

Transmitters to combine with pressure gauges Model 891.34 Model 892.34 Ex-Version

WIKA Data Sheet AC 08.02

Applications

- For installation in pressure gauges, measuring 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 analogue indication

Special Features

- Basic pressure gauge with mechanical analogue indication, needing no external power
- Transmitter without effect on mechanical analogue indication
- Combination of transmitters and alarm contacts possible
- Liquid filling case possible
- Optional accessories in accordance with details given in the respective basic pressure gauge data sheets



**Bourdon tube pressure gauge, Model 632.50
with transmitter Model 891.34**

Description

Service intended

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

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, Ex-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 "Ex 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.

Specifications

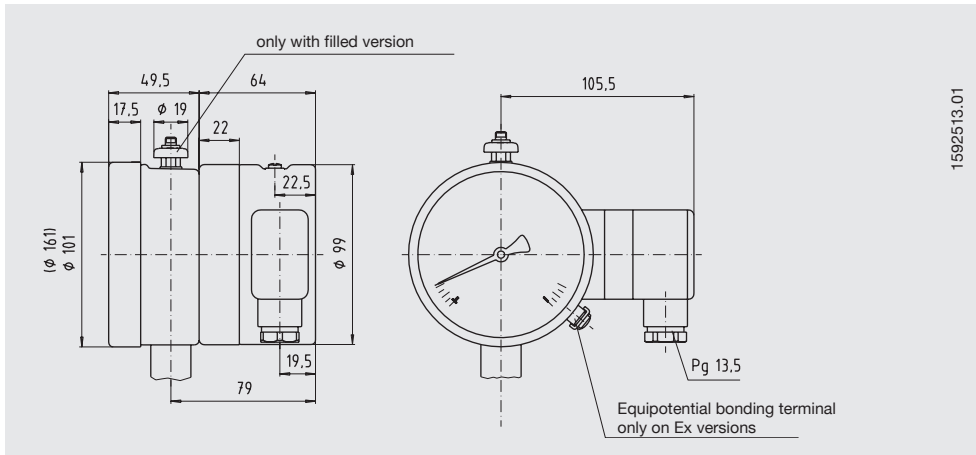
Model 891.34 and Model 892.34 (Ex-version)

Power supply U_B		
■ For non-Ex-class version	DC V	$10 < U_B \leq 30$
■ For Ex-class version		see section Ex-class protection
Supply voltage effect	% of FS/10 V	≤ 0.1
Permissible residual ripple	% ss	≤ 10
■ Output signal		for non-Ex-class version, Model 891.34: 4 ... 20 mA, 2-wire 0 ... 20 mA, 3-wire {0 ... 10 V, 3-wire}
■ Permissible max. load R_A		$R_A \leq (U_B - 10 \text{ V})/0.02 \text{ A}$ with R_A in Ohm and U_B in Volt, however max. 600 Ω
■ Output signal for Ex		for Ex-class version, Model 892.34: 4 ... 20 mA, 2-wire
■ Permissible max. load R_A for Ex		$R_A \leq (U_B - 12.5 \text{ V})/0.02 \text{ A}$ with R_A in Ohm and U_B in Volt, however max. 600 Ω
Effect of load	% FS	≤ 0.1
Response time	ms	approx. 50 (Model 736.51 approx. 1 s, optional 50 ms)
Output signal adjustment		
■ Zero point, electrical	% of span	± 5
■ Span, electrical	% of span	± 5
Linearity by accuracy of local readout		
■ Class 1.6	% of span	± 1.0 (limit point calibration)
■ Class 1.0	% of span	± 0.8 (limit point calibration)
Hysteresis by accuracy of local readout:		
■ Class 1.6	% of span	≤ 0.8
■ Class 1.0	% of span	≤ 0.5
Permissible		
■ Medium temperature ¹⁾	$^{\circ}\text{C}$	-25 ... +100
■ Ambient temperature ¹⁾	$^{\circ}\text{C}$	-20 ... +60
Compensated temperature range	$^{\circ}\text{C}$	-25 ... +60
Temperature coefficient in compensated temperature range		
■ Average T_K on zero point	% of span/10 K	≤ 0.3
■ Average T_K 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	$^{\circ}\text{C}$	-20 ... +60
■ Ambient temperature	$^{\circ}\text{C}$	-20 ... +60
CE-Conformity		Interference emission and immunity per EN 61 326
Wiring		Terminal box (screw terminal up to 2,5 mm ²)
Wiring protection		Protected against reverse polarity 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

