

Diaphragm pressure gauge with switch contacts

Model 432.56, high overload safety up to 100 bar

Model 432.36, safety version, high overload safety up to 400 bar

WIKA data sheet PV 24.07



for further approvals
see page 4

switchGAUGE

Applications

- Control and regulation of industrial processes at measuring points with increased overload and scale ranges from 0 ... 25 mbar
- Monitoring of plants and switching of circuits
- For gaseous and liquid, aggressive and highly viscous or contaminated media, also in aggressive environments
- Process industry: Chemical, petrochemical, power plants, mining, on-/offshore, environmental technology, machine building and general plant construction

Special features

- High overload safety, optionally up to 40, 100 or 400 bar, due to the metallic pressure element limit stop, without liquid-filled measuring cell
- Wide choice of special materials
- Also available with liquid-filled case for high dynamic pressure loads or vibrations
- Instruments with inductive contacts for use in hazardous areas with ATEX approval
- Instruments with electronic contact for PLC applications



**Diaphragm pressure gauge with switch contacts,
model 432.56.100, high overload safety up to 40 bar**

Description

Wherever the process pressure has to be indicated locally and, at the same time, circuits need to be switched, the model 432.56 or 432.36 switchGAUGE finds its use.

Switch contacts (electrical alarm contacts) close or open circuits dependent upon the pointer position of indicating measuring instruments. 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

Scale ranges ¹⁾

0 ... 25 mbar to 0 ... 250 mbar

0 ... 400 mbar to 0 ... 40 bar

or all other equivalent vacuum or combined pressure and vacuum ranges

Pressure limitation

Steady: Full scale value

Fluctuating: 0.9 x full scale value

Overload safety ¹⁾

■ 40 bar

■ 100 bar

■ 400 bar (only for scale ranges $\geq 0 \dots 400$ mbar ²⁾)

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 with lower measuring flange

Stainless steel 316L, G ½ B (male)

Pressure element

≤ 0.25 bar: Stainless steel 316L

> 0.25 bar: NiCr-alloy (Inconel)

Pressure chamber sealing

FPM/FKM

Movement

Stainless steel

Dial

Aluminium, white, black lettering

Pointer

Instrument pointer: Aluminium, black

Set pointer: Red

Case

Stainless steel, instruments with liquid filling with compensating valve to vent case

Model 432.56: With blow-out device

Model 432.36: Safety version with solid baffle wall (Solid-front) and blow-out back

Upper measuring flange and flange connecting screws

Stainless steel

Window

Laminated safety glass

Bezel ring

Bayonet ring, stainless steel

Electrical connection

Cable terminal box

Ingress protection

IP54 per IEC/EN 60529

¹⁾ Depending on scale range and overload safety, different flange Ø apply. Dimensions, see from page 5.

²⁾ 400 bar overload safety for scale ranges < 400 mbar on request

Switch contacts

Magnetic snap-action contact model 821

- No control unit and no 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 influence on the indication accuracy
- Fail-safe switching at high switching frequency
- 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 influence on the indication accuracy
- Fail-safe switching at high switching frequency
- Insensitive to corrosion
- Up to 3 switch contacts per measuring instrument

Reed switch model 851

- No control unit and no 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 index 1, 2 or 3.

Model 8xx.1: Normally open (clockwise pointer motion)

Model 8xx.2: Normally closed (clockwise pointer motion)

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








For further information 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 (models 433.56, 433.36, ingress protection IP65)
- Vacuum safe to -1 bar
- Max. medium temperature +200 °C
- Higher indication accuracy, class 1.0
- Open connecting flanges per DIN/ASME from DN 15 to DN 80 (preferred nominal widths DN 25 and 50 or DN 1" and 2"; see data sheet IN 00.10)
- Wetted parts made of special materials, high overload safety up to 10 bar (flange Ø 160 mm) or 40 bar (flange Ø 100 mm): PTFE (models 452.56, 452.36), Hastelloy, Monel, nickel, tantalum, titanium (accuracy class 2.5)
- Additional wall bracket for model 432.36, high overload safety up to 400 bar ¹⁾
- Inductive contacts also in safety version (SN, S1N)

