



Product information
Analysis Conductivity



Characteristics

System

- 2- and 4- electrode measurement,
- calibration acc. to USP<645>

Interpretation

- Conductivity from 50 μ S up to 2000 mS/cm

Process connection

- G 1/2 A, G 3/4 A, G 1 A Clamp
- VARIVENT®
- Milk pipe

Media

- Ultra pure water up to seawater/sewage

Process pressure

- 10 bar up to 60 bar

Medium temperature

- -10 °C up to +200°C

Functions

The conductive measurement of the conductivity of liquids for monitoring and controlling in the ongoing process is a varied measurement process in industry.

By the increasing strict conditions and purity requirements of authorities ever increasing standards have been created for the food and beverage industry for the purity and hygiene in production. For this reason process engineering demands that plants and measurement must comply with a specified cleaning and sterilization procedure (CIP, SIP). In the pharmaceutical industry a high degree of hygiene and cleaning of the plants is necessary. This process is fulfilled by ultra-pure water.

As a standard for the purity of the water a standard of the United States Pharmacopeia <USP> recognized worldwide applies. Our measurement devices have the corresponding parameters to monitor pharmaceutical water and rinsing water.

Applications

- Ultra pure water
- Food - and Pharmaceutical industry
- Chemical industry
- Drinking water preparation
- Desalination of sea water
- Sewage treatment

Advantages

- Various standardized process connections
- Measuring cells for the most varying applications
- Measuring cells with integrated transmitter and digital interface
- FDA compatible measuring cells
- Ultra-pure water measurement
- High level of precision and long-term stability measurement achieved by 4-electrodes
- Temperature-compensated measurement by PT1000 sensor
- CIP-/SIP capable

Device Overview

Device	2-electrode	4-electrode	Process connection	Measuring range	Max. Temperature	Max. Pressure	Page
Display devices							
LF9648	•	•	Clamp terminals	2 S/cm	55 °C	-	4
LF1010	•	•	Clamp terminals	2 S/cm	55 °C	-	6
UNICON-LF	•	•	Clamp terminals	500 mS/cm	50 °C	-	7
GLMU	•	•	Round plug	500 mS/cm		-	9
Digital Conductivity Converter							
CONDIX4213		•	PVC-U fittings	500 mS/cm	60 °C	16 bar	11
CONDIX4613		•	G ½ A	200 mS/cm	60 °C	16 bar	13
CONDIX4623		•	G ¾ A, G1A	500 mS/cm	60 °C	16 bar	15
Conductivity cells							
LF2203	•		PVC-U fittings	2 mS/cm	60 °C	16 bar	17
LF2603	•		G ½A, R ½A, G ¾A, R ¾A	100 µS/cm	60 °C	16 bar	18
LF2613	•		G ½A, R ½A, G ¾A, R ¾A	2 mS/cm	60 °C	16 bar	19
LF2653HT	•		G ¾A, G 1A, G1 ¼A	50 µS/cm	200 °C	20 bar	20
LF1453 / LF2453	•		Clamp	50 µS/cm	120 °C	16 bar	21
LF1553 / LF2553	•		VARIVENT®	50 µS/cm	120 °C	16 bar	22
LF1653 / LF2653	•		G ¾ A, G1A	50 µS/cm	120 °C	16 bar	23
LF4003		•	Immersion cell	500 mS/cm	60 °C	10 bar	24
LF3043 / LF4043		•	Immersion cell	500 mS/cm	60 °C	-	25
LF3213 / LF4213		•	PVC-U fittings	500 mS/cm	60 °C	16 bar	26
LF3433 / LF4433		•	Clamp	500 mS/cm	120 °C	16 bar	27
LF3533 / LF4533		•	VARIVENT®	500 mS/cm	120 °C	16 bar	28
LF3623 / LF4623		•	G ¾A, G 1A	500 mS/cm	120 °C	16 bar	29
LF3733 / LF4733		•	Milk-pipe	500 mS/cm	120 °C	16 bar	30
Accessories							
Accessories Conductivity Measurement							31
Connection diagram Terminals B-D, LF9648							5
Connection diagram cells							8
EYY220 Programing Adapter			USB adapter / Round plug				32

Errors and technical modifications reserved.

Conductivity Meter LF9648



Characteristics

The Conductivity Meter LF9648 has been designed for the measurement of conductivity, as a degree of the purity or concentration of a liquid. In connection with 4-electrode-conductivity cells a high accuracy and insensitivity of contamination can be achieved. A further advantage is a broad range of application with only one cell. Only for measurement in ultra-pure water a special 2-electrode conductivity cell must be used.

Technical data

Power supply

Supply voltage : 230 V AC $\pm 10\%$; 115 V AC $\pm 10\%$;
 24 V AC $\pm 10\%$ or 24 V DC $\pm 15\%$
 Power consumption : max. 3.5 VA, 5 VA with analog output
 Operating temp. : $-10\ldots+55\text{ }^{\circ}\text{C}$
 CE-conformity : EN 61326-1:2013
 EN 60664-1:2007

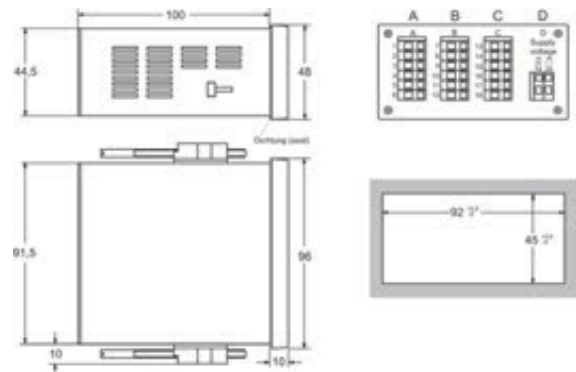
Inputs

MR conductivity : 0..2.000(0) $\mu\text{S}/\text{cm}$ up to
 0..2000 / 200(0) mS/cm (at $25\text{ }^{\circ}\text{C}$)
 -Cell constant : 0.080..9.999
 -Accuracy : 0.5 % of the measuring value, ± 2 Digit
 -Temperature comp. : non linear for ultra pure water and natural
 water or linear programmable from
 0.000..9.999 $\%/^{\circ}\text{C}$
 MR temperature : $-50.0\ldots+200.0\text{ }^{\circ}\text{C}$; Sensor Pt100 or Pt1000
 -Accuracy : $\pm 0.2\text{ }^{\circ}\text{C}$
Display
 Indicating range : 2000(0) Digit with leading zero suppression
 Parameter display : LED 2-digit red, 7 mm
 (parameter - and output indicator)

Outputs

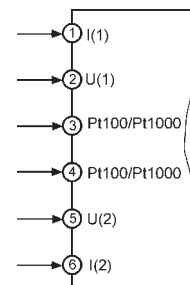
Relay : SPDT < 250 V AC < 250 VA < 2 A,
 < 300 V DC < 50 W < 2 A
 Transistor : transistor, <35 V AC/DC, max.100 mA,
 short circuit protected
 Analog output
 Active : 0/4..20 mA burden $\leq 500\text{ }\Omega$;
 0/2..10 V burden $> 500\text{ }\Omega$, isolated
 automatic burden changing
 (burden dependent)
 Passive : 4..20 mA, ext.
 burden = $RA[\Omega] \leq (\text{supply} - 5\text{ V}) \div 0.02\text{ A}$;
 supply voltage 5..30 V DC,
 Accuracy : 0.1 %; TK 0.01 $\%/^{\circ}\text{C}$
Case : panel mounting DIN 96x48 mm,
 material PA6-GF; UL94V-0
 Dimensions : front 96x48 mm, mounting depth 100 mm,
 Weight : max. 390 g
 Connection : clamp terminals, 0.08..1.5 mm^2 ,
 AWG28..AWG14

Dimensions



Connection diagram

Terminal strip A



Ordering code

LF9648 - 1. - 2. - 3. - 4. - 5. - 6. - 7.

1. Terminal strip A		
1	input for 2- or 4-electrode-cells, temperature compensation via Pt100	
3	as 1, but temperature compensation via Pt1000	
2. Terminal strip B		
00	not installed	
2R	2 relay outputs	
2T	2 electronic outputs	
3. Terminal strip C		
00	not installed	
2R	2 relay outputs	
2T	2 electronic outputs	
AO	analog output 0/4..20 mA, 0/2..10 V DC	
2A	2 analog outputs 4..20 mA passive	
4. Terminal strip D Supply voltage		
0	230 V AC	±10 % 50-60Hz
1	115 V AC	±10 % 50-60Hz
4	24 V AC	±10 % 50-60Hz
5	24 V DC	±15 %
5. Options		
00	without option	
01	min- and max-peak hold	
14	measuring/monitoring acc. to USP<645>	
6. Unit appears on the unit field		
7. Additional text above the display (3x90 mm HxW)		

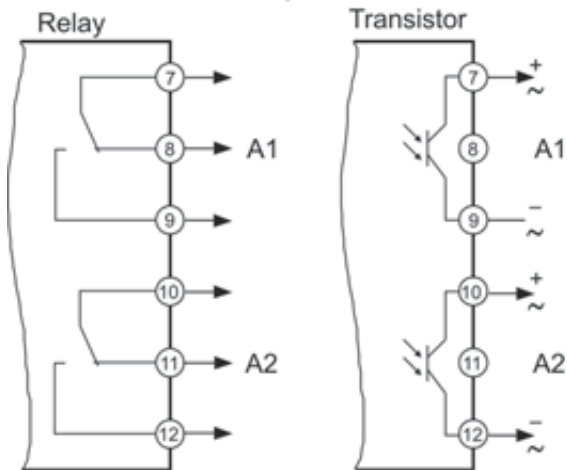
Connection diagram for terminal strip B-D see page Fehler:
 Referenz nicht gefunden

Connection Diagrams X9648, Terminals B-D

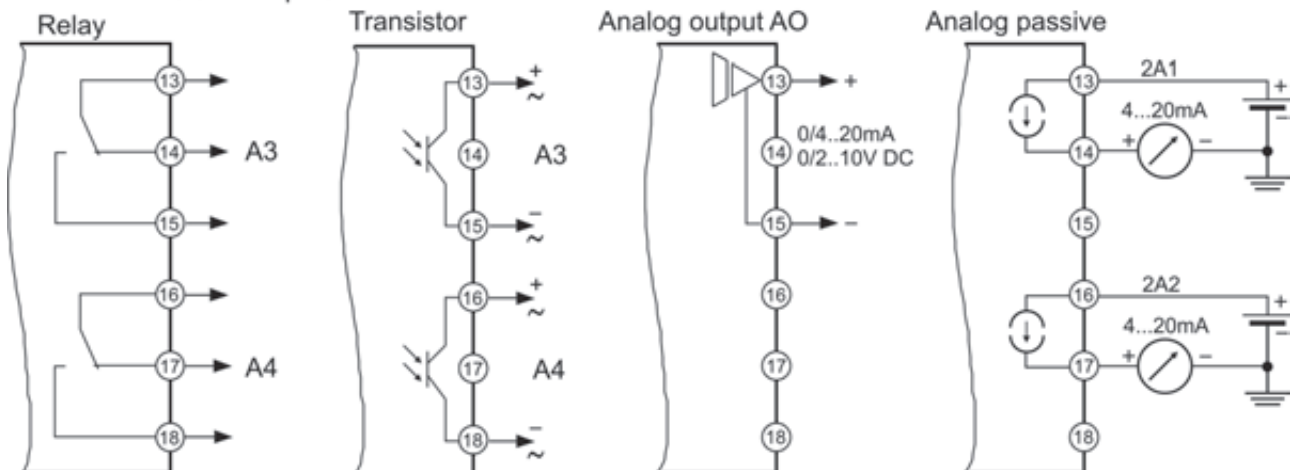
Terminal strips B, C, D

Terminal strip A belongs to each article.

