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JUMO BlackLine Lf-GT / -EC electrolytic 2-electrode conductivity cells

Cell constants K=0.01-1.0 and 3.0

202922 Series

- k for universal application, e.g. drinking and surface water monitoring, ion exchangers and reverse osmosis plant, construction of air conditioning and cooling systems, horticultural technology, sea water and fresh water aquaculture, mildly contaminated industrial rinse and process water, high-purity water monitoring, etc.
- k compact style for universal application
- k manufactured from physiologically safe materials



JUMO BlackLine Lf-GT with the cell constants K=1.0 and K=3.0

The GT version features a special graphite as the electrode material. The graphite has been especially treated to achieve - in conjunction with suitable evaluation devices - measuring ranges up to 100 mS/cm and above. A temperature probe can optionally be integrated. The conductivity cell with 120 mm fitting length and a shaft diameter of 12 mm can be used in combination with standard pH or redox electrodes in suitable built-in fittings. The sensor is also ideally suited for linking with handheld or laboratory measuring equipment. When used as an online sensor, suitable flow-through fittings must be employed (see JUMO data sheets 20.2810, 20.2820, 20.2822).

JUMO BlackLine Lf-EC with the cell constants K=0.01, K=0.1 and K=1.0

The principal features of the EC version are its very compact construction and the Pt100 that is integrated as standard. With a fitting length of just 40 mm (or 63 mm), the sensors can also be screwed into pipelines with a small nominal diameter. To this end, the conductivity cells either have a G1/2A or 1/2"-14 thread. The version with K=1.0 achieves a measuring range of 0.1 to about 5000 µS/cm (5mS/cm). Titanium pins function as the measuring electrodes here. The version with K=1.0 has been implemented as a coaxial cell and can be used to about 1000 µS/cm. Cells with K=0.01 cover ranges from 0.05 to 20 µS/cm. They are therefore extremely suitable for pure and high-purity water applications. The electrode material for these cells is stainless steel 1.4571.

Operating principle

The measuring cells in the 202922 series are 2-electrode cells. A transmitter applies an AC voltage to the cells. The current flowing through the liquid and the electrodes is determined by the conductivity of the liquid.

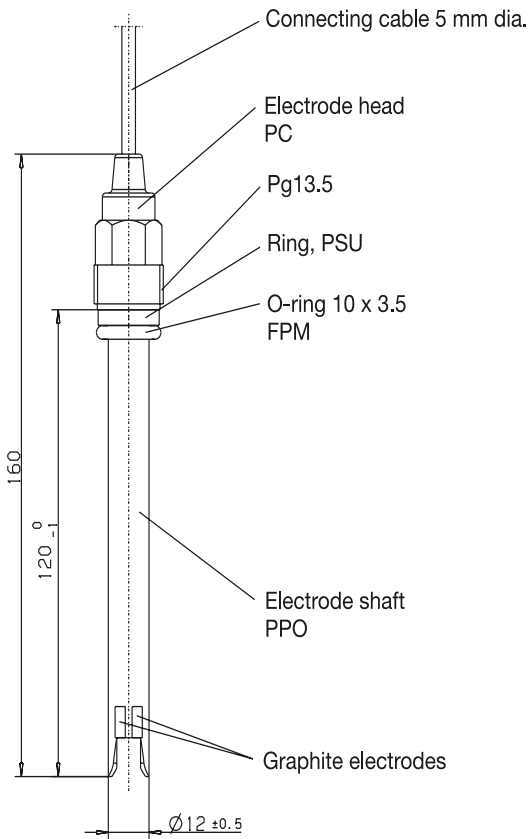
Technical data

Type	JUMO BlackLine Lf-GT		JUMO BlackLine Lf-EC		
Cell constant ¹	K=1.0	K=3.0	K=0.01	K=0.1	K=1.0
Typical measuring range ²	0.1 to approx. 10 mS/cm (with the appropriate evaluation equipment: up to 100 mS/cm)	0.1 to approx. 30 mS/cm (with the appropriate evaluation equipment: up to 200 mS/cm)	0.05 to approx. 20 µS/cm	0.1 to approx. 1000 µS/cm	0.1 to approx. 5000 µS/cm
Temperature compensation	none / Pt100 / Pt1000		Pt100		
Process connection	Pg13.5 screw-in thread		G1/2A or 1/2"-14 NPT screw-in thread		
Electrode material	special graphite		stainless steel 1.4571		titanium
Body material	PPO (polyphenylene oxide)		PEI (polyetherimide)		
Operating temperature	-5 to +80°C		-5 to +90°C		
Maximum pressure	6 bar (at 25°C)		6 bar (at 25°C)		
Electrical connection	attached cable (free cable ends) or M12 connector		attached cable (free cable ends) M12 connector		