1) Recommendation with vibration load > 0.5 g

Approvals

Logo	Description	Country
	EU declaration of conformity <ul style="list-style-type: none"> ■ EMC directive ■ Pressure equipment directive ■ ATEX directive (option) 	European Union
	EAC (option) <ul style="list-style-type: none"> ■ Pressure equipment directive ■ Hazardous areas 	Eurasian Economic Community
	GOST (option) Metrology, measurement technology	Russia
	KazInMetr (option) Metrology, measurement technology	Kazakhstan
-	MTSCHS (option) Permission for commissioning	Kazakhstan
	BelGIM (option) Metrology, measurement technology	Belarus
	UkrSEPRO (option) Metrology, measurement technology	Ukraine
-	CPA (option) Metrology, measurement technology	China
	KCs (KOSHA) (option) Hazardous areas	South Korea
-	CRN Safety (e.g. electr. safety, overpressure, ...)	Canada

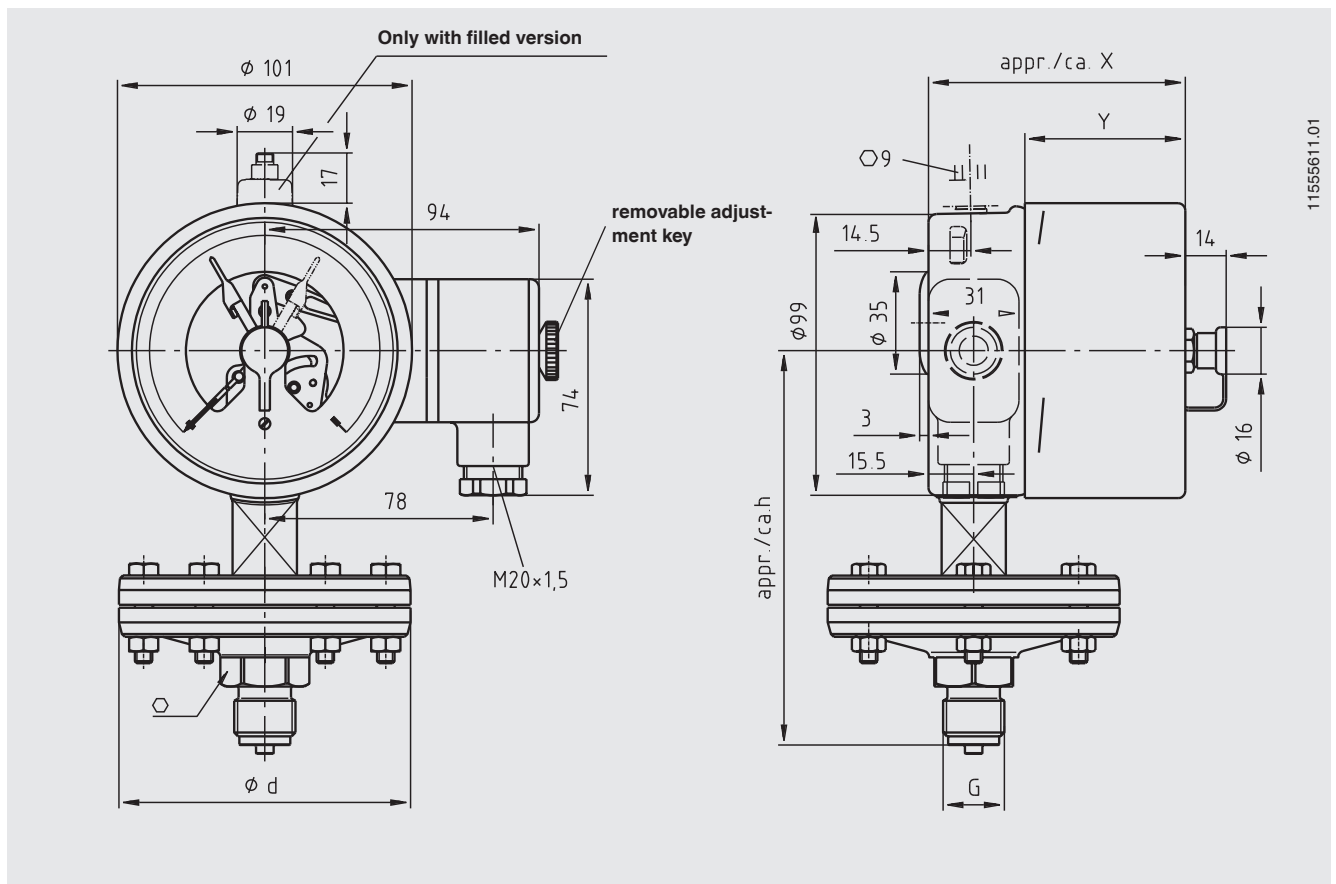
Certificates (option)