Terminal strip B (varies with versions) 2 alarm outputs



Terminal strip C (varies with versions) 2 alarm outputs



Terminal strip D supply voltage (varies with version)



Conductivity Meter LF1010



Characteristics

The Conductivity-Meter LF1010 has been designed for the measurement of conductivity, as a degree of the purity or concentration of a liquid. In connection with 4-electrode-conductivity cells a high accuracy and insensitivity of contamination can be achieved. A further advantage is a broad range of application with only one cell. Only for measurement in ultra-pure water a special 2-electrode conductivity cell must be used.

Technical data

Power supply

Supply voltage : 230 V AC $\pm 10\%$; 115 V AC $\pm 10\%$;
24 V AC $\pm 10\%$ or 24 V DC $\pm 15\%$

Power consumption : max. 3.5 VA

Operating temp. : -20...+55 °C

CE-conformity : EN 61326-1:2013
EN 60664-1:2007

Inputs

MR conductivity : 0..2.000(0) $\mu\text{S}/\text{cm}$ up to
0..2000 / 200(0) mS/cm (at 25 °C)

-Cell constant : 0.080..9.999

-Accuracy : 0.5 % of the measuring value, ± 2 Digit

-Temperature comp. : non linear for ultra pure water and natural
water or linear programmable from
0.000..9.999 %/K

MR temperature : -50.0..200.0 °C; Sensor Pt100 or Pt1000

-Accuracy : ± 0.2 °C

Display : LED red, 14.2 mm

Indicating range : 2000(0) Digit with leading zero suppression

Parameter display : LED 2-digit red, 7 mm
(Parameter - and output indicator)

Outputs

Relay : SPDT < 250 V AC < 250 VA < 2 A,
 < 300 V DC < 50 W < 2 A

Field case : Material PA6-GF15/15, keypad polyester

Dimensions : 100x100x60 mm

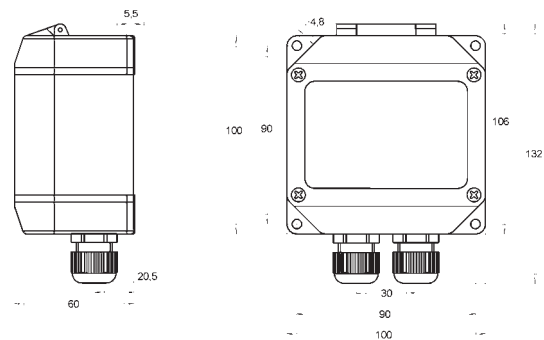
Weight : max. 450 g

Connection : clamp terminals

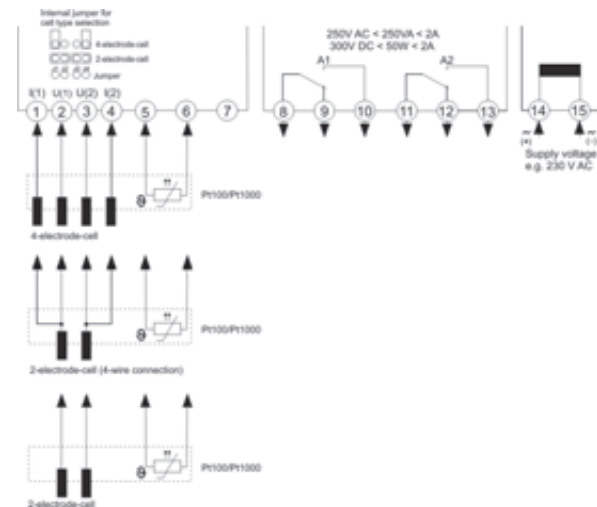
	<i>single wire</i>	<i>flexi wire</i>
Terminals 1-4	0.75 mm ² , AWG18	0.5 mm ² , AWG 20
Terminals 5-15	2.5 mm ² , AWG13	1.5 mm ² , AWG 15

Protection class : IP65, terminals IP20 acc. to BGV A3

Dimensions



Connection diagram



Ordering code

LF1010 - 1. - 2. - 3. - 4. - 5. - 6.

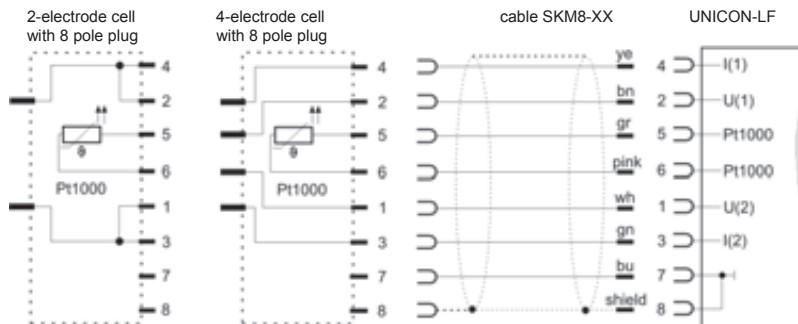
1. Input		
1	input for 2- or 4-electrode-cells, temperature compensation via Pt100	
3	as 1, but temperature compensation via Pt1000	
2. Alarm output		
00	not installed	
2R	2 relay	
3. Supply voltage		
0	230 V AC	±10 % 50-60Hz
1	115 V AC	±10 % 50-60Hz
4	24 V AC	±10 % 50-60Hz
5	24 V DC	±15 %
4. Options		
00	without option	
01	min- and max-peak hold	
09	1xM20x1.5 Multi (2xØ6 mm), 1xM20x1.5	
14	measuring and monitoring of ultra-pure water acc. to USP<645>	
5. Unit appears on the unit field		
6. Additional text above the display (3x70 mm HxW)		

7

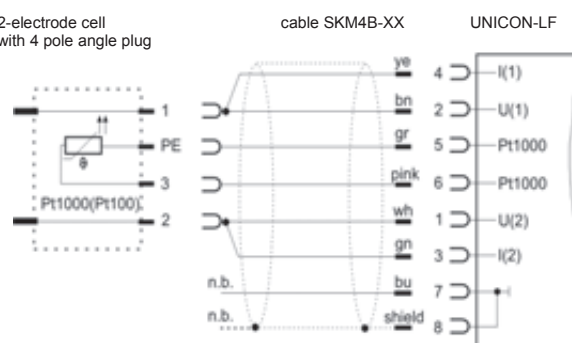
Connection Diagrams Conductivity Measurement

Connection at UNICON-LF field case

A

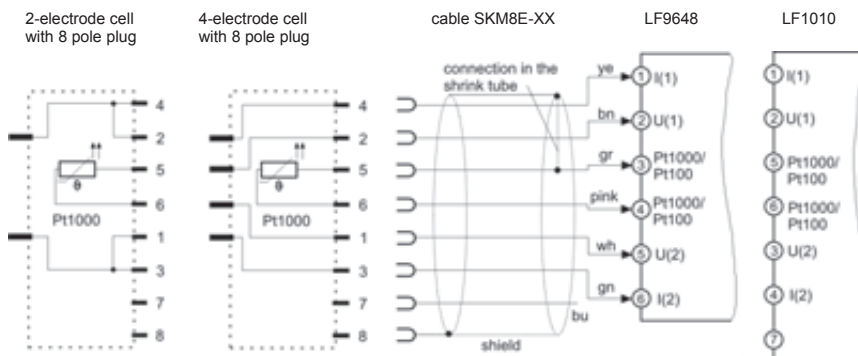


B

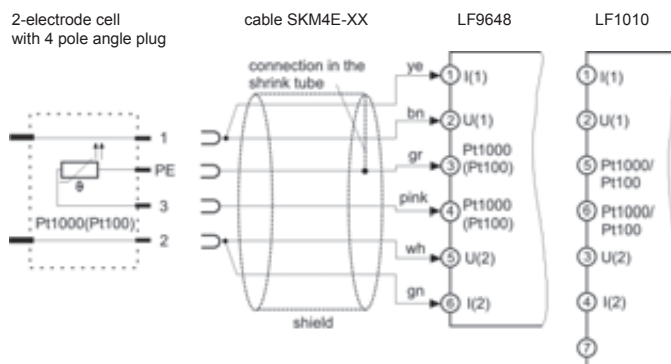


Connection at LF1010 and LF9648

D



E



Compact Conductivity Measuring Transducer GLMU



- Local display of conductivity and temperature
- Freely scalable output scales
- Variable temperature-compensation type
- With local display and galvanic isolation
- 4 to 20 mA version with 2 wires: Power supply via current loop (optionally with 0-10V 3-wire)

Features

The GLMU is used for drinking water and surface water monitoring, fish husbandry, aquariums and measurement in contaminated solutions and waste water or monitoring of neutralisation.

The 4-pole measuring cell of the GLMU-400-MP is especially well-suited for use for higher salt concentrations based on the insensitivity to dirt.

The GLMU has a local display of conductivity and temperature. The output signal is freely scalable and the measuring range and temperature compensation type can be selected by the customer.

