



Electromechanical Rotary Latches

Overview

- Push-to-close, electronic release
- High electromechanical release load
- Minimal power draw
- Optional door sensor
- Mechanical over-ride
- 5VDC, 12VDC and 24VDC options



R4-EM-05

R4-EM-05 Series — Compact Size

The R4-EM-05 Series provides push to close convenience with electronic release in a compact design. The microprocessor controlled gear motor releases reliably under high loads while the integrated latch and door sensors ensure the application is secure. Operation configurations include auto re-lock and delayed re-lock. The integrated electronics easily connect with various access controls systems.



R4-EM-

R4-EM-9 Series — Full-featured

The microprocessor controlled R4-EM 9 Series delivers next generation electronic rotary latching. All inputs are routed through the internal microprocessor, allowing expanded programing capability and customization of latch functionality. Extended housing provides added protection of the cam and an integrated trigger sensor provides indisputable lock/unlock status reporting. Additionally, the 9 Series offers a door retention feature which allows a door or panel to remain in the closed position until it is ready to be opened.



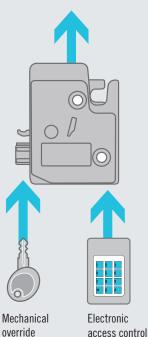
Latch and door status indication



R4-EM-8

R4-EM-8 Series - Basic functionality

The R4-EM 8 Series combines the efficient and robust performance of a rotary latch mechanism with simplified DC motor actuation. The R4-EM 8 Series is available with or without an extended housing option to accommodate door sensing and to provide added protection of the locking cam. Additionally, the 8 Series is available with an integrated connector and mechanical override bracket, and features simple, concealed two-hole installation.





R4-EM-5 & 7

R4-EM 5 & 7 Series — Outdoor use

The R4-EM Outdoor provides reliable electronic access control in demanding environments. With its corrosion-resistant plated-steel or stainless steel outer body construction and fully-sealed internal actuator, the R4-EM Outdoor provides reliable electronic locking that is resistant to moisture and dust. The embedded electronic control allows integration with an external control system and flexible, concealed installation accommodates a variety of outdoor applications.



R4-EM-4 & 6

R4-EM 4 & 6 Series — Lightweight

The R4-EM Light Duty delivers proven electronic access control in a compact, lightweight integrated package. Easy push-to-close operation and simple installation make it an ideal solution for transitioning from mechanical to electronic access. The R4-EM Light Duty is available in both auto re-lock and delayed re-lock versions for added flexibility. Multiple mounting configurations and a compact size afford easy integration into existing designs.



R4-EM-1 & 2

R4-EM 1 & 2 Series — All-metal construction

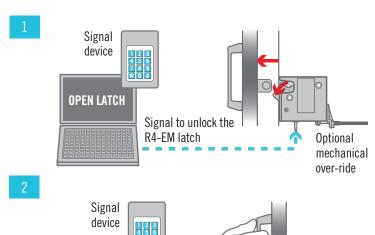
The original, all-metal construction R4-EM delivers the convenience of electronic access control with the security of a proven, robust, all-metal rotary latch. Easy push-to-close operation and electronic actuation simplify access across a wide variety of applications. The R4-EM series accepts access control signals from access control devices as well as networked systems. An optional internal microswitch provides an output signal to remotely monitor latch status or control external systems.



R4-EM Electronic Rotary Latch Operation Style



Auto Relock Operation Style



to lock

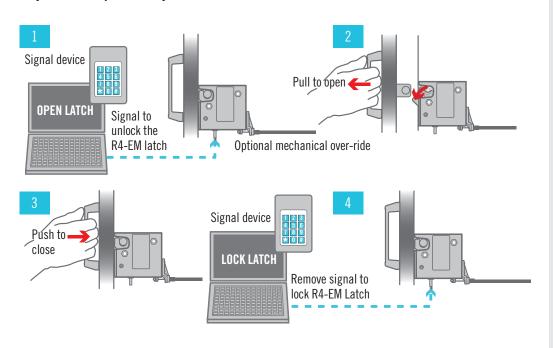
Remove signal to lock R4-EM Latch

Operation Style - Auto relock

- 1. The signal unlocks the R4-EM latch and releases the spring loaded cam which rotates out to push a lightweight door open. The mechanism will cycle through unlatched then relatched state automatically, regardless of input signal on time.
- 2. Push door closed to engage striker after unlock time has expired. Striker will rotate cam to closed position.