- 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, indication accuracy)
- 3.1 inspection certificate per EN 10204 (e.g. indication accuracy)

Approvals and certificates, see website

Dimensions in mm

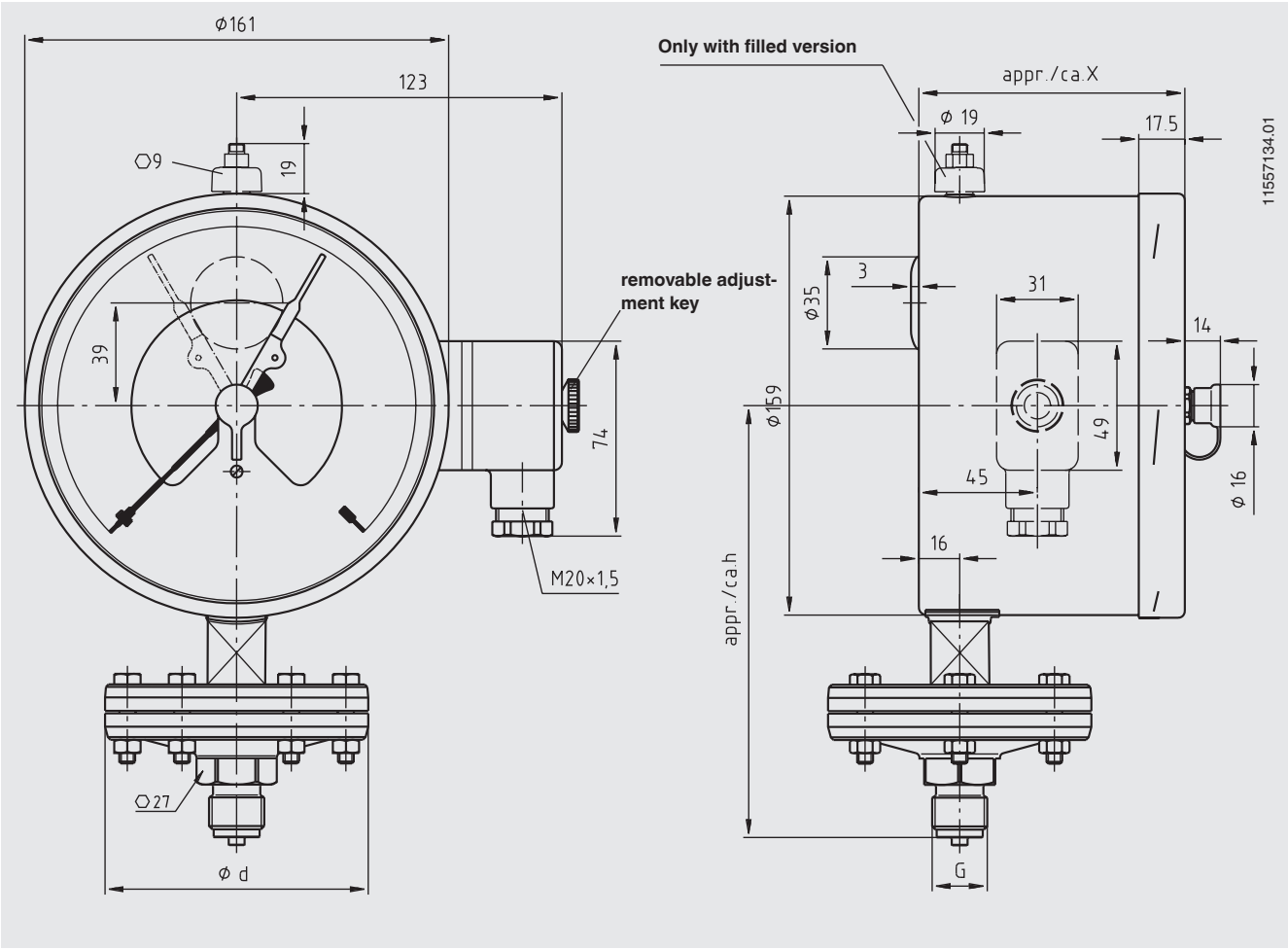
switchGAUGE model 432.56.100, with switch contact model 821, 831 or 830 E



