

# Absolute pressure gauge with switch contacts Stainless steel version Model 532.53

WIKA data sheet PV 25.02



for further approvals  
see page 3

**switchGAUGE**

## Applications

- Control and regulation of process values
- Monitoring of plants and switching of electric circuits
- Pressure measurement independent of fluctuations in the atmospheric pressure
- Monitoring of vacuum pumps, packing machines, determination of condensation pressure and vapour pressure in liquids

## Special features

- High overpressure safety, long service life due to metallic media chamber sealing
- Media chamber protected against unauthorised access
- Also available with liquid-filled case for high dynamic pressure loads or vibrations
- Gauges with inductive contacts for use in hazardous areas with ATEX approval
- Gauges with electronic contact for PLC applications



**Absolute pressure gauge model 532.53.100 with  
switch contact model 831.21**

## Description

Wherever the process pressure has to be indicated locally, and, at the same time, circuits are to be made or broken, the model 532.53 switchGAUGE can be used.

Switch contacts (electrical alarm contacts) make or break an electric control circuit dependent upon the position of the instrument pointer. The switch contacts are adjustable over the full extent of the scale range (see DIN 16085), and are mounted predominantly below the dial, though also partly on top of the dial. The instrument pointer (actual value pointer) moves freely across the entire scale range, independent of the setting.

The set pointer can be adjusted using a removable adjustment key in the window.

Switch contacts consisting of several contacts can also be set to a single set point. Contact actuation is made when the actual value pointer travels beyond or below the desired set point.

The pressure gauge is manufactured in accordance with DIN 16085 and fulfils all requirements of the relevant standards (EN 837-3) and regulations for the on-site display of the working pressure of pressure vessels.

As switch contacts magnetic snap-action contacts, reed switches, inductive contacts - for requirements to ATEX - or electronic contacts for triggering a PLC are available. For further information on the different switch contacts please see data sheet AC 08.01.

## Standard version

### Nominal size in mm

100, 160

### Accuracy class

1.6

The measuring accuracy is ensured for ambient pressure fluctuations between 955 and 1,065 mbar (min. and max. of atmospheric pressure).

### Scale ranges

0 ... 25 mbar to 0 ... 25 bar absolute pressure

### Pressure limitation

Steady: Full scale value

Fluctuating: 0.9 x full scale value

### Overpressure safety

Minimum 1 bar absolute pressure (atmospheric pressure), in addition 10 x full scale value, max. 25 bar absolute pressure

### Permissible temperature

Ambient: -20 ... +60 °C

Medium: +100 °C maximum

### Temperature effect

When the temperature of the measuring system deviates from the reference temperature (+20 °C):  
max.  $\pm 0.8 \text{ } \%/10 \text{ K}$  of full scale value

### Process connection (wetted)

Stainless steel 1.4571

Lower mount (LM)

G ½ B (male), 22 mm flats

### Pressure element (wetted)

≤ 0.25 bar: Stainless steel 1.4571

> 0.25 bar: NiCr-alloy (Inconel)

### Measuring chamber (wetted)

Stainless steel 1.4571

### Movement

Stainless steel

### Dial

Aluminium, white, black lettering

### Pointer

Aluminium, black

### Zero adjustment

by means of adjustment appliance

### Case

Stainless steel, with blow-out device

Gauges with liquid filling with compensating valve to vent case

### Window

Laminated safety glass

### Bezel ring

Cam ring (bayonet type), stainless steel

### Mounting by means of:

- Rigid measuring lines
- Mounting bracket for wall or pipe mounting (option)
- Panel or surface mounting flange (option)

### Electrical connection

Terminal box

### Ingress protection

IP 54 per EN 60529 / IEC 529

## Switch contacts

### Magnetic snap-action contact model 821

- No control unit and no extra power supply required
- Direct switching up to 250 V, 1 A
- Up to 4 switch contacts per measuring instrument