Delayed Relock Operation Style

LOCK LATCH



Operation Style - Delayed relock

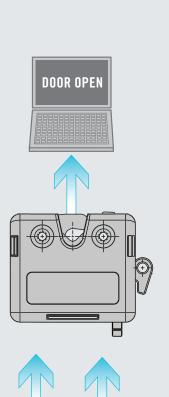
- The signal unlocks the R4-EM latch leaving a biased closed door in the closed position.
 The unlock time is controlled by the access control device.
- 2. Manually pull door/striker free from R4-EM latch.
- 3. Manually push door closed.
 Striker will rotate cam to closed position, however latch will remain unlocked and can be re-opened as long as signal is present.
- 4. After accessing the door, the signal can be removed to re-lock the R4-EM. This can be done with the door in the open or closed position.

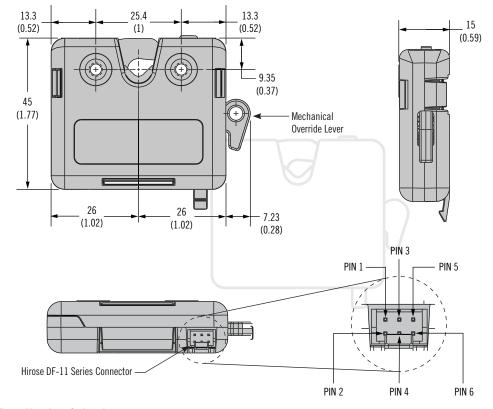


R4-EM-05 Series Electromechanical Rotary Latch

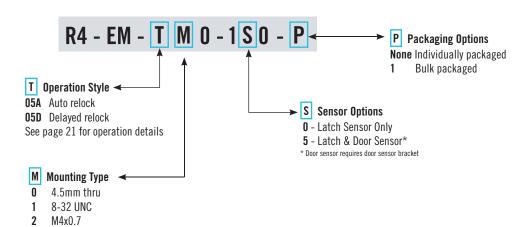
Compact Size · Door Sense Option Electronic access with internal motor control

- Push-to-close, electronic release
- Compact design
- Sensors ensure secure latch & door
- Latch releases reliably even under high load
- Integrated mechanical over-ride



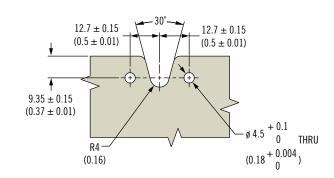


Part Number Selection



Installation

Panel Preparation

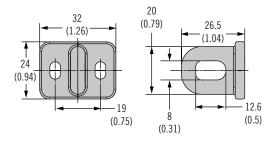


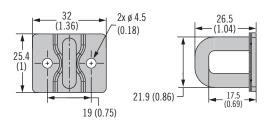


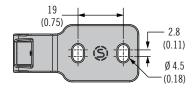
Optional Striker and Door Sensor Bracket

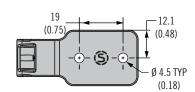
Part Number			
Molded Striker R4-0-61336			
Door Sensor Bracket	R4-99-966		

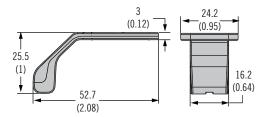
Part Number			
Wire Form Striker R4-0-71060			
Door Sensor Bracket	R4-99-966-1		

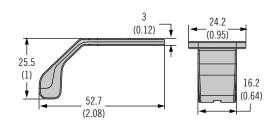












Electronic Actuators See page 48 See page 34 See page 34



Material and Finish

Housing: PC/ABS

Latch frames, Pivot pins, Cam and

Trigger: Steel, zinc plated

Striker: Steel, zinc plated or Glass-filled nylon, black

Door Sensor Bracket: PC/ABS, Magnet:

Neodymium

Recommended Operating Voltage:

5 to 12 VDC

Typical Operating Current:

Less than 500mA

Latch Connector PIN Assignment

PIN 1: Ground (-)

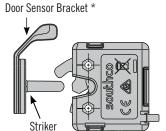
PIN 2: Power (+)

