






Electromechanical Rotary Latches

Selection guide

ELECTROMECHANICAL ROTARY LATCHES
PAGES 23-37

Latch Series	Latch Type	Load Rating	Sealed Electronics	Installation	Material	Integrated Microprocessor-Based Control	Integrated Card Reader or Keypad	Nominal Voltage Range
 R4-EM-9	Rotary Push-to-Close	Medium		Concealed	Steel and Plastic	✓		12-24 VDC
 R4-EM-8	Rotary Push-to-Close	Medium		Concealed	Steel and Plastic			12 or 24 VDC
 R4-EM-5 & 7	Rotary Push-to-Close	High	✓	Concealed	Steel or Stainless Steel	✓		12-24 VDC
 R4-EM-4 & 6	Rotary Push-to-Close	Medium		Concealed	Plastic	✓		12-24 VDC
 R4-EM-1 & 2	Rotary Push-to-Close	High		Concealed	Steel	✓		12-24 VDC

Electromechanical Rotary

Pages 23 - 37

The R4-EM series delivers the convenience of electronic access control with the security of a proven, robust, rotary latch design in a compact, integrated package. Easy push-to-close operation and electronic actuation simplify access across a wide variety of applications. An optional microswitch provides feedback on latch status, and a full range of manual release options are available.

- 12-24 VDC operation, minimal current consumption
- Accepts control inputs from any access control device
- Operates against heavy mechanical loads
- Corrosion-resistant version available for outdoor use
- Optional door sensor



R4-EM-9



R4-EM-8



R4-EM-4, 6



R4-EM-5, 7



R4-EM-1, 2



Dimensions in millimeters (inch) unless otherwise stated

Electromechanical Rotary Latches

Overview



R4-EM-9

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 programming 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.



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 – Compact & 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

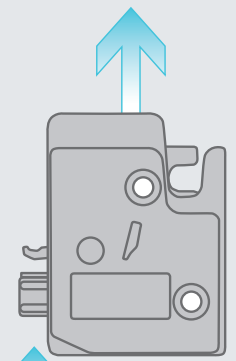
R4-EM 1 & 2 Series – All-metal construction

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.

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



Latch and door status indication



Mechanical override



Electronic access control

Other options available. For complete details on variety, part numbers, installation and specification, go to



www.southco.com/R4-EM



R4-EM 9 Series Electromechanical Rotary Lock

Concealed cam

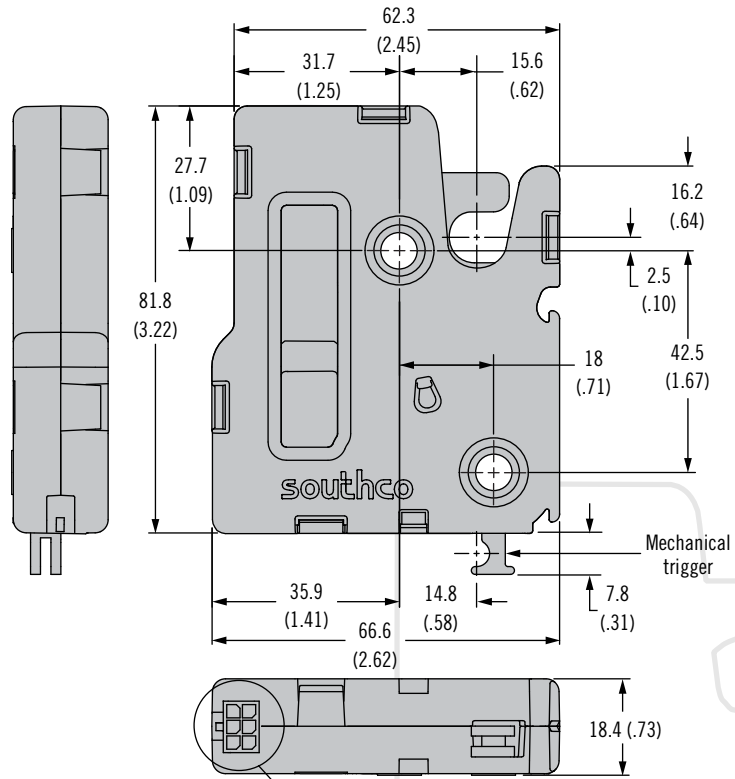
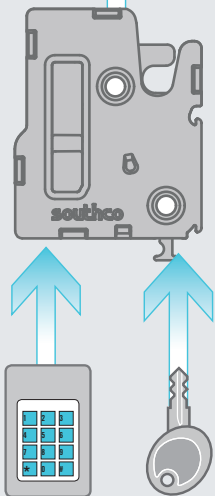
Electronic access with internal motor control



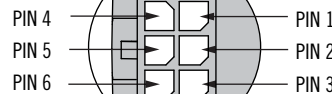
12V

24V

- Push-to-close, electronic release
- High electromechanical release load
- 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
- 12V to 24V operations
- Efficient DC gear motor actuation
- Detent mechanism for pull-open function
- Simple two-hole installation



Latch Wiring Connections



ACTUAL SIZE

Part Number Selection

R4 - EM - 9 T B A - 150 - P

T Trigger Styles

- A** Auto relock, rear trigger, with kick-out spring
- D** Delayed relock, rear trigger, with kick-out spring
- P** Delayed relock, rear trigger, pull to open

A Alternate Configurations

- None** Plastic housing
- 5** Metal Housing

B Base Mounting Style

- 1** 1/4 - 20 thread
- 2** M6 thread
- 3** Ø 7.0 (.27) thru hole

P Packaging Options

- None** Individually packaged
- 1** Bulk packaged

Other options available. For complete details on variety, part numbers, installation and specification, go to



