PE 81.74

# Pressure Transmitter

## with Diaphragm, High Overpressure Safety

**Standard • Model 891.34.2166**

**Ex-Version • Model 892.34.2166**

TRONIC LINE

- **Pressure ranges from 0 ... 4 mbar to 0 ... 25 bar**
- **Diaphragm pressure element**
- **Material stainless steel, NiCrCo-alloy (Duratherm) and FPM (Viton) exposed to pressure medium**
- **Without pressure transmission fluid**
- **For measuring points with increased overload**
- **Pressure connection G ½ B male**
- **For gaseous, liquid and aggressive media, and in aggressive environments**
- **Also for contaminated and viscous media, if the open pressure connection flange is chosen as optional extra**
- **Transmitter with Hall sensor and amplifier**
- **Industrial standard signals 4 ... 20 mA or 0 ... 20 mA**
- **Electrical connection via cable box**
- **Ingress protection IP 65**

**General features**

The principle feature of this pressure gauges with mounted transmitter intended for low measuring ranges starting from 0 ... 4 mbar is its high overload capacity.
The standard design allows for overload values of the pressure transmitter of up to 5 times the measuring range value (max. 40 bar).

As an optional extra, the pressure transmitter may be supplied in designs allowing for overload values of either 40 or 100 bar or a negative pressure up to -1 bar.
The high overload capacity is provided by fully contoured metal bolsters for the diaphragm pressure element.
Liquid filling of the measuring cell was abandoned in order to eliminate the limitations caused by control valve mechanisms, and problems caused by fluid expansion at high temperatures.

The standardized output signals 4 ... 20 or 0 ... 20 mA are generated by an axial and pressure-proportional deflection of the diaphragm pressure element directly drives the magnetic-field-dependent sensor (Hall sensor) without friction.
Upon request, the transmitter may also be supplied in intrinsically safe ex-approved design (⇒ **892.34.2166**) with the output signal 4 ... 20 mA.

For recalibration, zero and span can be adjusted by means of easily accessible potentiometers.

Pressure connection flanges DIN/ASME DN 15 to DN 80 are possible for adjustment of the measuring point and for contaminated and viscous media.

The use of high-quality stainless steel material is intended for applications within the chemical industry for gaseous, liquid and aggressive media. For applications with increased demands for corrosion resistance, wetted parts made of special materials like PTFE, Hastelloy, Monel, Nickel, Tantalum, Titanium may be supplied.

Electrical connection is made by means of a cable box with screwed cable gland M 20 x 1.5.

**Supplementary data sheets**

- Differential pressure transmitter **Model 89X.34.1998**
  Pressure rating PN 2.5/25/40 bar
  (see data sheet PE 81.70)
- Differential pressure transmitter **Model 89X.34.1884**
  Pressure rating PN 40/100/250 bar
  (see data sheet PE 81.72)
- Absolute pressure transmitter **Model 89X.34.2082**
  (see data sheet PE 81.76)
- Transmitter to combine with pressure gauges **Model 89X.34**
  (see data sheet AE 08.02)

