

Electrical Position Indicators for Quarter Turn Actuators

Construction

The GEMÜ LS series electrical position indicators are used to indicate and monitor the position of quarter turn valves. Depending on the version, they have either one or two mechanical micro-switches or 2-wire or 3-wire proximity switches. The position indicators can be universally mounted on all hole patterns according to VDI/VDE 3845. The electrical connection is via M12 plug or M20 cable gland.

Versions

GEMÜ LSF:

- Switch: NCN3-F25F-N4-V1, 2-wire, NAMUR
Switching function: DC dual break contact
Ex-marking:  II 1G Ex ia IIC T6
- Switch: NBN3-F25F-E8-V1, 3-wire, PNP
Switching function: PNP dual make contact
- Protection class: IP 67, VDE 0470/EN 60529

GEMÜ LSR:

- Switch: Microswitch type CROUZET 831709
Switching function: SPDT (single pole double throw)
- Switch: NBN4-V3-N0-Y189289
Switching function: Break contact NAMUR
Ex-marking:  II 2G Ex ia IIB T6
- Switch: NBN4-V3-E2-Y51516
Switching function: PNP make contact
- Protection class: IP 67, VDE 0470/EN 60529

GEMÜ LST:

- Switch: Microswitch Crouzet 83.161.301
Switching function: SPDT (single pole double throw)
- Switch: SJ3.5, 2-wire NAMUR
Switching function: SPDT (single pole double throw)
Ex-marking:  II 1G Ex ia IIC T6
- Switch: NBN3-F25F-E8-V1, 3-wire, PNP (code 312)
Switching function: PNP dual make contact
- Protection class: IP 65, VDE 0470/EN 60529

Advantages

- Simple mounting and retrofitting to quarter turn actuators
- Attachment to other valve makes possible
- Compact design in a stable housing
- Optical position indicator as standard



GEMÜ LSF

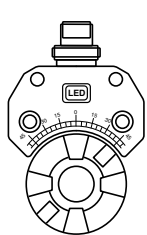


GEMÜ LSR

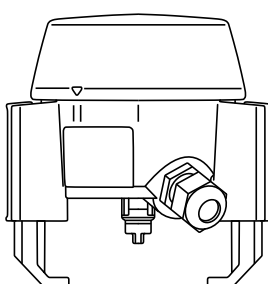


GEMÜ LST

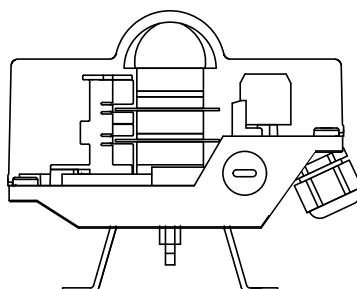
Drawings



GEMÜ LSF



GEMÜ LSR



GEMÜ LST

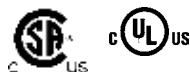
Technical data - GEMÜ LSF

General

Mounting dimensions	acc. to VDI/VDE 3845 for flange designs 30x80 and 30x130
Display and switching range	0° to 90°
Ambient temperature	
Switch NCN3-F25F-N4-V1 P+F	-25 to 85 °C
Switch NBN3-F25F-E8-V1 P+F	-25 to 70 °C

Materials

Housing	PBT
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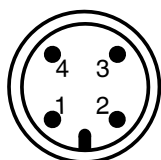


Electrical data

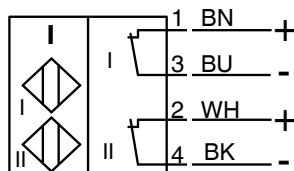
Protection class	IP 67, VDE 0470/EN 60529
Output	short-circuit proof, reverse battery protection
Switching interval	3 mm
Connection	Plug M12x1, 4-pin
Switch: NCN3-F25F-N4-V1 2-wire, NAMUR (code 206)	
Switching function	DC dual break contact (DIN EN 60947-5-6 NAMUR)
Ex-marking	Ex II 1G Ex ia IIC T6
Rated voltage	8.2 V DC
Switching frequency	0 to 1000 Hz
Current consumption	≥ 3 mA (idle) ≤ 1 mA (actuated)
No-load current	≤ 3 mA
Switch: NBN3-F25F-E8-V1, 3-wire, PNP (code 312)	
Switching function	PNP dual make contact
Protection class	IP 67, VDE 0470/EN 60529
Operating voltage	10 to 30 V DC
Operating current	max. 200 mA

