

CPA-K-358H



- hydrostatic level transmitter
- detachable probe, diameter 39.5 mm
- nominal pressure: from 0...60 cmH₂O up to 0...100 mH₂O
- output signals: 2-wire: 4...20 mA
- stainless steel probe
- ceramic sensor
- accuracy 0.1 % span
- HART® communication (setting of offset, span and damping)
- especially for sewage, viscous and pasty media
- optional: diaphragm 99.9 % Al₂O₃



The detachable stainless steel probe **CPA-K-358H** has been designed for level measurement in waste water, waste and higher viscosity media. Basic element is a capacitive ceramic sensor. In order to facilitate stock-keeping and maintenance the transmitter head is plugged to the cable assembly with a connector and can be changed easily.

PREFERRED AREAS OF USE ARE



Water

- ground water level measurement
- rain spillway basin



Sewage

- waste water treatment
- water recycling



Fuel / Oil

- level monitoring in open tanks with low filling heights
- fuel storage
- tank farms
- biogas plants

TECHNICAL DATA

| Input pressure range ¹ | | | | | | | | |
|-----------------------------------|---------------------|--------|------|-----|----|----|----|-----|
| Nominal pressure gauge | [bar] | 0.06 | 0.16 | 0.4 | 1 | 2 | 5 | 10 |
| Level | [mH ₂ O] | 0.6 | 1.6 | 4 | 10 | 20 | 50 | 100 |
| Overpressure | [bar] | 2 | 4 | 6 | 8 | 15 | 25 | 35 |
| max. ambient pressure (housing) | | 40 bar | | | | | | |

¹ On customer request we adjust the devices by software on the required pressure ranges, within the turn-down-possibility (starting at 0.02 bar)

| Output signal / Supply | | | |
|------------------------|---|----------|------------------------------|
| Standard | 2-wire: 4 ... 20 mA / V _S = 12 ... 36 V _{DC} with HART® communication V _{S rated} = 24 V _{DC} | | |
| Performance | | | |
| Accuracy ² | P _N ≥ 160 mbar | TD ≤ 5:1 | ≤ ± 0.2 % span |
| | | TD > 5:1 | ≤ ± [0.2 + 0.03 x TD] % span |
| | P _N < 160 mbar | | ≤ ± [0.2 + 0.1 x TD] % span |
| | P _N ≥ 0.6 bar | TD ≤ 5:1 | ≤ ± 0.1 % span |
| | | TD > 5:1 | ≤ ± [0.1 + 0.02 x TD] % span |
| Permissible load | R _{max} = [(V _S - V _{S min}) / 0.02 A] Ω load at HART®-communication: R _{min} = 250 Ω | | |
| Long term stability | ≤ ± (0.1 x turn-down) % span / year at reference conditions | | |
| Influence effects | supply: 0.05 % span / 10 V load: 0.05 % span / kΩ | | |
| Turn-on time | 850 msec | | |
| Mean response time | 140 msec – without consideration of electronic damping | | measuring rate 7/sec |
| Max. response time | 380 msec | | |
| Adjustability | configuration of following parameters possible (interface / software necessary ³) | | |
| | - electronic damping 0 ... 100 sec | | |
| | - offset: 0 ... 80 % span | | |
| | - turn-down of span: max. 10:1 | | |

² accuracy according to EN IEC 62828-2– limit point adjustment (non-linearity, hysteresis, repeatability)

³ software, interface, and cable have to be ordered separately (software appropriate for Windows® 95, 98, 2000, NT Version 4.0 or higher, and XP)

Thermal effects (Offset and Span) / - permissible temperatures

| | |
|--------------------------|--|
| Tolerance band | ≤ ± (0.2 x turn-down) % span |
| TC, average | ± (0.02 x turn-down) % span / 10 K |
| in compensated range | -20 ... 80 °C |
| Permissible temperatures | medium/ electronics/ environment/ storage: -20 ... 85 °C * |

*If the cable is intended for use in a smaller temperature range, the use of the probe is limited by this range.

Electrical protection ⁴

| | |
|-------------------------------|---|
| Short-circuit protection | permanent |
| Reverse polarity protection | no damage, but also no function |
| Lightning protection | integrated |
| Electromagnetic compatibility | emission and immunity according to EN 61326 |

⁴ additional external overvoltage protection unit in terminal box KL 1 or KL 2 with atmospheric pressure reference available on request



