

# Hazardous Location Pressure Switch

Models: RC-A0750 & RC-M0750

For Applications Under 100 PSI

## Installation & Operation Manual



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## 1 Safety

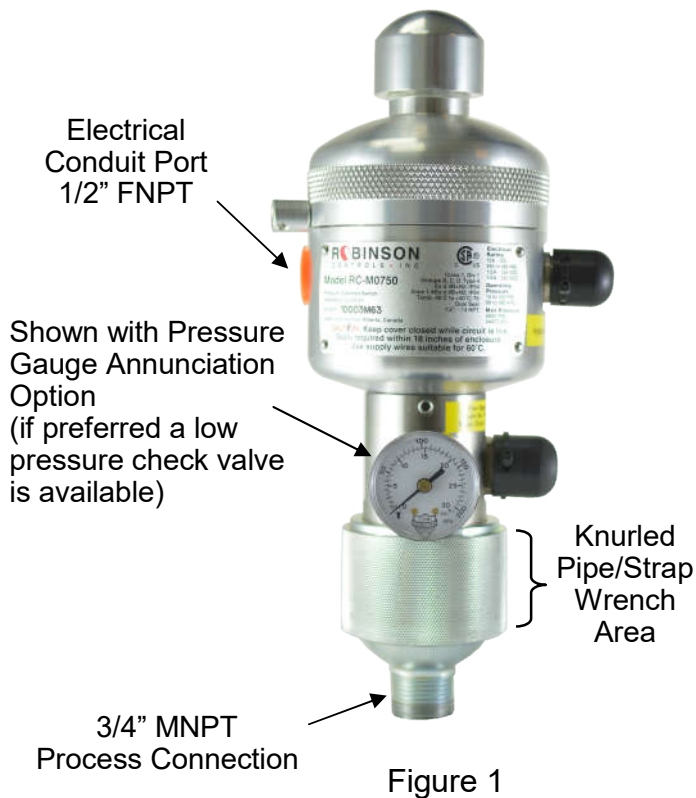
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- 1.1 Power supply must be disconnected before installation, calibration and maintenance.
- 1.2 Keep all components dry and free from damage.
- 1.3 Review applicable standards to ensure Robinson Pressure Switch model is the correct control for the application.
- 1.4 Personnel must wear appropriate safety approved apparel for working environment.
- 1.5 Only qualified personnel should install the Robinson Pressure Switch and accessories.
- 1.6 A qualified electrician is required to inspect wiring installation prior to applying electricity.
- 1.7 Ensure enclosure cover is in place prior to applying electricity

## 2 Quick Installation

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- 2.1 Inspect all threaded Process Connections for damage.
- 2.2 Screw pressure switch into place. Use a strap wrench or pipe wrench on the knurled portion of the process connection only.
- 2.3 **Warning**  
Do not use spring body Wrench **Flats** located on either sides of the pressure gauge for installation, flats are for factory assembly only. Damage will result if torque is applied to the spring body Wrench Flats.
- 2.4 Inspect the Electrical Conduit Port threads (1/2" FNPT) as well as the Electrical cable assembly fitting to ensure cleanliness and free of damage.
- 2.5 Feed wire leads through the Electrical Conduit Port and tighten the electrical cable assembly fitting. Refer to the wiring diagram on next page to attach wires to micro switch.



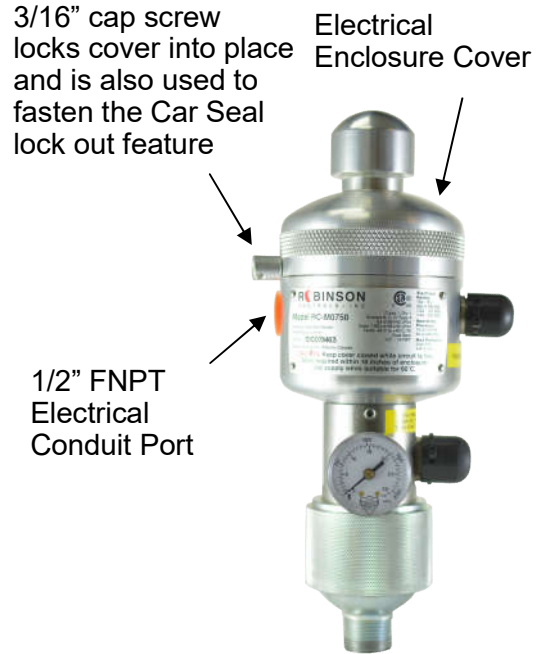
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### 3 Wiring

- 3.1 Use a 3/16" hex key to loosen the cap screw located on the Enclosure Lid.
- 3.2 Use a spanner wrench (1/4" pin, 2-4 3/4" span) to break loose the Enclosure Cover and complete removal by hand.
- 3.3 Connect wires to micro switch as required.
- 3.4 Thread electrical cable union into the Electrical Port, 5 plus turns.
- 3.5 Thread **Enclosure Cover** back onto the Electrical Enclosure and ensure it is properly seated prior to applying electricity.