Connection diagrams - GEMÜ LSF

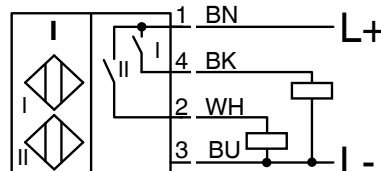
PIN assignment



GEMÜ LSF switch - Code 206



GEMÜ LSF switch - Code 312



Order data- GEMÜ LSF

1 Switch

Code
Inductive sensor, 2-wire, NAMUR, ATEX NCN3-F25F-N4-V1 206
Inductive sensor, 3-wire, PNP, dual make contact NBN3-F25F-E8-V1 312

2 Accessory

Code
Accessory Z

3 Namur size

Code
80x30x20 for actuator DR/SC0015U - 0150U 01
80x30x30 for actuator ADA/ASR0020U - 0850U A2
80x30x30 for actuator ADA/ASR0020U - 2100U and DR/SC0220U - 0600U 02
130x30x30 for actuator ADA/ASR1200U - 4000U 03
130x30x50 for actuator DR/SC0900U - 5000U 04

4 Function

Code
Open / Closed A00

5 Field bus

Code
Without 000

6 Electrical connection

Code
M12 4-pin plug 1110

7 K number

Code
Without -

8 Special function

Code
ATEX (switch code 206) X
Without -

Order example

Type	1	2	3	4	5	6	7	8
Code LSF	206	Z	01	A00	000	1110	-	X

Note: Cable socket M12 without cable not included in the scope of delivery.
GEMÜ order code 1219 000 Z 00 00DW 00M0 M125 A, article number 88205545

Technical data - GEMÜ LSR

General

Mounting dimensions	acc. to VDI/VDE 3845 for flange designs 30x80 and 30x130
Display and switching range	0° to 90°
Permissible temperatures	-20 to 70 °C

Materials

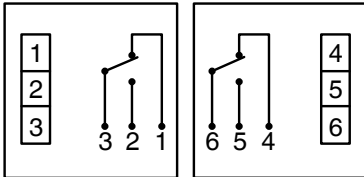
Cover	Lexan 143 R
Switching shaft	POM
Seals	NBR
PG glands /counter nut	PA
Other plastic parts	ABS, T45
Hexagon socket screw	A2-70

Electrical data

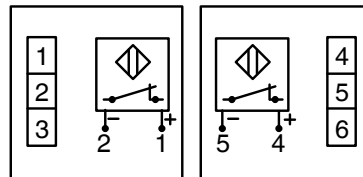
Protection class	IP 67, VDE 0470/EN 60529	
Cable entry with strain relief clamp range	5 to 10 mm	
Recommended wire cross section	ø 5 to 10 mm, max. 2.5 mm ²	
Switch: Microswitch type CROUZET 831709 (code 106)		
Switching function	SPDT (single pole double throw)	
Rated voltage	4 V DC - 250 V AC	
On-load current	250 V AC	0.1 - 5 A
	4 V DC	1 mA
Switch: NBN4-V3-N0-Y189289 (code 204)		
Switching function	Break contact NAMUR	
Rated voltage	8 V DC	
Explosion protection	Marking acc. to ATEX Ⓔ II 2G Ex ia IIB T6 -20°C < Ta < +70°C	
Output current	Damped < 1 mA Undamped > 3 mA	
Switching frequency	0 to 2000 Hz	
Switch: NBN4-V3-E2-Y51516 (code 313)		
Switching function	PNP make contact	
Operating voltage	10 to 30 V	
Switching frequency	0 to 500 Hz	

Connection diagrams - GEMÜ LSR

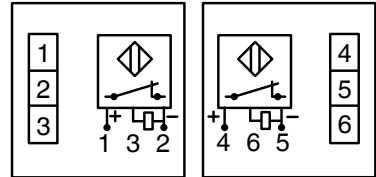
GEMÜ LSR switch - code 106



GEMÜ LSR switch - Code 204



GEMÜ LSR switch - Code 313



Order data - LSR

1 Switch Code

Microswitch, SPDT (Single Pole Double Throw) contact, type CROUZET 831709	106
Inductive sensor, 2-wire, break contact NAMUR, ATEX, NBN4-V3-NO-Y189289	204
Inductive sensor, 3-wire, PNP, make contact NBN4-V3-E2-Y51516	313

