75 x 55	07-5195-0800/7555	07-5194-0800/7555
110 x 75 x 55	07-5195-1100/7555	07-5194-1100/7555
160 x 75 x 55	07-5195-1600/7555	07-5194-1600/7555
190 x 75 x 55	07-5195-1900/7555	07-5194-1900/7555
122 x 120 x 90	07-5195-1221/2090	07-5194-1221/2090
122 x 120 x 120	07-5195-1221/2012	07-5194-1221/2012
220 x 120 x 90	07-5195-2201/2090	07-5194-2201/2090
160 x 160 x 90	07-5195-1601/6090	07-5194-1601/6090
160 x 160 x 120	07-5195-1601/6012	07-5194-1601/6012
260 x 160 x 90	07-5195-2601/6090	07-5194-2601/6090
360 x 160 x 90	07-5195-3601/6090	07-5194-3601/6090
560 x 160 x 90	07-5195-5601/6090	07-5194-5601/6090
200 x 250 x 120	07-5195-2002/5012	07-5194-2002/5012
255 x 250 x 120	07-5195-2552/5012	07-5194-2552/5012
255 x 250 x 160	07-5195-2552/5016	07-5194-2552/5016
400 x 250 x 120	07-5195-4002/5012	07-5194-4002/5012
400 x 250 x 160	07-5195-4002/5016	07-5194-4002/5016
400 x 405 x 120	07-5195-4004/0512	07-5194-4004/0512
400 x 405 x 165	07-5195-4004/0516	07-5194-4004/0516

Technical data subject to change without notice.

**Dimensions (mm)**



The dimensions indicated on this page apply to the following polyester enclosures and distribution boxes:

IP enclosure	black	07-5195-.../...
IP enclosure	grey	07-5194-.../...
Ex enclosure	black	07-5185-.../...
Ex enclosure	grey	07-5184-.../...
IP distribution box	black	07-5178-.../...
IP distribution box	grey	07-5177-.../...
Ex e distribution box	black	07-5103-.../...
Ex e distribution box	grey	07-5106-.../...
Ex i distribution box	black	07-5105-.../...
Ex i distribution box	grey	07-5107-.../...

**Technical data**

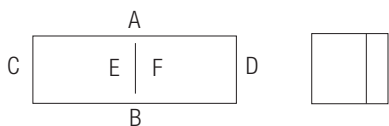
External dimensions	80 x 75 x 55 mm	
Weight	230 g	
Material	polyester, grey, black	
Article no.	07-51 □□ -0800/7555	

External dimensions	110 x 75 x 55 mm	
Weight	280 g	
Material	polyester, grey, black	
Article no.	07-51 □□ -1100/7555	

External dimensions	160 x 75 x 55 mm	
Weight	370 g	
Material	polyester, grey, black	
Article no.	07-51 □□ -1600/7555	

External dimensions	190 x 75 x 55 mm	
Weight	430 g	
Material	polyester, grey, black	
Article no.	07-51 □□ -1900/7555	

**Dimensions (mm)**

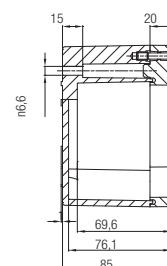
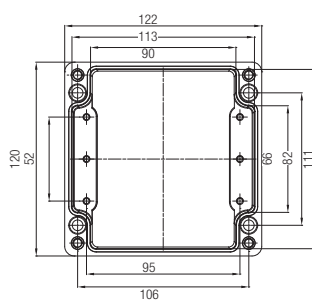


The dimensions indicated on this page apply to the following polyester enclosures and distribution boxes:

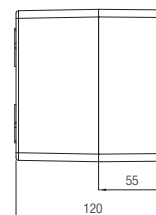
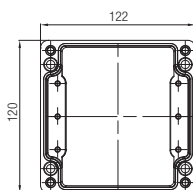
IP enclosure	black	07-5195-.../...
IP enclosure	grey	07-5194-.../...
Ex enclosure	black	07-5185-.../...
Ex enclosure	grey	07-5184-.../...
IP distribution box	black	07-5178-.../...
IP distribution box	grey	07-5177-.../...
Ex e distribution box	black	07-5103-.../...
Ex e distribution box	grey	07-5106-.../...
Ex i distribution box	black	07-5105-.../...
Ex i distribution box	grey	07-5107-.../...

**Technical data**

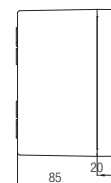
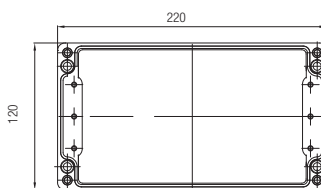
External dimensions	122 x 120 x 90 mm
Weight	660 g
Material	polyester, grey, black
Article no.	07-51 □□ -1221/2090



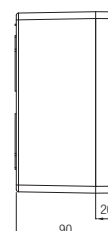
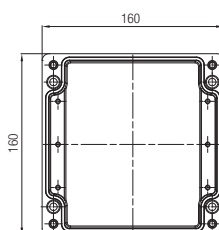
External dimensions	122 x 120 x 120 mm
Weight	890 g
Material	polyester, grey, black
Article no.	07-51 □□ -1221/2012



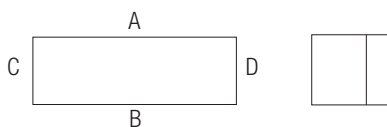
External dimensions	220 x 120 x 90 mm
Weight	1040 g
Material	polyester, grey, black
Article no.	07-51 □□ -2201/2090



External dimensions	160 x 160 x 90 mm
Weight	1280 g
Material	polyester, grey, black
Article no.	07-51 □□ -1601/6090



**Dimensions** (mm)

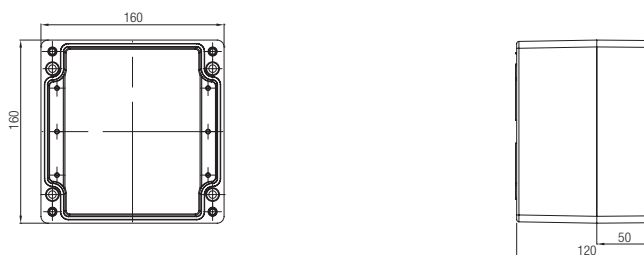


The dimensions indicated on this page apply to the following polyester enclosures and distribution boxes:

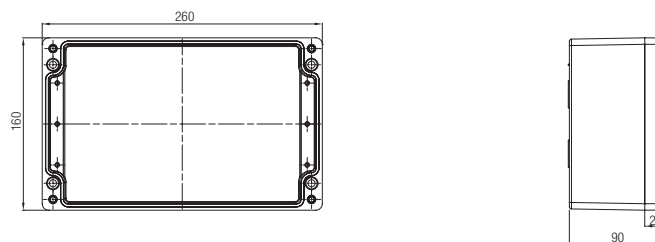
IP enclosure	black	07-5195-.../...
IP enclosure	grey	07-5194-.../...
Ex enclosure	black	07-5185-.../...
Ex enclosure	grey	07-5184-.../...
IP distribution box	black	07-5178-.../...
IP distribution box	grey	07-5177-.../...
Ex e distribution box	black	07-5103-.../...
Ex e distribution box	grey	07-5106-.../...
Ex i distribution box	black	07-5105-.../...
Ex i distribution box	grey	07-5107-.../...

**Technical data**

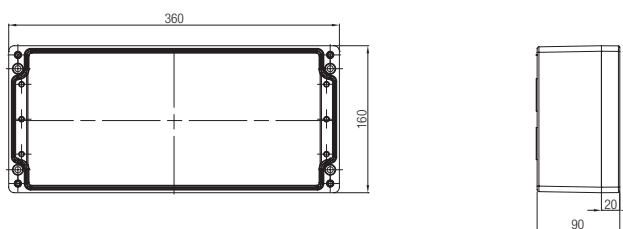
External dimensions	160 x 160 x 120 mm
Weight	1500 g
Material	polyester, grey, black
Article no.	07-51 □□ -1601/6012



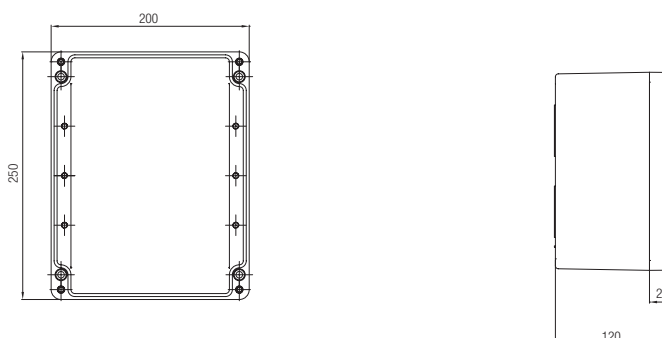
External dimensions	260 x 160 x 90 mm
Weight	1750 g
Material	polyester, grey, black
Article no.	07-51 □□ -2601/6090

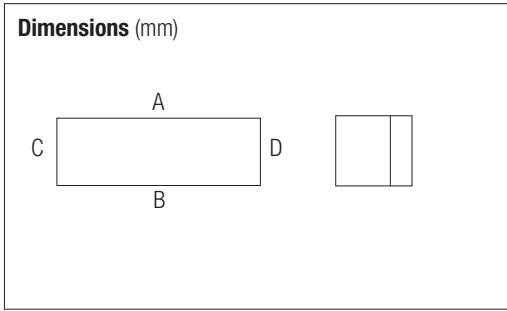


External dimensions	360 x 160 x 90 mm
Weight	2300 g
Material	polyester, grey, black
Article no.	07-51 □□ -3601/6090



External dimensions	200 x 250 x 120 mm
Weight	2320 g
Material	polyester, grey, black
Article no.	07-51 □□ -2552/5012





The dimensions indicated on this page apply to the following polyester enclosures and distribution boxes:

IP enclosure	black	07-5195-.../...
IP enclosure	grey	07-5194-.../...
Ex enclosure	black	07-5185-.../...
Ex enclosure	grey	07-5184-.../...
IP distribution box	black	07-5178-.../...
IP distribution box	grey	07-5177-.../...
Ex e distribution box	black	07-5103-.../...
Ex e distribution box	grey	07-5106-.../...
Ex i distribution box	black	07-5105-.../...
Ex i distribution box	grey	07-5107-.../...

**Technical data**

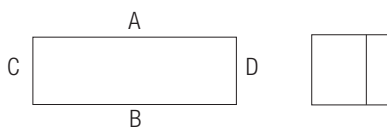
External dimensions	255 x 250 x 120 mm	
Weight	2730 g	
Material	polyester, grey, black	
Article no.	07-51 □□ -2552/5012	

External dimensions	255 x 250 x 160 mm	
Weight	3275 g	
Material	polyester, grey, black	
Article no.	07-51 □□ -2552/5016	

External dimensions	400 x 250 x 120 mm	
Weight	3650 g	
Material	polyester, grey, black	
Article no.	07-51 □□ -4002/5012	

External dimensions	400 x 250 x 160 mm	
Weight	4800 g	
Material	polyester, grey, black	
Article no.	07-51 □□ -4002/5016	

**Dimensions (mm)**

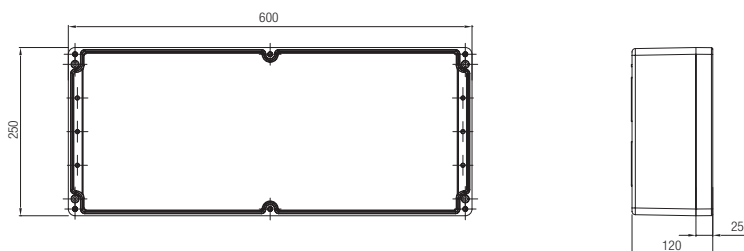


The dimensions indicated on this page apply to the following polyester enclosures and distribution boxes:

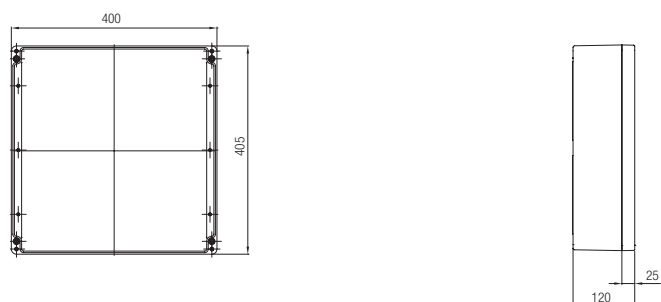
IP enclosure	black	07-5195-.../...
IP enclosure	grey	07-5194-.../...
Ex enclosure	black	07-5185-.../...
Ex enclosure	grey	07-5184-.../...
IP distribution box	black	07-5178-.../...
IP distribution box	grey	07-5177-.../...
Ex e distribution box	black	07-5103-.../...
Ex e distribution box	grey	07-5106-.../...
Ex i distribution box	black	07-5105-.../...
Ex i distribution box	grey	07-5107-.../...

**Technical data**

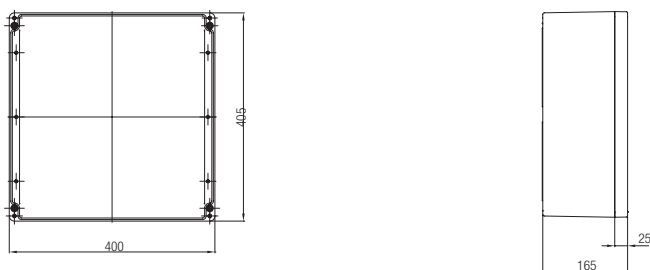
External dimensions	600 x 250 x 120 mm
Weight	5380 g
Material	polyester, grey, black
Article no.	07-51 □□ -6002/5012



External dimensions	400 x 405 x 120 mm
Weight	5080 g
Material	polyester, grey, black
Article no.	07-51 □□ -4004/0512



External dimensions	400 x 405 x 165 mm
Weight	7740 g
Material	polyester, grey, black
Article no.	07-51 □□ -4004/0516



Technical data subject to change without notice.



- Simple
- Quick use
- Preassembled

The explosion-proof terminal boxes of glass-fiber reinforced plastic come with pillar terminals. Lid and base are secured with captive screws. The box has pillar terminals and threads (see selection chart). All holes for cable entries not used, have to be sealed by means of Ex-certified stopping plugs. The terminal box is also suitable for the connection of intrinsically safe circuits. Such cases require special markings. The box is mounted via fixing holes located outside of the terminal compartment.

**Fields of application:** Connection of lamps, devices and sensors, Zone 1/Zone 2

**Explosion protection (EN 60079-0)**

Marking ATEX	Ⓔ II 2G Ex e II T6
Certification	PTB 08 ATEX 1061
Marking IECEx	Ex e II T6
Certification	PTB 09.0066x
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-20 °C to +40 °C

**Technical data**

Material	glass-fibre reinforced polyester, colour: RAL 7035
Lid screws	stainless steel, captive, cross-head, M 4
Seals	EPDM -20 °C to +80 °C
Door latch	Locking system with casement fastener (other models on request) with double-bit key
Mechanical resistance	according to EN 60079-0 impact energy 7 Nm
Protection class	IP 65 (EN/IEC 605299)
Terminals	4 or 5 Ex e II, pillar terminals according to execution max. 2 x 4 mm <sup>2</sup> , single-wire
Rated voltage	max. 690 V
Rated current	max. 27 A

**Ordering information** Terminal boxes Ex e, 690 V (just drilling, without cable glands)

Description	Order no.
4 sheath clamps 2 x 4 mm <sup>2</sup> , 1 x M20 x 1.5 + 2 x M20 x 1.5	07-5311-2320/DD00
5 sheath clamps 2 x 4 mm <sup>2</sup> , 1 x M20 x 1.5 + 2 x M20 x 1.5	07-5311-2420/DD00

**Ordering information** Terminal boxes Ex e, 690 V (with metric polyamide cable glands)

Description	Order no.
4 sheath clamps 2 x 4 mm <sup>2</sup> , 1 x M20 x 1.5 (6 to 12), 2 x M20 x 1.5 (5 to 9)	07-5311-9014
3 x M20 x 1.5 (6 to 12)	07-5311-2320/FF00
1 x M20 x 1.5 (10 to 14), 2 x M20 x 1.5 (6 to 12)	07-5311-9016
5 sheath clamps 2 x 4 mm <sup>2</sup> , 1 x M20 x 1.5 (6 to 12), 2 x M20 x 1.5 (5 to 9)	07-5311-9015
3 x M20 x 1.5 (6 to 12)	07-5311-2420/FF00
1 x M20 x 1.5 (10 to 14), 2 x M20 x 1.5 (6 to 12)	07-5311-9017

**Ordering information** Terminal boxes Ex i (with metric polyamide cable glands)

Description	Order no.
4 sheath clamps 2 x 4 mm <sup>2</sup> , 3 x M20 x 1.5 (6 to 12)	07-5311-9009
5 sheath clamps 2 x 4 mm <sup>2</sup> , 3 x M20 x 1.5 (6 to 12)	07-5311-9010

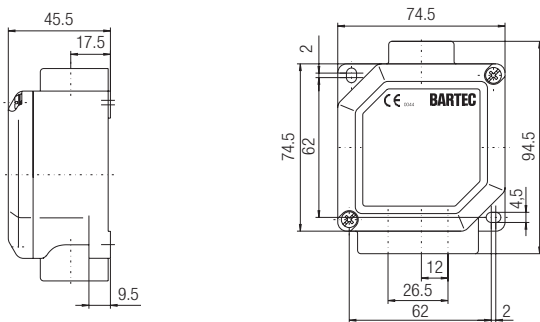
**Ordering information** Accessories/spare parts

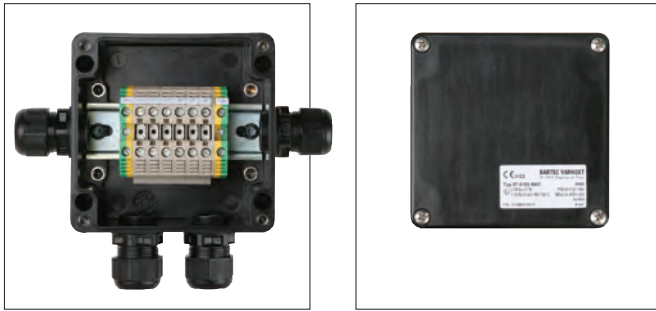
	Cable glands	Stopping plugs
M20 x 1.5	03-6062-0127 (6 to 12 mm)	03-5210-0064
M20 x 1.5	07-9534-2M2 (5 to 9 mm)	-
M20 x 1.5	07-9534-3M2 (10 to 14 mm)	-

Technical data subject to change without notice.

Please note:  
New version under development. For additional details, please get in touch.

**Dimensions (in mm)**





- Robust
- Functional
- Engineered to order

Polyester distribution boxes have been of great advantage in many industrial plants. They offer safe protection even when they are exposed to extreme environmental conditions, aggressive chemical media or high mechanical stress. The narrow sides within the enclosure hold threaded bushings for the fixing of terminal rails or mounting panels. The enclosure is mounted by means of insulated screws outside of the lid sealing gasket. These black high-quality explosion-proofed enclosures are used in hazardous areas by inflammable dust (Zone 21 and 22). The fundamental prerequisites of the “protection through enclosure” protection class are fulfilled with the heating up calculation as per the accompanying sheet and a separate IP protection test. EC model test certification was issued in 2000 by the nominated body IBExU.

**Option**

External feet of high-quality stainless steel

**Components**

Rail-mounted terminals, terminal markers, cable glands, mounting panels, rails, type labels, labels

**Installation instructions**

The installer must make sure that the enclosure used is suitable for the corresponding field of application. This means that the marking must correspond to the classification of the Ex area. Also must the temperature class of the distribution box meet the respective requirements.

**Explosion protection**

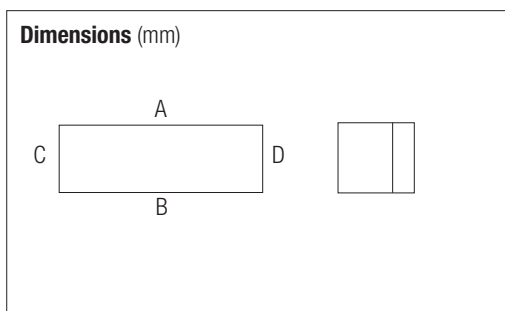
IP distribution box	black 07-5178-.../....
Ex e distribution box	black 07-5103-.../....
Ex i distribution box	black 07-5105-.../....
Marking ATEX	Ⓢ II 2G Ex e IIA, IIB, IIC T6, T5 Gb Ⓢ II 2G Ex ia/ib IIA, IIB, IIC T6, T5 Gb Ⓢ II 2D Ex tb IIIC T80 °C, T95 °C Db IP 66 Ⓢ II 2D Ex ia/ib IIIC T80 °C, T95 °C Db
Certification	PTB 08 ATEX 1064 Zone 1/21 and 2/22
Marking IECEx	Ex e IIA, IIB, IIC T6, T5 Gb Ex ia/ib IIA, IIB, IIC T6, T5 Gb Ex tb IIIC T80 °C, T95 °C Db IP 66 Ex ia/ib IIIC T80 °C, T95 °C Db
Certification	Zone 1/21 und 2/ 22 PTB 09.0009X
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	

**Explosion protection**

IP distribution box	grey 07-5177-.../....
Ex e distribution box	grey 07-5106-.../....
Ex i distribution box	grey 07-5107-.../....
Marking ATEX	Ⓢ II 2G Ex e IIA, IIB, IIC T6, T5 Gb Ⓢ II 2G Ex ia/ib IIA, IIB, IIC T6, T5 Gb
Certification	Zone 1/21and 2/22 PTB 08 ATEX 1064
Marking IECEx	Ex e IIA, IIB, IIC T6, T5 Gb Ex ia/ib IIA, IIB, IIC T6, T5 Gb
Certification	Zone 1/21and 2/22 PTB 09.0009X
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature ranges	-20 °C (-55 °C) to +40 °C at T6 -20 °C (-55 °C) to +55 °C at T5 (special temperature ranges on request)

**Technical data**

Material	glass-fibre reinforced polyester, EN 60079-0, halogen-free black surface resistance < 10 <sup>9</sup> Ω grey surface resistance > 10 <sup>12</sup> Ω
Colour	black: RAL 9005 grey: RAL 7000/RAL 7001
Lid screws	stainless steel, captive cross-head (+ -) (other models on request)
Standard seals	EPDM -20 °C to +95 °C optional silicone -55 °C to +100 °C
Mechanical resistance	impact energy 7 Nm (EN/IEC 60079-0)
Protection class	IP 66 EN/IEC 60529
Rated voltage	max. 1 100 V

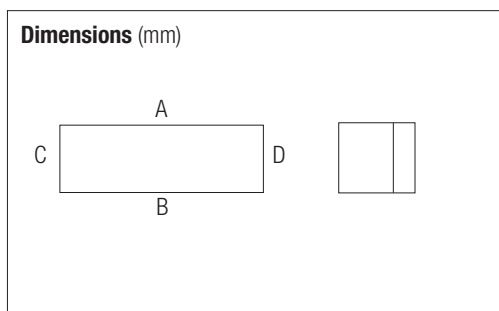


The table on this page applies to the following polyester distribution boxes:

IP distribution box	black	07-5178-.../...
IP distribution box	grey	07-5177-.../...
Ex e distribution box	black	07-5103-.../...
Ex e distribution box	grey	07-5106-.../...
Ex i distribution box	black	07-5105-.../...
Ex i distribution box	grey	07-5107-.../...

**Rail-mounted terminal components/maximum number**

Polyester distribution boxes Article no.	Mini-terminal 07-9702-....		AKZ4 03-7112-0006		WDU 2.5 03-7111-0012		WDU 2.5 bl 03-7111-0012		WDU 4 03-7112-0015	
	mounting rail	Terminals per rail	mounting rail	Terminals per rail	mounting rail	Terminals per rail	mounting rail	Terminals per rail	mounting rail	Terminals per rail
07- [ ] [ ] [ ] [ ] -0800/7555	1	6	1	8	-	-	-	-	-	-
07- [ ] [ ] [ ] [ ] -1100/7555	1	8	1	13	-	-	-	-	-	-
07- [ ] [ ] [ ] [ ] -1600/7555	1	12	1	21	-	-	-	-	-	-
07- [ ] [ ] [ ] [ ] -1900/7555	1	16	1	26	-	-	-	-	-	-
07- [ ] [ ] [ ] [ ] -2300/7550	1	19	1	32	-	-	-	-	-	-
07- [ ] [ ] [ ] [ ] -1221/2090	2	8	1	14	1	16	1	16	1	14
07- [ ] [ ] [ ] [ ] -1221/2012	2	8	1	14	1	16	1	16	1	14
07- [ ] [ ] [ ] [ ] -2201/2090	2	17	1	30	1	35	1	35	1	30
07- [ ] [ ] [ ] [ ] -1601/6090	-	-	2	18	1	24	1	23	1	20
07- [ ] [ ] [ ] [ ] -1601/6012	-	-	2	18	1	24	1	23	1	20
07- [ ] [ ] [ ] [ ] -2601/6090	-	-	2	34	1	43	1	42	1	34
07- [ ] [ ] [ ] [ ] -3601/6090	-	-	-	-	1	60	1	62	1	50
07- [ ] [ ] [ ] [ ] -2552/5012	-	-	-	-	2	43	3	42	2	35
07- [ ] [ ] [ ] [ ] -2552/5016	-	-	-	-	2	43	3	42	2	35
07- [ ] [ ] [ ] [ ] -4002/5012	-	-	-	-	2	67	3	70	2	56
07- [ ] [ ] [ ] [ ] -4002/5016	-	-	-	-	2	67	3	70	2	56
07- [ ] [ ] [ ] [ ] -4004/0512	-	-	-	-	3	67	5	70	3	56
07- [ ] [ ] [ ] [ ] -4004/0516	-	-	-	-	3	67	5	70	3	56
07- [ ] [ ] [ ] [ ] -6002/5012	-	-	-	-	2	108	2	110	1	91

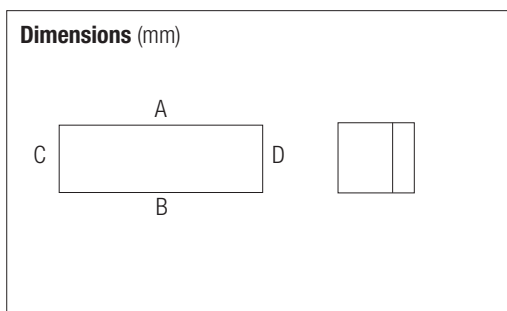


The table on this page applies to the following polyester distribution boxes:

IP distribution box	black	07-5178-.../...
IP distribution box	grey	07-5177-.../...
Ex e distribution box	black	07-5103-.../...
Ex e distribution box	grey	07-5106-.../...
Ex i distribution box	black	07-5105-.../...
Ex i distribution box	grey	07-5107-.../...

**Cable glands/maximum number**

Article no.	Side	M12 x 1.5	M16 x 1.5	M20 x 1.5 extended	M20 x 1.5 extended	M20 x 1.5 extended	M25 x 1.5	M32 x 1.5	M40 x 1.5	M50 x 1.5	M63 x 1.5
07-□□□□ -0800/7555	A/B C/D	4 1	2 1	2 -	2 -	1 -	1 -	- -	- -	- -	- -
07-□□□□ -1100/7555	A/B C/D	6 1	4 1	3 -	3 -	2 -	2 -	- -	- -	- -	- -
07-□□□□ -1600/7555	A/B C/D	12 1	6 1	5 -	4 -	4 -	3 -	- -	- -	- -	- -
07-□□□□ -1900/7555	A/B C/D	15 1	8 1	6 -	5 -	5 -	4 -	- -	- -	- -	- -
07-□□□□ -1221/2090	A/B C/D	13 4	9 4	5 2	5 2	4 2	3 1	2 1	1 1	1 -	- -
07-□□□□ -1221/2012	A/B C/D	13 4	9 4	5 2	5 2	4 2	3 1	2 1	1 1	1 -	- -
07-□□□□ -2201/2090	A/B C/D	28 4	18 4	12 2	11 2	10 2	5 1	3 1	3 1	2 -	- -
07-□□□□ -1601/6090	A/B C/D	18 8	14 8	8 5	8 4	6 4	4 2	2 2	2 1	1 -	- -
07-□□□□ -1601/6012	A/B C/D	18 8	14 8	8 5	8 4	6 4	4 2	2 2	1 1	1 -	- -
07-□□□□ -2601/6090	A/B C/D	33 8	26 8	17 5	14 4	12 4	7 2	4 2	3 1	3 -	- -
07-□□□□ -3601/6090	A/B C/D	48 8	38 8	24 5	20 4	18 4	10 2	6 2	5 1	4 -	- -
07-□□□□ -2002/5012	A/B C/D	24 12	16 12	10 10	9 8	7 8	4 4	3 3	2 2	2 2	- 2
07-□□□□ -2552/5012	A/B C/D	53 12	34 12	23 10	20 8	18 8	9 4	7 3	4 2	3 2	2 2
07-□□□□ -2552/5016	A/B C/D	53 12	34 12	23 10	20 8	18 8	9 4	7 3	4 2	3 2	2 2
07-□□□□ -4002/5012	A/B C/D	88 12	58 12	38 10	35 8	30 8	17 4	13 3	6 2	5 2	4 2
07-□□□□ -4002/5016	A/B C/D	88 12	58 12	38 10	35 8	30 8	17 4	13 3	6 2	5 2	4 2
07-□□□□ -4004/0512	A/B C/D	88 26	58 20	38 16	35 14	30 10	17 6	13 4	6 2	5 4	4 3
07-□□□□ -4004/0516	A/B C/D	135 42	89 38	58 34	53 30	46 24	26 8	20 5	9 3	7 6	4 4
07-□□□□ -6002/5012	A/B C/D	130 12	84 12	56 10	52 8	46 8	24 4	18 3	10 2	6 2	4 2



The table on this page applies to the following polyester distribution boxes:

IP distribution box	black	07-5178-.../...
IP distribution box	grey	07-5177-.../...
Ex e distribution box	black	07-5103-.../...
Ex e distribution box	grey	07-5106-.../...
Ex i distribution box	black	07-5105-.../...
Ex i distribution box	grey	07-5107-.../...

**External dimensions, earth bars, mounting panels**

Polyester enclosure Article no.	External dimensions in mm			Earth bars				Mounting panel
	Length	Width	Height	Type	Order no.	Type	Order no.	Order no.
07- [ ] [ ] [ ] [ ] -0800/7555	80	75	55	MK 2	05-0012-0006	-	-	05-2105-0002
07- [ ] [ ] [ ] [ ] -1100/7555	110	75	55	MK 2	05-0012-0006	-	-	05-2105-0003
07- [ ] [ ] [ ] [ ] -1600/7555	160	75	55	MK 2	05-0012-0006	-	-	05-2105-0004
07- [ ] [ ] [ ] [ ] -1900/7555	190	75	55	MK 2	05-0012-0006	-	-	05-2105-0005
07- [ ] [ ] [ ] [ ] -1221/2090	122	120	90	QS 3	05-0012-0091	LS 4	05-0012-0100	05-0105-0100
07- [ ] [ ] [ ] [ ] -1221/2012	122	120	120	QS 3	05-0012-0091	LS 4	05-0012-0100	05-0105-0100
07- [ ] [ ] [ ] [ ] -2201/2090	220	120	90	QS 3	05-0012-0091	LS 9	05-0012-0101	05-0105-0101
07- [ ] [ ] [ ] [ ] -1601/6090	160	160	90	QS 5	05-0012-0092	LS 5	05-0012-0010	05-0105-0103
07- [ ] [ ] [ ] [ ] -1601/6012	160	160	120	QS 5	05-0012-0092	LS 5	05-0012-0010	05-0105-0103
07- [ ] [ ] [ ] [ ] -2601/6090	260	160	90	QS 5	05-0012-0092	LS 11	05-0012-0102	05-0105-0104
07- [ ] [ ] [ ] [ ] -3601/6090	360	160	90	QS 5	05-0012-0092	LS 16	05-0012-0103	05-0105-0105
07- [ ] [ ] [ ] [ ] -2552/5012	255	250	120	QS 9	05-0012-0096	LS 11	05-0012-0105	05-0105-0113
07- [ ] [ ] [ ] [ ] -2552/5016	255	250	160	QS 9	05-0012-0096	LS 11	05-0012-0105	05-0105-0113
07- [ ] [ ] [ ] [ ] -4002/5012	400	250	120	QS 9	05-0012-0096	LS 18	05-0012-0016	05-0105-0114
07- [ ] [ ] [ ] [ ] -4002/5016	400	250	160	QS 9	05-0012-0096	LS 18	05-0012-0016	05-0105-0114
07- [ ] [ ] [ ] [ ] -4004/0512	400	405	120	QS 15	05-0012-0097	LS 18	05-0012-0016	05-0105-0117
07- [ ] [ ] [ ] [ ] -4004/0516	400	405	120	QS 15	05-0012-0097	LS 18	05-0012-0016	05-0105-0117
07- [ ] [ ] [ ] [ ] -6002/5012	600	250	120	QS 9	05-0012-0096	LS 28	05-0012-0106	05-0105-0199

Technical data subject to change without notice.



- Robust
- Functional
- High available

Polyester distribution boxes have been of great advantage in many industrial plants. They offer safe protection even when they are exposed to extreme environmental conditions, aggressive chemical media or high mechanical stress. The narrow sides within the enclosure hold threaded bushings for the fixing of terminal rails or mounting panels. The enclosure is mounted by means of insulated screws outside of the lid sealing gasket. These black high-quality explosion-proofed enclosures are used in hazardous areas by inflammable dust (Zone 21 and 22). The fundamental prerequisites of the „protection through enclosure“ protection class are fulfilled with the heating up calculation as per the accompanying sheet and a separate IP protection test.

**Technical data**

Protection class	IP 66
Material	glass-fibre reinforced polyester, EN 60079-0, halogen-free
Colour	RAL 9005, black
Electrical resistance	surface resistance < 10 <sup>9</sup> Ω

**Explosion protection**

Marking ATEX	Ⓜ II 2G Ex e ia/ib IIA, IIB, IIC T6, T5 Gb Ⓜ II 2G Ex IIA, IIB, IIC T6, T5 Gb Ⓜ II 2D Ex tb IIIC T80 °C, T95 °C Db IP 66 Ⓜ II 2D Ex ia/ib IIIC T80 °C, T95 °C Db
Certification	PTB 08 ATEX 1064
Marking IECEx	Ex e ia/ib IIA, IIB, IIC T6, T5 Gb Ex IIA, IIB, IIC T6, T5 Gb Ex tb IIIC T80 °C, T95 °C Db IP 66 Ex ia/ib IIIC T80 °C, T95 °C Db
Certification	PTB 09.0009X
Other approvals and certificates, see www.bartec.de	
Ambient temperature	-20 °C to +40 °C at T6 -20 °C to +55 °C at T5 optional -55 °C to +40 °C at T6 -55 °C to +55 °C at T5

**Ordering information**

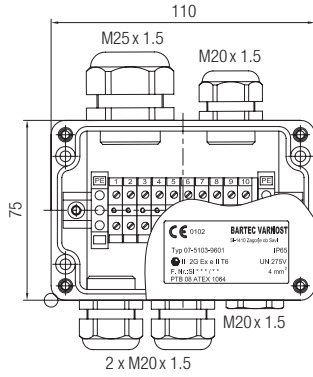
Dimensions (mm)					Terminals	Order no.
	side A	side B	side C	side D		
110 x 75	1 x M20 x 1.5 1 x M25 x 1.5	2 x M20 x 1.5 1 x M20*	-	-	10 x AKZ4 + 2 x PE	07-5103-9601
122 x 120	2 x M20 x 1.5	2 x M20 x 1.5	1 x M20 x 1.5*	1 x M20 x 1.5*	10 x WDU4 + 2 x PE	07-5103-9602
220 x 120	4 x M16 x 1.5 4 x M20 x 1.5*	4 x M16 x 1.5 4 x M20 x 1.5 1 x M25 x 1.5*	-	-	25 x WDU4 + 6 x PE	07-5103-9604
122 x 120	-	2 x M20 x 1.5	1 x M20 x 1.5	1 x M20 x 1.5	8 x WDU4 + 2 x PE	07-5103-9606
122 x 120	-	2 x M25 x 1.5	1 x M25 x 1.5	1 x M25 x 1.5*	6 x WDU6 + 2 x PE	07-5103-9608

\* Sealing plug

Technical data subject to change without notice.

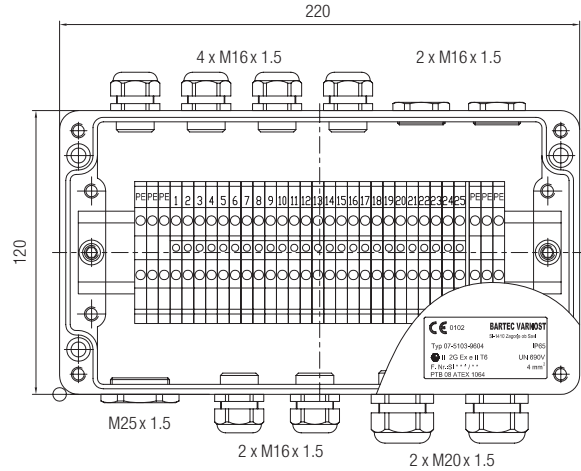
**Type 07-5103-9601**

Dimensions 110 x 75 x 55 mm  
 Terminals 10 x AKZ4 + 2AKE4



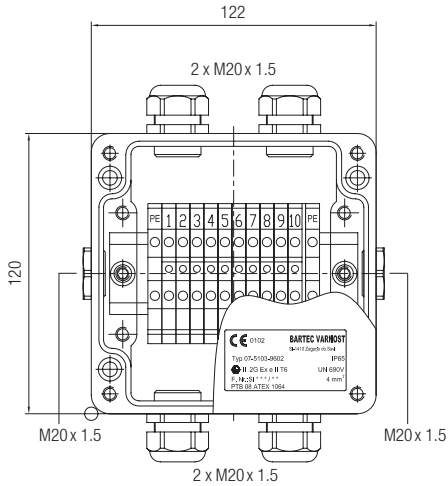
**Type 07-5103-9604**

Dimensions 220 x 120 x 90 mm  
 Terminals 25 x WDU4 + 6 x WPE4



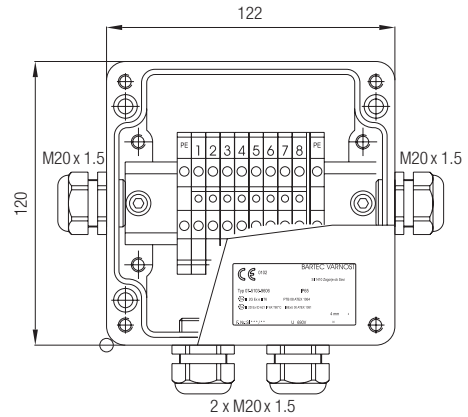
**Type 07-5103-9602**

Dimensions 122 x 120 x 90 mm  
 Terminals 10 x WDU4 + 2 x WPE4



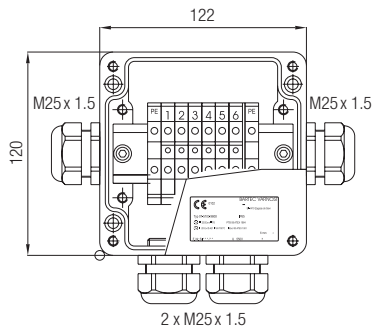
**Type 07-5103-9606**

Dimensions 122 x 120 x 90 mm  
 Terminals 8 x WDU4 + 2 x WPE4



**Type 07-5103-9608**

Dimensions 122 x 120 x 90 mm  
 Terminals 6 x WDU6 + 2 x WPE4



4



- GRP
- Hinged
- Big volume

BARTEC offers nine different types of polyester enclosures with door as distribution boxes for Ex e. The enclosures safely protect against mechanical stress and resist even the most extreme environmental conditions.

**Explosion protection**

Marking ATEX	Ⓔ II 2G Ex e ia/ib IIC T6, T5 Gb Ⓔ II 2D Ex tb IIIC T80 °C, T95 °C Db IP 66 Ⓔ II 2D Ex ia/ib IIC T80 °C db IP 66
Certification	PTB 08 ATEX 1066
Marking IECEx	Ex e ia/ib IIC T6, T5 Gb Ex tb IIIC T80 °C, T95 °C Db IP 66 Ex ia/ib IIC T80 °C db IP 66
Certification	PTB 13.0017
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	

**Technical data**

Material	glass-fibre reinforced polyester enclosure with hinged door, EN 60079 surface resistance < 10 <sup>9</sup> Ω, steel sheet mounting panel, RAL 2000
Paint	glassfibre reinforced polyester, EN 60079-0, halogen-free
Colour	RAL 9005, black
Dorlock	Locking system with casement fastener double way cam lock (other models on request)
Standard seals	foamed PU seal -20 °C to +80 °C
Mechanical resistance	impact energy 7 Nm (EN/IEC 60079)
Protection class	EN/IEC 60529, IP 66 EN 60079-0 (07-5187-8000/0130 in IP 56)

**Accessories**

Supplied with steel sheet mounting panel. Wall mounting brackets on request.

