Bourdon tube pressure gauge with switch contacts
For UHP (ultra high purity) applications
Model 230.15 NS 2", with reed contact model 851

Applications

- For gaseous and liquid, also aggressive media for demanding high purity applications, also in aggressive ambience
- Semiconductor and flat panel industry
- Medical and pharmaceutical industry, biotechnology industry, production of active ingredients
- For high requirements to keep media contamination-free

Special features

- Up to 2 Reed contacts, SPDT
- Switch points adjustable on site
- Wetted parts from stainless steel 316L and face seal process connections
- Electropolished internals and case, internal surface finish up to Ra < 0.25 µm [Ra < 10 µin]
- Scale ranges from -30 inHg ... 45 psi to 0 ... 6,000 psi

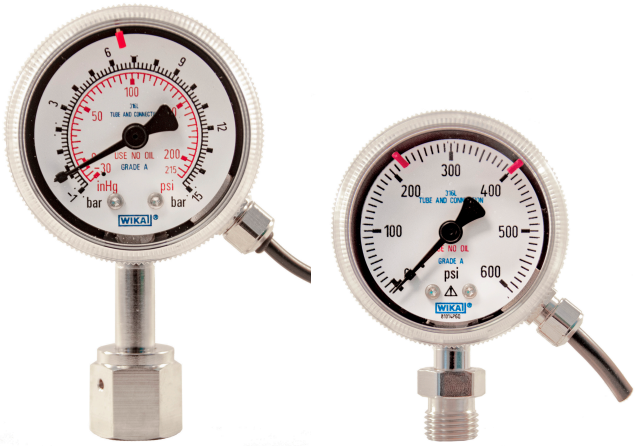


Fig. left: Model 230.15 with 1 contact model 851.3
Fig. right: Model 230.15 with 2 contacts model 851.33

Description

The model 230.15 is a bourdon tube pressure gauge with up to 2 Reed contacts model 851. It was created for high purity applications that require discrete monitoring outputs for globally installed systems and life safety applications.

The switch point can easily be adjusted by removing the window and putting the mark pointer on the desired value on the dial's circumference.

The pressure gauge is helium leak tested and the internals are electropolished to optimally meet purity standards. The instrument complies with SEMATECH and SEMI standards to optimally ensure the quality your applications demand.

With such UHP characteristics, the instrument is suitable for the semiconductor and flat panel industries, various gas distribution systems, as well as medical gas applications.

Specifications

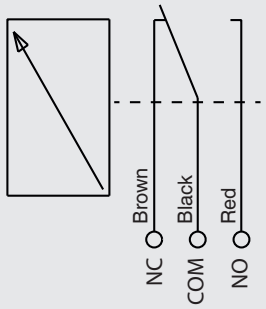
Mechanical Data, model 230.15	
Design	Bourdon tube pressure gauge per ASME B40.100
Nominal size (NS)	2.0" [50 mm]
Accuracy class	Indication: ±2,5 % of measuring span according to ASME B40.100 (Grade A) Switch: ±5 % of measuring span at switch point
Scale range	■ -30 inHg ... +45 psi ■ 0 ... 60 psi ■ 0 ... 300 psi ■ 0 ... 1,500 psi ■ -30 inHg ... +60 psi ■ 0 ... 100 psi ■ 0 ... 400 psi ■ 0 ... 2,000 psi ■ -30 inHg ... +100 psi ■ 0 ... 150 psi ■ 0 ... 500 psi ■ 0 ... 3,000 psi ■ -30 inHg ... +160 psi ■ 0 ... 160 psi ■ 0 ... 600 psi ■ 0 ... 4,000 psi ■ -30 inHg ... +200 psi ■ 0 ... 200 psi ■ 0 ... 800 psi ■ 0 ... 5,000 psi ■ -30 inHg ... +300 psi ■ 0 ... 250 psi ■ 0 ... 1,000 psi ■ 0 ... 6,000 psi [1] or all other equivalent vacuum or combined pressure and vacuum ranges
Pressure limitation	Steady: Full scale value Fluctuating: ¾ x full scale value Short time: ⅔ x full scale value
Permissible temperature range Medium Ambient	 ≤ 212 °F [≤ 100 °C] -40 ... +104 °F [-40 ... +40 °C]
Temperature effect	When the temperature at the measuring system deviates from the reference temperature +68 °F [+20 °C]: max. ±0.4 %/10 K of full scale value
Ingress protection	IP20 per IEC/EN 60529
Process connection Material Connection location Thread	VCR-compatible face seal fittings Face seal nut: Stainless steel 316, Option: Gall resistant (Nitronic® 60) Face seal gland: Stainless steel 316L Lower mount (LM) or center back mount (CBM) ¼ swivel male or female face seal, ¼ fixed male, ¼ weld stub, 9/16-18 UNF swivel male or female face seal Option: ¼ NPT male
Pressure element	Stainless steel 316L C-type or helical type
Material of wetted parts	Stainless steel 316L, electropolished
Surface roughness of wetted parts	Ra ≤ 0.25 µm [10 µin] For process connection ¼ NPT male: Ra ≤ 0.5 µm [20 µin]
Level of cleanliness	Clean for semiconductor applications in accordance with SEMI / SEMATEC. Cleaned and packaged in class 100/10 cleanroom Packaged in two bags Purged with nitrogen Protective cap over threaded connection
Movement	Stainless steel
Dial	Aluminium, white, black lettering with pointer stop pin
Case	Stainless steel 304, electropolished
Pointer	Aluminium, black
Window	Polycarbonate, Screw-fitted on case (twist lock)

