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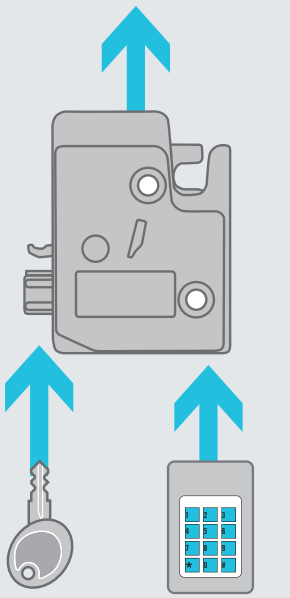
Electromechanical Rotary Latches

Overview

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



Latch and door status indication



Mechanical override

Electronic access control



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-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 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.



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

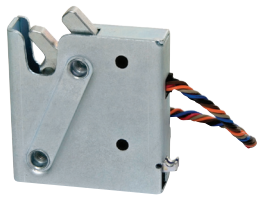
The original, all-metal construction R4-EM delivers the convenience of electronic access control with the security of a proven, robust, all-metal rotary latch. Easy push-to-close operation and electronic actuation simplify access across a wide variety of applications. The R4-EM series accepts access 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.

Dimensions in millimeters (inch) unless otherwise stated

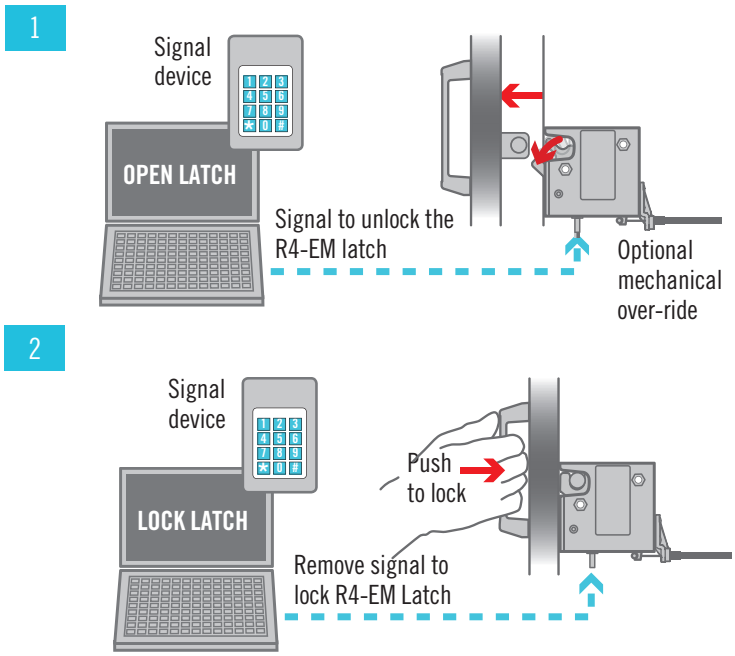
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R4-EM Electronic Rotary Latch

