

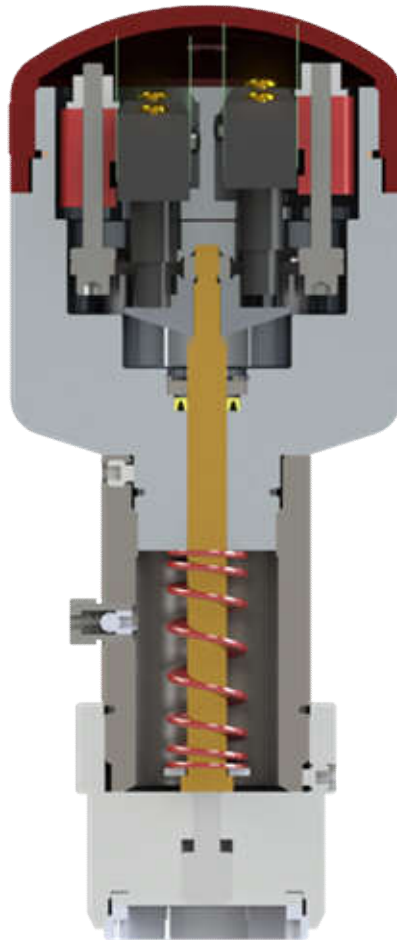
Hazardous Location Pressure Switch

Model: RC-AA-Dual

Operates Two Circuits

Installation & Operation Manual

Set Point Range: 100 psi to 1000 psi



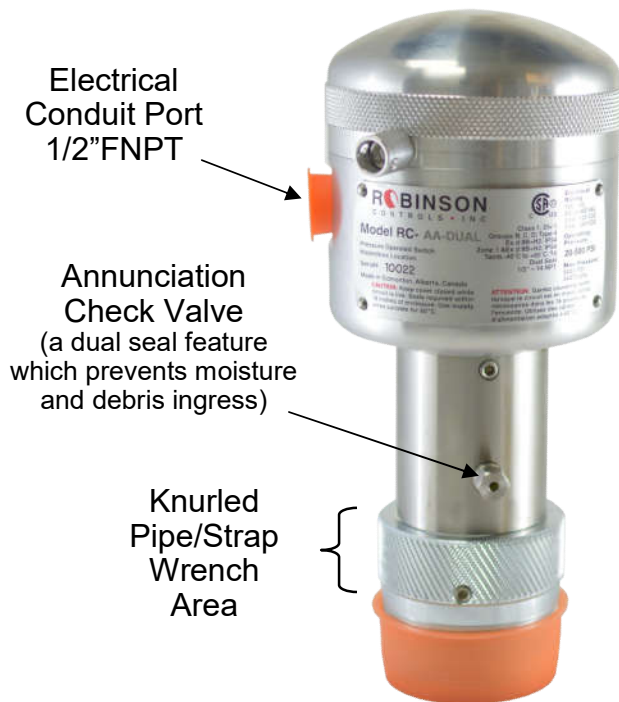
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1 Safety

- 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 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



