



**Complete Functional Safety with  
Enhanced Reliability.**

**ASCO™ Redundant Control System (RCS)**  
Providing process reliability and valve diagnostics, for safety  
instrumented applications up to SIL 3.



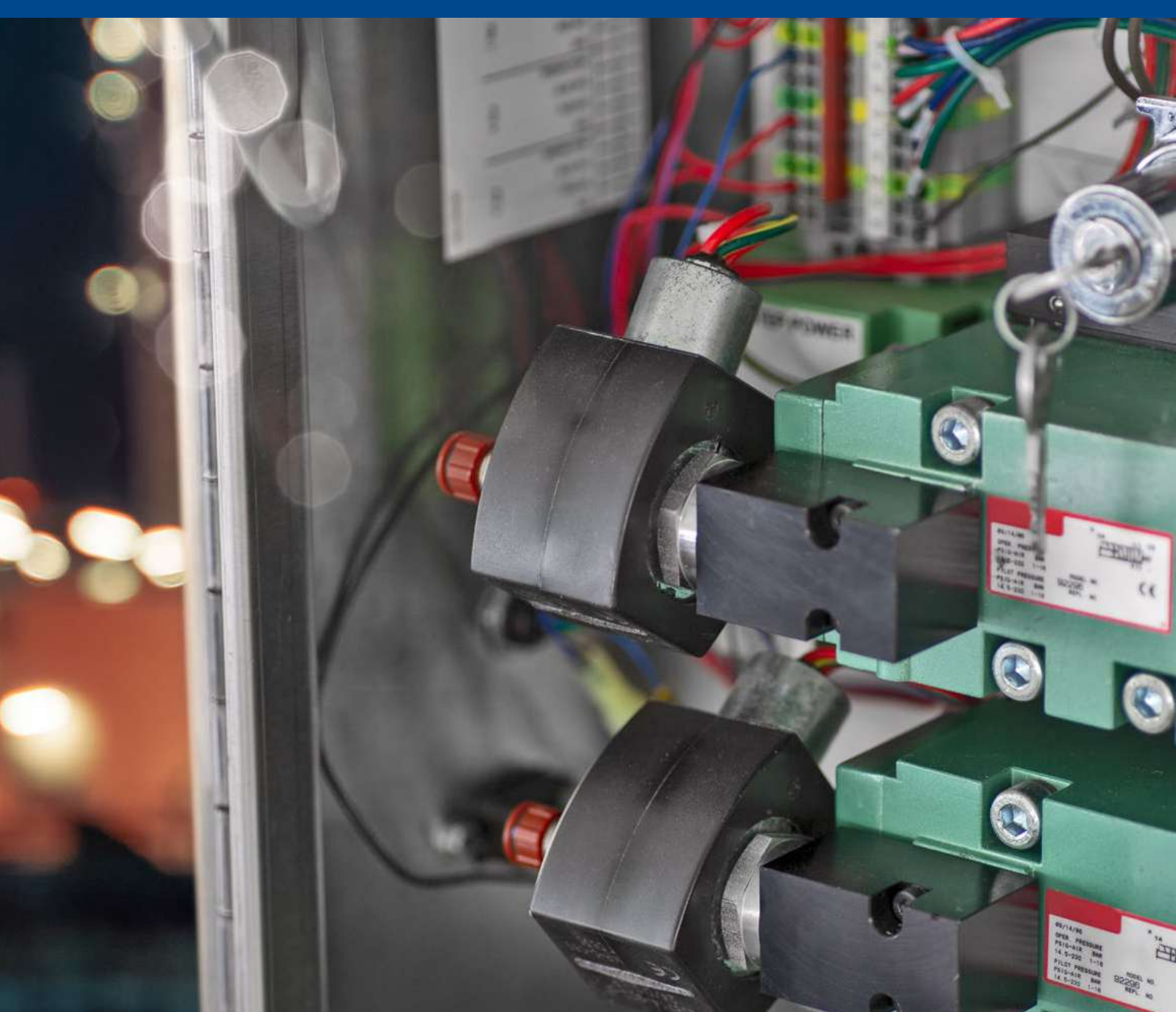
## Offering Complete Functional Safety With Enhanced Reliability



The Redundant Control System (RCS) is a pilot valve system that has no single point of failure that could result in an unwanted closure of the process valve. The Redundant Control System is fit for use in SIL 3 applications and greatly reduces spurious trip rates. RCS achieves a higher level of process safety and reliability by using a redundant, fault tolerant architecture, high diagnostic coverage, and automated testing. A keyed bypass allows on-line maintenance of the RCS without process interruption. The RCS is available in a variety of constructions that provide valve diagnostics through automated, on-line testing.