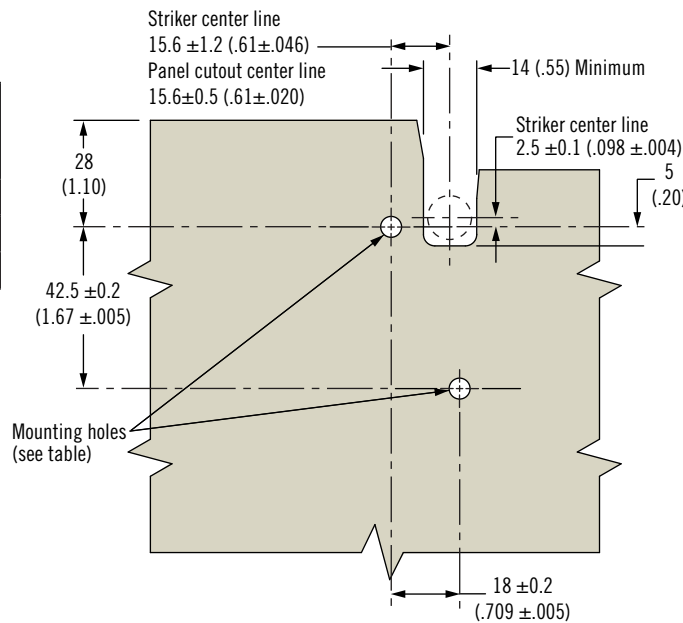
www.southco.com/R4-EM

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)

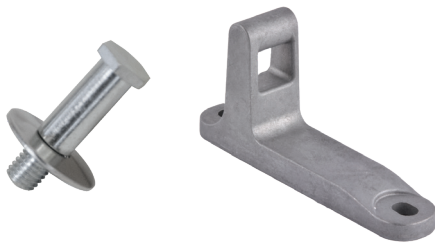


Operation

See page 34 for operating instructions

Accessories

Striker Bolt or Cast Striker
See page 35



Cable Mounting Kit
See page 35



Material & Finish

- Top Housing: PC/ABS or Aluminum
- Bottom Housing: PC/ABS or Zinc, Die Cast
- 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

Electronic Actuators
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Mechanical Actuators
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Cables
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Wiring/Junctions
See www.southco.com





R4-EM 8 Series Electromechanical Rotary Lock

Door sensor option · Extended housing option

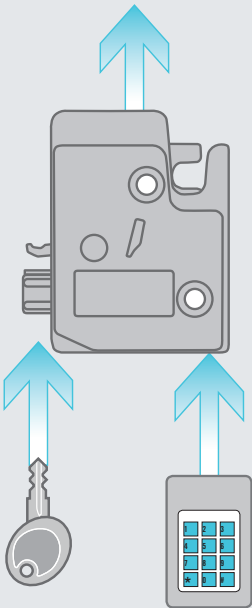
Electronic access without internal motor control

- 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



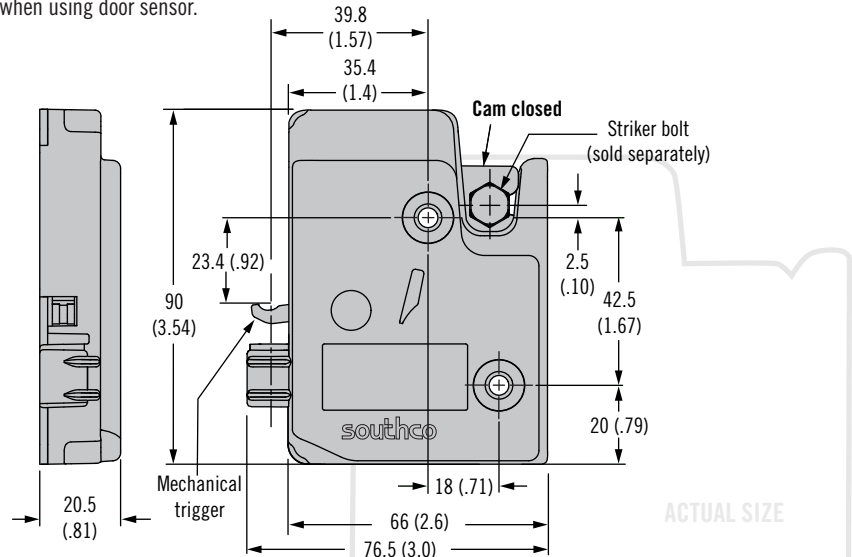
12V

24V



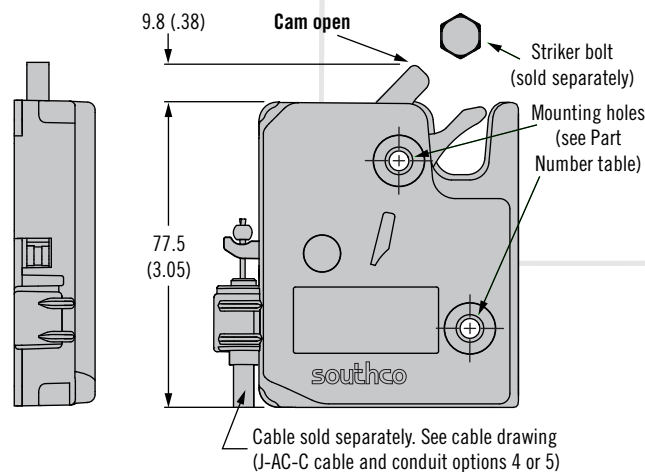
Extended Housing

This version is required when using door sensor.



Standard Housing

(Dimensions are the same as above, except as noted.)