- 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**
Only use the Knurled Pipe/Strap Wrench area for tightening and torquing the pressure switch into place. Damage may result if excessive force is applied to any other part of the switch.
- 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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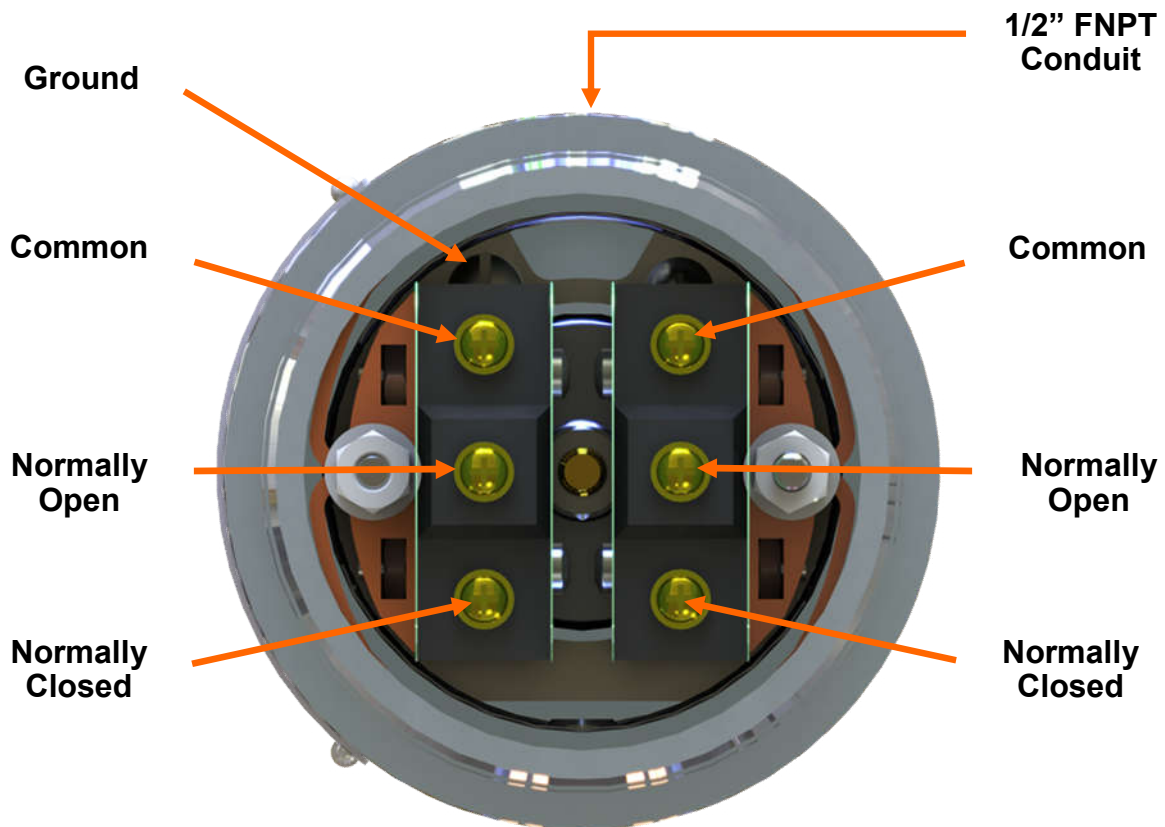
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3 Wiring

- 3.1 Use a 3/16" hex key to loosen the cap screw located on the Enclosure Cover.
- 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 Reinstall the 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.



Dual Automatic Reset

<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>

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4 Setting & Verifying Set Point

Note: pressure gauge and pressure source required to verify settings

Tool required 3/8" wrench or socket.