2 Accessory Code

Accessory	Z
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3 Namur size Code

All	XX
suitable for all sizes by rotating the mounting brackets 180°	

4 Function Code

Open / Closed	A00
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5 Field bus Code

Without	000
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6 Electrical connection Code

M20 cable gland	3101
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7 K number Code

Without	-
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8 Special function Code

ATEX (switch code 204)	X
Without	-

Order example	Type	1	2	3	4	5	6	7	8
Code	LSR	106	Z	XX	A00	000	3101	-	-

Technical data - GEMÜ LST

Technical data

Mounting dimensions	acc. to VDI/VDE 3845 for flange designs 30x80 and 30x130
Display and switching range	0° to 90°
Permissible ambient temperature	
Switch CROUZET 83.161.301	-20 to +100 °C
Switch SJ3,5N P+F	-25 to +85 °C
Switch NBN3-F25F-E8-V1 P+F	-25 to +70 °C

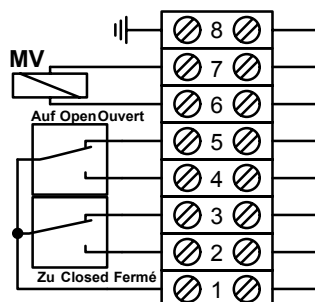
Materials

Housing cover	Makrolon, transparent
Housing base	Vestamid, black
Seal (housing)	EPDM, NBR or Silicone

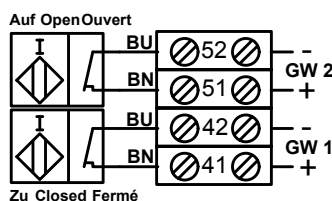
Electrical data

Output	short-circuit proof, reverse battery protection
Connection	M20 cable gland
Protection class (housing)	IP 65, VDE 0470/EN 60529
Switch: Microswitch Crouzet 83.161.301 (code 107)	
Switching function	SPDT (single pole double throw)
Protection class	IP 65, VDE 0470/EN 60529
Switch rating	6 A, 250 V AC
Switch SJ3.5, 2-wire NAMUR (code 208)	
Switching function	Break contact NAMUR
Protection class	IP 67, VDE 0470/EN 60529
Rated voltage	8 V DC
Operating voltage	5 to 25 V DC
Ex-marking	Ex II 1G Ex ia IIC T6
Switch NBN3-F25F-E8-V1, 3-wire, PNP (code 312)	
Switching function	PNP dual make contact
Protection class	IP 67, VDE 0470/EN 60529
Operating voltage	10 to 30 V DC
Operating current	max. 200 mA

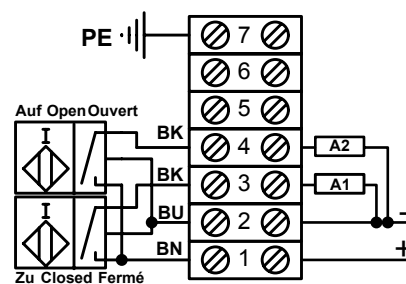
Connection diagrams - GEMÜ LST



GEMÜ LST switch - Code 107



GEMÜ LST switch - Code 208



GEMÜ LST switch - Code 312

Order data - GEMÜ LST

1 Switch	Code
Microswitch, SPDT (Single Pole Double Throw) contact, type CROUZET 83161301W2	107
Inductive sensor, 2-wire, break contact NAMUR, ATEX, P+F SJ 3.5 N	208
Inductive sensor, 3-wire, PNP, dual make contact NBN3-F25F-E8-V1	312

4 Function	Code
Open / Closed	A00

5 Field bus	Code
Without	000

2 Accessory	Code
Accessory	Z

6 Electrical connection	Code
M20 cable gland	3101

3 Namur size	Code
80x30x20 for actuator DR/SC0015U - 0150U	01
80x30x30 for actuator ADA/ASR0020U - 2100U and DR/SC0220U - 0600U	02
130x30x30 for actuator ADA/ASR1200U - 2500U	03
130x30x50 for actuator DR/SC0900U - 5000U	04