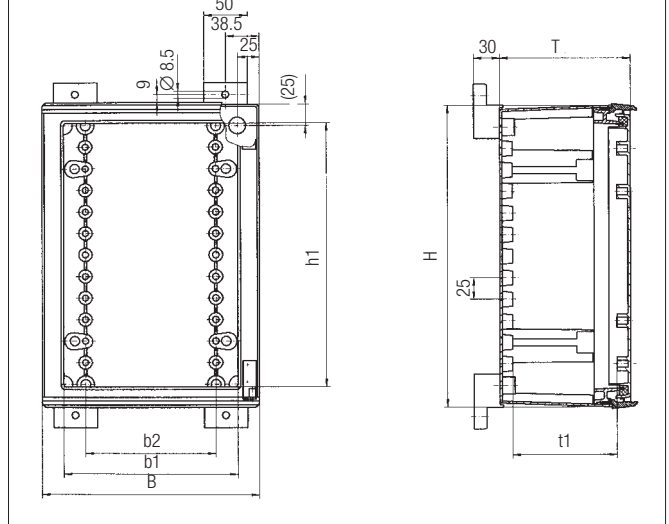
**Components**

Rail-mounted terminals, terminal markers, cable glands, mounting panels, rails, labels

**Installation instructions**

The installer must make sure that the enclosure used is suitable for the corresponding field of application. This means that the marking must correspond to the classification of the Ex area. Also must the temperature class of the distribution box meet the respective requirements.

**Dimensions**



**Ordering information**

External dimensions (mm) Length (L) x Width (B) x Height (H)	Empty Ex enclosure, Type 07-5187-.../.... Order no.	Ex e distribution box, Type 07-5109-.../.... Order no.	Ex i distribution box, Type 07-5110-.../.... Order no.
200 x 300 x 150	07-5187-2003/0015	07-5109-2003/0015	07-5110-2003/0015
250 x 350 x 150	07-5187-2503/5015	07-5109-2503/5015	07-5110-2503/5015
300 x 400 x 200	07-5187-3004/0020	07-5109-3004/0020	07-5110-3004/0020
400 x 400 x 200	07-5187-4004/0020	07-5109-4004/0020	07-5110-4004/0020
400 x 600 x 200	07-5187-4006/0020	07-5109-4006/0020	07-5110-4006/0020
600 x 600 x 200	07-5187-6006/0020	07-5109-6006/0020	07-5110-6006/0020
500 x 500 x 300	07-5187-5005/0030	07-5109-5005/0030	07-5110-5005/0030
600 x 800 x 300	07-5187-6008/0030	07-5109-6008/0030	07-5110-6008/0030
800 x 1000 x 300	07-5187-8000/0130	07-5109-8000/0130	07-5110-8000/0130

**Ordering information**

External dimensions (mm) Length (L) x Width (B) x Height (H)	b1	h1	t1	b2	Weight (kg)	Order no.
200 x 300 x 150	140	256	130	100	3.7	07-5187-20030015
250 x 350 x 150	190	306	130	150	4.6	07-5187-25035015
300 x 400 x 200	240	355	180	200	6.0	07-5187-30040020
400 x 400 x 200	340	354	180	300	6.5	07-5187-40040020
400 x 600 x 200	340	554	180	300	11.5	07-5187-40060020
600 x 600 x 200	440	454	280	400	12.9	07-5187-50050030
500 x 500 x 300	540	554	180	500	15.9	07-5187-60060020
600 x 800 x 300	485	753	280	500	24.3	07-5187-60080030
800 x 1000 x 300	685	953	280	700	30.0	07-5187-80000130

The following table applies to polyester enclosures/distribution boxes with door

Empty Ex enclosure	black	07-5187-..../....	
Ex e distribution boxes	black	07-5109-..../....	
Ex i distribution boxes	black	07-5110-..../....	

Each enclosure side wall has only a limited number of gland entries to ensure the mechanical stability of the enclosure.

**Ordering information** Assembly cable glands/maximum number

Article no.	Side	M12 x 1.5	M16 x 1.5	M16 x 1.5	M20 x 1.5	M20 x 1.5	M25 x 1.5	M32 x 1.5	M40 x 1.5	M50 x 1.5	M63 x 1.5
07- [ ] [ ] [ ] [ ] -2003/0015	A/B	24	18	12	8	8	2	2	2	2	-
	C/D	24	18	6	4	4	2	-	-	-	-
07- [ ] [ ] [ ] [ ] -2503/5015	A/B	32	24	18	12	12	4	2	2	2	-
	C/D	32	24	12	8	8	2	2	2	2	-
07- [ ] [ ] [ ] [ ] -3004/0020	A/B	60	50	32	32	24	12	8	4	4	2
	C/D	60	50	24	24	24	12	4	4	4	2
07- [ ] [ ] [ ] [ ] -4004/0020	A/B	96	70	48	40	40	24	12	8	8	4
	C/D	60	50	24	24	24	12	4	4	4	2
07- [ ] [ ] [ ] [ ] -4006/0020	A/B	96	70	48	40	40	24	12	8	8	4
	C/D	120	90	56	52	44	24	12	10	10	4
07- [ ] [ ] [ ] [ ] -6006/0020	A/B	156	110	80	72	64	36	20	16	16	6
	C/D	120	90	56	52	44	24	12	10	10	4
07- [ ] [ ] [ ] [ ] -5005/0030	A/B	220	162	128	112	98	50	36	18	18	12
	C/D	165	126	80	72	63	30	16	12	12	9
07- [ ] [ ] [ ] [ ] -6008/0030	A/B	286	198	160	144	112	60	40	24	24	18
	C/D	308	234	168	152	112	60	36	21	21	21
07- [ ] [ ] [ ] [ ] -8000/0130	A/B	308	234	160	144	112	60	40	24	24	18
	C/D	418	306	216	200	154	90	52	33	33	27

Technical data subject to change without notice.



- For harsh and hazardous areas
- Wide range
- Different colours on demand

Aluminium enclosures have proven to be an excellent solution for encapsulating and shielding components and modules in electronic and pneumatic engineering. The base and lid of the enclosure come with earthing screws for the connection of the protective conductor. Fixing holes outside the sealed space.

**Explosion protection (EN 60079-0)**

Marking ATEX	⊕ II 2G Ex e IIC Gb ⊕ II 2D Ex tb IIIC Db IP 66
Certification	PTB 08 ATEX 1063 U
Marking IECEx	Ex e IIC Gb Ex tb IIIC Db IP 66PTB 09.0066x
Certification	PTB 11.0032U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	

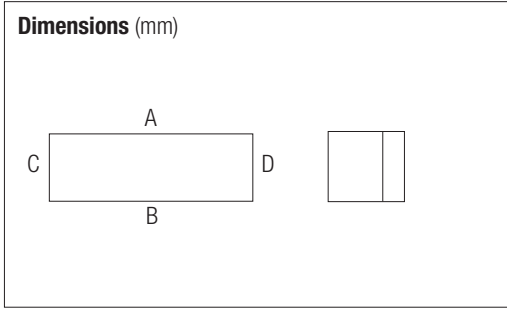
**Technical data**

Material	aluminium, die or shell casting, (metal mould) ALSi 12, Mg < 6 thread -%
Colour	RAL 7001, silver grey, optional unpainted special varnish and seawater-resistant varnish on request
Lid screws	stainless steel, captive, cross-head (+ -) (other models on request)
Standard seals	CR -28 °C to +95 °C optional silicone -55 °C to +100 °C
Mechanical resistance	impact energy 7 Nm (EN 60079-0)
Protection class	IP 66 EN/IEC 60529

**Ordering information IP enclosure**

External dimensions in mm Length (L) x Width (B) x Height (H)	Order no.
58 x 64 x 36 mm	07-5190-0580/6436
98 x 64 x 36 mm	07-5190-0980/6436
150 x 64 x 36 mm	07-5190-1500/6436
75 x 80 x 57 mm	07-5190-0750/8057
125 x 80 x 57 mm	07-5190-1250/8057
175 x 80 x 57 mm	07-5190-1750/8057
250 x 80 x 57 mm	07-5190-2500/8057
122 x 120 x 80 mm	07-5190-1221/2080
122 x 120 x 90 mm	07-5190-1221/2090
360 x 120 x 80 mm	07-5190-3601/2080
220 x 120 x 80 mm	07-5190-2201/2080
220 x 120 x 90 mm	07-5190-2201/2090
160 x 160 x 90 mm	07-5190-1601/6090
260 x 160 x 90 mm	07-5190-2601/6090
360 x 160 x 90 mm	07-5190-3601/6090
560 x 160 x 90 mm	07-5190-5601/6090
200 x 230 x 110 mm	07-5190-2002/1011
280 x 230 x 110 mm	07-5190-2802/1011
330 x 230 x 110 mm	07-5190-3302/1011
400 x 230 x 110 mm	07-5190-4002/1011
600 x 230 x 110 mm	07-5190-6002/1011
400 x 310 x 110 mm	07-5190-4003/1011
600 x 310 x 110 mm	07-5190-6003/1011
200 x 230 x 180 mm	07-5190-2002/3018
330 x 230 x 180 mm	07-5190-3302/3018
400 x 310 x 180 mm	07-5190-4003/1018
600 x 310 x 180 mm	07-5190-6003/1018

Technical data subject to change without notice.

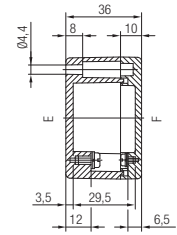
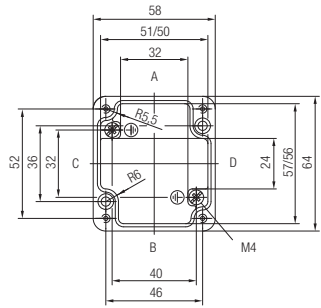


The dimensions on this page apply to the following aluminium enclosure/distribution boxes:

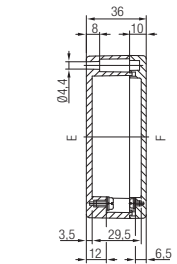
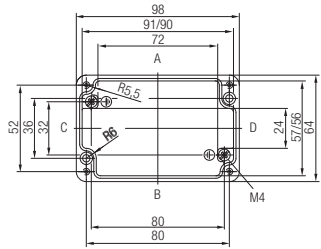
- IP enclosure 07-5190-.../...
- Ex enclosure 07-5180-.../...
- IP distribution box 07-5172-.../...
- Ex e distribution box 07-5101-.../...
- Ex i distribution box 07-5102-.../...

**Technical data**

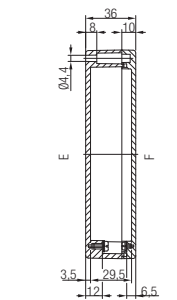
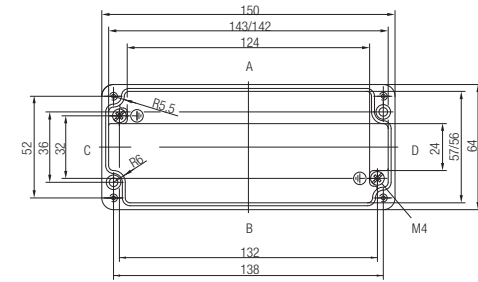
External dimensions	58 x 64 x 36 mm
Weight	150 g
Material	aluminium, grey
Article no.	07-51 <input type="checkbox"/> -0580/6436



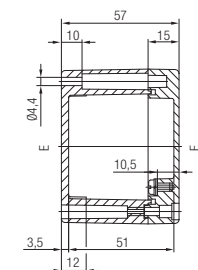
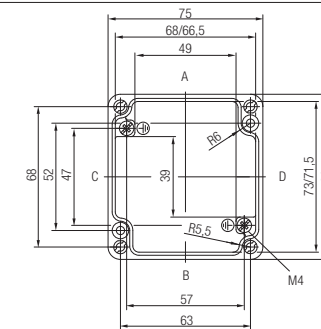
External dimensions	98 x 64 x 36 mm
Weight	250 g
Material	aluminium, grey
Article no.	07-51 <input type="checkbox"/> -0980/6436



External dimensions	150 x 64 x 36 mm
Weight	320 g
Material	aluminium, grey
Article no.	07-51 <input type="checkbox"/> -1500/6436



External dimensions	75 x 80 x 57 mm
Weight	300 g
Material	aluminium, grey
Article no.	07-51 <input type="checkbox"/> -0750/8057



**Dimensions (mm)**

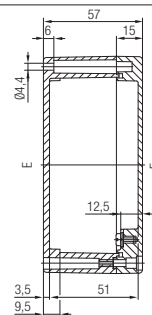
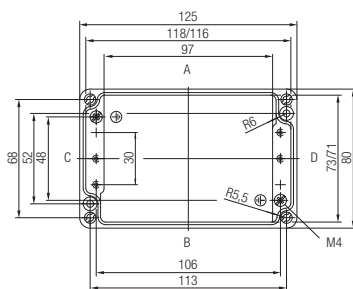


The dimensions on this page apply to the following aluminium enclosure/distribution boxes:

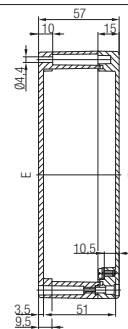
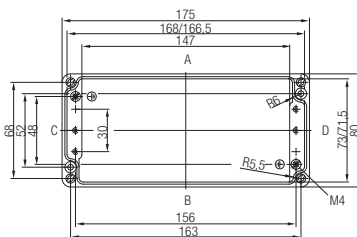
- IP enclosure 07-5190-.../...
- Ex enclosure 07-5180-.../...
- IP distribution box 07-5172-.../...
- Ex e distribution box 07-5101-.../...
- Ex i distribution box 07-5102-.../...

**Technical data**

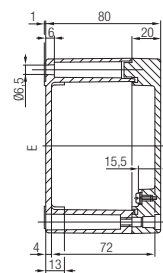
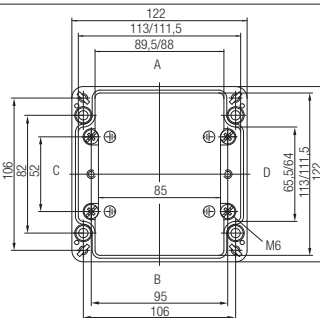
External dimensions	125 x 80 x 57 mm
Weight	440 g
Material	aluminium, grey
Article no.	07-51 □□ -1250/8057



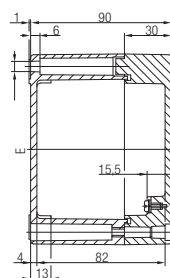
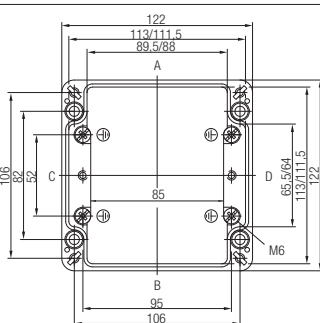
External dimensions	175 x 80 x 57 mm
Weight	510 g
Material	aluminium, grey
Article no.	07-51 □□ -1750/8057



External dimensions	122 x 122 x 80 mm
Weight	940 g
Material	aluminium, grey
Article no.	07-51 □□ -1221/2080

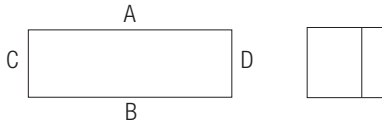


External dimensions	122 x 122 x 90 mm
Weight	880 g
Material	aluminium, grey
Article no.	07-51 □□ -1221/2090





**Dimensions (mm)**

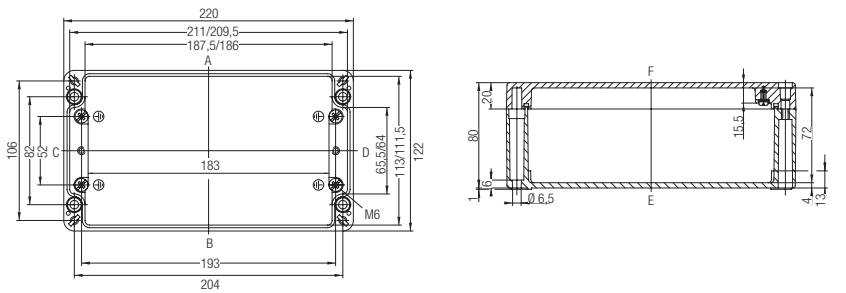


The dimensions on this page apply to the following aluminium enclosure/distribution boxes:

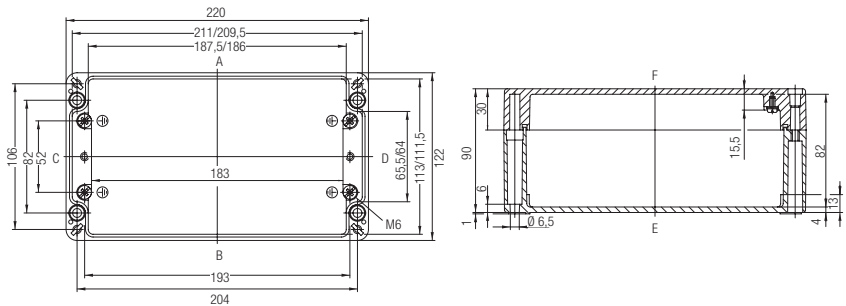
- IP enclosure 07-5190-.../...
- Ex enclosure 07-5180-.../...
- IP distribution box 07-5172-.../...
- Ex e distribution box 07-5101-.../...
- Ex i distribution box 07-5102-.../...

**Technical data**

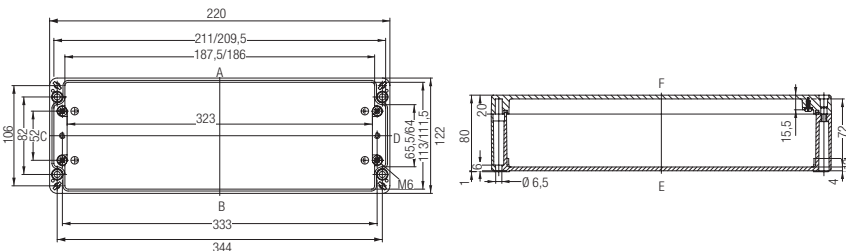
External dimensions	220 x 120 x 80 mm
Weight	1390 g
Material	aluminium, grey
Article no.	07-51 <input type="checkbox"/> <input type="checkbox"/> -2201/2080



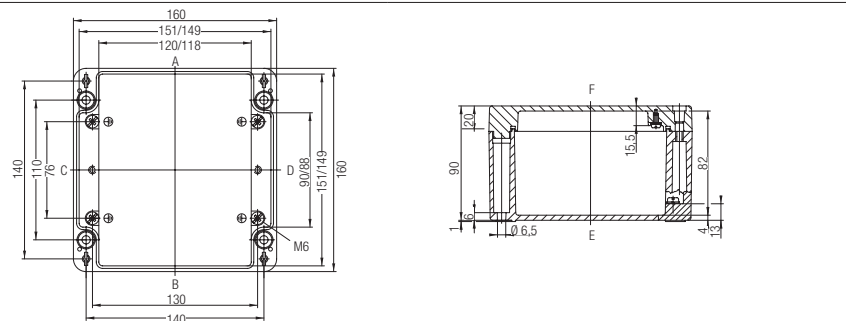
External dimensions	220 x 120 x 90 mm
Weight	1350 g
Material	aluminium, grey
Article no.	07-51 <input type="checkbox"/> <input type="checkbox"/> -2201/2090



External dimensions	360 x 120 x 80 mm
Weight	1950 g
Material	aluminium, grey
Article no.	07-51 <input type="checkbox"/> <input type="checkbox"/> -3601/2080

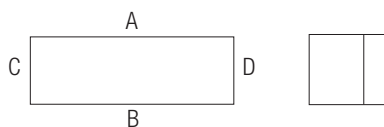


External dimensions	160 x 160 x 90 mm
Weight	1470 g
Material	aluminium, grey
Article no.	07-51 <input type="checkbox"/> <input type="checkbox"/> -1601/6090



4

## Dimensions (mm)

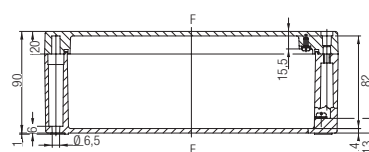
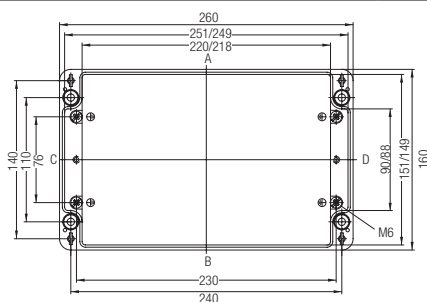


The dimensions on this page apply to the following aluminium enclosure/distribution boxes:

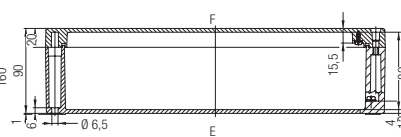
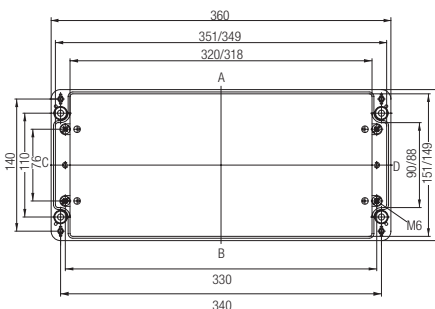
- IP enclosure 07-5190-.../...
- Ex enclosure 07-5180-.../...
- IP distribution box 07-5172-.../...
- Ex e distribution box 07-5101-.../...
- Ex i distribution box 07-5102-.../...

## Technical data

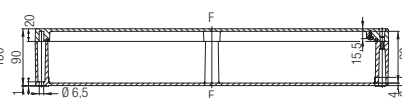
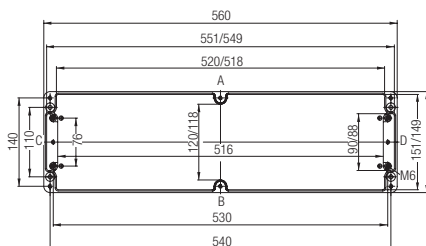
External dimensions	260 x 160 x 90 mm
Weight	2100 g
Material	aluminium, grey
Article no.	07-51 □□ -2601/6090



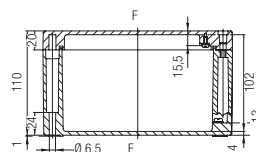
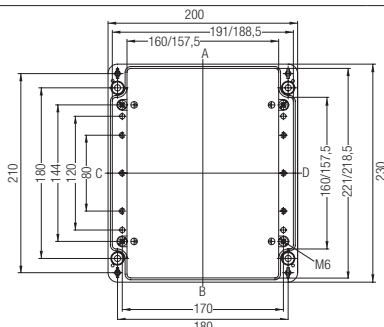
External dimensions	360 x 160 x 90 mm
Weight	2700 g
Material	aluminium, grey
Article no.	07-51 □□ -3601/6090



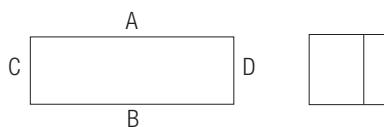
External dimensions	560 x 160 x 90 mm
Weight	3600 g
Material	aluminium, grey
Article no.	07-51 □□ -5601/6090



External dimensions	200 x 230 x 110 mm
Weight	2450 g
Material	aluminium, grey
Article no.	07-51 □□ -2002/1011



**Dimensions (mm)**

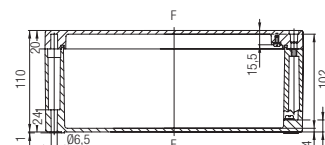
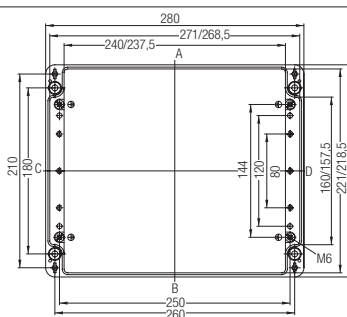


The dimensions on this page apply to the following aluminium enclosure/distribution boxes:

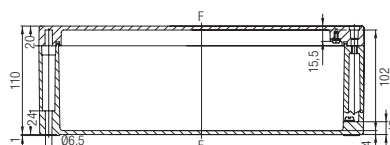
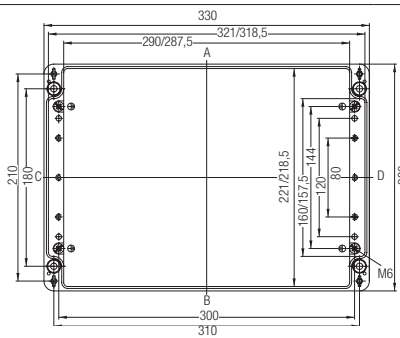
- IP enclosure 07-5190-.../...
- Ex enclosure 07-5180-.../...
- IP distribution box 07-5172-.../...
- Ex e distribution box 07-5101-.../...
- Ex i distribution box 07-5102-.../...

**Technical data**

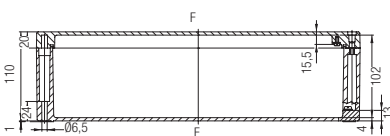
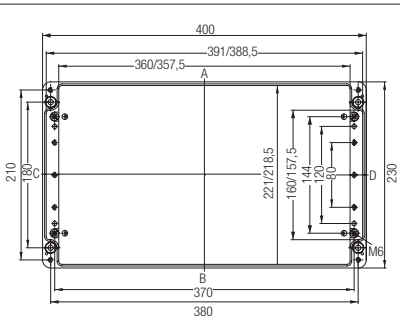
External dimensions	280 x 230 x 110 mm
Weight	2990 g
Material	aluminium, grey
Article no.	07-51 □□ -2802/1011



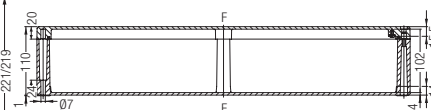
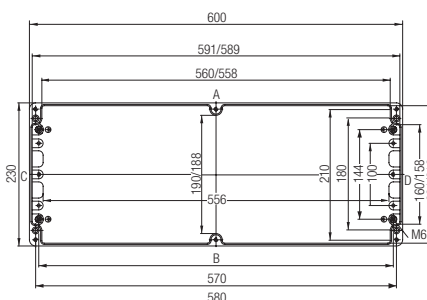
External dimensions	330 x 230 x 110 mm
Weight	3400 g
Material	aluminium, grey
Article no.	07-51 □□ -3302/1011



External dimensions	400 x 230 x 110 mm
Weight	4600 g
Material	aluminium, grey
Article no.	07-51 □□ -4002/1011

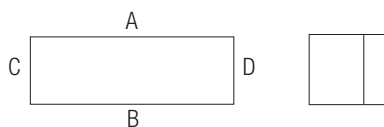


External dimensions	600 x 230 x 110 mm
Weight	6800 g
Material	aluminium, grey
Article no.	07-51 □□ -6002/1011



4

## Dimensions (mm)

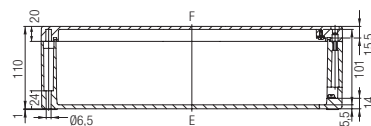
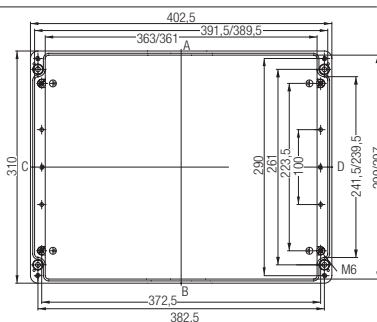


The dimensions on this page apply to the following aluminium enclosure/distribution boxes:

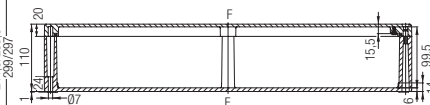
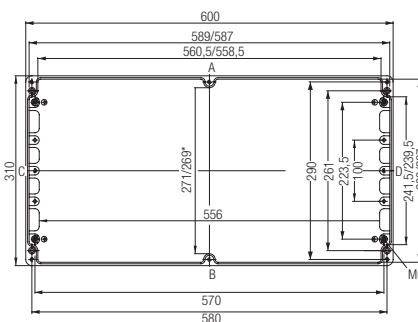
IP enclosure	07-5190-.../...
Ex enclosure	07-5180-.../...
IP distribution box	07-5172-.../...
Ex e distribution box	07-5101-.../...
Ex i distribution box	07-5102-.../...

## Technical data

External dimensions	400 x 310 x 110 mm
Weight	6600 g
Material	aluminium, grey
Article no.	07-51 <input type="checkbox"/> <input type="checkbox"/> -4003/1011



External dimensions	600 x 310 x 110 mm
Weight	9400 g
Material	aluminium, grey
Article no.	07-51 <input type="checkbox"/> <input type="checkbox"/> -6003/1011



Aluminium enclosure for NPT thread on request (insulation thickness). All dimensions are approximate measurements and subject to terminal changes.

Technical data subject to change without notice.



- For harsh and hazardous areas
- Flexible
- Engineered to order

Aluminium distribution boxes have proven to be an excellent solution for encapsulating and shielding components and modules in electronic and pneumatic engineering. Bottom and lid of the distribution boxes come with earthing screws for the connecting of the protective conductor. Mounting threads in the bottom section, fixing holes outside of the sealed space. The same high quality explosion-proofed enclosures are used in hazardous areas by inflammable dust (Zone 21 and 22). By means of the heating calculation according to the supplement to the test certificate and a separate IP-protection test, the basic requirements of the "protection through enclosure" type of protection are met.

IP distribution box	grey	07-5172-.../....
Ex e distribution box	grey	07-5101-.../....
Ex i distribution box	grey	07-5102-.../....

## Explosion protection

Marking ATEX	Ⓢ II 2G Ex e ia/ib IIA, IIB, IIC T6 oder T5 Gb Ⓢ II 2D Ex tb IIIC T80 °C, T95 °C Db IP 66
Certification for Zone 1 and Zone 2	PTB 11 ATEX 1016X
Marking IECEx	Ex e ia/ib IIA, IIB, IIC T6 oder T5 Gb Ex tb IIIC T80 °C, T95 °C Db IP 66
Certification for Zone 21 and Zone 22	PTB 11.0033X
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-20 °C to +40 °C for T6
(specific designs available on request)	-55 °C to +55 °C for T5 optionally up to +65 °C (T5)

## Technical data

Material	aluminium, die or shell casting, AISI 12, Mg < 6 thread -%
Colour/coating	RAL 7001, silver grey, optionally unpainted special varnish and seawater-resistant varnish on request
Lid screws (other models on request)	stainless steel, captive, cross-head (+ -)
Standard seals	CR -28 °C to +95 °C optional silicone -55 °C to +100 °C
Mechanical resistance	impact energy 7 Nm (EN/IEC 60079-0)
Protection class	IP 66 EN/IEC 60529
Rated voltage	max. 1 100 V

## Installation instructions

The installer must make sure that the enclosure used is suitable for the corresponding field of application. This means that the marking must correspond to the classification of the Ex area. Also must the temperature class of the distribution box meet the respective requirements.

## Aluminium distribution boxes for Zone 1/21 and Zone 2/22

The table on this page applies to the following aluminium distribution boxes:

IIP distribution box 07-5172-.../.... Ex e distribution box 07-5101-.../.... Ex i distribution box 07-5102-.../....

### Rail-mounted terminals/maximum number

Aluminium enclosure Article no.	Mini-terminal 07-7902-....		AKZ4 03-7112-0008		WDU 2,5 03-7111-0012		WDU 2,5 bl 03-7111-0012		WDU 4 03-7112-0015	
	mounting- rail	Terminals per rail	mounting- rail	Terminals per rail	mounting- rail	Terminals per rail	mounting- rail	Terminals per rail	mounting- rail	Terminals per rail
07- [ ] [ ] [ ] [ ] -0580/6436	-	3	-	-	-	-	-	-	-	-
07- [ ] [ ] [ ] [ ] -0980/6436	-	7	-	-	-	-	-	-	-	-
07- [ ] [ ] [ ] [ ] -1500/6436	-	11	-	-	-	-	-	-	-	-
07- [ ] [ ] [ ] [ ] -0750/8057	1	5	1	7	-	-	-	-	-	-
07- [ ] [ ] [ ] [ ] -1250/8057	1	10	1	16	-	-	-	-	-	-
07- [ ] [ ] [ ] [ ] -1750/8057	1	14	1	22	-	-	-	-	-	-
07- [ ] [ ] [ ] [ ] -1221/2080	2	8	1	14	1	16	1	16	1	14
07- [ ] [ ] [ ] [ ] -1221/2090	2	8	1	14	1	16	1	16	1	14
07- [ ] [ ] [ ] [ ] -2201/2080	2	17	1	30	1	35	1	35	1	30
07- [ ] [ ] [ ] [ ] -2201/2090	2	17	1	30	1	35	1	35	1	30
07- [ ] [ ] [ ] [ ] -3601/2080	-	-	-	-	1	60	1	60	1	49
07- [ ] [ ] [ ] [ ] -1601/6090	-	-	2	18	1	24	1	23	1	20
07- [ ] [ ] [ ] [ ] -2601/6090	-	-	2	34	1	43	1	42	1	34
07- [ ] [ ] [ ] [ ] -3601/6090	-	-	-	-	1	60	1	62	1	50
07- [ ] [ ] [ ] [ ] -5601/6090	-	-	-	-	1	98	1	102	1	85
07- [ ] [ ] [ ] [ ] -2002/1011	-	-	3	25	2	30	2	30	2	25
07- [ ] [ ] [ ] [ ] -2802/1011	-	-	-	-	2	44	2	44	2	38
07- [ ] [ ] [ ] [ ] -3302/1011	-	-	-	-	2	56	2	53	2	46
07- [ ] [ ] [ ] [ ] -4002/1011	-	-	-	-	2	70	2	68	2	58
07- [ ] [ ] [ ] [ ] -6002/1011	-	-	-	-	2	108	2	109	1	90
07- [ ] [ ] [ ] [ ] -4003/1011	-	-	-	-	3	70	3	68	2	58
07- [ ] [ ] [ ] [ ] -6003/1011	-	-	-	-	2	110	2	110	2	91

Technical data subject to change without notice.

The table on this page applies to the following aluminium distribution boxes:  
 IIP distribution box 07-5172-.../.... Ex e distribution box 07-5101-.../.... Ex i distribution box 07-5102-.../....

## Ordering information

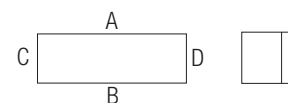
Aluminium enclosure Article no.	External dimensions in mm			Earth bars/Mantle terminal				Mounting panel
	Length	Width	Height	Type	Order no.	Type	Order no.	Order no.
07-□□□□-0580/6436	58	64	36	SB 2	05-0012-0002	-	-	05-2105-0094
07-□□□□-0980/6436	98	64	36	SB 2	05-0012-0002	-	-	05-2105-0095
07-□□□□-1500/6436	150	64	36	SB 2	05-0012-0002	-	-	05-2105-0096
07-□□□□-0750/8057	75	80	57	SB 2	05-0012-0002	-	-	05-2105-0097
07-□□□□-1250/8057	125	80	57	SB 2	05-0012-0002	-	-	05-0105-0098
07-□□□□-1750/8057	175	80	57	SB 2	05-0012-0002	LS 4	-	05-0105-0099
07-□□□□-1221/2080	122	120	80	QS 3	05-0012-0002	LS 4	05-0012-0100	05-0105-0100
07-□□□□-1221/2090	122	120	90	QS 3	05-0012-0002	LS 9	05-0012-0100	05-0105-0100
07-□□□□-2201/2080	220	120	80	QS 3	05-0012-0091	LS 5	05-0012-0101	05-0105-0101
07-□□□□-2201/2090	220	120	90	QS 3	05-0012-0091	LS 5	05-0012-0101	05-0105-0101
07-□□□□-3601/2080	360	120	80	QS 3	05-0012-0091	LS 11	05-0012-0103	05-0105-0102
07-□□□□-1601/6090	160	160	90	QS 5	05-0012-0092	LS 16	05-0012-0010	05-0105-0103
07-□□□□-2601/6090	260	160	90	QS 5	05-0012-0092	LS 11	05-0012-0012	05-0105-0106
07-□□□□-3601/6090	360	160	90	QS 5	05-0012-0092	LS 11	05-0012-0014	05-0105-0105
07-□□□□-5601/6090	560	160	90	QS 5	05-0012-0092	LS 18	05-0012-0107	05-0105-0107
07-□□□□-2002/1011 07-□□□□-3302/3018	200	230	110	QS 7	05-0012-0098	LS 18	05-0012-0108	05-0105-0108
07-□□□□-2802/1011	280	230	110	QS 7	05-0012-0098	LS 18	05-0012-0109	05-0105-0109
07-□□□□-3302/1011 07-□□□□-3302/3018	330	230	110	QS 7	05-0012-0098	LS 18	05-0012-0110	05-0105-0110
07-□□□□-4002/1011	400	230	110	QS 7	05-0012-0098	LS 28	05-0012-0016	05-0105-0111
07-□□□□-6002/1011	600	230	110	QS 7	05-0012-0098	LS 28	05-0012-0111	05-0105-0112
07-□□□□-4003/1011 07-□□□□-4002/1018	400	310	110	QS 13	05-0012-0099	LS 28	05-0012-0016	05-0105-0115
07-□□□□-6003/1011 07-□□□□-6003/1018	600	310	110	QS 13	05-0012-0099	LS 28	05-0012-0111	05-0105-0116

QS = diagonal strip/horizontal alignment, e.g.: LS 4 = 4 clamping points for 8 connections  
 LS = horizontal strip/vertical strip, e.g.: QS 3 = 3 clamping points for 6.

Technical data subject to change without notice.



The table on this page applies to the following aluminium distribution boxes:  
 IIP distribution box 07-5172-.../.... Ex e distribution box 07-5101-.../.... Ex i distribution box 07-5102-.../....



**Aluminum distribution box with lid** Cable glands/maximum number

Aluminium enclosure Article no.	Side	M12 x 1.5	M16x 1.5	M16 x 1.5 extended	M20 x 1.5	M20 x 1.5 extended	M25 x 1.5	M32 x 1.5	M40 x 1.5	M50 x 1.5	M63 x 1.5
07-□□□□-0580/6436	A/B C/D	1 -	1 -	1 -	- -	- -	- -	- -	- -	- -	- -
07-□□□□-0980/6436	A/B C/D	3 1	3 1	3 1	- -	- -	- -	- -	- -	- -	- -
07-□□□□-1500/6436	A/B C/D	6 1	5 1	4 1	- -	- -	- -	- -	- -	- -	- -
07-□□□□-0750/8057	A/B C/D	5 2	3 2	2 2	2 1	1 -	1 -	- -	- -	- -	- -
07-□□□□-1250/8057	A/B C/D	9 2	6 2	4 2	3 1	3 1	2 -	- -	- -	- -	- -
07-□□□□-1750/8057	A/B C/D	14 2	9 2	6 2	5 1	4 1	3 -	- -	- -	- -	- -
07-□□□□-1221/2080	A/B C/D	12 4	10 4	6 3	6 2	5 2	3 1	2 1	1 -	1 -	1 -
07-□□□□-1221/2090	A/B C/D	12 4	9 4	6 2	5 2	4 2	2 -	1 -	1 -	1 -	1 -
07-□□□□-2201/2080	A/B C/D	27 4	17 4	12 3	11 2	10 2	5 1	3 1	3 -	2 -	2 -
07-□□□□-2201/2090	A/B C/D	27 4	17 4	12 2	11 2	10 2	5 -	3 -	3 -	2 -	1 -
07-□□□□-3601/2080	A/B C/D	48 4	30 4	22 4	21 2	18 2	9 1	6 1	5 -	- -	- -
07-□□□□-1601/6090	A/B C/D	18 8	14 8	8 5	8 4	6 4	4 2	2 -	1 -	1 -	1 -
07-□□□□-2601/6090	A/B C/D	33 8	26 8	17 5	14 4	12 4	7 2	4 -	3 -	3 -	2 -
07-□□□□-3601/6090	A/B C/D	48 8	38 8	24 5	20 4	18 4	10 2	6 -	5 -	4 -	3 -
07-□□□□-5601/6090	A/B C/D	84 8	60 8	42 5	34 4	28 4	20 2	10 -	8 -	6 -	4 -
07-□□□□-2002/1011	A/B C/D	38 20	24 15	16 10	15 10	12 6	8 4	5 3	3 2	2 2	2 1
07-□□□□-2002/3018	A/B C/D	64 56	36 42	25 25	25 25	16 16	16 16	9 9	4 4	4 4	4 4
07-□□□□-2802/1011	A/B C/D	58 20	30 15	25 10	23 10	20 6	11 4	8 3	4 2	3 2	2 -
07-□□□□-3302/1011	A/B C/D	70 20	46 15	30 10	28 10	24 6	14 4	10 3	5 2	4 2	2 1
07-□□□□-3302/3018	A/B C/D	120 56	72 36	50 25	45 25	32 16	28 12	18 9	8 4	8 4	6 4
07-□□□□-4002/1011	A/B C/D	58 20	56 15	38 10	35 10	30 6	17 4	12 3	6 2	4 2	3 1
07-□□□□-6002/1011	A/B C/D	126 25	84 15	56 10	52 10	46 6	24 4	18 3	8 2	6 2	4 1
07-□□□□-4003/1011	A/B C/D	85 30	56 25	38 20	35 18	30 10	17 5	12 4	6 2	4 2	3 1
07-□□□□-4003/1018	A/B C/D	144 84	90 60	65 45	60 40	44 28	36 24	21 15	12 8	10 6	8 6
07-□□□□-6003/1011	A/B C/D	126 30	84 25	56 20	52 18	46 10	24 5	18 4	8 2	6 2	4 1
07-□□□□-6003/1018	A/B C/D	208 84	132 60	90 45	90 40	80 28	56 18	30 15	16 8	16 6	12 6

Each enclosure side wall has only a limited number of gland entries to ensure the mechanical stability of the enclosure.

Technical data subject to change without notice.



