



DCT 532

Industrial Pressure Transmitter with i²C interface

Stainless Steel Sensor

Accuracy according to IEC 60770:
standart: $\leq \pm 0.35 \% \text{ FSO}$
option: $\leq \pm 0.25 \% \text{ FSO}$

Nominal pressure

from 0 ... 100 mbar up to 0 ... 400 bar

Digital output signals

- i²C
- bus frequency max. 400 kHz
- configuration of data format
- interrupt signal

Special characteristic

- ▶ perfect thermal behaviour
- ▶ excellent long term stability

Optional versions

- ▶ pressure port
G 1/2" flush up to 40 bar
- ▶ welded sensor
- ▶ customer specific versions

Contrary to the industrial pressure transmitter with analog signal, the DCT 532 has a digital i²C-interface. i²C has a master-slave topology, whereby you can use up to 127 devices at one master. In addition to the typical settings, as slave address, data format, etc., it is possible to do special parametrisation for pressure unit and more.

Due to the usage of high quality materials and components, the DCT 532 is suitable for almost every industrial application, if medium is compatible with stainless steel 316L.

The modular concept of the pressure transmitter allows customized electrical or mechanical connections, so it is easy to adapt the DCT 532 to different conditions on-site.

Preferred areas of use are



Plant and Machine Engineering



Energy Industry



| Input pressure range | | | | | | | | | | | | |
|------------------------|-------|--------|------|------|------|------|------|-----|-----|-----|----|----|
| Nominal pressure gauge | [bar] | -1...0 | 0.10 | 0.16 | 0.25 | 0.40 | 0.60 | 1 | 1.6 | 2.5 | 4 | 6 |
| Nominal pressure abs. | [bar] | - | - | - | - | 0.40 | 0.60 | 1 | 1.6 | 2.5 | 4 | 6 |
| Overpressure | [bar] | 5 | 0.5 | 1 | 1 | 2 | 5 | 5 | 10 | 10 | 20 | 40 |
| Burst pressure ≥ | [bar] | 7.5 | 1.5 | 1.5 | 1.5 | 3 | 7.5 | 7.5 | 15 | 15 | 25 | 50 |

| | | | | | | | | | | |
|-------------------------------|-------|--|-----|-----|-----|-----|------|------|------|------|
| Nominal pressure gauge / abs. | [bar] | 10 | 16 | 25 | 40 | 60 | 100 | 160 | 250 | 400 |
| Overpressure | [bar] | 40 | 80 | 80 | 105 | 210 | 600 | 600 | 1000 | 1000 |
| Burst pressure \geq | [bar] | 50 | 120 | 120 | 210 | 420 | 1000 | 1000 | 1250 | 1250 |
| Vacuum resistance | | $P_N \geq 1$ bar: unlimited vacuum resistance $P_N < 1$ bar: on request | | | | | | | | |

| Output signal / Supply | |
|------------------------|--|
| i ² C | V _S = 3.5 ... 5.5 V _{DC} |

| Performance | |
|--|--|
| Accuracy ¹ | standard for $P_N \geq 0.4$ bar: $\leq \pm 0.35$ % FSO standard for $P_N < 0.4$ bar: $\leq \pm 0.5$ % FSO option for $P_N \geq 0.4$ bar: $\leq \pm 0.25$ % FSO |
| max. I/O current | 10 mA |
| Long term stability | $\leq \pm 0.1$ % FSO / year at reference conditions |
| Response time | 1.5 msec + transmission time (depending on bus frequency) |
| Measuring rate | 500 Hz |
| ¹ accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability) | |