Operation Style



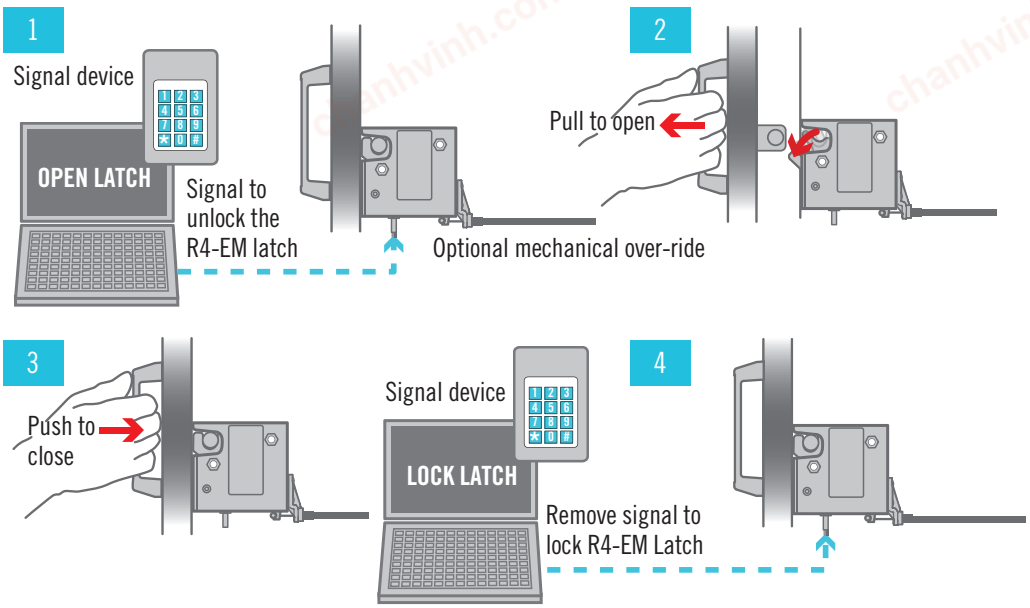
Auto Relock Operation Style



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



Operation Style - 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.

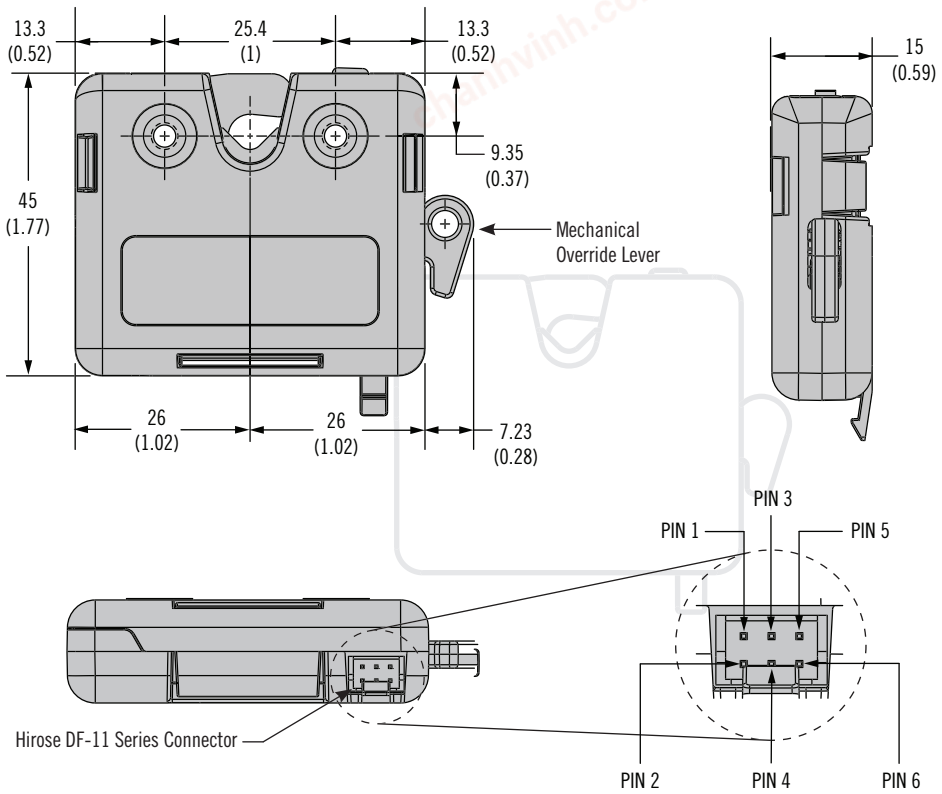
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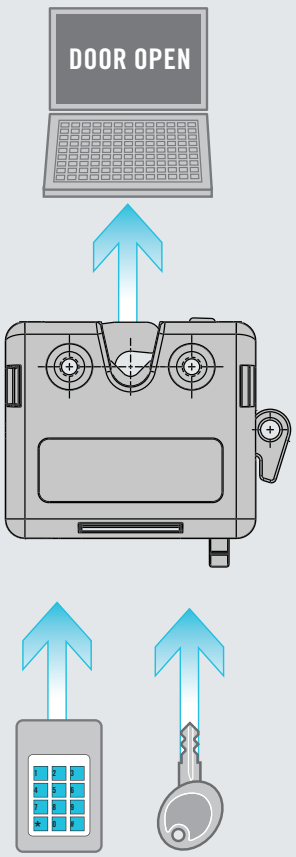


