

# Test gauge, copper alloy Class 0.6, NS 160 [6"] Model 312.20

WIKA data sheet PM 03.01



for further approvals  
see page 3

## Applications

- For gaseous and liquid media that are not highly viscous or crystallising and will not attack copper alloy parts
- Precision measurement in laboratories
- High-accuracy pressure measurement
- Testing of industrial type pressure gauges

## Special features

- Knife edge pointer for optimal accuracy of reading
- Precise movement with wear parts of argentan
- Scale ranges from 0 ... 0.6 bar to 0 ... 600 bar [0 ... 10 psi to 0 ... 10,000 psi]



Test gauge, model 312.20

## Description

The model 312.20 mechanical test gauge has been specifically designed for the measurement of pressures with high accuracy. With its accuracy class of 0.6, the Bourdon tube pressure gauge is suitable for testing industrial type pressure gauges or for precision measurement in laboratories.

For the respective measuring requirement, a scale range between 0 ... 0.6 bar to 0 ... 600 bar [0 ... 10 psi to 0 ... 10,000 psi] can be selected.

The model 312.20 is constructed with a case from stainless steel and wetted parts from copper alloy. The instrument meets the requirements of the international industry standard EN 837-1 for Bourdon tube pressure gauges.

The optimal readability of the instrument, with a nominal size of 160 mm, is achieved via a knife edge pointer and a dial with fine divisions. In addition, a mirror scale can be chosen to avoid the parallax error.






On request, a calibration certificate will be provided for this instrument.

Safe storage and transport is ensured by a transport case (accessory).

## Specifications

| Model 312.20                               |   |
|--|---|
| <b>Standard</b>                            | EN 837-1<br>See Technical Information IN 00.05 for information on "Selection, installation, handling and operation of pressure gauges".   |
| <b>Nominal size (NS)</b>                   | Ø 160 mm [6"]   |
| <b>Accuracy class</b>                      | <ul style="list-style-type: none"> <li>■ 0.6</li> <li>■ 0.25 (selectable for scale ranges ≤ 400 bar)</li> <li>■ Grade 3A per ASME B40.100 (selectable for scale ranges ≤ 400 bar)</li> </ul>              |
| <b>Scale ranges</b>                        | 0 ... 0.6 bar to 0 ... 600 bar [0 ... 10 psi to 0 ... 10,000 psi]<br>other units (e.g. psi, kPa) available<br>or all other equivalent vacuum or combined pressure and vacuum ranges                       |
| <b>Scale</b>                               | <ul style="list-style-type: none"> <li>■ Single scale</li> <li>■ Mirror band scale</li> </ul>   |
| <b>Zero point setting</b>                  | <ul style="list-style-type: none"> <li>■ Without</li> <li>■ From outside through adjustable dial</li> </ul>   |
| <b>Pressure limitation</b>                 |   |
| Steady                                     | Full scale value  |
| Fluctuating                                | 0.9 x full scale value  |
| Short time                                 | 1.3 x full scale value  |
| <b>Connection location</b>                 | <ul style="list-style-type: none"> <li>■ Lower mount (radial)</li> <li>■ Lower back mount</li> </ul>  |
| <b>Process connection</b>                  | G ½ B<br>Others on request  |
| <b>Permissible temperature</b>             |   |
| Medium                                     | <ul style="list-style-type: none"> <li>■ +80 °C [+176 °F]</li> <li>■ +100 °C [+212 °F] (version with special soft solder)</li> <li>■ +200 °C [+392 °F] (model 332.50, see data sheet PM 03.06)</li> </ul> |
| Ambient                                    | -20 ... +60 °C [-4 ... +140 °F]   |
| <b>Temperature effect</b>                  | When the temperature at the measuring system deviates from the reference temperature +20 °C [+68 °F]: ≤ ±0.4 %/10 °C [≤ ±0.4 %/18 °F] of full scale value   |
| <b>Case filling</b>                        | <ul style="list-style-type: none"> <li>■ Without</li> <li>■ With case filling (model 333.50, see data sheet PM 03.06)</li> </ul>  |
| <b>Wetted materials</b>                    |   |
| Process connection                         | Copper alloy  |
| Pressure element                           | < 100 bar: Copper alloy, C-type<br>≥ 100 bar: Stainless steel 316L, helical type  |
| <b>Non-wetted materials</b>                |   |
| Case                                       | Stainless steel <ul style="list-style-type: none"> <li>■ Safety level "S0" per EN 837</li> <li>■ Safety level "S1" per EN 837: With blow-out device in case back</li> </ul>                               |
| Ring                                       | <ul style="list-style-type: none"> <li>■ Bayonet ring, stainless steel</li> <li>■ Triangular profile ring, polished stainless steel, with clamp</li> </ul>  |
| Movement                                   | Copper alloy, wear parts argentan   |
| Dial                                       | Aluminium, white, black lettering   |
| Pointer                                    | Knife edge pointer, aluminium, black  |
| Window                                     | Instrument glass  |
| <b>Ingress protection per IEC/EN 60529</b> | IP54  |
| <b>Adjustment medium</b>                   | <ul style="list-style-type: none"> <li>■ Liquid for scale ranges &gt; 25 bar; gas for scale ranges ≤ 25 bar</li> <li>■ Gas for all scale ranges</li> </ul>  |