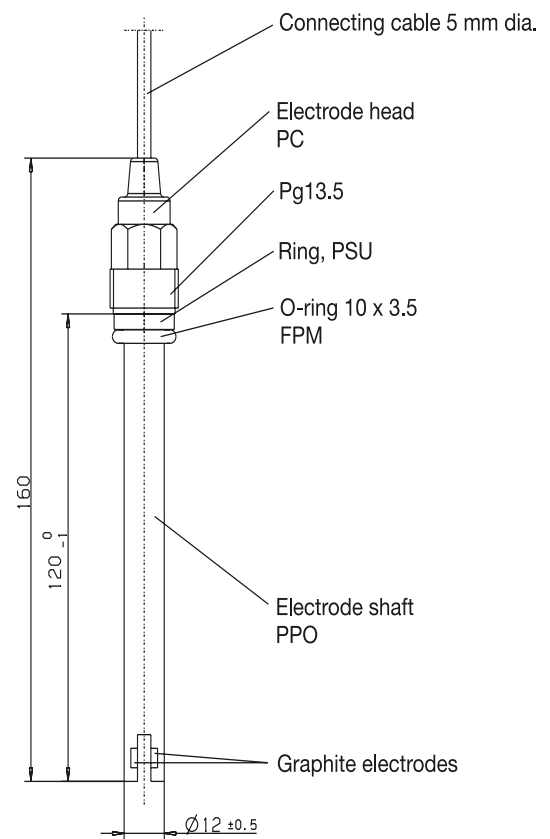
¹ Any deviation of the cell constant can be adjusted on the transmitter.

² The measuring ranges also depend on the transmitter used. When used for wider ranges than the "typical" ones, measurement errors may be caused by polarization.

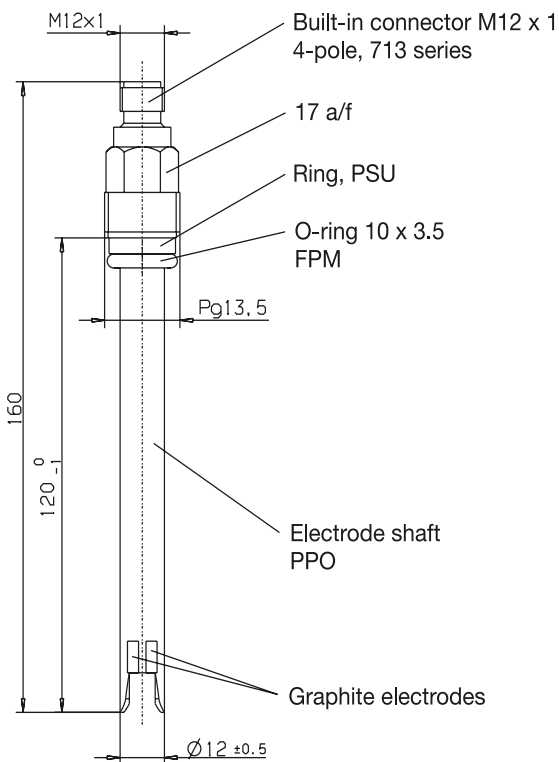
Dimensions for JUMO BlackLine Lf-GT



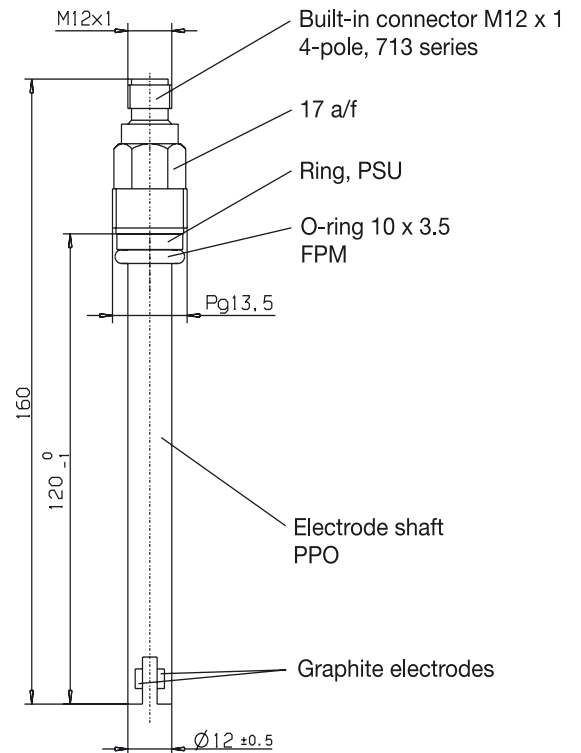
Type 202922/10-0300-xxxx-84-413-20-5000-120/000
Cell constant K = 3.0