¹ accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)

| Thermal effects (Offset and Span) | | | |
|---------------------------------------|------------|----------|------------|
| Nominal pressure P _N [bar] | -1 ... 0 | < 0.40 | ≥ 0.40 |
| Tolerance band [% FSO] | ≤ ± 0.75 | ≤ ± 1 | ≤ ± 0.75 |
| in compensated range [°C] | -20 ... 85 | 0 ... 70 | -20 ... 85 |

| Permissible temperatures | |
|--------------------------|--|
| Permissible temperatures | medium: -25 ... 125 °C |
| | electronics / environment: -25 ... 85 °C |
| | storage: -40 ... 85 °C |

| Electrical protection | |
|-------------------------------|--|
| Short-circuit protection | Permanent |
| Reverse polarity protection | by exchanged supply connections no damage, but also no function by exchanged communication with signal lines it can come according to constellation to damages. |
| Electromagnetic compatibility | emission and immunity according to EN 61326 |

| Mechanical stability | |
|----------------------|---|
| Vibration | 10 g RMS (25 ... 2000 Hz) according to DIN EN 60068-2-6 |
| Shock | 500 g / 1 msec according to DIN EN 60068-2-27 |

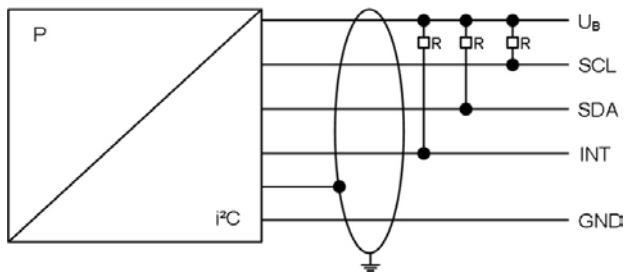
| Materials | |
|-------------------------|--|
| Pressure port / Housing | stainless steel 1.4404 (316 L) |
| Seals (media wetted) | standard: FKM options: EPDM welded version ² <div style="text-align: right;">others on request</div> |
| Diaphragm | stainless steel 1.4435 (316 L) |
| Media wetted parts | pressure port, seal, diaphragm |

² welded version only with pressure ports according to EN 837

| Miscellaneous | |
|-----------------------|---|
| Current consumption | < 15 mA |
| Weight | approx. 140 g |
| Ingress protection | IP 67 / IP 68 for cable with ventilation tube |
| Installation position | any ³ |
| Operational life | > 100 x 10 ⁶ pressure cycles |
| CE-conformity | EMC Directive: 2004/108/EC |

³ Pressure transmitters are calibrated in a vertical position with the pressure connection down. If this position is changed on installation there can be slight deviations in the zero point for pressure ranges $P_N \leq 1$ bar.

Wiring diagrams

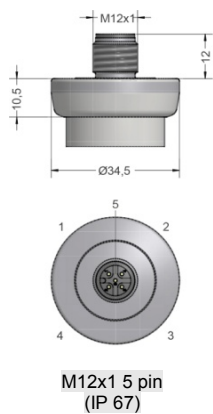


Pin configuration

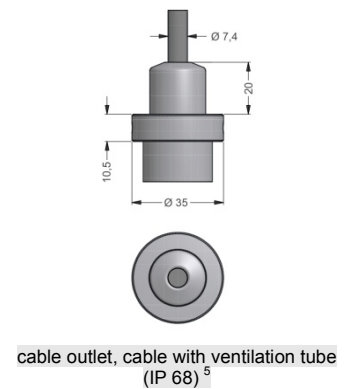
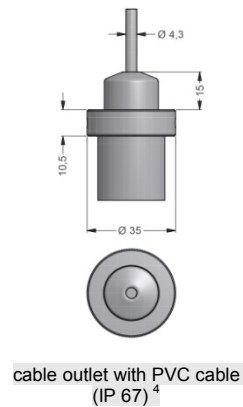
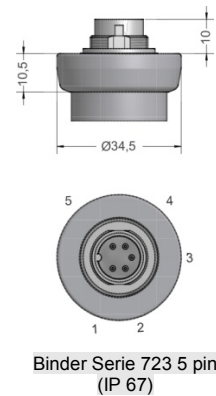
| Electrical connection | M12x1 / metal (5 pin) | Binder 723 (5 pin) | cable colours (DIN 47100) |
|-----------------------|--------------------------|-----------------------|------------------------------|
| Supply + | 1 | 1 | wh (white) |
| Supply - | 3 | 3 | bn (brown) |
| SDA | 2 | 2 | ye (yellow) |
| SCL | 4 | 4 | gn (green) |
| INT | 5 | 5 | pk (pink) |
| Shield | housing | housing | ye/gn (yellow / green) |

