



PIEZORESISTIVE PRESSURE TRANSMITTERS

SERIES 25Y

ABSOLUTE AND GAUGE PRESSURE / ACCURACY 0,25 %FS

The Y-line transmitters have an extremely small temperature error. This is achieved using an additional circuit containing a temperature sensor that subdivides the temperature range into fields that are 1,5 Kelvin (K) wide. The TK zero and TK compensation values are calculated for each field and programmed into the additional circuit. During operation, these values are fed into the analogue signal path depending on the temperature. Each temperature is the «calibration temperature» for this transmitter. The accuracy thereof is mainly determined by linearity. 120 fields are available, representing a possible temperature range of 180 K. The wider the temperature range, the greater the amount of testing that is needed to minimise the inaccuracy of the mathematical model.

The Series 25Y product line is outstanding due to its extreme ruggedness towards electromagnetic fields. The limits of the CE standard are undercut by a factor of up to 10 with conducted and radiated fields.



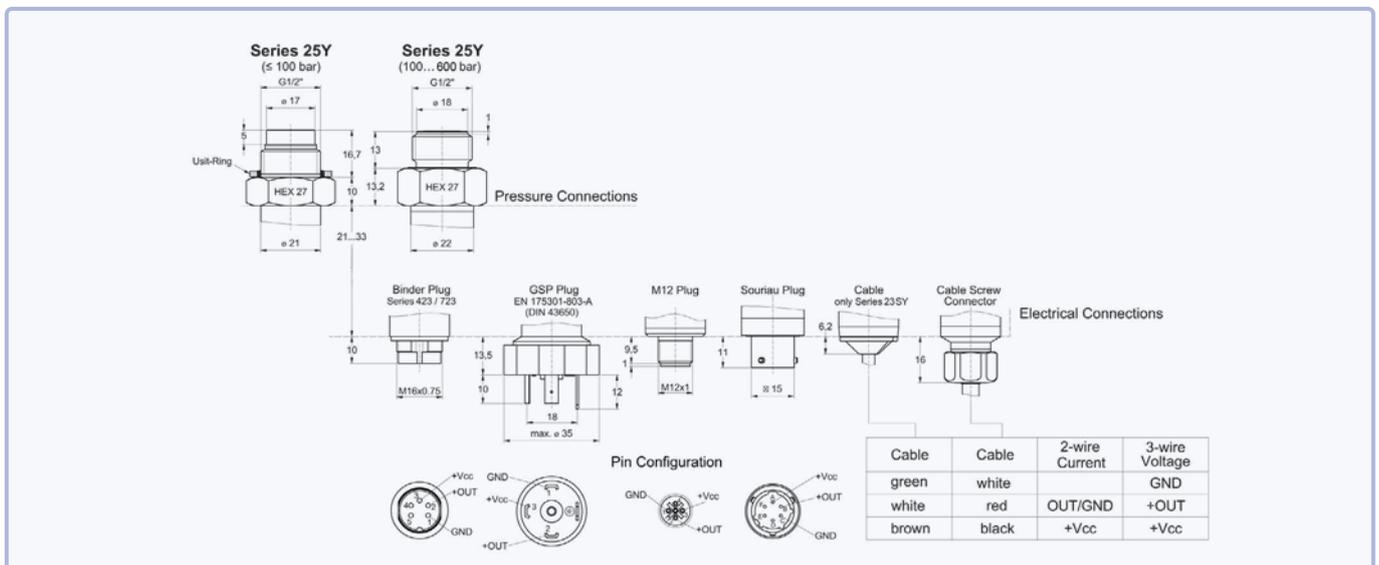
Series 25Y

A Comprehensive Range

Absolute, barometric, gauge (positive and negative pressures). Many nominal pressure ranges. Current or voltage output.

Flexibility

A modular concept is used, with fast and economical production achieved by using off-the-shelf sensors. Numerous options and variations are available to meet customers' specific requirements: Pressure ranges, pressure ports, signal outputs, electrical connectors, etc.



KELLER AG für Druckmesstechnik
CH-8404 Winterthur
☎ +41 52 235 25 25
✉ info@keller-druck.com

KELLER Ges. für Druckmesstechnik mbH
DE-79798 Jestetten
☎ +49 7745 9214 0
✉ eurocenter@keller-druck.com

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Companies approved to ISO 9001
🏠 www.keller-druck.com



