

# QUALITROL® 900/910 RPRR

Rapid pressure rise relays



## Protection and detection of dangerous sudden pressure changes

- 100% factory calibrated and tested to ensure performance
- Multiple mounting and calibration options for gas or oil applications
- From the original creator of mechanical rapid pressure rise relays

### Product Summary

**Description** Patented mechanical device for detection of sudden pressure events based on the rate of pressure rise and safe limits established by transformer manufacturers. When a dangerous pressure rise has been detected, the QUALITROL rapid pressure rise relay (RPRR) will change state. This can be used as an alarm or trip signal to minimize the potential of transformer tank damage.

**Application** For transformer and other electrical apparatus protection. Can be used in both oil (QUALITROL 900) or gas (QUALITROL 910) space of a transformer.



**QUALITROL®**  
Defining Reliability

# QUALITROL® 900/910 RPRR rapid pressure rise relays

## Protection and detection of dangerous sudden pressure changes

- Devices calibrated to quickly alarm or trip during rapid pressure rise changes (see response curves below)
- Actuation only occurs based on rate of pressure rise and will not occur under normal pressure variations caused by temperature change and vibration
- Can be subjected to full vacuum or 20 PSI positive pressure without damage
- Standard operation from -40 to 180°F ( -40 to 82°C)
- Special units available for operation at -67°F (-55°C)

## 100% factory calibrated and tested to ensure performance

- Units are serialized and calibration records are maintained
- Factory tested for switch (contact) performance and response time
- Field test kit available for simple GO/NO-GO test to assure proper functionality of the device

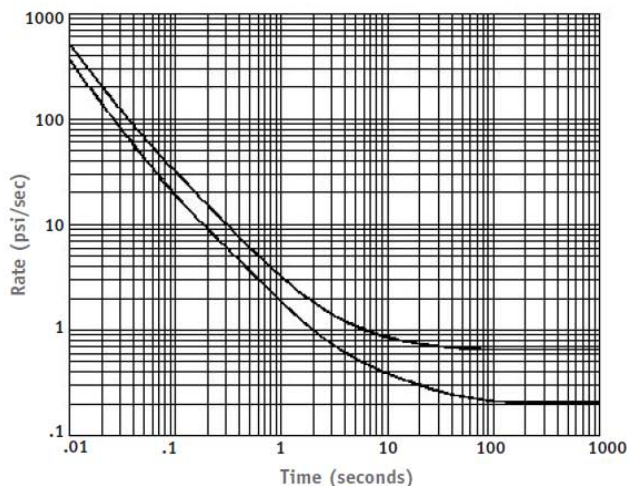
## Multiple mounting and calibration options for gas or oil applications

- Flange or thread mounting options available for both vertical or horizontal mounting
- Models calibrated for proper response in gas or oil space applications (see response curves below)

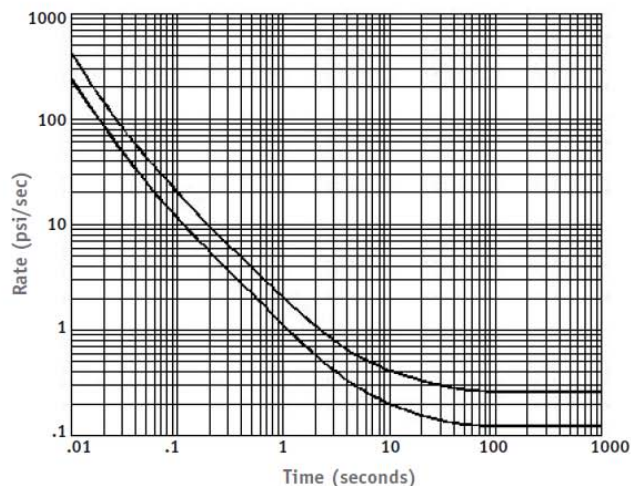
## From the original creator of mechanical rapid pressure rise relays

- Original creator of patented bellows technology for mechanical rapid pressure rise detection
- Over 25 years of experience and refinement in rapid pressure rise protection with greater than 100,000 units installed