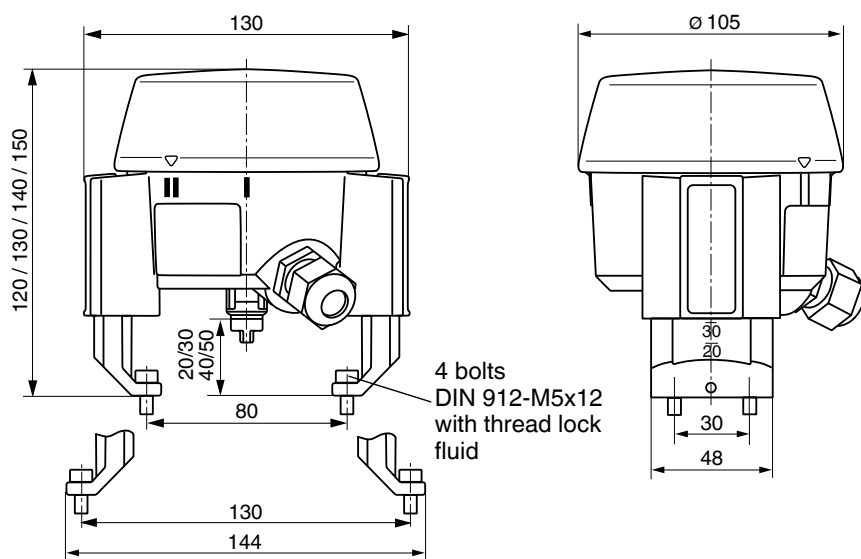
7 K number	Code
Without	-

8 Special function	Code
ATEX (switch code 208)	X
Without	-

Order example	Type	1	2	3	4	5	6	7	8
Code	LST	107	Z	01	A00	000	3101	-	-

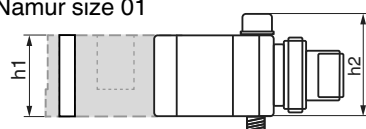
Dimensions - GEMÜ LS series [mm]

GEMÜ LSR

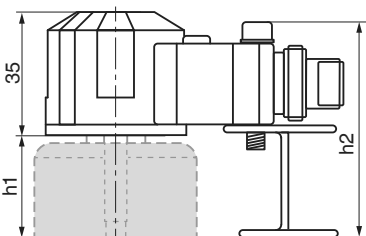


GEMÜ LSF

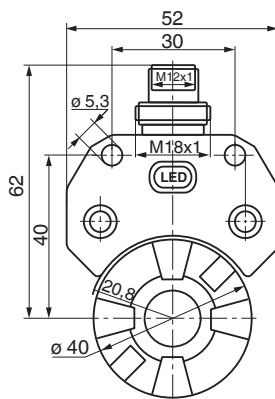
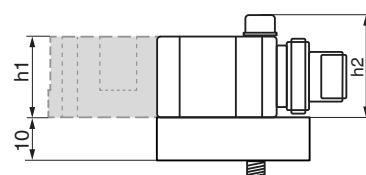
Namur size 01



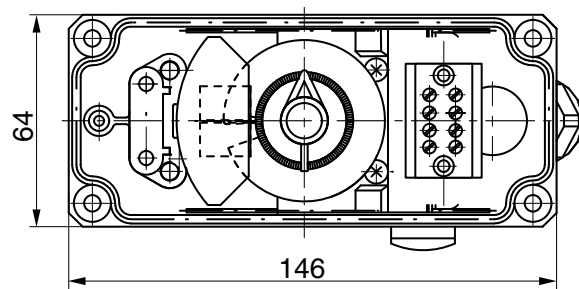
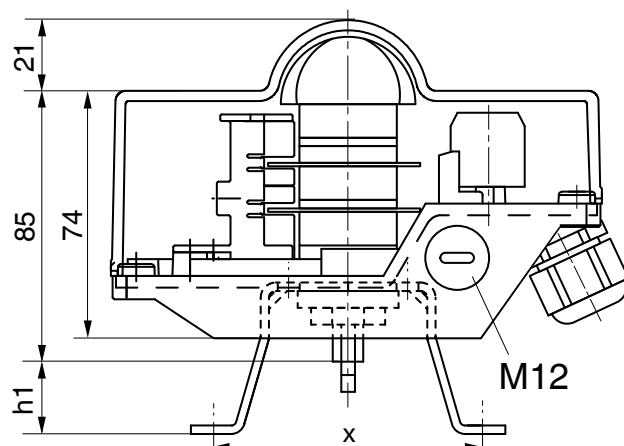
Namur size 02 / 03 / 04