## Approvals

| Logo  | Description   | Country        |
|---|---|----------------|
|  | <b>EU declaration of conformity</b><br>Pressure equipment directive, PS > 200 bar; module A, pressure accessory | European Union |
|  | <b>GOST (option)</b><br>Metrology, measurement technology   | Russia         |
|  | <b>KazInMetr (option)</b><br>Metrology, measurement technology  | Kazakhstan     |
| -   | <b>MTSCHS (option)</b><br>Permission for commissioning  | Kazakhstan     |
|  | <b>UkrSEPRO (option)</b><br>Metrology, measurement technology   | Ukraine        |
|  | <b>Uzstandard (option)</b><br>Metrology, measurement technology   | Uzbekistan     |
| -   | <b>CPA (option)</b><br>Metrology, measurement technology  | China          |
| -   | <b>CRN</b><br>Safety (e.g. electr. safety, overpressure, ...)   | Canada         |

## Certificates (option)

- 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. indication accuracy)
- PCA calibration certificate, traceable and accredited in accordance with ISO/IEC 17025
- Calibration certificate by the national accreditation body, traceable and accredited in accordance with ISO/IEC 17025 on request

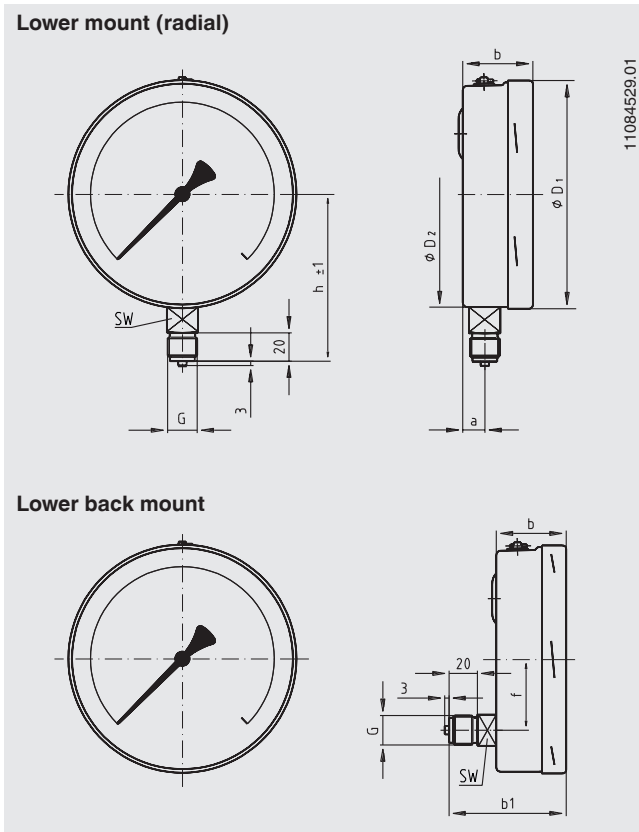
Approvals and certificates, see website

## Accessories

- Sealings (model 910.17, see data sheet AC 09.08)
- Panel or surface mounting flange, stainless steel
- Transport case

# Dimensions in mm [in]

## Standard version



| NS  | Dimensions in mm [in] |                               |                             |                |                |               |       |                |    | Weight in kg [lbs] |
|-----|-----------------------|-------------------------------|-----------------------------|----------------|----------------|---------------|-------|----------------|----|--------------------|
|     | a                     | b                             | b <sub>1</sub>              | D <sub>1</sub> | D <sub>2</sub> | f             | G     | h ±1           | SW |                    |
| 160 | 15.5<br>[0.61]        | 49.5<br>[1.949] <sup>1)</sup> | 83<br>[3.268] <sup>1)</sup> | 161<br>[6.339] | 159<br>[6.26]  | 50<br>[1.969] | G ½ B | 118<br>[4.646] | 22 | 1.10 [2.947]       |

1) Plus 16 mm with scale ranges ≥ 100 bar

Process connection per EN 837-1 / 7.3

## Ordering information

Model / Nominal size / Scale range / Process connection / Connection location / Options

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