#### Notes Regarding Wiring

Ensure wire insulation is not damaged  
 Connect wires firmly to micro switch terminals  
 (torque to 4 inch lbs.)  
 Wiring must meet or exceed circuitry requirements

Figure 2

<p>Figure 3</p> <p style="text-align: center;"><b>Manual Reset</b></p>	<p>Figure 4</p> <p style="text-align: center;"><b>Automatic Reset</b></p>
<p>Single Pole Double Throw                  15A—125, 250 or 480 VAC                  1/4 HP—125 VAC, 1/2 HP— 250 VAC                  1/2A—125 VDC, 1/4A—250 VDC</p>	<p>Single Pole Double Throw                  15A—125, 250 or 480 VAC, 2A—600 VAC                  1/8 HP—125 VAC, 1/4 HP—250 VAC                  1/2A—125VDC, 1/4A—250 VDC</p>

## 4 Setting & Verifying Set Point

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**Note:** Pressure Gauge and Pressure Source is needed to set and verify settings

- 4.1 **Lower Security Cap**  
Cut off (Car Seal or Zip Tie) security tie and remove the Lower Security Cap.
- 4.2 **Pressure Adjusting Screw** (use 1/4" hex key)  
Turn Screw inward to increase the set point.  
Turn Screw outward to decrease the set point.
- 4.3 **Verify Pressure Setting**  
Increase/decrease the pressure source acting on pressure switch to verify the pressure switch set point.
- 4.4 **Security Cap and Security Seal**  
Reinstall the Security Cap on the Pressure Adjusting Screw.  
The security cap can be locked in place with either a Car Seal or a 1/8" plastic zip tie.



Figure 5

**Pease Note:**

The pressure gauge is not used for set point adjustment. This gauge is to indicate a primary seal (diaphragm) leak only.  
If preferred, an optional check valve is available in place of the gauge.

## 5 Notes Regarding Calibration

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- 5.1 Calibration is not required after re-setting & verifying trip pressure.
- 5.2 Calibration (micro switch gap setting) is required when the Micro Switch has been replaced or if disassembly and re-assembly has occurred.  
**Refer to Repair Manual for calibration instructions [www.robinsontools.com](http://www.robinsontools.com)**

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## 6 Specifications

### Models RC-A0750 and RC-M0750

6.1 **Pressure Range** 10-100 (69 to 690 kPa )  
For custom pressure ranges please call 1-780-435-5195

6.2 **Max Safety Pressure**  
5000psi (34474 kPa), all models.

6.3 **Temperature Range**

**Auto Reset**

Process temperature - 45°C to 140°C  
Ambient Temperature - 40°C to 60°C  
Max Enclosure temperature 96°C.

**Manual Reset**

Process Temperature -45 to 120°C  
Ambient Temperature -40°C to 60°C  
Max Enclosure temperature 96°C.

6.4 **Certification Markings**

Class I, Division 1, Groups B, C and D; Type 4  
Ex d IIB+H2; IP54  
Zone 1 AEx d IIB+H2; IP54  
Tamb -40°C to +60°C; T4  
Use Supply Wires Suitable for enclosure temperatures up to 96°C

6.6 **Process Connection; NACE MR0175-2003**

3/4" MNPT Male Threaded Connection  
SA350 LF2 Class 1  
Diaphragms—Inconel, PTFE  
CRN: 0F10753.2

6.6 **Input Ratings (model dependent):**

**Manual Reset**

Single Pole Double Throw  
15A—125, 250 or 480 VAC  
1/4 HP—125 VAC, 1/2 HP— 250 VAC  
1/2A—125 VDC, 1/4A—250 VDC

**Auto Reset**

Single Pole Double Throw  
15A—125, 250 or 480 VAC, 2A—600 VAC  
1/8 HP—125 VAC, 1/4 HP—250 VAC  
1/2A—125VDC, 1/4A—250 VDC

Figure 5



**IMPORTANT INFORMATION**  
Process Temperature Testing

Pressure Switches with the **minimum Class 1 Div 1** name plate markings **do not meet** CSA C22.2 No E60079-0:2007 which requires a maximum process temperature to be applied for explosion proof testing.

All Robinson Pressure Switches in addition to meeting the minimum Class 1 Div 1 have also been temperature tested to CSA C22.2 No E60079-0:2007 and are legally allowed to have the additional markings of  
Ex d IIB+H2; IP54  
Zone 1 AEx d IIB+H2; IP54  
Tamb -40°C to +60°C; T4 .

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## 7 **Recommend Service**

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- 7.1 **3 month interval** - Verify operation by pressure testing, most importantly prior to cold weather season.
- 7.2 Ensure Annunciation Gauge is not showing pressure. Gauge should read 0 PSIG at all times.
- 7.3 Any amount of pressure showing on the pressure gauge (or leakage from the optional check valve) indicates a primary seal failure has occurred and the switch needs to be removed from service and rebuilt.

## 8 **Features**

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<b>FEATURE</b>	<b>COMMENTS</b>
Dual Seal Certification	Meets ANSI/ISA-12.27.01-2003 dual seal certification
Annunciation Pressure Gauge or optional Check Valve (a dual seal feature)	Visually indicates a primary seal failure. 1. Models with Pressure Gauge any indication of pressure indicates primary seal failure 2. Models with Check Valve - leakage indicates primary seal failure. Unlike open holes found on competitive models the Robinson gauge or check valve prevents moisture and debris from contaminating internal components.
Certification Areas	Class 1 - Flammable Gas or Vapor, Division 1 - Intermittent Hazard
Gas Groups B, C, D	Ensures safety for Hydrogen, Ethylene and Propane in environment
IEC	Robinson Pressure Switch has been tested to international standards
External Adjustment	Pressure Adjustment Screw designed to allow pressure setting external adjustment. External adjustment prevents moisture and debris to enter Pressure Switch internals, ensuring Robinson Pressure Switch protects against corrosion.
Security/Lockout	To prevent tampering or unauthorized use of the Pressure Switch a Car Seal lockout device can be installed on three components 1) electrical enclosure cover 2) calibration screw/cap, and 3) set point adjustment screw/cap.
Process Connection NACE (for sour service)	Process Connection Materials are chosen in accordance to NACE MR0175-2003
Piston Orientation	Eliminate the need for pulsation dampening
Field Service	Micro Switch replaceable, no need to disassemble Pressure Switch.
Low Ownership Costs	Maintenance kits are available to renew pressure switch for service.

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