

Robinson Pressure Control Specifications

The Robinson Controls Pressure Control has been designed and tested to meet the most rigorous criteria for hazardous location operations. The Robinson Pressure Control has been certified for use in Canada (CSA), USA (UL) and tested to IEC standards in the gas groups Hydrogen, Ethylene and Propane.

Current standards require the inclusion of process temperature in the certification of Hazardous Location Pressure Controls, Process Temperature impacts the temperature of the Pressure Control and has an impact on enclosure, microswitch and wiring temperatures. To serve our customers we have included two process temperature options and the resulting wire temperature requirements for those options. Please note that Robinson Controls current Wiring package uses only 105°C certified cabling.

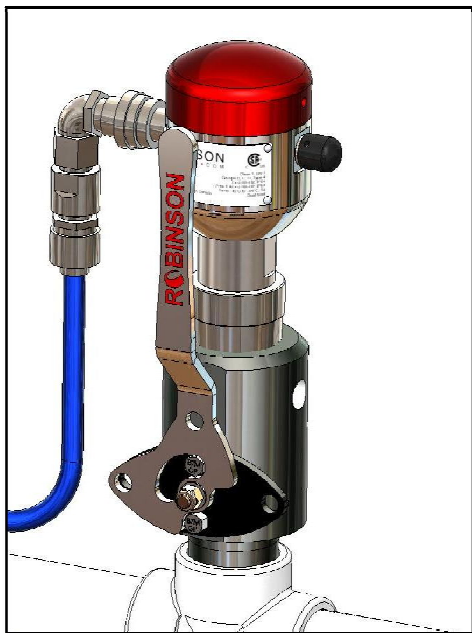
Below are the certifications for the 2 inch Robinson Pressure Controls.

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 96°C

Optional Temperature Limits for Supply Wires at a Lower Temperature Rating

Process Temperature -40°C to 40°C
Ambient 40°C
Use Supply Wires Suitable For 60°C
(Enclosure would be rated T6 under these conditions)



IMPORTANT INFORMATION

PROCESS TEMPERATURE

When comparing the Robinson Pressure Control to other controls, be aware claims made regarding process temperature may reflect outdated standards.

The Robinson Pressure Control has been successfully tested to CSA C22.2 No. E60079-0:2007 (Electrical Apparatus for Explosive gas atmospheres 2007) which requires process temperature to be applied for certification testing.

Explaining the certifications of the Robinson Pressure Control

Certification Marks on Robinson Pressure Control	Geographic Area of Authority	Description of Certification Marks
Class I	CSA, UL	Flammable Gas or Vapour
Division 1	CSA, UL	Area Classification – Intermittent Hazard
Groups B	CSA, UL	Hydrogen
C	CSA, UL	Ethylene
D	CSA, UL	Propane
Type 4	CSA, UL	Protection against Rain, Snow, Hose Directed Water
Dual Seal	CSA, UL	Secondary process seal
T4	CSA, UL, IEC	The surface temperature of the enclosure could be up to 135°C if the process temperature reaches 140°C with an ambient of 60°C. This code is to warn personnel of possible danger.
T6	CSA, UL, IEC	The surface temperature of the enclosure could be up to 85°C if the process temperature reaches 40°C with an ambient of 40°C. This code is to warn personnel of possible danger.
Ex	CSA, UL	Explosion Protected
d	CSA, UL	Explosion Proof, Flameproof
II	IEC	Surface Equipment (not mining)
B	IEC	Ethylene
H2	IEC	
IP54	IEC	Ingress Protection; Dust Protected, Splashing Water
Zone 1	CSA, UL, IEC	Area Classification – Intermittent Hazard
AEx	US	
A		Conformity to U.S. Requirements
Ex		Explosion Protected
Tamb	CSA, UL, IEC	Temperature, Ambient range

Applicable Standards that apply to the Robinson Pressure Controls

CSA C22.2 No. 0-M1982	-	General Requirements - Canadian Electrical Code, Part II
CSA C22.2 No. 0.4- 04	-	Bonding of Electrical Equipment (Protective Grounding)
CSA C22.2 No. 14-10	-	Industrial Control equipment
CSA C22.2 No. 94-M91	-	Special Purpose Enclosures
CSA C22.2 No.30-M1986	-	Explosion-Proof Enclosures for Use in Class I Hazardous Locations
CSA C22.2 No. E60079-0:2007	-	Electrical Apparatus for Explosive gas atmospheres – Part 0 General Requirements
CSA C22.2 No. E60079-1:2007	-	Explosive Atmospheres – Part 1 Equipment protection by Flameproof Enclosures “d”
UL 508, 17 th Edition	-	Industrial Control Equipment
UL 50, 11 th Edition	-	Enclosures for Electrical Equipment
UL 1203 4 th Edition	-	Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations
UL 60079-0 4 th Edition	-	Electrical Apparatus for Explosive gas atmospheres – Part 0 General Requirements
UL 60079-1 5 th Edition	-	Explosive Atmospheres – Part 1 Equipment protection by Flameproof Enclosures “d”
ANSI/ISA-12.27.01-2003	-	Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids
IEC 60529 Edition 2.1	-	Degrees of Protection Provided by Enclosures (IP Code)

