



# JUMO ecoLine Lf-PVC Electrolytic Conductivity Cells

## 202923 Series (former 2EL5... Series)

- 2-electrode principle
- proven versions for industrial application
- measuring ranges: 0 – 1 mS/cm (K=0.1) or 0.01 – 15 mS/cm (K=1.0)
- temperature range up to 55°C, maximum pressure: 6 bar at 20°C

### Brief description

Conductivity cells in the 202923 series are used, for instance, in general water engineering, air conditioning and refrigeration, drinking and bathing water, and in industrial rinsing and process water circulation. The PVC body material restricts their application to media temperatures up to 55°C. Two variants with the cell constants K=0.1 or 1.0 can be supplied.

Versions with the popular thread sizes G3/4" or G1" as well as a pluggable style are available for installation. The pluggable version is appropriate for use, for instance, with suitable PVC tees in the nominal sizes DN25, 32 and 40. It enables fast de-installation of the sensor for cleaning and maintenance. According to choice, the electrical connection is made either by a detachable connector or an attached cable.

The overall construction and the wetted components are physiologically harmless. Stainless steel (K=0.1) or special graphite (K=1.0) is used as the electrode material. The temperature probe, which can optionally be integrated, simultaneously acquires the temperature of the medium, for temperature compensation in connected instrumentation amplifiers.

**Stainless steel variant K=0.1:** The cell features 3 metallic pin electrodes. The two outer pins are electrically connected and form one pole of the 2-electrode cell. The stainless steel pin in the middle is the counter electrode. This arrangement ensures highly accurate measurement with narrow stray fields. A temperature probe can be integrated into the middle pin.

**Graphite variant K=1.0:** Physical requirements necessitate using a special graphite as electrode material for high conductance measurement. The two graphite electrodes are completely integrated in the electrode shaft. The optional temperature probe is housed in a stainless steel sleeve that is immersed in the solution under test.



### Principle of operation

The 20.2923 series measuring cells are 2-electrode cells. An a.c. voltage is applied by means of a transmitter. The current flowing through the liquid and the electrodes is determined by the conductivity of the liquid.

### Technical data

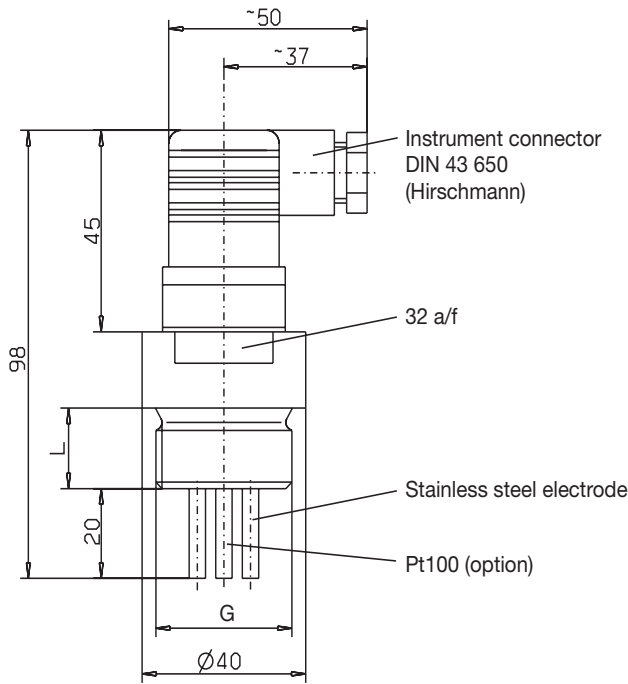
Cell constant <sup>1</sup>	K = 0.1 or K = 1.0
Typical measuring ranges <sup>2</sup>	0 – 1.0 mS/cm (with K = 0.1) 0.01 – 15 mS/cm (with K = 1.0)
Temperature compensation	optionally with Pt100
Process connection	screw-in thread G <sup>3</sup> / <sub>4</sub> A; G1A; union nut DN25; 1 <sup>1</sup> / <sub>2</sub> " for PVC tees
Body material	PVC
Cell material	stainless steel 1.4571 (with K=0.1) graphite (with K=1.0)
Operating temperature	up to +55°C
Maximum pressure	6 bar at 25°C
Electrical connection	instrument connector (Hirschmann) to DIN 43 650, IP65 protection or 5 m attached cable, other cable lengths on request.

<sup>1</sup> Any deviation of the cell constant can be adjusted on the transmitter.