Level transmitters

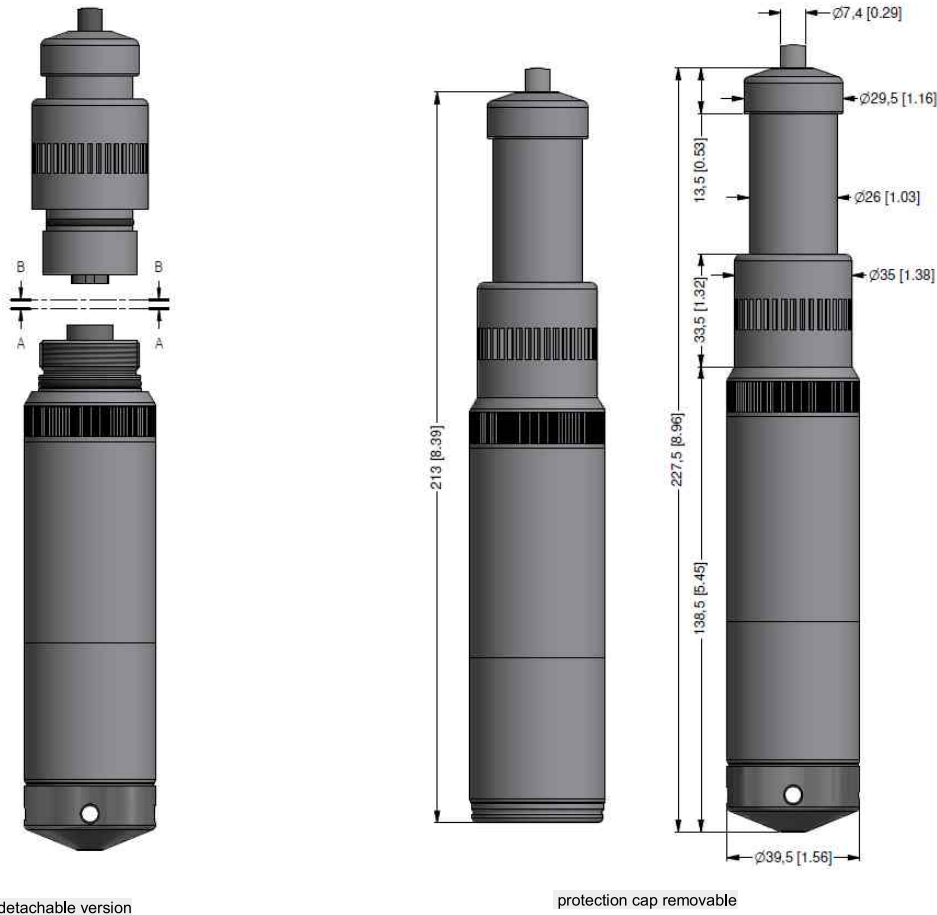
| | | | |
|--|--|---|----------|
| Mechanical stability | | | |
| Vibration | 4 g (according to: DIN EN 60068-2-6) | | |
| Electrical connection | | | |
| Cable with sheath material ⁵ | PVC (-5 ... 70 °C) | grey (-25 ... 70 °C in fixed condition) | Ø 7,4 mm |
| | PUR (-25 ... 80 °C) | black (with drinking water certificate) | Ø 7,4 mm |
| | FEP ⁶ (-25 ... 75 °C) | black | Ø 7,4 mm |
| | TPE-U (-25 ... 125 °C) | blue | Ø 7,4 mm |
| Bending radius | static installation: 10-fold cable diameter, dynamic application: 20-fold cable diameter | | |
| ⁵ shielded cable with integrated air tube for atmospheric pressure reference | | | |
| ⁶ do not use freely suspended probes with an FEP cable if effects due to highly charging processes are expected | | | |
| Materials (media wetted) | | | |
| Housing | stainless steel 1.4404 (316L) | | |
| Seals | FKM EPDM others on request | | |
| Diaphragm | standard: ceramics Al ₂ O ₃ 96 % option: ceramics Al ₂ O ₃ 99.9 % | | |
| Protection cap | POM-C | | |
| Cable sheath | PVC, PUR, FEP, TPE-U | | |
| Miscellaneous | | | |
| Current consumption | max. 21 mA | | |
| Weight | approx. 650 g (without cable) | | |
| Ingress protection | IP 68 | | |
| CE-conformity | EMC Directive: 2014/30/EU | | |

ELECTRICAL CONNECTION

| | | |
|---|--|---------------------------|
| Wiring diagram | | |
| <p>2-wire-system (current) HART[®]</p> | <p>connector</p> | |
| Pin configuration | | |
| Electrical connection | Binder series 723 ⁸ (5-pin) | cable colours (DIN 47100) |
| Supply + | 3 | WH (white) |
| Supply - | 1 | BN (brown) |
| Shield | 5 | GN/YE (green / yellow) |
| ⁸ in detached version | | |