Electrical connections (dimensions in mm)

Standard



Optional

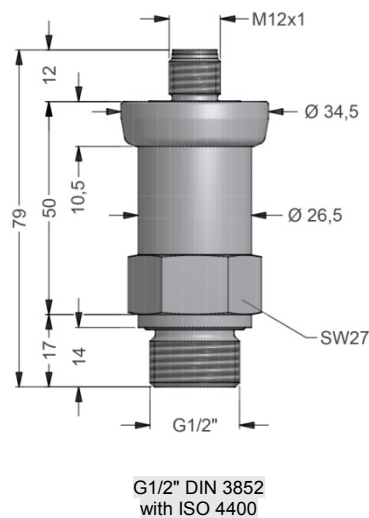


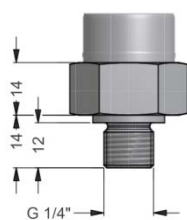
⁵ standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70°C)

⁶ different cable types and lengths available, permissible temperature depends on kind of cable

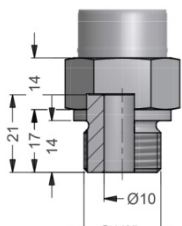
Mechanical connections (dimensions in mm)

standard

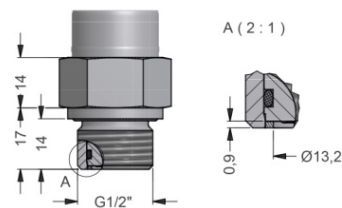
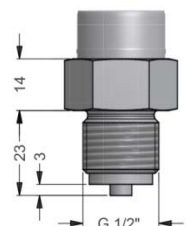


Mechanical connections (dimensions in mm)**option**

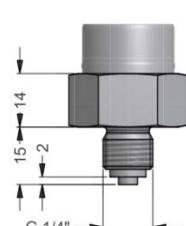
G1/4" DIN 3852



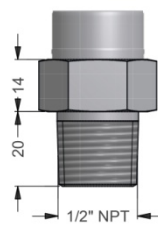
G1/2" open port

G1/2" DIN 3852
with flush sensor

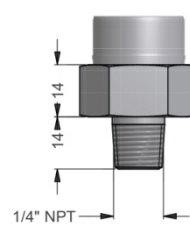
G1/2" EN 837



G1/4" EN 837



1/2" NPT



1/4" NPT

⇒ metric threads and other versions on request

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| Configuration i ² C-interface | | | | | | | | | | | | | | | | |
|--|---|-----|---|---|---|---|---|---|---|---|---|-----|---|---|---|---|
| Stand configuration | 0 | 5 | 0 | - | 0 | - | 0 | - | 0 | - | 0 | - | 0 | 0 | 0 | 1 |
| Slave Address | | | | | | | | | | | | | | | | |
| address | 0 | 0 | 1 | | | | | | | | | | | | | |
| | | ... | | | | | | | | | | | | | | |
| | 1 | 2 | 7 | | | | | | | | | | | | | |
| Type of result register | | | | | | | | | | | | | | | | |
| 32bit IEEE float | | | | | 0 | | | | | | | | | | | |
| 16bit Integer | | | | | 1 | | | | | | | | | | | |
| Byte order of values | | | | | | | | | | | | | | | | |
| Low byte first | | | | | | | 0 | | | | | | | | | |
| High byte first | | | | | | | 1 | | | | | | | | | |
| Mode of result register | | | | | | | | | | | | | | | | |
| Value | | | | | | | 0 | | | | | | | | | |
| Percent of nominal | | | | | | | 1 | | | | | | | | | |
| Restore of address pointer | | | | | | | | | | | | | | | | |
| No restore | | | | | | | | | | 0 | | | | | | |
| To last set address on next start | | | | | | | | | | 1 | | | | | | |
| Digital meaning | | | | | | | | | | | | | | | | |
| Count of result | | | | | | | | | | | | 0 | 0 | 0 | 0 | 1 |
| | | | | | | | | | | | | ... | | | | |
| | | | | | | | | | | | | 1 | 0 | 0 | 0 | 0 |