## RPRR response curves

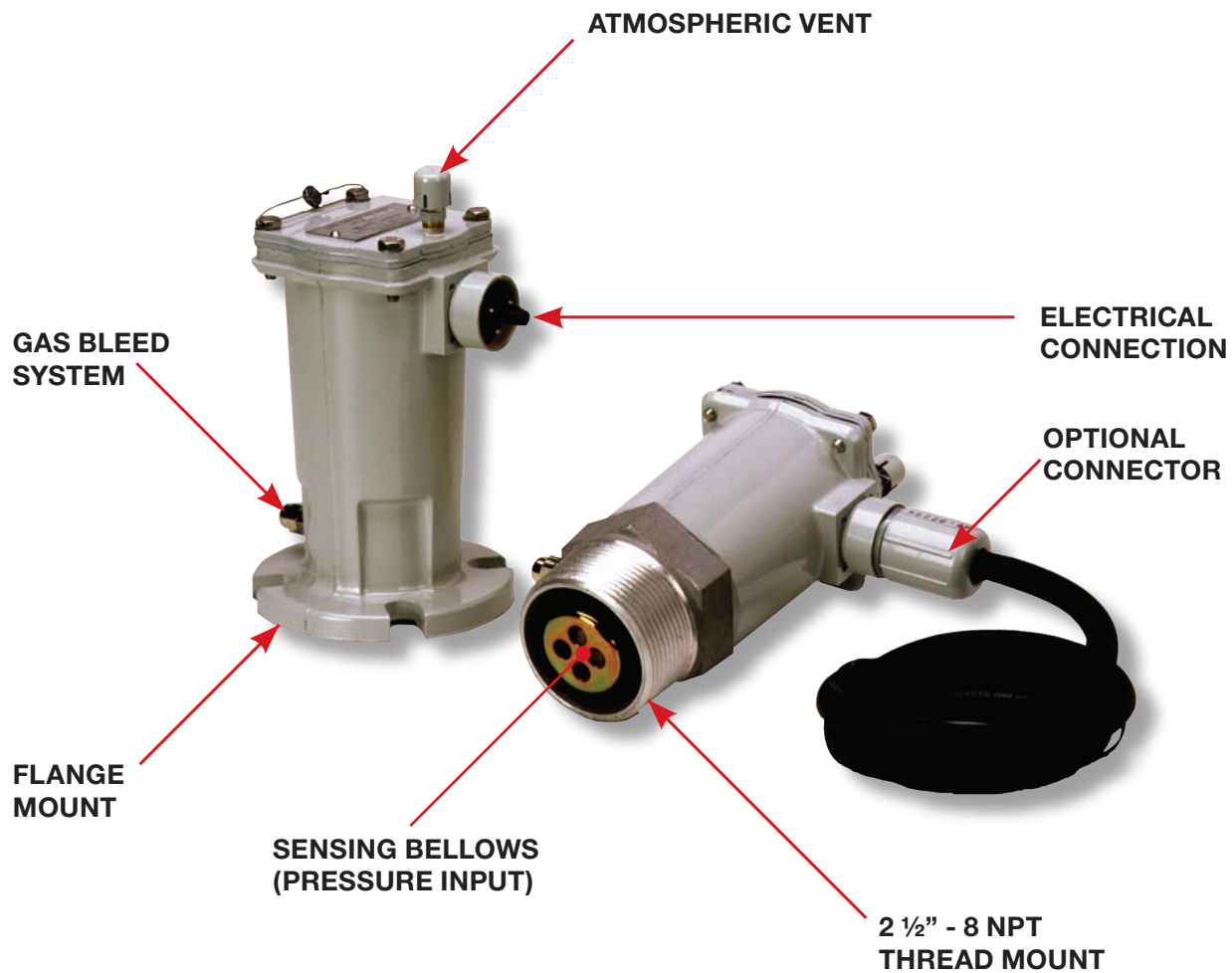


900 Series Response Limits



910 Series Response Limits

## RPRR features



### Reaction speed

Rapid pressure rise relays offer quick reaction to protect the transformer. Unlike other sudden pressure protection devices, QUALITROL RPRRs operate in oil or gas space for optimal detection of pressure events.

### Maximum protection

For maximum protection, single channel or multi-sensor QUALITROL 930 electronic pressure monitors are available.

Typically used in the most critical situations, these monitors add continuous pressure remote monitoring, adjustable sensitivity, static and rapid pressure detection, and 2 out of 3 logic for reliable trip functionality.