- Zones 1/21 und 2/22
- Extremely robust
- Fully bolted or hinged

BARTEC stainless steel housings and distribution boxes are designed and approved for Zone 1 and 2 as well as Zone 21 and 22. They are particularly suitable for applications under extreme environmental conditions, and they provide reliable protection under heavy loads. The housings are made from 1.4301 (V2 A) or 1.4404 stainless steel (V4 A). The series includes empty housings and distribution boxes with door or cover. From a housing height of 120 mm, the housings can be supplied with or without flange plates. In addition to 25 standard sizes, approved customer-specific design variants are also available.

**Explosion protection**

Marking acc. to EN 60079-0 for empty enclosures/cabinets	<ul style="list-style-type: none"> <li>⊕ II 2G Ex e IIC Gb</li> <li>⊕ II 2D Ex tb IIIC Gb</li> </ul>
for distribution boxes	<ul style="list-style-type: none"> <li>⊕ II 2G Ex e IIC T6, T5 Gb</li> <li>⊕ II 2G Ex e ia/ib IIC T6, T5 Gb</li> <li>⊕ II 2D Ex tb IIIC T80 °C, T95 °C Db</li> </ul>
Certification Empty enclosure	IBExU99ATEX1118 U IECEXiBE09.0016 U
Terminal box	IBExU99ATEX1096 IECEXiBE09.0017

Other approvals and certificates, see [www.bartec.de](http://www.bartec.de)

Marking	
EPDM gasket	- 20 °C to + 40 °C at T6 - 20 °C to + 55 °C at T5
Silicone gasket (only ST/ST)	- 55 °C to + 40 °C at T6 - 55 °C to + 55 °C at T5

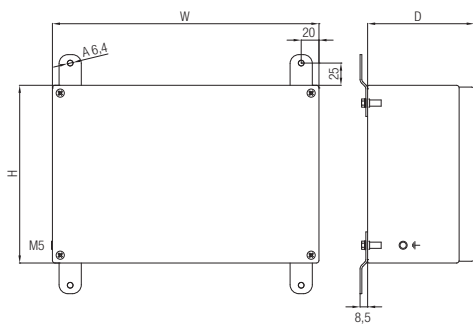
**Technical data**

Material	1.4404, AISI 316 L high quality stainless steel optional 1.4301, AISI 304 high quality stainless steel
Surface	brushed, painted or electro polished on request
Standard seals	EPDM
Mechanical strength	Impact energy 7 Nm
Version	with or without gland plates
Standard sizes	see selection chart
Protection class	max. IP 66 EN/IEC 60529

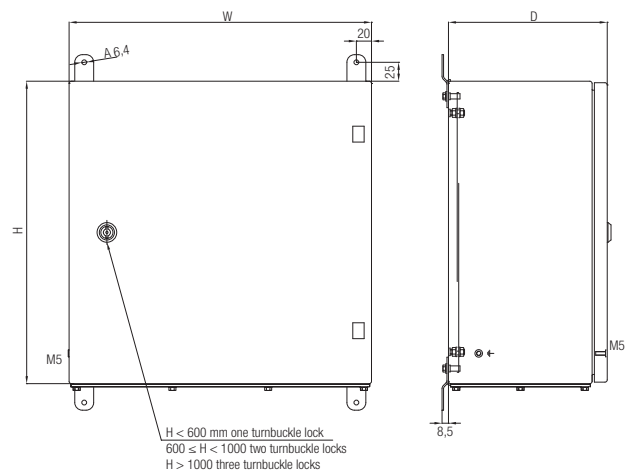
**Scope of delivery**

The scope of delivery includes wall attachment straps, internal and external PE connection, as well as a mounting plate for the empty housings/distribution cabinets.

**Enclosure dimensions**



**Cabinet dimensions**





**Ordering information**

Version	Code no.	Enclosure with lid (w x h x d)	Code no.	Enclosure with hinged door (w x h x d)	Code no.	Flanges Side A, B, (E)	Code no.	Flanges Side C, D, (E)	Code no.
Empty Enclosure Ex e	1	100 x 100 x 60 mm	17	200 x 300 x 155 mm	51	without	1	without	1
		150 x 150 x 80 mm	01						
Distribution Box Ex e II	2	400 x 150 x 80 mm	10	380 x 300 x 155 mm	54	Face A	2	Face C	2
		200 x 200 x 80 mm	03	300 x 380 x 210 mm	52				
		300 x 200 x 80 mm	22	400 x 400 x 210 mm	57	Face B	3	Face D	3
Distribution Box Ex e [ia/ib] II C	3	150 x 150 x 100 mm	02			400 x 600 x 210 mm	58		
		200 x 200 x 120 mm	04						
		Distribution Box Ex i II	4	300 x 200 x 120 mm	06	600 x 600 x 210 mm	59	Face E + A	5
400 x 200 x 120 mm	11			600 x 760 x 210 mm	60	Face E + B	6		
Distribution Box Ex i II	5	600 x 200 x 120 mm	25					600 x 800 x 300 mm	61
		300 x 300 x 120 mm	07						
		Distribution Box Ex i II	6	300 x 300 x 160 mm	08	800 x 800 x 300 mm	62	Face E	8
380 x 380 x 160 mm	26								
Distribution Box Non-Ex	7			400 x 200 x 160 mm	12	800 x 1000 x 300 mm	63		
		400 x 400 x 160 mm	14						
		500 x 400 x 160 mm	15						

or

Complete order no.

07-56   -

Please enter code number.

Example: Ex e distribution box with hinged door

Dimensions: 400 x 400 x 210 mm with gland plates on face B + C + D

Type 07-56D2-5734

Technical data subject to change without notice.

Design	Code no.	
	304	316 L
Enclosure with screwed lid	A	B
Enclosure with hinged door	C	D



The table on this page applies to the following high-quality stainless steel junction boxes:

Ex e-Enclosure, empty 07-56.1-.... Ex e/Ex i-Junction Box 07-56.3-.... IP Junction Box 07-56.7-....  
 Ex e-Junction Box 07-56.2-.... Ex i-Junction Box 07-56.4-....

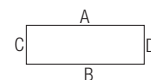
**High-quality stainless steel junction boxes** Rail-mounted terminal components/maximum number

High-quality stainless steel junction boxes without flanges Article no.	External dimensions in mm (L x W x H) Lid	AKZ4 03-7112-0008		WDU 2.5 03-7111-0012		WDU 4 03-7112-0015	
		Mounting rail	Mounting rail	Mounting rail	Mounting rail	Mounting rail	Mounting rail
07-56 □□ -1711	100 x 100 x 60	1	7	-	-	-	-
07-56 □□ -0111	150 x 150 x 80	2	13	1	16	1	13
07-56 □□ -1011	400 x 150 x 80	2	54	1	65	1	54
07-56 □□ -0311	200 x 200 x 80	2	21	1	25	1	21
07-56 □□ -2211	300 x 200 x 80	2	37	1	45	1	38
07-56 □□ -0211	150 x 150 x 100	2	13	1	16	1	13
07-56 □□ -0411	200 x 200 x 120	-	-	1	25	1	21
07-56 □□ -0611	300 x 200 x 120	-	-	1	45	1	38
07-56 □□ -1111	400 x 200 x 120	-	-	1	65	1	54
07-56 □□ -2511	600 x 200 x 120	-	-	1	104	1	87
07-56 □□ -0711	300 x 300 x 120	-	-	2	45	2	38
07-56 □□ -0811	300 x 300 x 160	-	-	2	45	2	38
07-56 □□ -2611	380 x 380 x 160	-	-	3	61	3	51
07-56 □□ -1211	400 x 200 x 160	-	-	1	65	1	54
07-56 □□ -1411	400 x 400 x 160	-	-	4	65	4	54
07-56 □□ -1511	500 x 400 x 160	-	-	4	84	4	70
Hinged door							
07-56 □□ -5111	200 x 300 x 155	-	-	2	21	2	18
07-56 □□ -5411	380 x 300 x 155	-	-	2	60	2	50
07-56 □□ -5211	300 x 380 x 210	-	-	3	45	3	37
07-56 □□ -5711	400 x 400 x 210	-	-	3	64	3	54
07-56 □□ -5811	400 x 600 x 210	-	-	5	64	5	54
07-56 □□ -5911	600 x 600 x 210	-	-	5	103	5	86
07-56 □□ -6011	600 x 760 x 210	-	-	6	103	6	86
07-56 □□ -6111	600 x 800 x 300	-	-	7	103	7	86
07-56 □□ -6211	800 x 800 x 300	-	-	7	142	7	118
07-56 □□ -6311	800 x 1000 x 300	-	-	9	142	9	118

Technical data subject to change without notice.



The table on this page applies to the following high-quality stainless steel junction boxes: Ex e-Enclosure, empty 07-56.1-....; Ex e/Ex i-Junction Box 07-56.3-....; IP Junction Box 07-56.7-....; Ex e-Junction Box 07-56.2-....; Ex i-Junction Box 07-56.4-....



**High-quality stainless steel junction boxes without flanges** Rail-mounted terminal components/maximum number

Article no.	External dimensions in mm (L x W x H)	Side	M12 x 1.5	M16 x 1.5	M20 x 1.5	M25 x 1.5	M32 x 1.5	M40 x 1.5	M50 x 1.5	M63 x 1.5
			Lid							
07-56 □□ -1711	100 x 100 x 60	A/B	3	2	1	1	-	-	-	-
		C/D	3	2	1	-	-	-	-	-
07-56 □□ -0111	150 x 150 x 80	A/B	14	5	4	2	1	-	-	-
		C/D	16	7	5	2	2	-	-	-
07-56 □□ -1011	400 x 150 x 80	A/B	45	24	18	7	6	-	-	-
		C/D	14	7	6	2	2	-	-	-
07-56 □□ -0311	200 x 200 x 80	A/B	20	10	6	3	2	-	-	-
		C/D	23	11	8	3	2	-	-	-
07-56 □□ -2211	300 x 200 x 80	A/B	31	17	12	6	4	-	-	-
		C/D	22	11	7	4	2	-	-	-
07-56 □□ -0211	150 x 150 x 100	A/B	18	11	7	3	2	1	1	1
		C/D	21	12	7	3	2	1	1	1
07-56 □□ -0411	200 x 200 x 120	A/B	37	20	15	7	4	2	2	2
		C/D	30	20	13	7	4	2	2	2
07-56 □□ -0611	300 x 200 x 120	A/B	59	32	21	11	7	4	3	3
		C/D	35	19	13	7	5	2	2	2
07-56 □□ -1111	400 x 200 x 120	A/B	64	34	28	15	9	6	5	4
		C/D	35	20	13	7	4	2	2	2
07-56 □□ -2511	600 x 200 x 120	A/B	82	78	47	23	15	9	7	6
		C/D	30	20	13	7	5	2	2	2
07-56 □□ -0711	300 x 300 x 120	A/B	60	35	22	11	7	4	3	3
		C/D	50	29	21	11	7	4	3	3
07-56 □□ -0811	300 x 300 x 160	A/B	75	46	30	16	10	7	5	4
		C/D	68	47	31	17	9	7	5	4
07-56 □□ -2611	380 x 380 x 160	A/B	96	60	40	21	11	9	6	5
		C/D	93	59	39	23	12	9	6	5
07-56 □□ -1211	400 x 200 x 160	A/B	97	61	40	23	13	9	7	5
		C/D	40	30	17	11	6	4	3	2
07-56 □□ -1411	400 x 400 x 160	A/B	105	61	41	21	13	9	7	5
		C/D	104	63	43	21	12	9	7	5
07-56 □□ -1511	500 x 400 x 160	A/B	126	79	64	28	16	12	9	7
		C/D	104	63	43	21	12	9	7	5
Hinged door										
07-56 □□ -5111	200 x 300 x 155	A/B	48	28	18	10	6	4	3	2
		C/D	74	46	32	17	9	7	4	3
07-56 □□ -5411	380 x 300 x 155	A/B	91	51	39	21	12	9	6	5
		C/D	74	46	32	17	9	7	4	3
07-56 □□ -5211	300 x 380 x 210	A/B	104	60	40	23	17	8	6	6
		C/D	107	69	50	23	15	9	8	7
07-56 □□ -5711	400 x 400 x 210	A/B	136	84	55	31	21	10	10	8
		C/D	115	72	51	23	18	10	9	7
07-56 □□ -5811	400 x 600 x 210	A/B	144	84	55	31	21	10	10	8
		C/D	183	116	65	35	29	15	14	12
07-56 □□ -5911	600 x 600 x 210	A/B	208	120	85	42	30	16	14	13
		C/D	194	120	70	35	29	15	14	11
07-56 □□ -6011	600 x 760 x 210	A/B	170	120	80	51	30	16	14	12
		C/D	228	148	100	47	37	19	17	16
07-56 □□ -6111	600 x 800 x 300	A/B	324	189	119	72	40	28	21	19
		C/D	411	252	147	78	51	32	27	26
07-56 □□ -6211	800 x 800 x 300	A/B	452	234	147	94	52	30	29	27
		C/D	403	231	159	83	51	32	29	26
07-56 □□ -6311	800 x 1000 x 300	A/B	452	234	147	94	52	30	29	27
		C/D	554	300	194	102	67	42	35	32

Each enclosure side wall has only a limited number of gland entries to ensure the mechanical stability of the enclosure. Technical data subject to change without notice.

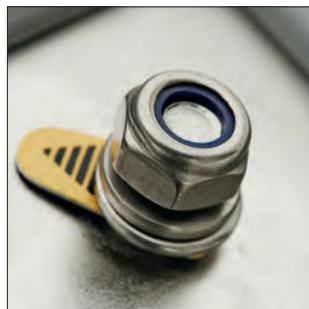


**Features**

- Flexible product range with many standard sizes
- Custom size or design on request
- Wide drain flange design to avoid accumulation of water or debris
- Hinged with screws from size 20 x 20 cm
- Standard IP 66 ingress protection, IP 67 and IP 68 on request
- Multiple grounding points
- Approved for intrinsically safe circuits
- Control equipment
- Self-limiting heating cable for anti-condensation protection
- May be combined as connection box for flameproof applications
- Temperature range -50 °C to + 200 °C
- ATEX, IECEx, INMETRO, CSA and TR-CU approved

**Applications**

The TNCN range of stainless steel 316L enclosures are designed for use in any environment where an explosive atmosphere may be present, and are especially recommended for chemical agent environments, seawater corrosion and extremes of low and high temperature.



The TNCN range comprises many standard sizes of enclosures manufactured in stainless steel 316L for maximum environmental protection. The main box is manufactured from 1.5 mm sheet. Cable entries can be made on all sides or onto optional gland plates. Multiple boxes of same or different size may be flanged together as a compact unit. If your need is for a particular size or requirement, BARTEC TECHNOR also offers tailor made sizes and solutions.

**Explosion protection**

Marking	Ex e IIC T6/T5/T4 / Ex [ia] IIC T6 Gb Ex tD A21 T85 °C - T110 °C Db ⊕ II 2 G/D and EPL Gb/Db
Certification ATEX	DNV-2008-OSL-ATEX-42438U DNV-2001-OSL-ATEX-0176X
IECEX	IECEX DNV 09.0005U IECEX DNV 09.0004X
INMETRO	DNV 16.0023U DNV 16.0022
CSA	CSA 2036776
EAC	TC RU C- NO-GB08-B-01133
Directives	EN/IEC 60079-0, EN/IEC 60079-7, EN/IEC 61241-0, EN/IEC 61241-1
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	

**Technical data**

Material	Stainless steel 316L
Protection class	IP 66 (IP 67 and IP 68 on request)
Temperature	-50 °C to +40 °C (T5) -50 °C to +60 °C (T6/T4)
Cover gasket	Silicone (operating temperature -50 °C to +200 °C)
Surface treatment	Acid pickle
Material thickness	min. 1.5 mm
Earthing	Internal earth bar/bracket, external earth bolt
Options	Quick locks, gland plates, multi transit conduit, window, electro polished or painted surface



**Calculating Terminal Box Heat Dissipation and Number of Terminals**

An ignition temperature is the temperature at which a hot surface will cause an ignition to occur in a given atmosphere. Dependent on the type of gas or dust, the maximum temperature that any surface in the terminal box can reach without a spontaneous ignition is known as the 'T Class'. The maximum surface temperature must always be lower than the ignition temperature of the atmosphere in which it is used. The terminal boxes within the TNCN range has been assigned a maximum heat dissipation relating to the ambient temperature and T-Class. The TNCN range offers T6, T5 and T4 protection:

T4 = Maximum 135 °C  
 (Internal wiring must have a temperature rating of at least 110 °C)

T6 = Maximum 85 °C

Theoretical values are calculated based upon typical configurations. Maximum power must not be exceeded in any given terminal box. Maximum current per terminal must be calculated using the Maximum Heat Dissipation. For some applications it may be necessary to have a variety of terminal sizes. The following tables and examples demonstrate how this is achieved. The power heat dissipation determines the maximum number of terminals permissible for any size of terminal box, based on a 100 % load. In example 2, the total load has exceeded the maximum 100 % value. Therefore, the required size and number of terminals cannot be fitted within this terminal box. If the load exceeds the maximum value simply select a larger size terminal box within the range and repeat the process until the total load value is within 100 % value.



**Maximum heat dissipation**

Type No.	Max. dissipated power at T <sub>a</sub> = 40 °C
121009	6 W
151510	15 W
202012	20 W
202017	20 W
302017	30 W
282817	30 W
383817	40 W
575717	90 W

**Example 1 TNCN 282817A**

Terminal/conductor size (mm <sup>2</sup> )	Current (Amps)	Number of terminals	Load = 100 % maximum
1.5	10	18 (of max. 33)	54.54 %
2.5	16	8 (of max. 33)	24.24 %
4	20	6 (of max. 33)	18.18 %
Total load			96.96 %

**Example 2 TNCN 282822A**

Terminal/conductor size (mm <sup>2</sup> )	Current (Amps)	Number of terminals	Load = 100 % maximum
1.5	10	18 (of max. 33)	54.54 %
2.5	16	10 (of max. 33)	30.30 %
4	20	6 (of max. 33)	18.18 %
Total load			103.02 %

Technical data subject to change without notice.



**Typical Terminal Load Configuration**

Note: In the shaded area you can add as many terminals as physically possible, provided the maximum load of 100 % is not exceeded. For loads on terminals below 4 A, the quantity will be limited by the available space inside the box. There is no restriction in the numbers of terminals. The temperature class will then be T6 (85 °C). Care must be taken to ensure that the size of the chosen enclosure can accommodate the cable bending radius.

**Terminal sizes (mm<sup>2</sup>)**

1210XX	1.5	2.5	4	6
Current (A)	10	15		
	16	6	10	
	20		6	10
	25			6

1515XX	1.5	2.5	4	6	10
Current (A)	10	37			
	16	16	25		
	20		16	25	
	25			16	25
	31				18
	35				
	43				21
					15

2828XX	1.5	2.5	4	6	10	16	35
Current (A)	10	33					
	16	13	33				
	20		21	33			
	25			21	33		
	31				30		
	35					27	
	43					17	
	52						17
	65						11
	96						11

3020XX	1.5	2.5	4	6	10	16	35
Current (A)	10	25					
	16	10	16				
	20		10	17			
	25			11	16		
	31				11		
	35					15	
	43					9	
	52						10
	65						6
	96						6

3838XX	1.5	2.5	4	6	10	16	35
Current (A)	10	33					
	16	13	22				
	20		14	23			
	25			14	22		
	31				14		
	35					20	
	43					12	
	52						13
	65						8
	96						8

3845XX	1.5	2.5	4	6	10	16	35
Current (A)	10	41					
	16	16	27				
	20		17	29			
	25			18	27		
	31				18		
	35					25	
	43					16	
	52						16
	65						10
	96						10

3857xx	1.5	2.5	4	6	10	16	35
Current (A)	10	54					
	16	21	36				
	20		23	38			
	25			24	36		
	31				24		
	35					32	
	43					20	
	52						21
	65						13
	96						13



Terminal sizes (mm<sup>2</sup>)

7695XX	1.5	2.5	4	6	10	16	35	50	95	150
Current (A)	10	153								
	16	60	62							
	20		40	64						
	25			40	60					
	31				40					
	35					54				
	43					35				
	52						37			
	65						24			
	96							23		
	120						15	18		
	135							14	25	
	210								10	12

95114XX	1.5	2.5	4	6	10	16	35	50	95	150
Current (A)	10	184								
	16	72	75							
	20		48	77						
	25			48	72					
	31				48					
	35					64				
	43					42				
	52						45			
	65						28			
	96							28		
	120						18	21		
	135							17	30	
	210								12	15

5757XX	1.5	2.5	4	6	10	16	35	50	95	150
Current (A)	10	75								
	16	30	50							
	20		32	52						
	25			33	50					
	31				33					
	35					45				
	43					29				
	52						30			
	65						19			
	96							19		
	120						12	12		
	135							10	16	
	210								6	7

95152XX	1.5	2.5	4	6	10	16	35	50	95	150	185
Current (A)	10	96									
	16	36	61								
	20		40	63							
	25			40	61						
	31				40						
	35					54					
	43					35					
	52						38				
	65						24				
	96							24			
	120						15	18			
	135							14	26		
	210								10	13	
	234									10	16
	250									9	15

5776XX	1.5	2.5	4	6	10	16	35	50	95	150
Current (A)	10	102								
	16	36	37							
	20		24	38						
	25			24	36					
	31				24					
	35					32				
	43					21				
	52						22			
	65						14			
	96							14		
	120						9	10		
	135							8	15	
	210								6	7

100200XX	1.5	2.5	4	6	10	16	35	50	95	150	185	240	300
Current (A)	10	50											
	16	32	50										
	20		32	51									
	25			32	50								
	31				32								
	35					43							
	43					28							
	52						30						
	65						19						
	96							20					
	120							12	15				
	135								12	22			
	210									9	11		
	234										10	12	15
	250										8	13	



TNCN dimension table – range of stocked boxes

Type	Width (cm)	Height (cm)	Depth (cm)	Volume (dm <sup>3</sup> )	Weight (kg)
12100901**	12	10	9	1.1	1.2
15151001**	15	15	10	2.3	1.8
20201201A**	20	20	12	4.8	2.7
20201202A	20	20	12	4.8	2.7
20201702A	20	20	17	6.8	3.2
20401701A**	20	40	17	13.6	5.2
28281702A	28	28	17	13.3	5.2
30201702A	30	20	17	10.2	5.0
38381702A	38	38	17	24.0	7.1
38382902A	38	38	28	41.9	10.1
38451702A	38	45	17	29.0	8.7
38571702A	38	57	17	36.8	10.6
57571702A	57	57	17	55.2	15.9
57573002	57	57	30	97.5	20.5
57762002	57	76	20	86.7	22.0
76763002	76	76	30	173.3	31.2

\*\* No hinges – screws only

Other sizes are available upon request. The boxes are delivered as standard with left hinged cover secured to the enclosure by screws. Quicklocks, screws only, or other systems can be delivered upon request.

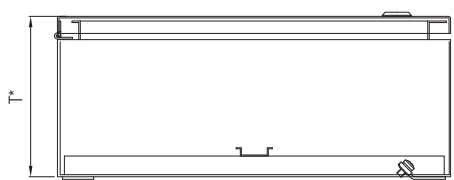
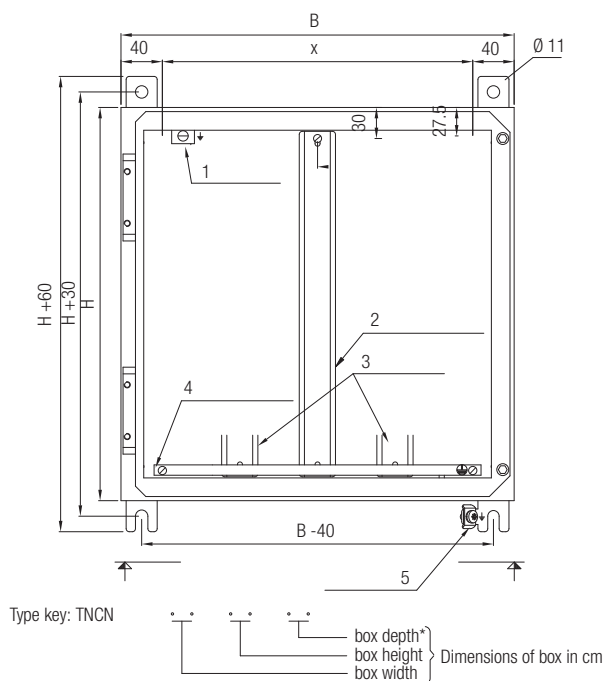
## Entry matrix

Width (cm)	Depth (cm)	M20	M25
15	10	8	6
	15	12	9
	20	16	12
	27	24	15
20	12	10	10
	17	15	15
	22	25	20
	29	35	30
30	12	15	14
	17	24	21
	22	40	28
	29	56	42
38	12	20	18
	17	30	27
	22	50	36
	29	70	54
40	12	22	18
	17	3	27
	22	55	36
	29	77	54
45	12	24	20
	17	36	30
	22	60	40
	29	84	60
57	12	32	26
	17	48	39
	22	80	52
	29	128	78
76	12	42	36
	17	63	54
	22	105	72
	29	147	108

The table is a guidance for the maximum quantity of glands for installation in one face (the Width column in the table) on TNCN terminal boxes.

Note! Recommended quantity is 2/3 of guided quantity. MCT-frames can be fitted in boxes with a minimum depth of 20 cm.

**Dimensions**



- 1 Internal earth
- 2 TS35 Rail (SS316)
- 3 Position for 2 terminal rails\*\*\*
- 4 Earth bar 3 x 10 mm
- 5 External earth
- W = Width
- H = Height
- D = Depth

**NOTES:**

x: Box width - 80 mm  
 \*: The actual box depth is 5 to 10 mm larger than the box depth in type key indicate, dependent on the actual boy size.  
 \*\*\*: Positioning of the internal bracket must be vertical when the width of the box exceeds the heigt. The bracket on the connection boxes shall always be placed vertically.

Please visit [www.bartec.de](http://www.bartec.de) for additional general arrangement drawings.

Technical data subject to change without notice.



- Up to 10 kV
- GRP or SS
- Wide range of sizes

BARTEC offers explosion protected connection enclosures up to 6 kV and 10 kV with more than ten different enclosure types 07-5H9.-.../... of stainless steel and polyester. They serve for the connection of incoming and outgoing cables adjacent to electrical equipment such as motors and transformers up to 10 kV within the Ex area.

**Consignment** With wall fixing brackets

Accessories: mounting panel, post insulator terminals, PE connection; BARTEC tailors the enclosures to the customer's request and equips them with the desired cable glands.

**Explosion protection**

Marking ATEX	Ⓜ II 2G Ex e IIC T6/T5 Gb Ⓜ II 2D Ex tb IIIC T80 °C/T95 °C Db
Certification	IBEXU 13 ATEX 1001
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	
EPDM gasket	- 20 °C to + 40 °C at T6 - 20 °C to + 55 °C at T5
Silicone gasket (only ST/ST)	- 55 °C to + 40 °C at T6 - 55 °C to + 55 °C at T5

**Technical data**

Material	polyester, black, glass-fibre reinforced mounting panel of sheet steel
Protection class	IP 66 according to EN/IEC 60529
Storage temperature	- 20 °C to + 70 °C
Rated voltage	up to 6 kV and 10 kV
Rated current	max. 500 A
Rated cross-section	max. 300 mm <sup>2</sup>

**Ordering information** Polyester-distribution boxes with door

Dimensions in mm			Rated voltage	Order no.
Width	Height	Depth		
400	600	200	6 kV	07-5H95-4006/0020
600	600	200	6 kV	07-5H95-6006/0020
600	800	300	6 kV/10 kV	07-5H95-6008/0030
800	1000	300	6 kV/10 kV	07-5H95-8000/0130

**Ordering information**

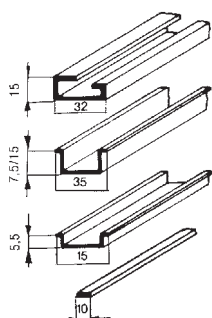
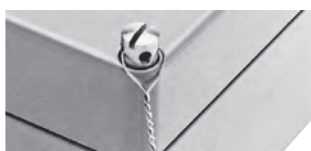
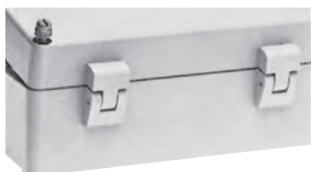
High-quality stainless steel distribution boxes with door

Dimensions in mm			Rated voltage	Order no.
Width	Height	Depth		
400	600	210	6 kV	07-5H92-4006/0021
600	600	210	6 kV	07-5H92-6006/0021
600	760	210	6 kV	07-5H92-6007/6021
760	760	300	6 kV/10 kV	07-5H92-7607/6030
600	800	300	6 kV/10 kV	07-5H92-6008/0030
600	800	300	6 kV/10 kV	07-5H92-8008/0030
800	1000	300	6 kV/10 kV	07-5H92-8000/0130

Technical data subject to change without notice.

**Accessories**

Designation	Description
Socket-head cap screws	
Hinges	Material: aluminium/plastic; opening angle: approx. 170°
Sealable steel lid screws	
Mounting panels for enclosures	galvanised steel plate laminate DIN 7735 HP 2061 for 80 x 75 to 190 x 75 mm polyester enclosures
Mounting rail TS 35	Material: bare copper, 15 high
Mounting rail TS 32	Material: galvanised steel plate, bare copper
Mounting rail TS 35	Material: galvanised steel plate, 7.5 high
Mounting rail TS 15	Material: galvanised steel plate
Mounting rail TS 10	Material: nickel-plated brass, 10 x 3 (5) mm
Lid seal	Material: silicone; temperature resistance: -55 °C to +100 °C
External fastening strips	Material: stainless steel
Earth bars LS, QS	
Wall bracket/steel structure	We supply special fixing brackets for enclosure mounting on pipes, walls and steel structures. They are made of high-quality stainless steel and can be ordered as complete mounting kit with fixing screws and, on request, bolts for the fixing onto steel structures. Ask BARTEC for more detailed information.
PB Pipe bracket	
On request, BARTEC supplies all enclosures complete with terminals, cable entries, blanking plugs and other fittings and components.	





## Features

- High voltage/junction box up to 11 kV (15 kV zone 2)
- Top drive
- Motor/pump
- Subsea umbilical/downhole termination
- Topside Umbilical Termination Unit (TUTU) signal/power/hydraulics
- Umbilical fiber signal/power splitter

The BARTEC TECHNOR TNHV range of enclosures are designed to meet the harshest environments and are ideal for any rugged medium voltage application where safety and flexibility is key. With its flexible design and certification, we are able to support up to 11/15 kV in zone 1/2 and 2100 A.

## Explosion protection

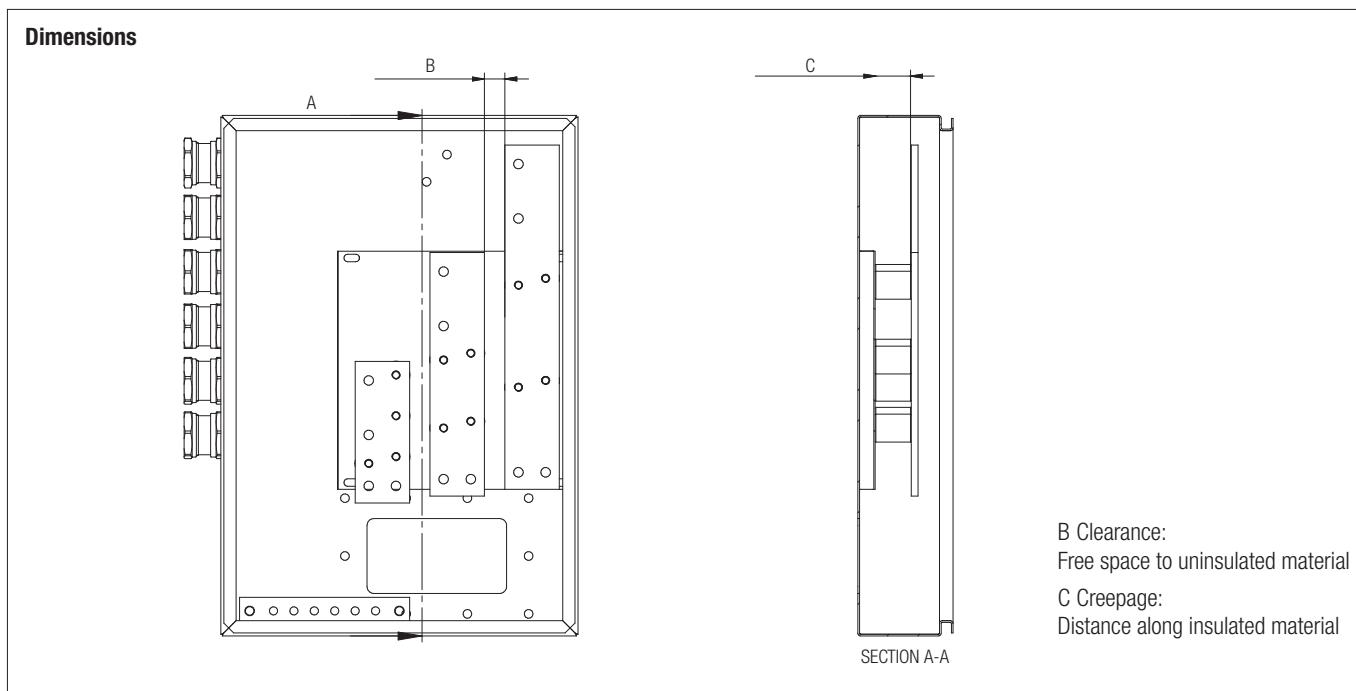
Marking	Ex e IIC T4 Gb / Ex d e IIC T3 Gb ⊕ II 2G/D and EPL Gb/Db
Certification ATEX	Presafe 14 ATEX 5228X DNV-2008-OSL-ATEX-42438
IECEX	IECEX DNV 09.005U IECEX PRE 16.0032X
EAC	TC-RU
Directives	EN 60079-0:2012/A11:2013 EN 60079-1:2007 & EN60079-7:2007

Other approvals and certificates, see [www.bartec.de](http://www.bartec.de)

## Technical data

Material	Stainless steel 316L
Protection class	IP 66 (IP 67 and IP 68 on request)
Ambient temperature	-50 °C to +60 °C (T4/T3)
Cover gaskets	Silicone
Operating temperature	-50 °C to +200 °C
Surface treatment	Acidized pickling
Material thickness	min. 1.5 mm (depending on the box size)
Earthing	Internal earth bar/bracket External earth bar/bracket
Drain plug	Optional
Gland plate	Optional
Space heater	Optional





**Ordering information** Stocked sizes

Version	Ex e Zone	Voltage	Current (see Note 1)	Connection with	Cross section cu (mm <sup>2</sup> )	Width (cm)	Height (cm)	Depth (cm)
TNCC577630	1 and 2	1.0 kV	1000 A	bus bars	1000	57	76	30
TNCC577630	1 and 2	1.0 kV	520 A	bolt terminals	300	57	76	30
TNHV638935	1 and 2	11 kV	1000 A	bus bars	1000	63	89	35
TNHV638935	2	15 kV	1000 A	bus bars	1000	63	89	35
TNHV577630	1 and 2	3.3 kV	1000 A	bus bars	1000	57	76	30
TNHV638935	1 and 2	6.6 kV	1000 A	bus bars	1000	63	89	35

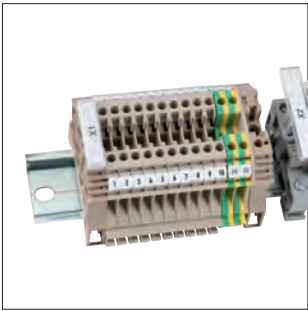
**TNHV** Dimensions and load table

Voltage (see Note 2)	Zone 1	Min. creepage distance	Min. clearance	Zone 2	Min. creepage distance	Min. clearance
		Material group I (C)	(B)		Material group I (C)	(B)
1000 V		20	14		11	8
2000 V		25	23		14	14
4000 V		50	44		28	28
6300 V		80	60		45	45
10000 V		125	100		71	70
15000 V					98	97

Note 1 - Please contact us if your load requirement is above 1000 A.

Note 2 - Voltages shown are derived from IEC 60664-1 and are based on the rationalization of supply voltages given in table 3b if IEC 60664-1. When determining the required values for creepage and clearance, the voltage value in the table may be increased by a factor of 1,1 in order to recognize the range of rated voltages in common use.

Technical data subject to change without notice.



BARTEC deploys rail-mounted terminals with EC model test certification in a variety of electrical operating equipment. BARTEC draws not only on its own innovations in this field, but also uses the know-how of other terminal manufacturers, such as WAGO, Phoenix and Weidmüller. BARTEC keeps a stock of terminals and their associated accessories made by these manufacturers and these are installed in explosion-proofed distributor boxes and at on-site control points as required by the customer.

- Customized assembly
- Marking perspecification
- Phoenix and Weidmüller as standard

**Explosion protection**

Terminals with EC model test certification are available in the following executions:

Feed-through terminals, Tension spring terminals, Mini-terminals, Block terminals, Protective conductor terminals	Ex II 2G Ex e
Feed-through terminals, Tension spring terminals, Mini-terminals	Ex II 2G Ex i

Technical data subject to change without notice.

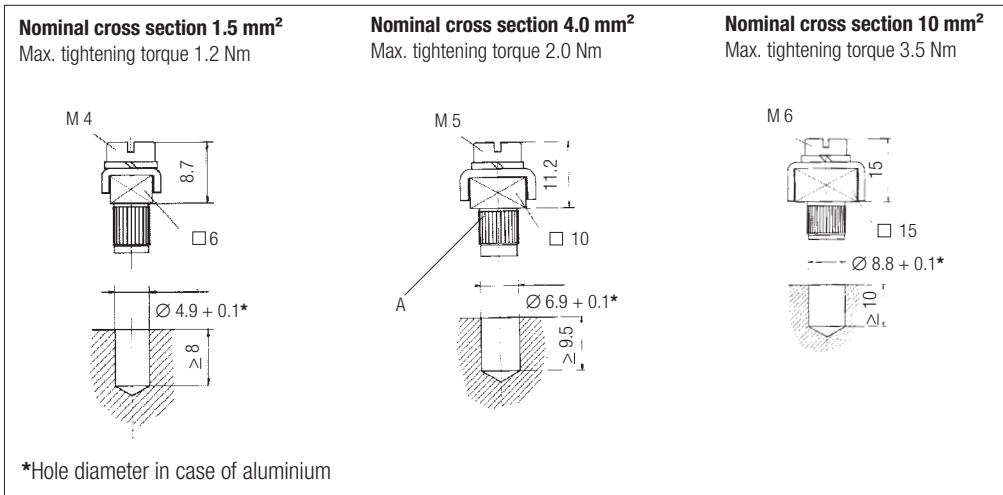
**Mounting**

The terminals are mounted on rails and each terminal row is provided with a terminal plate at the end to cover open clamp sides. The rows are secured with brackets at both ends to prevent movement. Terminal strips must be installed in accordance with the operating instructions issued by the respective manufacturers. These instructions document the admissible state for the terminal installation required at maximum operating voltages including the necessary accessories. This applies in particular to a mixed arrangement with voltage conducting terminals, protective conductors and potential equalisation terminals, rail-mounted terminals of differing potentials, and between “inherently safe power circuits” and those that are “not inherently safe”. If jumper bars are used, ensure compliance with the clearance and creepage distances required for the operating voltage.



- Proof in Application
- Easy to assemble
- Easy to use

Electrical equipment with operating voltages of more than 65 Volt need protective conductors. Metal enclosures also need an external protective conductor connection. BARTEC supplies these connections in three different sizes. The connections correspond to VDE 0170 and carry marking  $\perp$  or  $\oplus$ .



**Installation instructions (A):**  
Push in square cap (**do not hammer in**); put on terminal clamp and fasten screw with spring washer. Screw type terminals with U-brackets have to be wired according to EN 60999-1; 2000.

Ordering information

Designation	Nominal cross section	Possible conductors	Socket material	Order no.
<p>Earth terminals</p>	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup> stranded, 2.5 mm <sup>2</sup> single wire	Ms nickel-plated	05-0012-0038
	4.0 mm <sup>2</sup>	4.0 mm <sup>2</sup> stranded, 6.0 mm <sup>2</sup> single wire	Ms nickel-plated	05-0012-0001
	10.0 mm <sup>2</sup>	10.0 mm <sup>2</sup> stranded, 10.0 mm <sup>2</sup> single wire	Ms nickel-plated	05-0012-0003
	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup> stranded, 2.5 mm <sup>2</sup> single wire	Niro steel	05-0012-0039
	4.0 mm <sup>2</sup>	4.0 mm <sup>2</sup> stranded, 6.0 mm <sup>2</sup> single wire	Niro steel	05-0012-0018
	10.0 mm <sup>2</sup>	10.0 mm <sup>2</sup> stranded, 10.0 mm <sup>2</sup> single wire	Niro steel	05-0012-0022
<p>PE terminals</p>	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup> stranded, 2.5 mm <sup>2</sup> single wire	Ms nickel-plated	05-0012-0002
	4.0 mm <sup>2</sup>	4.0 mm <sup>2</sup> stranded, 6.0 mm <sup>2</sup> single wire	Ms nickel-plated	05-0012-0034
	10.0 mm <sup>2</sup>	10.0 mm <sup>2</sup> stranded, 10.0 mm <sup>2</sup> single wire	Ms nickel-plated	05-0012-0035
	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup> stranded, 2.5 mm <sup>2</sup> single wire	Niro steel	05-0012-0019
	4.0 mm <sup>2</sup>	4.0 mm <sup>2</sup> stranded, 6.0 mm <sup>2</sup> single wire	Niro steel	05-0012-0036
	10.0 mm <sup>2</sup>	10.0 mm <sup>2</sup> stranded, 10.0 mm <sup>2</sup> single wire	Niro steel	05-0012-0037

Technical data subject to change without notice.