Versions

GLMU-200-MP	GLMU-400-MP	GLMU-400-MP-UNI
Incl. 2-pole conductivity measuring cell, compact, single measuring cell	Incl. 4-pole conductivity measuring cell, high-quality, dirt-resistant measuring cell	Universally configurable measuring transducer without measuring cell, for connection of arbitrary measuring cells

Technical data

	GLMU-200-MP	GLMU-400-MP	GLMU-200-MP-RW
Measuring ranges	(Decimal point and resolution can be selected by the customer. Specification of the min. and max. possible measuring range)		
Conductivity	In $\mu\text{S/cm}$: 0.0..200.0 0..2000 In mS/cm : 0.00..20.00 0.0..200.0	In $\mu\text{S/cm}$: 0.0 ... 200.0 0 ... 2000 In mS/cm : 0.00..20.00 0.0..200.0 0..500	In $\mu\text{S/cm}$: 0.0..200.0 0.0..20.00

Spec. resistance	In $\text{k}\Omega\text{cm}$: 5.0..100.0 0.50..10.00 In Ωcm : 50..1000 5.0..100.0	In $\text{k}\Omega\text{cm}$: 0.0..200.0 0.00..20.00 In Ωcm : 1..5000 1.0..500.0 1.00..50.00	In $\text{k}\Omega\text{cm}$: 0..200 0..2000
TDS	In mg/l : 0.0..200.0 0..2000	In mg/l : 0.0..200.0 0..500.0 0..2000 In g/l : 0.0..20.0 0..200	In mg/l : 0.0..200.0 0.0..20.00
Salinity	0.0..70.0 (PSU)	0.0..70.0 (PSU)	
Temperature	-25..+50 °C (device) 0.0..80.0 °C (measuring cell)		

Measuring cell : Conductivity measuring cell with 2/4-pole for various applications

Accuracy
Conductivity : $\pm 0.5\%$ of measured value $\pm 0.3\%$ FS
(-RW: -1% of measured value $\pm 0.3\%$ FS)

Temperature : $\pm 0.2\text{ °C} \pm 1$ digit
Measuring cell connection : 7-pole diode socket

Cell constant : $K = 0.30..1.20$ freely selectable
(-RW: 0.03..0.12)

Temperature compensation
off : No compensation
Lin : Linear compensation (of 0.3..3.0 %/K)
nLF : non-linear compensation for natural water according to EN27888 (DIN 38404)

Output signal : 4..20 mA, (2-wire)
0..1 V or 0..10 V (3-wire)

Auxiliary energy : 12..30 V DC at 4..20 mA
18..30 V DC at 0..10 V

Permissible resistance : $R_A[\Omega] = (U_V[V] - 12V) / 0.02 A$

Permissible load : $R_L > 3000 \Omega$

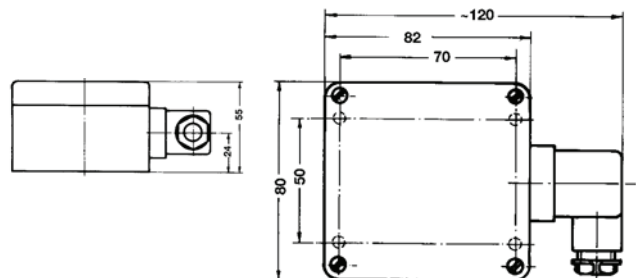
Display : 10 mm height, 4-digit display

Electrical connection : Angle connector according to EN 175301-803/A,

Housing : ABS

Ingress protection : IP65 (excluding 7-pole measuring cell connection socket)

Dimension



Measuring cells



2-pin measuring cell

4-pin measuring cell

Ordering code

GLMU - 1. - MP - 2. - 3. - 4. - 5.

1. Version	
200	Incl. 2-pole measuring cell
400	Incl. 4-pole measuring cell
2. Measuring cell	
TR	Drinking/fresh water
TRP	Drinking/fresh water, screw-in measuring cell
LTG	Organic substances
RW	Purest water
RWP	Purest water, screw-in measuring cell
SW	Dirty/salt water
SWP	Dirty/salt water, screw measuring cell
3. Output signal	
A1	4..20 mA
AV01	0..1 V
AV010	0..10 V
4. Cable length	
L01	1m
L02	2m
L03	3m
L04	4m
L05	5m
L05L	5m cable for -SWP, - RWP and -TRP
5. Options	
00	No options
PG	Measuring cell with fixed PG13.5 thread for pressure applications (up to max. 6 bar)

GLMU - 1. - 2. - 3. - 4.

1. Measuring cell	
	Measuring transducer without measuring cell
2. Output signal	
A1	4..20 mA, 2 wire
AV010	0..10 V, 3 wire
AV01	0..1 V, 3 wire
3. Electrical connection	
	Angle connector EN 175301-803 / A
EM16	Angeled plug connector, short, DIN-43650-A special M16, cable socket with metric screw connection
4. Connection sensor	
M16	M16 socket, 7- pole, standard
M12	M12 socket, 8 pole, e. g. for connection cable A SK8M

Accessories / Spare parts

LFE 202 art. no. 604344

2-pole spare measuring cell (for GLMU-200-MP-TR)

LFE 202-PG art. no. 603594

2-pole spare measuring cell (for GLMU-200-MP-TR-PG)

LFE 210 art. no. 606911

2-pole spare measuring cell (for GLMU-200-MP-LTG)

LFE 220 art. no. 607829

2-pole spare measuring cell (for GLMU-200-MP-RW-RWP)

LFE 230 art. no. 607825

2-pole spare measuring cell (for GLMU-200-MP-RWP)

LFE 240 art. no. 607828

2-pole spare measuring cell (for GLMU-200-MP-RW)

LFE 400 art. no. 604635

4-pole spare measuring cell (for GLMU-400-MP-TR)

LFE 400-PG art. no. 603565

4-pole spare measuring cell (for GLMU-400-MP-SW-PG)

LFE 430-PG art. no. 607827

4-pole spare measuring cell (for GLMU-400-MP-SWP)

PG 13.5 art. no. 603205

Plug-in thread adapter for pressureless insert, for electrode Ø12 mm for connection without adapter

GWA1Z art. no. 602914

Thread adapter PG 13.5 to G1", plastic

GKL 100 art. no. 601396

Conductivity control solution
(100 ml bottle with 1413 µS / cm, in accordance with DIN EN 27888)
Surface water / drinking water applications, among others

GKL 101 art. no. 601398

Conductivity control solution
(250 ml bottle with 84 µS / cm)
Purest water, osmosis system applications, among others

GKL 102 art. no. 601400

Conductivity control solution (100 ml bottle with 50 mS / cm)
Salt water aquarium applications, among others

Digital Conductivity-Converter CONDIX4213



- Digital, conductive 4-electrode flow-converter for outer pipe diameter from 20 mm up to 63 mm
- 6 types of temperature compensation selectable
- Status LED
- RS485 Interface with MODBUS RTU-protocol
- Installation with PVC-U standard fittings
- Flow fitting DFA32 as option accessories
- Suitable for conductivities in a range of 0..20 µS/cm up to 0..500 mS/cm
- Resistant against pollution
- Not influenced by polarisation effect or wire resistive

Characterisitcs

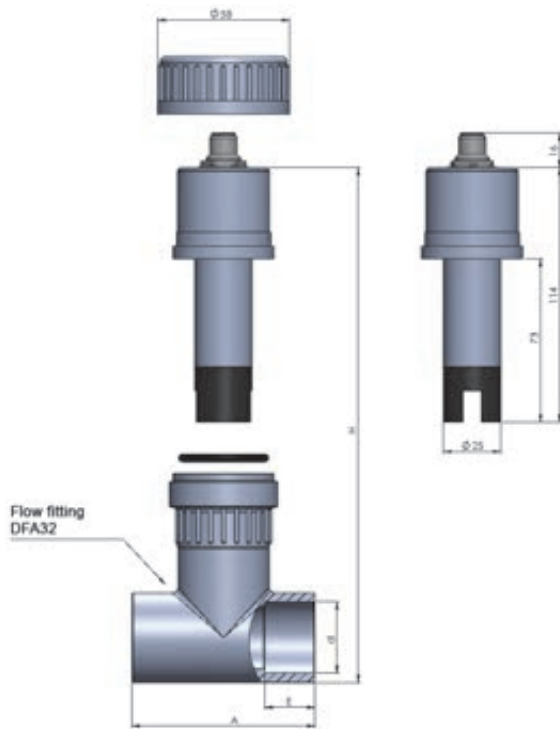
The digital conductivity converter CONDIX4213 is used for the conductivity measurement of liquids. The integrated digital transmitter submits values and parameters to a master (e.g. PLC, SCADA). Device parameters and input configuration are adjustable via the interface or GHMware configuration software. Application dependent six different types of temperature compensation are available.

The 4-electrode measurement principle with a cell constant of C0.5 1/cm is suitable for a range of applications up to 500 mS/cm. Applications can be found in the water treatment of landfill seeping water, seawater or black water treatment on ships

Technical Data

Power supply	
Supply voltage	: 4,7..28 V DC, max. 60 mA
CE-conformity	: EN 61326-1:2013 EN 61326-2-3:2013
Inputs	
Cell constant	: C = 0,5 1/cm (exact cell constant labelled on the type plate)
Measuring range	
Conductivity	: 0..20 µS/cm up to 0..500 mS/cm
Temperature	: -50..+200°C
Basic accurac	
Conductivity	: 1% of the measuring value
Temperature	: 0,2 K
Linearization errors	
Temperature	: 0,1%
Operating temperature	: 0..+60 °C
Ambient temperature	: -10..60 °C
Storage temperature	: -10..60°C
Condensation	: not allowed
Climate classification	: EN 60068-2-38:2010-6
Vibrations	: EN 60068-2-6, GL test 2
Process connection	: PVC fitting with cap nut
Process pressure	: max. -1..16 bar
Materials	
Process material	: PVC-U, casting resin, graphite (electrodes)
Viewing window	: Acrylic glass (PMMA)
Electrical connection	
Design	: 8 pole round connector plug
Materials	: brass nickel plated
Interface	: RS485, Half-Duplex
Protokoll	: MODBUS RTU
Baud rates	: 1200, 2400, 4800, 9600, 19200
Total weight	: ca. 160 g
Protection class	: IP67
Temperature comp. Selectable	: - without temperature compensation - linear temperature coefficient - compensation of natural waters - ASTM-D1125 ultra-pure water - NaCl diluted solution - ASTM-D5391 acidic pure water - ASTM-D5391 alkaline pure water

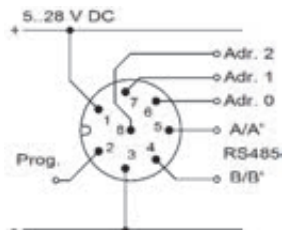
Dimensions



d	H	A	E
20	135	78	22
25	135	78	22
32	135	78	22
40	140	98	26
50	155	118	31
63	169	144	38

Connection diagram

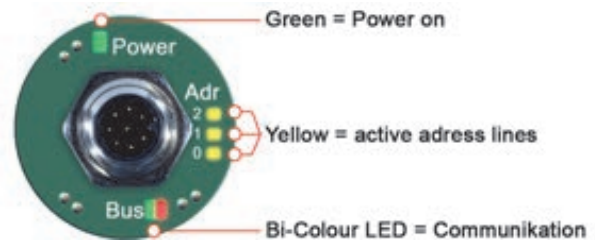
MB-type with
RS485, MODBUS RTU interface



PIN	Signal	Cable color ACI113
1	+ Supply voltage	White
2	Programming PIN (normally not connected)	Brown
3	- Supply voltage, Ground (C / C')	Green
4	B / B' Bus	Yellow
5	A / A' Bus	Grey
6	Adr. 0	Pink
7	Adr. 1	Blue
8	Adr. 2	Red (shield)

The addressing of the CONDIX can be realized with a field attachable female connector (see accessories) or in a junction box.

Optical signaling



Top view CONDIX4213: Optical signalling for supply voltage, bus communication and addressing.