| Technical data | | Model 891.34.2166 and Model 892.34.2166 (Ex-version) |
|---|---|---|
| Power supply $U_B$ | | |
| for non - Ex -class Models | DC V | $10 < U_B \leq 30$ |
| for Ex -class Models | | see under section Ex -class protection |
| Supply voltage effect | % of span/10 V | ≤ 0.1 |
| Permissible residual ripple | % ss | ≤ 10 |
| Output signal | | for non Ex -class version, Model 891.34.2166: |
| and permissible max. load $R_A$ | | 4 … 20 mA, 2-wire system $R_A \leq (U_B - 10\,V) / 0.02\,A$ with $R_A$ in Ohm and $U_B$ in Volt |
| | | 0 … 20 mA, 3-wire system $R_A \leq (U_B - 10\,V) / 0.02\,A$ with $R_A$ in Ohm and $U_B$ in Volt |
| | | {0 … 10 V, 3-wire system $R_A \leq (U_B - 10\,V) / 0.02\,A$ with $R_A$ in Ohm and $U_B$ in Volt} |
| | | for Ex -class version, Model 892.34.2166: |
| | | 4 … 20 mA, 2-wire system $R_A \leq (U_B - 12.5\,V) / 0.02\,A$ with $R_A$ in Ohm and $U_B$ in Volt |
| Effect of load | % of span | ≤ 0.1 |
| Response time | ms | approx. 50 |
| Output signal adjustment | | |
| Zero point, electrical | % of span | ± 15 |
| Span, electrical | % of span | ± 30 |
| Linearity | % of span | ± 1.2 {0.8} (limit point calibration) |
| Hysteresis | % of span | ≤ 0.8 {0.5} |
| Permissible | | |
| Medium temperature [1)] | °C | -25 … +100 |
| Ambient temperature [1)] | °C | -20 … +60 |
| Compensated temperat. range | °C | -25 … +60 |
| Temperature coefficient in | | |
| compensated temperat. range | | |
| average $T_C$ on zero point | % of span/10 K | ≤ 0.3 |
| average $T_C$ on span | % of span/10 K | ≤ 0.3 |
| Ex -class protection | | according to EC-Type Examination Certificate DMT 01 ATEX E 021 for Model 892.34 |
| Output signal | | 4 … 20 mA, 2-wire |
| Ex certification | | Ex II 2G EEx ia IIC T6 and I M2 EEx ia I |
| Conformity specifications | | |
| Power supply | DC V | 12.5 … 28 |
| Short circuit rating | mA | 100 |
| Rating | mW | 1000 |
| Internal capacitance | nF | $C_i \leq 24$ |
| Internal inductance | mH | $L_i \leq 0{,}2$ |
| Medium temperature | °C | -20 … +60 |
| Ambient temperature | °C | -20 … +60 |
| CE-Conformity | | Interference emission and immunity per EN 61 326 |
| Wiring | | Terminal box (screw terminals up to 2.5 mm²) |
| Wiring protection | | Protected against reserve polarity and overvoltage |
| Ingress protection | | |
| per EN 60 529 / IEC 529 | | IP 65 |
| Weight | | |
| non Ex -class Models | kg | approx. 2.5 (gauge head Ø 160 mm) or approx. 1.3 (gauge head Ø 100 mm), respectively |
| Ex -class Models | kg | approx. 2.8 (gauge head Ø 160 mm) or approx. 1.6 (gauge head Ø 100 mm), respectively |
| Dimensions | mm | see drawings |
| Items in curved { } brackets are optional extras for additional price. | | |

1) for maximum values of Ex-class versions: see Ex -class protection

## Power supply devices for Pressure Transmitter Model 891.34.2166 under non- Ex -operation

For non- Ex -operation the following power supply devices are available for DC-supply of transmitter Model 891.34.2166:

**Model A-VA-1 (old Model 903.30.400)** - Power supply, line voltage AC 230 V, output voltage DC 24 V, 70 mA max.
**Model KFA6-STR-1.24.500** - Power supply, line voltage AC 90 ... 253 V, 48 ... 63 Hz, output voltage DC 24 V, 500 mA max.

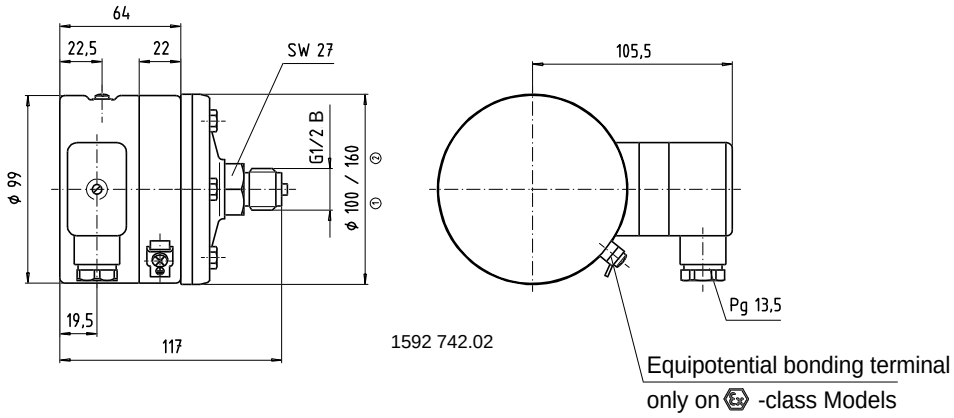
## Ex -Line transformer for Pressure Transmitter Model 892.34.2166 under Ex -operation