Type of contact	Dimensions in mm	
	X	Y
Single or double contact	88	55
Double (change-over) contact	113	80
Triple contact	96	63
Quadruple contact	113	80

Scale ranges	Overload safety	Dimensions in mm			
in bar	up to ... bar	d	G	h ±2	SW
≤ 0.25	40	160	G ½ B	135	27
	100	160	G ½ B	143	22
> 0.25	40	100	G ½ B	135	27
	100	100	G ½ B	135	27
	400	128	G ½ B	169	22

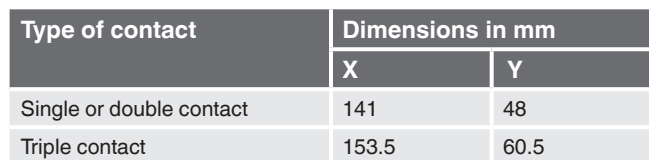
switchGAUGE model 432.56.160, with switch contact model 821, 831 or 830 E



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

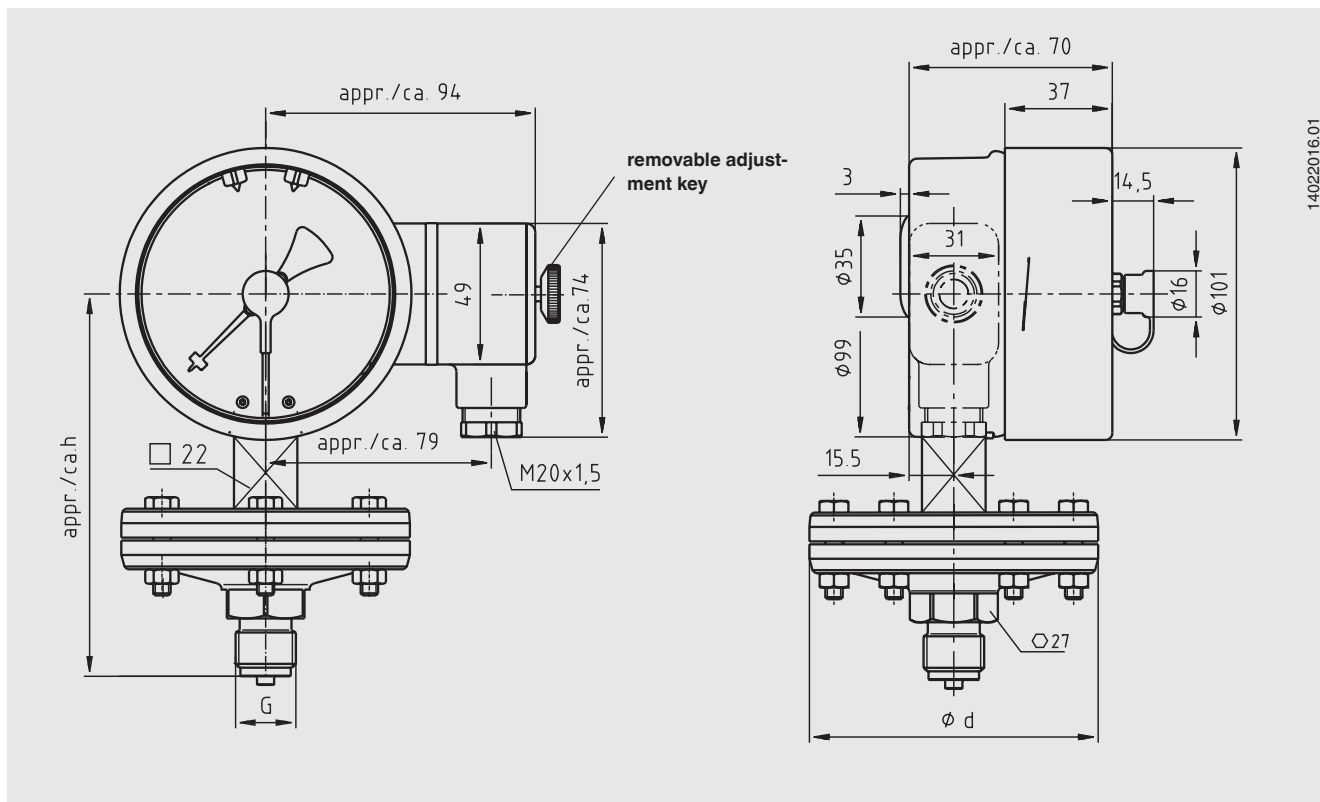
Scale ranges	Overload safety	Dimensions in mm			
in bar	up to ... bar	d	G	h ± 2	SW
≤ 0.25	40	160	G $\frac{1}{2}$ B	165	27
	100	160	G $\frac{1}{2}$ B	173	22
> 0.25	40	100	G $\frac{1}{2}$ B	165	27
	100	100	G $\frac{1}{2}$ B	165	27
	400	128	G $\frac{1}{2}$ B	199	22