R4-EM-05 Series Electromechanical Rotary Latch

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

R4 - EM - T M 0 - 1 S 0 - P

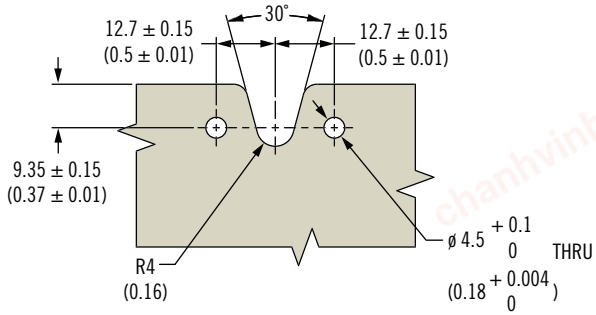
P Packaging Options
None Individually packaged
1 Bulk packaged

T Operation Style
05A Auto relock
05D Delayed relock
See page 21 for operation details

S Sensor Options
0 - Latch Sensor Only
5 - Latch & Door Sensor*
* Door sensor requires door sensor bracket

M Mounting Type
0 4.5mm thru
1 8-32 UNC
2 M4x0.7

Installation
Panel Preparation



Dimensions in millimeters (inch) unless otherwise stated

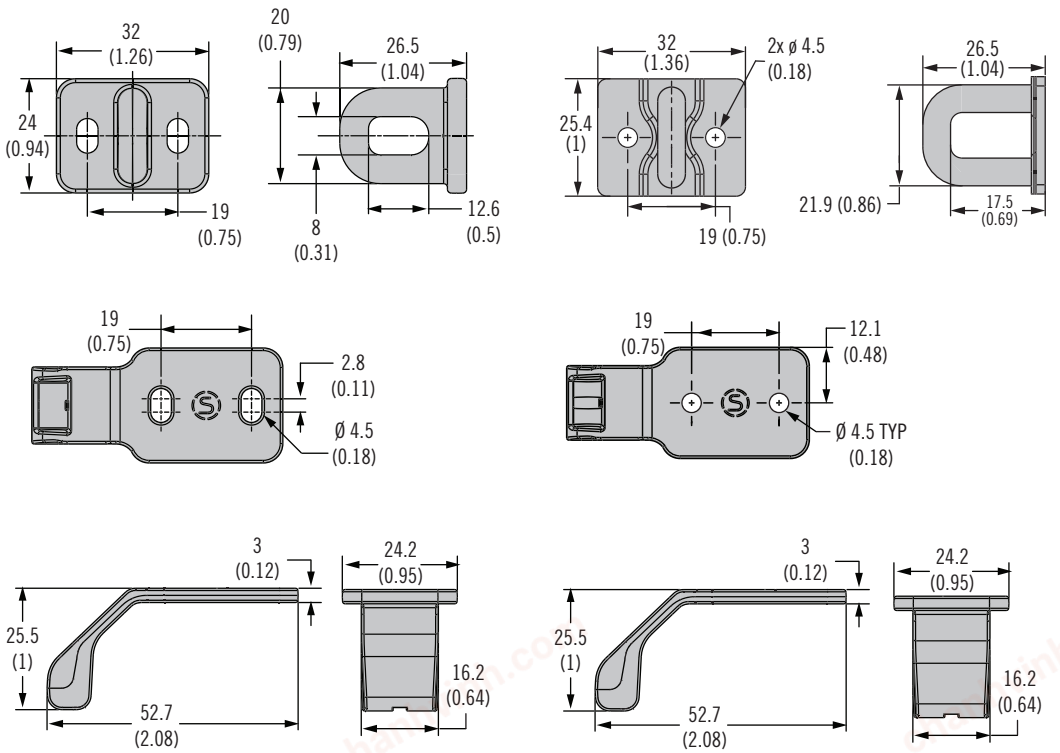
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Optional Striker and Door Sensor Bracket

