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JUMO ecoLine CR-PVC
Conductive 2-Electrode Conductivity Sensor

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 25 °C





Brief description

Conductivity sensors 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 G 3/4" or G 1" 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 DN 25, 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 sensor features 3 metallic pin electrodes. The two outer pins are electrically connected and form one pole of the 2-electrode conductivity sensor. 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 202923 series conductivity sensors are 2-electrode conductivity sensors. 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.

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Technical data

Cell constant[a]	K = 0.1 or K = 1.0
Typical measuring ranges[b]	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 3/4A, G 1A, union nut DN 25 1 1/2“ 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 EN 175301-803, IP65 protection or 5 m attached cable, other cable lengths on request

a. Depending on the production conditions, the cell constant can deviate by ±10% from the nominal value. This deviation can be compensated at the transmitter.

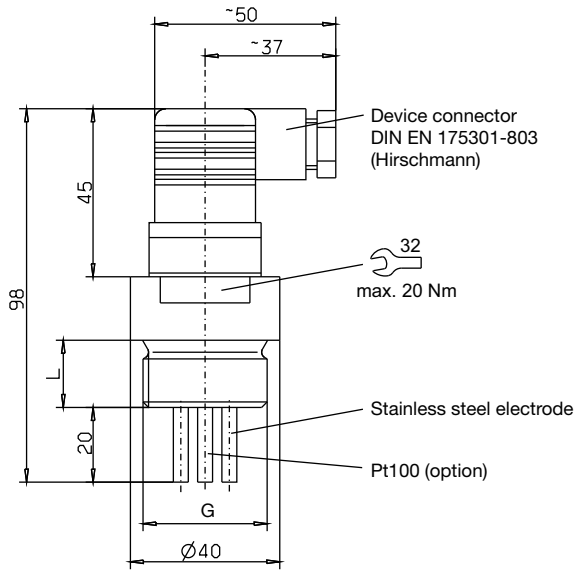
b. The measuring ranges also depend on the transmitter that is used.
When used for wider ranges than the “typical” ones, measurement errors caused by polarization may occur.

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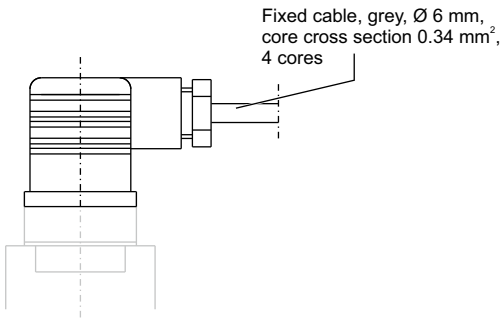
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Dimensions/installation options

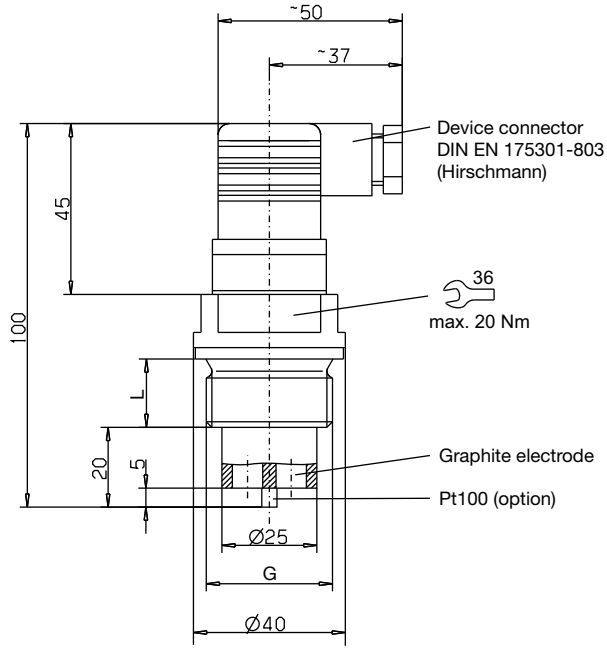


Type 202923/0010-1003-xxx-37-86-26
Cell constant K = 0.1

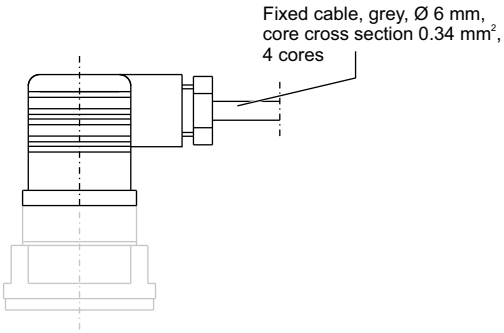


Type 202923/0010-1003-xxx-17-86-26
Cell constant K = 0.1

Process connection	G	L
-105	G 3/4	16
-106	G 1	18



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



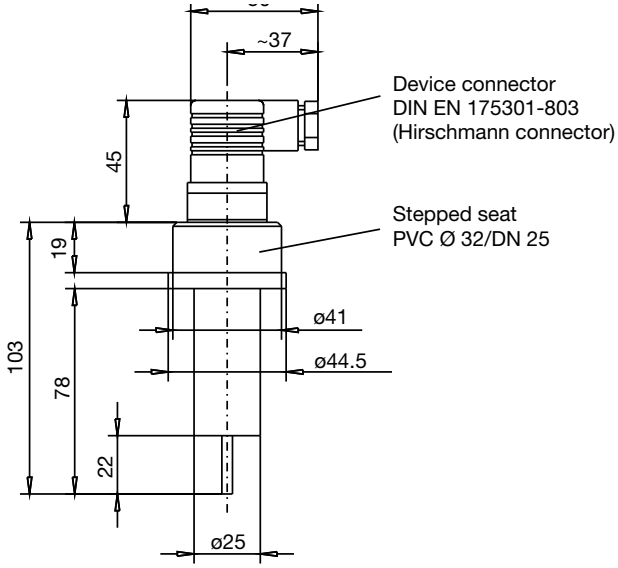
Type 202923/0100-1003-xxx-17-86-88
Cell constant K = 1.0