Contáctanos:
Telf. (+511) 640 1666
Cel. (+51) 941 451 011



Cotizaciones:
ventas@inprocess.com.pe



**Specifications**

Pressure Ranges (FS) in bar

| | | | | | | | | | | | | | | | | | | |
|---------|---------|----------|------|---|---|----|----|----|-----|-----|-----|-----|--|--|--|--|--|--|
| PR-25Y | -1 -0,5 | 0,5 ±0,5 | 1 ±1 | 2 | 5 | 10 | 20 | | | | | | | | | | | |
| PA-25Y | -1 | | 1 ±1 | 2 | 5 | 10 | 20 | 50 | 100 | 200 | 400 | 600 | | | | | | |
| PAA-25Y | | 0,5 | 1 | 2 | 5 | 10 | 20 | 50 | 100 | 200 | 400 | 600 | | | | | | |

| | | | | | | | | | | | | | | | | | | | | |
|--------------|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|-----|-----|-----|-------|------|
| Overpressure | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 12 | 12 | 40 | 40 | 80 | 100 | 200 | 300 | 1100* | 1100 |
|--------------|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|-----|-----|-----|-------|------|

PR: Vented Gauge. Zero at atmospheric pressure PA: Sealed Gauge. Zero at 1000 mbar abs. PAA: Absolute. Zero at vacuum

| Pressure Range | Accuracy ¹⁾ | Error Band @ 0...50 °C ²⁾ | | Error Band @ -10...80 °C ²⁾ | |
|----------------|------------------------|--------------------------------------|----------|--|----------|
| | | typ. | max. | typ. | max. |
| > 2...600 bar | ±0,25 %FS | ±0,3 %FS | ±0,5 %FS | ±0,4 %FS | ±0,7 %FS |
| 0,5...2 bar | ±0,25 %FS | ±0,6 %FS | ±1,0 %FS | ±0,8 %FS | ±1,5 %FS |

¹⁾ Linearity (best straight line) + Hysteresis + Repeatability

²⁾ Accuracy + Temperature Coefficient + Zero + Span Tolerance

Storage-/Operating Temperature -40...100 °C

Long Term Stability Range > 2 bar 0,1 %FS typ. 0,2 %FS max.
Range ≤ 2 bar 2 mbar typ. 4 mbar max.

| Type | 2-wire | 3-wire | 3-wire | 3-wire |
|--------------------------|---------------------|-----------------|----------------|--------------------|
| Signal Output | 4...20 mA | 0...10 V | 0...5 V | 0,5...4,5 V |
| Limitation Signal Output | 3,2...22,3 mA | -1,2...11,2 V | -0,6...5,6 V | 0,1...4,9 V |
| Supply | 8...32 VDC | 13...32 VDC | 8...32 VDC | 8...32 VDC |
| Load Resistance | < (U-8 V) / 0,025 A | > 5 kΩ | > 5 kΩ | > 5 kΩ |
| Limiting Frequency | 2 kHz | 2 kHz | 2 kHz | 2 kHz |
| Power Consumption | | max. 5 mA | max. 5 mA | max. 4 mA |

Electrical Connection

| Plug / Cable | Protection ⁵⁾ | Female connector |
|----------------------------------|--------------------------|--|
| Binder-423/723 (5-wire) | IP40 | Incl. in delivery, IP67 ⁶⁾ optional |
| GSP EN 175 301-803-A (DIN 43650) | IP65 ⁶⁾ | Incl. in delivery |
| M12 (4-wire) | IP67 ⁷⁾ | Optional with connection cable |
| Souriau (MIL-C26482) | IP65 ⁶⁾ | Optional |
| Cable (max. 80 °C) | IP54 | |
| Cable gland | IP67 ⁸⁾ | |

⁵⁾ with corresponding mating plug ⁶⁾ Use cable with integrated reference hose for PR version ⁷⁾ with PR version IP54

⁸⁾ Optional IP68 available

Pressure Connection

G1/2"

Response Time (Supply ON)

(0...99 %) < 5 ms

Insulation

> 10 MΩ@300 V

EMC

EN 61000-6-2: 2005 / EN 61000-6-3: 2007 / EN 61326-2-3: 2006

Dead Volume Change

< 0,1 mm³

Material in Media Contact

- Stainless Steel AISI 316L (1.4404/1.4435); 25wY > 400 bar: Inconel 718
- USIT or Viton® O-Ring (no internal seals)

Weight

≈ 120 g (depending on version)

Endurance

> 10 million cycles, 0...100 %FS at 25 °C ⁴⁾

Oil Filling

Silicone oil

Options

Temperature Range

Other temperature ranges on request. Maximal range: -40...+120 °C

Oil Filling

Fluorocarbon oil (O₂-compatible), olive-oil, lowest temperature oil (-55 °C)

Pressure Ranges

Intermediate ranges on request, e.g. barometer 0,7...1,2 bar abs.

Pressure Connection, Electrical Connection

Others on request

Intrinsic Safety (ATEX)

See also data sheet 25Y-Ei

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