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

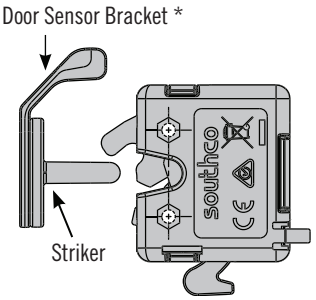


Material and Finish

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

Electronic Actuators
See page 48



Mechanical Actuators
See page 34



Cables
See page 322



Wiring/Junctions
See *www.southco.com*



Dimensions in millimeters (inch) unless otherwise stated

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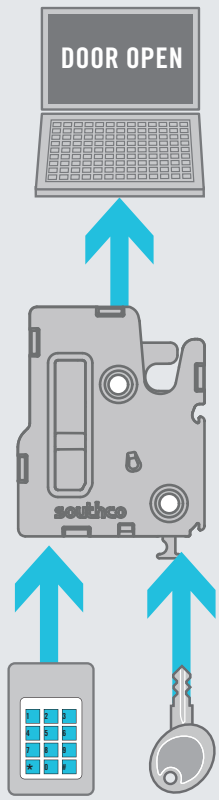


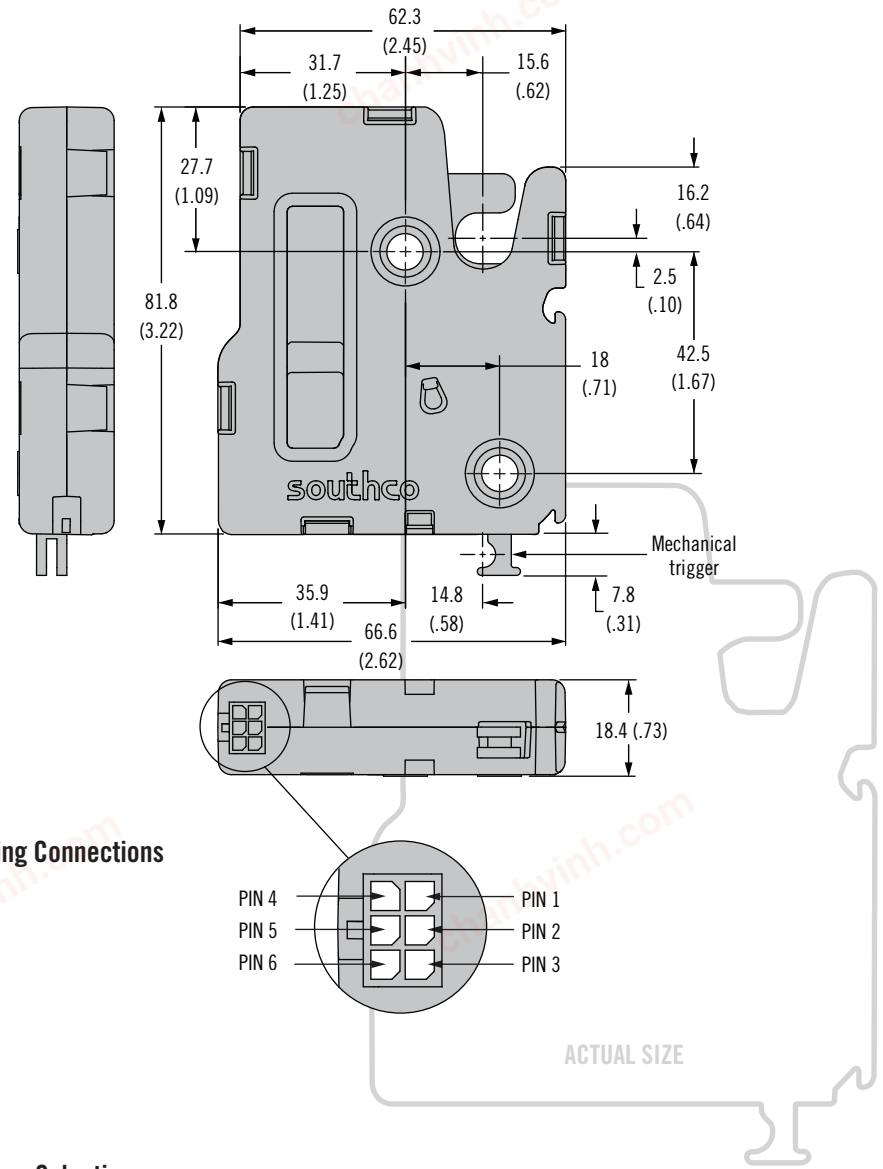
R4-EM 9 Series Electromechanical Rotary Lock