Part Number Selection

R4 - EM - 8 B A - V S O - P

- B Base Mounting Style**
- 1 1/4-20 thread
 - 2 M6 thread
 - 3 Ø 7.0 (.27) thru hole

- A Housing Configurations**
- None Standard housing
 - 6 Extended housing

- S Integrated Door Sensor**
- 3 No
 - 4 Yes (Extended housing only)

- V Voltage**
- 2 24 volts
 - 3 12 volts

- P Packaging Options**
- None Individually packaged
 - 1 Bulk packaged

Other options available. For complete details on variety, part numbers, installation and specification, go to



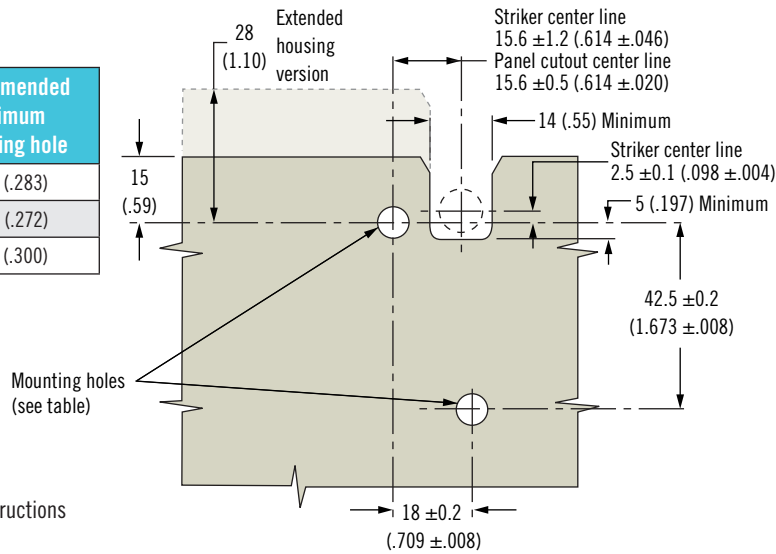
www.southco.com/R4-EM

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)



Operation

See page 34 for operating instructions

Accessories

Striker Bolt or Cast Striker

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Electronic Actuators

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Mechanical Actuators

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Cables

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Wiring/Junctions

See www.southco.com



Material & Finish

Top housing: Nylon
 Gearbox cover: PC/ABS
 Bottom housing, Pivot pins, Screws: Steel, zinc plated
 Cam, Trigger: Steel, sealed
 Gears: Acetal
 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



R4-EM 5 & 7 Series Electronic Rotary Latch

Sealed motor · Stainless steel housing option

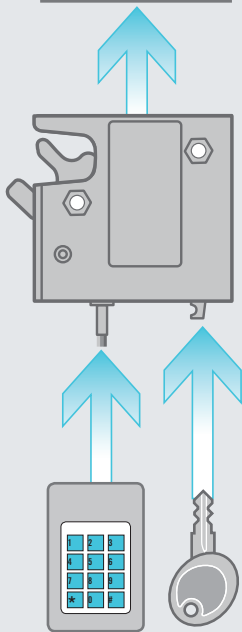
Electronic access with internal motor control



12V

24V

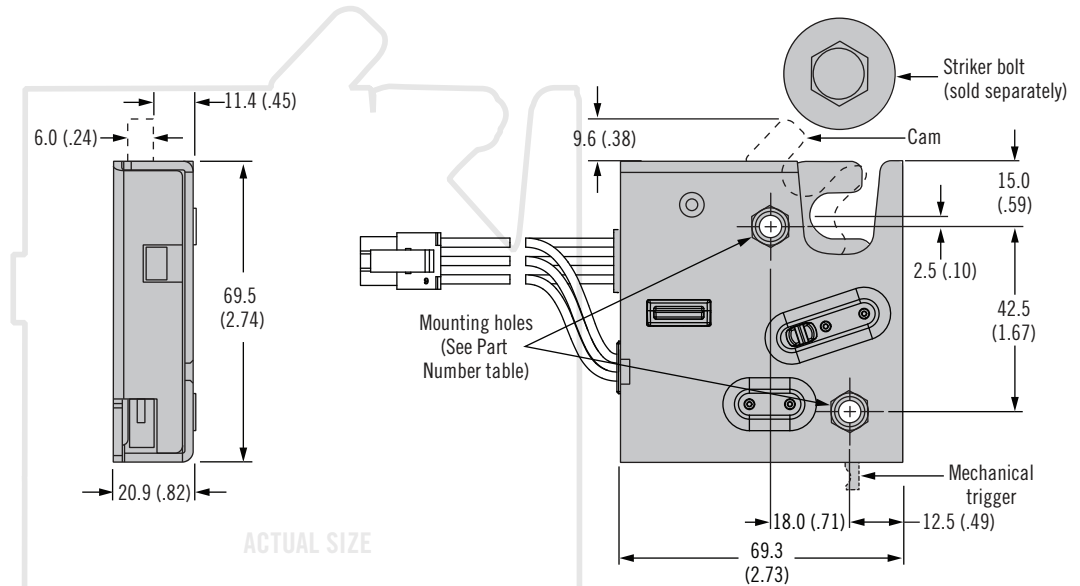
- Motor actuator sealed against water and dust ingress to IP56
- Corrosion resistant plated-steel and stainless steel options
- Push-to-close, electronic release
- Versatile rotary mechanism
- Concealed latching
- Microprocessor control
- Auto or delayed relock functionality
- Minimal power draw
- Optional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



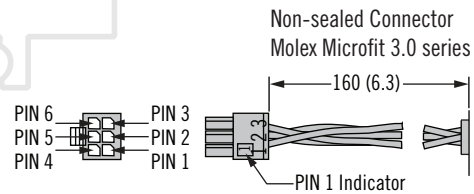
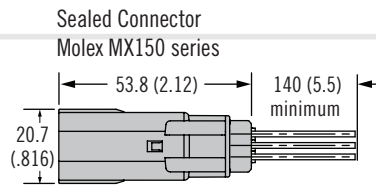
Other options available. For complete details on variety, part numbers, installation and specification, go to



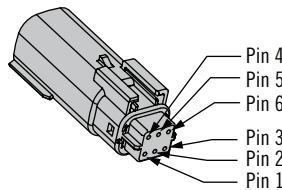
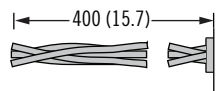
www.southco.com/R4-EM