### Inductive contact model 831

- Long service life due to non-contact sensor
- Additional control unit required (model 904)
- With corresponding control unit suitable for use in zone 1 / 21 (2 GD) hazardous areas
- Low effect on the indication accuracy
- Fail-safe switching at high switching rates
- Insensitive to corrosion
- Up to 3 switch contacts per measuring instrument

### Electronic contact model 830 E

- For direct triggering of a programmable logic controller (PLC)
- 2-wire system (option: 3-wire system)
- Long service life due to non-contact sensor
- Low effect on the indication accuracy
- Fail-safe switching at high switching rates
- Insensitive to corrosion
- Up to 3 switch contacts per measuring instrument

### Reed switch model 851

- No control unit and no extra power supply required
- Direct switching up to 250 V, 1 A
- Also suitable for direct triggering of a programmable logic controller (PLC)
- Free from wear as without contact
- Up to two change-over contacts per measuring instrument

### Switching function

The switching function of the switch is indicated by function index 1, 2 or 3.

Model 8xx.1: Contact makes (clockwise pointer motion)

Model 8xx.2: Contact breaks (clockwise pointer motion)

Models 821.3 and 851.3: Change over; one contact breaks and one contact makes simultaneously when pointer reaches set point

**For further information please see data sheet AC 08.01, electrical switch contacts**

## Options

- Other process connection
- Sealings (model 910.17, see data sheet AC 09.08)
- Liquid filling (ingress protection IP 65)
- Safety version
- Other accuracy classes (model 532.52, class 1.0, application test required or model 532.54, class 2.5)
- Overpressure safety > 10 x full scale value
- Wetted parts from Monel
- Medium temperature stability > 100 °C
- Permissible ambient temperature -40 ... +60 °C (silicone oil filling)
- Open connecting flanges DN 15/50 PN 16/40 (wetted)
- Small flange for vacuum applications DN 10/32 DIN 28403 (wetted)
- Panel or surface mounting flange (consider measuring cell!)
- Mounting bracket for wall or pipe mounting (data sheet AC 09.07)
- Inductive contacts also in safety version (SN, S1N)

## CE conformity

### Low voltage directive

2006/95/EC, EN 61010-1:2010

### EMC directive

2004/108/EC, EN 61326 emission (group 1, class B) and interference immunity (industrial application)

### ATEX directive <sup>1)</sup>

94/9/EC, II 2 G Ex ia IIC

<sup>1)</sup> Option

## Approvals

- **GOST**, metrology/measurement technology, Russia
- **GOST-R**, import certificate, Russia
- **CRN**, safety (e.g. electr. safety, overpressure, ...), Canada