Ordering code

CONDIX 1. 2. 3. 4.
CONDIX - - -

1. Model	4213
2. Cell constant	C0,5
3. Interface	MB RS 485, MODBUS RTU
4. Options	00 Without option

Accessories

Art. No.	Type	Description
-	GHMware	Download: www.ghm-group.de/en/info-desk/
475291	EYY220	Programming adapter
Diverse	DFA32	Flow fitting for CONDIX4213
476332	ACI113-00	Field attachable 8-pole female connector, Belden RKC8/9, Brass nickel plated
476331	ACI113-VA	Field attachable 8-pole female connector, Binder 713, stainless steel
476533	ACI113-002-1-00	8-pole female connector M12 (Brass nickel plated) with shielded cable and wire-end ferrules: 2 m
476116	ACI113-005-1-00	8-pole female connector M12 (Brass nickel plated) with shielded cable and wire-end ferrules: 5 m
476117	ACI113-010-1-00	8-pole female connector M12 (Brass nickel plated) with shielded cable and wire-end ferrules: 10 m
476118	ACI113-025-1-00	8-pole female connector M12 (Brass nickel plated) with shielded cable and wire-end ferrules: 25 m

Digital Conductivity-Converter CONDIX4613



- Digital, conductive 4-electrode flow-converter
- Compact design
- 6 types of temperature compensation selectable
- Status LED
- RS485 Interface with MODBUS RTU-protocol
- Installation with pipe thread DIN ISO 228 (DIN 259; BSP)
- Suitable for conductivities in a range of 0..20 $\mu\text{S}/\text{cm}$ up to 0..200 mS/cm
- Resistant against pollution
- Not influenced by polarisation effect or wire resistive

Characterisitcs

The digital conductivity converter CONDIX4613 is used for the conductivity measurement of liquids. The integrated digital transmitter submits values and parameters to a master (e.g. PLC, SCADA). Device parameters and input configuration are adjustable via the interface or GHMware configuration software. Application dependent six different types of temperature compensation are available.

The 4-electrode measurement principle with a cell constant of 0.4 1/cm is suitable for a range of applications up to 200 mS/cm . Applications can be found in the water treatment of landfill seeping water, seawater or black water treatment on ships.

Technical data

Power supply

Supply voltage : 4,7..28 V DC, max. 60 mA
CE-conformity : EN 61326-1:2013
EN 61326-2-3:2013

Inputs

Cell constant : $C = 0,4 \text{ 1/cm}$ (exact cell constant labelled on the type plate)

Measuring range

Conductivity : 0..20 $\mu\text{S}/\text{cm}$ up to 0..200 mS/cm
Temperature : -50..+200°C

Basic accurac

Conductivity : 1% of the measuring value
Temperature : 0,2 K

Linearization errors

Temperature : 0,1%
Operating temperature : 0..+60 °C
Ambient temperature : -10..60 °C
Storage temperature : -10..60°C
Condensation : not allowed
Climate classification : EN 60068-2-38:2010-6
Vibrations : EN 60068-2-6, GL test 2
Process connection : pipe thread DIN ISO 228 (DIN 259; BSP)
Process pressure : max. -1..16 bar

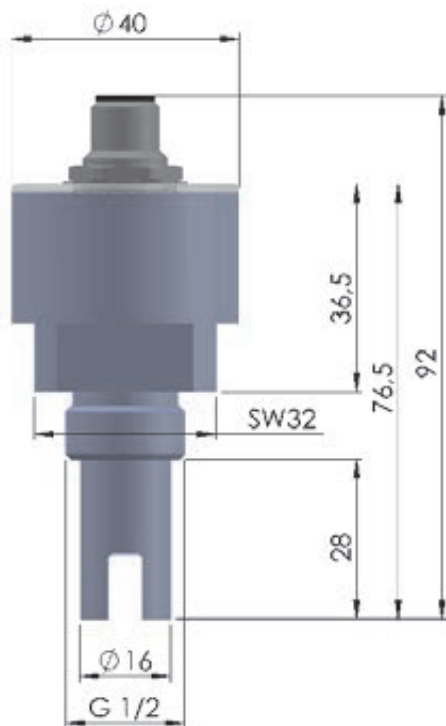
Materials

Process material : PVC-U, casting resin, graphite (electrodes)
Viewing window : Acrylic glass (PMMA)

Electrical connection

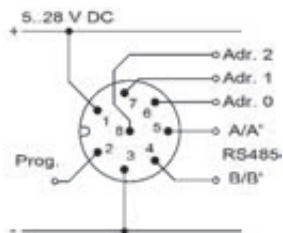
Design : 8 pole round connector plug, M12x1, IP67
Materials : brass nickel plated
Interface : RS485, Half-Duplex
Protokoll : MODBUS RTU
Baud rates : 1200, 2400, 4800, 9600, 19200
Total weight : ca. 160 g
Protection class : IP67
Temperature comp. Selectable :
- without temperature compensation
- linear temperature coefficient
- compensation of natural waters
- ASTM-D1125 ultra-pure water
- NaCl diluted solution
- ASTM-D5391 acidic pure water
- ASTM-D5391 alkaline pure water

Dimensions



Connection diagram

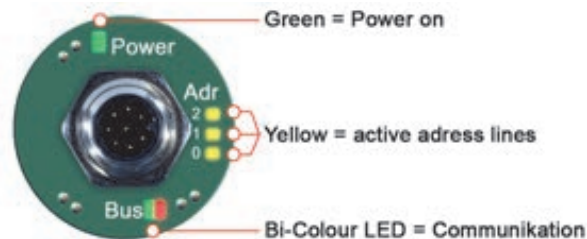
MB-type with RS485, MODBUS RTU interface



PIN	Signal	Cable color ACI113
1	+ Supply voltage	White
2	Programming PIN (normally not connected)	Brown
3	- Supply voltage, Ground (C / C')	Green
4	B / B' Bus	Yellow
5	A / A' Bus	Grey
6	Adr. 0	Pink
7	Adr. 1	Blue
8	Adr. 2	Red (shield)

The addressing of the CONDIX can be realized with a field attachable female connector (see accessories) or in a junction box

Optical signaling



Top view CONDIX4613: Optical signalling for supply voltage, bus communication and addressing.

Ordering code

CONDIX 1. 2. 3. 4. 5.
 - - - -

1. Model	4613
2. Cell constant	C0,4
3. Process connection	G ½ A
4. Interface	MB
5. Options	00

Accessories

Art. No.	Type	Description
-	GHMware	Download: www.ghm-group.de/en/info-desk/
475291	EYY220	Programming adapter
476332	ACI113-00	Field attachable 8-pole female connector, Belden RKC8/9, Brass nickel plated
476331	ACI113-VA	Field attachable 8-pole female connector, Binder 713, stainless steel
476533	ACI113-002-1-00	8-pole female connector M12 (Brass nickel plated) with shielded cable and wire-end ferrules: 2 m
476116	ACI113-005-1-00	8-pole female connector M12 (Brass nickel plated) with shielded cable and wire-end ferrules: 5 m
476117	ACI113-010-1-00	8-pole female connector M12 (Brass nickel plated) with shielded cable and wire-end ferrules: 10 m
476118	ACI113-025-1-00	8-pole female connector M12 (Brass nickel plated) with shielded cable and wire-end ferrules: 25 m

Digital Conductivity-Converter CONDIX4623



- Digital, conductive 4-electrode flow-converter
- 6 types of temperature compensation selectable
- Status LED
- RS485 Interface with MODBUS RTU-protocol
- Installation with pipe thread DIN ISO 228 (DIN 259; BSP)
- Suitable for conductivities in a range of 0..20 $\mu\text{S}/\text{cm}$ up to 0..500 mS/cm
- Resistant against pollution
- Not influenced by polarisation effect or wire resistive

Characteristics

The digital conductivity converter CONDIX4623 is used for the conductivity measurement of liquids. The integrated digital transmitter submits values and parameters to a master (e.g. PLC, SCADA). Device parameters and input configuration are adjustable via the interface or GHMware configuration software.

Application dependent six different types of temperature compensation are available.

The 4-electrode measurement principle with a cell constant of 0.5 $1/\text{cm}$ is suitable for a range of applications up to 500 mS/cm . Applications can be found in the water treatment of landfill seeping water, seawater or black water treatment on ships.

Technical data

Power supply

Supply voltage	: 4,7..28 V DC, max. 60 mA
CE-conformity	: EN 61326-1:2013 EN 61326-2-3:2013

Inputs

Cell constant	: C = 0,5 $1/\text{cm}$ (exact cell constant labelled on the type plate)
---------------	--

Measuring range

Conductivity	: 0..20 $\mu\text{S}/\text{cm}$ up to 0..500 mS/cm
Temperature	: -50..+200°C

Basic accuracy

Conductivity	: 1% of the measuring value
Temperature	: 0,2 K

Linearization errors

Temperature	: 0,1%
Operating temperature	: 0..+60 °C
Ambient temperature	: -10..60 °C
Storage temperature	: -10..60°C
Condensation	: not allowed
Climate classification	: EN 60068-2-38:2010-6
Vibrations	: EN 60068-2-6, GL test 2
Process connection	: pipe thread DIN ISO 228 (DIN 259; BSP)
Process pressure	: max. -1..16 bar

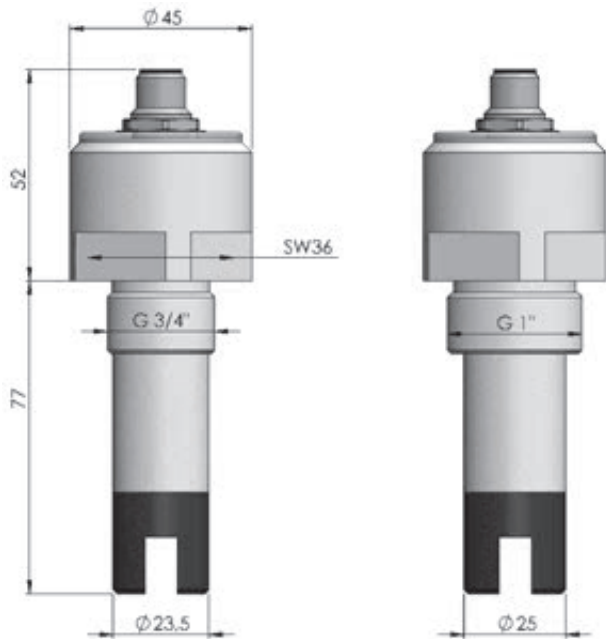
Material

Process material	: PVDF, casting resin, graphite (electrodes)
Viewing window	: Acrylic glass (PMMA)

Electrical connection

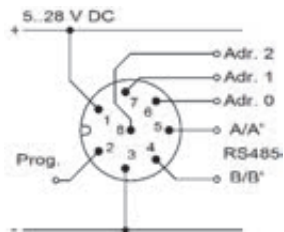
Design	: 8 pole round connector plug M12x1, IP67
Material	: brass nickel plated
Interface	: RS485, Half-Duplex
Protocol	: MODBUS RTU
Baud rates	: 1200, 2400, 4800, 9600, 19200
Total weight	: ca. 160 g
Protection class	: IP67
Temperature comp. selectable	: - without temperature compensation - linear temperature coefficient - compensation of natural waters - ASTM-D1125 ultra-pure water - NaCl diluted solution - ASTM-D5391 acidic pure water - ASTM-D5391 alkaline pure water

Dimensions



Connection diagram

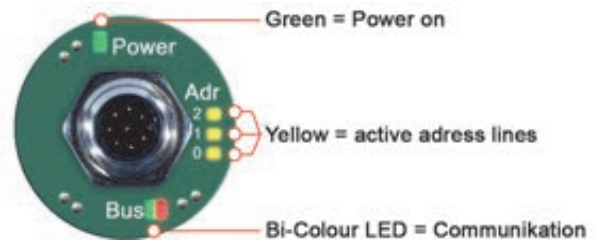
MB-type with
RS485, MODBUS RTU interface



PIN	Signal	Cable color ACI113
1	+ Supply voltage	White
2	Programming PIN (normally not connected)	Brown
3	- Supply voltage, Ground (C / C')	Green
4	B / B' Bus	Yellow
5	A / A' Bus	Grey
6	Adr. 0	Pink
7	Adr. 1	Blue
8	Adr. 2	Red (shield)

The addressing of the CONDIX can be realized with a field attachable female connector (see accessories) or in a junction box.