Latch Wiring Connections



No Connector



Part Number Selection

R4 - EM - T B A - 1 S C - P M

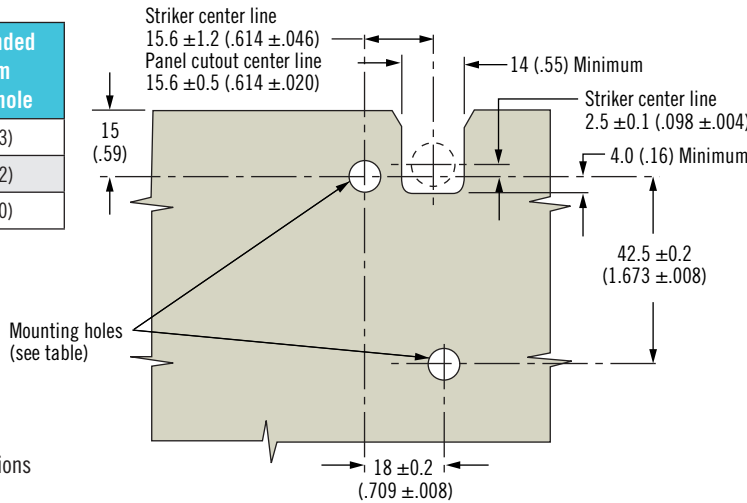
- T Trigger Style**
 - 5 Auto re-lock, side trigger, with kick-out spring
 - 7 Delayed re-lock, side trigger, with light spring
 - R5 Auto re-lock, rear trigger, with kick-out spring
 - R7 Delayed re-lock, rear trigger, with light spring
- B Base Mounting Style**
 - 1 1/4-20 thread
 - 2 M6 thread
 - 3 Ø 7.0 (.27) thru hole
- A Alternate Configurations**
 - None Standard configuration
 - 2 Strong (kick out) cam spring (delayed relock)
 - 3 High strength cam (steel cam only) **M** = none only
 - 4 High strength cam with strong (kick out) cam spring (delayed relock, steel cam only) **M** = none only
- M Material Options**
 - None Steel, zinc-nickel plated
 - B Stainless steel, passivated
 - A** = none or 2
- P Packaging Options**
 - None Individually packaged
 - 1 Bulk packaged
- C Connector Options**
 - 1 Non-sealed connector
 - 2 No connector (stripped and tinned)
 - 3 Sealed connector
- S Switch Options**
 - 3 No switch
 - 6 Internal latch status switch

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)

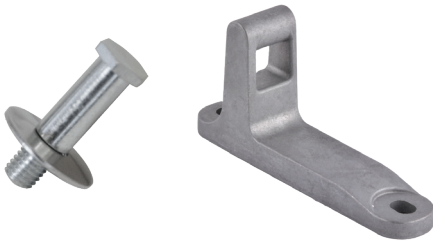


Operation

See page 34 for operating instructions

Accessories

Striker Bolt or Cast Striker
See page 35



Cable Mounting Kit
See page 35



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 than 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

Electronic Actuators
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Mechanical Actuators
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Cables
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Wiring/Junctions
See www.southco.com



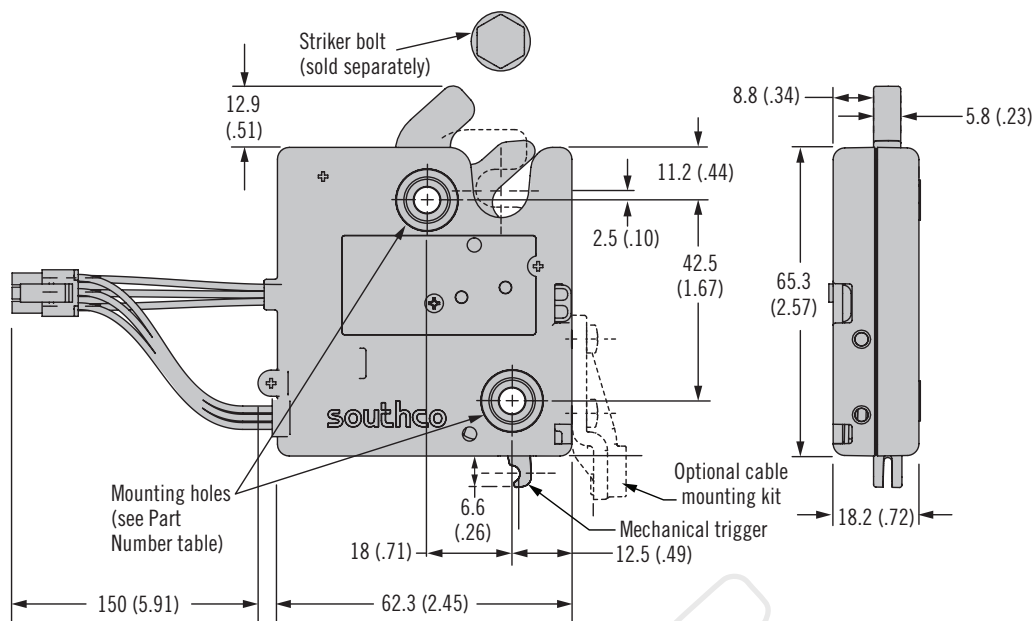


R4-EM 4 & 6 Series Electronic Rotary Latch

Compact size · Lightweight

Electronic access with internal motor control

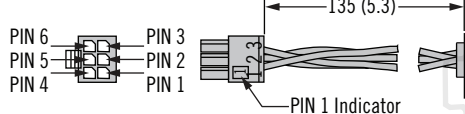
- Light weight construction
- Auto re-lock and delayed re-lock version
- Push-to-close, electronic release
- Versatile rotary mechanism
- Concealed latching
- Microprocessor control
- Minimal power draw
- Simple mechanical over-ride
- Optional internal microswitch for latch open/close output signal