1) Only for instruments with process connection ¼ NPT male

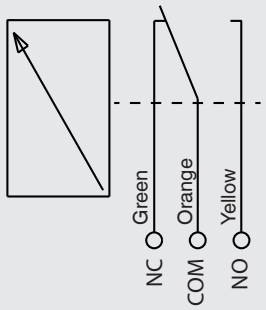
Electrical data, contact model 851	
Design	Reed switch contact
Switching function	Contact model 851.3: 1 x SPDT (change-over contact); SP1 Contact model 851.33: 2 x SPDT (change-over contact); SP1 and SP2
Switch point setting	The instrument should be disconnected from the monitoring device and the window unscrewed. The switch is set via the mark pointer on the dial‘s circumference. The set value of the switch point is adjustable up to 80% of the scale range,15% from low end and 5% from high end of scale.
Electrical rating Switching voltage Switching current Switching power	 ≤ AC 24 V / DC 24V ≤ 0.5 A ≤ 10 VA/W
Electrical connection	Cable gland M8 x 1.25, with 3 m (cable long (10 ft), wire cross section 0.14 mm² (26 AWG) with flying leads

Wiring diagram

Low pressure or single switch contact (SP1)



High pressure switch contact (SP2)



Legend:

NC	Normally closed
COM	Common contact
NO	Normally open

Approvals

Logo	Description	Country
CE Ex	**EU declaration of conformity** ■ EMC directive ■ Pressure equipment directive ■ Low voltage directive ■ RoHS directive ■ ATEX directive (option) Hazardous areas - Ex ic Gas [II 3G Ex ic IIC T6 Gc]	European Union
IEC IECEx	**IECEx (option)** Hazardous areas - Ex ic Gas [Ex ic IIC T6 Gc]	International
FM APPROVED	**FM (option)** Hazardous areas AEx/Ex ic IIC GC; Class I, Division 2, Groups A, B, C, D	USA and Canada

Certificates (option)

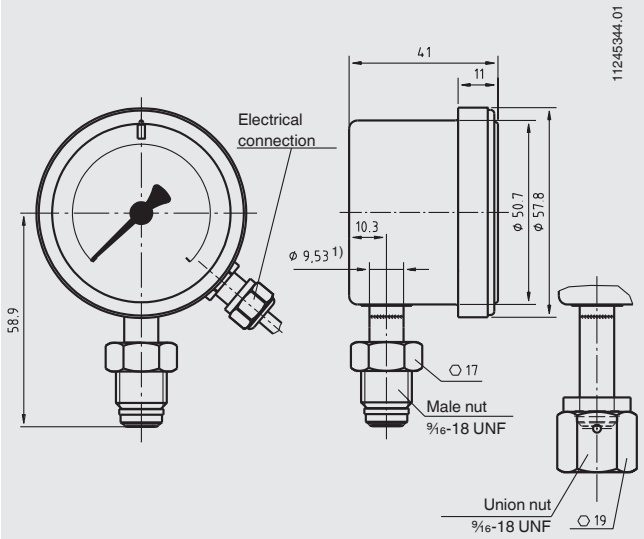
- 2.2 test report
- 3.1 inspection certificate

Approvals and certificates, see website

Dimensions in mm

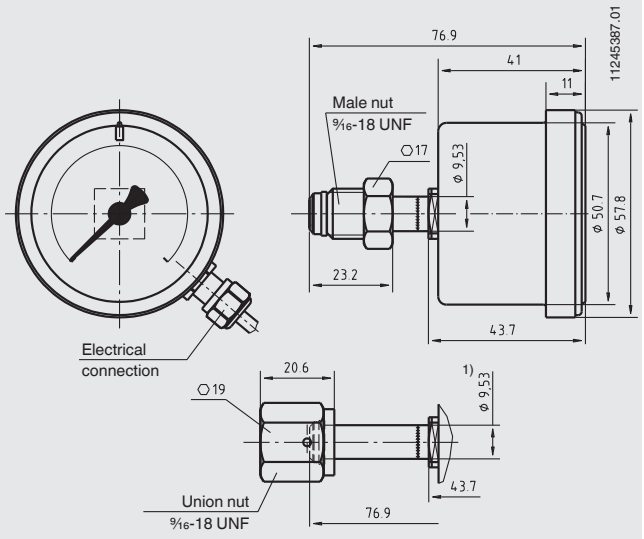
Model 230.15 with switch contact model 851

Lower mount (LM)



1) Ø 8.86 mm with pressure ranges 0 ... 250 to 0 ... 400 bar

Center back mount (CBM)



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WIKA Alexander Wiegand SE & Co. KG
Alexander-Wiegand-Straße 30
63911 Klingenberg/Germany
Tel. +49 9372 132-0
Fax +49 9372 132-406
info@wika.de
www.wika.de