Optical signalling



Top view CONDIX4623: Optical signalling for supply voltage, bus communication and addressing.

Ordering code

CONDIX 1. 2. 3. 4. 5.
 - - - -

1.	Model	4623
2.	Cell constant	C0,5
3.	Process connection	G 3/4 A G 1 A
4.	Interface	MB RS 485, MODBUS RTU
5.	Options	00 Without option

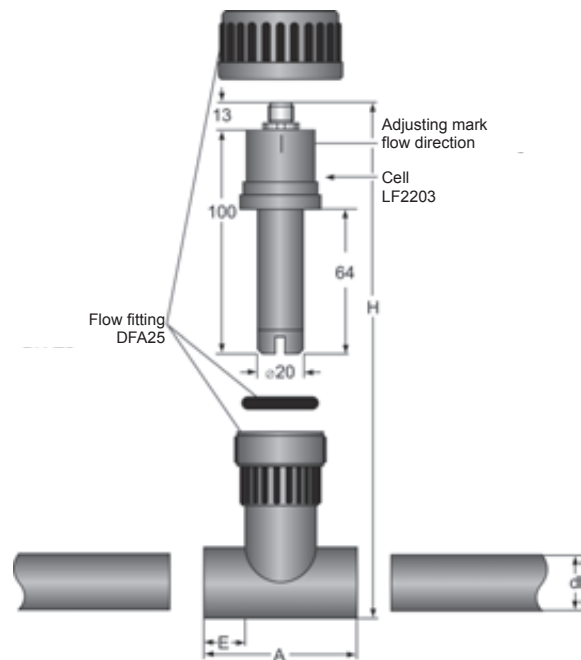
Accessories

Art. No.	Type	Description
-	GHMware	Download: www.ghm-group.de/en/info-desk/
475291	EYY220	Programming adapter
476332	ACI113-00	Field attachable 8-pole female connector, Belden RKC8/9, Brass nickel plated
476331	ACI113-VA	Field attachable 8-pole female connector, Binder 713, stainless steel
476533	ACI113-002-1-00	8-pole female connector M12 (Brass nickel plated) with shielded cable and wire-end ferrules: 2 m
476116	ACI113-005-1-00	8-pole female connector M12 (Brass nickel plated) with shielded cable and wire-end ferrules: 5 m
476117	ACI113-010-1-00	8-pole female connector M12 (Brass nickel plated) with shielded cable and wire-end ferrules: 10 m
476118	ACI113-025-1-00	8-pole female connector M12 (Brass nickel plated) with shielded cable and wire-end ferrules: 25 m

Conductivity Cell LF2203



Dimensions



Characteristics

- 2-electrode conductive flow cell for pipe diameter 25-63 mm
- Measuring range 0..100 µS/cm up to 2 mS/cm

Technical data

Cell constant : C = 1.0 ± 3.5 %
Operating temperature : 0..60 °C
Process pressure : max. 16 bar at 22 °C
Process material : graphite (electrodes),
PVC-U acc. to DIN8061/8062
Electrical connection : 8 pole round connector plug,
M12x1, IP67
-Material : brass nickel plated
Temperature measurement : integrated Pt1000 Sensor DIN IEC751,
class A

Ordering code

1.
LF2203 - C1.0 -

1. Options	
00	without option
03	8 pole round plug SS-type
Accessories	
Flow fitting DFA 25	
d = outer pipe diameter	
DFA25-25-1-1	d = 25 mm
DFA25-32-1-1	d = 32 mm
DFA25-40-1-1	d = 40 mm
DFA25-50-1-1	d = 50 mm
DFA25-63-1-1	d = 63 mm

Connection diagram see page Fehler: Referenz nicht gefunden

Additional accessories see page Fehler: Referenz nicht gefunden

Conductivity Cell LF2603



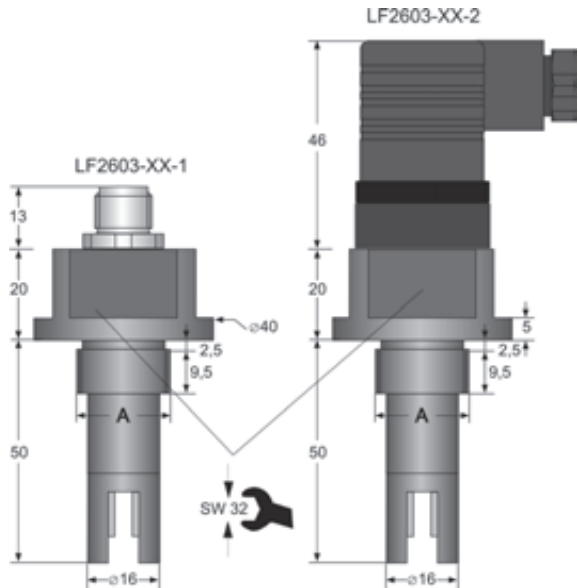
Characteristics

- 2-electrode conductive flow cell for pipe ultra pure water
- Measuring range 0..20 µS/cm up to 0..100 µS/cm

Technical data

Cell constant : C = 0.5 ± 3.5%
Operating temperature : 0..60 °C
Process pressure : max. 16 bar at 22°C
Process material : stainless steel (electrodes),
PVC-U acc. to DIN8061/8062
Electrical connection : 4 pole angle plug acc. to
EN 175301-803/A, IP65 or
8 pole round connector plug
M12x1, IP67
-Material : brass nickel plated
Temperature measurement : integrated Pt1000 Sensor DIN IEC751,
class A

Dimensions



Ordering code

LF2603 - C0.5 - 1. - 2. - 3.

1. Process connection (A)	
G ½ A	cylindrical thread
R ½	conical thread
G ¾ A	cylindrical thread
R ¾	conical thread
2. Electrical connection	
1	8 pole round connector
2	4 pole angle entry plug
3. Options	
00	without option
03	8 pole round connector plug SS-type

Connection diagram see page Fehler: Referenz nicht gefunden

Additional accessories see page Fehler: Referenz nicht gefunden

Conductivity Cell LF2613



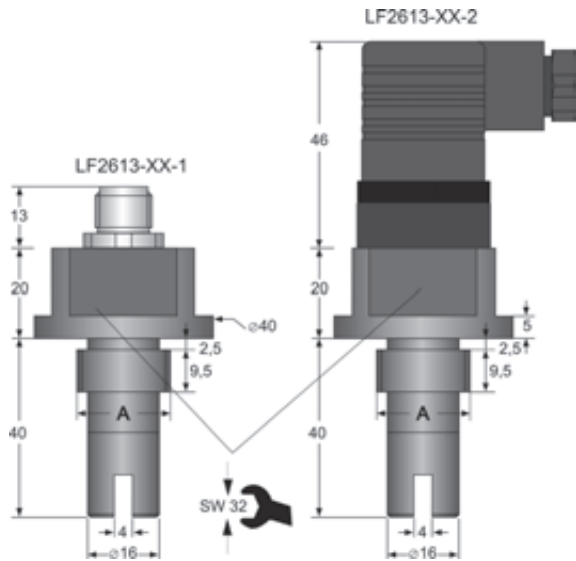
Characteristics

- 2-electrode conductive flow cell for drinking water
- Measuring range 0..100 µS/cm up to 0..2 mS/cm

Technical data

Cell constant : C = 0.9 ± 3.5 %
Operating temperature : 0..60 °C
Process pressure : max. 16 bar at 22 °C
Process material : Graphite electrodes,
PVC-U acc. to DIN8061/8062
Electrical connection : 4 pole angle entry plug
EN 175301-803/A, IP65 or
8 pole round connector plug
M12x1, IP67
-Material : brass nickel plated
Temperature measurement : integrated Pt1000 Sensor DIN IEC751,
class A

Dimensions



Ordering code

LF2613 - C0.9 - 1. - 2. - 3.

1. Process connection (A)	
G ½ A	cylindrical thread
R ½	conical thread
G ¾ A	cylindrical thread
R ¾	conical thread
2. Electrical connection	
1	8 pole round connector
2	4 pole angle entry plug
3. Options	
00	without option
03	8 pole round connector plug SS-type

Connection diagram see page Fehler: Referenz nicht gefunden

Additional accessories see page Fehler: Referenz nicht gefunden

Conductivity Cell LF2653HT



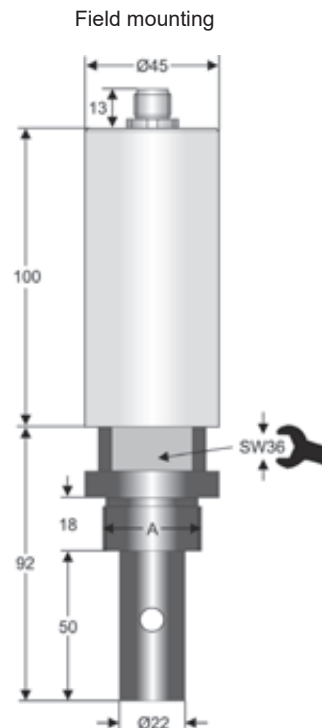
Characteristics

- 2-electrode conductive high temperature cell for pure- and ultra-pure water with pipe thread acc. to DIN ISO 228
- Measuring range 0..0.5 µS/cm up to 0..50 µS/cm

Technical data

Cell constant	: C = 0.1 exact cell constant labeled on the type plate
Operating temperature	: 0..200 °C
Process pressure	: max. 20 bar
Process material	: stainless steel 1.4404 (316L), ceramic, Kalrez
Electrical connection	
Field mounting	: 8 pole round connector plug M12x1, IP67
Material	: brass nickel plated
Temperature measurement	: integrated Pt1000 sensor DIN IEC751, Class A

Dimensions

**Ordering code**

LF ^{1.} - C0.1 - ^{2.} - ^{3.}

1. Model	
2653HT	field mounting
2. Process connection	
G ¾ A	
G 1 A	
G 1 ¼ A	
3. Options	
00	without option
03	8 pole round connector plug SS-type

Connection diagram see page Fehler: Verweis nicht gefunden

Additional accessories see page Fehler: Verweis nicht gefunden

Conductivity Cell LF1453 / LF2453



Characteristics

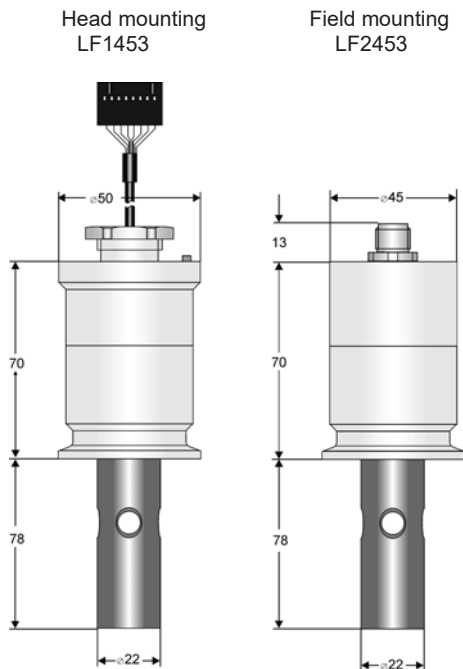
- 2-electrode ultra-pure water cell with Clamp connection acc. to DIN 32676 or Südmo Aseptic connection
- FDA compliant
- Application field: food industry
- Measuring range 0..0.5 µS/cm up to 0..50 µS/cm