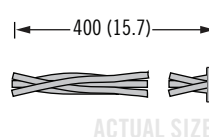
Latch Wiring Connections

With Connector

Molex Microfit 3.0 series



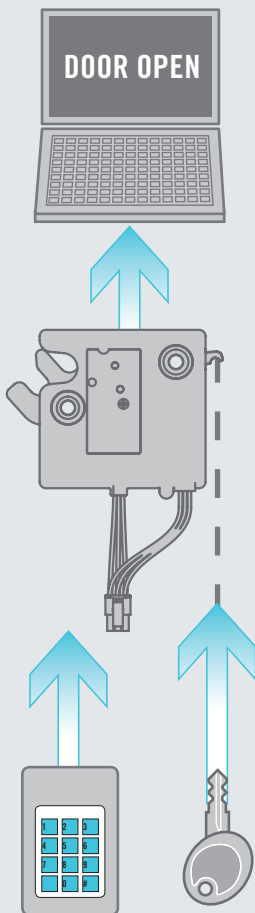
Without connector



Part Number Selection

R4 - EM - T B A - 1 S C - P

- T Trigger Styles**
 - 4 Auto re-lock with kick-out spring
 - 6 Delayed re-lock with light spring
- B Base Mounting Style**
 - 3 Ø 5.5 (.22) thru hole
 - 4 M5 thread
 - 5 10-24 thread
- A Alternate Configurations**
 - None Standard configuration
 - 2 Strong (kick out) cam spring (delayed relock)
- P Packaging Options**
 - None Individually packaged
 - 1 Bulk packaged
- C Connector Options**
 - 1 With connector
 - 2 Without connector
- S Switch Options**
 - 3 No switch
 - 6 Internal latch status switch



Other options available. For complete details on variety, part numbers, installation and specification, go to



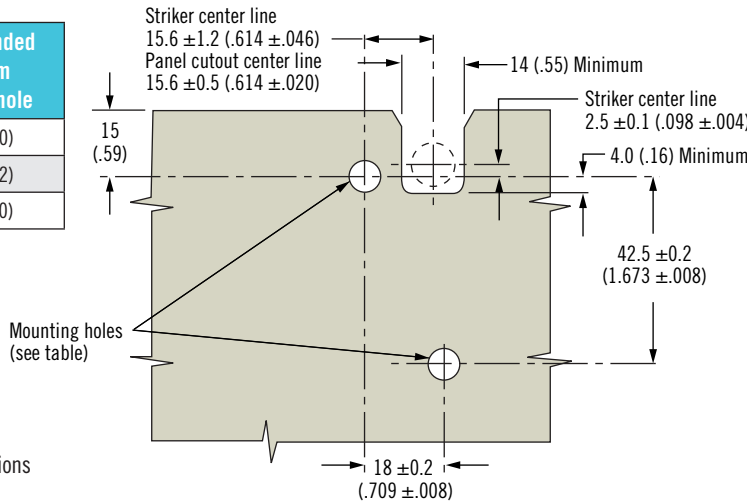
www.southco.com/R4-EM

Dimensions in millimeters (inch) unless otherwise stated

Installation

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)



Operation

See page 34 for operating instructions

Accessories

Striker Bolt

See page 35



Cable Mounting Kit

See page 35



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 12VDC
- 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

Electronic Actuators

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Mechanical Actuators

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Cables

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Wiring/Junctions

See www.southco.com





R4-EM 1 & 2 Series Electronic Rotary Latch

All-metal construction

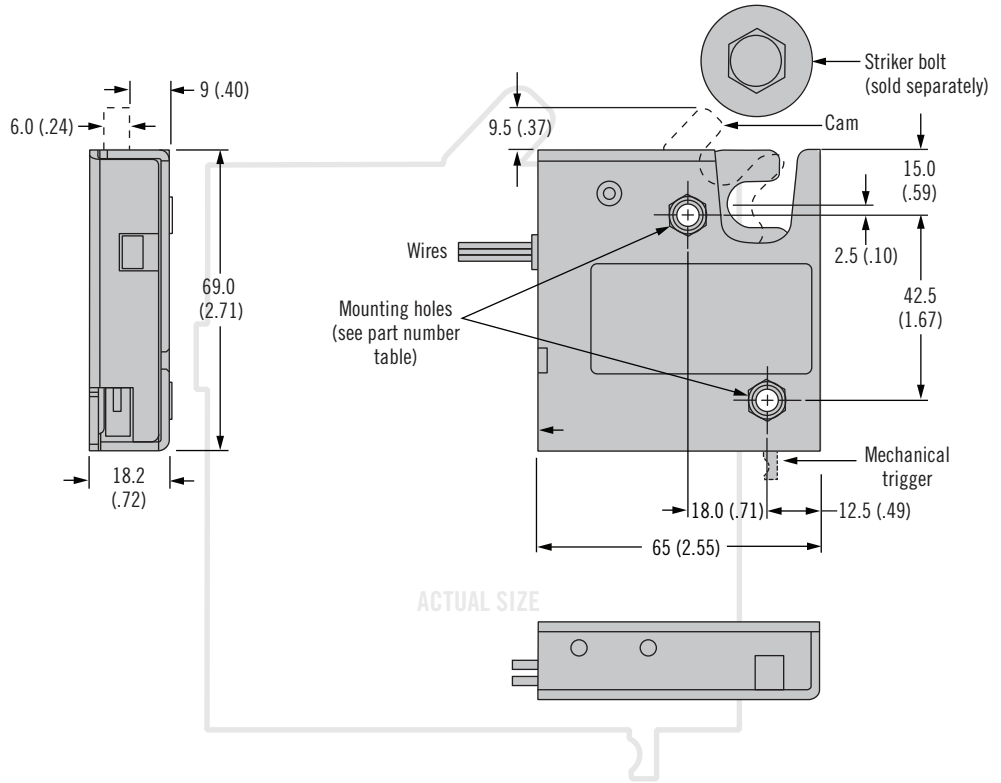
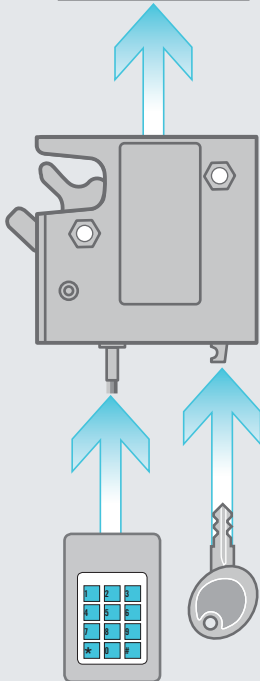
Electronic access with internal motor control