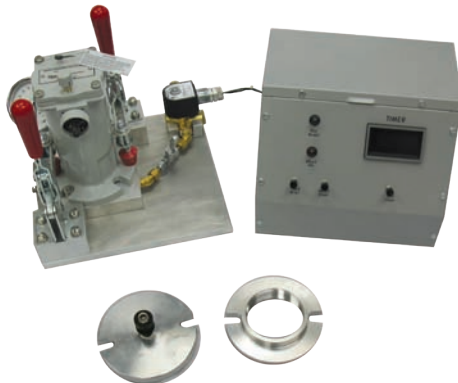
## Components and accessories

### Seal-in relay (909-300)



- Latching relay to “seal-in” momentary switch actuations common with detection of rapid pressure rise events
- Configurable for VAC or VDC
- Two output relays
- LED lights to indicate active status and actuation
- Low profile
- Redundant make/break circuit requirement protects against false trips due to damaged wiring
- UL certified for use in hazardous locations (Class 1, Div 2)

### Factory test fixture (FIX-601)



- Mimics the calibration and verification testing performed at the factory for all QUALITROL RPRRs
- Designed for use in repair shops and transformer manufacturing plants
- Built in LED indicator lamps show test status and results

### Field test kit (KIT-013-1)



- Easy field test kit for “go/no-go” testing of all QUALITROL RPRRs
- Rugged carrying case
- Setup and test instructions in case
- Power supply and other required components provided in kit



## TECHNICAL SPECIFICATIONS

|                      |                                |  |
|----------------------|--------------------------------|--|
| <b>Mechanical</b>    | Mounting                       | Vertical or horizontal in gas or oil mediums   |
|                      | Mounting style                 | Flange mount or thread mount   |
| <b>Dimensions</b>    | Flange mount                   | Four 1/2" diameter bolt slots equally spaced on a 4" bolt circle   |
|                      | Thread mount                   | 2 1/2" - 8 NPT tapered pipe male thread with 3" hex wrench flat  |
| <b>Materials</b>     | Bleed valve                    | Nickel plated brass  |
|                      | Finish                         | Thermosetting powder coat (ANSI # 70 gray)   |
|                      | Hardware                       | Stainless steel  |
|                      | Housing and cover              | Die cast aluminum  |
|                      | O-ring seal                    | Viton  |
|                      | Vent                           | Brass or copper  |
| <b>Environmental</b> | Ambient operating temperatures | -40°F to 180°F ( -40°C to 82°C). Special units available for operation down to -67°F (-55°C)   |
|                      | Resistance to vibration        | Switch operation not affected when subjected to 50/60 Hz, or whole multiples thereof<br>NOTE: Vibration amplitude of installed relay should be minimized |
|                      | Max pressure (sensing bellows) | 14.7 to 20 PSIG (1.0 to 1.4 bar)   |
| <b>Electrical</b>    | Switch type                    | Snap action, SPST or SPDT  |
|                      | Switch rating (AC)             | 10 A @ 125, 250 & 480 VAC  |
|                      | Inductive power factor (AC)    | 75%  |
|                      | Switch rating (DC)             | 1/2 A @ 125 VDC - resistive  |
|                      |                                | 1/4 A @ 250 VDC - resistive  |
|                      | Electrical connection          | QUALITROL style circular 3 pin, ANSI style circular 3 pin, military spec MS3102E16-10P circular 3 pin, flying leads or terminal box                      |