Details of Certification Testing

Dual Seal testing (ANSI/ISA-12.27.01-2003)

- Primary seal burst test successful to 13,600psi
- Primary seal leak test successful to 9300psi
- Secondary seal tested and rated for 750psi
- Annunciation from primary seal failure is visible rupture thru the pressure relief port.

Over pressure seats piston, resulting in two benefits;

1. If there is primary seal failure the seated piston restricts flow of process media.
2. Over pressure cannot cause the piston to damage the Pressure Control.

Thermal Test (Temperature Measurement, C22.2 No. E60079-0, Clause 26.5; UL 60079-0)

- Process Temperature 140°C
- Ambient 60°C
- Loaded 240 Volts, 15 Amps.

Process Connection

The 2" NPT process connection is rated to operate up to 5000psi (34474Kpa) up to a temperature of 204°C (400°F).

CRN: 0F10666.2

Process Connection Materials - Nace MR0175-2003

Component	Material	Material Options
Threaded Connection	Zinc Plated SA350 LF2 Class1	Pending*
Diaphragm	Inconel 718 (UNS N07718)	
Diaphragm Gasket	Carbon Graphite	
Diaphragm Retaining Nut	316 Stainless Steel	
Secondary Seal (Dual Seal)	Hydrogenated Nitrile.	

*Options available upon completion of stage two certification

Non Wetted External Components

Component	Material	Material Options
Enclosure	Anodized Aluminum	
Enclosure Cover	Anodized Aluminum	
Spring Body	Stainless Steel	
Check Valve, (dual seal annunciation)	Brass	Stainless Steel

Electrical

Electrical Connection: ½" NPT Female thread

Microswitch	Type	Electrical Ratings
Automatic 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
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

Performance

Switch Hysteresis (dead band) of Automatic Reset Pressure Controls 16% (average)

Maintenance

Maintenance kits are available with replacement seals, diaphragm and microswitch. The Robinson Pressure Control has been designed for easy and low cost maintenance.

Due to the explosion proof rating of the Robinson pressure control; maintenance should be performed by qualified personnel. Robinson Controls regularly trains individuals for the maintenance of the Robinson pressure controls, to enroll in a training class please contact the manufacturing facility at 780.435.5195.

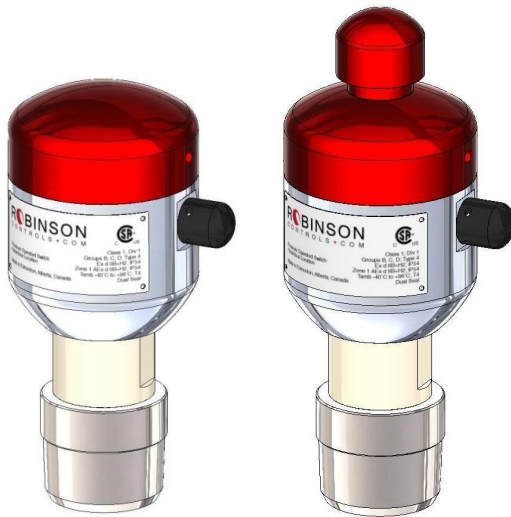
Product Origins

Manufactured and assembled in Canada

Models

Automatic Reset
RC-A2000

Manual Reset
RC-M2000



Model Number	Reset Type	Pressure Range	Process Temperature	Ambient Temperature
RC-A2000	Automatic Reset	1379 – 3447 Kpa 200 – 500 psi	140°C 284°F	60°C 140°F
RC-M2000	Manual Reset	1379 – 3447 Kpa 200 – 500 psi	120°C 248°F	40°C 104°F

External Calibration and Pressure Setting.

External adjustments made available to reduce the need to open the enclosure, resulting benefits are;

1. Safety – reduces personal to exposed wires
2. Contamination – reduces opportunity for moisture and debris to enter enclosure.
3. Simple Calibration and Pressure Setting – by turning the screw the settings can be adjusted.