- High strength, steel construction
- Operates against high 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



12V

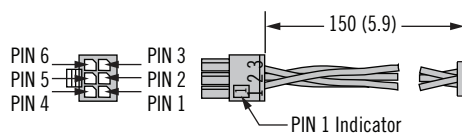
24V



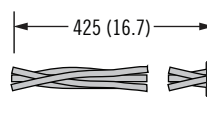
Latch Wiring Connections

With connector

Molex Microfit 3.0 series



Without connector



Part Number Selection

R4 - EM - T B A - 1 S C - P

T Trigger Styles

- 1 Auto relock, side trigger, with kick-out spring
- 2 Delayed relock, side trigger, with light spring
- R1 Auto relock, rear trigger, with kick-out spring
- R2 Delayed relock, rear trigger, with light spring

B Base Mounting Style

- 1 1/4 - 20 thread
- 2 M6 thread
- 3 Ø 7.0 (.27) thru hole

A Alternate Configurations

- None Standard configuration
- 2 Strong (kick out) cam spring (delayed relock)
- 3 High strength cam
- 4 High strength cam with strong (kick out) cam spring (delayed relock)

P Packaging Options

- None Individually packaged
- 1 Bulk packaged

C Connector Options

- 1 With connector
- 2 Without connector

S Switch Options

- 3 No switch
- 6 Internal latch status switch

Other options available. For complete details on variety, part numbers, installation and specification, go to



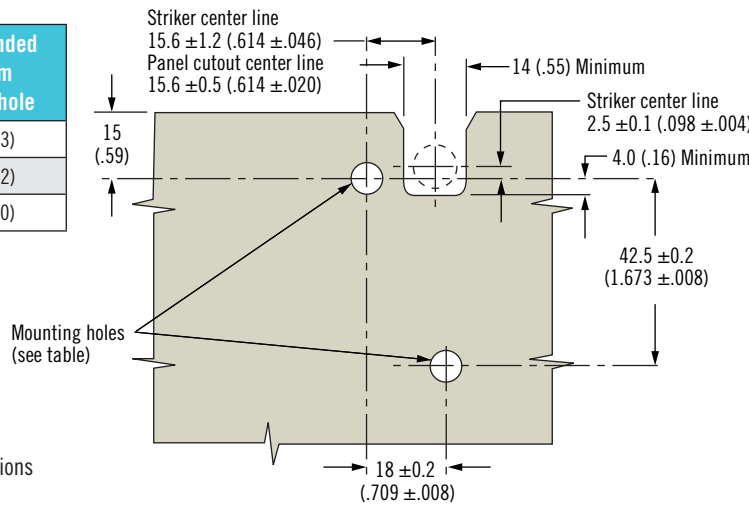
www.southco.com/R4-EM

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)



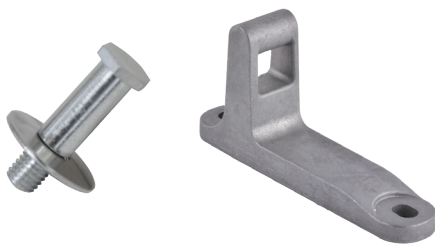
Operation

See page 34 for operating instructions

Accessories

Striker Bolt or Cast Striker

See page 35



Cable Mounting Kit

See page 35



Material & Finish

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

Electronic Actuators

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Mechanical Actuators

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Cables

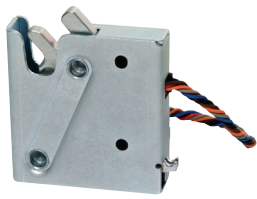
See page 272



Wiring/Junctions

See www.southco.com



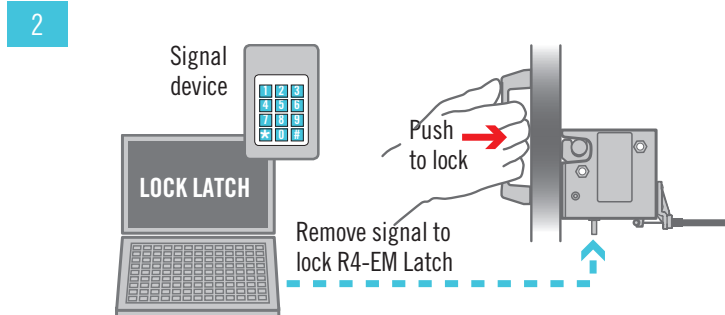
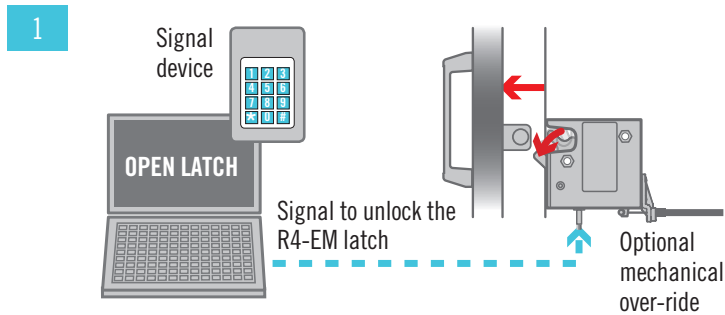