Type 202922/10-0100-xxxx-84-413-20-5000-120/000
Cell constant K = 1.0

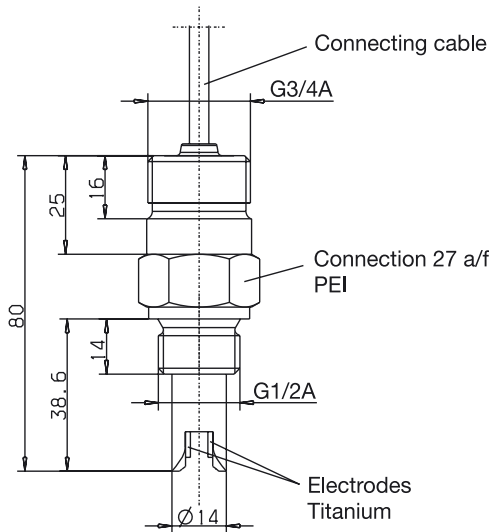


Type 202922/10-0300-xxxx-84-413-83-0000-120/000
Cell constant K = 3.0

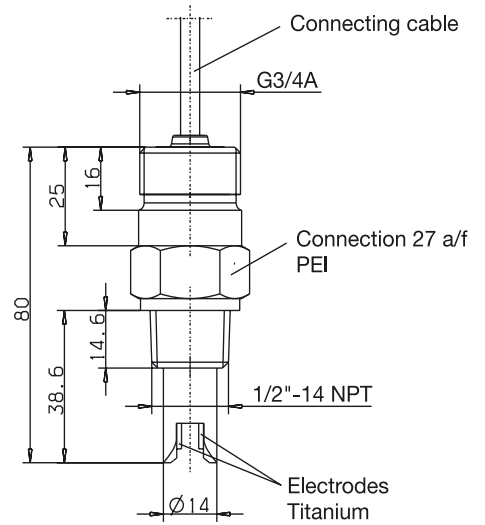


Type 202922/10-0100-xxxx-84-413-83-0000-120/000
Cell constant K = 1.0

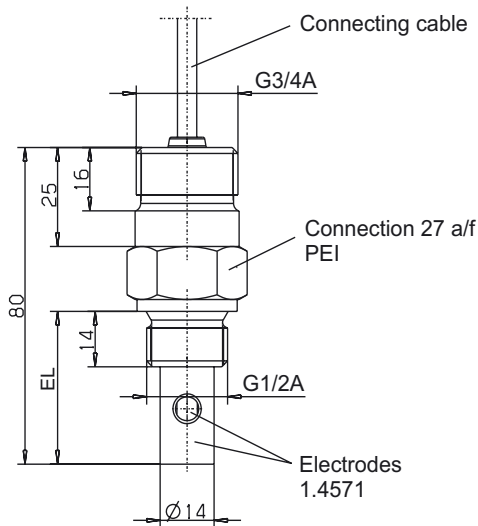
Dimensions for JUMO BlackLine Lf-EC



Type 202922/20-0100-1003-60-104-20-5000-040/000
Cell constant K = 1.0

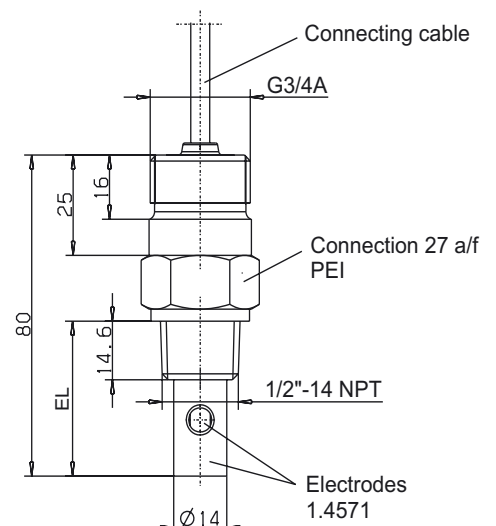