## Certificates <sup>1)</sup>

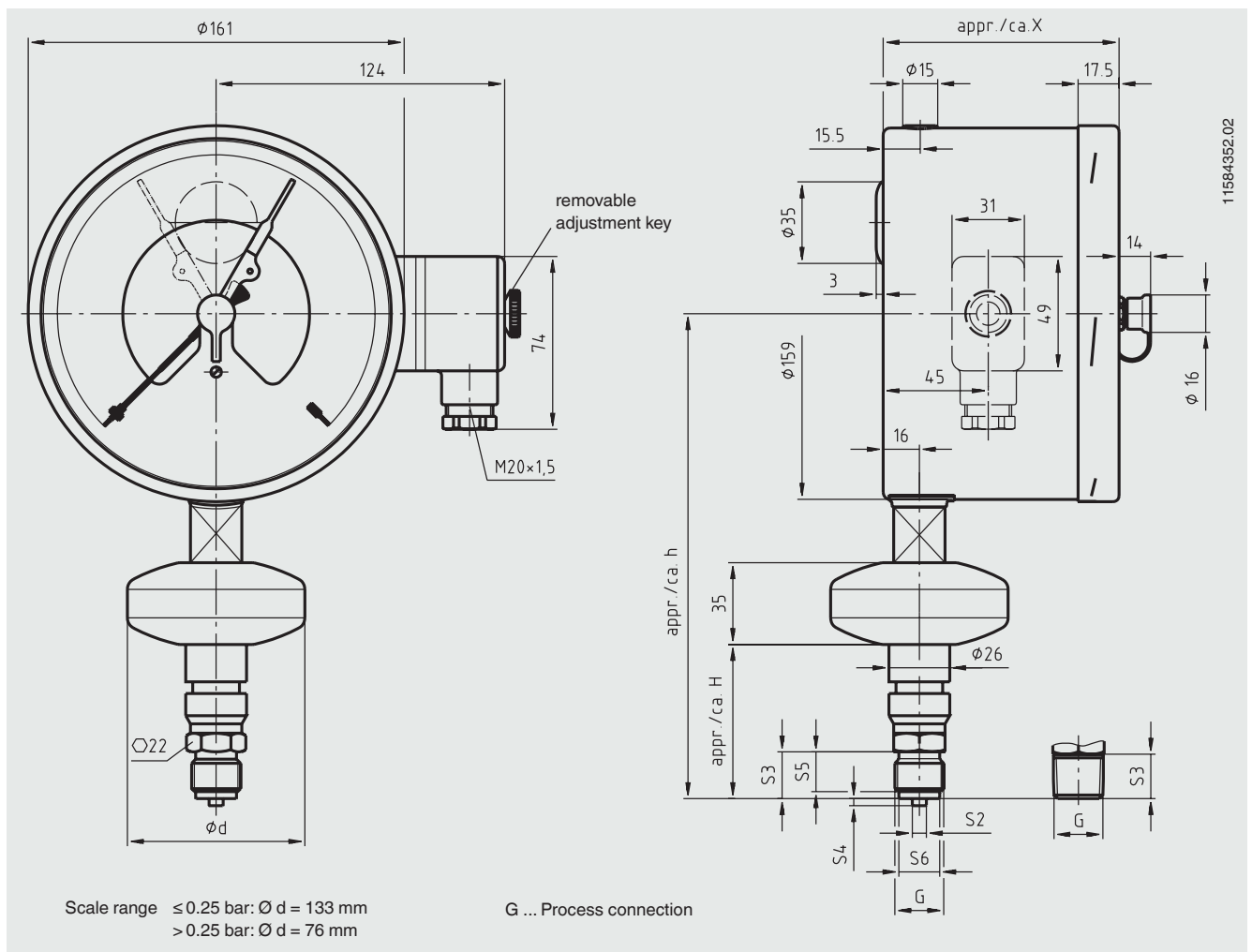
- 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, material proof, indication accuracy)
- 3.1 inspection certificate per EN 10204 (e.g. material proof wetted parts metal component, indication accuracy)