R4-EM Electronic Rotary Latch

Operating instructions

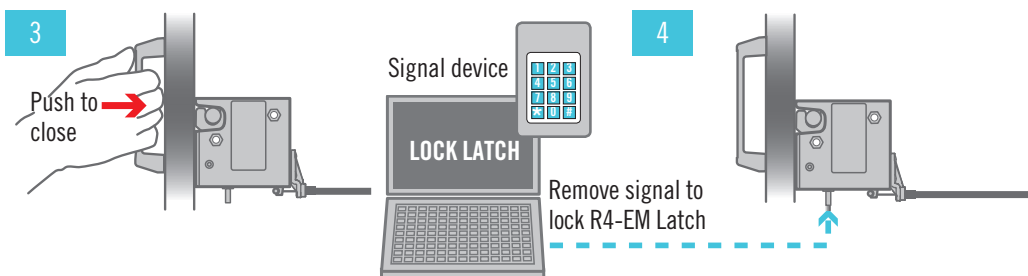
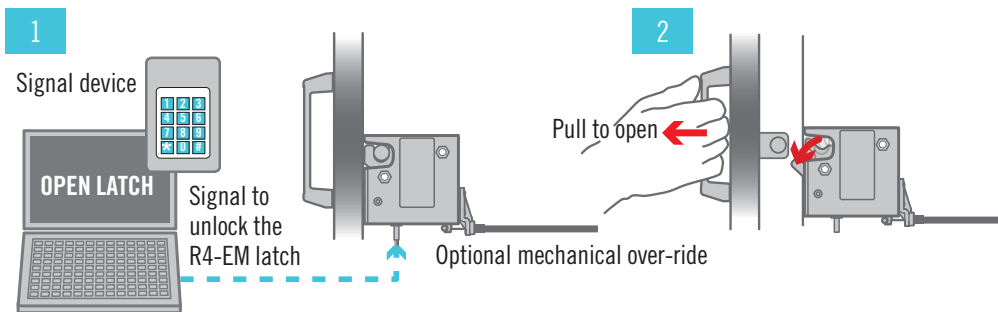
Operation - Auto relock

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.



Operation - Delayed relock

1. 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.



Other options available. For complete details on variety, part numbers, installation and specification, go to



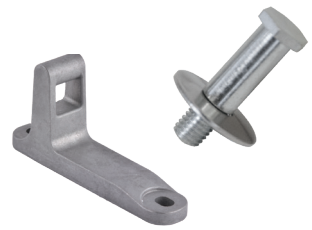
www.southco.com/R4-EM

Dimensions in millimeters (inch) unless otherwise stated

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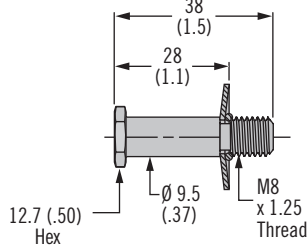
R4-EM Electronic Rotary Latch

Strikers - Cable mounting kits



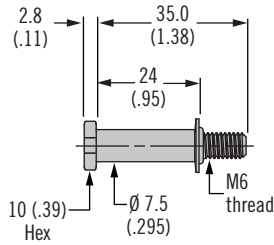
Striker Bolt - Large

Part number R4-90-121-10
R4-90-121-20



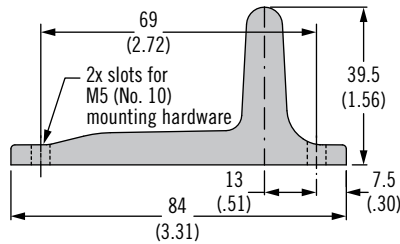
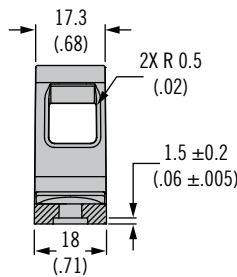
Striker Bolt - Small

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*

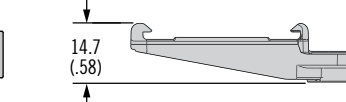
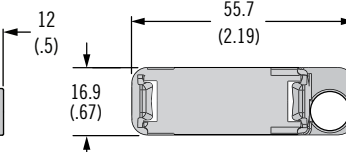
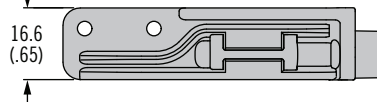
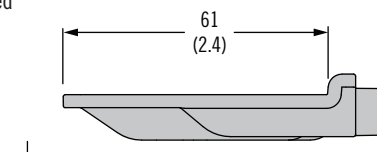
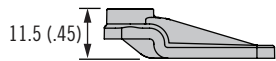
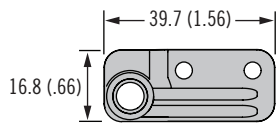


Cable Mounting Kit

Part number R4-EM-52 – Rivets included
Part number R4-EM-72 – Screws included

Part number R4-EM-87 – Rivets included

Part number R4-EM-952



	Striker Bolt		Cast Striker		Cable Mounting Kit			
	R4-90-121-XX	R4-90-511-20	R4-90-800-10	R4-90-804-10	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		✓				✓		
R4-EM-1 & 2	✓		✓		✓		✓	

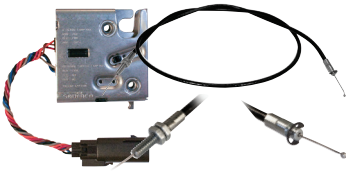
Material and Finish

Striker bolts: Steel, zinc plated or stainless steel

Cast strikers: Zinc alloy

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.



