

Hazardous Location Pressure Switch

Models: RS74A & RS74M

Flow Line Pressure Switch Installation & Operation Manual



ROBINSON
CONTROLS INC

1 Safety

- 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 is the correct switch 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.

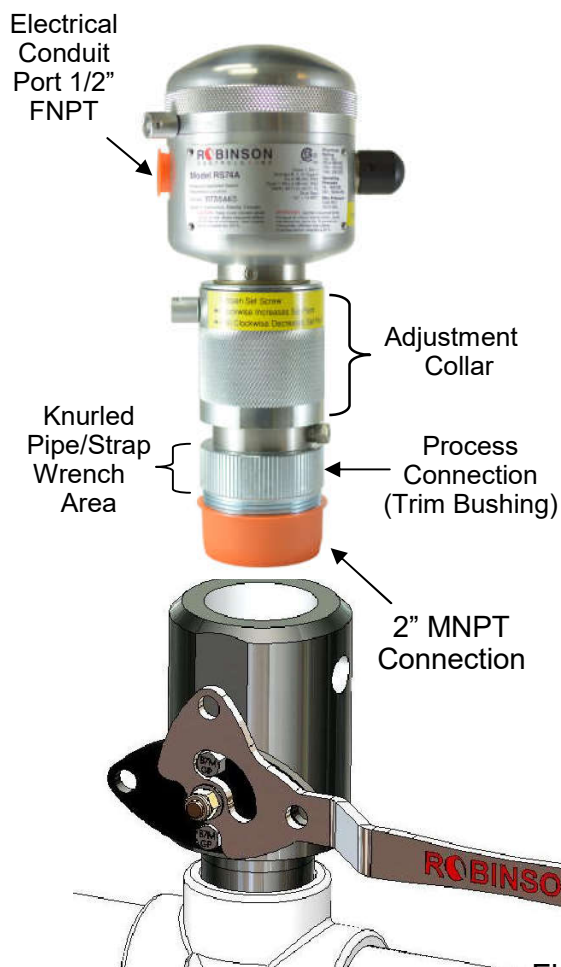


Figure 1

2 Quick Installation

- 2.1 Inspect all threaded connections and ensure they are all damage free.
- 2.2 Prepare Process Connection (Trim Bushing) Threads by applying PTFE (Teflon) tape or sealant.
- 2.3 Use knurled pipe wrench area on Process Connection to thread into place.
- 2.4 Inspect threads in the Electrical Conduit Port (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.

3 Wiring

- 3.1 Use 3/16" hex key to loosen the Enclosure Cover/Security feature.
- 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 1/2" MNPT electrical cord Union into the Electrical Port located on the side of the electrical enclosure housing, 5+ Turns
- 3.5 Thread **Enclosure Cover** back onto the Electrical Enclosure and ensure it is properly seated prior to applying electricity.

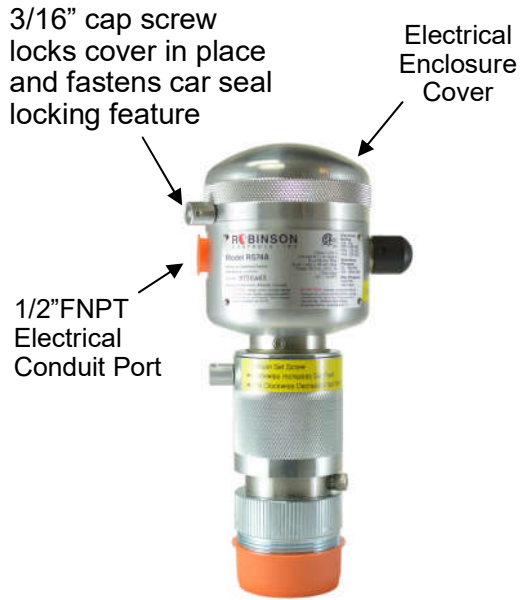


Figure 2

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

<p>Figure 3</p> <p>Common Ground Normally Closed Normally Open</p> <p>Manual Reset</p>	<p>Figure 4</p> <p>Common Ground Normally Closed Normally Open</p> <p>Automatic Reset</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 Trip Pressure

Note: pressure gauge and pressure source are needed to set and verify settings

- 4.1 **Cut off Zip Tie** (or Car Seal)
- 4.1 **Loosen Cap Screw (3/16" hex key) Located on upper part of Adjustment Collar**
Loosen Set Screw to Allow turning of Pressure Adjusting Collar
- 4.2 **Pressure Setting**
Turn Collar Clockwise to Increase Pressure Setting
Turn Collar Counter Clockwise to Decrease Pressure Setting
- 4.3 **Tighten Cap Screw**
Tighten Cap Screw to lock Pressure Adjusting Collar in position.