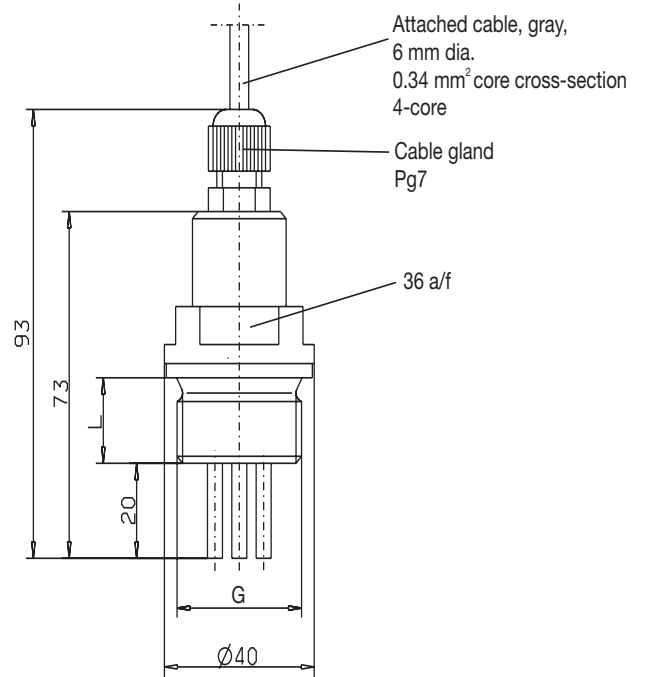
<sup>2</sup> The measuring ranges also depend on the transmitter that is used.

When used for wider ranges than the "typical" ones, measurement errors caused by polarization may occur.

