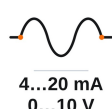


CONDUCTIVE LEVEL SENSOR



Type: **PT-HL-T-C**

- RANGES 0.1 ... 25 bar
- CONDUCTIVITY 0 ... 1000 $\mu\text{S}/\text{cm}$
- Pt100 -50 ... +85 °C, 4-WIRE
- IP68 UP TO 300 m



ORDER CODE

Code	Field	Meaning
QU	series	Conductive Level Sensor
0	pressure type	relative pressure
0	material	CrNi steel
A50 ... Z55	cable length	1.5 · 3 · 5 · 10 · 15 · 20 · 25 · 30 · 40 · 50 · 60 · 80 · 100 · 200 · 300 m
A1 ... C3	pressure range	0.1 · 0.16 · 0.25 · 0.4 · 0.6 · 1 · 1.6 · 2.5 · 4 · 6 · 10 · 16 · 25 bar
0	temperature	Pt100, 4-wire
0	conductivity	0 ... 1000 $\mu\text{S}/\text{cm}$
0	output	4 ... 20 mA, 2-wire
0 · 1	supply	10 ... 30 V DC · with 1.5 J lightning protection
0 · 1	cable type	FEP · PUR

The order code of the manufacturer document reads 0 ... 20 mA at the output position; the characteristics and the technical data give 4 ... 20 mA throughout, and that is what this sheet states.



OVERVIEW

Three measured values in one probe of 27 mm diameter. The hydrostatic pressure covers thirteen ranges from 0.1 to 25 bar and leaves the probe as 4 ... 20 mA in two-wire technique. An electronic conductivity sensor measures 0 ... 1000 $\mu\text{S}/\text{cm}$, and an integrated Pt100 in four-wire technique the temperature of the medium from -50 to $+85$ °C. The case is CrNi steel 316L, the cap plastic PA or steel against a surcharge, and the probe hangs on its own cable without additional strain relief. The cable decides two things: with PUR it reaches 300 m of submergence but only -10 ... $+50$ °C, with FEP 100 m and -10 ... $+85$ °C. Lightning protection of 1.5 J to EN 61000-4-5 is available as an option.

MEASUREMENT AND OUTPUT

- Relative pressure, 13 ranges 0.1 ... 25 bar
- Output 4 ... 20 mA, 2-wire
- Conductivity 0 ... 1000 $\mu\text{S}/\text{cm}$, electronic
- Pt100 4-wire, -50 ... $+85$ °C
- Accuracy ± 0.25 % of span above 0.25 bar
- Conductive measurement < 20 % of span
- Supply 10 ... 30 V DC, insulation 500 V DC
- Option lightning protection 1.5 J

DEVICE AND CABLE

- Case CrNi steel 316L
- Cap plastic PA, option CrNi steel 316L
- Cable PUR to 300 m, or FEP to 100 m
- Tension force 1 kN with PUR, 500 N with FEP
- Process connection G 1/2 B outside
- Weight 200 g plus 80 g per m of cable
- Protection class IP68 to IEC 60529
- Fastened by the cable, no strain relief



TECHNICAL DATA

INPUT AND ACCURACY

Relative pressure	0 ... 0.1 bar up to 0 ... 25 bar, thirteen ranges
Conductivity sensor	electronic, 0 ... 1000 $\mu\text{S}/\text{cm}$
Pt100	4-wire, -50 ... +85 °C
Accuracy, pressure	$\leq \pm 0.5 \%$ of span below 0.25 bar · $\leq \pm 0.25 \%$ from 0.25 bar, including non-linearity, hysteresis, zero point and full scale error to IEC 61298-2
Accuracy, conductivity	< 20 % of span
Non-linearity	< $\pm 0.2 \%$ of span, BFSL to IEC 61298-2
Non-repeatability	< $\pm 0.1 \%$ of span
Stability per year	< $\pm 0.2 \%$ of span at reference conditions

MECHANICS

Case	CrNi steel 316L
Cap	plastic PA; option CrNi steel 316L
Cable	PUR; option FEP
Transmission fluid	synthetic oil, internal
Process connection	G 1/2 B outside, CrNi steel
Dimensions	Ø 27 mm · approx. 147 mm with FEP cable · approx. 130 mm with PUR cable
Weight	probe approx. 200 g · cable 80 g per metre
Protection class	IP68 to IEC 60529

OUTPUT AND SUPPLY

Analog	4 ... 20 mA, 2-wire
Load	maximum (auxiliary energy – 10 V) / 0.02 A – (cable length in m $\times$ 0.14 Ω)
Supply voltage	10 ... 30 V DC
Short-circuit strength	S+ against U–
Reverse voltage protection	U+ against U–
Insulation voltage	500 V DC
Option	lightning protection 1.5 J to EN 61000-4-5

TEMPERATURE AND SUBMERGENCE

Medium, PUR cable	-10 ... +50 °C
Medium, FEP cable	-10 ... +85 °C
Ambient	-10 ... +50 °C
Storage	-30 ... +80 °C
Submergence	300 m with PUR cable · 100 m with FEP cable
Temperature error	$\leq \pm 0.4 \%$ of span per 10 K up to 0.25 bar · $\leq \pm 0.2 \%$ above

PRESSURE TABLE AND REFERENCE CONDITIONS

Pressure table	range 0.1 · 0.16 · 0.25 · 0.4 · 0.6 · 1 · 1.6 · 2.5 · 4 · 6 · 10 · 16 · 25 bar; overload limit 1 · 1.5 · 2 · 2 · 3 · 5 · 8 · 8 · 10 · 10 · 10 · 16 · 25 bar; burst pressure 2 · 2 · 2.4 · 2.4 · 4 · 6 · 10 · 10 · 10 · 10 · 10 · 16 · 25 bar, each in the same order
Reference conditions	temperature 15 ... 25 °C · air pressure 860 ... 1060 mbar · humidity 45 ... 75 % rH · auxiliary energy 24 V DC · calibrated in vertical fitting position with the process connection below



ELECTRICAL CONNECTION

Pt100 element, 4-wire

cable	FEP	PUR
4 ... 20 mA, 2-wire	U+ brown (1) · U- green (2)	U+ brown (1) · U- green (2)
Cable shield	grey	grey
maximum submergence	100 m	300 m
maximum tension force	500 N	1 kN
Length of the probe	approx. 147 mm	approx. 130 mm
Temperature of the medium	-10 ... +85 °C	-10 ... +50 °C

The wire colours are those of the manufacturer document. The shield of the supply cable is grey and is laid on the case; the shield of the Pt100 is blue. The probe carries no terminals — it ends in a fixed cable with an open end, 15 m as standard.

ACCESSORIES

Cable	PUR or FEP, length from the order code, 80 g per metre
Cap	plastic PA delivered; CrNi steel 316L as an option
Lightning protection	1.5 J to EN 61000-4-5, ordered with the device

The probe is fastened by its cable; no additional strain relief is needed.

COMPLIANCE

	Protection class	IP68 to IEC 60529, submergence up to 300 m
	Wetted material	CrNi steel 316L, case and process connection
	Output signal	4 ... 20 mA, 2-wire

The manufacturer names CE conformity with the EMC directive 2014/30/EU and EN 61326 — emission group 1, class B, and noise immunity for industrial application.



DIMENSIONS (mm)