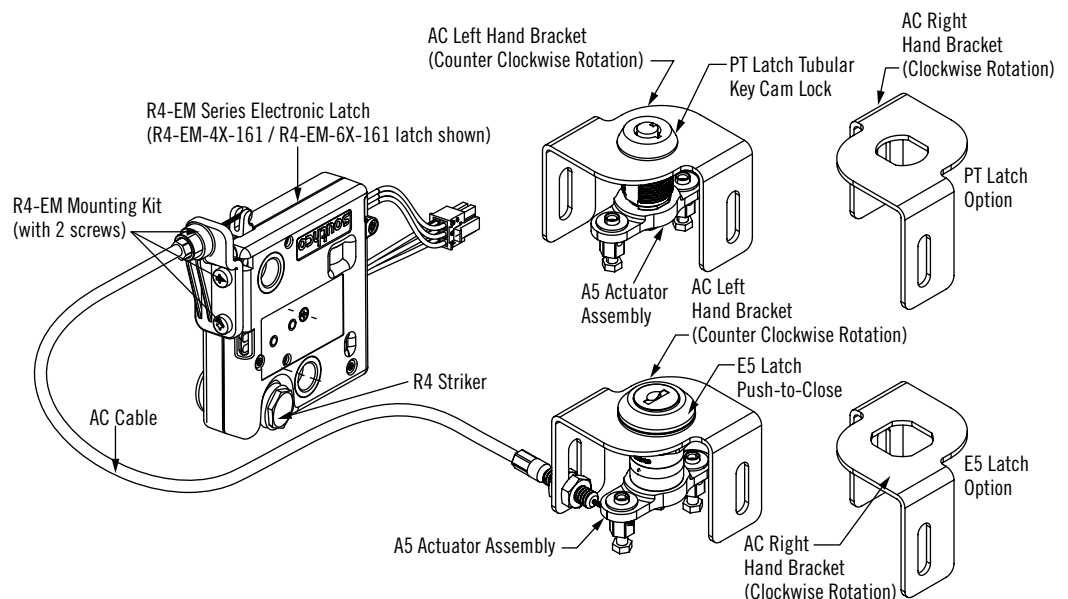
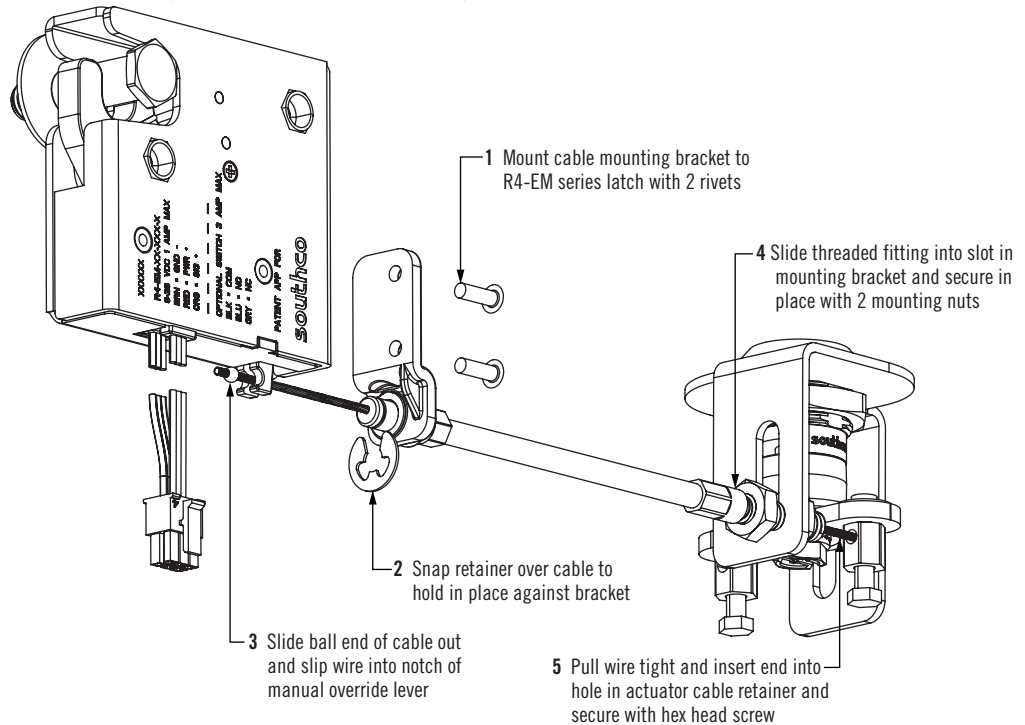
R4-EM Mechanical Override System

- 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)



Other options available. For complete details on variety, part numbers, installation and specification, go to




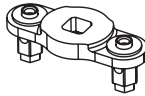
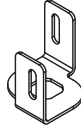

www.southco.com/R4-EM


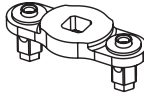
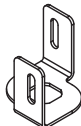

Dimensions in millimeters (inch) unless otherwise stated

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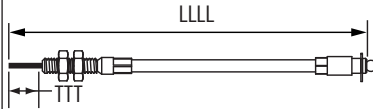
How to Order

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

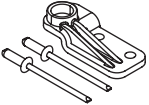
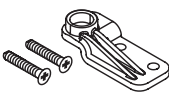
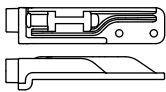

	Description	Part Number	
 <p>E5 Latch Push-to-Close assembly See page 128 See drawing J-E5-53-A</p>	A5 Actuator	A5-99-136	
	AND		
	AC Cable Bracket (Clockwise Rotation to Unlatch)	AC-0-49617-11-R	
	OR		
	AC Cable Bracket (Counter Clockwise Rotation to Unlatch)	AC-0-49617-11-L	

	Description	Part Number	
 <p>PT Latch Tubular Key cam Lock See page 170 See drawing J-PT-1</p>	A5 Actuator	A5-99-157	
	AND		
	AC Cable Bracket (Clockwise Rotation to Unlatch)	AC-0-49618-11-R	
	OR		
	AC Cable Bracket (Counter Clockwise Rotation to Unlatch)	AC-0-49618-11-L	

Step 2 Determine mechanical cable length required

<p>Mechanical Cable See drawing J-AC-C</p>	AC-COH0-4-LLLL-TTT	<p>LLLL - Length from behind ball end to end of cable TTT - Raw cable extension portion of LLLL length</p>	
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Step 3 Order cable mounting kit (one per R4-EM latch). See page 35 to select the kit to match your application.

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