Conductivity Switch Model 352

GENERAL DESCRIPTION

The Model 352 is a conductivity sensing ON-OFF control unit that is completely self-contained and enclosed in a weathertight and explosion proof housing. Designed to be mounted directly on the sensing probe or electrode, it may be used to detect conductive liquid levels or interface between non-conductive and conductive liquids.

The plug-in chassis assembly within the enclosure is equipped with a 20 turn potentiometer for threshold resistance adjustment and provides excellent resolution over a resistance range from 200 ohms to 2 megohms. The output control relay is socket mounted in DPDT configuration.

The sensing electrode voltage is transformer isolated from the supply voltage and is stepped down to approximately 10 VAC assuring personnel safety and freedom from electrode polarization. Incorporated within the unit are soldered jumper connections that may be changed in the field to allow low-level or high-level fail safe operation in the event of supply power failure.

Sensing electrodes, or probes are available in a variety of lengths and materials to suit the particular application. **The sensing electrode, or probe, must be of the bare, non-insulated style.**

PRINCIPAL OF OPERATION

The Model 352 conductivity switch utilizes an AC resistance bridge circuit, one leg of which is formed by the sensing probe in contact with the liquid and the opposite leg of the bridge containing the threshold adjustment potentiometer. AC output from the bridge is phase discriminated and coupled to an integrated circuit differential amplifier. Output from the amplifier is connected to a relay driver stage which in turn operates the control relay. Positive feedback is incorporated which assures solid bi-stable relay switching to prolong relay contact life.

Probe shown for illustration only. Must be ordered separately.

FEATURES AND BENEFITS

- **Low AC voltage on electrode -**
  No safety hazard to personnel
- **Field changeable fail-safe mode -**
  Operation on low level or high level application
- **Completely self-contained**
  Mounts directly on sensing probe, no additional equipment required
- **Wide adjustment range -**
  Allows operation on even partially conductive materials
- **Plug-in Control Relay**
  Ease of maintenance.

SPECIFICATIONS

ELECTRICAL

Supply voltage .....120 VAC ±10%, 50/60 Hz
240 VAC ± 10%, 50/60 Hz
Supply power .....5 watts, 15 VA maximum
Control Relay:
Form .....DPDT, electromechanical
Rating..... 5 a @ 120/240 VAC, electromechanical

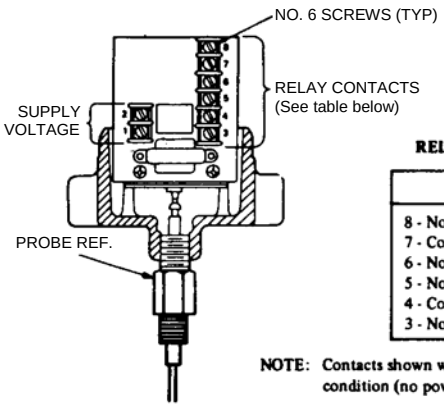
ENVIRONMENTAL

Enclosure .....Weathertight NEMA 4 and Explosion Proof
Class 1, Division 1, Group C & D
Operating temperature limits .....-40°F to +160°F
Vibration limits.....±2 g's, 20-200 Hz
Humidity.....0-95 RH@ 100°F
Shock..... 75 g's for 11 ms without permanent damage

PERFORMANCE

Resistance operating range.....200 ohms to 2.0 megohms
Deadband .....5% maximum
Temperature coefficient.....0.05%/l00°F
Supply coefficient..... 2%/10% supply change

ELECTRICAL CONNECTIONS

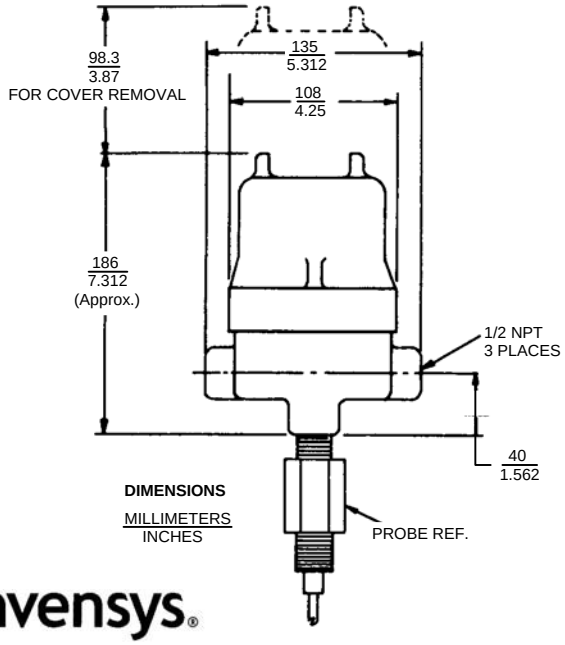


RELAY CONTACTS

DPDT Relay
8 - Normally open No. 2
7 - Common No. 2
6 - Normally closed No. 2
5 - Normally open No. 1
4 - Common No. 1
3 - Normally closed No. 1

NOTE: Contacts shown with the relay in the de-energized condition (no power).

DIMENSION DATA



ORDERING INFORMATION

STANDARD MODEL* 352 - A 2
OPTIONAL MODELS
Select from tables below.
(Allow additional 2 weeks delivery.)

352 - __ - __
Key Model Number
Table 1 - Supply Voltages
Table 2 - Control Relay

KEY MODEL NUMBER

Designation	Description
352	Conductivity sensing ON-OFF Control Instrument. Completely self-contained including plug-in control relay and threshold resistance adjustment. **Mounts directly on bare (non-insulated) sensing probe or electrode.** Does not include probe.

TABLE 1 - SUPPLY VOLTAGE

Designation	Description
*A	120 VAC ± 10%, 50/60 Hz
B	240 VAC ± 10%, 50/60 Hz

TABLE 2 - CONTROL RELAY

Designation	Description
*2	DPDT electromechanical relay

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