Concealed cam

Electronic access with internal motor control

- 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
- 12VCD to 24VCD operations
- Efficient DC gear motor actuation
- Detent mechanism for pull-open function
- Simple two-hole installation





Latch Wiring Connections

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

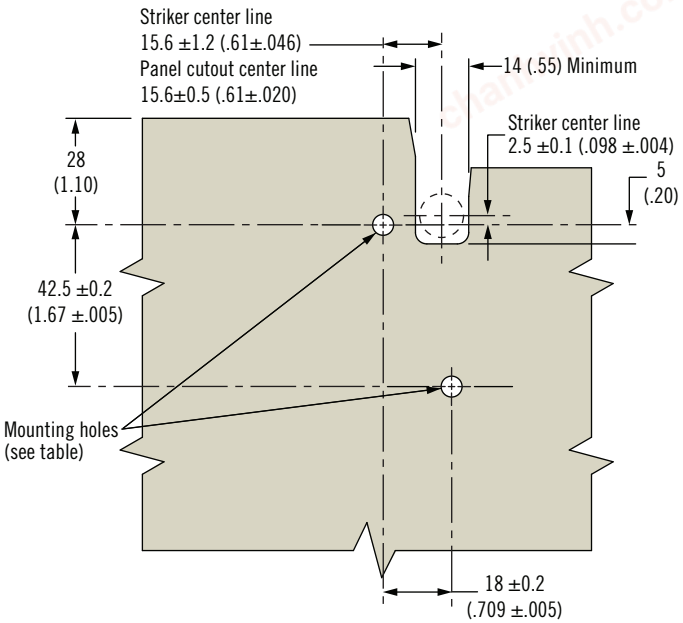
Dimensions in millimeters (inch) unless otherwise stated

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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 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*



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

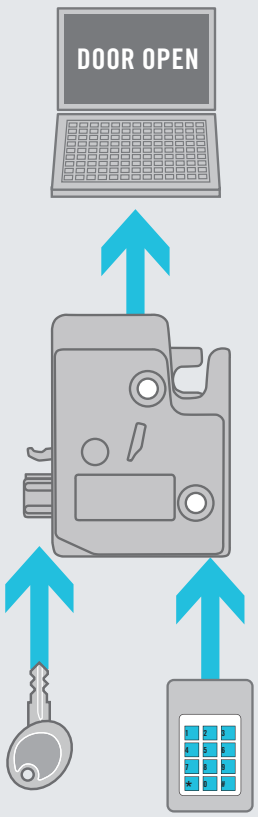
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R4-EM 8 Series Electromechanical Rotary Lock

