



Pressure measurement

Hydrostatic level transmitter / level switch
with data memory for general applications
Monitoring of levels in liquids



Type:
Hydrocont® HN4

In brief



Application

- General applications in
 - Machinery and plant engineering
 - Air-conditioning and refrigeration plant engineering
 - Hydraulic and pneumatic systems
 - Process industry
 - Environmental technology

Your benefits

- *Wide range of applications*
- Finely graded measuring ranges from 50 mbar up to 20 bar
- Wide process temperature range -40°C to +125°C
- Construction types extension cable and extension tube
- Wide variety of process connections and high protection class IP65 / IP67
- Wide environmental temperature range -20°C to +70°C
- Ceramic *front-flush diaphragm*
- Increased accuracy – characteristic deviation $\leq 0,05\%$ of measuring range
- Integrated evaluation electronic: 4x PNP switch output / 1x current output 0/4...20mA – voltage output 0...10V / Measure data memory for more than 500.000 measuring values / Battery powered data logger function / Bluetooth
- *High operating comfort*: enclosure and display rotatable for *optimal operability* in each installation position
- Robust high brightness LED display for *best readability*
- 3-key operation without additional assistance with tactile feedback

Description

The device is an electronic level transmitter / level switch for monitoring, control as well as continuous measurement of levels in liquids.

Due to the device construction with measuring ranges from -1 bar to 20 bar, measuring spans from 50 mbar to 20 bar, process temperatures from -40°C to +125°C and process materials Al2O3-ceramic / CrNi-steel as well as the availability of the two construction types extension cable (e.g. at limited installation situations, long sensor length) or extension tube (e.g. at strong turbulences, aggressive media, high temperatures) and the availability of industrial standard process connections like thread connection ISO 228-1 the device is especially suitable for the use for level and volume measurement, flow measurement at open channels and measuring weirs and for general applications in water and waste water sector machinery and plant

engineering, air-conditioning and refrigeration plant engineering, hydraulic and pneumatic systems, process industry and environmental technology.

The device is suitable for demanding measuring requirements.

Due to its high accuracy and the high flexibility of configuration, the device can be suited a wide variety of applications.

The robust design and the high-quality workmanship turns the device into a very high quality product, which even the most adverse environmental conditions cannot affect, whether low temperatures when used outdoors, high shock and vibration or aggressive media.

A captive laser marking of the type label ensures the identifiability throughout the entire lifetime of the device.

Obviously is the optional marking of a measurement point designation resp. TAG, a customer label or of a neutral



type label, of course also per laser marking.

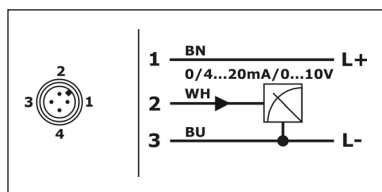
A LABS-free resp. silicone-free version, a factory calibration with calibration certificate and a customer specific configuration resp. preset is also optionally available like a material test certificate EN10204 3.1 or factory certifications for drink water resp. food suitability.



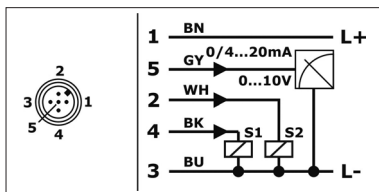
Technical Data

| Technical Data | |
|--------------------------------------|---|
| Supply voltage: | Setting output 0/4...20 mA: 9...30 VDC, reverse polarity protected Setting output 0...10 V: 14...30 VDC, reverse polarity protected |
| Supply current: | ≤ 50mA up to ≤ 100mA (depending on output, bluetooth ON/Off, US) |
| Start-up time: | ≤ 1s |
| Step response time: | ≤ 15 ms (td = 0s) |
| Operating range: | Analogue output – current 0...20mA IOut: 0...20,5mA, max. 22mA Analogue output – current 4...20mA IOut: 3,8...20,5mA, min. 3,6mA, max. 22mA Analogue output – voltage 0...10V UOut: 0 ... 10,5 V, max. 11 V |
| Switch output PNP S1 / S2 / S3 / S4 | |
| Function: | PNP switch to +L |
| Output current: | 0... ≤ 200mA current limited, short circuit protected |
| Measuring accuracy | |
| Characteristic deviation: | ≤ ±0,05% / ±0,1% / ±0,2% FS |
| Long term drift: | ≤ ± 0,1% FS / year not cumulative |
| Temperature deviation | Zero: ≤ ±0,015% FS 2) / K, max. ±0,75 % (-20°C...+80°C) Span: ≤ ±0,015% FS 2) / K, max. ±0,5 % (-20°C...+80°C / > 0,4 bar), max. ±0,8 % (-20°C...+80°C / ≤ 0,4 bar) |
| Materials | |
| Diaphragm: (process wetted) | Process connection Type 7 – G1½" / Sensor Ø40mm: Ceramic Al ₂ O ₃ – 99,9% Process connection Type 8 – G¾" / Sensor Ø22mm Measuring range ≤ 1bar: Ceramic Al ₂ O ₃ – 99,9% Process connection Type 8 – G¾" / Sensor Ø22mm Measuring range ≥ 1,6bar: Ceramic Al ₂ O ₃ – 96% |
| Process connection: (process wetted) | Steel 1.4404/316L / Steel 1.4571/316Ti |
| Terminal enclosure: | CrNi-steel |
| Gaskets: (process wetted) | FPM – fluorelastomere (e.g. Viton®) EPDM – ethylene-propylene-dienmonomere, FDA-listed FFKM – perfluorelastomere (e.g. Kalrez®) FFKM hd – perfluorelastomere high density |
| Environmental conditions | |
| Environmental temperature: | - 20°C...+70°C |
| Process temperature: | -40...+100°C (extended -40...+125°C) |
| Process pressure: | - 1 bar ...20 bar (depending on process connection) |
| Protection: | IP65/IP67 EN/IEC 60529 |