- Modular design
- Use without rail
- Marking individual

### Ex e I/II mini-terminal

The mini terminal allows conductors to be connected in hazardous areas. In order to protect from mechanical damage, touch, dust and moisture, Ex terminals must be installed in increased safety type "e" enclosures. BARTEC mini-terminals are available as 2 and 3-pole terminals which can be mounted in a row. The clearances and creepage distances allow the terminals to be mounted directly on metal. Each individual terminal pole is marked with a number or symbol by a clip-on label. 2 and 3-pole bridges are available for cross connection terminals.

### Ex I/II mini-terminals for intrinsically safe circuits

The design of the blue mini-terminal is the same as that of the Ex e I/II mini-terminal and is tested in the same way, too.

### Explosion protection

Marking ATEX	⊕ II 2G Ex eb IIC Gb ⊕ I M2 Ex eb I mb
Certification	PTB 99 ATEX 3117 U
Marking IECEx	Ex eb IIC Gb Ex eb I mb
Certification	IECEX PTB 07.0007 U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Min. ambient temperature	-55 °C
Max. operating temperature	+120 °C

### Technical data

Rated voltage	max. 440 V at UL (CSA: 300 V)
Rated current	max. 23 A at UL (CSA: 16 A)
Rated cross-section	2.5 mm <sup>2</sup> (single-, fine- and multi-stranded) at UL (CSA: AWG 24 - 14)
Connection of several conductors	max. 2 x 1 mm <sup>2</sup> (of the same cross section and type)
Operating temperature range	-55 °C to +120 °C
Material	Insulation: Duroplast Terminal: Copper alloy
Bridge	2 and 3-pole bridge
Labelling	plug-in label
Mounting	2-pole: 13 g 3-pole: 19 g
Weight	BARTEC mounting rail or base of enclosure
Contact spacing	11 mm
Tightening torque for clamp screw (EN 60999-1: 2000, TAB 4, III)	for clamp screw = 0.4 Nm at UL (CSA: 3.5 lb. in.)  for screw and washer assembly for fixation = 0.6 Nm at UL (CSA: 5.3 lb. in.)

Ordering information

Illustration	Designation	Order no.	
	Mini terminal 2-pole, Ex e, grey*	07-9702-0220/1	
	Mini terminal 2-pole, blue*	07-9702-0220/2	
	Mini terminal 3-pole, Ex e, grey*	07-9702-0320/1	
	Mini terminal 3-pole, blue*	07-9702-0320/2	
	2-pole bridge	05-0120-0004	
	3-pole bridge	05-0120-0005	
	Rotation stop for base mounting required when a single 2-pole terminal is mounted	05-0010-0002	
	Rotation stop for rail mounting required when a single 2-pole terminal is mounted	05-0106-0015	
	Label not printed	05-1144-0001	
	Label printed 0-99, A-Z, symbols on request	05-1144-0002	
<p>ähnlich DIN EN ISO 1207 (DIN 84)</p>	Screw combination, M3	l = 11 mm	03-1830-0001
	unit 100 pieces	l = 12 mm	03-1830-0004
		l = 15 mm	03-1830-0005
	Mounting rail	3 x 10 mm or 5 x 10 mm	on request

\* Product printing standard: ATEX and IECEx marking. Other markings on request. Please specify in plain text.

Technical data subject to change without notice.



- Increased voltage
- Large cross section
- With or without mounting rail

The continuous demand for increased nominal insulation voltage and current carrying capacity in Ex e terminals made us develop these larger BARTEC terminal blocks. Terminals for 4 mm<sup>2</sup> and 16 mm<sup>2</sup> conductors are available in 2- and 3-pole versions. Terminals for 35 mm<sup>2</sup> conductors are available in a 3-pole version. The terminals can be fitted directly onto a metal base or onto a 10 x 5 mm mounting rail.

## Explosion protection

Marking ATEX	II 2G Ex eb IIC Gb I M2 Ex eb I Mb
Certification	EPS 17 ATEX 1 041 U
Marking IECEx	Ex eb IIC Gb Ex eb I Mb
Certification	IECEx EPS 17.0026 U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Min. ambient temperature	-55 °C
Max. operating temperature	+105 °C

## Technical data

Nominal voltage	1100 V
Bridge	Jumper bar, 2-pole up to 5-pole
Labelling	2 labels per pole
Mounting	BARTEC mounting rail or base of enclosure
Material	Insulation: Duroplast Terminal (4 mm <sup>2</sup> /16 mm <sup>2</sup> ): Copper alloy Terminal (35 mm <sup>2</sup> ): Galvanised steel

## Rating cross section

	4 mm <sup>2</sup>	16 mm <sup>2</sup>	35 mm <sup>2</sup>
Conductor cross section			
stranded	0.5 mm <sup>2</sup>	0.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>
single and multi wire	up to 4.0 mm <sup>2</sup>	up to 16 mm <sup>2</sup>	up to 35 mm <sup>2</sup>
Max. current carrying capacity at ambient temp. +40 °C and conductor cross section	30 A	72 A	120 A
Weight			
2-pole	44 g	68 g	-
3-pole	68 g	104 g	285 g
Spacing	20 mm	20 mm	28 mm
Tightening torque of clamp screw	0.8 Nm	2.0 Nm	3.5 Nm

Ordering information

Illustration	Designation	Order no.
	Terminal block, 4 mm <sup>2</sup> , 2-pole	07-9721-0240
	Terminal block, 16 mm <sup>2</sup> , 2-pole	07-9721-0260
	Terminal block, 35 mm <sup>2</sup> , 3-pole	07-9721-0380
	Rotation stop for floor mounting required when a single 2-pole terminal is mounted	05-0010-0004
	Rail 5 x 10 mm, spacing 20	on request
	Rail 5 x 10 mm, spacing 28	on request

Ordering information

Illustration	Designation	Order no.
	Terminal block, 4 mm <sup>2</sup> , 3-pole	07-9721-0340
	Terminal block, 16 mm <sup>2</sup> , 3-pole	07-9721-0360
	Jumper bar, factory mounted, 4 mm <sup>2</sup> 2-pole 3-pole 4-pole 5-pole  Jumper bar, factory mounted, 16 mm <sup>2</sup> 2-pole 3-pole 4-pole 5-pole  Jumper bar, factory mounted, 35 mm <sup>2</sup> 2-pole 3-pole 4-pole 5-pole	05-0110-0005 05-0110-0006 05-0110-0011 05-0110-0012  05-0110-0007 05-0110-0008 05-0110-0009 05-0110-0010  05-0110-0013 05-0110-0014 05-0110-0015 05-0110-0016
Similar to DIN EN ISO 1207 (DIN 84)	Fixing screw, M 4 x 10 mm for the insulator	03-1040-0001
	Circlip S4 as securing element for fastening screw	03-3540-0001
	Labels not printed printed as per column 1 (1 - 10, 11 - 20) printed as per column 2 (1 - 50) printed, L1, L2, L3, N, PE printed to customer specifications 1 unit = 50 Labels	03-3600-0007 03-3600-0011 03-3600-0001 03-3600-0012 03-3600-0013

Technical data subject to change without notice.



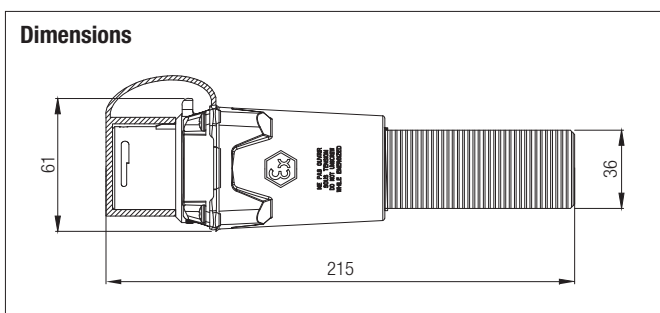
**Applications**

- Data logging & retrieval
- Portable data capture
- Diagnostics
- Hot systems restore
- Locking/unlocking of computers
- Virus scanning
- Installation of applications
- Run applications
- OS maintenance

ExDrive USB solutions represent an ultra-rugged mobile memory solution for hazardous areas. Measuring 215 x 61/36 mm and weighing in at 500 g, the BARTEC TECHNOR ExDrive will never be misplaced, lost or accidentally forgotten. Encased in machined 6082 aluminium bolt, the ExDrive offers a near indestructible and hot pluggable mobile solution for routine data exchange or systems restoration.

**ExDrive USB Mobile-Disk for use in hazardous areas**

Easy access of all stored data by hot “plug and play” action within hazardous areas. The ExDrive is detected by the computer and is “seen” as any other mobile disk. The hazardous area docking station may be wall or equipment mounted and connected with the pre-connected 2 m cable fitted with an M20 Ex de gland and USB interface plug. The safe area docking station with USB connection allows easy access to data in safe area.



**Explosion protection**

Marking	Ex II 2G Ex de IIC T6
Certification	Pending Update
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	

**Technical data**

Transfer rate	USB 2.0
Memory	128 GB or customer requirement
Protection class	IP 66
Operating temperature	0 °C to +50 °C
Weight	0.5 kg
Length	210 mm

**Order information**

ExDrive USB Stick	1162967
ExDrive Zone 1 docking station w/junction box	1162968
ExDrive Zone 1 docking station wall mount receptable	1162969
ExDrive Safe area docking station	1162970

Technical data subject to change without notice.



- Zones 1/21 and 2/22
- Extremely robust
- 16 A - 63 A

The plug connections in the 07-831\* series are suitable for use in potentially explosive areas of Zones 1/21 and of Zones 2/22. The quality materials used for the enclosure, including the external metal parts, guarantee the appropriate corrosion protection and chemical resistance for the application in “normal industrial atmospheres”:

- Impact resistant polyamide
- Fibreglass reinforced polyester
- Stainless steel AISI 316 L

The plug connections are used to supply power to portable local controllers, electrical installations and mobile machines and drives in potentially explosive areas, but can also be used in a “normal industrial area”. The low voltage sockets can be used up to a max. 16 A and for the voltage range set out in EN 60309 (see technical data). The operating equipment connected to the connector must be suitable for the mains voltage supplied.

**Explosion protection**

Marking ATEX	Ex d e [ia] IIC T6 Gb Ex tb IIIC T80 °C Db
Certification	
Wall socket/connector	PTB 99 ATEX 1039
Flange socket	PTB 99 ATEX 1040 U
Marking IECEx	Ex ed [ia] IIC T6
Certification IECEx	IECEx BKI 04.0002
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Permitted ambient temperature	-20 °C to +40 °C (extended temperature range on request)

**Technical data**

Rated voltage	up to 250 V, (3-pole)/415 V, (4-pole)/415 V, (5-pole) AC Further voltage ranges on request
Rated current	16 A
Frequency	up to 400 Hz
Making/breaking capacity AC-3 in acc. with EN 60947-4	U <sub>e</sub> 690 V/I <sub>e</sub> 16 A
Max. external back-up fuse	without thermal protection: 16 A with thermal protection: 35 A gL (Rated current set to 16 A)
Protection class	I
Protection type	IP 66 EN/IEC 60529
Enclosure colour	black

**Wall socket**

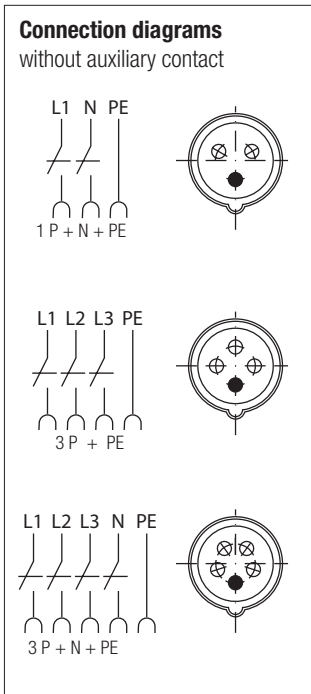
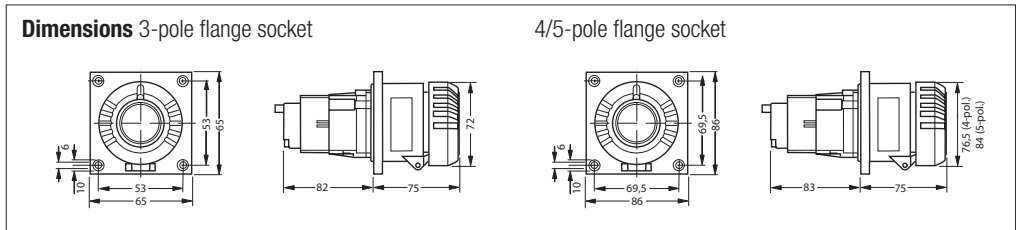
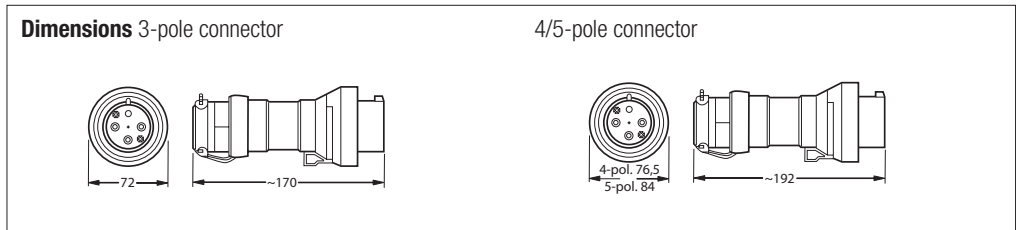
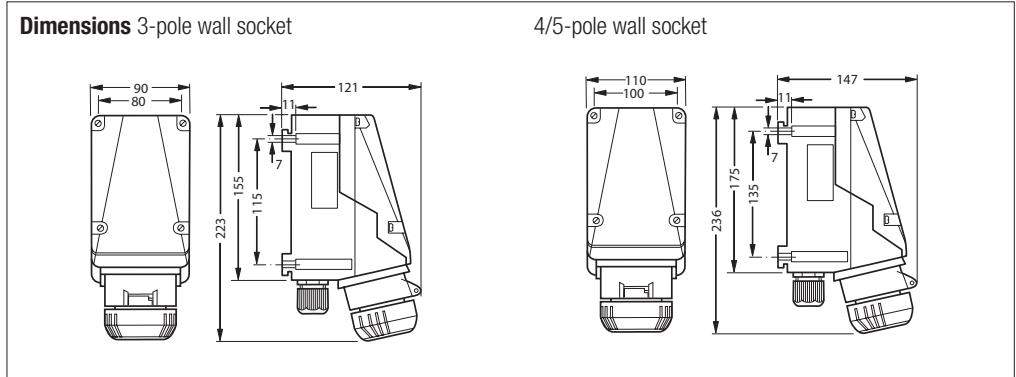
Cable glands	1 x M25 Ø 8 to 17 mm 1 x M25 plastic EX screw plug
Terminals	2 x 1 to 4 mm <sup>2</sup>
Enclosure material	Fibreglass reinforced polyester

**Connector**

Cable glands	Ø 8 to 19 mm (3-pole) Ø 8 to 21 mm (4-pole) Ø 12 to 21 mm (5-pole)
Terminals	1 x 1.0 to 2.5 mm <sup>2</sup>
Enclosure material	Polyamide

**Flange socket**

Terminals	2 x 1 to 4 mm <sup>2</sup>
Enclosure material	Polyamide



**Ordering information**

Voltage	h	Type	Cable gland	Weight approx. kg	Order no.
Type 16 A 3-pole 200 to 250 V		Wall socket	M25 KU	1.2	07-8314-34431000
		Flange socket		0.4	07-8313-34100000
		Connector		0.35	07-8311-34100000
Type 16 A 4-pole 380 to 415 V		Wall socket	M25 KU	1.8	07-8314-45431000
		Flange socket		1.0	07-8313-45100000
		Connector		0.7	07-8311-45100000
Type 16 A 5-pole 200 to 250 V 380 to 415 V		Wall socket	M25 KU	1.8	07-8314-55431000
		Flange socket		1.0	07-8313-55100000
		Connector		0.7	07-8311-55100000

Other voltage ranges and designs are available on request.  
 KU = 1 x M25 plastic cable gland for Ø 8 to 17 mm, 1 x M25 plastic EX screw plug

Technical data subject to change without notice.



- Zones 1/21 and 2/22
- Extremely robust
- 16 A to 63 A

The plug connections in the 07-832\* series are suitable for use in potentially explosive areas of Zones 1 and 2 and of Zones 21 and 22. The quality materials used for the enclosure, including the external metal parts, guarantee the appropriate corrosion protection and chemical resistance for the application in "normal industrial atmospheres":

- Impact resistant polyamide
- Fibreglass reinforced polyester
- Stainless steel AISI 316 L

The plug connections are used to supply power to portable local controllers, electrical installations and mobile machines and drives in potentially explosive areas, but can also be used in a "normal industrial area". The low voltage sockets can be used up to a max. 32 A and for the voltage range set out in EN 60309 (see technical data). The operating equipment connected to the connector must be suitable for the mains voltage supplied.

#### Explosion protection

Marking ATEX	II 2G Ex d e [ia] IIC T6 Gb II 2D Ex tb IIIC T80 °C Db
Certification	
Wall socket/connector	PTB 99 ATEX 1041
Flange socket	PTB 99 ATEX 1042 U
Marking IECEx	Ex ed [ia] IIC T6
Certification	IECEx BKI 04.0006
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Permitted ambient temperature	-20 °C to +40 °C (extended temperature range on request)

#### Technical data

Rated voltage	up to 250 V, (3-pole)/415 V, (4-pole)/415 V, (5-pole) AC Further voltage ranges on request
Rated current	32 A
Frequency	up to 400 Hz
Making/breaking capacity AC-3 in acc. with EN 60947-4	$U_e$ 690 V / $I_e$ 32 A
Max. external back-up fuse	Without thermal protection: 35 A With thermal protection: 50 A gL (Rated current set to 32 A)
Protection class	I
Protection type	IP 66 EN/IEC 60529
Enclosure colour	black

#### Wall socket

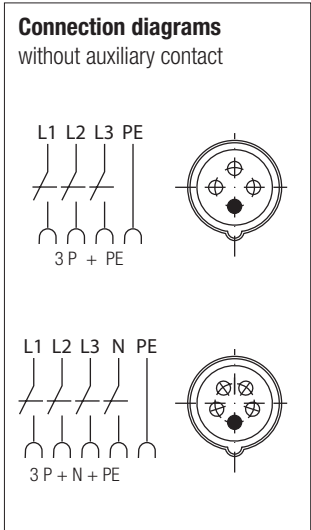
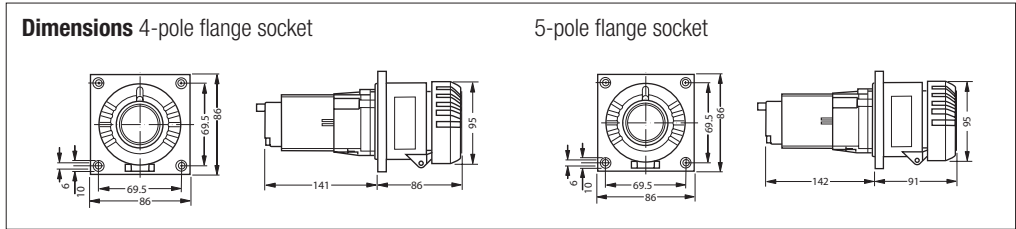
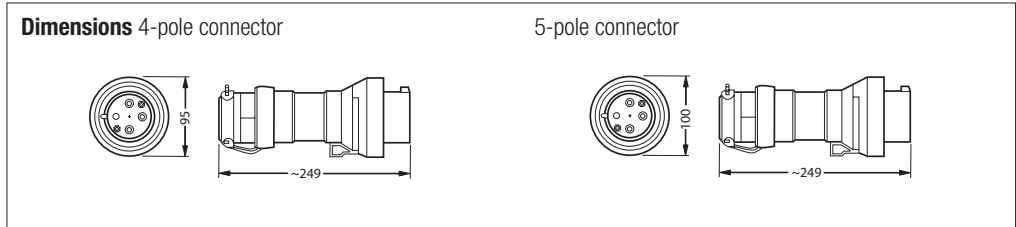
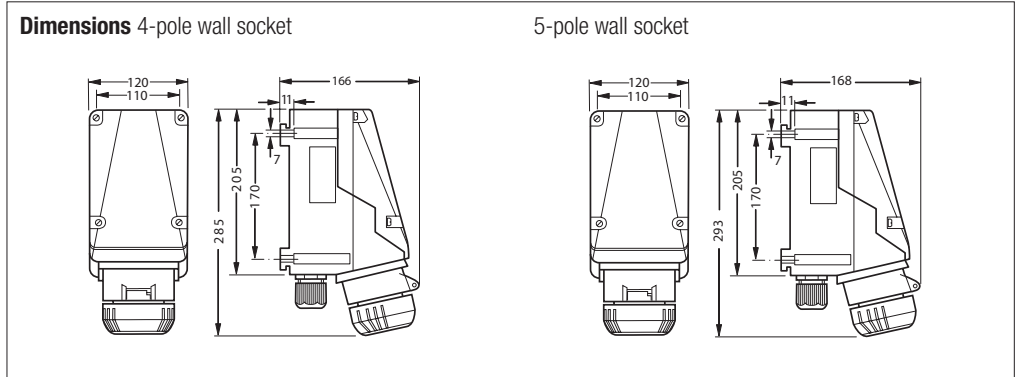
Cable glands	1 x M40 Ø 17 to 28 mm 1 x M40 plastic Ex screw plug
Terminals	2 x 4 to 10 mm <sup>2</sup>
Enclosure material	Fibreglass reinforced polyester

#### Connector

Cable glands	Ø 17 to 28 mm
Terminals	1.0 to 6 mm <sup>2</sup>
Enclosure material	Polyamide

#### Flange socket

Terminals	2 x 4 to 10 mm <sup>2</sup>
Enclosure material	Polyamide



**Ordering information**

Voltage	h	Type	Cable gland	Weight approx. kg	Order no.
Type 32 A 4-pole 380 to 415 V	6	Wall socket	KU	1.8	07-8324-45461000
		Flange socket		1.0	07-8323-45100000
		Connector		0.7	07-8321-45100000
Type 32 A 5-pole 200 to 250 V 380 to 415 V	6	Wall socket	KU	1.8	07-8324-55461000
		Flange socket		1.0	07-8323-55100000
		Connector		0.7	07-8321-55100000

Other voltage ranges and designs are available on request.  
 KU = 1 x M40 plastic cable gland for Ø 17 to 28 mm, 1 x M40 plastic EX screw plug  
 Technical data subject to change without notice.



- Zones 1/21 and 2/22
- Extremely robust
- 16 A to 63 A

The plug connections in the 07-833\* series are suitable for use in potentially explosive areas of Zones 1/21 and of Zones 2/22. The quality materials used for the enclosure, including the external metal parts, guarantee the appropriate corrosion protection and chemical resistance for the application in “normal industrial atmospheres”:

- Impact resistant polyamide
- Fibreglass reinforced polyester
- Stainless steel AISI 316 L

The plug connections are used to supply power to portable local controllers, electrical installations and mobile machines and drives in potentially explosive areas, but can also be used in a “normal industrial area”. The low voltage sockets can be used up to a max. 63 A and for the voltage range set out in EN 60309 (see technical data). The operating equipment connected to the connector must be suitable for the mains voltage supplied.

**Explosion protection**

Marking ATEX	II 2G Ex d e IIC T6 Gb II 2D Ex tb IIIC T80 °C Db
Certification	PTB 00 ATEX 1070
Marking IECEx	Ex ed IIC T6
Certification	IECEx BKI 04.0004
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Permitted ambient temperature	-20 °C to +40 °C (extended temperature range on request)

**Technical data**

Rated voltage	up to 415 V AC, further voltage ranges on request
Bemessungsstrom	63 A
Frequenz	up to 400 Hz
Making / breaking capacity AC-3 in acc. with EN 60947-4	$U_p$ 690 V / $I_p$ 63 A
Max. external back-up fuse	Without thermal protection: 63 A With thermal protection: 80 A gL (Rated current set to 63 A)
Protection class	I
Protection type	IP 66 EN/IEC 60529
Enclosure colour	black

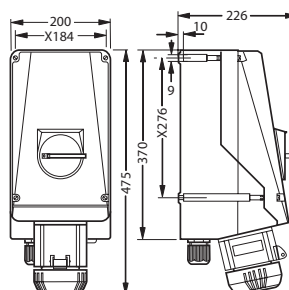
**Wall socket**

Cable glands	1 x M50 Ø 22 to 35 mm 1 x M50 plastic EX screw plug
Terminals	2 x 4 to 25 mm <sup>2</sup> Pin cable shoe 1 x 35 mm <sup>2</sup>
Enclosure material	Fibreglass reinforced polyester

**Connector**

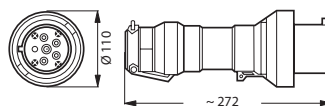
Cable glands	Ø 19 to 34 mm
Terminals	1 x 4 to 16 mm <sup>2</sup> Pin cable shoe <sup>2)</sup> 1 x 25 mm <sup>2</sup>
Enclosure material	Polyamide

**Dimensions** 4/5-pole wall socket

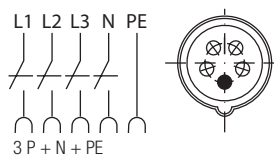
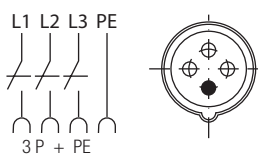


X = mounting dimensions

**Dimensions** 4/5-pole connector



**Connection diagrams**  
without auxiliary contact



**Ordering information**

Voltage	h	Type	Cable gland	Weight approx. kg	Order no.
Type 63 A 4-pole 380 to 415 V		Wall socket	KU	1.8	07-8334-45461000
		Connector		0.75	07-8331-45100000
Type 63 A 5-pole 200 to 250 V 380 to 415 V		Wall socket	KU	1.8	07-8334-55461000
		Connector		0.75	07-8331-55100000

Other voltage ranges and designs are available on request.

KU = 1 x M50 plastic cable gland for Ø 22 to 35 mm, 1 x M50 plastic Ex screw plug

Technical data subject to change without notice.

## Customer requirements Terminal Boxes

### Customer

Company

Street

Postcode/City

Country

Contact person

E-mail

Phone

Fax

### BARTEC (to fill out by the BARTEC employee)

Sales employee

Offer  Order

Project name/Application number

Customer number

Order value

Deadline Offer

Delivery

Quantity pieces

### Enclosure material

Aluminium, grey

Polyester, grey, not for DustEx

Polyester, black

Stainless steel V2A

Stainless steel V4A

with door

with lid

### Ex protection type

Ex e

Ex i

Ex e/Ex i

DustEx

Non Ex

IP 65/..

### Nominal voltage

AC V

DC V

### Further requests



## SWITCHES

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**Insert switch with connection cores**

This switching element can be universally used for switching, controlling and regulating operations within Ex-areas. The insert switch is audited to the latest EC guideline 94/9/EC. Devices equipped with these insert switches have to be approved by a testing authority, the switch itself needs not be retested. The cable cores are cast-in at the back of the switch. Their standard length is 500 mm; other lengths are available on request. To connect the cores we recommend the miniterminals from BARTEC.

**Limit switch with connection cable**

The limit switches have been developed for Ex-areas where safe and reliable signalling is required, for example on pumps, petrol pumps, as well as in mechanical and high-tech engineering. The switches must be mounted into the respective devices or systems in such a way as to guarantee mechanical protection. No further tests are required. The connection cable is cast-in on the back of the switch. For the connection in Ex-areas BARTEC provides a large variety of terminals and terminal boxes.

**Explosion protection**

**Limit switch**

ATEX	II 2G Ex d IIC T6, T5 Gb II 2D Ex tb IIIC T80°C, T95°C Db
Certification	EPS 14 ATEX 1 766 X
IECEX	Ex d IIC T6, T5 Gb Ex tb IIIC T80°C, T95°C Db
Certification	IECEX EPS 14.0092 X
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	

**Insert switch**

ATEX	II 2G Ex d IIC Gb I M2 Ex d I Mb
Certification	EPS 14 ATEX 1 765 U
IECEX	Ex db IIC Gb Ex db I Mb
Certification	IECEX EPS 14.0091 U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	

Ambient temperature	-60 °C to +100 °C depending on the type and materials used
Ambient temperature limit switches	T6 to max. +75 °C depending on the rated current
Protection class	IP 66 (IEC/EN 60529)

**Technical data**

Ex d **insert switch/limit switch** DIN EN 60947-5-1/DIN EN 60947-1

Electrical data for control switch in accordance with DIN EN 60947-5-1	Rated operating voltage	AC 400 V
	Utilization category	
	AC-15	4 A 250 V
	AC-15	2 A 400 V
	DC-13	0.15 A 250 V
	Isolation voltage	400 V

Ambient temperature +40 °C

**AC switching capacity**

	ohmic load	inductive load cos φ = 0.6
400 V	3 A	2 A
250 V	5 A	3 A
30 V	7 A	5 A

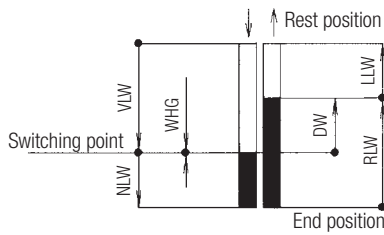
**DC switching capacity**

	ohmic load	inductive load L/R = 3 μs
250 V	0.4 A	0.03 A
30 V	7 A	5 A

(further electrical data on request)

Tightening torque of fixing screws	0.6 Nm
Rating of gold-coated contacts	Voltage: min. 5 V/max. 30 V Current: min. 4 mA/max. 400 mA  the product of voltage and current should not exceed 0.12 VA  for alternating current these values have to be interpreted as peak values

Contact Travels



Contact travels (in mm)

Pretravel	VLW	max. 0.9
Overtravel	NLW	min. 0.5
Differential val	DW	max. 0.45
Reset travel	RLW	0.9
No-load travel	LLW	0.1 bis 0.45
Repeat accuracy WHG (for repetitive actuation)		± 0.02

Service life

mechanical	>2 x 10 <sup>6</sup>
electrical	dependent on load
max. switching rate	1000 operations/h

Switching actuation force

Single-break switch	max. 2.0 N
Double-break switch	max. 3.6 N

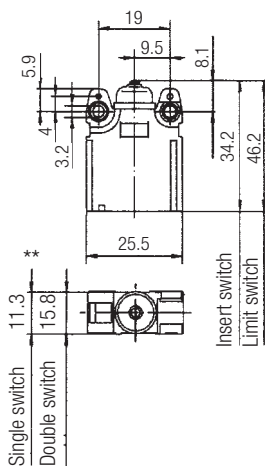
Reset force

Single-break switch	min. 0.4 N
Double-break switch	min. 0.8 N

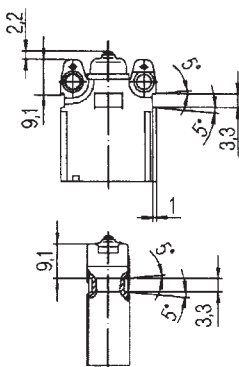
Operating rate	≥ 10 μm/sec.
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Contact break distance	2 x ≥ 0.3 mm	
Electrical connection	Insert switch cores 0.75 mm <sup>2</sup>	L07G-K/Radox
	Limit switch cable 0.75 mm <sup>2</sup>	H05VV-F/A05VV-F/ BETAflam
	other cores and cables on request	
Conductor diameter	2-wire 6.1 ± 0.3 mm	
	3-wire 6.6 ± 0.3 mm	
	4-wire 6.7 ± 0.3 mm	
	6-wire 8.9 ± 0.3 mm	
Contact element	snap-action contact element (double-break) as, normally-open, normally-closed, changeover contact as well as N/O + N/C contacts for circuits with equal potentials.	
Contact material	Silver or gold-coated contacts (all contact elements have a standard protective gold-coating as standard)	
Double-break switch (switch options)	simultaneous switch sequence: chamber I and II almost simultaneous	
	defined switch sequence: chamber I switches mechanically safe 0.03 up to 0.3 mm before chamber II	
Weight	Insert switch with 500 mm cores: single-break switch 35 g, double-break switch 70 g	
	Limit switch with 3 m cable: single-break switch 210 g, double-break switch 415 g	
Housing material	plastic (thermoplastics)	
Plunger/additional actuator	stainless steel	

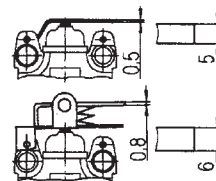
Dimensions in mm



Clip-on pockets



Lever widths



\*\* When packing several switches, these dimensions are reduced to 11 mm resp. 15.5 mm

Technical data subject to change without notice.

Selection chart Single-break switch

Type of contact	Code no.	Additional actuator*			
		Options	Code no.	Options	Code no.
	10	without additional actuator	00		44
			01		45
			02		46
			03		47
	20		04		48
			21		49
			22		61
	30		23	metal roller	62
			24	plastic roller	63
			41	metal roller	64
			42	plastic roller	66
	40		43	adjusting screw	73
			44		
			45		

**Complete order no.\*\***  
Please enter code number.

Technical data subject to change without notice.

07- 511- /

Length of connection cores  
5 = 500 mm  
Length of connection cable  
3 = 3 m  
Please specify greater lengths in plain text, code no. 0

( ) Code for connection cable

\* Dimensions for additional actuator are reference values

\*\* Standard product printing: ATEX and IECEx marking. Other international imprints obtainable on request. Please specify in plain text.

Insert switch with connection cores	1
Limit switch with connection cable	2

	Contact material	Ambient temperature (T <sub>a</sub> )
1	Silver	-20 °C to +60 °C
3	Gold	-20 °C to +60 °C
5	Silver	-55 °C to +60 °C
6	Gold	-55 °C to +60 °C
7	Silver	-60 °C to +75 °C
8	Gold	-60 °C to +75 °C

Selection chart Double-break switch

Type of contact			Additional actuator*				
Switch chamber 1	Switch chamber 2	Code no.	Options	Code no.	Options	Code no.	
not defined switch sequence		11	without additional actuator	00		44	
				01		45	
		21		02		46	
				03		47	
		22		04		48	
				21		49	
	defined switch sequence		33		22		61
					23		62
			1A		24		63
					41		64
			2A		42		66
					43		73
	2B		44				
			45				
	3C		46				
			47				

**Complete order no.\*\***  
Please enter code number.

Technical data subject to change without notice.

07- 511- /

Length of connection cores  
5 = 500 mm  
Length of connection cable  
3 = 3 m  
Please specify greater lengths in plain text, code no. 0

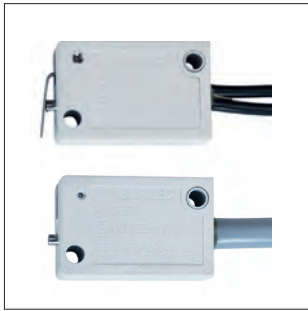
( ) Code for connection cable

\* Dimensions for additional actuator are reference values

\*\* Standard product printing: ATEX and IECEx marking. Other international imprints obtainable on request. Please specify in plain text.

Insert switch with connection cores	1
Limit switch with connection cable	2

	Contact material	Ambient temperature (T <sub>a</sub> )
1	Silver	-20 °C to +60 °C
3	Gold	-20 °C to +60 °C
5	Silver	-55 °C to +60 °C
6	Gold	-55 °C to +60 °C
7	Silver	-60 °C to +75 °C
8	Gold	-60 °C to +75 °C



- World's smallest Ex d miniature switch

BARTEC miniature switches are used in areas with of limited space for a flame-proof switching element. They are especially suitable for applications in valves, thermostats, push switches, servo components, level metres and switching gears. The world's smallest Ex d miniature switch is encapsulated in a plastic enclosure. The leads or cable tail are potted in at the base. The standard version of the BARTEC miniature switches contains fine silver contacts. Other use with low currents and voltages gold plated silver contacts are available optionally.

**Limit switch with connection cable**

Switches with connector cables have been approved by PTB with EC model test certification. The switches can therefore be mounted at any time into devices and systems which offer mechanical protection – no further testing is required. The connector cable is cast into the back of the switch. The wires are colour-coded. The (standard) cable length is 3 m; other lengths are available on request.

**Insert switch with connection cores**

The insert switch with wires is available as a building block for your explosion-proofing solution. These insert switches are tested and approved by PTB (the Federal Physical-Technical Institute) according to Ex Guideline 94/9/EC. After installation, the complete device is tested by an authorized institution. Thanks to its PTB approval, the microswitch itself needs not be individually tested. The leads are individually marked. The length of the cable is 50 cm (standard). Other lengths can be supplied on request. For the connection of the cores we recommend our BARTEC Ex Mini-terminals.

**Explosion protection**

**Limit switch**

ATEX	⊕ II 2G Ex db IIC T6, T5 Gb
Certification	EPS 14 ATEX 1689 X
IECEX	Ex db IIC Gb T6, T5
Certification	IECEX EPS 14.0039 X
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	

**Insert switch**

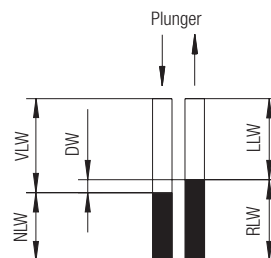
ATEX	⊕ II 2G Ex d IIC Gb ⊕ I M2 Ex d I Mb
Certification	EPS 14 ATEX 1688 U
IECEX	Ex d IIC Gb Ex d I Mb
Certification	IECEX EPS 14.0038 U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	

Working temperature	-60 °C to +100 °C depending on the type and the materials used
Ambient temperature limit switches	T5 to max. +90 °C T6 to max. +75 °C depending on the rated current
Schutzart	IP 54 (IEC/EN 60529)

**Technical data**

Rated voltage	AC 250 V	
Rated current		
Switching capacity with AC	ohmic load	inductive load
250 V	5 A	5 A
30 V	5 A	5 A
Switching capacity with DC	ohmic load	inductive load L/R = 3 μs
250 V	0.25 A	0.03 A
125 V	0.5 A	0.06 A
75 V	1 A	1 A
30 V	5 A	5 A
(Further electrical data on request)		

Contact elements	see table
Tightening torque of fixing screws	max. 0.6 Nm
Operating force	max. 1.4 N
Release force	min. 0.25 N
Switching frequency	max. 1 000/h
Contact travels	



# Miniature insert switch/limit switch



Contact travels (in mm)		
Pretravel	VLW	0.5 bis 1.0
Overtravel	NLW	min. 0.2
Differential value	DW	max. 0.13
Reset travel	RLW	~0.55
No-load travel	LLW	~0.5
Mechanical life	>2 x 10 <sup>6</sup> switching cycles	
Electrical life	dependent on load	

Electrical connection	Insert switch Cores 0.75 mm <sup>2</sup> 4 GAF/Radox/HO5V2-K Limit switches Lead 0.75 mm <sup>2</sup> LSYY/BETAflam® other cores and leads on request
Enclosure	Duroplast
Plunger/additional actuator	stainless steel
Weight	with 0.5 m cores approx. 25 g with 1 m cable approx. 50 g

### Dimensions in mm

core Ø ~ 2.5 mm

2-adrig Ø ~ 5,4 mm  
3-adrig Ø ~ 5,8 mm

### Ordering information

Type of contact	Code no.	Options	Code no.
	10	without additional actuator	00
			01
	20		02
			03
	30		63

### Additional actuator\*

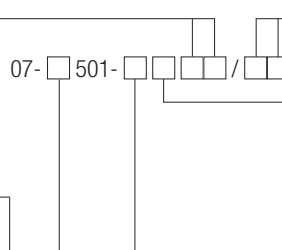
( ) specification for connection cable

\* Dimensions for a additional actuator are reference values

\*\* Standard product printing: ATEX and IECEx marking. Other international imprints obtainable on request. Please specify in plain text.

**Complete order no. \*\***  
Please enter code number.

Insert switch with connection cores	1
Limit switch with connection cable	2



Length of connection cores	5 = 500 mm
Length of connection cable	3 = 3 m
Please specify other lengths in plain text, code no. = 0	

	Contact material
6	Gold
7	Silver

Special versions, please specify in text  
 - precision switch with differential value 0.04 ± 0.02 (switching capacity 1 A), Type 07-.501-5.../  
 - different ambient temperature

Technical data subject to change without notice.



- Positive break contacts
- Very robust construction
- IP 65 protection class
- 13 different actuator versions
- Operator protection in accordance with GS-ET 15

Besides the metal-enclosed precision switch of the RET series, BARTEC also offers a series of limit switches with plastic bodies. The enclosure is made of shock proof plastic providing an IP 65 protection class according to IEC/EN 60529. Due to its format several limit switches can be mounted in tandem formation requiring very little space. This allows a multiple triggering of switching operations. The connection cable is equipped with a strain relief device, prewired and safely cast into the enclosure by means of epoxy resin. We supply this robust limit switch with a standard length of 3 m; special lengths are available on request. The integrated switching element changes over via NC contact with positive break operation. Operator protection corresponds to the GS-ET 15 requirements. Its high vibration resistance and long life are the result of a most extensive laboratory research. The certification for hazardous areas and the high protection class is granted thanks to its structural characteristics are the ideal prerequisites for its use in almost all fields of automation, mechanical and apparatus engineering.

