FULLKON

Measuring principle

The electric contact pressure gauge operates based on the elastic deformation of the Bourdon tube. The pressure of the measured medium forces the end of the Bourdon tube to produce corresponding elastic deformation-displacement. This displacement is transmitted through the linkage and gear mechanism, amplified, and indicated by the pointer on the dial. When the pointer contacts or disconnects from the upper or lower set contact, the control circuit opens or closes to achieve automatic control and signaling.

Recorder Flow Temp Analyzer Level Pressure

Special characteristics

- Suitable for automatic control and signaling (alarm) when paired with relays and contactors
- Two-position slow-acting contacts for reliable switching
- Not suitable for explosive media or explosive gas environment
- All-stainless steel movement with excellent contact reliability

Features

- Accuracy: 1.6 class
- Measuring ranges: 0~0.4, 0~0.6, 0~1, 0~1.6, 0~2.5, 0~4, 0~6, 0~10, 0~16, 0~25, 0~40, 0~60 MPa
- Maximum working voltage & contact capacity: 220V~380V, 10W
- Insulation strength: 2000V AC 50Hz for 1 minute
- Ambient temperature: -10 ~ +40 ° C, relative humidity ⩽85%
- Vertical installation recommended for accurate indication and reliable contact

The YD110 Electric Contact Pressure Gauge is a versatile and reliable instrument for measuring the pressure of non-corrosive, non-crystallizing and non-solidifying liquids, gases and air that are compatible with copper alloy, alloy structural steel and tin-lead solder. When matched with corresponding electrical devices (such as relays and contactors), it can realize automatic control and signaling (alarm) for the controlled system.

Preferred areas of use are

Widely used for pressure measurement, automatic control and alarm in industrial process control, machinery, HVAC, and general utility applications involving non-corrosive media.

Material and test

CE PA ISO

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Parameters

Accuracy	1.6 class
Measuring Range	0~0.4 / 0~0.6 / 0~1 / 0~1.6 / 0~2.5 / 0~4 / 0~6 / 0~10 / 0~16 / 0~25 / 0~40 / 0~60 MPa
Pressure Type	Gauge pressure
Control Mode	Two-position slow-acting contacts
Max Working Voltage & Contact Capacity	220V~380V, 10W
Insulation Strength	2000V AC 50Hz for 1 minute
Ambient Temperature	-10 ~ +40 °C
Relative Humidity	≤85%
Applicable Media	Non-corrosive to copper alloy, alloy structural steel and tin-lead solder; non-crystallizing, non-solidifying liquids, gases, air
Installation	Vertical (recommended)

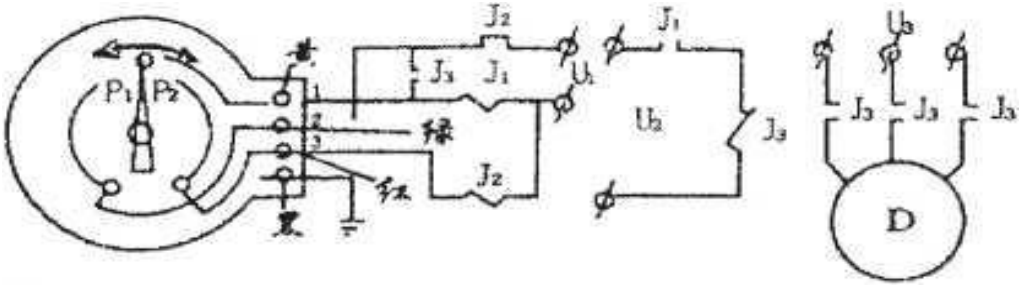
Technical Data

Structural principles

The instrument consists of a housing, measuring system, indicating section, electrical contact group, regulating device, and terminal box.

The instrument's working principle is based on the Bourdon tube in the measuring system. Under the pressure of the measured medium, the end of the Bourdon tube is forced to undergo corresponding elastic deformation—displacement. This displacement is transmitted via a pull rod and gears, amplified, and gradually indicated on the dial by a pointer (along with the contact point) on a fixed gear shaft. Simultaneously, when the pointer contacts (or disconnects) the contact point (upper or lower limit) on the setpoint needle, the circuit in the control system is opened and closed, achieving automatic control and signal transmission.

The connection method between the instrument's terminals and the corresponding electrical components (or equipment) can be seen in the following diagram:



Explanation: When the electrical circuit is connected as shown in the diagram, the measured pressure value can be maintained within the range of P1 to P2 to achieve automatic control. The control procedure is as follows:

(1) When the pressure of the measured medium (hereinafter referred to as pressure) increases from zero to within the range of P1, the moving contact on the instrument indicator needle contacts the contact at the given point of P1 (i.e., normally open, the same below), energizing relay J1, which then holds its contact in a normally open state. Simultaneously, the contacts on contactor J3 open, and the motor operates due to energization.

(2) As the pressure continues to increase from P1 to P2, the motor continues to operate because the contacts on relay J1 remain in a self-holding state after opening.

(3) When the pressure reaches the given point of P2, the contact on the instrument indicator needle contacts it, energizing relay J2: the contact immediately opens. At this time, the contacts on relay J1 are in an open state (the contacts in the instrument are also in an open state), so the motor remains stationary due to power failure.

(4) When the pressure drops from P2 to P1, the moving contact on the instrument indicator needle comes into contact with it again, causing the contacts on relay J1 and contactor J3 to return to their starting state (1), and the motor will start working again.