Technical data

Cell constant : C = 0.1 exact cell constant labeled on the type plate
Process temperature : -10..+120 °C
CIP-/SIP-capable 140 °C < 1 h
Process pressure : max. 16 bar
Process material : stainless steel 1.4404 (316L), electropolished; PVDF; seal EPDM, FDA-certified, PEEK

Electrical connection
LF1453 : flat cable connector, only head mounting UNICON-LF
LF2453 : 8 pole round connector plug M12x1, IP67
Material : brass nickel plated
Temperature measurement : integrated Pt1000 sensor DIN IEC751, class A

Dimensions



Ordering code

1. 2.
LF - C0.1 -

1. Model	
1453	head mounting UNICON-LF
2453	field mounting
2. Options	
00	without option
03	8 pole round plug SS-type
11	Process connection Südmo Aseptic, DIN 11850

Connection diagram see page Fehler: Verweis nicht gefunden

Accessories see page Fehler: Verweis nicht gefunden

Conductivity Cell LF1553 / LF2553



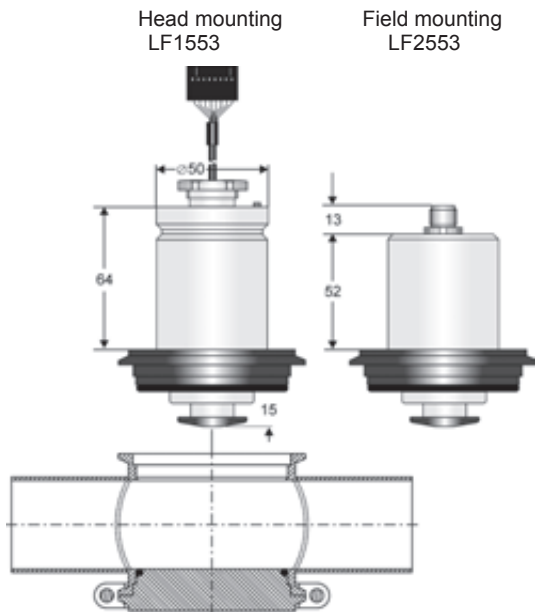
Characteristics

- 2-electrode ultra pure water cell for VARIVENT® Inline-case
- FDA compliant
- Application field food industry
- Measuring range 0..0.5 µS/cm up to 0..50 µS/cm

Technical data

Cell constant	: C = 0.1 exact cell constant labeled on the type plate
Process temperature	: -10..+120 °C CIP-/SIP-capable 140 °C < 1 h
Process pressure	: max. 16 bar
Process material	: stainless steel 1.4404; PEEK; seal EPDM, FDA compliant
Electrical connection	
LF1553	: flat cable connector, only head mounting UNICON-LF
LF2553	: 8 pole round connector plug M12x1, IP67
-Material	: brass nickel plated
Temperature measurement	: integrated Pt1000 sensor DIN IEC751, class A

Dimensions



Ordering code

1. 2. 3.
LF - C0.1 - -

1. Model	
1553	head mounting UNICON-LF
2553	field mounting
2. Process connection	
DN25	VARIVENT® DN25
DN40	VARIVENT® DN40..DN125
3. Options	
00	without option
03	8 pole round plug SS-type

Connection diagram see page Fehler: Referenz nicht gefunden

Accessories see page Fehler: Referenz nicht gefunden

Note:
Conductivity cells LF1553 / LF2553 should **not** be mounted together with other cells in **one** VARIVENT® case.

Conductivity Cell

LF1653 / LF2653



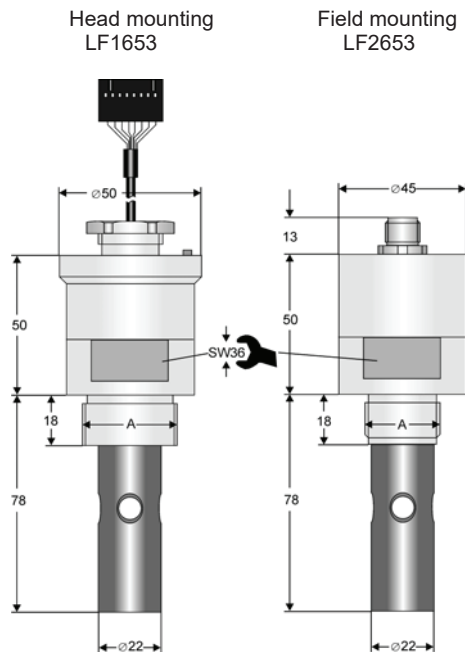
Characteristics

- 2-electrode ultra-pure water cell with pipe thread acc. to DIN ISO228
- Measuring range from 0..0.5 µS/cm up to0..50 µS/cm

Technical data

Cell constant	: C = 0.1 exact cell constant labeled on the type plate
Process temperature	: -10..+120 °C CIP-/SIP-capable 140 °C < 1 h
Process pressure	: max. 16 bar
Process material	: stainless steel 1.4404 (316L), electropolished; PVDF; seal EPDM, PEEK
<i>Electrical connection</i>	
LF1653	: flat cable connector, only head mounting UNICON-LF
LF2653	: 8 pole round connector plug M12x1, IP67
Material	: brass nickel plated
Temperature measurement	: integrated Pt1000 sensor DIN IEC751, class A

Dimensions



Ordering code

1. 2. 3.
LF - C0.1 - -

1. Model	
1653	head mounting UNICON-LF
2653	field mounting
2. Process connection A	
G ¾ A	
G 1 A	
3. Options	
00	without option
03	8 pole round plug SS-type

Connection diagram see page Fehler: Verweis nicht gefunden

Accessories see page Fehler: Verweis nicht gefunden

Conductivity Cell LF4003



Characteristics

- 4-electrode immersion cell for wells and open systems up to 100 m depth of water
- Measuring range 0..20 µS/cm up to 0..500 mS/cm
- Insensitive against soiling
- No influence from polarization effects and line resistance

Technical data

Cell constant	: C = 0.5 exact cell constant labeled on the type plate
Operating temperature	: 0..60 °C
Process pressure	: max. 10 bar
Process material	: PVC-U acc. to DIN 8061/8062, casting resin, stainless steel 1.4305, graphite (electrodes), PUR cable
Electrical connection	: 8 pole round connector plug M12x1, IP67
-Material	: brass nickel plated
Temperature measurement	: integrated Pt1000 sensor DIN IEC751, Class A

Dimensions



Ordering code

LF4003 - C0.5 - 1. - 2. - 3.

1. Connection type	
1	cable with 6 pole pigtail, PU-cable
2	8 pole cable plug for connection at UNICON-LF, field case, plug SS-type
2. Cable length [m] please state in clear text	
3. Options	
00	without option
Accessories	
G200-M8	additional weight 200g with thread bolt, SS-type 1.4401
ASK-6	anchor clamp, range 5.5..9.5 mm (steel zinc plated)

Connection diagram see page Fehler: Referenz nicht gefunden

Additional accessories see page Fehler: Referenz nicht gefunden

Conductivity Cell LF3043 / LF4043



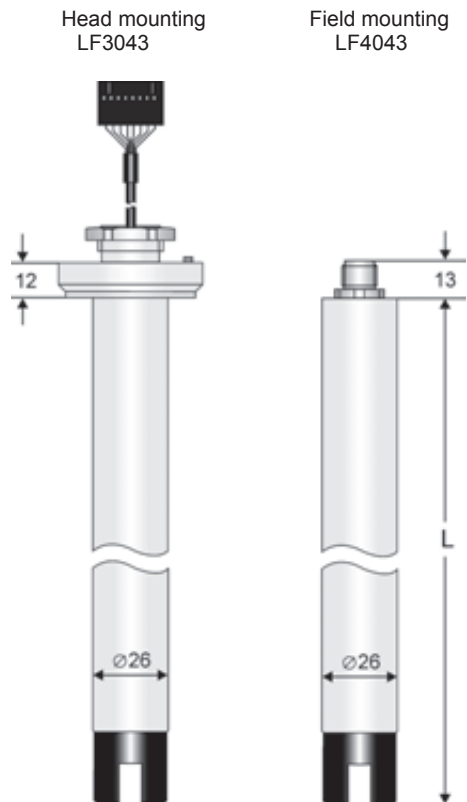
Characteristics

- 4-electrode immersion cell for wells and open systems
- Measuring range 0..20 µS/cm up to 0..500 mS/cm
- Insensitive against soiling
- No influence from polarization effects and line resistance

Technical data

Cell constant	: C = 0.5 exact cell constant labeled on the type plate
Operating temperature	: -20..60 °C
Process material (electrodes)	: PA polyamide, casting resin, graphite
Electrical connection	
LF3043	: flat cable connector, only head mounting UNICON-LF
LF4043	: 8 pole round connector plug M12x1, IP67
-Material	brass nickel plated
Temperature measurement	: integrated Pt1000 sensor DIN IEC751, class A

Dimensions



Ordering code

1. 2. 3.
LF - C0.5 - -

1. Model	
3043	head mounting UNICON-LF
4043	field mounting
2. Process length (L) [mm]*	
300	
500	
600	
800	
1000	
3. Options	
00	without option
03	8 pole round plug SS-type

* custom length on request

Connection diagram see page Fehler: Referenz nicht gefunden

Additional accessories see page Fehler: Referenz nicht gefunden

Conductivity Cell

LF3213 / LF4213



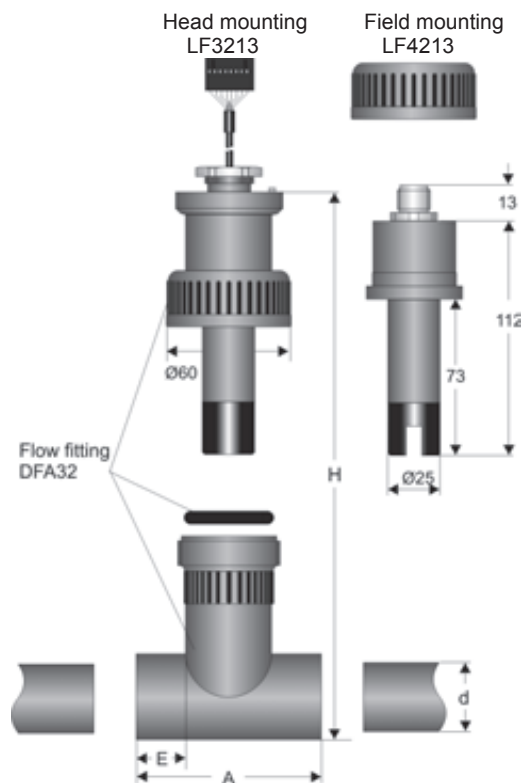
Characteristics

- 4-electrode flow cell for outer pipe diameter from 20 mm up to 63 mm
- Mounting with PVC-U standard fittings
- Measuring range from 0..20 $\mu\text{S}/\text{cm}$ up to 0..500 mS/cm
- Insensitive against soiling
- No influence from polarization effects and line resistance
- Accessory flow fitting DFA32