Namur size A2



GEMÜ LST



Namur size (Code)	h1	h2	x
01	20	26	80 x 30
02	30	56	80 x 30
03	30	56	130 x 30
04	50	76	130 x 30
A2	30	36	80 x 30

Mounting set

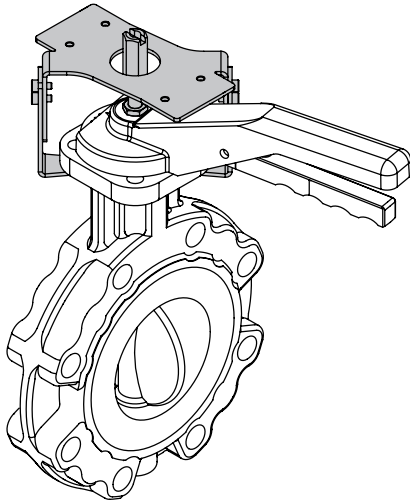
Code 01: Sensor, screws, Eisamet

Code 02,03,04: Sensor, screws, bracket, puck

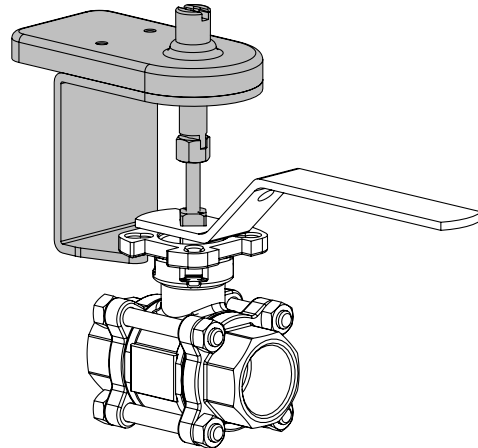
Code A2: Sensor, screws, distance plate

Accessory

Mounting kit (AHL S...) for fixing electrical position indicators acc. to VDI VDE 3845



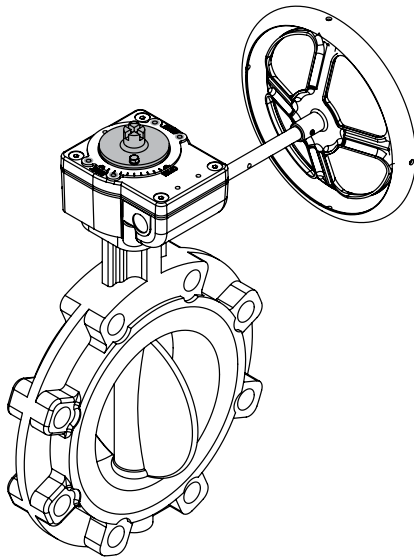
Gearbox prepared for mounting electrical position indicator LSF to GEMÜ ball valve 711, 740 and 762 with K-No. 7056



Nominal size	Article number	Order description
For GEMÜ 480		
DN 25 to 100	88333198	AHLS01Z F05 01/02
DN 125 bis 150	88335237	AHLS01Z F07 01/02
For GEMÜ D480		
DN 25 to 200	88335237	AHLS01Z F07 01/02
For GEMÜ 490		
DN 40	88333198	AHLS01Z F05 01/02
DN 50 to 150	88335237	AHLS01Z F07 01/02

Nominal size	Article number	Order description
For GEMÜ 711, 740, 762		
DN 8 to 20	88470175	LSFS01Z BV F04
DN 25 to 32	88470177	LSFS01Z BV F05
DN 40 to 50	88470178	LSFS01Z BV F07
DN 65 to 100	88470181	LSFS01Z BV F10

Gearbox prepared for mounting electrical position indicators K-No. 7042



For further electrical position indicators, accessories and other products, please see our Product Range catalogue and Price List.
Contact GEMÜ.

Technical data sheet

Should there be any doubts or misunderstandings, the German version of this data sheet is the authoritative document!

Subject to alteration · 05/2019 · 88386754

GEMÜ® VALVES, MEASUREMENT
AND CONTROL SYSTEMS