Type 202922/20-0100-1003-60-144-20-5000-040/000
Cell constant K = 1.0



Type 202922/20-0010-1003-26-104-20-5000-040/000
Cell constant K = 0.1

Type 202922/20-0001-1003-26-104-20-5000-040/000
Cell constant K = 0.01

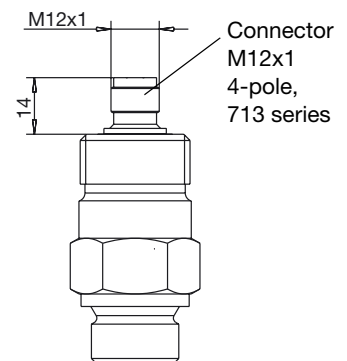
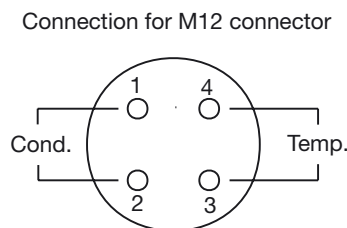
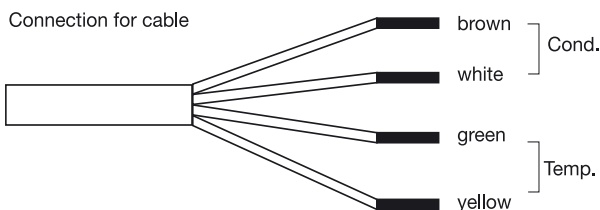


Type 202922/20-0010-1003-60-144-20-5000-040/000
Cell constant K = 0.1

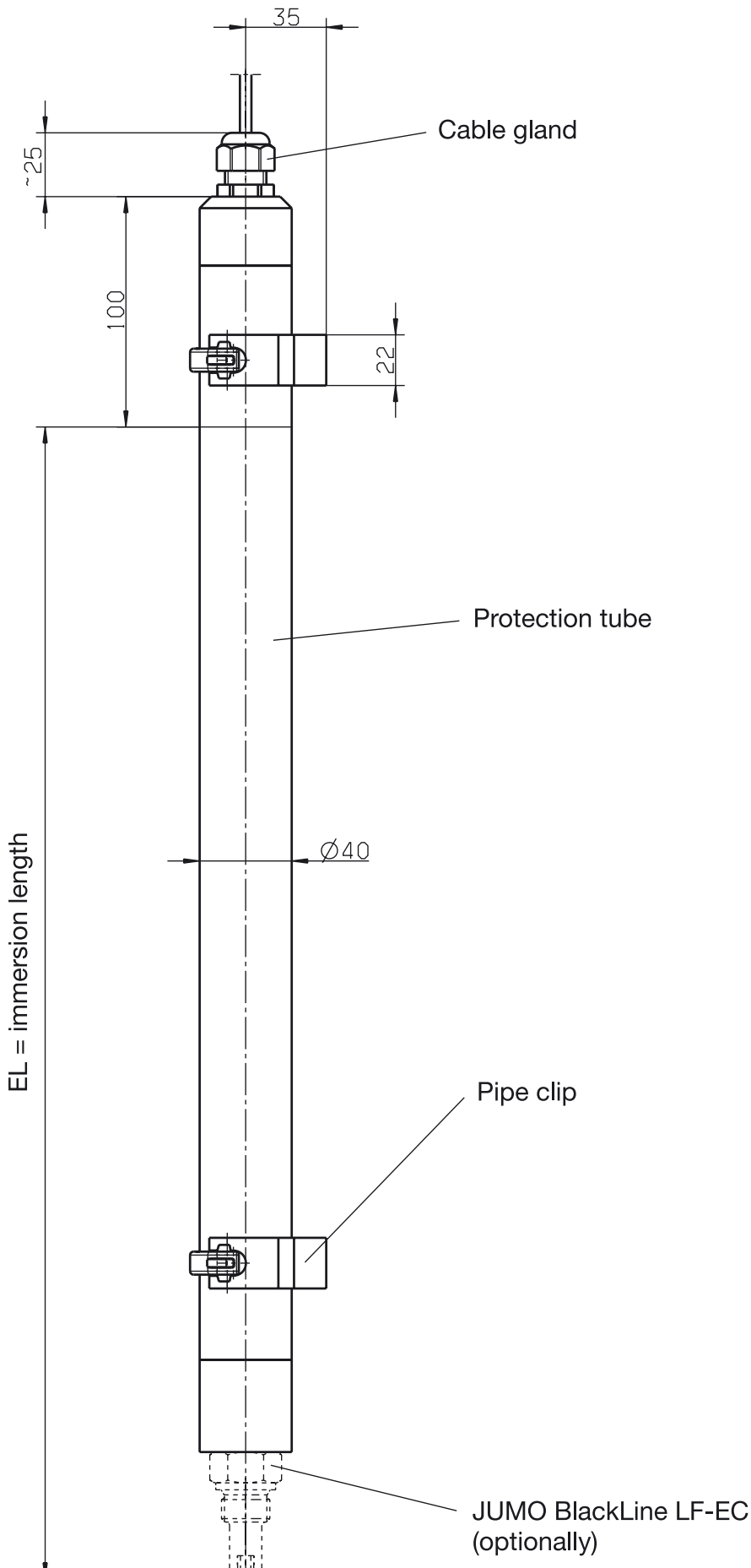
Type 202922/20-0001-1003-26-144-20-5000-040/000
Cell constant K = 0.01