5 Notes Regarding Calibration

- 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 at www.robinsoncontrols.com

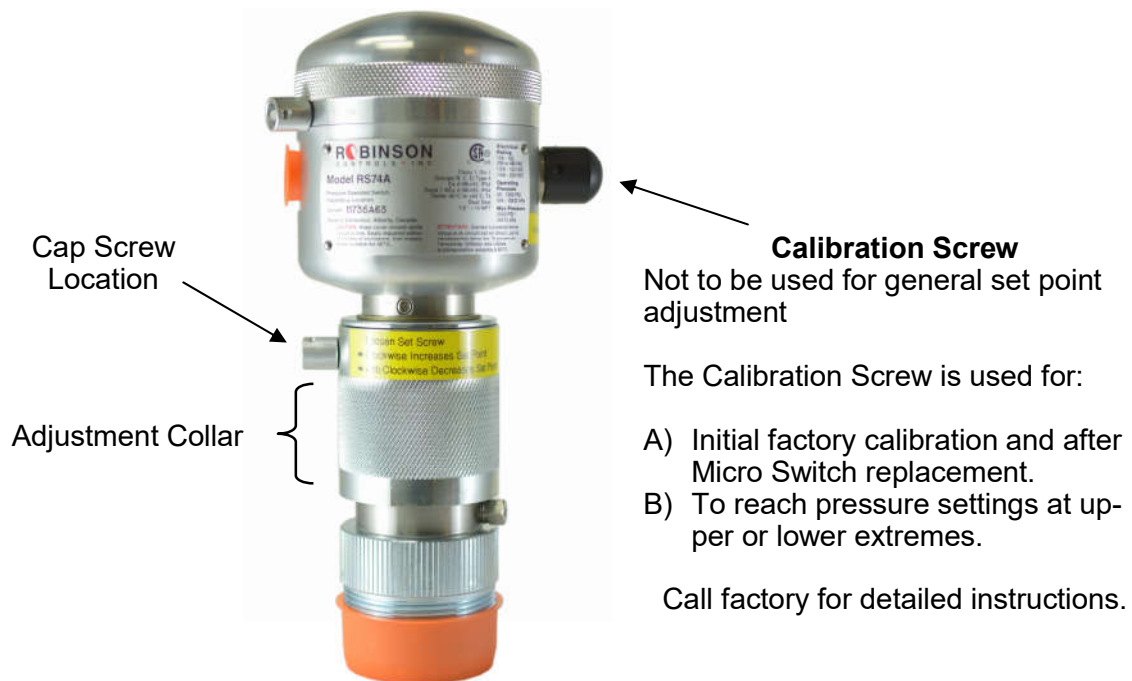


Figure 5

6 Specifications

Models: RS74A and RS74M

- 6.1 **Pressure Range**
50 to 1500 psi (345 to 10,340 kPa)
- 6.2 **Max Safety Pressure**
5000psi (34,473 kPa), all models.
- 6.3 **Temperature Range**
- Auto Reset**
Process temperature -45°C to 140°C
Ambient Temperature -40°C to 60°C
- Manual Reset**
Process temperature -45°C to 120°C
Ambient Temperature -40°C to 40°C
- 6.5 **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 $+60^{\circ}\text{C}$; T4
Use Supply Wires Suitable For 96°C
- 6.6 **Process Connection; NACE MR0175-2003**
2" MNPT Threaded Connection
SA350 LF2 Class 1, Zinc Plated
Diaphragm Inconel 718
Retaining Ring 316 SS
CRN: 0F10666.2
- 6.7 **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 6



RS74A
Auto Reset

RS74M
Manual Reset

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 C2.2 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 $+60^{\circ}\text{C}$; T4

7 Recommend Service

- 7.1 **3 month interval** - Verify operation by pressure testing, most importantly prior to cold weather season.
- 7.2 Ensure Annunciation port (breathe cap/check valve) is free from obstruction.
- 7.3 Any amount of leakage no matter how slight indicates a primary seal failure and the switch will need to be removed from service and rebuilt.

8 Features

FEATURE	COMMENT
Dual Seal Certification	Meets ANSI/ISA-12.27.01-2003 dual seal certification
Annunciation Check Valve (a dual seal feature)	Visually indicates a primary seal failure. Unlike open holes found on competitive models the Robinson 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	Simply rotate knurled adjustment collar to increase or decrease pressure setting.
Security/Lockout	To prevent tampering or unauthorized use of the Pressure Switch a Car Seal lockout devise can be installed on three components 1) electrical enclosure cover 2) calibration screw/cap, and 3) set point adjustment collar.
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	Microswitch replaceable, no need to disassemble Pressure Switch.
Diaphragm Servicing	Diaphragm can be replaced without disassembling Pressure Switch , Pin socket available for Diaphragm Nut, contact Robinson Pressure Controls.
Low Ownership Costs	Maintenance kits are available to renew Pressure Switch for service.

Important information

Robinson Controls Inc. has established industry leadership in the design and manufacture of its products. When properly selected, this Robinson product is designed to perform its intended function safely during its useful life. However, the purchaser or user of Robinson products should be aware that Robinson products might be used in numerous applications under a wide variety of industrial service conditions. Although Robinson can provide general guidelines, it cannot provide specific data and warnings for all possible applications. The purchaser/user must therefore assume the ultimate responsibility for the proper sizing and selection, installation, operation, and maintenance of Robinson products. The purchaser/user should read and understand the Installation Instructions included with the product, and train its employees and contractors in the safe use of Robinson products in connection with the specific application.

While the information and specifications contained in this literature are believed to be accurate, they are supplied for informative purposes only and should not be considered certified or as a guarantee of satisfactory results by reliance thereon. Nothing contained herein is to be construed as a warranty or guarantee, express or implied, regarding any matter with respect to this product. Because Robinson is continually improving and upgrading its product design, the specifications, dimensions and information contained herein are subject to change without notice. Should any question arise concerning these provisions, the purchaser/user should contact the Robinson Controls Inc. factory at:

Robinson Controls Inc.
Edmonton, Alberta, Canada
Telephone: 1 780 435 5195
www.robinsoncontrols.com



www.robinsoncontrols.com