**The availability and reliability of RCS provides the industry's best choice for process valve diagnostics and actuation.**  
**Advantages include:**

- No nuisance trips
- Easy on-line maintenance
- High availability
- Automated solenoid testing
- Known technology
- Automated partial stroke testing
- Industry's best choice for valve actuation & automated testing



The ASCO RCS is a pilot valve system with no single point of failure that can result in unwanted closure of the process valve.

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# RCS Solenoid Architectures

## 2002D (with Diagnostics)

- 2002 architecture w/diagnostics allows for increased operational reliability and functional safety

### Comprised of:

- Two solenoid valves mounted in 2002 configuration inside a Fiberglass, 304 or 316 stainless steel enclosure
- Comes standard with three pressure switches for diagnostic feedback/ online testing
- Optional GO™ Switches available
- Standard pneumatic maintenance bypass switch for online maintenance
- Online diagnostic testing (SOV and PST) capable
- Easy online maintenance
- Two operational modes available based on customer driven logic – either 1001HS or 2002D
- Available in Normally Closed, Normally Open, or Double Acting construction

## 2003 Basic

- 2003 architecture allows for increased operational reliability and functional safety

### Comprised of:

- Three solenoid valves mounted in 2003 configuration inside a 304 or 316 stainless steel enclosure
- No Diagnostic feedback
- No pneumatic maintenance bypass for online maintenance
- Available in Normally Closed construction only

## 2003D (with Diagnostics)

- 2003 architecture w/ diagnostics allows for increased operational reliability and functional safety

### Comprised of:

- Three solenoid valves mounted in 2003 configuration inside a 316 stainless steel enclosure
- Comes standard with four GO Switches for diagnostic feedback and online testing
- Standard pneumatic maintenance bypass switch for online maintenance
- Online diagnostic testing (SOV and PST) capable
- Easy online maintenance
- Available in Normally Closed construction only

# Configuration

## Normally Closed

- The Normally Closed RCS operates like a standard 3-Way Normally Closed solenoid operated valve
- Used for single acting actuators
- Available for 2002D, 2003 Basic and 2003D architectures

## Normally Open

- The Normally Open RCS operates like a standard 3-Way Normally Open solenoid operated valve
- Used for single acting actuators
- Available for 2002D architecture only

## Double Acting

- The Double Acting RCS operates similarly to a 4-Way solenoid operated valve
- One solenoid valve operates as a 3/2 NC valve controlling air to one side of the actuator. The second solenoid valve operates as a 3/2 NO valve controlling air to the other side of the actuator.
- Used for double acting actuators
- User must determine desired fail-safe position of the process valve (Open or Closed)
- Available for 2002D architecture only

**Note:** The Double Acting RCS has operational conditions where:

- A) both outlet ports (C1 & C2) are open to exhaust, allowing both sides of the actuator to vent
- B) both outlet ports (C1 & C2) supply pressure to both sides of the actuator

**If the process valve can change position under either condition, the standard Double Acting RCS should not be used. Please contact us for more information on this type of application.**

## Optional Features

Emerson offers many standard optional features including:

- Door mounted local interface with indicator lights and/or push buttons
- Panel mounted versions (2003 Basic only)
- 316SS valve bodies and manifold (2002D only)

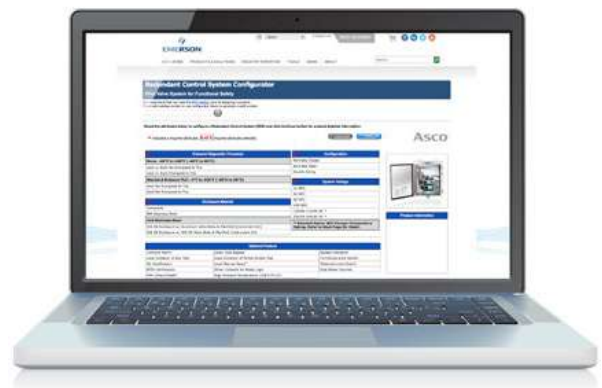
Special constructions containing customer specified features may also be available – please contact your Emerson representative for more detail.

## RCS Configurator

We have simplified the RCS product selection process with an online catalog number configurator. Once you have determined the features required, you can easily construct a catalog number by clicking on each feature required and then clicking the [View Details](#) button. A second screen appears providing the product catalog number, product attributes, and various drawings. The configurator is programmed to accept only valid constructions.