**Explosion protection**

Marking ATEX	Ⓜ II 2G Ex d IIC T6, T5 Gb Ⓜ II 2D Ex tb IIIC T80 °C, T95 °C Db
Certification	PTB 03 ATEX 1143 X
Marking IECEx	Ex d IIC T6, T5 Gb Ex tb IIIC T80 °C, T95 °C Db
Certification	IECEx EPS 12.0036 X
Other approvals and certificates, see www.bartec.de	
Working temperature	-20 °C up to +100 °C depending on type and material used
Ambient temperature	T5 for max. +90 °C
Limit switch	T6 for max. +65 °C depending on rated current
Protection class	IP 65 (IEC/EN 60529)

Switching capacity	with AC 15		with DC 13
	250 V	6 A	-
	230 V	-	0.25 A
	24 V	-	4 A
Short circuit protection	6 AgL/gG DIAZED fuse		

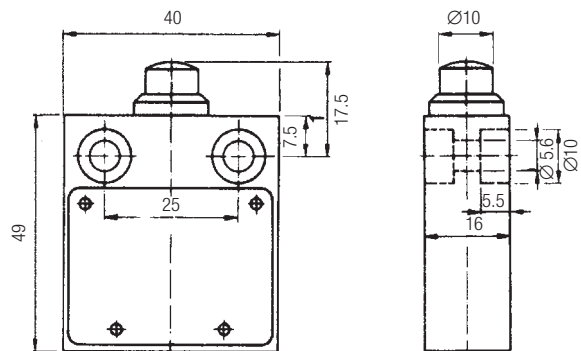
**Technical data**

Enclosure	shock-resistant thermoplastic material, self-extinguishing UL 94-V0	
Switching element	1 NO/1 NC contact both galvanically isolated NC contact with pos. break (VDE 0113, Part 1)	
Connection	4 core cable H05VV-F cross section: 0.75 mm <sup>2</sup> cable length: 3 m, 5 m, 10 m	
Colour coding of the flexible leads	11 = BN 12 = BU 23 = BK 24 = BK	
Electrical structure	EN 60947-5-1 EN 60947-1	
Nominal voltage	AC 250 V/DC 230 V	
Nominal current	AC 6 A DC 0.25 A	

**Mechanical data**

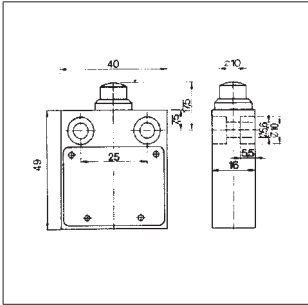
Switching point tolerance	± 0.5 mm depending on the actuator
Switching force tolerance	± 1 N
Repeat accuracy	± 0.1 mm
Mechanical service life	> 1 million operating cycles
Max. frequency of operation	1,800 operating cycles/h
Vibration resistance	10 g at 10 to 2,000 Hz
Impact resistance/shock resistance	50 g at a shock duration of 6 ms

**Dimensions in mm**

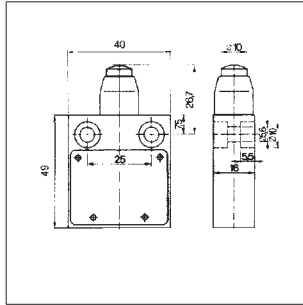


**Ordering information** Limit switch

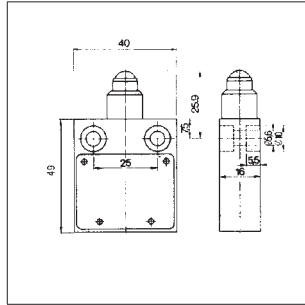
Plunger  
07-2961-1.62/01



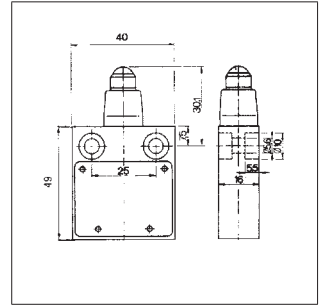
Membrane plunger  
07-2961-1.62/02



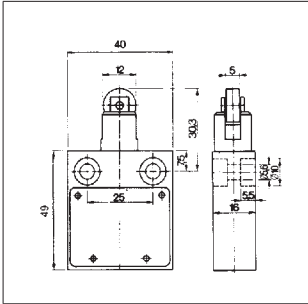
Spherical plunger  
07-2961-1.62/03



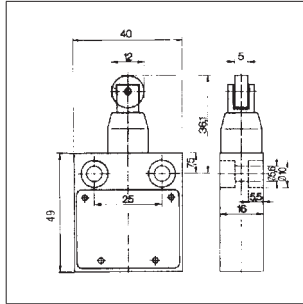
Spherical membrane plunger  
07-2961-1.62/04



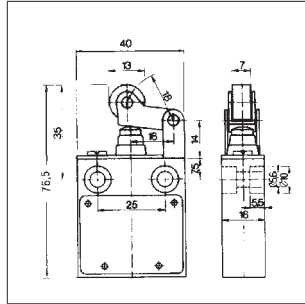
Roller plunger  
07-2961-1.62/09



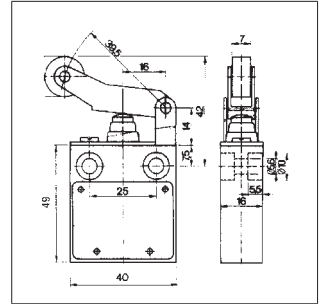
Membrane roller plunger  
07-2961-1.62/10



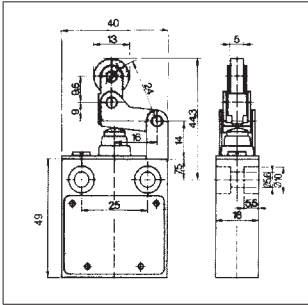
Membrane roller lever  
07-2961-1.62/14



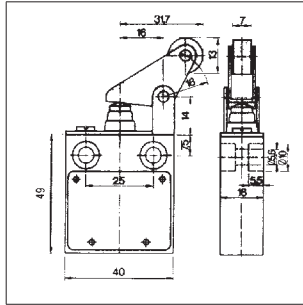
Membrane roller lever, long  
07-2961-1.62/16



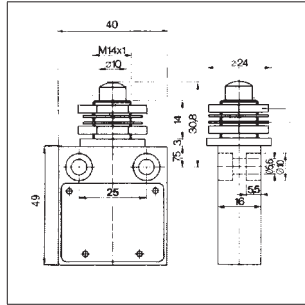
Membrane roller toggle lever  
07-2961-1.62/18



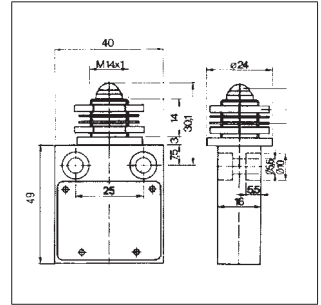
Parallel roller lever  
07-2961-1.62/20



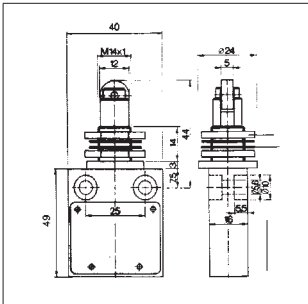
Front mounting/dome plunger  
Kuppelstößel 07-2961-1.62/47



Front mounting/spherical plunger  
07-2961-1.62/49



Front mounting/roller lever  
07-2961-1.62/51



**Complete order no.**

Please enter code number.

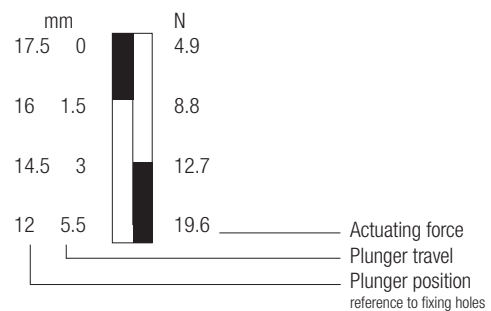
Technical data subject to change without notice.

07-2961-1  62/

Cable length	
3 m	3
5 m	5
10 m	0



**Contact travel diagram**





- Very robust construction
- IP 65 type of protection
- A choice of cable exit positions
- 16 different actuator versions

Limit switches of the RET range are metal-encapsulated precision switches with a robust and compact explosion-proof structure. Our connection cable comes prewired, is equipped with a strain-relief device and safely cast into the enclosure. We supply this robust limit switch with a standard cable length of three meter. Special cable lengths and switches with lateral cable outlets are available on request. The integrated basic switch has a single-pole changeover contact with high switching accuracy and a precise repeatability of the switching point. Its high vibration resistance and long mechanical life are the result of extensive laboratory tests. The high protection class, IP 67, allows the switch to be used in nearly all fields of automation, mechanical and apparatus engineering.

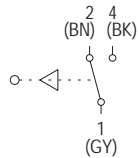
**Explosion protection**

Marking ATEX	Ⓜ II 2G Ex d IIC T6 Gb Ⓜ II 2D Ex tb IIIC T80 °C Db
Certification	PTB 03 ATEX 1142 X
Marking IECEx	Ex d IIC T6 Gb Ex tb IIIC T80 °C Db
Certification	IECEx EPS 12.0037 X
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Operating temperature	-20 °C to +90 °C depending on the model and the materials used
Limit switch ambient temperature	T6 to max. +60 °C depending on the rated current
Protection class	IP 65 (IEC/EN 60529)

Switching capacity	AC	DC inductive	DC ohmic
	250 V	6.5 A	-
	220 V	-	0.16 A
	110 V	-	0.2 A
	60 V	-	0.5 A
	24 V	-	4.0 A
	12 V	-	6.5 A

**Technical data**

Enclosure	aluminium-alloy, hard-coated
Switching element	integrated micro-switch
Connection	4 core cable (H05VV-F) cross section: 0.75 mm <sup>2</sup> cable length: 3 m, 5 m, 10 m
Coloured flexible leads	1 = GY 2 = BN 4 = BK PE = GN/YE
Equipotential bonding	EN 60947-5-1 EN 60947-1
Utilization category	AC-15 5 A 250 V DC-13 0.16 A 230 V max. 25 VA for gold contacts



**Electrical data**

Type of contact	single-pole changeover contact
Contact resistance	60 mΩ, measure at the end of the cable a cable length of 1 metre
Short circuit protection	5 AgL/gG DIAZED fuse

**Mechanical data**

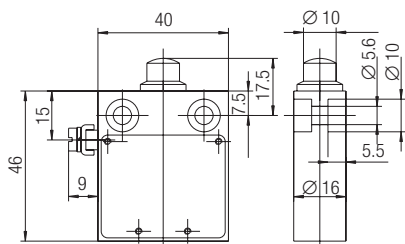
Switching point tolerance	± 0.5 mm depending on the actuator
Switching force tolerance	± 1 N
Repeat accuracy	± 0.1 mm
Mechanical service life	> 1 million operating cycles
Max. frequency of operation	1,800 operating cycles/h
Vibration resistance	10 g at 10 to 2 000 Hz
Shock resistance/shock stability	50 g at a shock duration of 6 ms
Cable outlet	- bottom - side - with bottom screw socket - with lateral screw socket

**Ordering information**

Contact material	Code no.	Cable outlet	Code no.	Cable length	Code no.
Ag	1	bottom	1	3 m	3
		side	2		
Ag Au 0.1 A	3	with bottom screw socket	3	5 m	5
Au 0.1 A	4	with lateral screw socket	4	10 m	0

**Complete order no.** 07-295  -   30/    
Please enter code number. Actuator

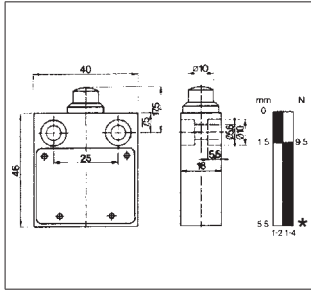
**Dimensions**



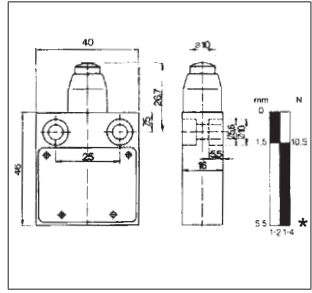


Dimensional drawings and contact travel diagrams

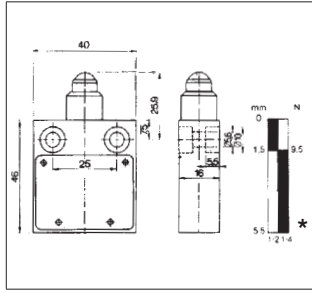
Plunger  
07-2951-..30/01



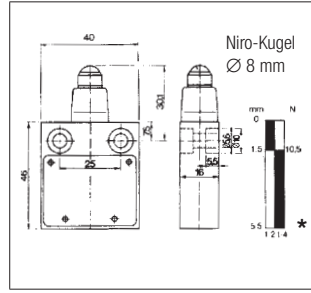
Membrane plunger  
07-2951-..30/02



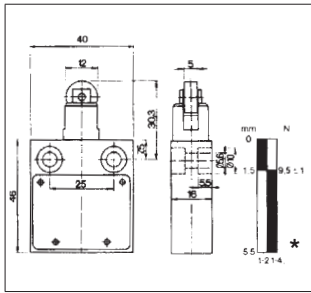
Spherical plunger  
07-2951-..30/03



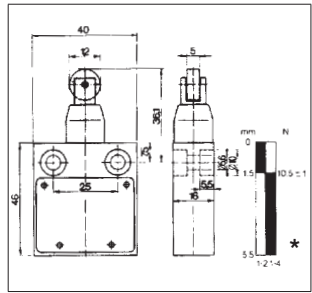
Spherical membrane plunger  
07-2951-..30/04



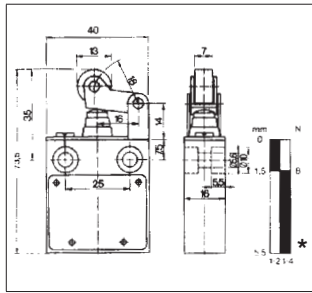
Roller plunger  
07-2951-..30/09



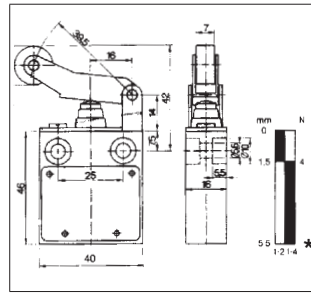
Membrane roller plunger  
07-2951-..30/10



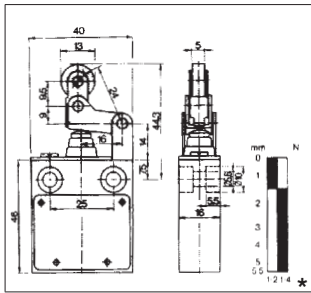
Membrane roller lever  
07-2951-..30/14



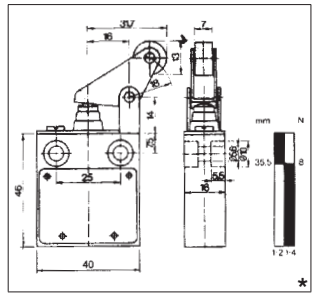
Membrane roller lever, long  
07-2951-..30/16



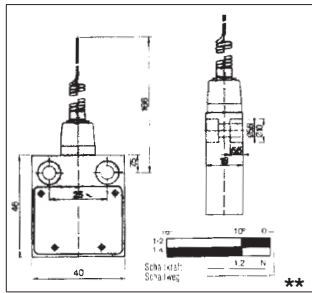
Membrane toggle roller lever  
07-2951-..30/18



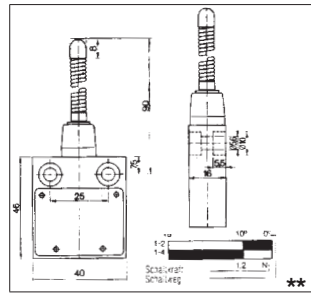
Parallel roller lever  
07-2951-..30/20



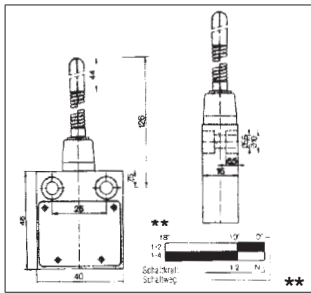
Feeler lever  
07-2951-..30/32



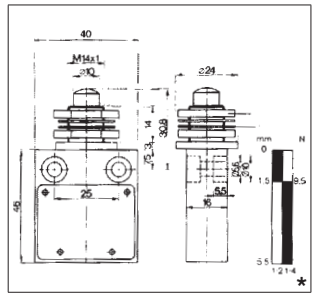
Feeler-butt lever  
07-2951-..30/34



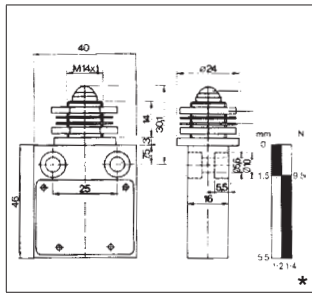
Feeler plastic lever  
07-2951-..30/36



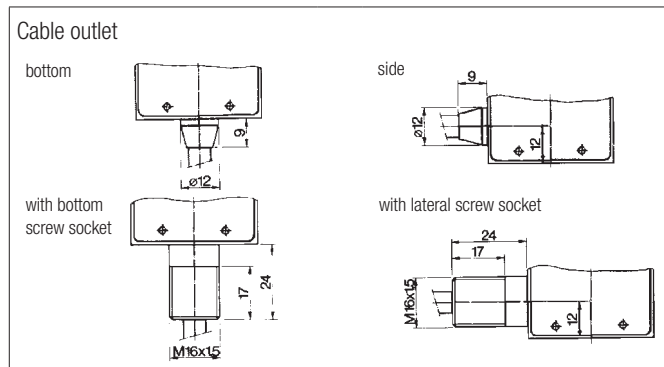
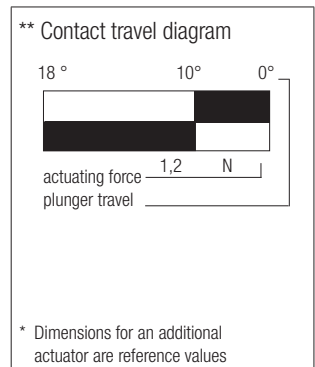
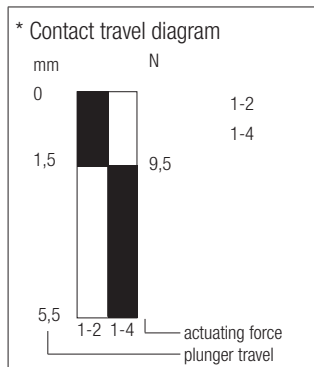
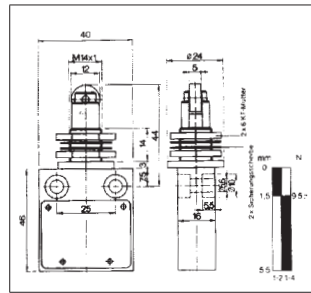
Front-mounting dome plunger  
07-2951-..30/47



Front-mounting spherical plunger  
07-2951-..30/49



Front-mounting-roller lever  
07-2951-..30/51





- Dimensions and mounting dimensions according to DIN EN 50041
- Compatible with non-Ex DIN limit switches
- Different switching elements

All dimensions and actuating elements of the Ex d position switch correspond to the DIN EN 50041 standard. Its 30 x 60 mm mounting dimensions make the switch directly compatible to the position switch corresponding to the same DIN standard. The switch is equipped with snap-action contacts with several switching element versions. A microswitch with connection cable Type 07-2511 is mounted as switching element. Different actuators are available for the variety of actuating possibilities. After the removal of four screws these knobs can be rotated by 90 °C allowing four different directions of actuation. Gold-plated contacts are available for the switching of low currents of voltages. Standard length of the connection cables are 3 m. BARTEC has designed a very extensive range of Ex e terminal boxes of polyester and aluminium for the connection of the position switch within the Ex area.

**Explosion protection**

Marking Position switch type 07-2511

ATEX	II 2G Ex d IIC T6 Gb II 2D Ex tD A21 IP 66 T80 °C
Certification	EPS 14 ATEX 1766 X
IECEX	Ex d IIC T6 Gb
Certification	IECEX EPS 14.0092 X
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Operating temperature	-50 °C to +100 °C depending on the model and the materials used
Ambient temperature	T6 to max. +75 °C depending on the rated current

**Technical data**

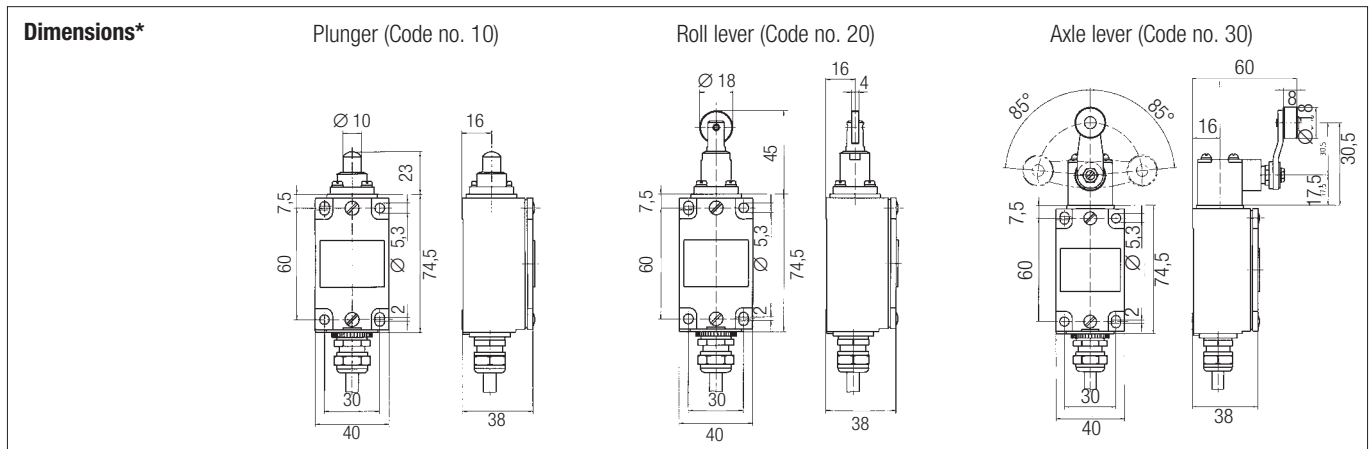
Electrical data according to DIN EN 60947-5-1	Rated operating voltage AC 400 V
	Utilisation category
	AC-15 4 A 250 V
	AC-15 2 A 400 V
	DC-13 0.15 A 250 V
	Isolation voltage 400 V

Ambient temperature +40 °C

AC switching capacity		
	ohmic load	inductive load cos φ = 0.6
400 V	3 A	2 A
250 V	5 A	3 A
30 V	7 A	5 A
DC switching capacity		
	ohmic load	inductive load L/R = 3 μs
250 V	0.4 A	0,03 A
30 V	7 A	5 A

(Further electrical data on request)

Switching elements	see table
Max. switching frequency	1 000 h
Mechanical life	>2 x 10 <sup>6</sup> switching cycles depending on plunger operating speed and angle
Electrical life	dependent on load
Electrical connection	Lead 0.75 mm <sup>2</sup> H05VV-F/A05VV-F/BETAflam other cores and leads on request
Enclosure material	aluminium



Ordering information

Type of contact			Actuators					
Interrupter chamber 1	Interrupter chamber 2	Code no.	Max. operating force	Pretravel	Overtravel	Differential approx.	Max. plunger operating speed	Code no.
	-	10	17 N	1 mm	5 mm	0,4 mm	5 m/s	10
	-	20						
	-	30	17 N	1 mm	5 mm	0,4 mm	5 m/s	20
		11						
		22	6 N	10°	70°	4°	5 m/s	30
		21						
		33	other actuators on request					

( ) specification for cable tail  
 \* Dimensions for actuator are reference values  
 \*\* Standard product printing: ATEX and IECEx marking. Other international imprints obtainable on request. Please specify in plain text.

	Contact material	Ambient temperature (T <sub>a</sub> )
1	Silber	-20 °C to +60 °C
3	Gold	-20 °C to +60 °C
5	Silber	-55 °C to +60 °C
7	Silber	-60 °C to +75 °C
8	Gold	-60 °C to +75 °C

Complete order no.\*\* 07-291  -1    /

Please enter code number.

Special versions: Please specify in the plain text  
 Technical data subject to change without notice.

Length of connection cable 3 = 3 m  
 please specify other length in plain text, code no. 0



## CABLE ENTRIES AND LINE BUSHINGS

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- Applicable under extreme and harsh conditions
- Made out of Marine brass & Stainless steel
- Wide temperature range -60 °C to +180 °C

The cable gland, made of different metallic materials, is used for inserting permanent cables and leads into electrical equipment with the increased safety "e" and flameproof "d" type of explosion protection. The cable glands conform to the protection class IP 66/68. They are suitable for use in Zone 1, 2 for Gas Groups IIA, IIB and IIC as well as for use in zones 21 and 22 for Dust Groups IIIA, IIIB and IIIC. When this cable gland is used, the instructions given in the type examination certificate/operating instructions must be observed.

**Explosion protection**

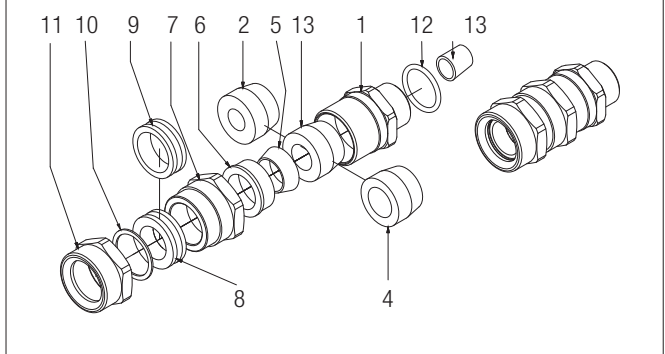
Marking ATEX	⊕ II 2G Ex d / Ex e / Ex ia IIC Gb ⊕ II 2D Ex tb IIIC Db
Certification	INERIS 09 ATEX 0028 X
Marking IECEX	Ex d / Ex e / Ex ia IIC Gb Ex tb IIIC Db
Certification	IECEX INE 13.0017 X
Ambient temperature	-40 °C to +90 °C (Rubber ring EPDM-60) -60 °C to +180 °C (Rubber ring Silicone)
Other approvals	Inmetro, EAC TR CU, RINA, RMRS, KC

**Technical data**

Protection class	IP 66 or IP 66/68
Material	Nickel plated brass or Stainless Steel AISI 316L
Entry thread size	Metric (ISO-pitch 1.5 mm) NPT (ANSI/ASME 31.20.1) Whitworth (UNI ISO-228)

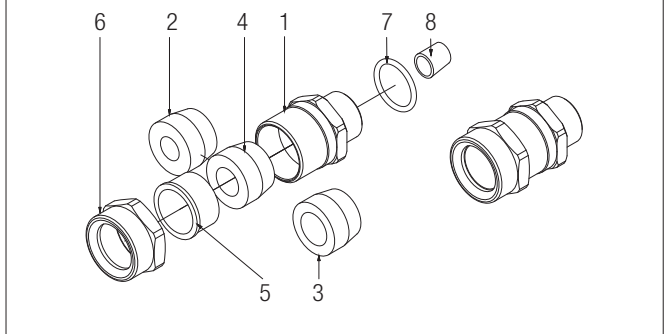
For further details and ordering numbers please see  
BARTEC FEAM catalogue <http://www.feam-ex.com/en/products>  
or BARTEC NASP catalogue <http://www.nuovaasp.net/cable-glands/>

**PAP Dimensional**












- 1 Body
- 2-3-4 Inner sealing ring for armoured cable
- 5 Armoured clamping cone
- 6 Armoured clamping ring for armoured cable
- 7 Gland barrel
- 8-9 Outer sealing ring
- 10 Anti rubbing washer
- 11 Gland nut
- 12 O-ring (only for metrical)
- 13 \*Chamber for sealing ("R" version only)

**PNA Dimensional**



- 1 Body
- 2-3-4 Inner sealing ring for not armoured cable
- 5 Armour clamping cone
- 6 Gland nut
- 7 O-ring (only for metrical)
- 8 \*Chamber for sealing ("R" version only)

**Ex Cable glands & Accessories**

	Version	Ambient temperature	Protection degree	Ex protection	Material	Applications
ARMOURED CABLES	PABD 	-40 °C ÷ +90 °C (Rubber rings EPDM-60) -60 °C ÷ +180 °C (Rubber rings SILICON)	IP66/68	II 2 G Ex d / Exe / Exia IIC Gb II 2 D Ex tb IIIC Db	Brass Nickel plated brass Stainles Steel AISI 316L	- for steel wire armoured cables (swa) - for steel tape armoured cables - for lead inner sheath cables - double compression - under armour and overall of armour cable Option: Sealing with resin - barrier type "R"
	PAP 	-40 °C ÷ +90 °C (Rubber rings EPDM-60) -60 °C ÷ +180 °C (Rubber rings SILICON)	IP66/68	II 2 G Ex d / Exe / Exia IIC Gb II 2 D Ex tb IIIC Db	Brass Nickel plated brass Stainles Steel AISI 316L	- for steel wire armoured cables (swa) - for steel tape armoured cables - for lead inner sheath cables - double compression - under armour and overall of armour cable Option: Sealing with resin - barrier type „R“
	PA 	-40 °C ÷ +90 °C (Rubber rings EPDM-60) -60 °C ÷ +180 °C (Rubber rings SILICON)	IP66/68	II 2 G Ex d / Exe / Exia IIC Gb II 2 D Ex tb IIIC Db	Brass Nickel plated brass Stainles Steel AISI 316L	- for steel wire armoured cables (swa) - for steel tape armoured cables - for lead inner sheath cables - double compression - under armour and overall of armour cable Option: Sealing with resin - barrier type „R“
UNARMOURED CABLES	PNA 	-40 °C ÷ +90 °C (Rubber rings EPDM-60) -60 °C ÷ +180 °C (Rubber rings SILICON)	IP66/68	II 2 G Ex d / Exe / Exia IIC Gb II 2 D Ex tb IIIC Db	Brass Nickel plated brass Stainles Steel AISI 316L	- for unarmoured cables only - single compression type suitable for indoor and outdoor use - single compression - on cable (inner sealing) Option: Sealing with resin - barrier type "R"
	PNAF 	-40 °C ÷ +90 °C (Rubber rings EPDM-60) -60 °C ÷ +180 °C (Rubber rings SILICON)	IP66/68	II 2 G Ex d / Exe / Exia IIC Gb II 2 D Ex tb IIIC Db	Brass Nickel plated brass Stainles Steel AISI 316L	- for unarmoured cables only - suitable for flexible conduit connection (threaded cap uni iso 228) - single compression - on cable (inner sealing) Option: Sealing with resin - barrier type "R"
ACCESSORIES	Plugs 	-60 °C ÷ +130 °C	IP66	II 2 G Ex d IIC Gb II 2 G Ex e IIC Gb II 2 D Ex t IIIC Db	"Nickel plated brass Stainles Steel AISI 316L Aluminium light alloy Galvanized steel"	Sealing of unused cable entries in Ex equipment
	Breather Drains 	-60 °C ÷ +130 °C (Silicone)	IP66	II 2 G Ex d IIC Gb II 2 G Ex e IIC Gb II 2 D Ex t IIIC Db	Stainles Steel AISI 316L	Provides breathing to minimise condensation effect, together with draining moisture within the equipment
	Adapters/ Reducers 	-60 °C ÷ +130 °C (Silicone/EPDM/NYLON)	IP66	II 2 G Ex d IIC Gb II 2 G Ex e IIC Gb II 2 D Ex t IIIC Db	"Brass Nickel plated brass Stainles Steel AISI 316L Galvanized steel"	"Explosion proof reducers and adaptors are used to connect various equipment and matching different thread types and sizes: - enclosures - lighting fixtures - junction and pulling boxes - etc..."
	DL-NW-PTD-ET 	Locknuts Shoruds Silicone sealant Gaskets Earth tags	Are preferred items used in securing cable glands to the gland plate especially to plastic junction boxes For all tipe of glands application where additional protection is required Is provided for submission of barrier cable glands type-R Are used to maintain the ip rating across the interface between the equipment and relevant cable gland Are used to ensure earth continuity and grounding of cable armour			

Technical data subject to change without notice.



- Zones 1/21 and 2/22
- IP66/IP68
- Ex “e” or Ex “i”

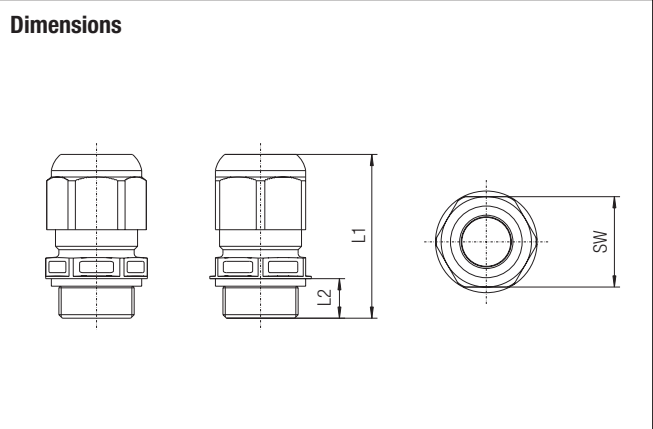
The cable gland made of polyamide is used for inserting permanent cables and leads into electrical equipment with the increased safety “e” type of explosion protection. The cable glands conform to the protection class IP 66/68. For intrinsically safe circuits the cable entries are available with a blue cap nut. When this cable gland is used, the instructions given in the type examination certificate/operating instructions must be observed.

**Explosion protection**

Marking ATEX	⊕ II 2G Ex e II C ⊕ II 2D Ex tb IIIC Db IP 68
Certification	PTB 13 ATEX 1015 X
Marking IECEX	Ex e II C Ex tb IIIC Db IP 68
Certification	IECEX PTB 13.0034 X
Operating temperature	-40 °C to +75 °C

**Technical data**

Material	Polyamid, self-extinguishing
Seals	EPDM
Colour	RAL 9005, black RAL 5015, blue
Protection class	IP 66/IP 68 EN/IEC 60529



**Ordering information** Cable gland Ex e, black

Thread size	Cable range (Ø)	Across flat (AF)	Thread length (L2)	Length in mm (L1)	Unit	Order no.
M12 x 1.5	3 - 6	16	15	35 - 45	50	03-6062-0137
M16 x 1.5	4.5 - 9	20	9	31 - 37	50	03-6062-0126
M20 x 1.5	7 - 13	24	10	36 - 45	50	03-6062-0127
M25 x 1.5	7 - 12	29	10	38 - 47	50	03-6062-0128
M25 x 1.5	10 - 17	29	10	38 - 47	50	03-6062-0136
M32 x 1.5	13 - 21	36	12	42 - 51	25	03-6062-0129
M40 x 1.5	17 - 28	46	12	52 - 65	10	03-6062-0130
M50 x 1.5	23 - 35	55	14	59 - 72	5	03-6062-0125
M63 x 1.5	31 - 48	68	15	64 - 78	1	03-6062-0131

Cable glands Ex e black, with long connection thread on request.

**Ordering information** Cable gland Ex i, with blue cap nut

Thread size	Cable range (Ø)	Across flat (AF)	Thread length (L2)	Length in mm (L1)	Unit	Order no.
M12 x 1.5	3 - 6	16	15	35 - 45	50	03-6065-0074
M16 x 1.5	4.5 - 9	20	9	31 - 37	50	03-6065-0066
M20 x 1.5	7 - 13	24	10	36 - 45	50	03-6065-0067
M25 x 1.5	7 - 12	29	10	38 - 47	50	03-6065-0068
M25 x 1.5	10 - 17	29	10	38 - 47	50	03-6065-0073
M32 x 1.5	13 - 21	36	12	42 - 51	25	03-6065-0069
M40 x 1.5	17 - 28	46	12	52 - 65	10	03-6065-0070
M50 x 1.5	23 - 35	55	14	59 - 72	5	03-6065-0071
M63 x 1.5	31 - 48	68	15	64 - 78	1	03-6065-0072

Technical data subject to change without notice.



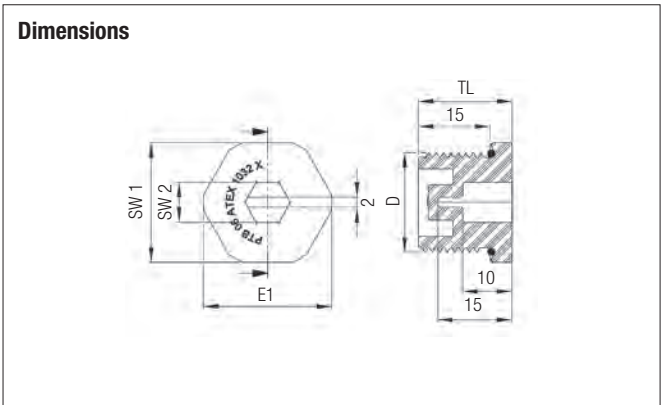
Screw plugs for closing unused boreholes in enclosures for the hazardous area in accordance with EN 60079-0 and EN 60079-7. For assembly purposes the outer shape and internal recess of the screw plug head are hexagonal.

**Explosion protection**

Marking ATEX	II 2G Ex eb IIC Gb II 2D Ex tb IIIC Db
Certification	PTB 06 ATEX 1032 X BVS 11 ATEX E073 X

**Technical data**

Protection class	IP 68
Material	Body: Polyamide O-ring: EPDM
Operating temperature	-40 °C to +75 °C
Colour	Black



**Ordering information**

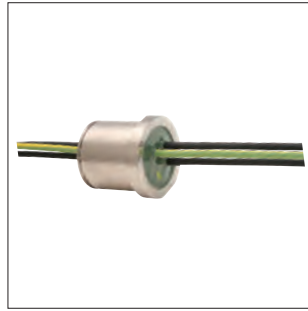
D (mm)	SW* 1 (mm)	SW* 2 (mm)	E1 (mm)	TL (mm)	Nm	Order no.
M12 x 1.5	16	6	18	19	2	03-5210-0092
M16 x 1.5	20	8	22	19	2	03-5210-0085
M20 x 1.5	24	8	26	19	2	03-5210-0089
M25 x 1.5	29	8	31	20	5	03-5210-0090
M32 x 1.5	36	8	39	20	5	03-5210-0091
M40 x 1.5	46	8	50	20	10	03-5210-0086
M50 x 1.5	55	8	60	20	10	03-5210-0087
M63 x 1.5	68	8	73	20	10	03-5210-0088

\*SW = Across flat

Technical data subject to change without notice.



multi-core with threaded sleeve



multi-core with cylindrical sleeve



4-pole or 6-pole with terminals

- Space-saving construction as many single cores are gathered in one single sleeve thus requiring only one cable entry hole.
- Motor mains and thermoprotection cables can be exited in **one** common sleeve.
- Numbered cores simplify connections and eliminate the usual “Ring out” in larger control systems.
- Coaxial and Ethernet bushings are similarly available.
- On the Ex d side, the cores are connected directly to the electrical load, intermediate terminals are no longer necessary.
- Small dimensions allow a rated insulation voltage of up to 3 kV.
- Blue cores for Ex i low power circuits.
- Permanent heat-resistance of the cores up to +110 °C.

A line bushing is a component for the electrical connection between a flameproof “d” enclosure and an increased safety “e” terminal box. The bushing consists of a threaded or non-threaded metal sleeve encapsulating one or more cores providing a flameproof barrier. The lengths of these leads vary according to their applications. The depth of engagement of the threaded sleeves and the joint length of the cylindrical sleeve in the wall of the “d” enclosure must correspond to the EN 60079-0 and EN 60079-1 standards. After installation the bushing must be protected against rotation and accidental loosening. Recommendations are given under “Accessories”. Our standard bushings come with threaded sleeves from M10 to M42 or with cylindrical sleeves. They are equipped with cores with a 0.2 to 120 mm<sup>2</sup> csa. and approved for nominal voltages between 250 V and 3 000 V. See also table “Electrical data”. For the connection of intrinsically safe circuits in the “d” area with the terminal strip in the connection compartment we provide **line bushings with blue cores for “i” low power circuits**.

Another product of our line-bushing range is the **bushing with terminals**. Combining Ex d line bushing with an Ex e terminal we designed an element which is hardly any bigger than a normal line bushing. This bushing plus terminals reduces the size of the terminal box and, at the same time, the installation costs. The bushings plus terminals are rated for 690 V and 1 000 V and certified. We supply them with 2 to 6 poles and threaded sleeves from M 24 to M 42.

All line bushings have been tested and certified for their use in hazardous areas according to the European standards EN 60079-0, EN 60079-1 and EN 60079-7 concerning electrical operating equipment for explosion-endangered areas for above-ground (II) and underground (I) according to ATEX. BARTEC has furthermore obtained several foreign admissions for these line bushings. When the 2014/34/EU guideline comes into force on 20. April 2016, explosion protected operating equipment must be properly installed in accordance with EN 60079-14. Among other things, section 10.4.2 requires that **cast, pressure-proof cable insertions according to EN 60079-1 are used for** operating equipment with an internal ignition source for the explosion subgroup IIC and operating equipment with an enclosure volume greater than 2 dm<sup>3</sup> in zone 1. BARTEC offers a wide range of products with EU type test certification.