PIN 3: Not connected

PIN 4: Control signal

PIN 5: Latch status

PIN 6: Door status



* Door sensor bracket required for door sense capability



R4-EM 9 Series Electromechanical Rotary Lock

Concealed cam

Electronic access with internal motor control

24V

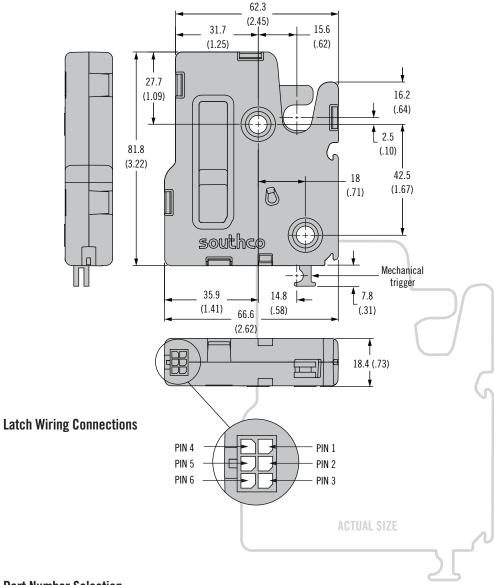
• High electromechanical release load

release

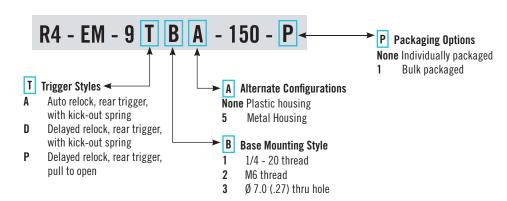
• Push-to-close, electronic

- Minimal power draw
- Integrated connector
- Extended housing for added security
- Door and Trigger Sensor
- Microswitch to detect latch status
- Mechanical over-ride with integrated cable bracket
- 12VCD to 24VCD operations
- Efficient DC gear motor actuation
- Detent mechanism for pull-open function
- Simple two-hole installation





Part Number Selection



12V

24V

Top Housing: PC/ABS or Aluminum Bottom Housing: PC/ABS or Zinc,

Die Cast

Material & Finish

Pivot Pins: Steel, zinc plated Cam, Trigger: Steel, sealed Springs: Stainless steel passivated Trigger Interlock Lever: Glass-filled

nylon Bistable Spring Retainer: Zinc Alloy

Drive Cam: Acetal, black Output Cam: Acetal, white

Electrical Specifications

Recommended Operating Voltage:

12 to 24 VDC

Typical Operating Current:

12 V Models: Less than 500mA

Latch Connector Pin Assignment

PIN 1: Ground (-)

PIN 2: Power (+)

PIN 3: Control Signal

PIN 4: Latch Status

PIN 5: None

PIN 6: Door status

Installation

Panel Preparation

Base Mounting Style	Recommended minimum mounting hole
1/4-20 thread	Ø 7.2 (.283)
M6 thread	Ø 6.9 (.272)
Thru hole	Ø 7.6 (.300)

Striker center line $15.6 \pm 1.2 (.61 \pm .046)$ 14 (.55) Minimum Panel cutout center line $15.6 \pm 0.5 \ (.61 \pm .020)$ Striker center line 2.5 ±0.1 (.098 ±.004) 28 (1.10)(.20) 42.5 ± 0.2 $(1.67 \pm .005)$ Mounting holes (see table) 18 ± 0.2 $(.709 \pm .005)$

Operation

See page 21 for operating instructions

Accessories

Striker Bolt or Cast Striker

See page 36



Cable Mounting Kit

See page 37



Electronic Actuators See page 48



Mechanical Actuators

See page 34



Cables See page 322



Wiring/Junctions See www.southco.com













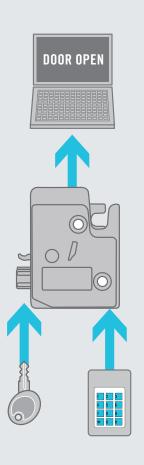


R4-EM 8 Series Electromechanical Rotary Lock

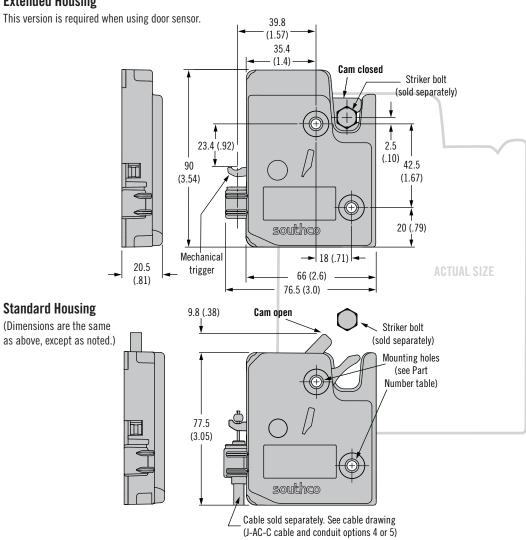
Door sensor option · Extended housing option Electronic access without internal motor control