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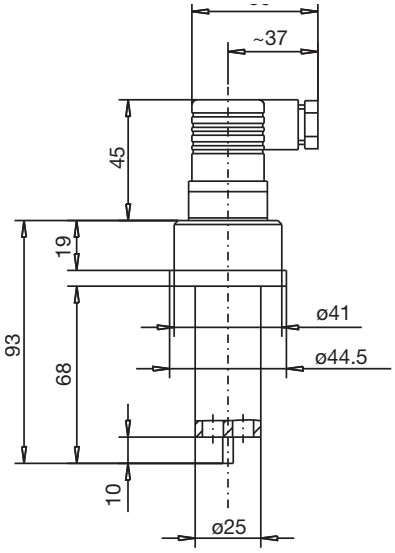
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Pluggable version

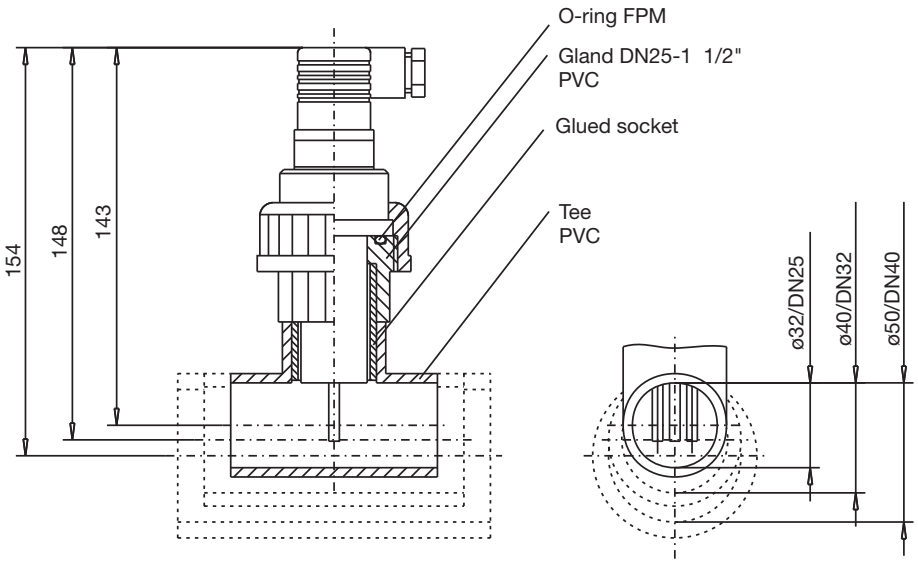


Type 202923/0010-1003-687-37-86-26
Cell constant K = 0.1
Note: supplied without union nut!



Type 202923/0100-1003-687-37-86-84
Cell constant K = 1.0
Note: supplied without union nut!

Accessories for für pluggable version



Tee DN 25
Tee DN 32
Tee DN 40

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Electrical connection

Connection for	Connector	Attached cable
Outer electrode	⏚	white
Inner electrode	2	brown
Temperature com (option)	1 3	yellow green

Order details

(1) Basic type

202923 JUMO ecoLine CR-PVC - Conductive 2-Electrode Conductivity Sensor

(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 Ø 32/DN 25 (supplied **without** union nut)
x	x	105	screw-in thread G 3/4“A
o	o	106	screw-in thread G 1“A

(5) Electriscal connection

o	o	17	fixed cable connection, standard length 5 m
x	x	37	device connector according to DIN EN 175301-803 (Hirschmann connector)

(6) Body material

x	x	86	PVC

(7) Cell material

x	-	26	stainless steel 1.4571
-	x	84	graphite

x = standard
o = optional
- = not possible

	(1)		(2)		(3)		(4)		(5)		(6)		(7)
Order code		/		-		-		-		-		-	
Order example	202923	/	0010	-	1003	-	196	-	17	-	86	-	26

Additional versions on request!

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Stock versions

Type	Brief description	Part no.
202923/0010-1003-105-37-86-26/000	K = 0.1/ Pt100/G 3/4A/stainless steel 1.4571	00303793
202923/0010-1003-687-37-86-26/000	K = 0.1/ Pt100/stepped seat PVC Ø 32/DN 25/stainless steel 1.4571	00439408
202923/0100-1003-687-37-86-84/000	K = 1.0/ Pt100/stepped seat PVC Ø 32/DN 25/graphite	00437034

Accessories

Brief description	Part no.
for version with device connector	
Connecting cable 25 m (4-core + screen)	00303681
Connecting cable 50 m (4-core + screen)	00304181
for pluggable version	
PVC tee DN 25 (incl. union nut, O-ring, glued socket)	00437035
PVC tee DN 32 (incl. union nut, O-ring, glued socket)	00437037
PVC tee DN 40 (incl. union nut, O-ring, glued socket)	00437038

Note:

The order code is not modular. When placing orders, if possible please select the items listed under "**Stock versions**".
We must check the technical feasibility of and approve freely chosen combinations of individual code parts.