Line bushings in the Ex e terminal box



Connection side of the line bushings with terminals

**Line bushing**

**Explosion protection**

Marking ATEX	⊕ II 2G Ex db IIC Gb ⊕ I M2 Ex db I Mb
Certification	EPS 13 ATEX 1619 U
Marking IECEx	Ex db IIC Gb Ex db I Mb
Certification	IECEx EPS 13.0045 U
Other approvals	INMETRO, UL, CSA, NEPSI, GOST, FM
Standard product printing	ATEX and IECEx marking. Other international imprints obtainable on request. Please specify in plain text.
Working temperature	-60 °C to +110 °C depending on the lead used and static test pressure (temperature ranges apply to the "fixed installation" of leads)

Other approvals and certificates, see [www.bartec.de](http://www.bartec.de)

**Standard versions\***

Cores depending on the working temperature and voltage	H07G-K radiation cross-linked polyolefin copolymer NSGAFÖU
max. number of cores	50 cores
Cross-section	0.25 mm <sup>2</sup> to 120 mm <sup>2</sup> AWG24 to AWG1
Sleeve size	metric: M16 x 1.5 to M42 x 1.5 non-threaded: Ø 22 mm to Ø 36 mm
Sleeve material	Metal, bare, varnished or galvanised
Rated voltage	690 V/1 000 V/3 000 V
Rated currents	see following table based on VDE 0298-04

\* all other versions on request

Please use the customer requirements form at the end of the chapter!

**Line bushing with terminals**

**Explosion protection**

Marking ATEX	⊕ II 2G Ex db eb IIC Gb ⊕ I M2 Ex db eb I Mb
Certification	EPS 14 ATEX 1644 U
Marking IECEx	Ex db eb IIC Gb Ex db eb I Mb
Certification	IECEx EPS 14.0020 U
Working temperature	-60 °C to +110 °C depending on the design, terminals and lead (temperature ranges apply to the "permanent installation" of the leads)
Ambient temperature of limit switches	depending on the design and the cores/leads
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	

**Standard versions\***

Cores depending on the working temperature and voltage	H07G-K radiation cross-linked polyolefin copolymer NSGAFÖU
Number of terminals	4 or 6 (depending on the cross-section)
Cross-section	0.75 mm <sup>2</sup> /1.5 mm <sup>2</sup> /2.5 mm <sup>2</sup> /4 mm <sup>2</sup> /6 mm <sup>2</sup>
Sleeve size	metric: M16 x 1.5 to M42 x 1.5 non-threaded: Ø 22 mm to Ø 36 mm
Sleeve material	Metall, blank, lackiert oder galvanisiert
Nominal voltage	690 V/1 000 V
Rated currents	see following table based on VDE 0298-04

\* all other versions on request

Please use the customer requirements form at the end of the chapter!

Technical data subject to change without notice.

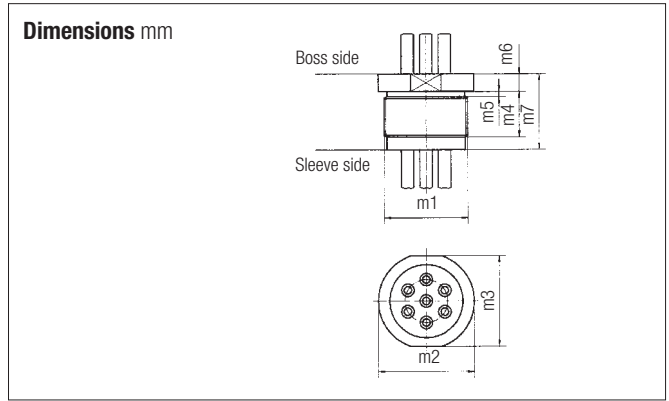
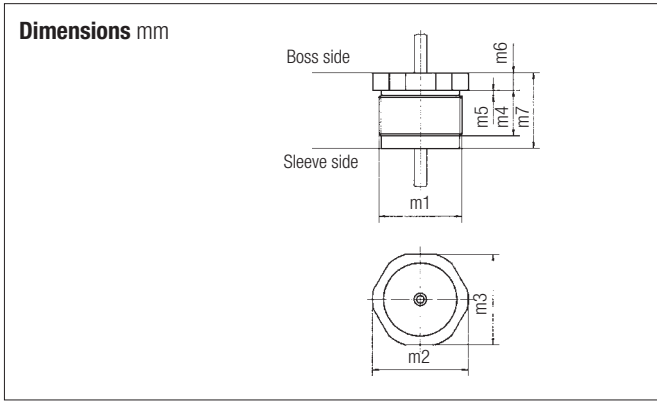
## Ordering information

Sleeve type	Code no.	Nominal voltage	Code no.	Conductor, cross-section mm <sup>2</sup>	Code no.	Sleeve size	Code no.				
threaded, metric	0	690 V	1	Special diameter	A	M 10 x 1	0				
				0.25	C						
				0.35	D	M 16 x 1	1				
				0.5	E						
				0.75	F	M 24 x 1.5 $\varnothing \geq 22$ mm	2				
				1	G						
pluggable, length of crack 12.5 mm	5	1 000 V	3	1.5	H	M33 x 1.5 $\varnothing \geq 32$ mm	3				
				2.5	J						
				4	K	M36 x 1.5	4				
				6	L						
				10	M	M38 x 1.5 $\varnothing \geq 36$ mm	5				
				16	N						
				25	P	M42 x 1.5	6				
				35	Q						
				pluggable, length of crack 25 mm	6	3 000 V	4	50	R	M12 x 1.5	C
								70	S		
95	T	M16 x 1.5	D								
120	U										
Mixed cores	Z	M20 x 1.5	E								
		M25 x 1.5	F								

**Complete order no.\*** 07-91   -    /G  
Please insert code number.

\* Standard product printing: ATEX and IECEx marking.  
Other international imprints obtainable on request. Please specify in plain text.  
Technical data subject to change without notice.

Number of cores z. B. 02 = 2 cores; 21 = 21 cores; etc. 1 ... 50 cores
Core length: as ordered
Core identification: printed numbers



m1	m2	m3	m4	m5	m6
M10 x 1	Ø 13.5	12	16	1.5	5
M12 x 1.5	Ø 16.5	15	17	2.0	5
M16 x 1	Ø 21	19	17	1.5	5
M16 x 1.5	Ø 21	19	17	2.0	5
M24 x 1.5	Ø 29	27	19	2.0	5
M25 x 1.5	Ø 29	27	19	2.0	5
M42 x 1.5	Ø 48	46	25	2.0	7

m1	m2	m3	m4	m5	m6
M33 x 1.5	Ø 38	36	18	2.0	7
M36 x 1.5	Ø 42	40	25	2.0	7

**Ordering information - cores**

Number of cores	Conductor cross section (mm <sup>2</sup> )	rated current (A) for continuous operation (reference values) <sup>1)</sup> Max. permissible operating temperature at the conductor is 110 °C Max. current carrying capacity based on VDE 0298-4	Thread size	Dimensions m7 (mm)	Order no. Indicate core length on both boss and sleeve side in plain text.
1	0.5	7 A	M10 x 1	25	07-910 □ -E010
1	0.5		M12 x 1.5	25	07-910 □ -E01C
9	0.5		M16 x 1	25	07-910 □ -E091
9	0.5		M16 x 1.5	25	07-910 □ -E09D
19	0.5		M24 x 1.5	26	07-910 □ -E192
19	0.5		M25 x 1.5	26	07-910 □ -E19F
16	0.5		M33 x 1.5	30	07-910 □ -E163
20	0.5		M36 x 1.5	35	07-910 □ -E204
30	0.5		M38 x 1.5	36	07-910 □ -E305
40	0.5		M42 x 1.5	35	07-910 □ -E406

<sup>1)</sup> When determining the maximum current carrying capacity of the connection cores, the self-heating rate and the enclosure heating at the installation site at the max. permissible ambient temperature must be taken as a basis.

Enter code number 1 = 690 V  
3 = 1000 V

Other equipment options and special sleeves on request.

It is essential to submit a customer requirements form which has been filled in correctly and completely. The form can be found in the catalogue at the end of the chapter.

Technical data subject to change without notice.

## Ordering information - cores

Number of cores	Conductor cross section (mm <sup>2</sup> )	Rated current (A) for continuous operation (reference values) <sup>2)</sup> Max. permissible operating temperature at the conductor is +110 °C Max. current carrying capacity based on VDE 0298-4	Thread size	Dimensions m 7 (mm)	Order no. Indicate core length on both boss and sleeve side in plain text.
1	0.75	15 A	M10 x 1	25	07-910 □ -F010
1	0.75		M12 x 1.5	25	07-910 □ -F01C
4	0.75		M16 x 1	25	07-910 □ -F041
4	0.75		M16 x 1.5	25	07-910 □ -F04D
11	0.75		M24 x 1.5	26	07-910 □ -F112
11	0.75		M25 x 1.5	26	07-910 □ -F11F
12	0.75		M33 x 1.5	30	07-910 □ -F123
15	0.75		M36 x 1.5	35	07-910 □ -F154
24	0.75		M38 x 1.5	36	07-910 □ -F245
25	0.75		M42 x 1.5	35	07-910 □ -F256
1	1.5	24 A	M10 x 1	25	07-910 □ -H010
1	1.5		M12 x 1.5	25	07-910 □ -H01C
3	1.5		M16 x 1	25	07-910 □ -H031
3	1.5		M16 x 1.5	25	07-910 □ -H03D
8	1.5		M24 x 1.5	26	07-910 □ -H082
8	1.5		M25 x 1.5	26	07-910 □ -H08F
12	1.5		M33 x 1.5	30	07-910 □ -H123
15	1.5		M36 x 1.5	35	07-910 □ -H154
24	1.5		M38 x 1.5	36	07-910 □ -H245
25	1.5		M42 x 1.5	35	07-910 □ -H256
3	2.5	32 A	M16 x 1	25	07-910 □ -J031
3	2.5		M16 x 1.5	25	07-910 □ -J03D
6	2.5		M24 x 1.5	26	07-910 □ -J062
6	2.5		M25 x 1.5	26	07-910 □ -J06F
8	2.5		M33 x 1.5	30	07-910 □ -J083
10	2.5		M36 x 1.5	35	07-910 □ -J104
10	2.5		M38 x 1.5	36	07-910 □ -J105
14	2.5		M42 x 1.5	35	07-910 □ -J146
1	4	42 A	M16 x 1	25	07-910 □ -K011
1	4		M16 x 1.5	25	07-910 □ -K01D
3	4		M24 x 1.5	26	07-910 □ -K032
3	4		M25 x 1.5	26	07-910 □ -K03F
6	4		M33 x 1.5	30	07-910 □ -K063
8	4		M36 x 1.5	35	07-910 □ -K084
8	4		M38 x 1.5	36	07-910 □ -K085
12	4		M42 x 1.5	35	07-910 □ -K126
1	6	54 A	M16 x 1	25	07-910 □ -L011
1	6		M16 x 1.5	25	07-910 □ -L01D
2	6		M24 x 1.5	26	07-910 □ -L022
2	6		M25 x 1.5	26	07-910 □ -L02F
6	6		M33 x 1.5	30	07-910 □ -L063
6	6		M36 x 1.5	35	07-910 □ -L064
6	6		M38 x 1.5	36	07-910 □ -L065
8	6		M42 x 1.5	35	07-910 □ -L086
1	10	73 A	M16 x 1.5	25	07-910 □ -M011
1	10		M16 x 1.5	25	07-910 □ -M01D
1	10		M24 x 1.5	26	07-910 □ -M012
3	10		M33 x 1.5	30	07-910 □ -M033
6	10		M36 x 1.5	35	07-910 □ -M064
6	10		M38 x 1.5	36	07-910 □ -M065
8	10		M42 x 1.5	35	07-910 □ -M086
1	16		98 A	M25 x 1.5	26
3	16	M33 x 1.5		30	07-910 □ -N033
3	16	M36 x 1.5		35	07-910 □ -N034
6	16	M38 x 1.5		36	07-910 □ -N035
6	16	M42 x 1.5		35	07-910 □ -N066
1	25	129 A		M24 x 1.5	26
1	25		M25 x 1.5	26	07-910 □ -P01F
1	35	158 A	M24 x 1.5	26	07-910 □ -Q012
1	35		M25 x 1.5	26	07-910 □ -Q01F
1	50	198 A	M24 x 1.5	26	07-910 □ -R012
1	50		M25 x 1.5	26	07-910 □ -R01F
1	70	245 A	M33 x 1.5	50	07-910 □ -S013
1	70		M36 x 1.5	50	07-910 □ -S014

<sup>1)</sup> When determining the maximum current carrying capacity of the connection cores, the self-heating rate and the enclosure heating at the installation site at the max. permissible ambient temperature must be taken as a basis.

Other equipment options and special sleeves on request. It is essential to submit a customer requirements form which has been filled in correctly and completely. The form can be found in the catalogue at the end of the chapter.

Enter code number	1 = 690 V 3 = 1000 V
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Technical data subject to change without notice.

**Ordering information - cores**

Number of cores	Conductor cross section (mm <sup>2</sup> )	Rated current (A) for continuous <sup>1)</sup> operation (reference values) <sup>1)</sup> Max. permissible operating temperature at the conductor is +90°C Max. current carrying capacity based on VDE 0298-4	Thread size	Dimensions m 7 <sup>2)</sup> (mm)	Order no. Indicate core length on both boss and sleeve side in plain text.
1	1.5	30 A	M16 x 1	25	07-9104-H011
1	1.5		M16 x 1.5	25	07-9104-H01D
2	1.5		M24 x 1.5	26	07-9104-H022
2	1.5		M25 x 1.5	26	07-9104-H02F
5	1.5		M33 x 1.5	30	07-9104-H053
6	1.5		M36 x 1.5	35	07-9104-H064
6	1.5		M38 x 1.5	36	07-9104-H065
8	1.5		M42 x 1.5	35	07-9104-H086
1	2.5	41 A	M16 x 1	25	07-9104-J011
1	2.5		M16 x 1.5	25	07-9104-J01D
5	2.5		M33 x 1.5	30	07-9104-J053
6	2.5		M36 x 1.5	35	07-9104-J064
6	2.5		M38 x 1.5	36	07-9104-J065
8	2.5		M42 x 1.5	35	07-9104-J086
1	4	55 A	M24 x 1.5	26	07-9104-K012
1	4		M25 x 1.5	26	07-9104-K01F
3	4		M33 x 1.5	30	07-9104-K033
5	4		M36 x 1.5	35	07-9104-K054
5	4		M38 x 1.5	36	07-9104-K055
6	4		M42 x 1.5	35	07-9104-K066
1	6	70 A	M24 x 1.5	26	07-9104-L012
1	6		M25 x 1.5	26	07-9104-L01F
3	6		M33 x 1.5	30	07-9104-L033
4	6		M36 x 1.5	35	07-9104-L044
4	6		M38 x 1.5	36	07-9104-L045
6	6		M42 x 1.5	35	07-9104-L066
1	10	98 A	M24 x 1.5	26	07-9104-M012
1	10		M25 x 1.5	26	07-9104-M01F
2	10		M33 x 1.5	30	07-9104-M023
3	10		M36 x 1.5	35	07-9104-M034
3	10		M38 x 1.5	36	07-9104-M035
1	16	132 A	M24 x 1.5	26	07-9104-N012
1	16		M25 x 1.5	26	07-9104-N01F
3	16		M42 x 1.5	35	07-9104-N036
1	25	176 A	M24 x 1.5	26	07-9104-P012
1	25		M25 x 1.5	26	07-9104-P01F
1	35	218 A	M33 x 1.5	30	07-9104-Q013
1	35		M38 x 1.5	30	07-9104-Q015
1	50	276 A	M33 x 1.5	50	07-9104-R013

<sup>1)</sup> When determining the maximum current carrying capacity of the connection cores, the self-heating rate and the enclosure heating at the installation site at the max. permissible ambient temperature must be taken as a basis.

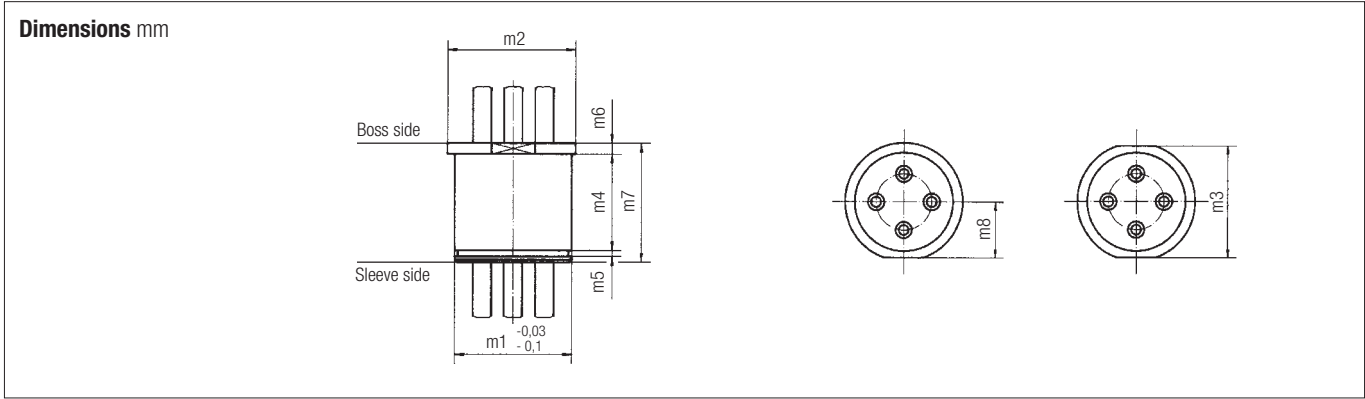
<sup>2)</sup> Thread size M25 x 1.5 - Dimensions m 7 = 46 mm

Other equipment options and special sleeves on request.

It is essential to submit a customer requirements form which has been filled in correctly and completely.

The form can be found in the catalogue at the end of the chapter

Technical data subject to change without notice.



m1	Joint length L	m2	m3	m4	m5	m6	m8
Ø 22	15 mm	Ø 25	-	16.1	1.3	2	11.1 + 0.2
Ø 22	25 mm	Ø 25	-	26.1	1.3	2	11.1 + 0.2
Ø 32	25 mm	Ø 36	-	26.1	1.6	3	17.1 - 0.2
Ø 36	25 mm	Ø 42	SW 40	28.1	1.85	7	-

**Ordering information Cores**

Number of cores	Conductor cross section (mm <sup>2</sup> )	Rated current (A) for continuous operation (reference values) <sup>1)</sup> Max. permissible operating temperature at the conductor is +110°C Max. current carrying capacity based on VDE 0298-4	Sleeve size	Dimensions m7 (mm)	Order no. Joint length L = 15 mm 07-..5.- Joint length L = 25 mm 07-..6.- Indicate the core length on both the boss sleeve sides in plain text
11	0.75	15 A	Ø 22	23	07-915 □ -F112
11	0.75		Ø 22	31	07-916 □ -F112
12	0.75		Ø 32	32	07-916 □ -F123
15	0.75		Ø 36	39	07-916 □ -F155
8	1.5	24 A	Ø 22	23	07-915 □ -H082
8	1.5		Ø 22	31	07-916 □ -H082
12	1.5		Ø 32	32	07-916 □ -H123
15	1.5		Ø 36	39	07-916 □ -H155
6	2.5	32 A	Ø 22	31	07-916 □ -J062
6	2.5		Ø 32	32	07-916 □ -J063
10	2.5		Ø 36	39	07-916 □ -J105
3	4	42 A	Ø 22	31	07-916 □ -K032
6	4		Ø 32	32	07-916 □ -K063
8	4		Ø 36	39	07-916 □ -K085
2	6	54 A	Ø 22	31	07-916 □ -L022
6	6		Ø 32	32	07-916 □ -L063
8	6		Ø 36	39	07-916 □ -L085
1	10	73 A	Ø 32	32	07-916 □ -M013
6	10		Ø 36	39	07-916 □ -M065
4	16	98 A	Ø 36	39	07-916 □ -N045
1	25	129 A	Ø 36	39	07-916 □ -P015
1	35	158 A	Ø 36	39	07-916 □ -Q015
1	50	198 A	Ø 36	39	07-916 □ -R015

<sup>1)</sup> When determining the maximum current-carrying capacity of the connection cores, the self-heating rate and the enclosure heating at the installation site at the max. permissible ambient temperature must be taken as a basis

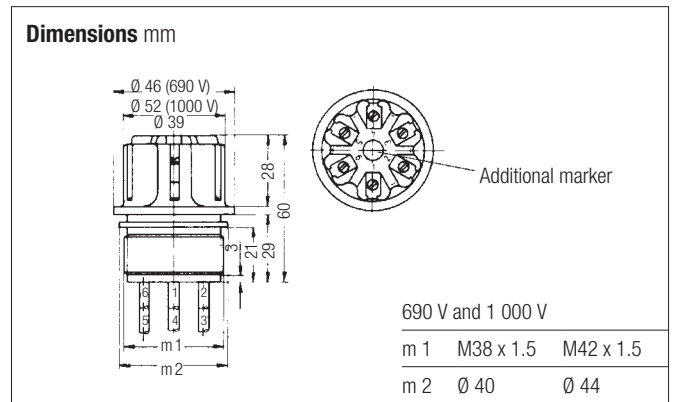
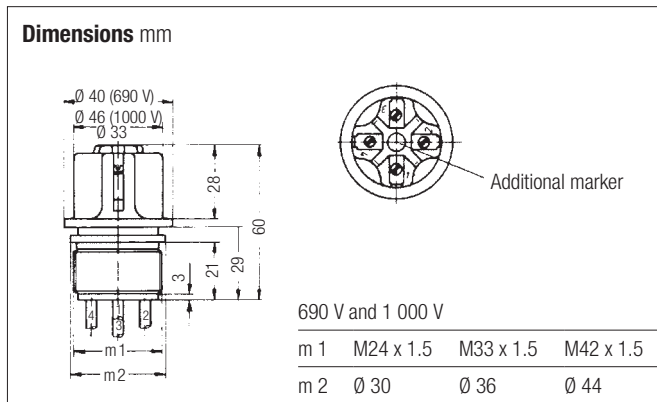
Enter code number	1 = 690 V 3 = 1000 V
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Other equipment options and special sleeves on request.

It is essential to submit a customer requirements form which has been filled in correctly and completely. The form can be found in the catalogue at the end of the chapter.

- Note:
1. Cylindrical sleeves with joint length L = 15 mm (type 07-915\*) for enclosures with a volume of ≤ 2 litres.
  2. Cylindrical sleeves with joint length L = 25 mm (type 07-916\*) for enclosures with a volume of > 2 litres.

Technical data subject to change without notice.



**Ordering information Cores**

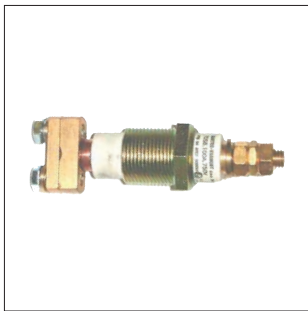
Rated insulation voltage	No. of terminals/cores	Conductor cross section (mm <sup>2</sup> )	Rated current (A) for continuous operation (reference values) <sup>1)</sup> Max. permissible operating temperature at the conductor is +110 °C Max. current-carrying capacity based on VDE 0298-4 Table 11, Gap 2	Thread size	Order no. Core length please specify in plain text
690 V	4	0.75	11 A	M24 x 1.5	07-9304-F042
		1.5	17 A	M24 x 1.5	07-9304-H042
		2.5	23 A	M24 x 1.5	07-9304-J042
		4	31 A	M24 x 1.5	07-9304-K042
	4	0.75	11 A	M33 x 1.5	07-9304-F043
		1.5	17 A	M33 x 1.5	07-9304-H043
		2.5	23 A	M33 x 1.5	07-9304-J043
		4	31 A	M33 x 1.5	07-9304-K043
		6	40 A	M33 x 1.5	07-9304-L043
	4	0.75	11 A	M42 x 1.5	07-9304-F046
		1.5	17 A	M42 x 1.5	07-9304-H046
		2.5	23 A	M42 x 1.5	07-9304-J046
		4	31 A	M42 x 1.5	07-9304-K046
		6	40 A	M42 x 1.5	07-9304-L046
	6	0.75	11 A	M38 x 1.5	07-9304-F065
		1.5	17 A	M38 x 1.5	07-9304-H065
		2.5	23 A	M38 x 1.5	07-9304-J065
		4	31 A	M38 x 1.5	07-9304-K065
		6	40 A	M38 x 1.5	07-9304-L065
	6	0.75	11 A	M42 x 1.5	07-9304-F066
		1.5	17 A	M42 x 1.5	07-9304-H066
		2.5	23 A	M42 x 1.5	07-9304-J066
		4	31 A	M42 x 1.5	07-9304-K066
		6	40 A	M42 x 1.5	07-9304-L066
1 000 V	4	1.5	17 A	M33 x 1.5	07-9306-H043
		2.5	23 A	M33 x 1.5	07-9306-J043
		4	31 A	M33 x 1.5	07-9306-K043
		6	40 A	M33 x 1.5	07-9306-L043
	4	1.5	17 A	M42 x 1.5	07-9306-H046
		2.5	23 A	M42 x 1.5	07-9306-J046
		4	31 A	M42 x 1.5	07-9306-K046
		6	40 A	M42 x 1.5	07-9306-L046
	6	1.5	17 A	M38 x 1.5	07-9306-H065
		2.5	23 A	M38 x 1.5	07-9306-J065
		4	31 A	M38 x 1.5	07-9306-K065
	6	1.5	17 A	M42 x 1.5	07-9306-H066
		2.5	23 A	M42 x 1.5	07-9306-J066
		4	31 A	M42 x 1.5	07-9306-K066
		6	40 A	M42 x 1.5	07-9306-L066

<sup>1)</sup> When determining the maximum current-carrying capacity of the connection cores, the self-heating and enclosure heating at the site of installation at the maximum permissible ambient temperature must be assumed. The maximum tightening torque for the terminal screw is 0.8 Nm.

Other equipment options and special sleeves on request.

It is essential to submit a customer requirements form which has been filled in correctly and completely. The form can be found in the catalogue at the end of the chapter.

Technical data subject to change without notice.



- 16 A to 630 A
- 690 V, 1000 V and 1600 V
- Max. working temperature 130 °C
- Different types of terminals
- Standard thread  
M16 x 1.5 to M42 x 1.5

A bushing conductor stud is a component with which the electrical connection between an enclosure in type of protection Flameproof enclosure „d“ and its connection enclosure in type of protection Increased Safety „e“ is established. The cable bushing includes a threaded metal sleeve, a ceramic insulation, terminals and a stud. Standard threaded sleeves from M16 to M42 are included in the delivery of bushing conductor studs. The diameter of the stud depends on current and the terminal size on the cable diameter. Thanks to different types of terminals, vertical as well as horizontal cable connection is possible. Special terminals are available on request. After installation, the bushing conductor stud needs to be secured by means of a nut or adhesive to prevent self-loosening.

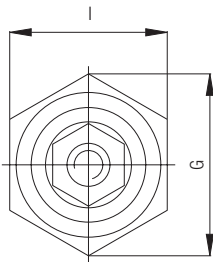
**Explosion protection**

Marking ATEX	II 2G Ex de IIC Gb I M2 Ex de I Mb
Certification	PTB 04 ATEX 1099 U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Temperature range	at the place of installation by rated operation of the electrical apparatus -50 °C to +130 °C  The maximum current carrying capacity of the bushing conductor stud and the connecting leads shall be established on the basis of the self-heating rate and the enclosure heating rate at the place of installation starting from the maximum permissible ambient temperature.

**Technical data**

Protection class	EN 60079-0: 2009; EN 60079-1: 2007	
Material	Insulation	ceramic, C610
	Stud	
	16 A to 250 A	CuZn39Pb2
	400 A to 630 A	E-Cu
Current	16 A to 630 A	
Voltage	690 V, 1 000 V and 1 600 V	
Connection	1.5 mm <sup>2</sup> to 300 mm <sup>2</sup>	
Stud size	4 mm to 20 mm	
Thread size	M16 x 1.5 to M42 x 1.5	

**Dimensions**



**Ordering information**

Type	Current	Type of terminal	Thread size
TOS4.16A..-	16 A	A	M16 x 1,5
TOS5.25A..-	25 A	A, F, FL, RF, C	M18 x 1,5
TOS6.63A..-	63 A	A, F, FL, RF, C	M20 x 1,5
TOS8.100A..-	100 A	F, FL, RF, C	M24 x 1,5
TOS10.160A..-	160 A	F, FL, RF, R	M27 x 1,5
TOS12.250A..-	250 A	F, FL, RF, R	M33 x 1,5
TOS16.400A..-	400 A	F, FL, RF, R	M36 x 1,5
TOS20.630A..-	630 A	F, FL, RF, R	M42 x 1,5

**Example-**

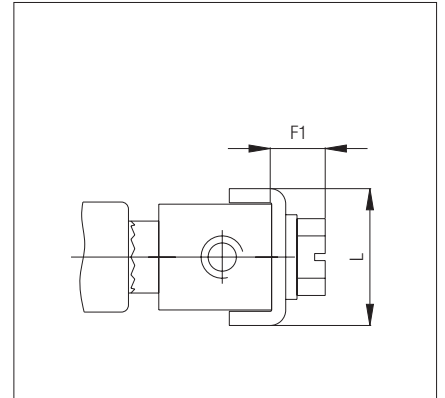
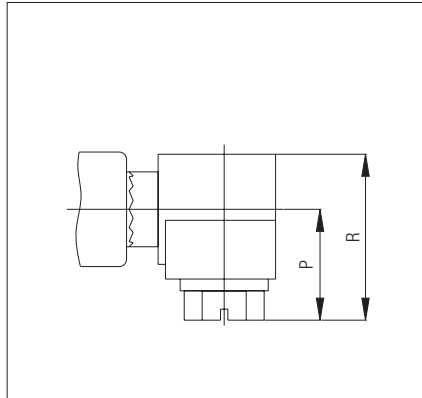
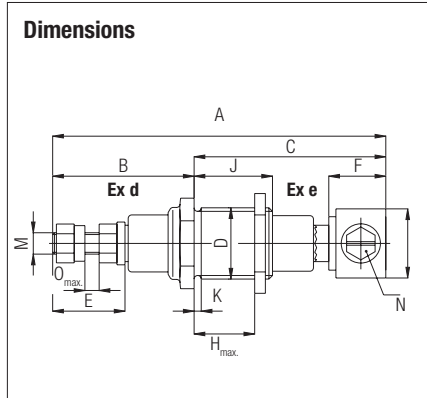
**Complete order no.** TOS8.100A.690V - RF

Please insert code number.  
Specify voltage in plain text.

Voltage  
690 V, 1000 V  
or 1600 V

Technical data subject to change without notice.

**Type of terminal A from 690 V to 1000 V**



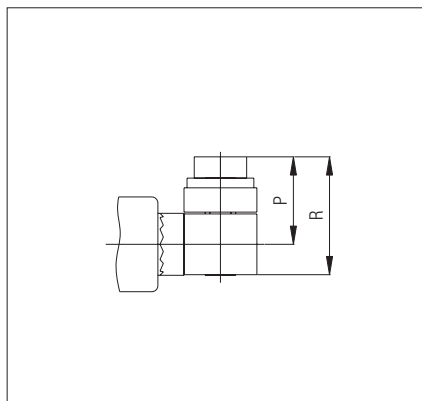
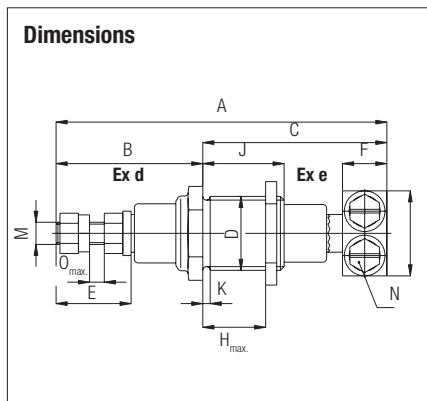
**Ordering information** Type of terminal A to 690 V

Type	D	A	B	C	E	F/F1	G	H <sub>max</sub>	I	J	K	L	M	N	O <sub>max</sub>	P	R	Terminals
TOS4.16.690 V	M16 x 1.5	81.5	33	48.5	13.4	12/5.5	19.6	18	17	22	2	13.4	M4	M4 x 10	4	10.7	15.7	1.5 - 6 mm <sup>2</sup>
TOS5.25.690 V	M18 x 1.5	87	36	51	16.5	14/5.5	21.9	18	19	22	2	15.4	M5	M5 x 10	4	11.7	17.7	2.5 - 10 mm <sup>2</sup>
TOS6.63A.690 V	M20 x 1.5	93.5	39.5	54	20.3	16/7.6	25.4	18	22	22	2	19.4	M6	M6 x 10	4	15.1	22.6	2.5 - 16 mm <sup>2</sup>

**Ordering information** Type of terminal A to 1000 V

Type	D	A	B	C	E	F/F1	G	H <sub>max</sub>	I	J	K	L	M	N	O <sub>max</sub>	P	R	Terminals
TOS4.16.690 V	M16 x 1.5	97.5	41	56.5	13.4	12/5.5	19.6	18	17	22	2	13.4	M4	M4 x 10	4	10.7	15.7	1.5 - 6 mm <sup>2</sup>
TOS5.25.690 V	M18 x 1.5	103	44	59	16.5	14/5.5	21.9	18	19	22	2	15.4	M5	M5 x 10	4	11.7	17.7	2.5 - 10 mm <sup>2</sup>
TOS6.63A.690 V	M20 x 1.5	109.5	47.5	62	20.3	16/7.6	25.4	18	22	22	2	19.4	M6	M6 x 10	4	15.1	22.6	2.5 - 16 mm <sup>2</sup>

**Type of terminal F from 690 V to 1000 V**



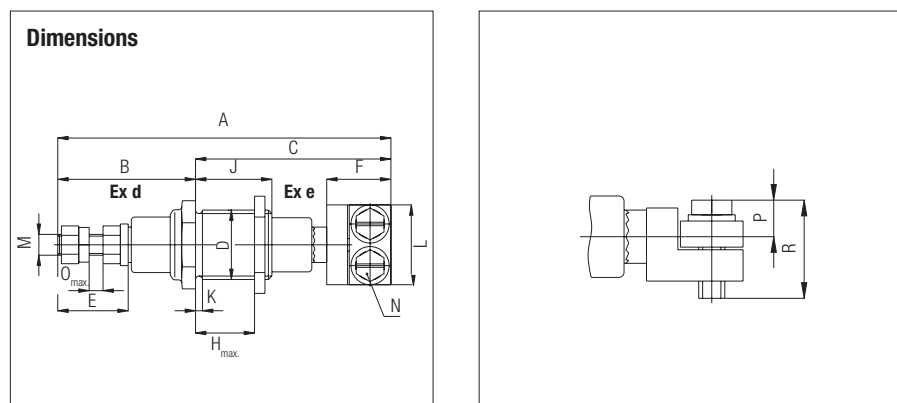
**Ordering information** Type of terminal F to 690 V

Type	D	A	B	C	E	F/F1	G	H <sub>max</sub>	I	J	K	L	M	N	O <sub>max</sub>	P	R	Terminals
TOS5.25.690 V	M18 x 1.5	83.5	36	47.5	16.5	10	21.9	18	19	22	2	19	M5	M4 x 12	4	11	15	2.5 - 25 mm <sup>2</sup>
TOS6.63A.690 V	M20 x 1.5	89.5	39.5	50	20.3	12	25.4	18	22	22	2	23	M6	M5 x 16	4	14	19.5	2.5 - 25 mm <sup>2</sup>
TOS8.100A.690 V	M24 x 1.5	97.5	43.5	54	24.3	15	31.2	18	27	22	2	26	M8	M6 x 25	4	17	29	6 - 50 mm <sup>2</sup>
TOS10.160A.690 V	M27 x 1.5	110	50	60	30	20	34.6	18	30	22	2	36	M10	M8 x 30	5	21	35.5	10 - 95 mm <sup>2</sup>
TOS12.250A.690 V	M33 x 1.5	122	55.5	66.5	35.5	25	41.6	18	36	22	2	42	M12	M8 x 35	5	24.5	40.5	16 - 185 mm <sup>2</sup>
TOS16.400A.690 V	M36 x 1.5	139	65	74	45	30	47.3	18	41	22	2	50	M16	M10 x 40	5	32	47	25 - 300 mm <sup>2</sup>
TOS20.630A.690 V	M42 x 1.5	153	75	78	55.1	32	53.1	18	46	22	2	50	M20	M10 x 45	6	34.5	51.5	25 - 300 mm <sup>2</sup>

**Ordering information** Type of terminal F to 1000 V

Type	D	A	B	C	E	F/F1	G	H <sub>max.</sub>	I	J	K	L	M	N	O <sub>max.</sub>	P	R	Terminals
TOS5.25.1000 V	M18 x 1.5	99.5	44	55.5	16.5	10	21.9	18	19	22	2	19	M5	M4 x 12	4	11	15	2.5 - 25 mm <sup>2</sup>
TOS6.63A.1000 V	M20 x 1.5	105.5	47.5	58	20.3	12	25.4	18	22	22	2	23	M6	M5 x 16	4	14	19.5	2.5 - 25 mm <sup>2</sup>
TOS8.100A.1000 V	M24 x 1.5	113.5	51.5	62	24.3	15	31.2	18	27	22	2	26	M8	M6 x 25	4	17	29	6 - 50 mm <sup>2</sup>
TOS10.160A.1000 V	M27 x 1.5	126	57.5	68.5	30	20	34.6	18	30	22	2	36	M10	M8 x 30	5	21	35.5	10 - 95 mm <sup>2</sup>
TOS12.250A.1000 V	M33 x 1.5	138	63.5	74.5	35.5	25	41.6	18	36	22	2	42	M12	M8 x 35	5	24.5	40.5	16 - 185 mm <sup>2</sup>
TOS16.400A.1000 V	M36 x 1.5	155	73	82	45	30	47.3	18	41	22	2	50	M16	M10 x 40	5	32	47	25 - 300 mm <sup>2</sup>
TOS20.630A.1000 V	M42 x 1.5	169	83	86	55.1	32	53.1	18	46	22	2	50	M20	M10 x 45	6	34.5	51.5	25 - 300 mm <sup>2</sup>

**Type of terminal FL from 690 V to 1000 V**



**Ordering information** Type of terminal FL to 690 V

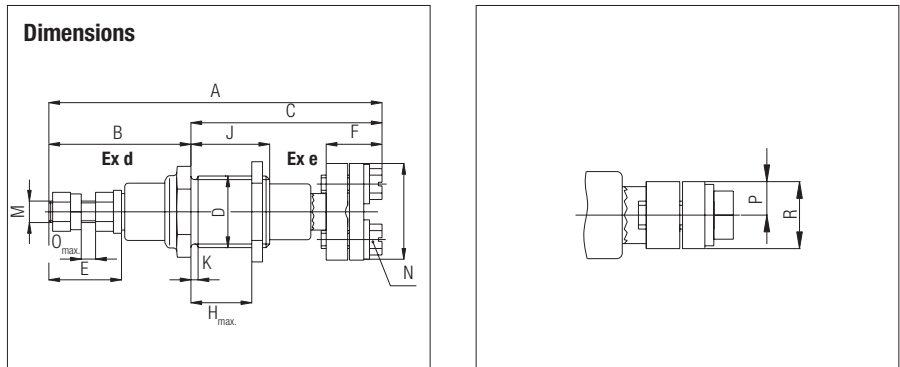
Type	D	A	B	C	E	F/F1	G	H <sub>max.</sub>	I	J	K	L	M	N	O <sub>max.</sub>	P	R	Terminals
TOS5.25.690 V	M18 x 1.5	88.5	36	52.5	16.5	15.5	21.9	18	19	22	2	19	M5	M4 x 12	4	6	14.8	2.5 - 25 mm <sup>2</sup>
TOS6.63A.690 V	M20 x 1.5	96	39.5	56.5	20.3	18.5	25.4	18	22	22	2	23	M6	M5 x 16	4	6.5	18.8	2.5 - 25 mm <sup>2</sup>
TOS8.100A.690 V	M24 x 1.5	106.5	43.5	63	24.3	24	31.2	18	27	22	2	26	M8	M6 x 20	4	8	24	6 - 50 mm <sup>2</sup>
TOS10.160A.690 V	M27 x 1.5	121	50	71	30	31	34.6	18	30	22	2	36	M10	M8 x 30	5	11	35.5	10 - 95 mm <sup>2</sup>
TOS12.250A.690 V	M33 x 1.5	130	55.5	74.5	35.5	33	41.6	18	36	22	2	42	M12	M8 x 30	5	10	35.5	16 - 185 mm <sup>2</sup>
TOS16.400A.690 V	M36 x 1.5	151	65	86	45	42	47.3	18	41	22	2	49	M16	M10 x 40	5	12.5	47	25 - 300 mm <sup>2</sup>
TOS20.630A.690 V	M42 x 1.5	172	75	97	55.1	51	53.1	18	46	22	2	55	M20	M10 x 45	6	10.5	52	25 - 300 mm <sup>2</sup>

**Ordering information** Type of terminal FL to 1000 V

Type	D	A	B	C	E	F/F1	G	H <sub>max.</sub>	I	J	K	L	M	N	O <sub>max.</sub>	P	R	Terminals
TOS5.25.1000 V	M18 x 1.5	104.5	44	60.5	16.5	15.5	21.9	18	19	22	2	19	M5	M4 x 12	4	6	14.8	2.5 - 25 mm <sup>2</sup>
TOS6.63A.1000 V	M20 x 1.5	112	47.5	64.5	20.3	18.5	25.4	18	22	22	2	23	M6	M5 x 16	4	6.5	18.8	2.5 - 25 mm <sup>2</sup>
TOS8.100A.1000 V	M24 x 1.5	122.5	51.5	71	24.3	24	31.2	18	27	22	2	26	M8	M6 x 20	4	8	24	6 - 50 mm <sup>2</sup>
TOS10.160A.1000 V	M27 x 1.5	137	57.5	79.5	30	31	34.6	18	30	22	2	36	M10	M8 x 30	5	11	35.5	10 - 95 mm <sup>2</sup>
TOS12.250A.1000 V	M33 x 1.5	146	63.5	82.5	35.5	33	41.6	18	36	22	2	42	M12	M8 x 30	5	10	35.5	16 - 185 mm <sup>2</sup>
TOS16.400A.1000 V	M36 x 1.5	167	73	94	45	42	47.3	18	41	22	2	49	M16	M10 x 40	5	12.5	47	25 - 300 mm <sup>2</sup>
TOS20.630A.1000 V	M42 x 1.5	188	83	105	55.1	51	53.1	18	46	22	2	55	M20	M10 x 45	6	10.5	52	25 - 300 mm <sup>2</sup>

Technical data subject to change without notice.