24V

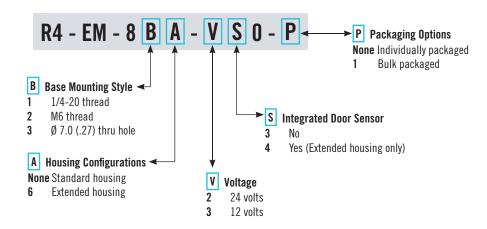
- Push-to-close, electronic release
- Auto relock functionality
- Minimal power draw
- Integrated connector
- Extended housing option for added security
- Optional door sensor
- Microswitch to detect latch status
- Mechanical over-ride with integrated cable bracket
- Efficient DC motor actuation
- Simple two-hole installation



Extended Housing



Part Number Selection



12V

24V

Top housing: Nylon Gearbox cover: PC/ABS

Bottom housing, Pivot pins, Screws: Steel, zinc plated

Cam, Trigger: Steel, sealed Gears: Acetal

Material & Finish

Pin, Springs: Stainless steel

Electrical Specifications

Recommended Operating Voltage: 12 V Models: 8 to 14 VDC

24 V Models: 21 to 26 VDC Typical Operating Current:

12 V Models: Less than 200mA

24 V Models: Less than 100mA Latch status switch: 1A Maximum

Latch Connector Pin Assignment

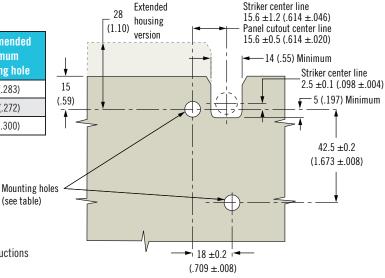
PIN 1: Power

PIN 2: Ground (-)

PIN 3: None

PIN 4: Latch status signal

Installation Panel Preparation Recommended **Base Mounting** minimum Style mounting hole 1/4-20 thread Ø 7.2 (.283) M6 thread Ø 6.9 (.272) Thru hole Ø 7.6 (.300)



Accessories

Operation

Striker Bolt or Cast Striker

See page 21 for operating instructions

See page 36



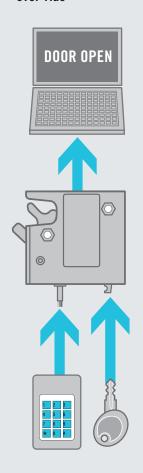
(see table)

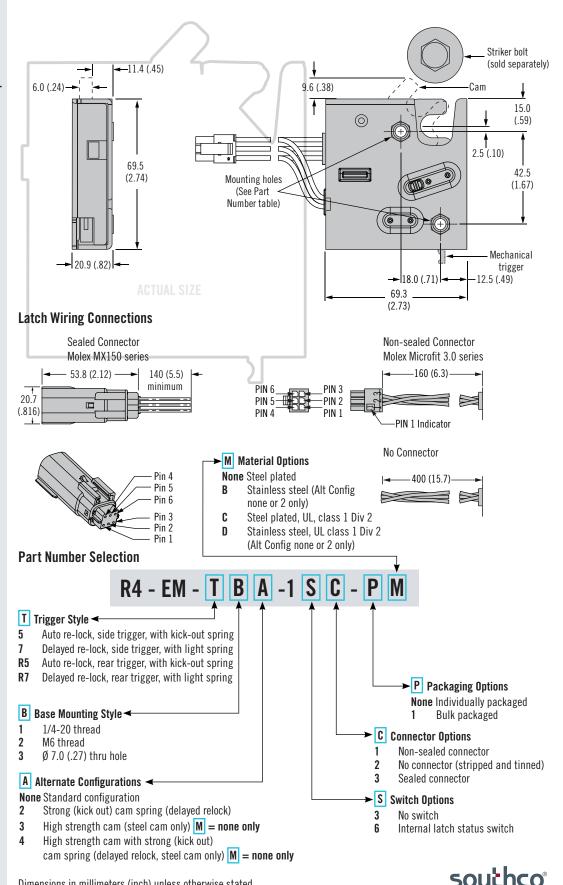


R4-EM 5 & 7 Series Electronic Rotary Latch

Sealed motor · Stainless steel housing option Electronic access with internal motor control

- Motor actuator sealed against water and dust ingress to IP56
- Corrosion resistant platedsteel and stainless steel options
- Push-to-close, electronic release
- Versatile rotary mechanism
- Concealed latching
- Microprocessor control
- Auto or delayed relock **functionality**
- Minimal power draw
- Optional internal microswitch for latch status
- Simple mechanical over-ride