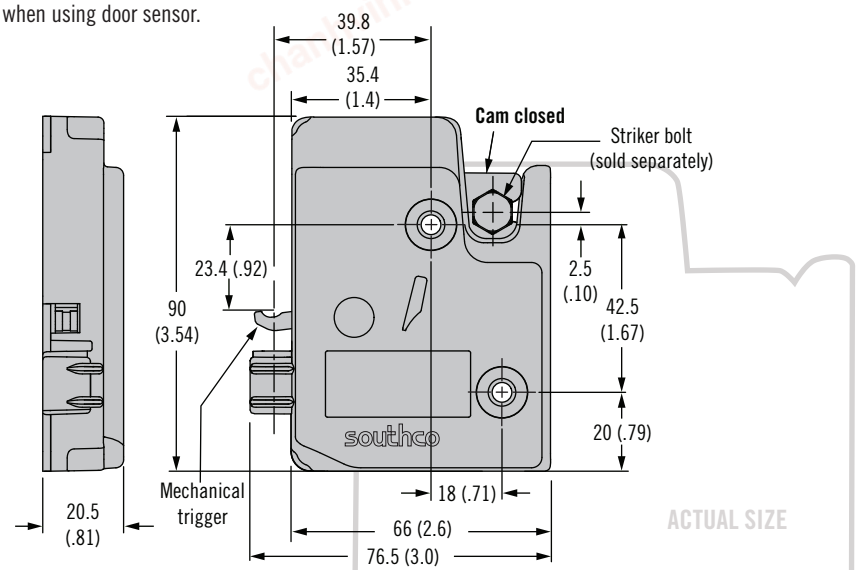
Door sensor option · Extended housing option
Electronic access without internal motor control

- 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



Extended Housing

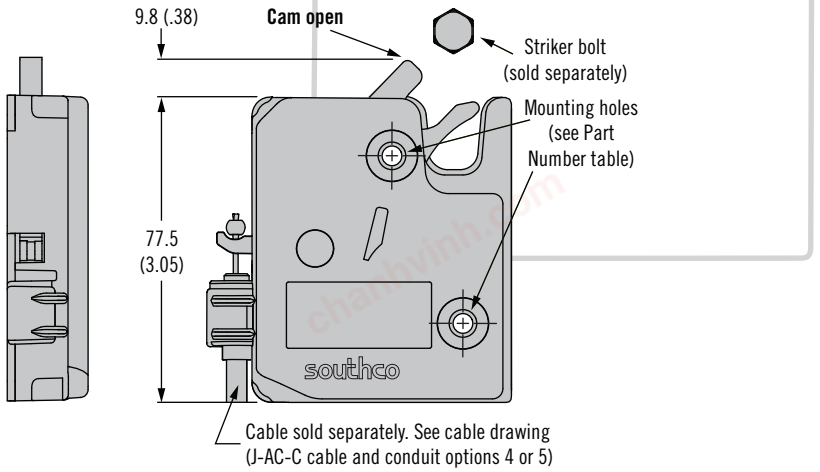
This version is required when using door sensor.



ACTUAL SIZE

Standard Housing

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



Part Number Selection

R4 - EM - 8 [B] [A] - [V] [S] 0 - [P]

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

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

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

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

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

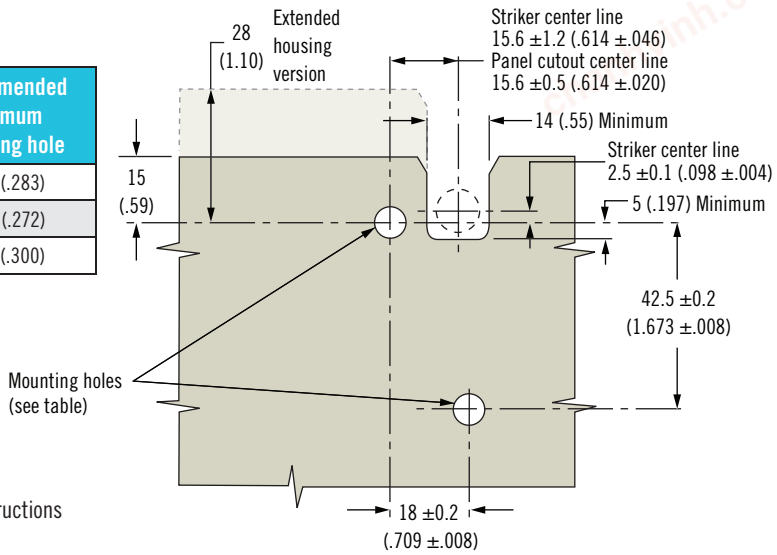
Dimensions in millimeters (inch) unless otherwise stated