For Ex -operation the following Ex -line transformers are available for galvanical separation and transfer of power supply for transmitter Model 892.34.2166:

**Model KFD2-STC4-Ex1** - Ex -line transformer, line voltage: DC 20 ... 32 V, output voltage: DC 25.4 V maximum, 88.2 mA max.

**Model SI 815-52** - Ex -line transformer with power supply transfer for 2-wire system 4 ... 20 mA.
The line transformer is usable with power supply or electronic indicating instrument with integrated power supply for transmitter. When calculating the permissible max. load $R_A$ a voltage drop of 7.7 V at the line transformer has to be considered.

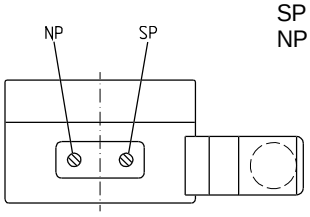
**Dimensions** in mm




① gauge head Ø 100 mm (pressure ranges ≥ 100 mbar)
② gauge head Ø 160 mm (pressure ranges < 100 mbar)

## Position of the potentiometers in the electronics case

The potentiometers are accessible after unscrewing the screw plugs in the top of the casing.



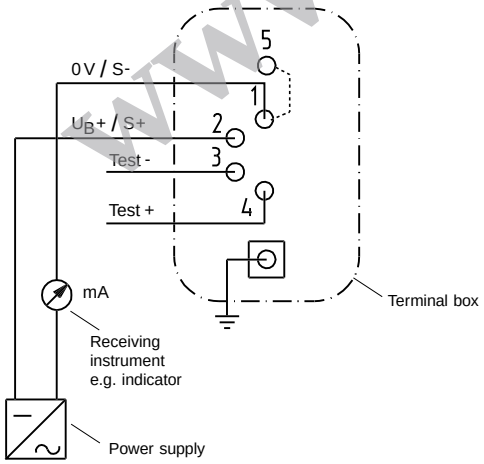

SP potentiometer for span
NP potentiometer for zero point

1592 750.01

## Connection details

The terminals 1 and 5 are bridged internally in the terminal box providing two terminals for the 0 V / S- connection.

**4 … 20 mA 2-wire system**

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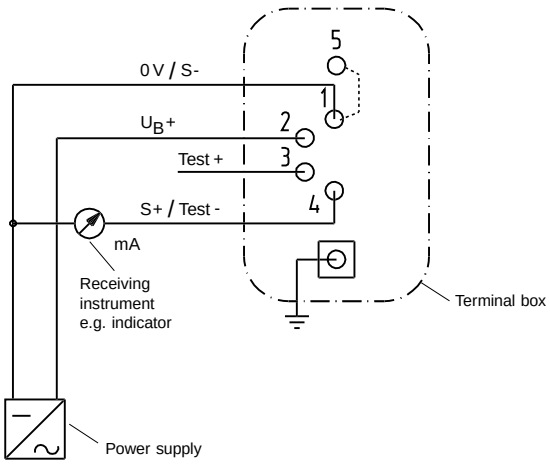
**0 … 20 mA 3-wire system**



## Ordering information

Model / Pressure range / Size of connection / Output signal / Optional extras required

Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing.
Modifications may take place and materials specified may be replaced by others without prior notice.

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