

# Transmitter

to combine with pressure gauges

Standard • Model 891.34

 - version • Model 892.34

## Accessories, Electric

- Combined with pressure gauges, pressure ranges from 0 ... 2.5 mbar to 0 ... 1000 bar
- Transmitter with magnetic field-dependent sensor and amplifier
- Industry standard signals are available 4 ... 20 mA resp. 0 ... 20 mA
- With mechanical analog indication
- Optionally with inbuilt alarm contacts
- Optionally with liquid filling case

### Service intended

WIKAI pressure gauges with integrated transmitter Model 89X.34 combine the advantages of in-situ mechanical indication with the demands for electrical signal transmission for modern measured value registration in industry.

### General features


- Basic pressure gauge with mechanical analogous indication, calling for no external energy supply
- Transmitter without effect on mechanical analog indication
- Combination of transmitter and alarm contacts possible
- Optional accessories in accordance with details given in the respective basic pressure gauge data sheets


### Operating principle

Spring-elastic measuring elements in bourdon tube, diaphragm or capsule form are used as pressure pick-ups.

The movement of the measuring element is used on the mechanical side for movement deflection and converted into an electrical output signal on the electrical side by a magnetic field-dependent sensor (Hall sensor).

The standard 4 ... 20 mA current signals in 2-wire system or 0 ... 20 mA in 3-wire system are generated by the integrated amplifier on the pressure gauge with transmitter, Model 891.34.

The intrinsically safe version,  - class version Model 892.34, has to be used in explosion hazardous areas.

The EC-Type Examination Certificate of the DMT (Deutsche Montan Technologie GmbH) for intrinsically safe instruments in ignition protection Class  II 2G EEx ia IIC T6 and I M2 EEx ia I is provided for Model 892.34.

Due to the standard 4 ... 20 mA output signal these gauges can be used in all industries.



Bourdon tube pressure gauge, Model 232.30.100 with transmitter Model 891.34



Differential pressure gauge, Model 732.51.100 with transmitter Model 891.34



Technical data		Model 891.34 and Model 892.34 (Ex - version)
Power supply $U_B$ for non-Ex - class version	DC V	$10 < U_B \leq 30$
for Ex - class version		see under section Ex - class protection!
Permissible residual ripple	% of span/10 V	$\leq 0.1$
Supply voltage effect	% ss	$\leq 10$
Output signal and permissible max. load $R_A$		for non-Ex - class version, Model 891.34: $4 \dots 20$ mA, 2-wire $R_A \leq (U_B - 10 \text{ V}) / 0.02 \text{ A}$ with $R_A$ in Ohm and $U_B$ in Volt $0 \dots 20$ mA, 3-wire $R_A \leq (U_B - 10 \text{ V}) / 0.02 \text{ A}$ with $R_A$ in Ohm and $U_B$ in Volt $\{0 \dots 10 \text{ V}, 3\text{-wire}\}$ $R_A \leq (U_B - 10 \text{ V}) / 0.02 \text{ A}$ with $R_A$ in Ohm and $U_B$ in Volt for Ex - class version, Model 892.34: $4 \dots 20$ mA, 2-wire $R_A \leq (U_B - 12.5 \text{ V}) / 0.02 \text{ A}$ with $R_A$ in Ohm and $U_B$ in Volt
Effect of load	% of span	$\leq 0.1$
Response time	ms	approx. 50 2)
Output signal adjustment		
Zero point, electrical	% of span	$\pm 5$
Span, electrical	% of span	$\pm 5$
Linearity by		
accuracy of local readout:		
Class 1.6	% of span	$\pm 1.0$ (limit point calibration)
Class 1.0	% of span	$\pm 0.8$ (limit point calibration)
Hysteresis by		
accuracy of local readout:		
Class 1.6	% of span	$\leq 0.8$
Class 1.0	% of span	$\leq 0.5$
Permissible		
Medium temperature 1)	°C	$-25 \dots +100$
Ambient temperature 1)	°C	$-20 \dots +60$
Compensated temperat. range	°C	$-25 \dots +60$
Temperature coefficient in compensated temperat. range		
average $T_C$ on zero point	% of span/10 K	$\leq 0.3$
average $T_C$ on span	% of span/10 K	$\leq 0.3$
Ex - class protection		according to EC-Type Examination Certificate DMT 01 ATEX E 021 for Model 892.34
Output signal		$4 \dots 20$ mA, 2-wire
Ex certification		Ex II 2G EEx ia IIC T6 and I M2 EEx ia I
Conformity specifications:		
Power supply	DC V	$12.5 \dots 28$
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	$-20 \dots +60$
Ambient temperature	°C	$-20 \dots +60$
CE-Conformity		Interference emission and immunity per EN 61 326
Wiring		Terminal box (screw terminals up to 2.5 mm 2)
Wiring protection		Protected against polarity crossing and overvoltage
Ingress protection		IP 65 per EN 60 529 / IEC 529
Items in curved brackets { } are optional for additional price.		