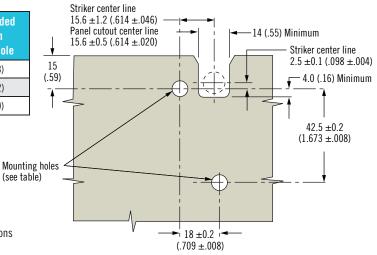




Installation

Panel Preparation

Base Mounting Style	Recommended minimum mounting hole
1/4-20 thread	Ø 7.2 (.283)
M6 thread	Ø 6.9 (.272)
Thru hole	Ø 7.6 (.300)



Accessories

Operation

Striker Bolt or Cast Striker

See page 21 for operating instructions

See page 36



Cable Mounting Kit

See page 37



Electronic Actuators See page 48

Mechanical Actuators See page 34



See www.southco.com

Material & Finish

Mechanism

Housing, Cam, Trigger, Pins: Zinc nickel plated steel or stainless steel Springs: 300 Series stainless steel

Electronic Actuator Housing: PC/ABS

Bellows, Wire seal: Silicone Perimeter Seal: Buna

Cams: Acetal **Grommet: TPE**

Electrical Specifications

Recommended Operating Voltage: 12 to 24 Volt DC

Typical Operating Current (average at no load): Less then 600mA at 12 VDC

Input Signal Current Draw: 25mA

Maximum at 24 VDC

Micro-switch Rating: 3A Maximum

at 12VDC

Wire Color Code / Connector Pin Assignment:

PIN 1: Brown: Ground (-)

PIN 2: Red: Power 12 to 24 Volts DC

PIN 3: Orange: Control Signal

12 to 24 Volts DC

PIN 4: Black: Microswitch Common

PIN 5: Blue: Microswitch N.O.

Contact

PIN 6: Grey: Microswitch N.C.

Contact

6

12V



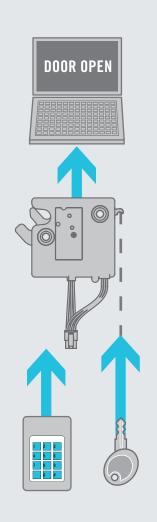


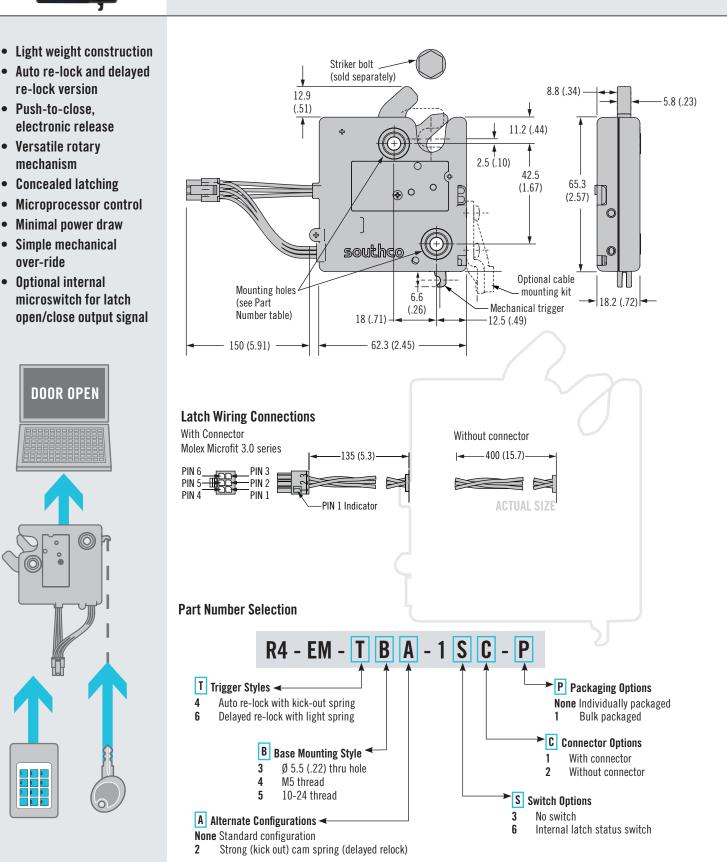
R4-EM 4 & 6 Series Electronic Rotary Latch

Compact size · Lightweight Electronic access with internal motor control

12V

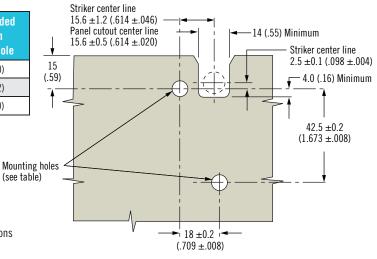
- Auto re-lock and delayed re-lock version
- Push-to-close. electronic release
- Versatile rotary mechanism
- Concealed latching
- Microprocessor control
- Minimal power draw
- Simple mechanical over-ride
- Optional internal microswitch for latch open/close output signal