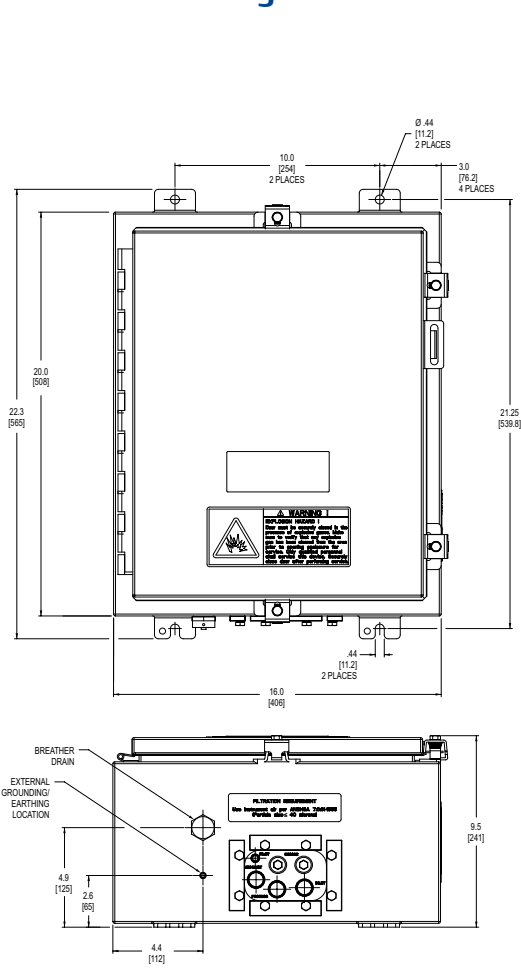
In addition to creating a catalog number, the configurator can also decipher a catalog number. Type a valid 5RC catalog number into the window next to the Enter Catalog Number button (CAPs only). The configurator automatically highlights the appropriate construction features.

[Click Here](#) to use the online RCS configurator.

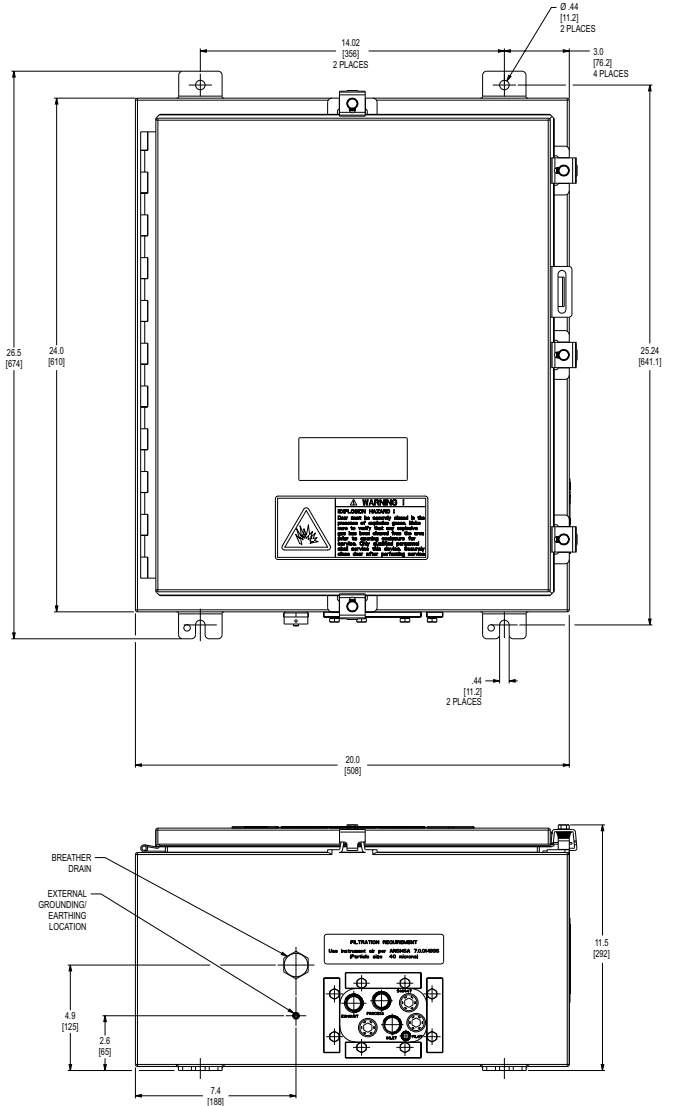




### 2002D and 2003 Basic Configuration



### 2003D Configuration



# Providing the industry's best choice for process valve diagnostics and actuation.




**ASCO™**

The best choice for process valve diagnostics and actuation. Achieve a higher level of process reliability while maintaining required safety levels in a variety of process industries.


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