switchGAUGE model 432.36.160, with switch contact model 821, 831 or 830 E

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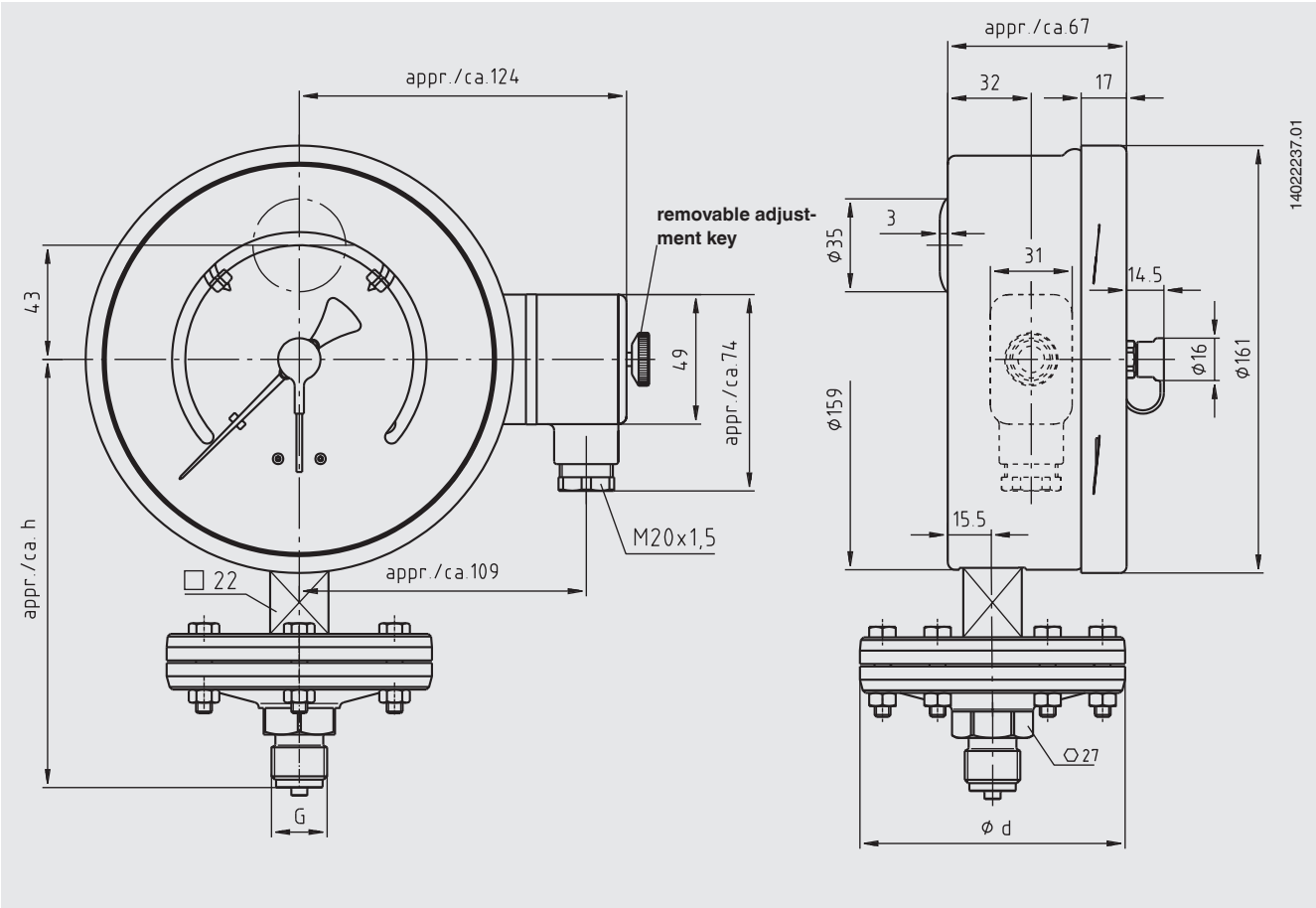
Dimensions in mm

switchGAUGE model 432.56.100, with switch contact model 851.3 or 851.33



Scale ranges	Overload safety	Dimensions in mm			
in bar	up to ... bar	d	G	h ±2	SW
≤ 0.25	40	160	G ½ B	135	27
	100	160	G ½ B	143	22
> 0.25	40	100	G ½ B	135	27
	100	100	G ½ B	135	27
	400	128	G ½ B	169	22