Technical data

Cell constant	: C = 0.5 exact cell constant labeled on the type plate
Operating temperature	: 0..60 °C
Process pressure	: max. 16 bar at 22°C
Process connection	: PVC fitting with cap nut
Process material	: PVC-U, casting resin, graphite (electrodes)
Electrical connection	
LF3213	: flat cable connector, only head mounting UNICON-LF
LF4213	: 8 pole round connector plug M12x1, IP67
-Material	: brass nickel plated
Temperature measurement	: integrated Pt1000 sensor DIN IEC751, class A

Dimensions



d	H	A	E
20	142	78	22
25	142	78	22
32	142	78	22
40	154	98	26
50	165	118	31
63	179	144	38

Ordering code

1. 2.
LF - C0.5 -

1. Model (including cap nut)	
3213	head mounting UNICON-LF
4213	field mounting
2. Options	
00	without option
03	8 pole cable plug SS-type for connection at UNICON-LF, field case
Accessory flow fitting DFA 32, PVC-U	
DFA32-20-1-1	d = 20 mm
DFA32-25-1-1	d = 25 mm
DFA32-32-1-1	d = 32 mm
DFA32-40-1-1	d = 40 mm
DFA32-50-1-1	d = 50 mm
DFA32-63-1-1	d = 63 mm

Connection diagram see page Fehler: Referenz nicht gefunden

Additional accessories see page Fehler: Referenz nicht gefunden

Conductivity Cell LF3433 / LF4433



Characteristics

- 4-electrode conductive flow cell for pipe systems with Clamp-connection acc. to DIN 32676
- Measuring range 0..20 µS/cm up to 0..500 mS/cm
- Insensitive against soiling
- No influence from polarization effects and line resistance

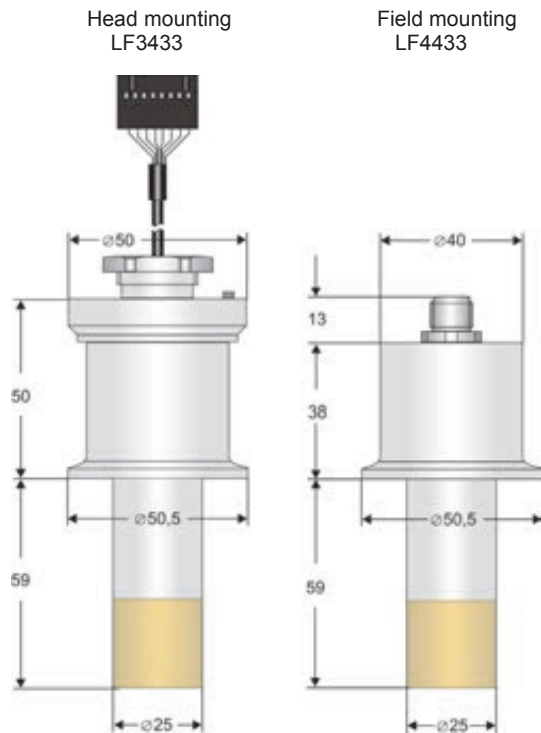
Technical data

Cell constant : C = 0.4 exact cell constant labeled on the type plate
Operating temperature : -10..+120 °C
CIP-/SIP-capable 140°C < 1h
Process pressure : max. 16 bar
Process connection : Clamp acc. to DIN 32676
Process material : PEEK, PVDF, stainless steel 1.4404, Graphite (electrodes), Seal EPDM

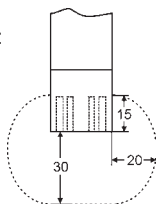
Electrical connection

LF3433 : flat cable connector, only head mounting UNICON-LF
LF4433 : 8 pole round connector plug M12x1, IP67
-Material : brass nickel plated
Temperature measurement : integrated Pt1000 sensor DIN IEC751, class A

Dimensions



Mounting distance:



Note:
Cell constant must be checked again, if the free space is less than illustrated.

Ordering code

1. 2.
LF - C0.4 -

1. Model	
3433	head mounting UNICON-LF
4433	field mounting
2. Options	
00	without option
03	8 pole round plug SS-type

Connection diagram see page Fehler: Referenz nicht gefunden

Accessories see page Fehler: Referenz nicht gefunden

Conductivity Cell LF3533 / LF4533



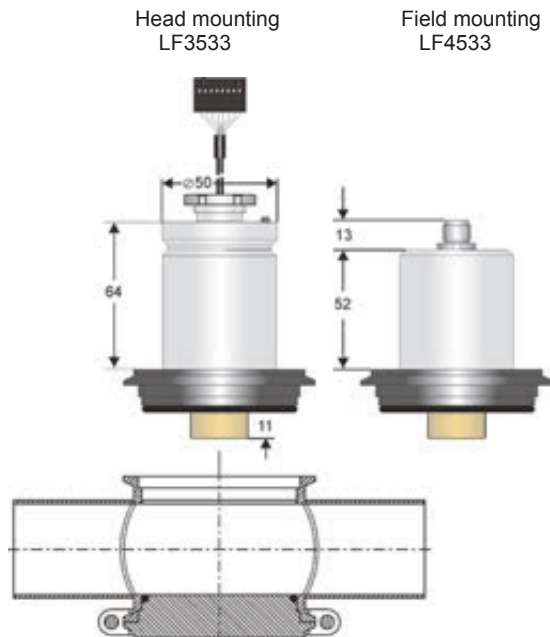
Characteristics

- 4-electrode hygienic flow-cell for VARIVENT®-Inline cases
- Application fields food- and chemical industry
- Measuring range from 0..20 µS/cm up to 0..500 mS/cm
- Insensitive against soiling
- No influence from polarization effects and line resistance

Technical data

Cell constant	: C = 0.4 exact cell constant labeled on the type plate
Process temperature	: -10..+120 °C CIP-/SIP-capable 140°C < 1h
Process pressure	: max. 16 bar
Process connection	: VARIVENT® Inline case
Process material	: PEEK, stainless steel 1.4404, graphite (electrodes) seal EPDM
Electrical connection	
LF3533	: flat cable connector, only head mounting UNICON-LF
LF4533	: 8 pole round connector plug M12x1, IP67
-Material	: brass nickel plated
Temperature measurement	: integrated Pt1000 sensor DIN IEC751, class A

Dimensions



Ordering code

1. 2. 3.
LF - C0.4 - -

1. Model	
3533	head mounting UNICON-LF
4533	field mounting
2. Process connection	
DN25	VARIVENT connection DN25
DN40	VARIVENT connection DN40..DN125
3. Options	
00	without option
03	8 pole round plug SS-type

Connection diagram see page Fehler: Referenz nicht gefunden

Accessories see page Fehler: Referenz nicht gefunden

Note:
Conductivity cells LF1553 / LF2553 should **not** be mounted together with other cells in **one** VARIVENT® case.

Conductivity Cell LF3623 / LF4623



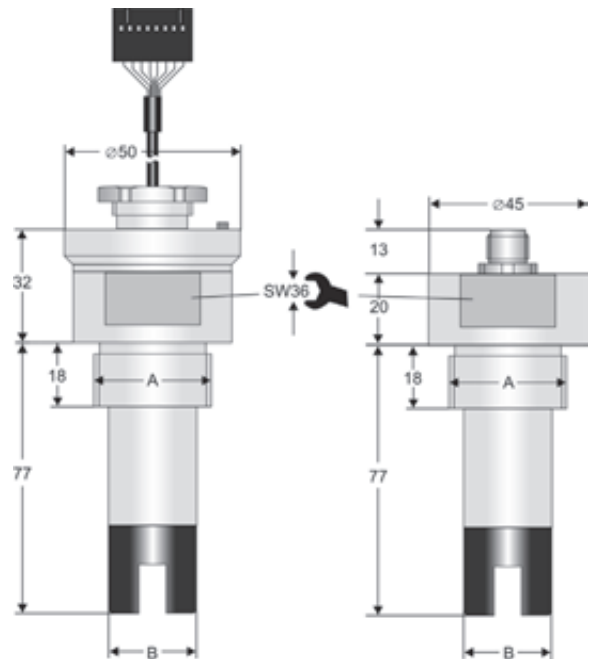
Characteristics

- 4-electrode screw-in cell; pipe thread acc. to DIN ISO 228
- Measuring range 0..20 µS/cm up to 0..500 mS/cm
- Insensitive against soiling
- No influence from polarization effects and line resistance

Technical data

Cell constant	: C = 0.5 exact cell constant labeled on the type plate
Process temperature	: -10..+120 °C
Process pressure	: max. 16 bar
Process connection	: pipe thread acc. to DIN ISO228
Process material (electrodes)	: PVDF, casting resin, graphite
Electrical connection	
LF3623	: flat cable connector, only head mounting UNICON-LF
LF4623	: 8 pole round connector plug M12x1, IP67
-Material	: brass nickel plated
Temperature measurement	: integrated Pt1000 sensor DIN IEC751, class A

Dimensions



LF3623
for head mounting UNICON-LF

LF4623
for field mounting

Process connection

A	BØ [mm]
G ¾A	23,5
G 1 A	25

Ordering code

1. 2. 3.
LF - C0.5 - -

1. Model	
3623	head mounting UNICON-LF
4623	field mounting
2. Process connection A	
G ¾A	
G 1 A	
3. Options	
00	without option
03	8 pole round plug SS-type

Conductivity Cell

LF3733 / LF4733



Characteristics

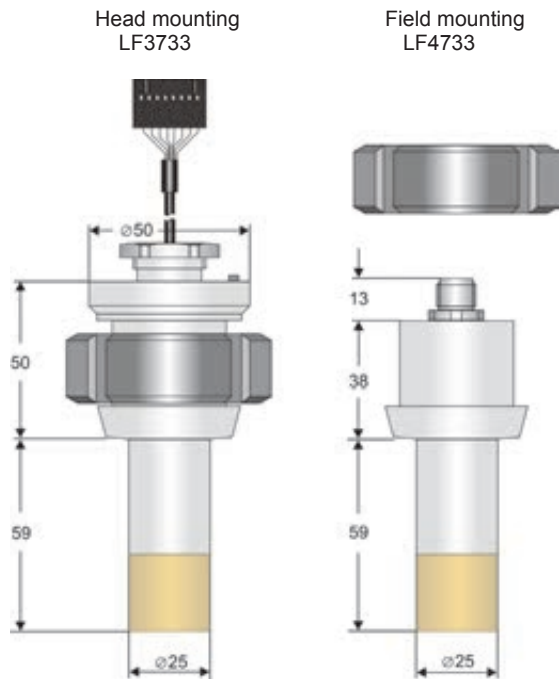
- 4-electrode hygienic cell for milk pipe connection acc. to DIN 11887
- Application fields: food- and chemical industry
- Measuring range from 0..20 µS/cm up to 0..500 mS/cm
- Insensitive against soiling
- No influence from polarization effects and line resistance

Technical data

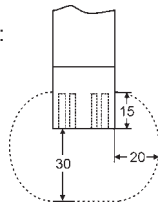
Cell constant	: C = 0.4 exact cell constant labeled on the type plate
Process temperature	: -10..+120 °C CIP-/SIP-capable 140°C < 1h
Process pressure	: max. 16 bar
Process connection	: milk pipe acc. to DIN 11887
Process material	: PEEK, PVDF, stainless steel 1.4404 , graphite (electrodes), seal EPDM

Electrical connection	
LF3733	: flat cable connector, only head mounting UNICON-LF
LF4733	: 8 pole round connector plug M12x1, IP67
-Material	: brass nickel plated
Temperature measurement	: integrated Pt1000 sensor DIN IEC751, class A

Dimensions



Mounting distance:



Note:
Cell constant must be checked again, if the free space is less than illustrated.