DIMENSION DRAWINGS

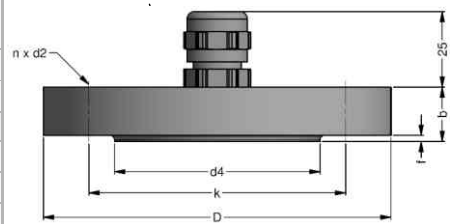


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ACCESSORIES

| Mounting flange with cable gland | | |
|---|---|----------------------|
| Technical data | | |
| Suitable for | all probes | |
| Flange material | stainless steel 1.4404 (316L) | |
| Material of cable gland | standard: brass, nickel plated on request: stainless steel 1.4305 (303); plastic | |
| Seal insert | material: TPE (ingress protection IP 68) | |
| Hole pattern | according to DIN 2507 | |
| Version | Size (in mm) | Weight |
| DN25 / PN40 | D = 115, k = 85, b = 18, n = 4, d = 14 | 1.4 kg |
| DN50 / PN40 | D = 165, k = 125, b = 20, n = 4, d = 18 | 3.2 kg |
| DN80 / PN16 | D = 200, k = 160, b = 20, n = 8, d = 18 | 4.8 kg |
| Ordering type | | Ordering code |
| DN25 / PN40 with cable gland brass, nickel plated | | ZMF2540 |
| DN50 / PN40 with cable gland brass, nickel plated | | ZMF5040 |
| DN80 / PN16 with cable gland brass, nickel plated | | ZMF8016 |
| Terminal clamp | | |
| Technical Data | | |
| Suitable for | all probes with cable \varnothing 5.5 ... 10.5 mm | |
| Material | standard: steel, zinc plated optionally: stainless steel 1.4301 (304) | |
| Weight | approx. 160 g | |
| Ordering type | | Ordering code |
| Terminal clamp, steel, zinc plated | | 1003440 |
| Terminal clamp, stainless steel 1.4301 (304) | | 1000278 |

cable gland M16x1.5 with seal insert (for cable- \varnothing 4 ... 11 mm)



Level transmitters

ORDER CODE

CPA-K-358H------

| | | | |
|--|----------------------------------|--------------|---------|
| Pressure | | | |
| in bar | | | 4 4 5 |
| in m H ₂ O | | | 4 4 6 |
| Input | [mH₂O] | [bar] | |
| | 0 ... 0,6 | 0 ... 0,06 | 0 6 0 0 |
| | 0 ... 1,6 | 0 ... 0,16 | 1 6 0 0 |
| | 0 ... 4 | 0 ... 0,4 | 4 0 0 0 |
| | 0 ... 10 | 0 ... 1 | 1 0 0 1 |
| | 0 ... 20 | 0 ... 2 | 2 0 0 1 |
| | 0 ... 50 | 0 ... 5 | 5 0 0 1 |
| | 0 ... 100 | 0 ... 10 | 1 0 0 2 |
| Customer | | | 9 9 9 9 |
| Housing material | | | |
| Stainless steel 1.4404 (316 L) | | | 1 |
| Customer | | | 9 |
| Diaphragm material | | | |
| Ceramics Al ₂ O ₃ 96 % | | | 2 |
| Ceramic Al ₂ O ₃ 99,9 % | | | C |
| Customer | | | 9 |
| Output signal | | | |
| 4 ... 20 mA / 2-wire | HART [®] -communication | | H |
| Customer | | | 9 |
| Seals | | | |
| Viton (FKM) | | | 1 |
| EPDM | | | 3 |
| FFKM | | | 7 |
| Customer | | | 9 |
| Electrical connection | | | |
| Without cable part | | | 0 |
| PVC - cable (grey, Ø 7,4 mm, price for 1 m) ¹ | | | 1 |
| PUR - cable (black, Ø 7,4 mm, price for 1 m) ¹ | | | 2 |
| FEP - cable with PTFE sheath (black, Ø 7,4 mm, price for 1 m) ¹ | | | 3 |
| TPE-U - cable, up to 125°C (blue, Ø 7.4 mm, price for 1 m) ¹ | | | 4 |
| Customer | | | 9 |
| Accuracy | | | |
| 0,1 % (P _N ≥ 1 bar) | | | 1 |
| 0,1 % (P _N ≥ 1 bar) including Calibration Certificate | | | P |
| 0,2 % (P _N < 1 bar) | | | B |
| 0,2 % (P _N < 1 bar) including Calibration Certificate | | | Q |
| Customer | | | 9 |
| Cable length | | | |
| in m | | | 9 9 9 |
| Special version | | | |
| Standard | | | 0 0 0 |
| Customer | | | 9 9 9 |
| Accessories for submersible transmitter | | | |
| Cabel part + price for cabel in m | | | 5000722 |
| Terminal clamp - zinc plated | | | 1003440 |
| Terminal clamp - stainless steel 1.4301 | | | 1000278 |
| Mounting screw PG16 - plastic | | | 5002200 |
| Software for the intelligent pressure transmitters | | | |
| Communication device ADAPT-5 (RS 232 / HART incl. USB) | | | |
| (ADAPT - 5 , INT-702, software included) | | | |

1 - shielded cable with integrated ventilation tube for atmospheric pressure reference

Manufacturer reserves the right to change sensor specifications without further notice.