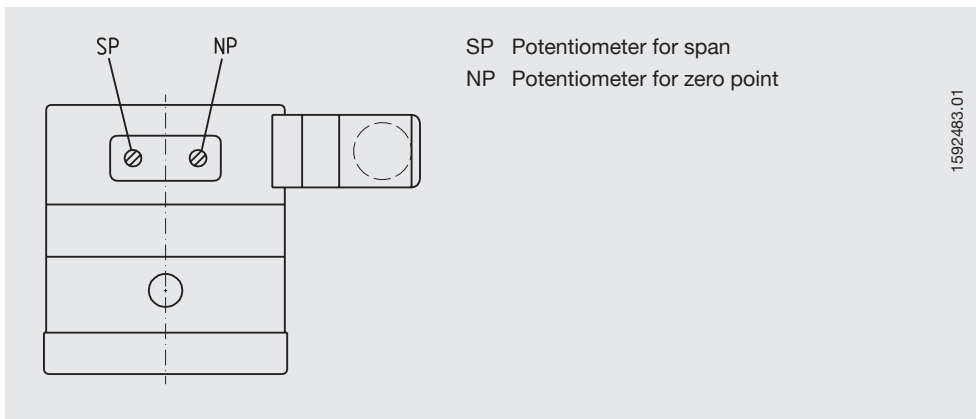
Dimensions in mm



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Position of potentiometer

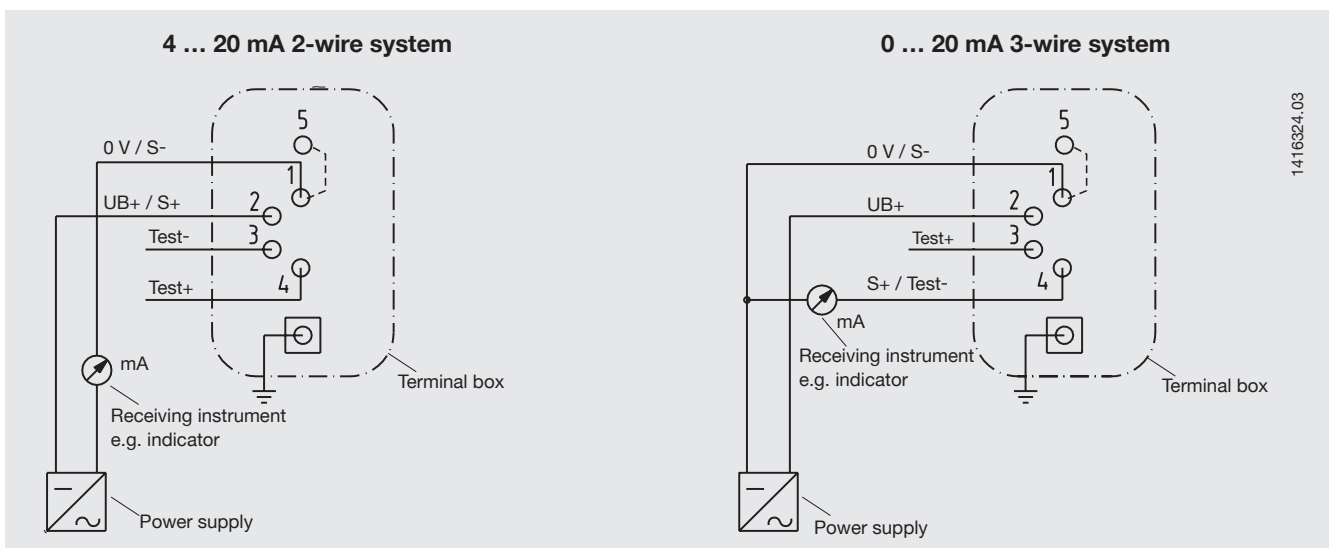
The potentiometers are accessible after unscrewing the screw plugs in the top of the casing.



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Connection details

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



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Operating Instructions 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 will be built in the following pressure gauges ¹⁾. Furthermore in most alarm contacts can be combined with transmitters (see food notes for limitations).

Pressure gauge				Transmitters		Transmitters and alarm contacts		
Model	Nominal size	Pressure connection	Data sheet	Model 891.34	Model 892.34	Transmitter model 891.34	Transmitter model 892.34	Alarm contact model (data sheet AC 08.01)
						821	831	831
632.50	100	bottom	PM 06.03	x	x			
736.51	100/160	bottom	PM 07.08	x	x	x ²⁾	x	x

1) Other feasibility of installing into pressure gauges on request.
 2) Inquire feasibility when intended for flammable gases!

Measuring instruments with integrated transmitter see "Mechatronic Pressure Measurement" with Models PGT.

Accessories

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

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

Model A-VA-1

Power Supply Unit, line voltage AC 230 V, output voltage DC 24 V, max. 70 mA

Model KFA6-STR-1.24.500

Power Supply Unit, line voltage AC 90 ... 253 V, 48 ... 63 Hz, output voltage DC 24 V, max. 500 mA

Ex-Galvanic Separator for pressure gauge with transmitter Model 892.34 under Ex-operation

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

Model KFD2-STC4-Ex1

Ex-Transmitter Supply Isolator, line voltage: DC 20 ... 32 V, output voltage: max. DC 25.4 V, max. 88.2 mA

Model SI815-52

Ex-Galvanic Separator with power supply transfer for 2-wire system 4 ... 20 mA.

The galvanic separator 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 galvanic separator has to be considered.

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.