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

2) all model 7XX gauges: response time approx. 1 s (option: approx. 0.05 s)

## Power supply devices for pressure gauge with Transmitter Model 891.34 under non-Ex-operation

For non-Ex-operation the following power supply devices are available for DC-supply of transmitter Model 891.34:

**Model A-VA-1 (old Model 903.30.400)** - Power supply, line voltage AC 230 V, output voltage DC 24 V, max. 70 mA

**Model KFA6-STR-1.24.500** - Power supply, line voltage AC 90 ... 253 V, 48 ... 63 Hz, output voltage DC 24 V, max. 500 mA

## Ex - Line transformer for pressure gauge with Transmitter Model 892.34 under Ex-operation

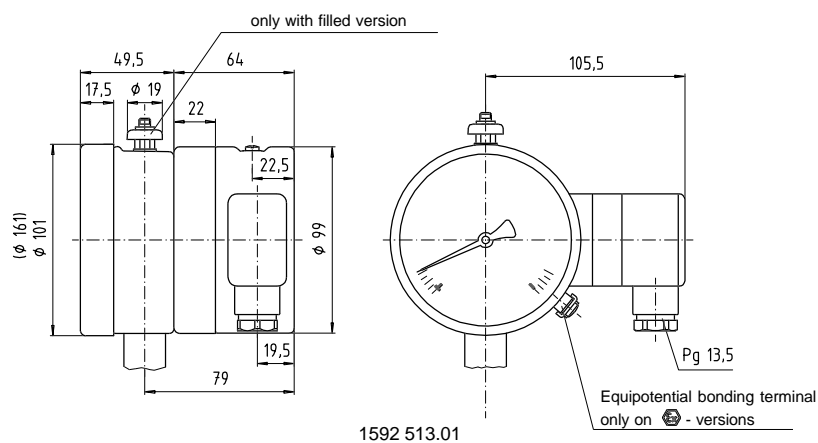
For Ex-operation the following Ex-line transformers are available for galvanical separation and transfer of power supply for transmitter Model 892.34:

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

**Model SI 815-52** - Ex-line transformer with power supply transfer for 2-wire system  $4 \dots 20$  mA.

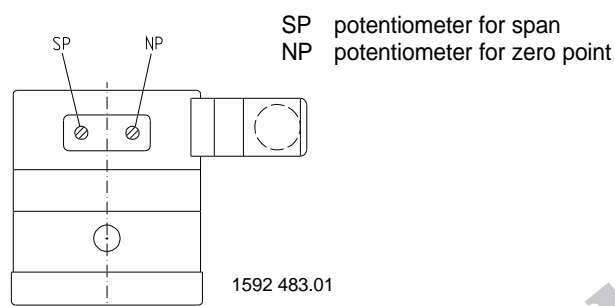
The line transformer is usable with power supply or electronic indicating instrument with integrated power supply for transmitter. When calculating the permissible max. load  $R_A$  a voltage drop of 7.7 V at the line transformer has to be considered.