<sup>1)</sup> Option

Approvals and certificates, see website



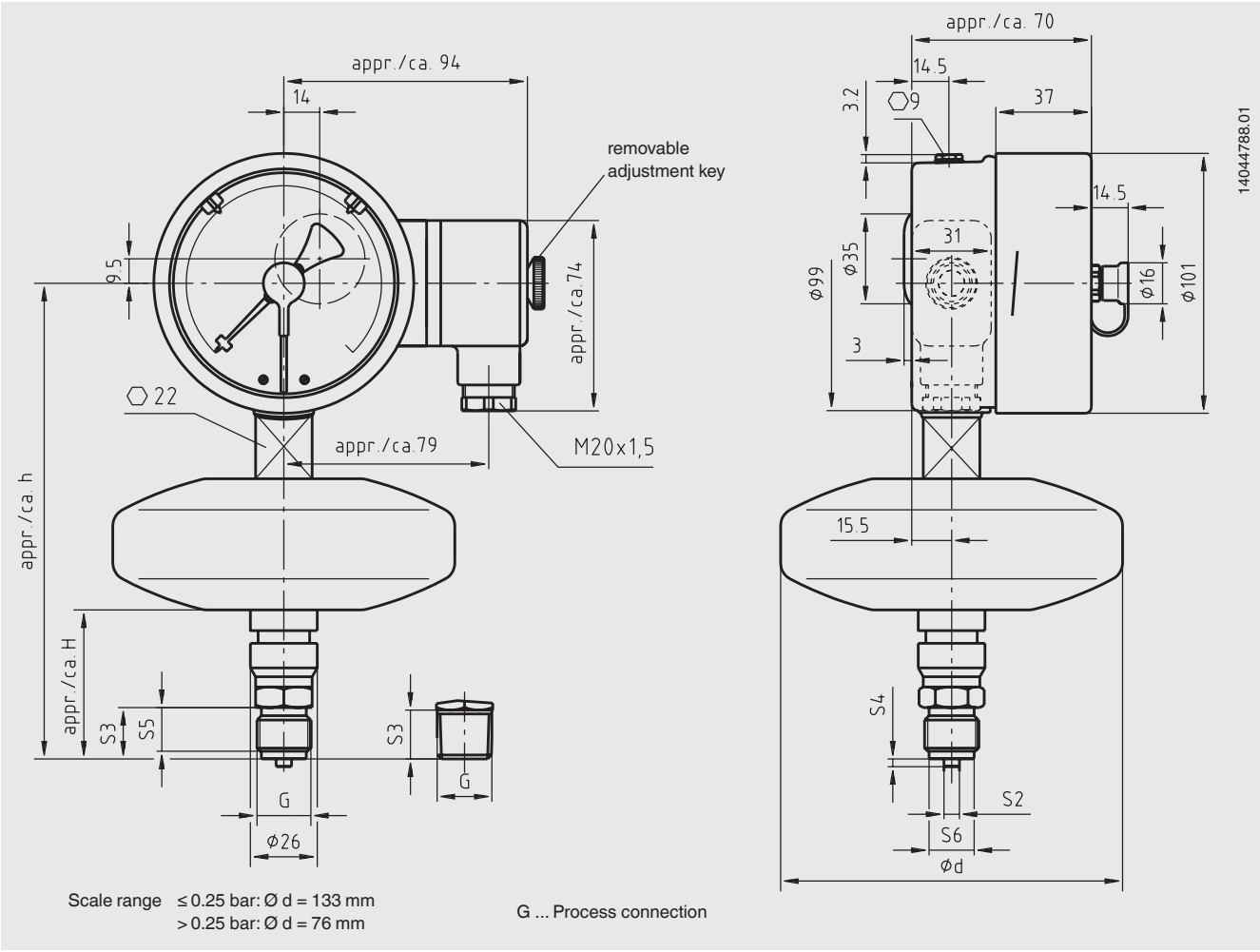
switchGAUGE model 523.53.160 with switch contact model 821, 831 or 830 E



Type of contact	Dimensions in mm
X	
Single or double contact	102
Double (change-over) contact	116
Triple contact	102
Quadruple contact	116