Panel Preparation

Base Mounting Style	Recommended minimum mounting hole
10-24 thread	Ø 5.6 (.220)
M5 thread	Ø 5.9 (.232)
Thru hole	Ø 6.1 (.240)



Accessories

Operation

Striker Bolt See page 36



See page 21 for operating instructions

Cable Mounting Kit See page 37



Electronic Actuators Mechanical Actuators See page 48









Material & Finish

Housings: PC/ABS Cam: Glass-filled nylon

Trigger: PBT

Springs: Stainless Steel Pins: Steel, zinc plated

Electrical Specifications

Recommended Operating Voltage: 12 to 24 VDC

Typical Operating Current (average at no load): Less than 600mA at

Input Signal Current Draw: 25mA Maximum

**Optional microswitch closes upon latch closure Microswitch Rating: 3A Max at 12 VDC

Wire Color Code / Connector **Pin Assignment:**

PIN 1: Brown: Ground (-)

PIN 2: Red: Power 8 to 26 Volts DC

PIN 3: Orange: Control Signal

8 to 26 Volts DC

PIN 4: Black: Microswitch Common

PIN 5: Blue: Microswitch N.O.

Contact

PIN 6: Grey: Microswitch N.C.

Contact

12V

R4-EM 1 & 2 Series Electronic Rotary Latch

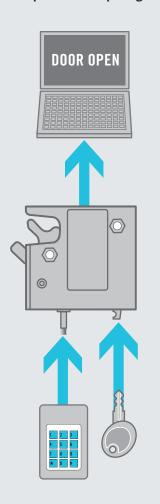
All-metal construction Electronic access with internal motor control

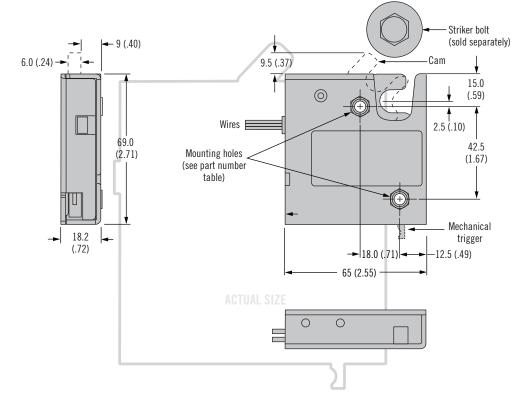
24V

construction Operates against high

• High strength, steel

- mechanical loads Push-to-close, electronic release
- Versatile rotary mechanism
- Concealed latching
- Microprocessor control
- Minimal power draw
- Simple mechanical override
- Optional internal microswitch for latch open/close output signal





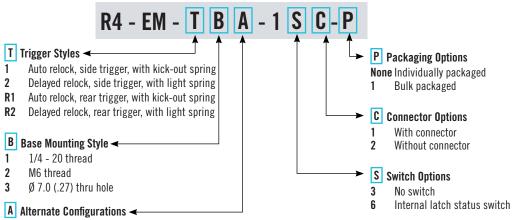
Without connector

Latch Wiring Connections

With connector Molex Microfit 3.0 series

150 (5.9) 425 (16.7) PIN 5 PIN 2 PIN 1 PIN 1 Indicator

Part Number Selection



None Standard configuration

- Strong (kick out) cam spring (delayed relock)
- High strength cam
- High strength cam with strong (kick out) cam spring (delayed relock)

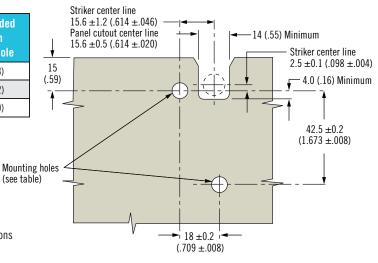
Dimensions in millimeters (inch) unless otherwise stated



Installation

Panel Preparation

Base Mounting Style	Recommended minimum mounting hole
1/4-20 thread	Ø 7.2 (.283)
M6 thread	Ø 6.9 (.272)
Thru hole	Ø 7.6 (.300)



Accessories

Operation

Striker Bolt or Cast Striker

See page 21 for operating instructions

See page 36





Electronic Actuators See page 48





Mechanism

Housing: Steel, zinc plated Cam, trigger: Steel, zinc plated Springs: 300 Series stainless steel

Pins: Steel, zinc plated

Electronic Actuator:

Housing: PC/ABS

Cam / follower: Acetal

Electrical Specifications

Recommended Operating Voltage: 12 to 24 Volt DC
Typical Operating Current: Less than 500mA at 12 VDC
Peak/Stall Operating Current: 1 A
Standby Current: 185uA
Input Signal Current Draw: 25mA
**Optional microswitch closes
upon latch closure
Microswitch Rating: 3A at
12VDC Maximum

Wire Color Code / Connector Pin Assignment:

PIN 1: Brown: Ground (-)

PIN 2: Red: Power 8 to 26 Volts DC

PIN 3: Orange: Control Signal

8 to 26 Volts DC

PIN 4: Black: Microswitch Common

PIN 5: Blue: Microswitch N.O.