### Dimensions / installation options

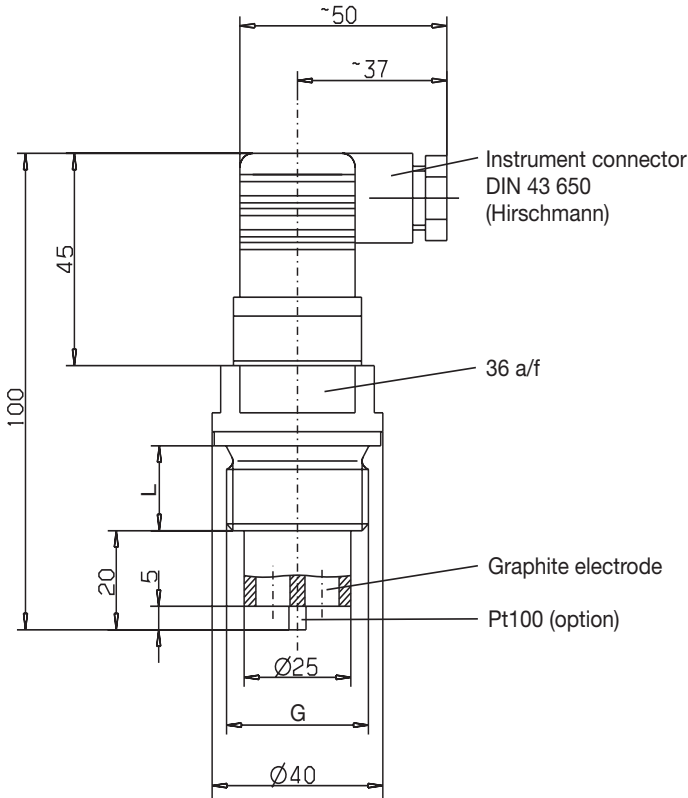


Type 202923/0010-1003-xxx-37-86-26/000  
cell constant K = 0.1

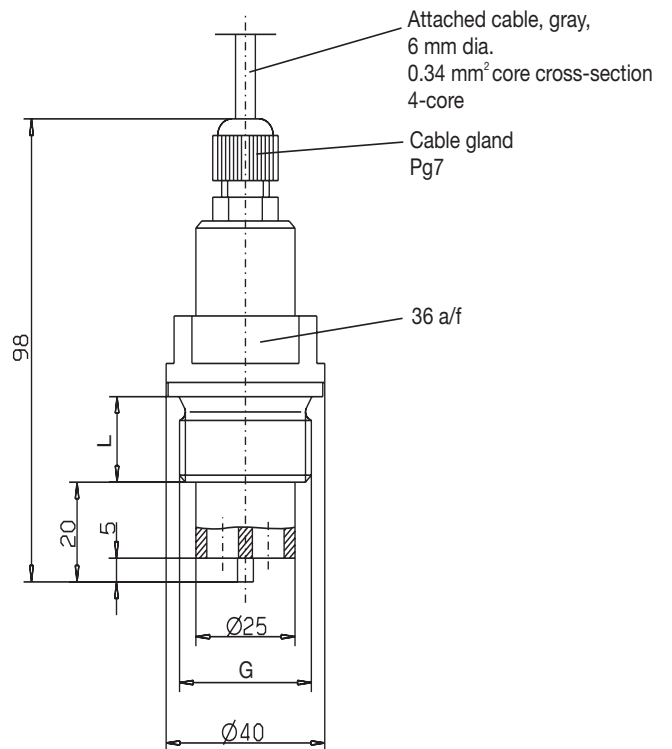


Type 202923/0010-1003-xxx-17-86-26/000  
cell constant K = 0.1

Process connection	G	L
-105	G3/4	16
-106	G1	18

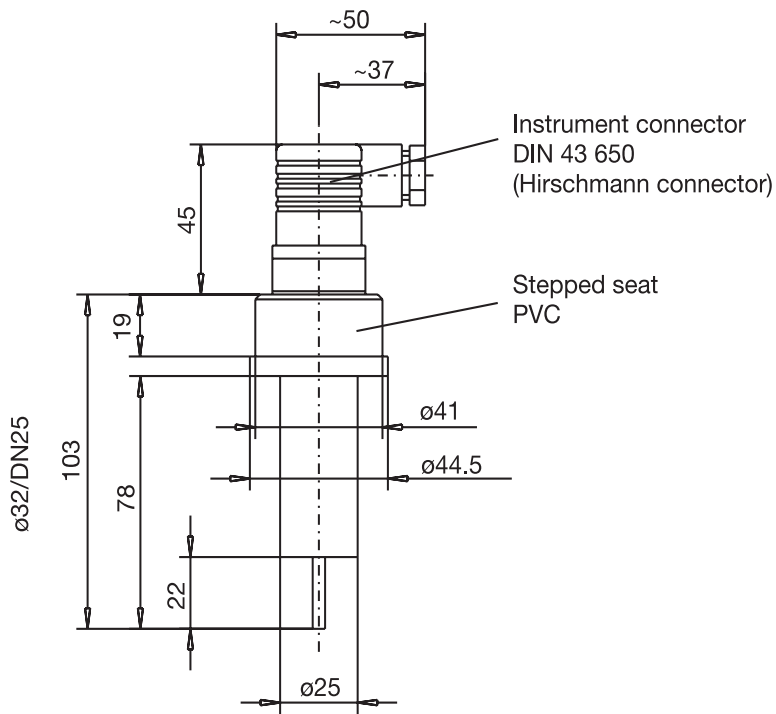


Type 202923/0100-1003-xxx-37-86-88/000  
cell constant K = 1.0



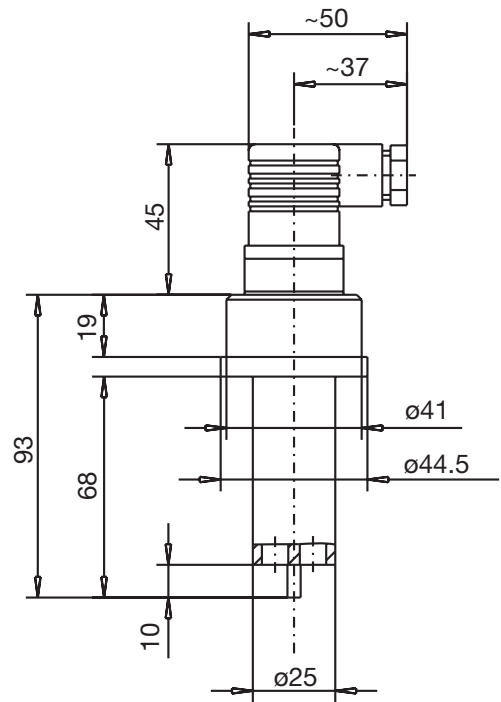
Type 202923/0100-1003-xxx-17-86-88/000  
cell constant K = 1.0