Type	Fitting length EL mm
202922/20-0010-...	38.6
202922/20-0001-...	63

Electrical connection



Accessories for JUMO BlackLine Lf-EC



Choice of immersion length EL:
500 mm or 1000 mm

Order details

(1) Basic type
 202922 JUMO BlackLine Lf-GT / -EC, electrolytic 2-electrode conductivity cells

(2) Basic type extensions

10 Style: JUMO BlackLine Lf-GT
 20 Style: JUMO BlackLine Lf-EC

(3) Cell constant

o 0001 K = 0.01
 o 0010 K = 0.1
 o 0100 K = 1.0
 o 0300 K = 3.0

(4) Temperature sensor

o 0000 none
 o x 1003 Pt100
 o 1005 Pt1000

(5) Electrode material

o 26 stainless steel 1.4571
 o 60 titanium
 o 84 special graphite

(6) Process connection

o 104 G1/2A screw-in thread
 o 144 1/2"-14 NPT screw-in thread
 o 413 Pg13.5 thread

(7) Electrical connection

o 20 attached cable
 o 83 M12 connector

(8) Cable length

x 0000 no cable (with electrical connection 83)
 x x 5000 length in mm (other lengths on request)

(9) Fitting length

x 040 40 mm
 x 063 63 mm (for cell constant K=0.01 only)
 x 120 120 mm

(10) Extra codes

x x 000 none

X = combination is standard
 o = combination is optional

Other versions on request!

Order code (1) / (2) - (3) - (4) - (5) - (6) - (7) - (8) - (9) / (10)
Order example 202922 / 10 - 0100 - 0000 - 84 - 104 - 83 - 0000 - 120 / 000

Note:

The type code is a type designation, not a modular system.

If at all possible, choose the articles listed under "Stock items" or "Non-stock items".

Any free combination of individual code features must be technically checked by us and released.

Please ask us in case of doubt!

Stock items

Sales No.	Type	Brief description
20/00430769	202922/10-0100-0000-84-413-20-5000-120/000	K=1.0, without Pt100, attached cable, Pg13.5, 120 mm
20/00430770	202922/10-0100-1003-84-413-20-5000-120/000	K=1.0, with Pt100, attached cable, Pg13.5, 120 mm
20/00437646	202922/20-0100-1003-60-104-20-5000-040/000	K=1.0, with Pt100, attached cable, G1/2A, 40 mm
20/00437647	202922/20-0100-1003-60-144-20-5000-040/000	K=1.0, with Pt100, attached cable, 1/2"-14 NPT, 40 mm
20/00418069	202922/20-0010-1003-26-104-20-5000-040/000	K=0.1, with Pt100, attached cable, G1/2A, 40 mm
20/00441398	202922/20-0010-1003-26-144-20-5000-040/000	K=0.1, with Pt100, attached cable, 1/2"-14 NPT, 40 mm
20/00448986	202922/20-0001-1003-26-144-20-5000-063/000	K=0.01, with Pt100, attached cable, 1/2"-14 NPT, 63 mm

Non-stock items

Sales No.	Type	Brief description
20/00442432	202922/10-0100-1003-84-413-83-0000-120/000	K=1.0, with Pt100, M12 connector, Pg13.5, 120 mm
20/00442433	202922/10-0300-1003-84-413-83-0000-120/000	K=3.0, with Pt100, M12 connector, Pg13.5, 120 mm
20/00442434	202922/10-0300-1003-84-413-20-5000-120/000	K=3.0, with Pt100, attached cable, Pg13.5, 120 mm

Other versions on request!

Accessories for version with M12 connector

Sales No.	Brief description
20/00318906	4-pole cable connector M12 x 1, 713 series, angled (supplied without cable), gold-plated contacts
20/00303681	25 m connecting cable, for self-assembly, 4-pole + screen

Accessories for JUMO BlackLine Lf-EC

Sales No.	Brief description
20/00452567	immersion fitting, EL = 500 mm
20/00452571	immersion fitting, EL = 1000 mm