**Type of terminal RF from 690 V to 1000 V**



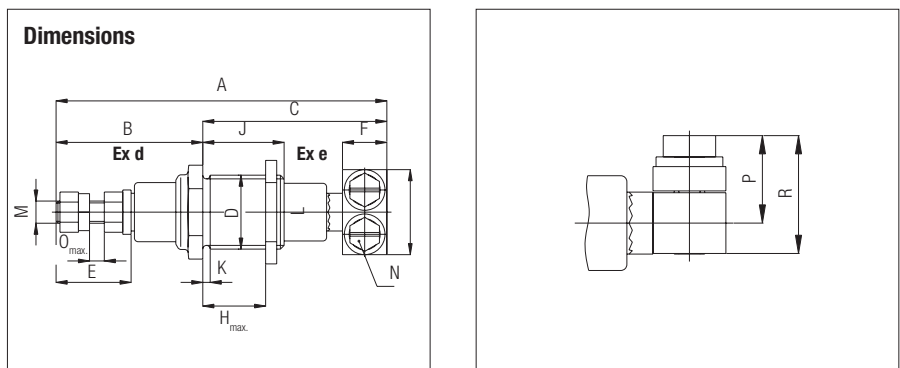
**Ordering information** Type of terminal RF to 690 V

Type	D	A	B	C	E	F/F1	G	H <sub>max.</sub>	I	J	K	L	M	N	O <sub>max.</sub>	P	R	Terminals
TOS5.25.690 V	M18 x 1.5	85.5	36	49.5	16.5	12.5	21.9	18	19	22	2	22	M5	M4 x 12	4	5	10	2.5 - 25 mm <sup>2</sup>
TOS6.63A.690 V	M20 x 1.5	93	39.5	53.5	20.3	15.6	25.4	18	22	22	2	27	M6	M5 x 16	4	6	12	2.5 - 25 mm <sup>2</sup>
TOS8.100A.690 V	M24 x 1.5	102	43.5	58.5	24.3	19.1	31.2	18	27	22	2	32	M8	M6 x 25	4	7.5	15	6 - 50 mm <sup>2</sup>
TOS10.160A.690 V	M27 x 1.5	114	50	64	30	24	34.6	18	30	22	2	41	M10	M8 x 30	5	10	20	10 - 95 mm <sup>2</sup>
TOS12.250A.690 V	M33 x 1.5	125	55.5	69.5	35.5	28	41.6	17	36	22	2	43	M12	M8 x 30	5	12.5	25	16 - 185 mm <sup>2</sup>
TOS16.400A.690 V	M36 x 1.5	145	65	80	45	36	47.3	17	41	22	2	55	M16	M10 x 40	5	15	30	25 - 300 mm <sup>2</sup>
TOS20.630A.690 V	M42 x 1.5	161	75	86	55.1	40	53.1	17	46	22	2	61	M20	M10 x 45	5	15	30	25 - 300 mm <sup>2</sup>

**Ordering information** Type of terminal RF to 1000 V

Type	D	A	B	C	E	F/F1	G	H <sub>max.</sub>	I	J	K	L	M	N	O <sub>max.</sub>	P	R	Terminals
TOS5.25.1000 V	M18 x 1.5	101.5	44	57.5	16.5	12.5	21.9	18	19	22	2	∅ 22	M5	M4 x 12	4	5	10	2.5 - 25 mm <sup>2</sup>
TOS6.63A.1000 V	M20 x 1.5	109	47.5	61.5	20.3	15.6	25.4	18	22	22	2	∅ 27	M6	M5 x 16	4	6	12	2.5 - 25 mm <sup>2</sup>
TOS8.100A.1000 V	M24 x 1.5	118	51.5	66.5	24.3	19.1	31.2	18	27	22	2	∅ 32	M8	M6 x 20	4	7.5	15	6 - 50 mm <sup>2</sup>
TOS10.160A.1000 V	M27 x 1.5	130	57.5	72.5	30	24	34.6	18	30	22	2	∅ 41	M10	M8 x 30	5	10	20	10 - 95 mm <sup>2</sup>
TOS12.250A.1000 V	M33 x 1.5	141	63.5	77.5	35.5	28	41.6	17	36	22	2	∅ 43	M12	M8 x 30	5	12.5	25	16 - 185 mm <sup>2</sup>
TOS16.400A.1000 V	M36 x 1.5	161	73	88	45	36	47.3	17	41	22	2	∅ 55	M16	M10 x 40	5	15	30	25 - 300 mm <sup>2</sup>
TOS20.630A.1000 V	M42 x 1.5	177.5	83	94.5	55.1	40	53.1	17	46	22	2	∅ 61	M20	M10 x 45	5	15	30	25 - 300 mm <sup>2</sup>

**Type of terminal C from 690 V to 1000 V**



**Ordering information** Type of terminal C to 690 V

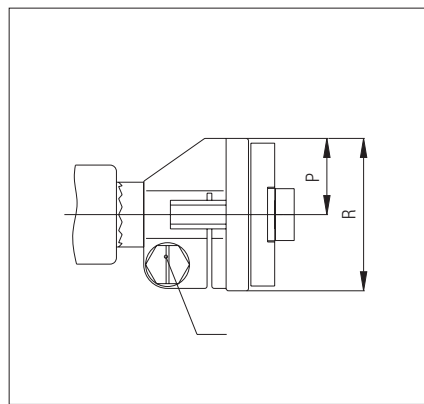
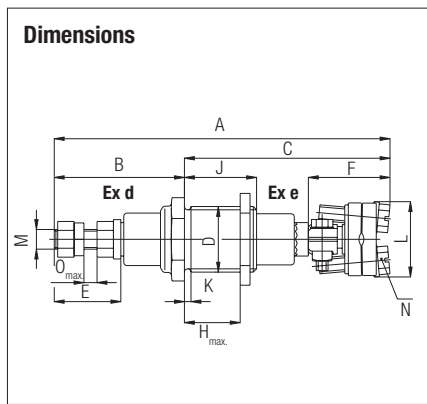
Type	D	A	B	C	E	F/F1	G	H <sub>max.</sub>	I	J	K	L	M	N	O <sub>max.</sub>	P	R	Terminals
TOS5.25.690 V	M18 x 1.5	90	36	54	16.5	16.8	21.9	18	19	22	2	17,5	M5	M5 x 20/M4 x 6	4	7	20	2.5 - 25 mm <sup>2</sup>
TOS6.63A.690 V	M20 x 1.5	98	39.5	58.5	20.1	20.1	25.4	18	22	22	2	21	M6	M5 x 20/M4 x 5	4	7	20	2.5 - 25 mm <sup>2</sup>
TOS8.100A.690 V	M24 x 1.5	110	43.5	66.5	24.3	26.8	31.2	18	27	22	-	28	M8	M6 x 22/M5 x 10	4	12	26	4 - 35 mm <sup>2</sup>



**Ordering information** Type of terminal C to 1000 V

Type	D	A	B	C	E	F/F1	G	H <sub>max.</sub>	I	J	K	L	M	N	O <sub>max.</sub>	P	R	Terminals
TOS5.25.1000 V	M18 x 1.5	106	44	62	16.5	16.8	21.9	18	19	22	2	17.5	M5	M5 x 20/M4 x 6	4	7	20	2.5 - 25 mm <sup>2</sup>
TOS6.63A.1000 V	M20 x 1.5	114	47.5	66.5	20.1	20.1	25.4	18	22	22	2	21	M6	M5 x 20/M4 x 5	4	7	20	2.5 - 25 mm <sup>2</sup>
TOS8.100A.1000 V	M24 x 1.5	126	51.5	74.5	24.3	26.8	31.2	18	27	22	2	28	M8	M6 x 22/M5 x 10	4	12	26	4 - 35 mm <sup>2</sup>

**Type of terminal R from 690 V to 1000 V**



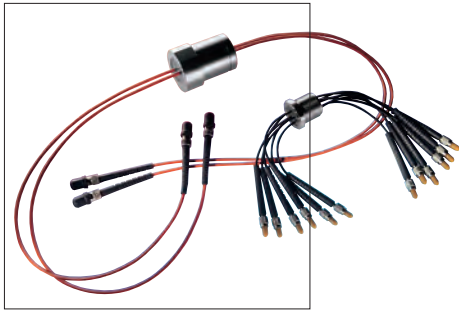
**Ordering information** Type of terminal R to 690 V

Type	D	A	B	C	E	F/F1	G	H <sub>max.</sub>	I	J	K	L	M	N	O <sub>max.</sub>	P	R	Terminals
TOS10.160A.690 V	M27 x 1.5	130.5	50	80.5	30	41.5	34.6	18	30	22	2	37	M10	M8 x 30/M6 x 22	5	19.5	39	6-70 or 10-95 mm <sup>2</sup>
TOS12.250A.690 V	M33 x 1.5	145.5	55.5	92	35.5	48.8	41.6	17	36	22	2	46.6	M12	M10 x 35/M6 x 22	5	23.5	47	10-95 or 16-150 mm <sup>2</sup>
TOS16.400A.690 V	M36 x 1.5	161.5	65	96.5	45	52.3	47.3	17	41	22	2	51	M16	M10 x 40/M8 x 30	5	26	52	16-150 or 16-300 mm <sup>2</sup>
TOS20.630A.690 V	M42 x 1.5	175	75	100	55.1	53.3	53.1	17	46	22	2	59	M30	M10 x 45/M8 x 30	5	29.5	59	16 - 300 mm <sup>2</sup>

**Ordering information** Type of terminal R to 1000 V

Type	D	A	B	C	E	F/F1	G	H <sub>max.</sub>	I	J	K	L	M	N	O <sub>max.</sub>	P	R	Terminals
TOS10.160A.1000 V	M27 x 1.5	146.5	57.5	89	30	41.5	4.6	18	30	22	2	37	M10	M8 x 30/M6 x 22	5	19.5	39	6-70 or 10-95 mm <sup>2</sup>
TOS12.250A.1000 V	M33 x 1.5	161.5	63.5	98	35.5	48.8	1.6	17	36	22	2	6.6	M12	M10 x 35/M6 x 22	5	23.5	47	10-95 or 16-150 mm <sup>2</sup>
TOS16.400A.1000 V	M36 x 1.5	177.5	73	104.5	45	52.3	7.3	17	41	22	2	51	M16	M10 x 40/M8 x 30	5	26	52	16-150 or 16-300 mm <sup>2</sup>
TOS20.630A.1000 V	M42 x 1.5	191	83	108	55.1	53.3	3.1	17	46	22	2	59	M30	M10 x 45/M8 x 30	5	29.5	59	16-300 mm <sup>2</sup>

Technical data subject to change without notice.



The optical fibre bushing is used as an optical fibre cable entry into flameproof enclosures located in hazardous areas. They can also be supplied with plug-in connectors. The optical waveguiders - also known as fibres - are made of glass and resist to mechanical, climatic, chemical and electromagnetic influences. The optical waveguide is most commonly used for carrying signals in the form of electromagnetic waves in the frequency range of visible light. The type and structure of the cable determines its transmission properties.

- Fast, interference free transmission of data in both directions
- Not affected by electromagnetic interference
- High transmission reliability
- High transmission speed
- Corrosion-free contacts
- Simple plug-in connection (low installation costs)
- Reliable signal transmission even over long distances
- Suitable for use under extreme conditions

**Explosion protection**

Marking ATEX	⊕ II 2G Ex db IIC Gb ⊕ I M2 Ex db I Mb
Certification	EPS 13 ATEX 1619 U
Marking IECEx	Ex db IIC Gb Ex db I Mb
Certification	IECEx PTB 19.0045 U
Working temperature	-20 °C to +105 °C depending on the fibre optic cable used (temperature ranges apply to the fixed installation of leads)
Power limit	Ex d II ≤ 35 mW / 5 mW/mm <sup>2</sup> Ex d I ≤ 150 mW / 20 mW/mm <sup>2</sup>
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	

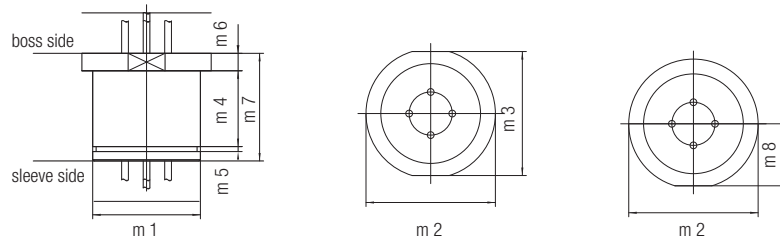
**Standard versions\***

Max. quantity of the fibre-optic cables	47 cores
Sleeve size	metric: M16 x 1.5 to M48 x 1.5 non-threaded: Ø 22 mm to Ø 40 mm
Sleeve material	Metal, bare, varnished or galvanised  * all other versions on request. Please use the customer requirements form at the end of the chapter!
Installation instructions	Threaded holes into which threaded bushings are screwed must meet the minimum requirements in EN 60079-0 Section 5.3  These fibre optic line bushings are suitable for installing in electric apparatus marked “d” flame-proof enclosure for the IIA, IIB, and IIC groups.
Note	The bushings must be fastened in the electric apparatus in such a way that they are secured against twisting and self-loosening.

## Dimensions

	m1	m2	m3 <sup>1)</sup>	m4	m5	m6	m7	m8
threaded	∅ 22 mm (0,87)	∅ 25 mm (0.98)	-	26.1 (1.03)	1.3 (0.05)	2 (0.08)	31 (1.22)	11.1 (0.44)
	∅ 32 mm (1,26)	∅ 36 mm (1.42)	-	26.1 (1.03)	1.6 (0.06)	3 (0.12)	32 (1.26)	17.1 (0.67)
	∅ 36 mm (1,42)	∅ 42 mm (1.65)	SW 40	28.1 (1.12)	1.85 (0.07)	7 (0.28)	39 (1.54)	-
	∅ 40 mm (1,58)	∅ 48 mm (1.89)	SW 46	28.1 (1.12)	1.85 (0.07)	6.5 (0.26)	40 (1.58)	-

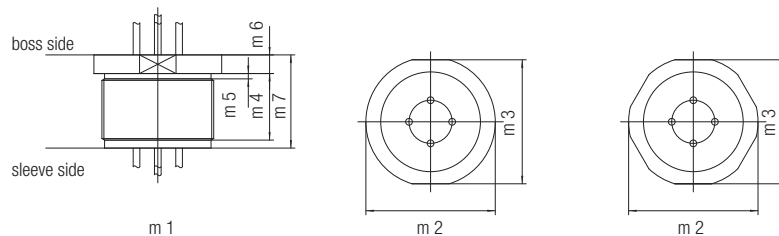
### Dimensions threaded



## Dimensions

	m1	m2	m3 <sup>1)</sup>	m4	m5	m6	m7
metric	M16 x 1 <sup>2)</sup>	∅ 21 mm (0.83)	SW 19	17 (0.67)	max. 1.5 (0.06)	5 (0.2)	25 (0.98)
	M16 x 1.5 <sup>2)</sup>	∅ 21 mm (0.83)	SW 19	17 (0.67)	max. 2 (0.08)	5 (0.2)	25 (0.98)
	M24 x 1.5 <sup>2)</sup>	∅ 29 mm (1.14)	SW 27	19 (0.75)	max. 2 (0.08)	5 (0.2)	26 (1.02)
	M33 x 1.5	∅ 38 mm (1.5)	SW 36	18 (0.71)	max. 2 (0.08)	7 (0.28)	30 (1.18)
	M36 x 1.5	∅ 42 mm (1.65)	SW 40	25 (0.98)	max. 2 (0.08)	7 (0.28)	35 (1.38)
	M42 x 1.5 <sup>2)</sup>	∅ 48 mm (1.89)	SW 46	25 (0,98)	max. 2 (0.08)	7 (0.28)	35 (1.38)

### Dimensions metric



<sup>1)</sup> Width across flats  
<sup>2)</sup> Boss in non-threaded hexagonal version

## Ordering information optical fibre line bushing

Sleeve type	Code no.	Fibre type core/jacket	Code no.	Sleeve size	Code no.
screw-in, metric	0	9/125	1	M16 x 1.5	D
				M24 x 1.5 / ∅ 22 mm	2
				M33 x 1.5 / ∅ 32 mm	3
non-threaded, joint length 12.5 mm	5	50/125	2	M36 x 1.5	4
				M38 x 1.5 / ∅ 36 mm	5
non-threaded, joint length 25 mm	6	62.5/125	3	M42 x 1.5 / ∅ 40 mm	6
				M48 x 1.5	7

\* other versions on request

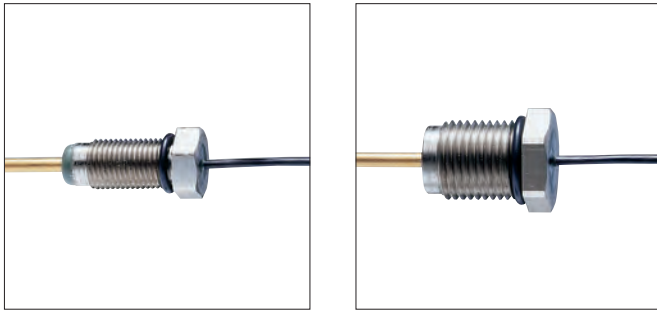
### Complete order no.

Please insert correct code.

57-91  A -

No. of cores

Technical data subject to change without notice.



Waste water pumps can be fully submersible units. The pump assembly and motor are often separated from each other by an oil fore-chamber sealed by mechanical seals. Any leaks in the shaft seals need to be registered in order to prevent malfunctions or failure of the motor and to arrange for inspections in good time. BARTEC's electrode line bushings Ex + sealed allow signals to be reliably transmitted through the walls of pressure-proof enclosed operating equipment, even in areas in which an explosion hazard exists. Only electrical circuits certified as intrinsically safe may be connected to the electrode line bushing.

**Explosion protection**

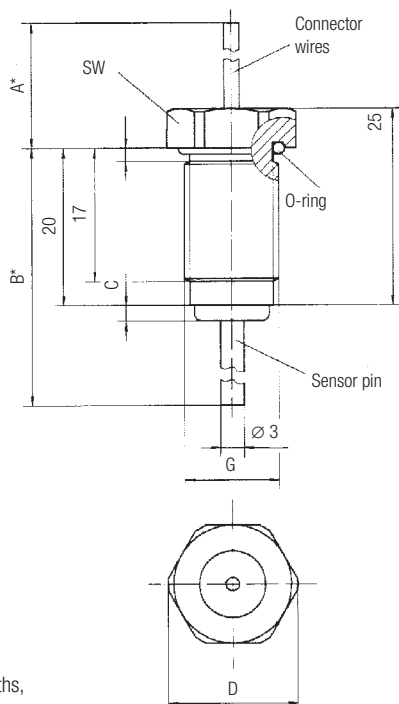
Marking ATEX	II 2G Ex db IIC Gb I M2 Ex db I Mb
Certification	EPS 17 ATEX 1102 U
Marking IECEx	Ex db IIC Gb Ex db I Mb
Certification	IECEx EPS 17.0052 U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Working temperature	-20 °C to +70 °C or +110 °C depending on the core wire used

**Technical data**

Material	Sleeve Brass nickel-plated or stainless steel
Gauge	Brass or stainless steel
Thread	M10 x 1; M12 x 1; M16 x 1.5
Pressure on the Ex e side	≤ 6 bar
Rated insulation voltage	≤ 30 V
Rated constant current	< 1 A
Connection method	Cable wires 0.5 to 1.5 mm <sup>2</sup>

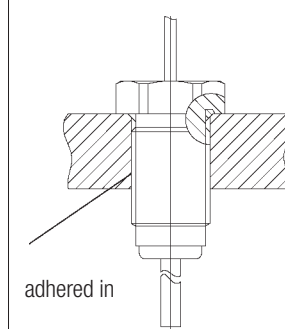
Versions deviating from the basic data are available on request. Please use the customer requirements form at the end of the chapter!

**Dimensions**

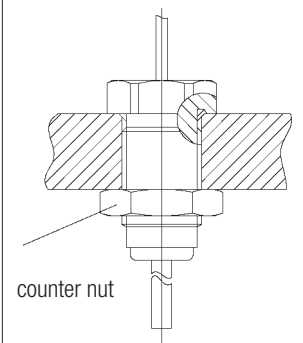


See table for standard lengths, other lengths on request

**Example application**



**Example application**



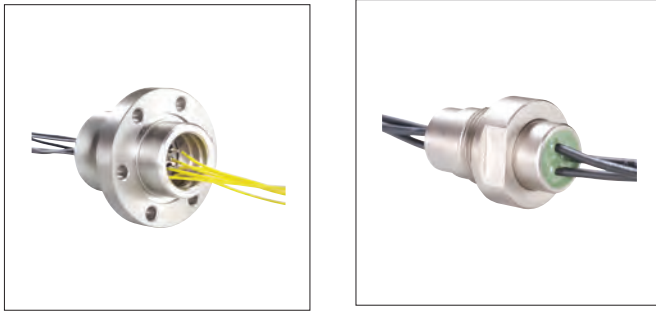
**Safety notice**

Electrode line bushings that are damaged must be replaced. The electrode line bushing must be secured against twisting and self-loosening.

**Ordering information**

Dimensions in mm							Order no.
G	C	D	SW	A	B	O-ring	
M10 x 1	2	14.5	13	500	36	9 x 1.5	37-9405-1230/1000
M12 x 1	2	16.5	15	500	36	10 x 1.5	37-9405-123B/1000
M16 x 1.5	2	21.0	19	500	36	14 x 2	37-9405-123D/1000

Technical data subject to change without notice.



The 07-96... type series II 1G line bushing serves as a gas diffusion-proof isolation element for zone 0 (1G/2G) while simultaneously providing an electric connection for leads:

- between flameproof enclosures
- between flameproof enclosures and enclosures with another approved type of protection Category II 2 G
- flameproof enclosures and protected installations Category II 3 G or
- in the safe area

The core piece of this gas diffusion-proof lead-through is a metal plate in which the stud-type bushings are insulated with glass. The electrical connection on both sides of the lead-through can be set forth with metal duct bolts, cable wires or hose lines as required. This connecting area is, or can additionally be, cast with a poured resin. The connector studs, connecting wires or the hose line of the line bushing II 1G must be connected in enclosures which conform to a type of protection standardised according to DIN EN 60079-0. The lead-through is compliant with the pertinent EN 60079-0, EN 60079-1 and EN 60079-7 and EN 60079-26 standards.

**Explosion protection**

Marking ATEX	Ⓜ II 1/2 G Ex db + eb/db IIC Ga/Gb Ⓜ II 2 G Ex db IIC Gb Ⓜ II 2 G Ex eb IIC Gb Ⓜ I M 1 Ex db eb I Ma
Certification	CML 13 ATEX 1009 U
Marking IECEx	Ex db + eb/db IIC Ga/Gb Ex db IIC Gb Ex eb IIC Gb Ex db eb I Ma
Certification	IECEx CML 14.0003 U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Temperature at rated operation	-55 °C to +150 °C (with potting) -55 °C to +200 °C (without potting) depending on the lead used and type of sealing

**Technical data**

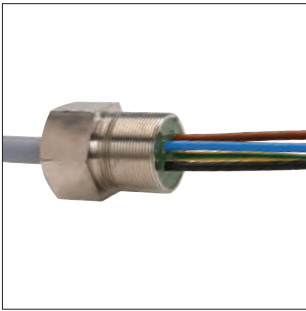
Protection class	IEC 60529/EN 60529 Abhängigkeit von der Ausführung	
Material	Sleeve metal	
	Insulator	Glass, Ceramic
	Pour	EP resin, PU resin
	Bushing bolt	FeNi alloy steel, Niro steel
Rated insulation voltage	≤ AC 50 V/DC 75 V, 250 V, 690 V, 1 000 V	
Rated uninterrupted current	up to 500 A	
Type of connection	Core wires	0.25 mm <sup>2</sup> to 16 mm <sup>2</sup>
	Threaded bolts	M3 to M30 (max. quantity of connections: 99)
Construction sizes	Thread	M10 x 1 to M72 x 2
	Flange	Ø 10 mm to 250 mm
Pressure	-500 mbar to +400 bar depending on the design	

**Complete order no.** 07-96 □□ - □□□□ / □□ \*

There are many connection options available through core wires or threaded bolts.

\* Technical specifications can be given in the customer requirements form at the end of the chapter.

Technical data subject to change without notice.



Flameproof Ex d cable entries are elements which allow electrical cables to be introduced into an Ex d enclosure, without danger of explosion. The additional Ex e terminal housing is not required. A main distribution box may be used or the connections can be made outside the Ex-zone. The cable entry consists of a threaded metal sleeve, in which a sheathed cable is anchored and encapsulated. The individual cores are then connected directly inside the flameproof enclosure. The length of cores and cables are customer-tailored. All cables come with standard green-yellow earth leads. The length of engaged thread between the sleeve and the flameproof “d” enclosure must comply with EN 60079-0 and EN 60079-1. The cable entry is normally inserted from the inside of the flameproof enclosure. A special version can be supplied for insertion from the outside, provided that removal is possible with a special tool only. After installation, the cable entry must be protected against turning and loosening, corresponding recommendations can be found under accessories. All cable entries have been tested and certified in accordance with the European standards on electrical equipment for explosive atmospheres EN 60079-0, EN 60079-1. When the 2014/34/EU guideline comes into force on 20. April 2016, explosion protected operating equipment must be properly installed in accordance with EN 60079-14. Among other things, section 10.4.2 requires that **cast, pressure-proof cable insertions according to EN 60079-1 are used for** operating equipment with an internal ignition source for the explosion sub-group IIC and operating equipment with an enclosure volume greater than 2 dm<sup>3</sup> in Zone 1. BARTEC offers a wide range of products with EU model test certification.

- Ex e terminal boxes are dispensed with
- Suitable for cables with 1 to max. 49 cores
- Sleeves metric: M16 x 1.5 to M48 x 1.5  
Sleeves plug-in: Ø 22 mm to Ø 36 mm
- Compact, space-saving design
- The cores are connected directly to the electrical load at the Ex d side, intermediate terminal positions are dispensed with
- Rated insulation voltage of up to 1000 V for small dimensions
- Permanent heat resistance up to +110 °C

**Explosion protection**

**Cable entry screwable**

Marking ATEX	⊕ II 2G Ex db IIC T6-T4 Gb ⊕ II 2D Ex tb IIIC T80°C/T95°C/T100°C Db
Certification	EPS 17 ATEX 1 099 X
Marking IECEx	Ex db IIC T6-T4 Gb Ex tb IIIC T80°C/T95°C/T100°C Db
Certification	IECEx EPS 17.0050 X
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	depending on the design and the leads

**Cable entry pluggable**

Marking ATEX	⊕ II 2G Ex db IIC Gb ⊕ II 2D Ex tb IIIC Db
Certification	EPS 17 ATEX 1 100 U
Marking IECEx	Ex db IIC Gb Ex tb IIIC Db IP 6X
Certification	IECEx EPS 17.0051 U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Working temperature	-60 °C to +110 °C depending on the lead used (temperature ranges apply to “fixed installation” of leads)

**Standard versions\***

Cores depending on the working temperature and voltage	Öiflex® 100, Öiflex® 110 HO7RN-F, Ozoflex-Plus radiation cross-linked polyolefin copolymer NSSHÖU
max. number of cores in shielded cable	threaded: 25 cores non-threaded: 49 cores
Cross-section	0,25 mm <sup>2</sup> to 150 mm <sup>2</sup>
Sleeve size	metric: M24 x 1.5 to M48 x 1.5 non-threaded: Ø 22 mm to Ø 36 mm
Sleeve material	Metall, blank, varnished and galvanized
Rated voltage	300 V/500 V/750 V/1 000 V
Rated currents	see following table based on VDE 0298-04

\* all other versions on request.  
Please use the customer requirements form at the end of the chapter!

**Ordering information**

Sleeve type	Code no.	Nominal power	Code no.	Conductors cross section mm <sup>2</sup>	Code no.	Sleeve size	Code no.		
screw-in, metric	0	on order	0	special cross section	A	M24 x 1.5 Ø = 22 mm	2		
				0.25	C				
				0.35	D				
		NSSHöu	1	0.5	E	M36 x 1.5	4		
				0.75	F				
				1	G				
screw-in NPT	1	H05GG-F Radox, Betaflam	3	1.5	H	M48 x 1.5	7		
				2.5	J				
		Ölflex 100 Ölflex 110	5	4	K	M48 x 1.5	7		
				6	L				
		pluggable	6	H07RN-F bzw. A07RN-F, (Ozoflex-Plus)	6	10	M	Ø = 36 mm	5
						16	N		
LiYY/Ölflex-EB	7			25	P	special sizes	9		
				35	Q				
ÖLFLEX CY	8			50	R	special sizes	9		
				70	S				
		95	T						
				120	U				
				150	V				

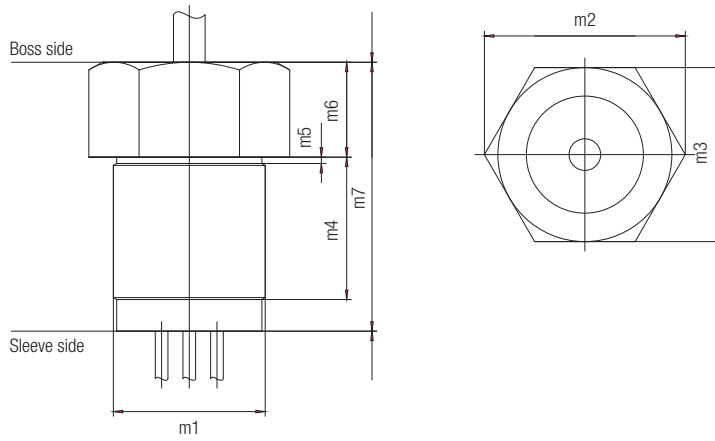
**Complete order no.** 07-92   -    /G  
Please insert correct code.

Technical data subject to change without notice.

Number of cores e.g. 02 = 2 cores; 21 = 21 cores; etc.  
1... 49 shielded cable sleeve side  
51... 99 shielded cable boss side

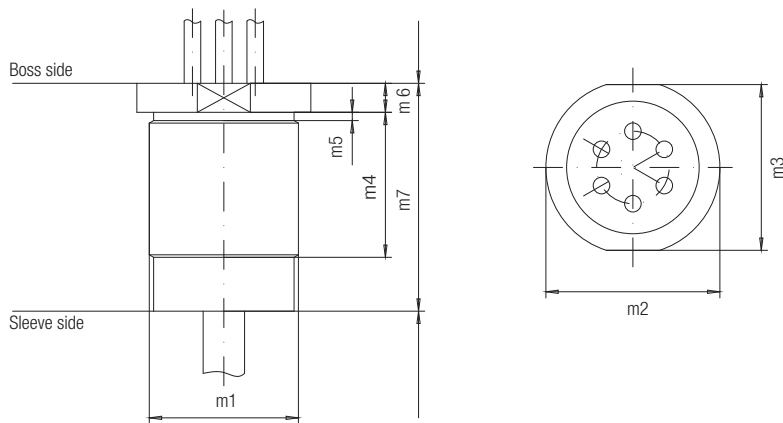
Core length: on request  
Cable length: on request  
Core marking: in accordance with current standards  
Other cables: e.g. shielded or blue cable for intrinsically safe circuits on request.  
Customer requirements form at the end of the chapter.

**Dimensions** Shielded cable Boss side



m1	m3	m4	m5	m6	m7
M24 x 1.5	SW 27	20	max. 2.5	26	46
M36 x 1,5	SW 41	30	max. 2.5	25	55

**Dimensions** Shielded cable Sleeve side



m1	m2	m3	m4	m5	m6	m7
M24 x 1.5 <sup>1)</sup>	-	SW 27	30	max. 2.5	5	46
M25 x 1.5 <sup>1)</sup>	-	SW 27	35	max. 2.5	5	46
M36 x 1.5	∅ 42	SW 40	35	max. 2.5	7	55
M48 x 1.5	∅ 55	SW 50	35	max. 2.5	10	75

<sup>1)</sup> Conventant in hex version

Other fittings and special sleeves on request.



**Ordering information**

**Ex d cable entries 300/500 V** - cable, Ölflex 100/110

Number of cores	Conductor cross section mm <sup>2</sup>	Current carrying capacity (A) in continuous operation (rel.values) <sup>1)</sup> Max. permissible operating temperature at the conductor +80 °C. Max. current-carrying capacity based on VDE 0298-4. Table 11, gap 4	Thread size	Order no. please indicate core and cable length in plain text	Shielded cable	Shielded cable
					Sleeve side	Boss side
6	0.75	6 A	M24 x 1.5	07-9205-	F062	F562
15	0.75		M36 x 1.5	07-9205-	F154	F654
25	0.75		M48 x 1.5	07-9205-	F257	-
6	1.5	16 A	M24 x 1.5	07-9205-	H062	H562
14	1.5		M36 x 1.5	07-9205-	H144	H644
25	1.5		M48 x 1.5	07-9205-	H257	-
3	2.5	20 A	M24 x 1.5	07-9205-	J032	J532
7	2.5		M36 x 1.5	07-9205-	J074	J574
18	2.5		M48 x 1.5	07-9205-	J187	-

**Ex d cable entries 450/750 V** - cable H07RN-F, Ozoflex-Plus

		Max. permissible operating temperature at the conductor +60 °C. Max. current-carrying capacity based on VDE 0298-4. Table 13, gap 8				
5	1.5	16 A	M24 x 1.5	07-9206-	H052	H552
7	1.5		M36 x 1.5	07-9206-	H074	H574
3	2.5	23 A	M24 x 1.5	07-9206-	J032	J532
7	2.5		M36 x 1.5	07-9206-	J074	J574
19	2.5		M48 x 1.5	07-9206-	J197	-
5	4	30 A	M36 x 1.5	07-9206-	K054	K554
5	6	38 A	M36 x 1.5	07-9206-	L054	L554
5	10	54 A	M48 x 1.5	07-9206-	M057	-
5	16	71 A	M48 x 1.5	07-9206-	N057	-

**Ex d cable entries 1000 V** - cable NSSHÖU

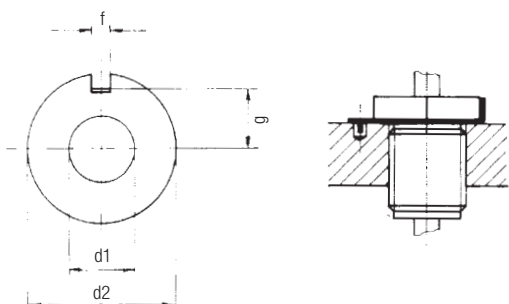
		Max. permissible operating temperature at the conductor +90 °C. Max. current-carrying capacity based on VDE 0298-4. Table 15, gap 21 and 4				
5	1.5	20 A	M24 x 1.5	07-9201-	H052	H552
10	1.5		M36 x 1.5	07-9201-	H104	H604
3	2.5	30 A	M24 x 1.5	07-9201-	J032	J532
7	2.5		M36 x 1.5	07-9201-	J074	J574
19	2.5		M48 x 1.5	07-9201-	J197	-
5	4	41 A	M36 x 1.5	07-9201-	K054	K554
4	6	53 A	M36 x 1.5	07-9201-	L044	L544
5	6		M48 x 1.5	07-9201-	L057	-
5	10	74 A	M48 x 1.5	07-9201-	M057	-
5	16	99 A	M48 x 1.5	07-9201-	N057	-
1	25	176 A	M36 x 1.5	07-9201-	P014	P514
1	35	218 A	M36 x 1.5	07-9201-	Q014	Q514
1	50	276 A	M36 x 1.5	07-9201-	R014	R514
1	70	347 A	M36 x 1.5	07-9201-	S014	S514
1	95	416 A	M48 x 1.5	07-9201-	T017	-
1	120	488 A	M48 x 1.5	07-9201-	U017	-

<sup>1)</sup> When determining the maximum current carrying capacity of the cores, their self-heating and enclosure heating on site at maximum ambient temperature must be taken into consideration. Other fittings and special sleeves on request. It is essential to submit a customer requirements form that has been filled in correctly and completely. The form can be found in the catalogue at the end of the chapter.

Technical data subject to change without notice.

Line bushings and cable entries must be safe against turning and accidental loosening. The most common fixing methods are shown below.

**Tab washer**

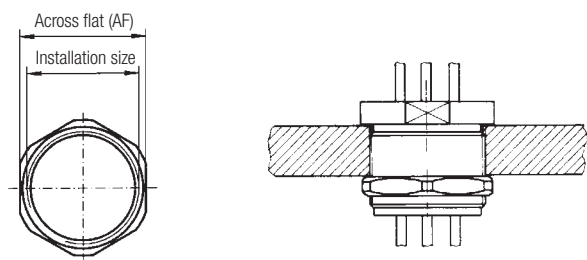


**Ordering information** Accessoires

Tab washers

Size	d1	d2	f	g	Thickness	Order no.
M16 x 1.5 (x 1)	17	36	3.5	15	0.75	03-3400-0003
M24 x 1.5	25	45	3.5	18	0.75	03-3400-0005
M33 x 1.5	34	50	4.5	21	0.75	03-3400-0007
M36 x 1.5	37	58	4.5	26	0.75	03-3400-0008
M42 x 1.5	43	58	4.5	26	0.75	03-3400-0009

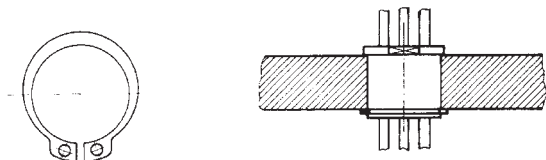
**Lock nut**



Lock nuts

Size	Across flat (AF)	Thickness	Order no.
M16 x 1	19	5	03-2000-0001
M16 x 1.5	20	3	03-2090-0120
M20 x 1.5	24	3.4	03-2090-0121
M24 x 1.5	27	5	03-2000-0003
M25 x 1.5	30	3.5	03-2090-0122
M32 x 1.5	35	4.5	03-2090-0123
M33 x 1.5	36	5	03-2000-0005
M36 x 1.5	41	6	03-2000-0006
M40 x 1.5	44	4.5	03-2090-0124
M42 x 1.5	46	6	03-2000-0008
M48 x 1.5	55	6	03-2000-0011

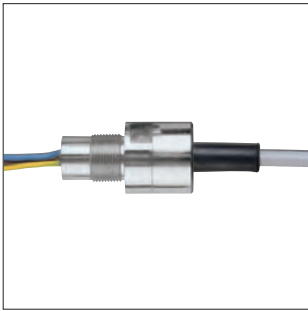
**Circlip**



Circlip similar to DIN 471 for plug-in type line bushings

	Order no.
∅ 22 mm	03-3480-0002
∅ 32 mm	03-3480-0003
∅ 36 mm	03-3480-0004

Technical data subject to change without notice.



- Economical, due to high packing density
- Space-saving, due to internal thread
- Fast installation with the small flange versions
- Corrosion-resistant due to high-quality sleeve material
- Bushing stems with suitable thermomaterial to ensure unimpaired signals from thermal sensors

**Cable entries**

Electrical cable entries are components which facilitate the insertion of electric leads into enclosures while providing a secure seal at the point of entry.

**Line bushings**

The line bushings allow an electrical connection of apparatus in enclosures or the connection of two enclosures. The standard versions are suitable for the application range of 10<sup>-6</sup> mbar to 63 bar positive pressure depending on the ambient temperature. Depending on the pressure and the medium to be sealed, the bushing / cable entry can be designed for a temperature range of -70 °C to +150 °C. Versions up to 1000 bar are available to suit the temperature at the point of cable entry or bushing and the type of the medium to be sealed. BARTEC cable entries and line bushings in the IP 68 type of protection not only seal the cable sheath, they also protect the inside strands. BARTEC cable entries and line bushings consist in principle of a sleeve into which electric leads and single conductors are embedded in casting resin. Even the standard version of this component series satisfies most of the sealing requirements of modern process technologies. When it is necessary to satisfy higher requirements, versions are available that are better than 10<sup>-6</sup> mbar absolute and higher than 63 bar, sealed by the cast-in stranded conductors. BARTEC line bushings were tested at up to 2000 bar for resistance to oil.

**Technical data**

**Single-core non-sheathed cable**

Temperature range	-70 °C to +150 °C
Pressure	up to 200 bar
Vacuum	10 <sup>-6</sup> mbar
Protection class	IP 65 to IP 68
Materials	nickel-plated brass stainless steel 1.4305 or 1.4571 Steel nickel-plated

**Cable entries**

Temperature range	-70 °C to +150 °C
Pressure	up to 200 bar
Vacuum	10 <sup>-6</sup> mbar
Protection class	IP 65 to IP 68
Materials	nickel-plated brass stainless steel 1.4305 or 1.4571 Steel nickel-plated

**Applications**

Sealed electric distribution boxes; hydraulic plants; nuclear power plants; climatic chambers; nuclear engineering; pneumatic plants; split cage motors; submersible pumps; drying kilns; impregnation plants; vacuum presses; vacuum furnaces.