4.1 Set Point Adjustment

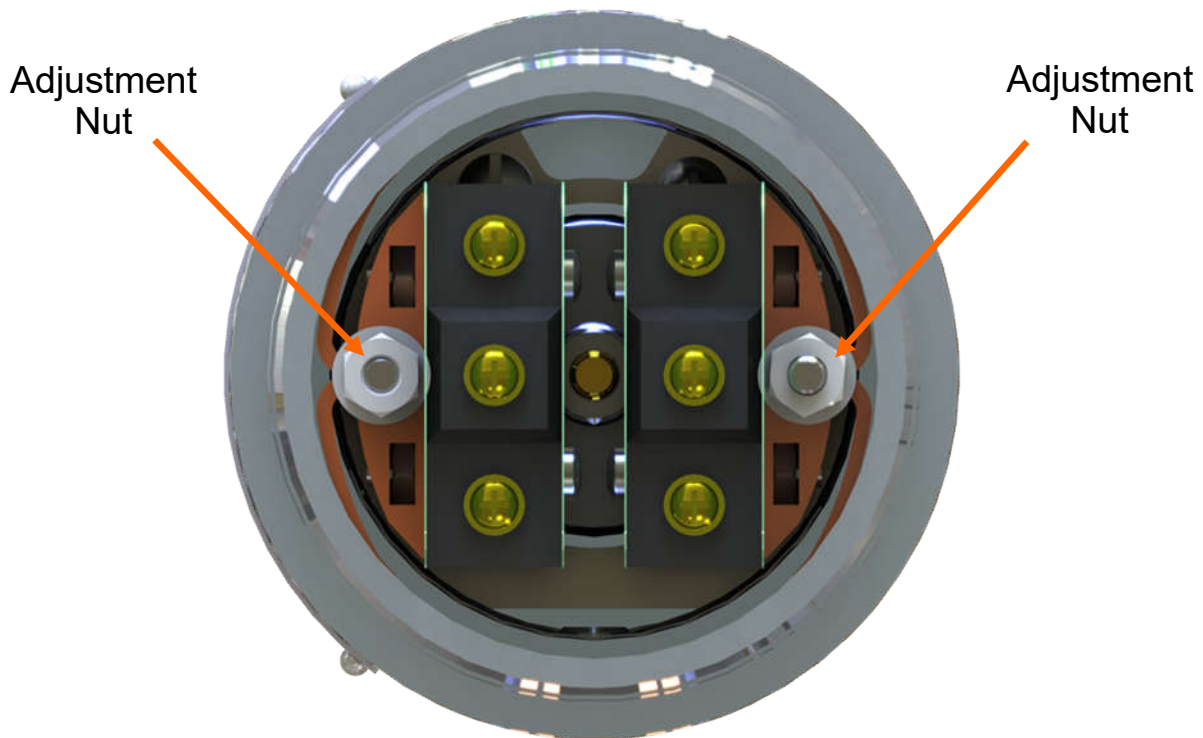
Turn adjustment nut **outward to increase** the pressure set point and **inward to decrease** the set point.

4.2 Verify Trip Pressure (After switches have been wired)

4.2.1 Relieve the pressure acting on the pressure switch, then bring it back up until the micro switch trips off and note the resulting gauge pressure.

4.2.2 Make fine adjustments (+/-) to the pressure setting by turning the adjustment nuts **outward to increase** or **inward to decrease** the set point.

4.2.3 Repeat the first step (4.2.1) to verify pressure setting.



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5 Specifications

Model: RC-AA-Dual (Fixed Differential)

- 5.1 **Pressure Range**
100 psi to 1000 psi (690 kPa to 6900 kPa)
Custom pressure ranges are available
- 5.2 **Max Safety Pressure**
5000psi (34,473 kPa), all models.
- 5.3 **Temperature Range**
Process temperature -45°C to 140°C
Ambient Temperature -40°C to 60°C
- 5.4 **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 $+60^{\circ}\text{C}$; T4
Use Supply Wires suitable for 96°C
- 5.5 **Process Connection**
2" MNPT Threaded Connection
SA-193-B7
Retaining Ring 316 SS
CRN: 0F10666.2
NACE MR0175-2003
Diaphragm
HNBR material
NACE TM-0187
- 5.6 **Input Ratings**
Refer to "Wiring Section" of this manual
- 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

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



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6 Recommend Service

- 6.1 **3 month interval** - Verify operation by pressure testing, most importantly prior to cold weather season.
- 6.2 Ensure Annunciation Check Valve is not showing any signs of process leakage.
- 6.3 Any amount of leakage no mater how slight indicates a primary seal failure and the switch needs to be removed from service and rebuilt.

7 Features

FEATURE	COMMENTS
Dual Micro Switches	Two micro switches allow controlling two circuits with two independent set points. Micro Switches are both auto reset with a fixed differentials.
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
Security/Lockout	To prevent tampering or unauthorized use of the Pressure Switch a Car Seal lockout devise can be installed on electrical enclosure cover .
Process Connection NACE (for sour service)	Process Connection Materials are chosen in accordance to NACE MR0175-2003 and NACE TM 0187
Piston Orientation	Eliminate the need for pulsation dampening
Field Service	Micro Switch 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.

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