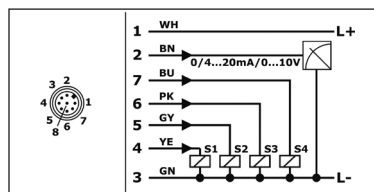
Electrical connection



Electronic output type M
1x signal 0/4...20mA-0...10V, supply 24VDC

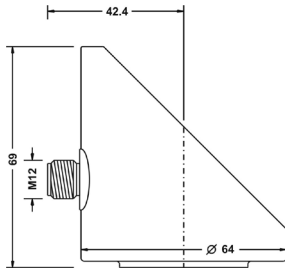


Electronic output type K
1x signal 0/4...20mA-0...10V, 2x switch PNP, supply 24VDC

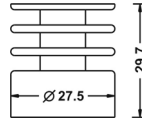


Electronic output type R
1x signal 0/4...20mA-0...10V, 4x switch PNP, supply 24VDC

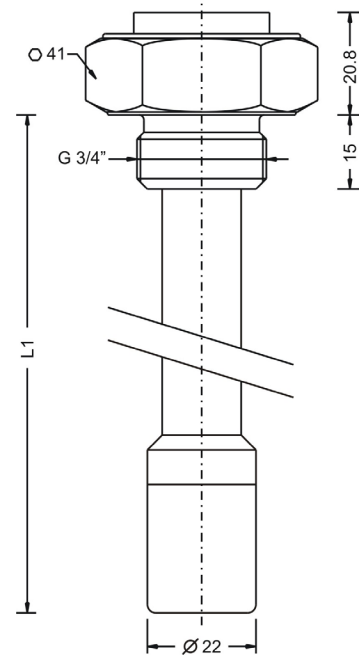
Terminal enclosure



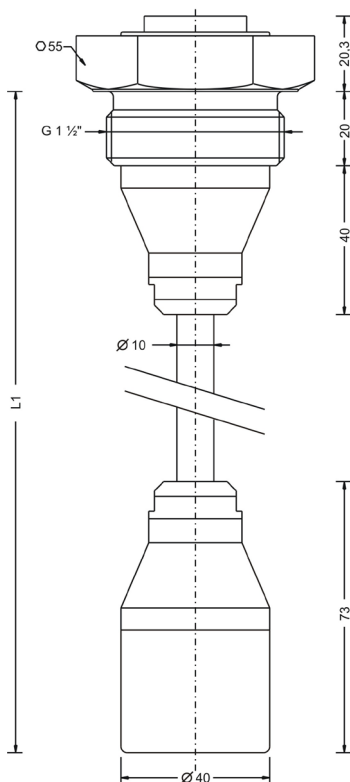
Temperature decoupler



Type 8 – Thread ISO 228-1 –
G $\frac{3}{4}$ "A Probe extension type F –
Tube \varnothing 16mm / Probe \varnothing 22mm
Length L1 \leq 2000 mm



Type 7 – Thread ISO 228-1 –
G $\frac{1}{2}$ "A Probe extension type A / E
– Extension cable / Probe \varnothing 40mm
Length L1 \leq 100 000 mm



Type 7 – Thread ISO 228-1 –
G $\frac{1}{2}$ "A Probe extension type D –
Tube \varnothing 16mm / Probe \varnothing 40mm
Length L1 \leq 3000 mm