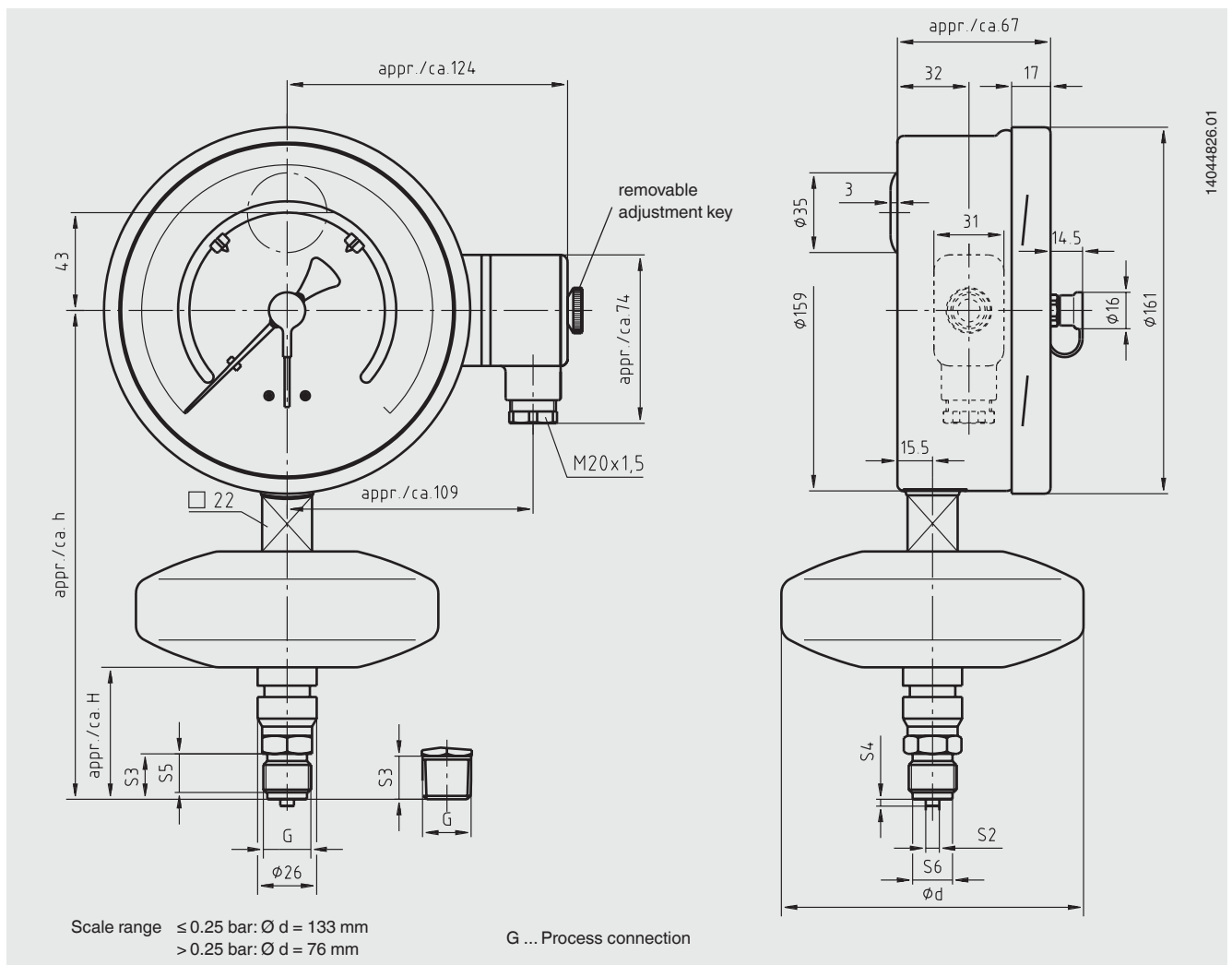
Process connection	Dimensions in mm						
h $\pm$ 1	H	S2	S3	S4	S5	S6	
G 1/2 B	207	66	6	20	3	17	17.5
1/2 NPT	206	65	-	19	-	-	-

switchGAUGE model 523.53.100 with switch contact model 851.3 or 851.33



Process connection	Dimensions in mm						
	h ±1	H	S2	S3	S4	S5	S6
G ½ B	185	58	6	20	3	17	17.5
½ NPT	184	57	-	19	-	-	-

**switchGAUGE model 523.53.160 with switch contact model 851.3 or 851.33**



Process connection	Dimensions in mm						
	h $\pm 1$	H	S2	S3	S4	S5	S6
G ½ B	215	58	6	20	3	17	17.5
½ NPT	214	57	-	19	-	-	-

**Ordering information**

Model / Nominal size / Type of contact and switching function / Scale range / Connection size / Options

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