YTN liquid-filled pressure gauges

Complete English translation | Installation, use and maintenance

1. Product overview

The standard vibration-resistant gauge described in the source uses a brass threaded connection, precision brass movement and brass Bourdon tube, with internal damping liquid. It measures gas and liquid pressure where mechanical vibration or pressure fluctuation can make an undamped pointer difficult to read. Applications include machinery, energy, petroleum, chemical processing, metallurgy and mining.

2. Features

Glycerin or silicone-oil fill damps pointer movement caused by vibration and pressure pulsation. The precision movement provides indication within the specified accuracy class. The manufacturer describes leak, overpressure and fatigue testing before shipment. Brass-component versions require media compatible with copper alloys; stainless wetted versions have different material specifications.

3. Shared family specification

Parameter	Specification
Pressure selections	Vacuum selection −0.1MPa; positive full-scale values 0.1, 0.16, 0.25, 0.4, 0.6, 1.0, 1.6, 2.5, 4.0, 6.0, 10, 16, 25, 40, 60 and 100MPa; other configurations may be available
Recommended steady pressure	1/3 to 2/3 of full scale
Recommended fluctuating pressure	1/3 to 1/2 of full scale
Accuracy classes	1.0, 1.6 or 2.5; use the dial marking
Connections	M10×1, M14×1.5, M20×1.5; G, ZG, PT or NPT in 1/8in, 1/4in or 1/2in, and other configurations
Relative humidity	≤85%RH
Medium temperature	−20°C to 80°C
Ambient temperature	−20°C to 60°C
Vibration frequency	≤50Hz; the source does not state an amplitude or acceleration rating
Scale units	MPa, psi, bar, kgf/cm² and other options
Nominal dial diameters	40, 50, 60, 100, 150 and 160mm, and other options

The table is the general manual’s family specification. Model-specific fill, temperature, material and accuracy ratings govern the supplied instrument. In particular, selecting a liquid fill does not remove the sensor’s pressure limit. Design and specifications may change without prior notice.

Installation and operating instructions

4. Before installation

Check that the model, pressure range, connection and fill type match the pressure source and operating environment. Confirm that the unpressurized pointer is at zero and that the fill is neither leaking nor cloudy.

5. Installation procedure

Location: Prefer a position with less vibration and convenient access for reading and maintenance. Align the axial or radial connection perpendicular to the pipeline as directed by the source. Avoid turbulence concentrations near elbows and valves.

Seal and secure: Use an appropriate seal, such as compatible thread-seal tape or a sealing ring. Align the threads and tighten gradually using a wrench at the connection. Avoid cross-threading and excessive tightening.

Commission: Slowly open the line valve so pressure enters steadily. Check for a smooth pointer rise without sticking. Isolate and safely release the gauge pressure before checking its return to zero; small deviations must remain within the applicable tolerance. Put the gauge into service only after confirming normal operation.

6. Reading and monitoring

View the pointer at eye level with the line of sight perpendicular to the dial. Use the scale unit printed on the gauge. In poor lighting, use an external light without glare or misleading side illumination. For continuous service, periodically record the pressure and pointer condition to monitor both the system and the instrument.

7. Abnormal conditions

Stop using the gauge if the pointer continually shakes, sticks or fails to return to zero when depressurized, or if the fill leaks, becomes cloudy or changes color. Check for excessive pressure fluctuation, instrument damage or insufficient fill. Excessive indication error requires professional calibration; do not dismantle and adjust the gauge yourself.

8. Maintenance and storage

Regularly inspect the housing, window and connection for damage or leakage, check the fill level, and confirm free pointer movement. If the fill is low, contact the manufacturer for replenishment with the same type of fluid.

Arrange professional calibration every 6–12 months and retain the calibration records. For long periods out of service, remove the depressurized gauge, clean the exterior, seal the process connection and store it in a dry, vibration-free location.

Precautions and configuration notes

9. Precautions

1. The manufacturer states that the gauge is calibrated before shipment and meets the technical requirements of GB/T 1226. Do not dismantle, modify or independently replace the filling liquid. Contact the supplier if the product fails.
2. Avoid impact, dropping, heavy force on the housing, window or connection, and scratches from sharp objects. Damage may cause fill leakage.
3. Do not exceed the pressure range or temperature limits. This can damage the movement or Bourdon tube and compromise operation.
4. If vibration exceeds the instrument’s capability, fit a damping tube or vibration-isolating connection, or select a gauge with an appropriate vibration rating.
5. Before pipeline dismantling, maintenance or transport, close the line valve and fully release pressure before removing the gauge. Protect the housing and connection against impact and corrosion from residual process fluid.
6. Avoid filling-liquid contact with skin or eyes. If contact occurs, rinse promptly with clean water and obtain medical attention where needed.

10. Model-specific information accompanying the manual

Configuration	Chinese product-page details
YTN-40, copper-alloy connection	304 stainless case, G1/8, Class 2.5, 92.7g, −5°C to 55°C, ≤85%RH
YTN-60 / YTN-60Z, copper-alloy connection	304 case, M14×1.5, Class 2.5, 176g / 182.5g. Glycerin: −5°C to 55°C; customized silicone oil: −25°C to 55°C. ≤85%RH.
YTN-60BF, stainless version	304 case and movement, 316 connection, M14×1.5, Class 2.5, −5°C to 55°C, ≤98%RH. Listed range −0.1 to 0.60MPa, with customization.
100mm brass-component version	Brass movement and connection, Class 1.6, approximately 750g, 5°C to 55°C as printed, ≤85%RH. Page uses both YTN-100 and YTN-100BF names.
YTN-100BF, stainless version	Stainless case and connection, M20×1.5, Class 1.6, ≤85%RH. Glycerin-filled operation: −5°C to 55°C. No specific alloy grade is stated.
YTN-150BF	150mm dial; painted iron case and brass components described. Model introduction and dial photograph show Class 1.6; the table instead says Class 2.5, M14×1.5, approximately 300g and −40°C to 55°C. These conflicting entries require build-specific confirmation.

Operating notes

Release trapped pressure safely before checking zero, even after an isolation valve has been closed. Use the model-specific pressure and temperature ratings. The 50Hz vibration figure does not specify an amplitude.

Source: Yueqing ELECALL Electric Co., Ltd., trademark holder and manufacturer. No. 246 Weishi Road, Yueqing Economic Development Zone, Zhejiang Province, China. Telephone: 4006-111-323. www.elecall.cn. Document VI-YTN-260305-ZE, original format 148mm × 210mm. Source slogan: “ELECALL—making quality products.”