Contact

PIN 6: Grey: Microswitch N.C.

Contact

6-6

12V



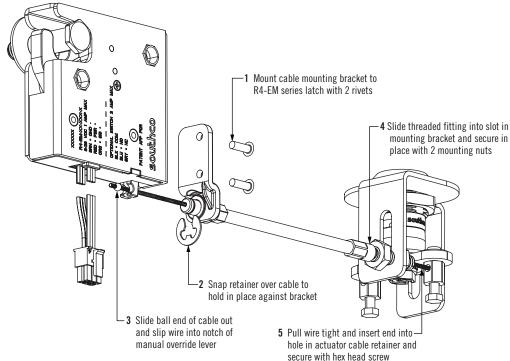
R4-EM Mechanical Override System

- Adapts to any standard Southco R4-EM Electronic Rotary Latch
- Choose from flat key or tubular key cam latch for remote key lock
- Simple installation with multiple adjustments and customized cable lengths to suit any application.
- Accommodates clockwise or counter clockwise key rotation for latch release

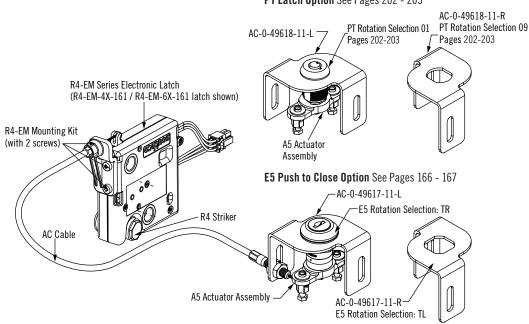
Southco now offers a standard solution for remote mechanical actuation of the R4-EM Electronic Rotary Latch. The cable based solution provides a simple means of mechanically releasing the electronic lock in the event of electrical power loss providing fully redundant access.

Installation

R4-EM Series Electronic Latch (R4-EM-1X-161 / R4-EM-2X-161 shown)



PT Latch Option See Pages 202 - 203





How to Order

Step 1 Select mechanical override lock and corresponding AC actuator assembly and AC cable bracket

	Description	Part Number	Latch Rotation Selection
	A5 Actuator	A5-99-136	
		AND	
E5 Latch Push-to-Close assembly See page 166 See drawing J-E5-53-A	AC Cable Bracket	AC-0-49617-11-R	E5-T-LF-TL-1K See pages 166 - 167
		OR	
	AC Cable Bracket	AC-0-49617-11-L	E5-T-LF-TR-1K See pages 166 - 167

	Description	Part Number	Latch Rotation Selection
	A5 Actuator	A5-99-157	
		AND	
PT Latch Tubular Key cam Lock See page 202 See drawing J-PT-1	AC Cable Bracket	AC-0-49618-11-R	PT-1-HC109-20K-KC See pages 202 - 203
		OR	
	AC Cable Bracket	AC-0-49618-11-L	PT-1-HC101-20K-KC See pages 202 - 203

Step 2 Determine mechanical cable length required

Mechanical Cable See drawing J-AC-C	AC-COHO-4-LLLL-TTT	LLLL - Length from behind ball end to end of cable TTT - Raw cable extension portion of LLLL length	
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Step 3 Order cable mounting kit (one per R4-EM latch). See page 36 to select the kit to match your application.

R4-EM-52	R4-EM-72	R4-EM-87	R4-EM-952





R4-EM Electronic Rotary Latch

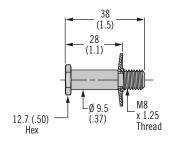
Strikers

Material and Finish

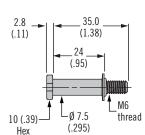
Striker bolts: Steel, zinc plated or stainless steel Cast strikers: Zinc alloy

*Note: Latch and striker installation details can be found on the latch trade drawing at www.southco.com.