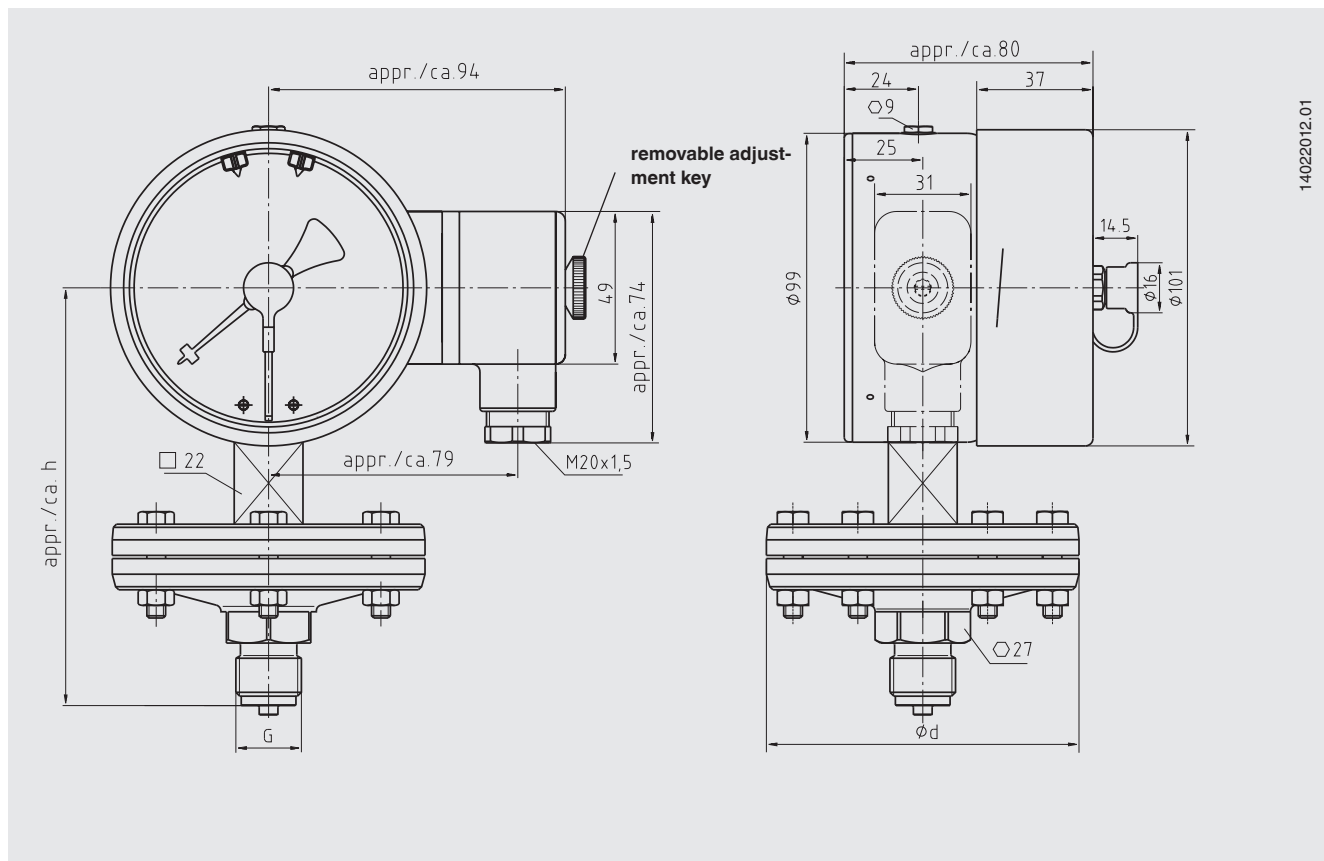
switchGAUGE model 432.56.160, with switch contact model 851.3 or 851.33



Scale ranges	Overload safety	Dimensions in mm			
		d	G	h ±2	SW
≤ 0.25	up to ... bar				
	40	160	G ½ B	165	27
> 0.25	100	160	G ½ B	173	22
	40	100	G ½ B	165	27
	100	100	G ½ B	165	27
	400	128	G ½ B	199	22