### Pluggable version



Type 202923/0010-1003-687-37-86-26/000  
cell constant K = 0.1

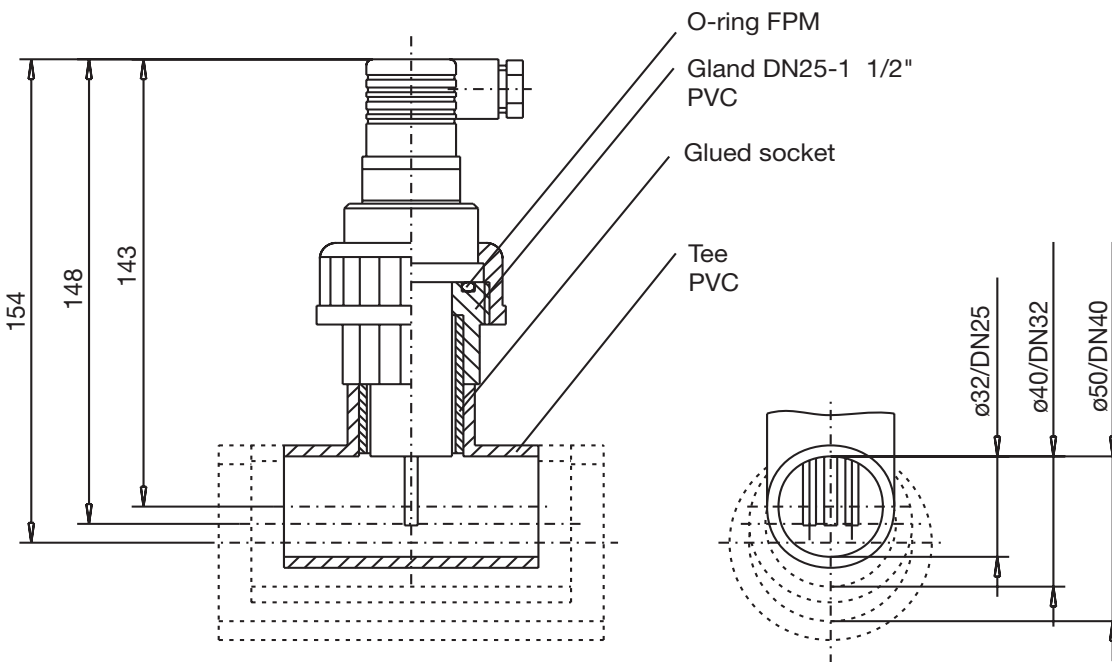
**Note: supplied without union nut!**



Type 202923/0100-1003-687-37-86-84/000  
cell constant K = 1.0


**Note: supplied without union nut!**

### Accessories for pluggable version



tee DN25  
tee DN32  
tee DN40

## Electrical connection

Connection for	Connector	Attached cable
Outer electrode		white
Inner electrode	2	brown
Temperature com*	1 3	yellow green

\*option

## Order details

**(1) Basic type**

202923 JUMO ecoLine Lf-PVC, electrolytic conductivity cells

**(2) Cell constant**

0010 K = 0.1 (measuring range 0 – 1.0 mS/cm)

0100 K = 1.0 (measuring range 0.01 – 15 mS/cm)

**(3) Temperature sensor**

o o 0000 none  
x x 1003 Pt100

**(4) Process connection**

o o 687 stepped seat PVC  $\varnothing 32$  / DN25 (supplied **without** union nut)  
x x 105 screw-in thread G  $3/4$ " A  
o o 106 screw-in thread G 1" A

**(5) Electrical connection**

o o 17 by attached cable with Pg gland, cable length 5 m  
x x 37 by instrument connector to DIN 43 650 (Hirschmann connector)

**(6) Body material**

x x 86 PVC

**(7) Cell material**

x - 26 stainless steel 1.4571  
- x 84 graphite

**(8) Extra codes**

o o 000 none

x = combination is standard

o = combination is optional

- = combination cannot be supplied

Additional versions on request!

**Order code**                    (1)            (2)            (3)            (4)            (5)            (6)            (7)            (8)  
 202923 /  -  -  -  -  - 86 -  /   
**Order example**                202923 /  -  -  -  -  - 86 -  /

## Stock items

Sales No.	Type	Brief description
20/00303793	202923/0010-1003-105-37-86-26/000	K = 0.1; Pt100; G3/4A
20/00319402	202923/0010-1003-105-17-86-26/000	K = 0.1; Pt100; G3/4A; 5 m attached cable

## Non-stock items

Sales No.	Type	Brief description
20/00089411	202923/0010-1003-106-37-86-26/000	K = 0.1 / Pt100 / G1A
20/00402638	202923/0010-1003-106-17-86-26/000	K = 0.1 / Pt100 / G1A / 5 m attached cable
20/00437032	202923/0100-1003-105-37-86-84/000	K = 1,0 / Pt100 / G3/4A
20/00409610	202923/0100-1003-106-37-86-84/000	K = 1,0 / Pt100 / G1A
20/00437034	202923/0100-1003-687-17-86-84/000	K = 1,0 / Pt100 / stepped seat PVC / 5 m attached cable

## Accessories (for pluggable version)

Sales No.	Brief description
20/00437035	PVC tee DN25 (incl. union nut, O-ring and glued socket for pluggable version)
20/00437037	PVC tee DN32 (incl. union nut, O-ring and glued socket for pluggable version)
20/00437038	PVC tee DN40 (incl. union nut, O-ring and glued socket for pluggable version)
20/00303681	Connecting cable 25 m (4-core + screen)
20/00304181	Connecting cable 50 m (4-core + screen)