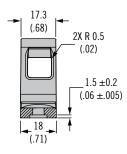
Striker Bolt - LargePart number R4-90-121-10 R4-90-121-20

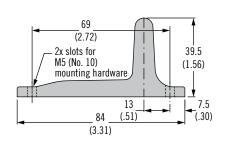


Striker Bolt - Small Part number R4-90-511-20



Cast Striker with Door Sensor Part number R4-90-804-10*
Cast Striker without Door Sensor Part number R4-90-800-10*





	Striker Bolt		Cast Striker	
	R4-90-121-XX	R4-90-511-20	R4-90-800-10	R4-90-804-10
R4-EM-9	>		✓	✓
R4-EM-8	>		✓	✓
R4-EM-5 & 7	>		✓	
R4-EM-4 & 6		>		
R4-EM-1 & 2	✓		~	

12V



R4-05 Electronic Rotary Latch

Compact · Sealed · Electronic Access

Push-to-close, electronic release, pull-to-open

- Versatile rotary mechanism
- Concealed latching
- · Minimal power draw

Wire Color Code / Connector Pin Assignment:

PIN 1: Extend (+), Orange Wire

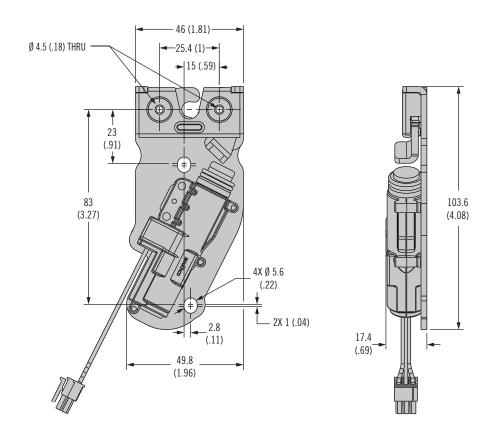
PIN 2: Retract (+), Red Wire

PIN 3: Ground (-), Black Wire

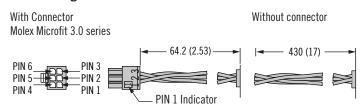
PIN 4: Not used

PIN 5: Not used

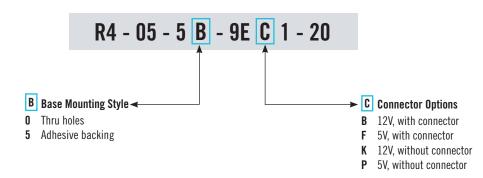
PIN 6: Not used



Latch Wiring Connections



Part Number Selection







5٧

12V

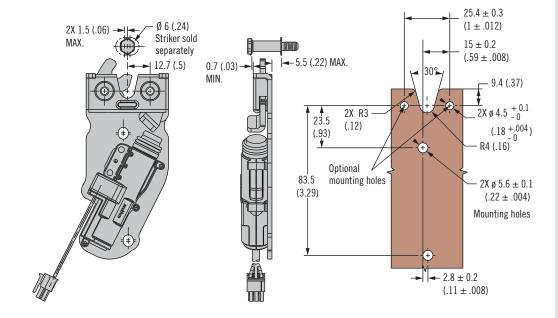
R4-05 Electronic Rotary Latch

Compact · Sealed · Electronic Access



Installation

Panel Preparation



Material & Finish

Mechanism:

Housings: Stainless Steel Cam, trigger: Stainless Steel Springs: Steel, zinc plated Pins: Stainless Steel

Eletronic Actuator:

Enclosure, Output Cam: Nylon,

Acetal

Housing Assembly Screws:

Stainless Steel

Electrical Specifications

Supply Voltage: 5 or 12VDC

Operating Current:

Less than 300 mA

Operating Temperature:

-20°C - 60°C

Operating Humidity: 85% max

No condensation

Notes:

Connector version uses Molex brand Microfit 3.0

Visit southco.com to download further installation and operation details.



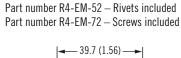


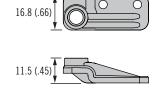


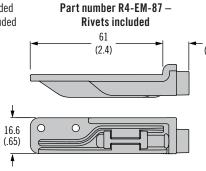
R4-EM Electronic Rotary Latch Cable mounting kits



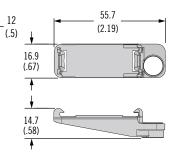
Cable Mounting Kit







Part number R4-EM-952



	Cable Mounting Kit			
	R4-EM-52	R4-EM-72	R4-EM-87	R4-EM-952
R4-EM-9				>
R4-EM-8				
R4-EM-5 & 7	~		~	
R4-EM-4 & 6		V		
R4-EM-1 & 2	✓		~	

Material and Finish

Cable mounting kits: Glass-filled nylon, black

*Note: Latch and striker installation details can be found on the latch trade drawing at www.southco.com.

