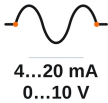


INTRINSICALLY SAFE HART LEVEL PROBE



Type: **PT-HL**

- ATEX II 1G Ex ia IIA T4, ZONE 0
- RANGES 0.1 ... 10 bar
- 4 ... 20 mA WITH HART
- IP68 UP TO 100 m



ORDER DETAILS

Input range	one of the eleven ranges, 0.1 ... 10 bar; preferred 0.4, 1 and 2.5 bar
Cable length	please specify; the cable adds approx. 80 g per metre
Material	CrNi steel 1.4435 standard · Hastelloy HC4 as an option
Covering cap	fitted for transport and storage; removable for dirty or viscous media

The manufacturer document gives no order code for this device; the four fields above are what it names as selectable.



OVERVIEW

An intrinsically safe level probe for hazardous areas — fuel, ballast, service and freight tanks. A hermetically sealed stainless steel case of 27 mm diameter on an FEP cable may be immersed to 100 m; the two-wire electronic module is fed with 16 ... 30 V through an intrinsically safe isolating amplifier suitable for HART and returns 4 ... 20 mA with a superimposed HART signal. Everything is set over that signal: measuring range, turn down up to 4 : 1, self stability, filter and damping, linearisation and temperature compensation. Eleven input ranges cover 0.1 to 10 bar, of which three are preferred. Accuracy is 0.125 % of span above 0.25 bar according to BFSL. The manufacturer names the ATEX certification and the approval by Germanischer Lloyd for the maritime field as the outstanding features.

MEASUREMENT AND OUTPUT	DEVICE AND APPROVAL
• Hydrostatic pressure, 11 ranges 0.1 ... 10 bar • Preferred 0.4 · 1 · 2.5 bar • 4 ... 20 mA, 2-wire, with HART signal • Accuracy 0.125 % of span above 0.25 bar • Non-linearity 0.2 % of span (BFSL) • Turn down up to 4 : 1, set over HART • Supply 16 ... 30 V DC, < 25 mA • Operation -10 ... +85 °C	• ATEX II 1G Ex ia IIA T4, EPL Ga • Gas and vapour in zones 0, 1 and 2 • Case and cap CrNi steel 1.4435, option Hastelloy • Cable FEP, tensile strength 500 N • IP68, immersion up to 100 m • Weight approx. 200 g plus 80 g per m of cable • Approval by Germanischer Lloyd, maritime • Process connection G1/2B, A/F 24



TECHNICAL DATA

INPUT AND ACCURACY

Measured value	hydrostatic pressure
Input ranges	0.1 · 0.16 · 0.25 · 0.4 · 0.6 · 1 · 1.6 · 2.5 · 4 · 6 · 10 bar; preferred 0.4, 1 and 2.5 bar
Accuracy	0.25 % of span up to 0.25 bar · 0.125 % above, according to BFSL
Accuracy incl. hysteresis and errors	0.5 % up to 0.25 bar · 0.25 % above
Non-linearity	0.2 % of span according to BFSL
Non-repeatability	0.1 % of span
Stability per year	0.2 % of span at reference conditions
Calibration	in vertical mounting position with the pressure connection downward

MECHANICS

Case and covering cap	CrNi steel 1.4435; option Hastelloy HC4
Cable	FEP, maximum tensile strength 500 N
Transmission fluid	synthetic oil, internal
Process connection	G1/2B, across flats 24
Dimensions	Ø 27 mm · approx. 147 mm over the cap
Weight	approx. 200 g, plus approx. 80 g per metre of cable
Covering cap	for transport and storage; as an immersion probe it can be removed with dirty or viscous media
Protection class	IP68, immersion up to 100 m

OUTPUT AND SUPPLY

Output signal	4 ... 20 mA, 2-wire, with superimposed HART signal
Power supply	UB = 16 ... 30 V DC through an intrinsically safe isolating amplifier suitable for HART
Current consumption	< 25 mA maximum
Load	$R = (UB - 16 \text{ V}) / 0.02 \text{ A}$ – (cable length in m $\times$ 0.14 Ω); HART needs a communication resistance of 250 Ω
Short-circuit protection	permanent
Reverse polarity	no damage, but no function

TEMPERATURE

Operation	–10 ... +85 °C, HART transmitter and FEP cable
Storage	–10 ... +60 °C
Compensated range	0 ... +50 °C
TC of zero	0.2 % of span per 10 K · 0.4 % for ranges up to 0.25 bar
TC of span	0.2 % of span per 10 K

CONFIGURATION AND EX PROTECTION

Configuration	over the HART protocol, with a PC and HART modem or with a HART communicator: measuring range, turn down up to 4 : 1, self stability, filter, damping, linearisation and temperature compensation
Ex protection	ATEX category II 1G, ignition protection Ex ia IIA T4, EPL Ga — for gas and vapour in zones 0, 1 and 2. The data of the corresponding EC type examination certificate apply and have to be observed; further temperature ranges are given there.



INPUT RANGES (bar)

Pressure range	0.1	0.16	0.25	0.4*	0.6	1*	1.6	2.5*	4	6	10
Over pressure safety	1	1.5	2	2	4	5	10	10	17	35	35
Burst pressure	2	2	2.4	2.4	4.8	6	12	12	20.5	42	42

* preferred ranges

Over pressure safety and burst pressure belong to the range ordered. The manufacturer document gives no terminal diagram: the probe ends in a two-wire FEP cable that is fed through an intrinsically safe isolating amplifier.

ACCESSORIES

Isolating amplifier	intrinsically safe, suitable for HART, 16 ... 30 V
HART modem	with PC software, or a HART communicator
Covering cap	delivered with the probe

A communication resistance of 250 Ω has to be taken into account for HART.

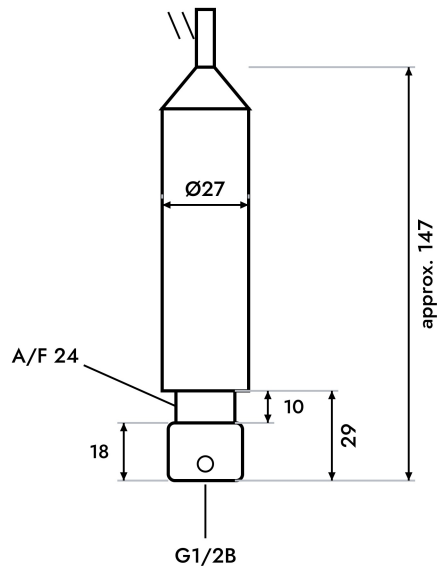
COMPLIANCE

	Explosion protection	ATEX II 1G Ex ia IIA T4, EPL Ga — zones 0, 1 and 2, gas and vapour
	Protection class	IP68, immersion up to 100 m
	Wetted material	CrNi steel 1.4435, case and cap; option Hastelloy HC4
	Output signal	4 ... 20 mA, 2-wire, with HART

The manufacturer names conformity with the pressure equipment directive 2014/68/EU, the EMC directive 2014/30/EU and the ATEX directive 2014/34/EU, and an approval by Germanischer Lloyd for the maritime field. The data of the EC type examination certificate apply.



DIMENSIONS (mm)



Drawn by octogon from the manufacturer document; the dimensioned values are taken from it, the outline is schematic and the cable is broken — its length is chosen with the order.