Option

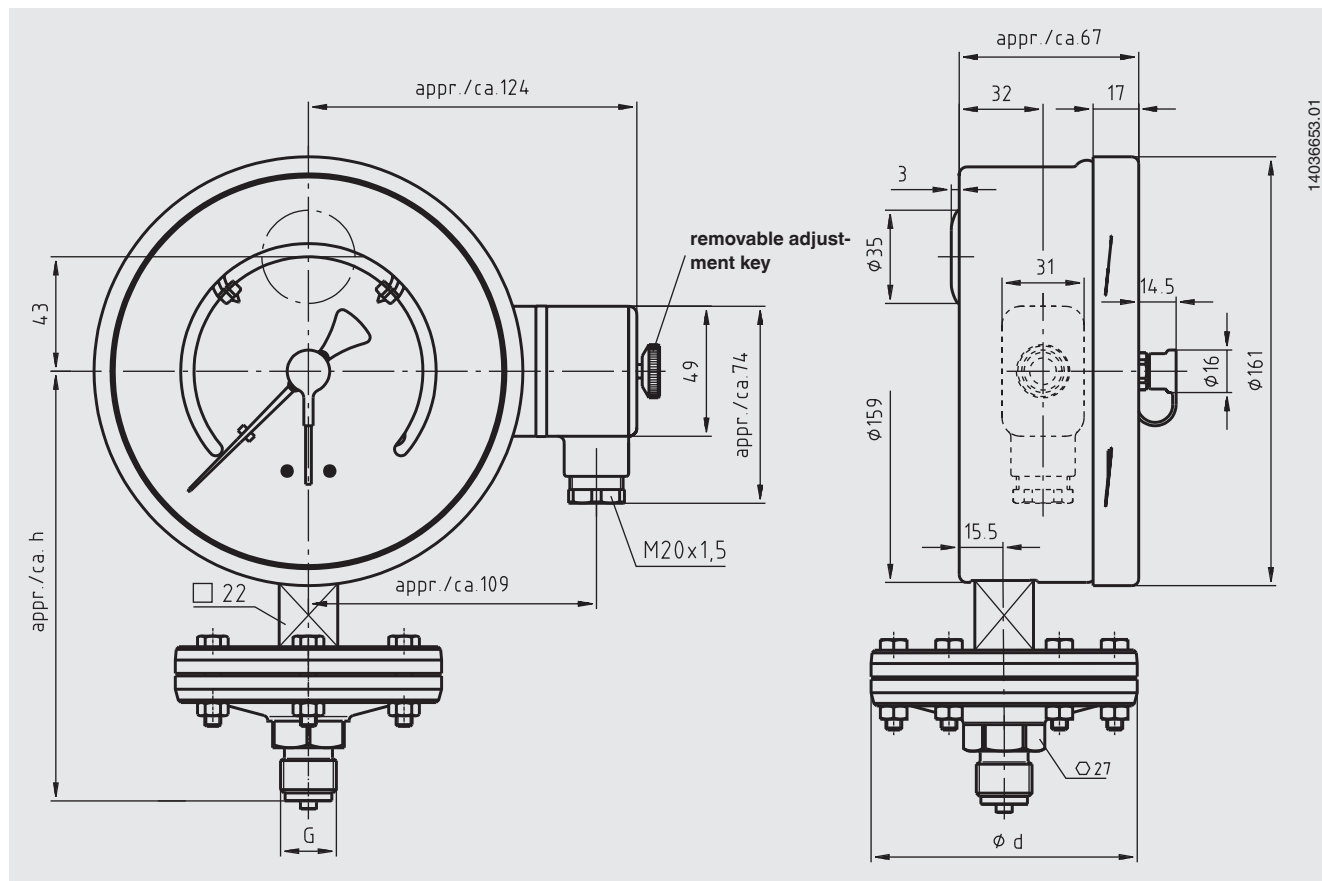
switchGAUGE model 432.36.100, with switch contact model 851.3 or 851.33



Scale ranges	Overload safety	Dimensions in mm			
in bar	up to ... bar	d	G	h ±2	SW
≤ 0.25	40	160	G 1/2 B	135	27
	100	160	G 1/2 B	143	22
> 0.25	40	100	G 1/2 B	135	27
	100	100	G 1/2 B	135	27
	400	128	G 1/2 B	169	22

Option

switchGAUGE model 432.36.160, with switch contact model 851.3 or 851.33



Scale ranges	Overload safety	Dimensions in mm			
in bar	up to ... bar	d	G	h ±2	SW
≤ 0.25	40	160	G ½ B	165	27
	100	160	G ½ B	173	22
> 0.25	40	100	G ½ B	165	27
	100	100	G ½ B	165	27
	400	128	G ½ B	199	22

Ordering information

Model / Nominal size / Overload safety up to ... bar / Scale range / Type of contact and switching function / Process connection / Options

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