## Dimensions in mm



## Position of potentiometer

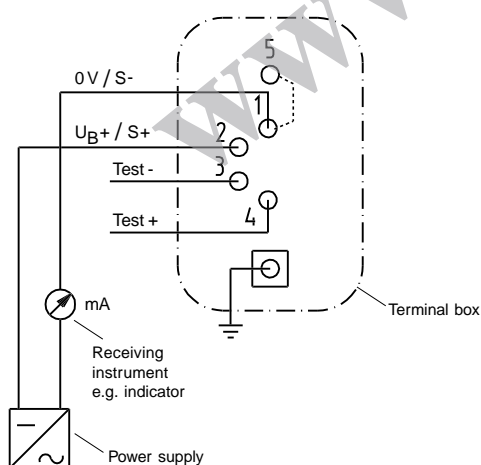
The potentiometers are accessible after unscrewing the screw plugs in the top of the casing.



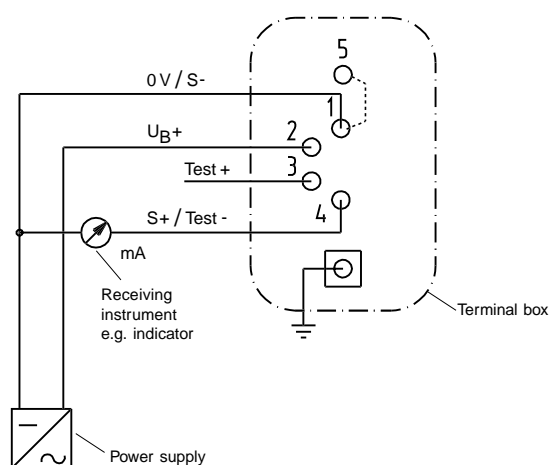
## Connection details

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



### 0 ... 20 mA 3-wire system



An **operating manual** including further information about mounting and commissioning as well as operation and maintenance is enclosed to each shipment of a pressure transmitter with local readout.

## Feasibility of installing transmitters into pressure gauges

The described transmitters may be built in the following pressure gauges. Furthermore in most alarm contacts can be combined with transmitters (see food notes for limitations).

For specifications of the pressure gauges see corresponding data sheets.

Pressure gauge				Transmitter		Transmitter and alarm contacts		
Model	Nominal size	Pressure connection	Data Sheet	Typ		Transmitter model		
				891.34	892.34	891.34		892.34
						Alarm contact model (data sheet AE 08.01)		
						821	831	831
232.30 233.30	100	bottom	PM 02.04 PM 02.05	x	x	x	x	x
432.50 433.50 452.50 453.50	100 / 160	bottom	PM 04.03	x	x	x	x	x
432.56 433.56	100 / 160	bottom	PM 04.07	x	x	x	x	x
432.36 433.36	100							
422.20 423.20	100 / 160	bottom	PM 04.08	x	x	x	x	x
532.52 533.52 532.53 533.53 532.54 533.54	100	bottom	PM 05.02	x	x	x	x	x
632.50	100	bottom	PM 06.03	x	x			
632.51	100 / 160	bottom	PM 06.06	x	x	x	x	x
712.20 713.20	100 / 160	bottom	PM 07.10	x	x	x	x	x
732.51 733.51	100 / 160	bottom	PM 07.05	x	x	x	x	x
736.51	100 / 160	bottom	PM 07.08	x	x	x <sup>1)</sup>	x	x
722.14 <sup>3)</sup> 723.14 <sup>3)</sup> 732.14 <sup>3)</sup> 733.14 <sup>3)</sup>	160	bottom	PM 07.13	x <sup>2)</sup>	x <sup>2)</sup>	x <sup>2)</sup>	x <sup>2)</sup>	x <sup>2)</sup>

1) Inquire feasibility when intended for flammable gases!

2) Only scale ranges  $\geq 0 \dots 400$  mbar

3) Exterior dimensions do not correspond to drawing 1592 513.01!

## Ordering information

Pressure gauge model / Nominal size / Scale range / Size and location of connection / Model-no. of Transmitter / Output signal 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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