- Electrical versions

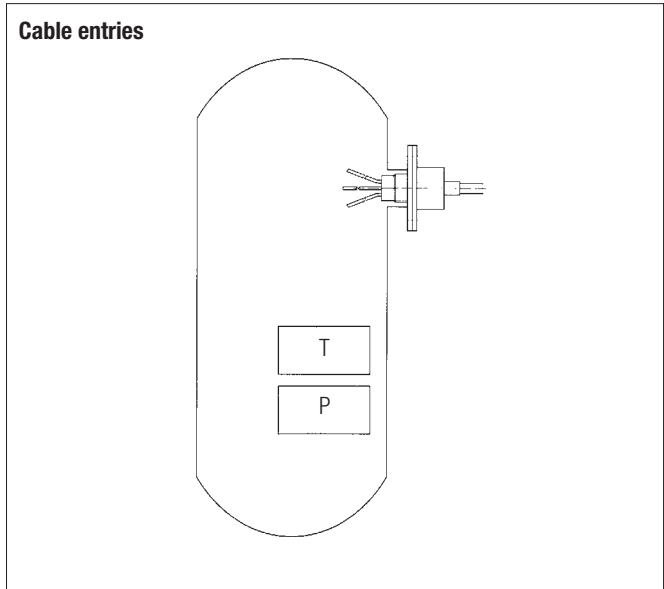
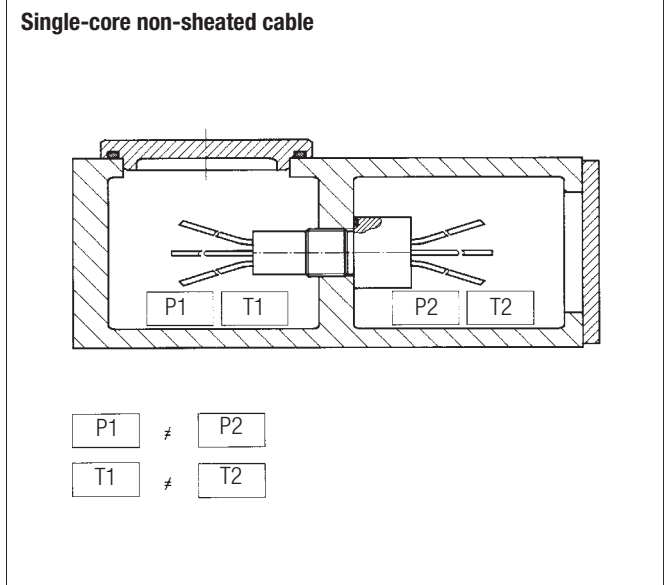
The standard versions have cables with flexible cores of a 0.5 mm<sup>2</sup> to 35 mm<sup>2</sup> cross section. Larger and smaller cross sections are available on request. Depending on version, fittings, temperature range and core insulation, a voltage range of up to 6 000 V is possible. IP 68 versions used in temperature measurement circuits, the bushing stems are made of material with appropriate thermal characteristics.

- Versions and dimensions

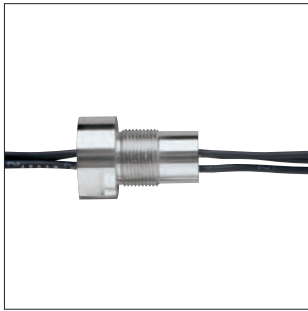
The standard threaded sleeve can be screwed into thread sizes from M24 x 1.5 to M50 x 1.5. Other dimensions and special threads such as NPT and Witworth pipe threads can be supplied on request. Versions with a plug-in flange can also be supplied. The accommodation of several cables, which may have different core cross sections, in a common sleeve allows compact, dimensioning and economic constructions. Cables with up to 45 cores with cross sections of 0.5 mm<sup>2</sup> can be put in an M50 x 1.5 sleeve. For versions with long cables, the screw-in solution is not the most advantageous. Here the plug-in versions with mounting flange considerably facilitate installation. The flange may be made to customer specifications.

- Insulation materials

BARTEC insulates with highly filled epoxy resins. Different formulations are used for the various pressure and temperature ranges. The BARTEC epoxy casting material is characterized by its low outgassing. These material have been used most successfully for many years in industrial vacuum engineering. Their maximum baking temperature of +150 °C - depending on the material used - make them an ideal solution for almost all industrial applications. The standard sealing washer is made of VITON. For special application, VITON-FEP-sheathed O-rings can be used. Also available are silicone sealing washers. The versions for higher sealing requirements provide factory-made grooves in the sleeves for the sealing washers.



Technical data subject to change without notice.



Industrial processes often take place in closed containers under increased pressure or even under vacuum conditions. When electric leads are run through, care must be taken to prevent any transfer of mass through the conductor or drops in pressure/vacuum. BARTEC pressure-proof/vacuum-sealed line bushings provide a simple and cost-effective way of dealing with this problem. These line bushings consist essentially of a metallic sleeve which encapsulates and longitudinally seals the electric conductors in cast resin. This means that sealing is not only ensured along the lengths of the conductors but also through the conductor strands themselves. BARTEC pressure-proof/vacuum-sealed line bushings can be designed for working temperatures of -70 °C to +150 °C depending on the application. Depending on the working temperature and ambient medium, it is possible to control pressure levels of 10<sup>-6</sup> mbar to 200 bar. Depending on the application, it is also possible to use BARTEC line bushings under conditions which deviate from the following technical basic data. They are **not** approved for use in hazardous areas.

**Explosion-proof and pressure-sealed version(EPS 13 ATEX 1619 U).**

**Technical data** Basic version

Protection class	up to IP 68 for enclosure
Nominal voltage	see table
Rated conductor cross section	0.25 mm <sup>2</sup> to 35 mm <sup>2</sup>
Temperature range	-70 °C to +150 °C
Nominal pressure	63 bar at RT (RT= +25 °C)
Core lengths	on request

**Ordering information**

Nominal voltage	Code no.	Conductor cross section	Code no.	Number of cores	Code no.	Sleeve sizes	Code no.	Temperature	Code no.	Sleeve material
450/750 V	1	Special cross section	A	1 core	01	M24 x 1.5	2	-25 °C to +100 °C	0	nickel-plated brass
		0.25 mm <sup>2</sup>	C							
250 V	2	0.35 mm <sup>2</sup>	D	2 core	02	M33 x 1.5	3			
		0.5 mm <sup>2</sup>	E							
1 000 V	3	0.75 mm <sup>2</sup>	F	10 cores	10	M36 x 1.5	4			
		1.00 mm <sup>2</sup>	G							
3 000 V*	4	1.5 mm <sup>2</sup>	H	20 cores	20	M42 x 1.5	6			
		2.5 mm <sup>2</sup>	J							
60 V	5	4.0 mm <sup>2</sup>	K	21 cores	21	M50 x 1.5	8	up to +150 °C	5	Steel 1.4305
		6.0 mm <sup>2</sup>	L							
400 V	7	10.0 mm <sup>2</sup>	M	etc. up to a max. indicated in column "Max. number of cores" in the chart "Dimensions"		Special size	9			
		16.0 mm <sup>2</sup>	N							
500 V	8	25.0 mm <sup>2</sup>	P			Steel 1.4571				
		35.0 mm <sup>2</sup>	Q							

\*on request

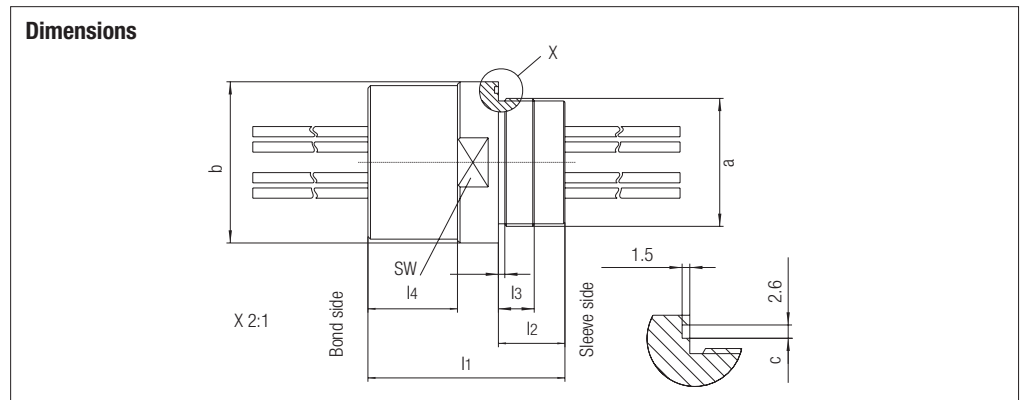
**Complete order no.**

37-910  -     /7  \*

Please insert correct code.

\* In conjunction with the customer requirements form at the end of the chapter

Technical data subject to change without notice.

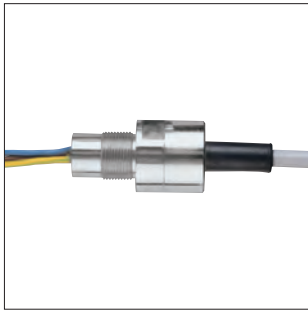


**Ordering information**

Thread size a	Dimensions in mm							Nominal conductor cross-section	Max. number of conductors
	b	c	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	AF		
M24 x 1.5	Ø 36	Ø 28	50	22	17	0	32	0.5	8
								0.75 / 1 / 1.5	6
								2.5	5
								4	1
			6	1					
			85	37	17	0	32	10	1
M33 x 1.5	Ø 43	Ø 35	50	34	17.5	0	41	0.5	18
								0.75 / 1 / 1.5	8
								2.5	6
								4	5
			6	1					
			85	49	17.5	20	41	20	2
M36 x 1.5	Ø 46	Ø 38	50	34	17.5	0	41	0.5	22
								0.75 / 1 / 1.5	10
								2.5	9
								4	6
			85	49	17.5	20	41	6	6
			10 + (1.5)	3 + (3)					
M42 x 1.5	Ø 55	Ø 45	50	34	17.5	0	50	0.5	30
								0.75 / 1 / 1.5	16
								2.5	12
								4	8
			6	8					
			85	49	17.5	20	50	10 + (1.5)	3 + (6)
16 + (1.5)	3 + (3)								
10 + (1.5)	4 + (4)								
M50 x 1.5	Ø 63	Ø 54	77	26	14	35	60	0.5	45
								0.75 / 1 / 1.5	30
								2.5	15
								4	13
			6	13					
			97	36	14	45	60	10 + (1.5)	3 + (6)
			16 + (1.5)	3 + (6)					
			10 + (1.5)	4 + (4)					
16 + (1.5)	4 + (4)								
25 + (1.5)	4 + (4)								

Other versions on request. Please use the customer requirements form at the end of the chapter!

Technical data subject to change without notice.



Industrial processes often take place within closed containers, under increased pressure or even vacuum conditions. It is therefore of utmost importance that no media leakages or pressure/vacuum drops occur when cables are led in. Our BARTEC pressure and vacuum sealed cable entries provide a simple and cost-effective solution to this problem. The cable entries essentially consist of a metal sleeve encapsulating the whole length of the electric conductors within epoxy-resin. This means that sealing is not only guaranteed for the whole length of the conductors but also through the stranded conductors themselves. Depending on their field of application, BARTEC pressure and vacuum sealed cable entries can be used at temperatures of -70 °C to +150 °C. With regard to the actual temperature and surrounding media, pressures of 10<sup>-6</sup> mbar to 200 bar can be withstood. Our BARTEC cable entries can also be used under conditions that differ from the basic technical data listed below.

They have **not been** approved for use in potentially explosive areas.

**Explosion-proof and pressure-sealed versions (on request).**

**Technical data** Basic version

Protection class	up to IP 68 for enclosure
Nominal voltage	see table
Nominal conductor cross section	0.25 mm <sup>2</sup> to 6 mm <sup>2</sup>
Temperature range	-70 °C to +150 °C
Nominal pressure	63 bar at RT (RT= +25 °C)
Cable lengths	on request
Core lengths	on request

**Ordering information**

Nominal voltage	Code no.	Conductor cross section	Code no.	Number of cores	Code no.	Sleeve sizes	Code no.	Temperature	Code no.	Sleeve material
450/750 V	1	Special cross section	A	1 core	01	M24 x 1.5	2	-25 °C to +100 °C	0	nickel-plated brass
250 V	2	0.25 mm <sup>2</sup>	C	2 core	02	M33 x 1.5	3			
1 000 V	3	0.35 mm <sup>2</sup>	D	10 cores	10					M36 x 1.5
3 000 V*	4	0.5 mm <sup>2</sup>	E	11 cores	11					
60 V	5	0.75 mm <sup>2</sup>	F	20 cores	20	M42 x 1.5	6	up to +150 °C	5	Steel 1.4305
400 V	7	1.00 mm <sup>2</sup>	G	21 cores	21					
500 V	8	1.5 mm <sup>2</sup>	H	etc. up to a max. indicated in column "Max. number of cores" in the chart "Dimensions"		M50 x 1.5	8			
Special voltage	9	2.5 mm <sup>2</sup>	J					Special size	9	Steel 1.4571
		4.0 mm <sup>2</sup>	K							
		6.0 mm <sup>2</sup>	L							

\*on request

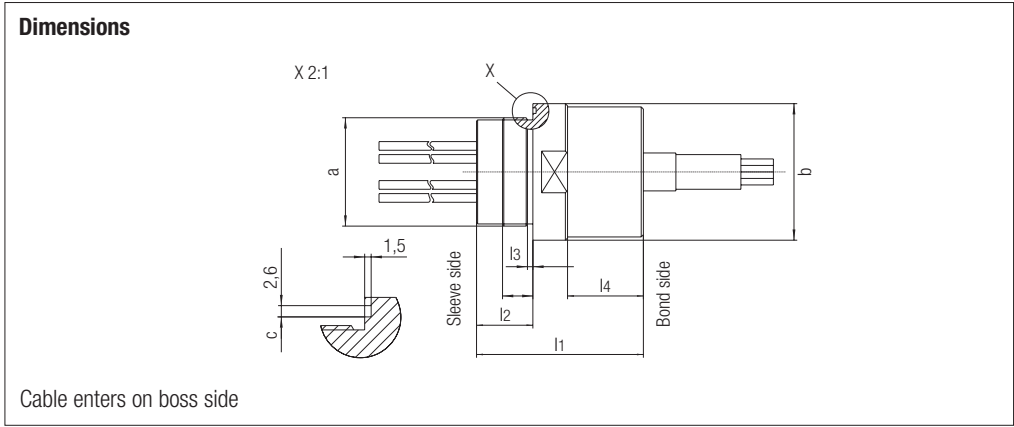
**Complete order no.**

Please insert correct code.

37-920  -     /7  \*

\* in conjunction with the customer requirements form at the end of the chapter

Technical data subject to change without notice.

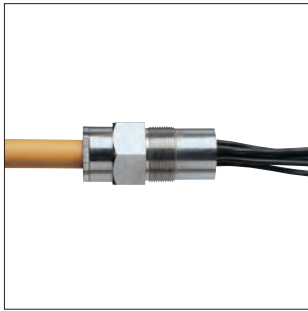


**Ordering information**

Tread size a	Dimensions in mm							Nominal conductor cross section	Max. number of cores
	b	c	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	SW		
M24 x 1.5	Ø 36	Ø 28	70	22	17	0	32	0.5	8
								0.75 / 1 / 1.5	6
								2.5	3
								4	1
M33 x 1.5	Ø 43	Ø 35	83	34	17.5	33	41	0.5	18
								0.75 / 1 / 1.5	8
								2.5	6
								4	5
M36 x 1.5	Ø 46	Ø 38	83	34	17.5	33	41	0.5	22
								0.75 / 1 / 1.5	10
								2.5	9
								4	6
M42 x 1.5	Ø 55	Ø 45	83	34	17.5	33	50	0.5	30
								0.75 / 1 / 1.5	16
								2.5	12
								4	8
								6	8

Other versions on request. Please use the customer requirements form at the end of the chapter!

Technical data subject to change without notice.



BARTEC submersible cable entries maintain their seal even under extreme conditions. Major fields of application are submersible pumps for use areas such as:

- water treatment plants
- sewage treatment plants
- sewage disposal
- building sites

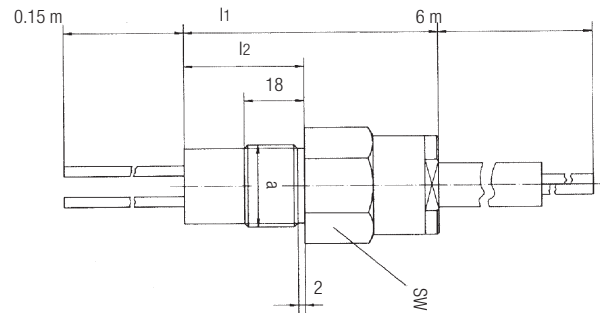
The cable sheath and cores are encapsulated in a special sealing compound. If the cable is damaged, no water can penetrate the cable entries causing a short-circuit. Our BARTEC submersible cable entries are sealed over their whole length. BARTEC submersible cable entries are designed for depths with pressures up to 6 bar. The standard version is threaded, but flanged versions can also be supplied. For these cable entries, BARTEC use as extremely robust NSSHÖU cable resistant to extreme stress such as sewage or chemically aggressive waste water. The basic versions have 4 x 1.5 mm<sup>2</sup> or 7 x 2.5 mm<sup>2</sup> cores. For special cables incorporating pilotlines, we offer versions with 7 x 1.5 mm<sup>2</sup> or when used with oil-filled motors, the cables can be provided with FEP-insulated stranded conductors. The standard version has nickel-plated brass threaded sleeves. For special applications, BARTEC offers threaded sleeves of stainless steel types.

**Explosion-proof version (on request).**

**Technical data** Basic version

Protection class	IP 68
Pressure seal	up to 6 bar
Temperature resistance	max. +100 °C at encapsulation
Voltage	up to 500 V for NSSHÖU
Cable length outside	6 m
Core length inside	0.15 m

**Dimensions**



**Ordering information**

Thread a	Dimensions in mm			Connection number of cores x cross section	Cable	Voltage	Order no.
	l <sub>1</sub>	l <sub>2</sub>	SW				
M36 x 1.5	85	45	41	7 x 4			on request
				4 x 4	NSSHöU	500 V	37-9208-K044/2000
				7 x 2.5	NSSHöU	500 V	37-9208-J074/2000
				4 x 2.5	NSSHöU	500 V	37-9208-J044/2000
M24 x 1.5	75	35	30	3 x 2.5	NSSHöU	500 V	37-9208-J032/2000
				4 x 1.5	NSSHöU	500 V	37-9208-H042/2000

Other versions on request. Please use the customer requirements form at the end of the chapter!

Technical data subject to change without notice.



Industrial processes often take place within closed containers, under increased pressure or even vacuum conditions. It is therefore of utmost importance that no media leakages or pressure/vacuum drops occur when electrical power or signals are led through the container wall. Our BARTEC pressure and vacuum sealed stud-type bushings provide a simple and cost-effective solution to this problem. The stud-type bushings essentially consist of a threaded metal sleeve and the stud forming one block by means of a creepage-proof insulation material. The electrical connection can be made by the user himself with conventional connection systems. The seals can withstand pressures from 10 mbar abs. to 63 bar depending on the type used for the installation. Depending on their field of application, BARTEC pressure and vacuum sealed stud-type bushings can be used at temperatures of -70 °C to +150 °C. Our BARTEC stud-type bushings can also be used under conditions that differ from the basic technical data listed below. They are **not** approved for the use in hazardous areas.

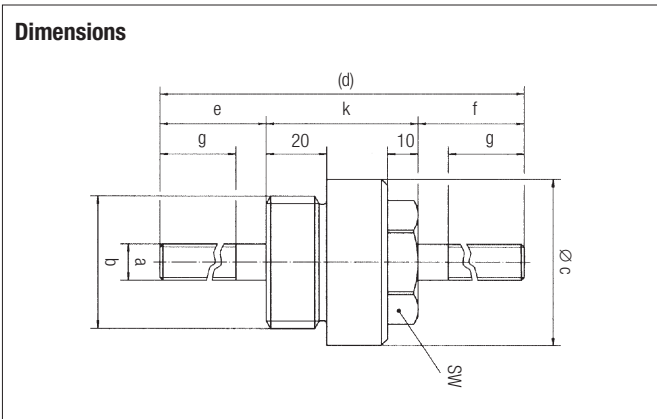
**Technical data** Basic version

Nominal voltage	up to 1 000 V
Stud thread	M3 to M30
Temperature range	-70 °C to +150 °C
Nominal pressure	up to 63 bar at RT (RT = +25 °C) <sup>1)</sup>
Test pressure	80 bar at RT

<sup>1)</sup> depending on outer seal

**Ordering information**

Nominal current			
at +25 °C ambient temperature	100 A	250 A	315 A
Dimensions in mm			
a	M8	M12	M16
b	R 1"	R 1 1/4"	R 1 1/2"
c	41	55	60
d	100	150	160
e	35	50	55
f	30	50	55
g	22	40	40
SW	30	36	36
k	35	50	50
	2	1	4



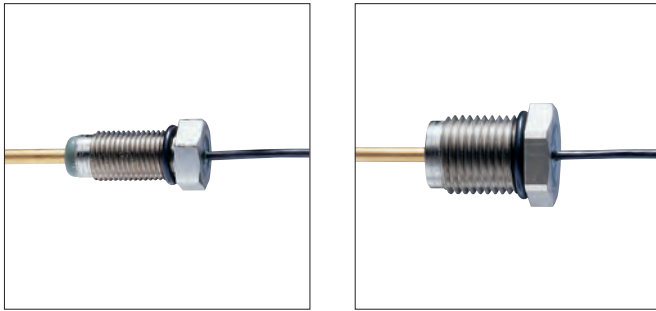
**Complete order no.** 37-9119-A019/70E

Please insert correct code.

Other versions on request.

Please use the customer requirements form at the end of the chapter!

Technical data subject to change without notice.

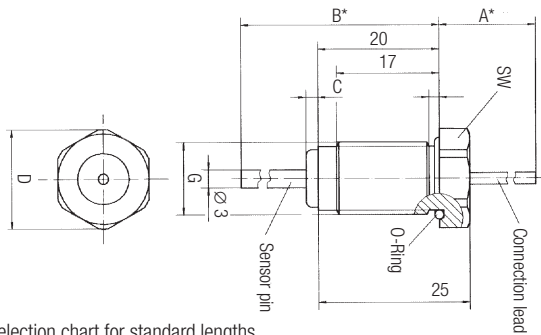


In submersible sewage pumps, motor and pump assembly are often separated by an oil chamber sealed with mechanical seals. To prevent motor malfunctions or breakdowns it is absolutely necessary to detect possible leakages of the shaft seals and to carry out maintenance works in due time. Our BARTEC electrodes help you solve this problem most cost effectively. The electrode essentially consists of a threaded metal sleeve and a metal sensor rod forming one block by means of a creepage-proof insulation material. An appropriate evaluation unit indicates any existing leak or due maintenance in good time. Depending on type and application, BARTEC electrodes can be used for temperatures from -25 °C to +150 °C. They can also be used under conditions that deviate from the following basic technical data.

**Technical data** Basic version

Nominal voltage	≤ 30 V
Temperature range	-25 °C bis max. +150 °C depending on the core wire used
Rated uninterrupted current	< 1 A
Materials	Threaded sleeve: Nickel-plated brass or stainless steel Sensor rod: Brass or stainless steel Connection core: 0.5 mm <sup>2</sup> to 1.5 mm <sup>2</sup> Encapsulation: Epoxy resin O-ring: Viton

**Dimensions**



See selection chart for standard lengths.  
Different lengths on request.

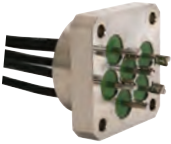


**Ordering information**

Dimensions in mm							Order no.
G	C	D	SW	A	B	O-ring	
M10 x 1	2	14.5	13	500	36	9 x 1.5	37-9A05-1250/1000
M12 x 1	2	16.5	15	500	36	10 x 1.5	37-9A05-125B/1000
M16 x 1.5	2	21.0	19	500	36	14 x 2	37-9A05-125D/1000

Versions deviating from the basic technical data on request.  
Please use the customer requirements form at the end of the chapter!

Technical data subject to change without notice.

### Special versions

Illustration	Description
	Stud plate Stud insulated in glass e. g. as pressure-proof motor connection
	Line bushings with flat-pin plug
	Prestressed-glass line bushings electrical

Technical data subject to change without notice.

## Customer requirements Cable entries/line bushings

### Customer

**BARTEC** (to be completed by the BARTEC representative)

Company	Sales employee	
Street	<input type="checkbox"/> Offer	<input type="checkbox"/> Order
Postcode/City	Project name/Application number	
Country	Customer number	
Contact person	Order value	
E-mail	Deadline	Offer
Phone	Fax	Delivery

### Conditions of use

Current	A	Voltage	V	Peak voltage	V	Frequency	Hz
---------	---	---------	---	--------------	---	-----------	----

### Pressure

Nominal pressure	bar	<input type="checkbox"/> Boss side
Test pressure	bar	<input type="checkbox"/> Sleeve side
Leakage rate	mb * l * s <sup>-1</sup>	

### Medium

Boss side
Sleeve side
aggressive components of the medium

<b>Ambient temperature</b>	°C
----------------------------	----

<b>max. permissible heating at the conductor</b>	
<b>max. conductor temperature</b>	°C

<b>Ex area (Zone)</b>
-----------------------

<b>Type of protection</b>
---------------------------

<b>Other points</b>
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### Installation site sketch

# Customer requirements Cable entries/line bushings

## Cable entry/line bushing

### Cable description

Boss side  Shielded cable  Core

---

not shielded  shielded

Shield connected to ground

Shield run through

Shield insulated

Designation lead/core

Length \_\_\_\_\_ mm

Sleeve side  Shielded cable  Core

---

not shielded  shielded

Shield connected to ground

Shield run through

Shield insulated

Designation lead/core

Length \_\_\_\_\_ mm

Number of cores \_\_\_\_\_ piece

Core cross section \_\_\_\_\_ mm<sup>2</sup>

## Bolt bushing

### Bolt description

Connection Boss side \_\_\_\_\_ Sketch

Connection Sleeve side \_\_\_\_\_ Sketch

**Bolt material** \_\_\_\_\_

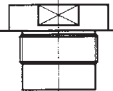

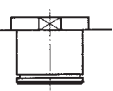
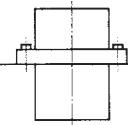
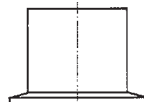
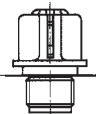
**Electrode line bushing** \_\_\_\_\_

Length of sensor pin \_\_\_\_\_

Material of sensor pin \_\_\_\_\_

Sketch

## Version

Threaded sleeve	Non-threaded sleeve	Non-threaded sleeve with mounting flange	Small flange	Line bushing with terminals
<p>Boss side </p> <p>Sleeve side </p>	<p></p>	<p></p>	<p></p>	<p></p>
Quantity _____	Quantity _____	Quantity _____	Quantity _____	Quantity _____
Thread name _____	Sleeve size _____	Sleeve size _____	Diameter Ø _____	Thread name _____
Thread size _____	Length of gap _____	Length of gap _____	Length of gap _____	Thread size _____
Sleeve material _____	Sleeve material _____	Sleeve material _____	Sleeve material _____	Sleeve material _____



## SIGNALLING DEVICES

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- Set in Zone 1/21, Zone 2/22
- Protection class IP 65
- Sound level 105 dB
- Temperature range -40 °C to +50 °C
- Easy to install

Machines and equipment are provided with acoustic warning and emergency devices for the protection of people and the environment. These devices signal hazardous situations and thus allow for instant safety measures to be taken. BARTEC provides a loud signal horn with continuous tone in attractive design. The device is suitable for applications in potentially explosive gas and dust atmospheres without further accessories. The signal horn reliably warns against hazards in a wide temperature range of -40 °C up to +50 °C outdoors and indoors.

**Explosion protection**

Marking ATEX	II 2G Ex e mb IIC T5 Gb II 2D Ex tb IIIC T70 °C Db
Certification	BVS 05 ATEX E113 X
Other approvals and certificates, see www.bartec.de	

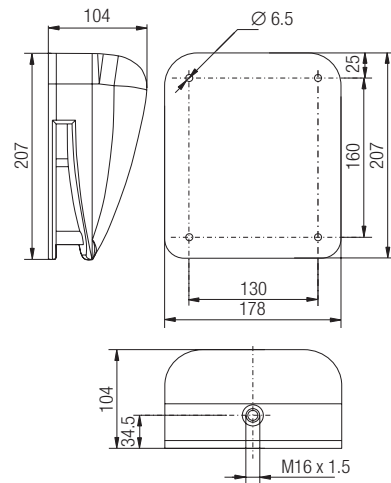
**Technical data**

Dimensions	207 mm x 178 mm x 104 mm
Mounting dimensions	160 mm x 130 mm
Enclosure	PC
Connection	terminal screw max. 2.5 mm <sup>2</sup>
Cable entry	cable gland M16 x 1.5 cable diameter 5 to 9 mm
Mounting	wall mounting and floor mounting

**Electrical data**

Rated voltage	see selection chart
Sound level	max. 105 db (A)
Type of tone	continuous tone

**Dimensions in mm**



**Ordering information**

Rated voltage	Code no.
DC 24 V	1
AC 24 V, 50 Hz	2
AC 42 - 48 V, 50 Hz	3
AC 115 V, 50/60 Hz	4
AC 120 V, 60 Hz	
AC 230 V, 50 Hz	5

Complete order no. 07-4602-1  12  
Please insert correct code.

Technical data subject to change without notice.



- Set in Zone 1/21, Zone 2/22
- Maintenance-free
- Compact design
- Very sturdy
- Low power demand due to high lamp efficiency
- Easy installation

Plant and machinery are fitted with visual alarms to give timely warning of dangerous situations and to enable machinery to be shut down before damage occurs. BARTEC flashing lamps are designed for continuous operation. BARTEC's flashing lamps provide information, warnings and alarms on machinery and plant in explosion-endangered areas in Zone 1 and Zone 2, Zone 21 and 22.

**Function**

The flashing lamp is made of an aluminium Ex d enclosure with a dome made of Borosilikat glass. The connection compartment was designed in the "increased safety" type of protection in conformance to EN 60079-7. An M20 x 1.5 gland is available to facilitate the insertion of the cable. A optional LED flashing lamp is available and can be set on 4 different modes: flashing, flash, permanent and rotating light.

**Explosion protection**

Marking ATEX	II 2G Ex d e IIC T5, T6 Gb II 2D Ex tb IIIC T95 °C, T80 °C Db
Certification	PTB 00 ATEX 1013
Marking IECEx	Ex d e IIC T5, T6 Gb Ex tb IIIC T95 °C, T80 °C Db
Certification	IECEx PTB 12.0059
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	

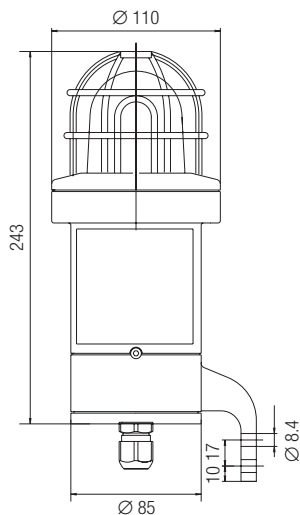
**Technical data**

Protection class	IP 66/IP 67 according to IEC 60529
Enclosure material	Aluminium, powder-coated with hardened glass dome and with protective cage

**Electrical data**

Rated voltage	AC 230 V DC 24 V
Flash energy	15 J
Flash frequency	approx. 60/min (1 Hz)
Operating mode	Continuous operation S 1 after IEC 60034-1; DIN EN 60034-1; VDE 0530 level 1
Activation	by connecting with the rated voltage
Temperature range	Service: $-55\text{ °C} \leq T_a \leq +40\text{ °C}$ (T6) (T80 °C) $-55\text{ °C} \leq T_a \leq +55\text{ °C}$ (T5) (T95 °C) Storage: $-60\text{ °C}$ to $+80\text{ °C}$

**Dimensions in mm**



**Ordering information**

Description	Nominal voltage	Code no.	Signal colour	Code no.
Flashing lamp 15 J	AC 230 V	1	yellow	3
			red	4
	DC 24 V	8	green	5

Complete order no. 07-4838-31

Please insert correct code.

Technical data subject to change without notice.



- Seawater-resistant
- External trigger
- Siren card available
- Wide temperature range
- Multiple dome colors

BARTEC TECHNOR's TNFCD/M series is an extreme duty flash beacon solution for use in hazardous location on- or offshore. Designed for the most demanding environments of the North Sea, the beacons have for more than 25 years proven their excellence, providing a low maintenance solution for operators and rig owners worldwide. Available in Ex de, Ex d or non-Ex. The beacon offers a multiple of options like power on when connected, external triggering or a siren card for acoustic warning.

### Explosion protection

Marking

TNFCD II 2G Ex d IIC T4 Gb or Ex de IIC T4 Gb

TNFCDM II 2G Ex d IIC T4 Gb

Certification NEMKO 01 ATEX 430

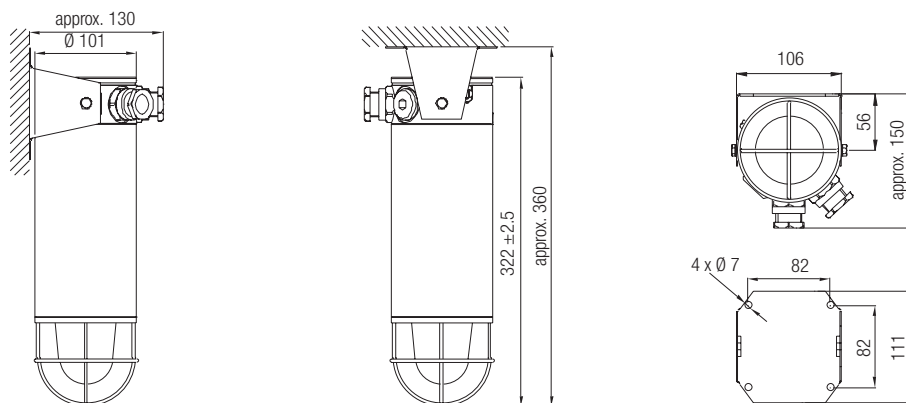
Other approvals and certificates, see [www.bartec.de](http://www.bartec.de)

Ambient temperature -50 °C to +60 °C

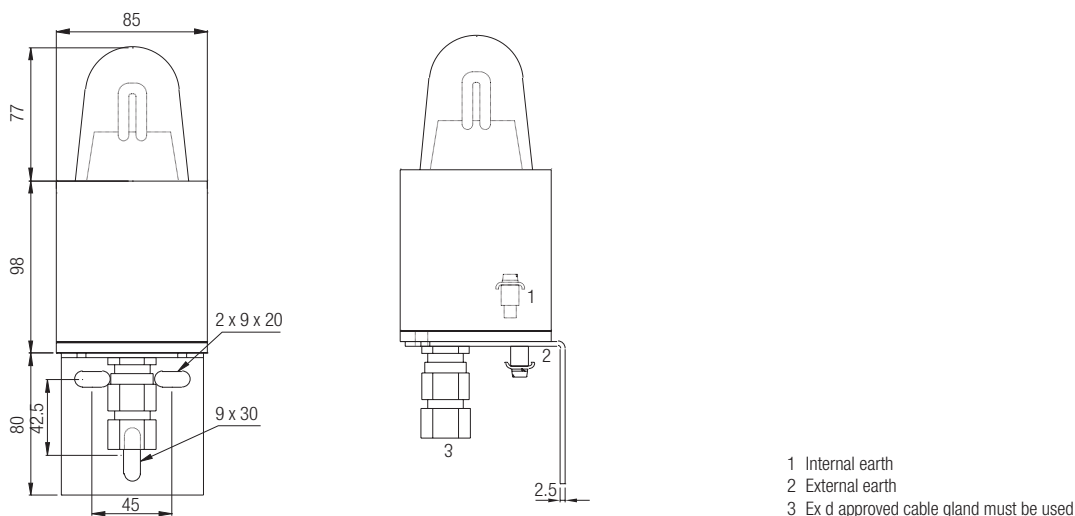
### Technical data

Material	stainless steel 316L/CF-3M	
Surface treatment	machined/shot blasted	
SS316L		
Earth terminal	inside and outside	
Cable entry	TNFCD	Standard M25
	TNFCDM	Standard M25, M20 or flying lead on request
Real humidity	100 %	
Dome colours	red, yellow, blue, green, orange, clear	
Flash frequency	1 Hz	
Flash energy	TNFCD	10 joule
	TNFCDM	5 joule
Weight	TNFCD	5.1 kg
	TNFCDM	2.5 kg
Protection class	IP 66 (IP 67 upon request)	
Standards	EN/IEC: 60079-0, 60079-1, 60079-7, 50281-1-1	

**Dimensions TNFCD**



**Dimensions TNFCDM**



**Flashing beacon TNFCD**

Rated voltage	Voltage range	Rated current	Power consumption	Supply frequency	Typical start current	Triggering	Fuse	Siren card for acoustic warning
AC 220 to 254 V	±10 %	110 mA	24 VA	50/60 Hz	>1 A in max. 1 msec.	direct, telephone, DC 24 to 48 V, fail safe	1 to 2 A < time-lag fuse is recommended	8 W, 20 W or 25 W for Ex loudspeaker (8 ohm, 20 ohm or 100 V line)
AC 110 to 120 V	±10 %	220 mA	24 VA	50/60 Hz				
DC 24 to 48 V	±10 %	DC 24 V/670 mA DC 48 V/330 mA	16 VA					

**Flashing beacon TNFCDM**

Rated voltage	Voltage range	Power consumption	Typical start current	Triggering
AC 220 to 254 V	AC 190 to 272 V	100 mA	1 A in max. 1 msec	direct
AC 110 to 127 V	±20 %	100 mA		
DC 24 V	±10 %	380 mA		
DC 48 V	±10 %	200 mA		

Technical data subject to change without notice.



The range of TNCLS Ex em LED backlights are designed for use to illuminate level gauges in all kinds of industry where an explosive atmosphere may be present. The TNCLS LED back lights are designed to illuminate see through level gauges found in a variety of industries where an explosive atmosphere may be present. The BARTEC TECHNOR back light solution has a proven track record of more than twenty years and is considered by some to be the only choice for low life cycle cost level gauge illumination.

- Low to no maintenance
- Installation kits for high/low temperatures
- Lengths available from 24 cm and up in increments of 1 cm and combinations of units

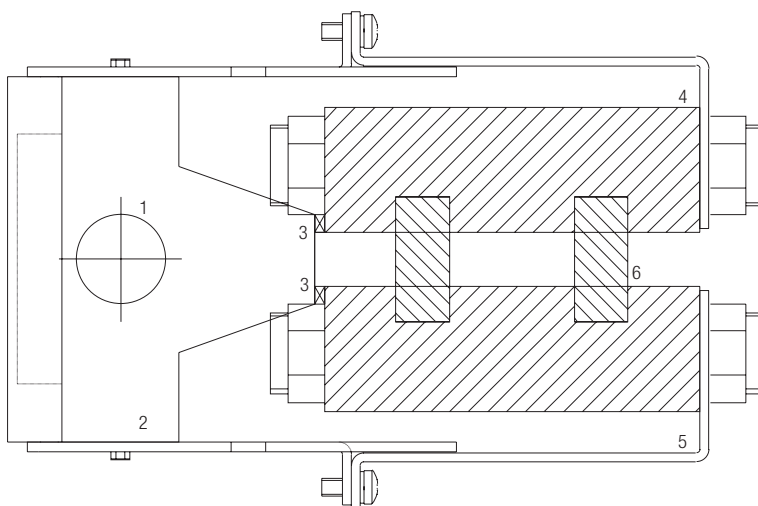
### Explosion protection

Marking	⊕ II 2G/Ex ebmtbopis IIC/IIIC T4Gb Ex II 2G/Ex ebmtbopis IIC/IIIC T4Gb
Certification	
ATEX	Presafe 16ATEX8117X
IECEX	Pre16.0008x
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-25 °C to +60 °C

### Technical data

Material	stainless steel 316L
Surface treatment	acidized
Earthing	M6 inside and outside
Cable entry	up to 2 x M25 in top, bottom and /or side
Power consumption	approx. 3 VA per module
Voltage	220 to 240 V AC or 254 V AC Other voltages on request
Frequency	50/60 Hz
Humidity	100 %
Terminals	4 x 2.5 m <sup>2</sup> other terminal size on request
Illumination colour	yellow
Protection class	IP 66
Directives	EN/IEC: 60079-0, 60079-7, 60079-18, 60079-28, 60079-31

**Dimensions**



- 1 Cable entrance, max. M25
- 2 Backlight
- 3 Gasket
- 4 Level gauge
- 5 Mounting bracket
- 6 Level glas

**Ordering information**

Dimensions	Total length A mm	Light exposure B mm	Weight kg
27-1	270	250	2.3
30-1	300	280	2.5
34-1	340	320	2.7
36-1	360	340	2.8
27-2	540	520	4.3
30-2	600	580	4.6
34-2	680	660	5.1
36-2	720	700	5.3
27-3	810	790	6.2
30-3	900	880	6.7
34-3	1020	1000	7.3
36-3	1080	1060	7.5
27-4	1080	1060	7.9
30-4	1200	1180	8.5
34-4	1360	1340	9.3
36-4	1440	1420	9.6

Several units can be assembled to one unit  
 Type key: TNCLS L-X, L = Module length,  
 X = No. of modules, Total length: A = L\*X  
 Other sizes on request.

Technical data subject to change without notice.

**Reservation**

Technical data subject to change without notice. No claims for damages arising from alterations, errors or misprints shall be allowed. Attention is drawn to the applicable standards and regulations on safety components and systems together with the relevant operating and installation instructions.



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