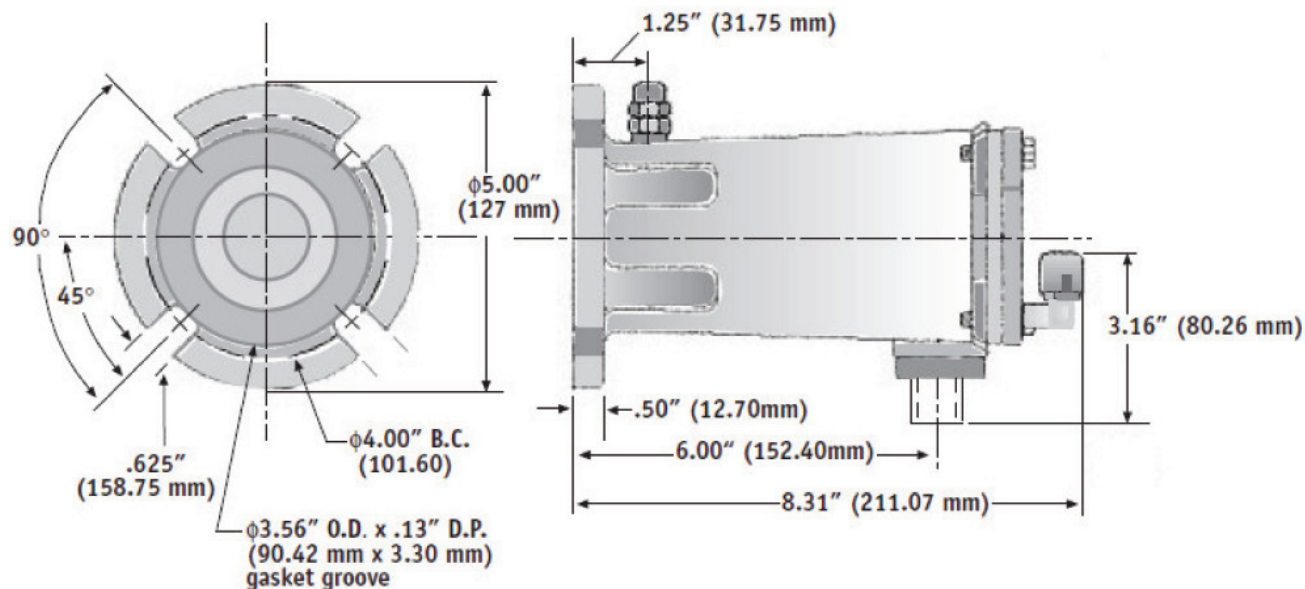


### Don't see what you need?

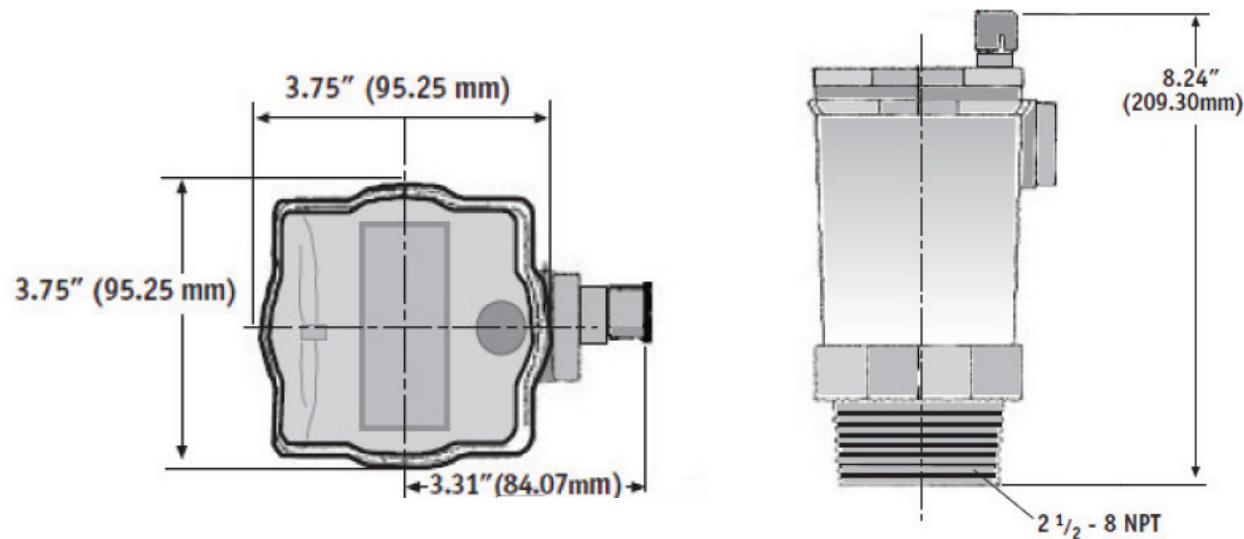
QUALITROL regularly creates models with special customer requirements. Contact your local sales representative or QUALITROL Application Engineer to review your special requirements.



## Flange mount (horizontal mount shown)



## Thread mount (vertical mount shown)



### About QUALITROL®

QUALITROL Company LLC manufactures substation and transformer monitoring and protection devices used by electric utilities and manufacturing companies. It is the global leader in sales and installations of transformer asset protection equipment, fault recorders and fault locators. Established in 1945, QUALITROL Company produces thousands of different types of products on demand, each customized to customers' unique requirements.

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