Ordering code

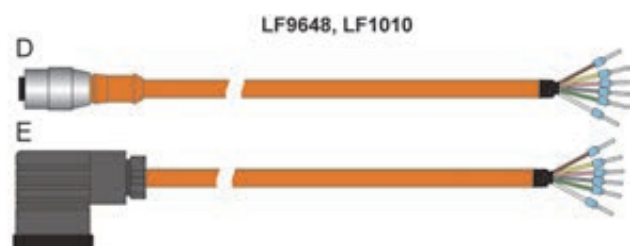
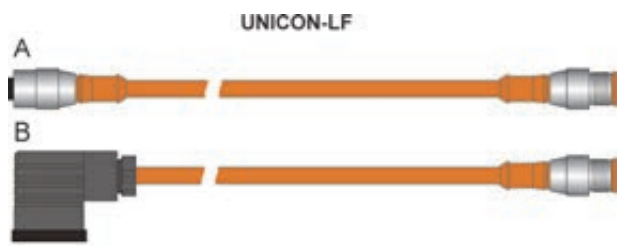
1. 2.
LF - C0.4 -

1. Model	
3733	head mounting UNICON-LF
4733	field mounting
2. Process connection (incl. Slot nut 1.4301))	
DN25	
DN40	
DN50	
DN65	
3. Options	
00	without option
03	8 pole round plug SS-type

Connection diagram see page Fehler: Referenz nicht gefunden

Accessories see page Fehler: Referenz nicht gefunden

Accessories for Conductivity Measurement



Connection cable

Connection cable A

for 2- and 4-electrode cells at UNICON-LF field case with 8 pole cable socket and 8 pole cable plug, brass plated, PU-cable

Ordering No.	length [m]	protection class
SKM8-02	2	IP67
SKM8-05	5	IP67
as before, but plug SS-type, PVC cable		
SKM8-02-VA	2	IP67
SKM8-05-VA	5	IP67

Connection cable B

for 2-electrode-cells at UNICON-LF field case with 4 pole angle entry socket acc. to DIN EN 175301-803/A and 8 pole cable plug brass plated, PU-cable

Ordering No.	length [m]	protection class
SKM4B-02	2	IP65
SKM4B-05	5	IP65
as before, but plug SS-type, PVC cable		
SKM4B-02-VA	2	IP65
SKM4B-05-VA	5	IP65

Connection cable D

for 2- and 4-electrode-cells at LF1010/LF9648 with 8 pole cable socket brass plated and 6 pole pigtail, PU-cable

Ordering No.	length [m]	protection class
SKM8E-02	2	IP67
SKM8E-05	5	IP67
SKM8E-10	10	IP67
SKM8E-25	25	IP67
as before, but plug SS-type, PVC cable		
SKM8E-02-VA	2	IP67
SKM8E-05-VA	5	IP67
SKM8E-10-VA	10	IP67
SKM8E-25-VA	25	IP67

Connection cable E

for 2-electrode-cells at LF1010/LF9648 with 4 pole angle entry socket DIN EN 175301-803/A and 6 pole pigtail, PU-cable

Ordering No.	length [m]	protection class
SKM4E-02	2	IP65
SKM4E-05	5	IP65
SKM4E-10	10	IP65
SKM4E-25	25	IP65

Calibration accessories

Reference solution for calibration (250 ml)

Ordering No.	Conductivity [mS/cm] at 25°C
REF-LF-0001	0.147
REF-LF-0010	1.413
REF-LF-0100	12.88
REF-LF-1000	111.8

Reference solution for calibration acc. to USP<645>, (1000 ml)

Ordering No.	Conductivity [µS/cm] at 25°C
EC15	15,0

Precision-thermometer

Ordering No.	Measuring range °C
N63802	17.0..35.0 scale solution 0.05 °C accuracy ±0.1 °C



Programming Adapter EYY220



- Universal adapter
- Suitable for all digital sensors with MODBUS/RS485 interface
- USB 2.0 (3.x compatible)

Characteristics

The Programming adapter fulfills all conditions for the configuration of digital sensors with MODBUS-interface. In conjunction with a PC or programming device and GHMware, parameters (e.g. cell constant, temperature compensation, measuring unit, etc.) can be adjusted and readings can be recorded.

The GHMware Programming Software could be downloaded free of charge at our homepage:

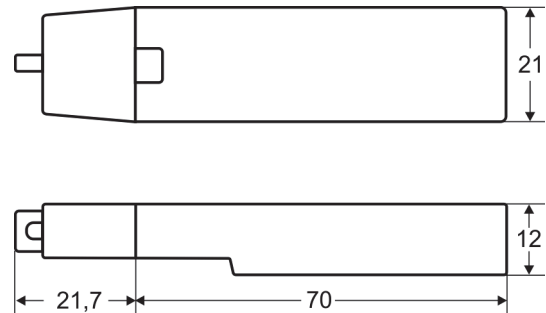
<https://www.ghm-group.de/en/info-desk/>

Technical Data

Power supply

Supply voltage	: USB-Host
Power consumption	: 85mW (free running) – 400mW (with sensor connected)
Operat. temperature	: -10...+55 °C
Storage temperature	: -10...+60 °C
Relative humidity	: < 95 %
Bedewing	: not permissible
CE-conformity	: EN 55022:2011-12 EN 55024:2011-09
Electrical connection	: USB 2.0 (3.x compatible)
Sensor connection	: 8-pol. M12 round plug
Connection cable	: PVC cable 1,5 m
Case	: ABS, grey

Dimensions



Optical signalling

LED	Description
Green (dimly lit), permanantly	Adapter supplied via USB
Green (bright lit) flashing	Device sends data
Red flashing	Device receives data
Red & green (bright lit) flashing	EYY220 communicates with the MODBUS device
Green (dimly lit) flashing	Power supply unstable / too weak. Test other port, dispence on USB hub

Operation example



Ordering code

1.
EYY ☐

1. Design type
220 Input USB 2.0

Your direct contact to us



+49 2191 9672-0



info@ghm-group.de



Headquarters

GHM Messtechnik GmbH
GHM GROUP CORPORATE
Tenter Weg 2-8
42897 Remscheid | GERMANY
Phone +49 2191 9672-0
Fax +49 2191 9672-40
info@ghm-group.de
www.ghm-group.de

Center of Competence

GHM Messtechnik GmbH
GHM GROUP – Greisinger
Hans-Sachs-Straße 26
93128 Regensburg | GERMANY
Phone +49 9402 9383-52
Fax +49 9402 9383-33
info@greisinger.de
www.greisinger.de

GHM Messtechnik GmbH
GHM GROUP – Honsberg
Tenter Weg 2-8
42897 Remscheid | GERMANY
Phone +49 2191 9672-0
Fax +49 2191 9672-40
info@ghm-group.de
www.ghm-group.de

GHM Messtechnik GmbH
GHM GROUP – Martens
Kiebitzhörn 18
22885 Barsbüttel | GERMANY
Phone +49 40 67073-0
Fax +49 40 67073-288
info@ghm-group.de
www.ghm-group.de

GHM Messtechnik GmbH
GHM GROUP – Imtron
Carl-Benz-Straße 11
88696 Owingen | GERMANY
Phone +49 7551 9290-0
Fax +49 7551 9290-90
info@ghm-group.de
www.ghm-group.de

Delta OHM S.r.l. a socio unico
GHM GROUP – Delta OHM
Via Marconi 5
35030 Caselle di Selvazzano
Padova (PD) | ITALY
Phone +39 049 8977150
info@deltaohm.com
www.deltaohm.com

Valco srl
GHM GROUP – Val.co
Via Rovereto 9/11
20014 S. Ilario di Nerviano
Milano (MI) | ITALY
Phone +39 0331 53 59 20
valco@valco.it
www.valco.it

GHM GROUP International

Austria

GHM Messtechnik GmbH
Office Austria
Breitenseer Str. 76/1/36
1140 Vienna | AUSTRIA
Phone +43 660 7335603
a.froestl@ghm-messtechnik.de
www.ghm-group.de

Brazil & Latin America

GHM Messtechnik Do Brasil Ltda
Av. José de Souza Campos,
1073, cj 06 | Campinas, SP
13025 320 | BRAZIL
Phone +55 19 98275 0069
info@grupoghm.com.br

Czech Republic / Slovakia

GHM Greisinger s.r.o.
Ovci hajek 2 / 2153
158 00 Prague 5
Nove Butovice | CZECH REPUBLIC
Phone +420 251 613828
Fax +420 251 612607
info@greisinger.cz
www.greisinger.cz

Denmark

GHM Maaleteknik ApS
Maarslet Byvej 2
8320 Maarslet | DENMARK
Phone +45 646492-00
Fax +45 646492-01
info@ghm.dk
www.ghm.dk

France

GHM GROUP France SAS
Parc des Pivottes
9 Rue de Catalogne
69150 Décines (Lyon) | FRANCE
Phone +33 6 60 32 06 35
contact@ghm-group.fr
www.ghm-group.fr

India

GHM Messtechnik India Pvt Ltd.
209 | Udyog Bhavan
Sonowala Road | Gregaon (E)
Mumbai - 400 063 | INDIA
Phone +91 22 40236235
info@ghmgroup.in
www.ghmgroup.in

Italy

Sales Greisinger & Delta OHM
GHM GROUP – Delta OHM
Via Marconi 5
35030 Caselle di Selvazzano
Padova (PD) | ITALY
Phone +39 049 8977150
info@deltaohm.com

Italy

Sales Honsberg, Martens, Val.co
GHM GROUP – Val.co
Via Rovereto 9/11
20014 S. Ilario di Nerviano
Milano (MI) | ITALY
Phone +39 0331 53 59 20
alessandro.perego@valco.it

Netherlands

GHM Meettechniek BV
Zeeltweg 30
3755 KA Eemnes
NETHERLANDS
Phone +31 35 53805-40
Fax +31 35 53805-41
info@ghm-nl.com
www.ghm-nl.com

South Africa

GHM Messtechnik SA (Pty) Ltd
16 Olivier Street
Verwoerdpark, Alberton 1453
SOUTH AFRICA
Phone +27 74 4590040
j.grobler@ghm-sa.co.za



Visit us: www.ghm-group.de