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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 21 for operating instructions

Accessories

Striker Bolt or Cast Striker

See page 36



Electronic Actuators

See page 48



Mechanical Actuators

See page 34



Cables

See page 322



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

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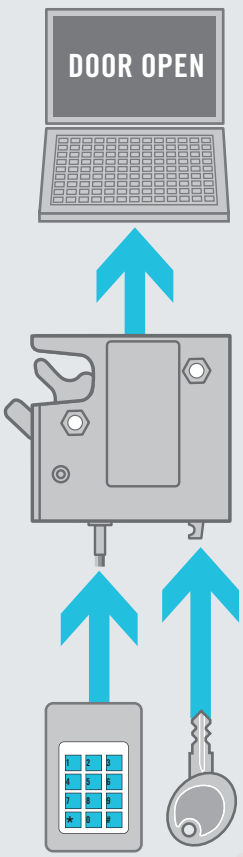
R4-EM 5 & 7 Series Electronic Rotary Latch

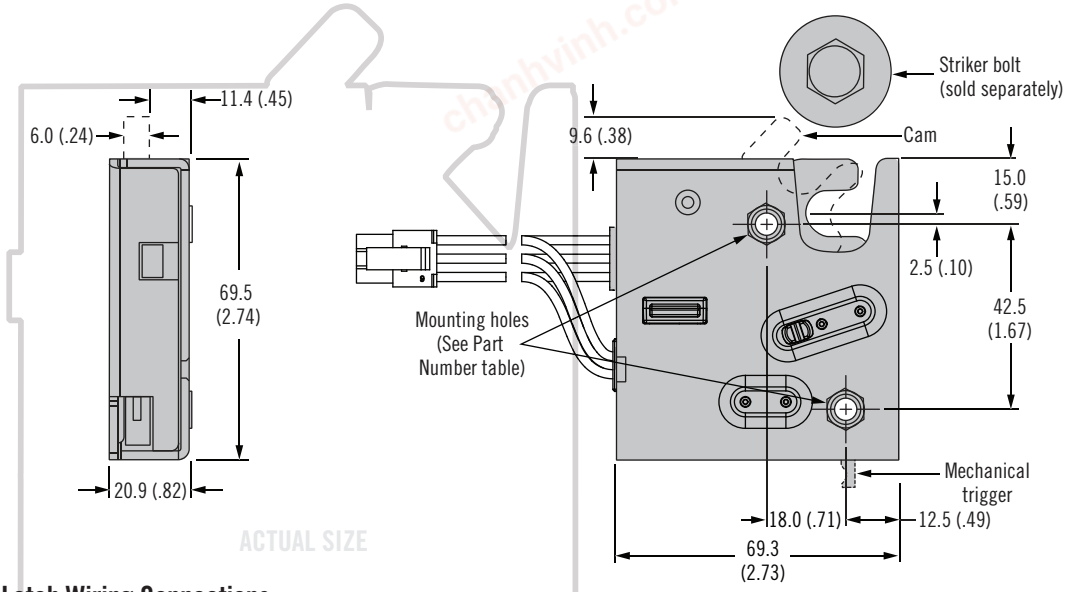
Sealed motor · Stainless steel housing option
Electronic access with internal motor control

- Motor actuator sealed against water and dust ingress to IP56
- Corrosion resistant 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

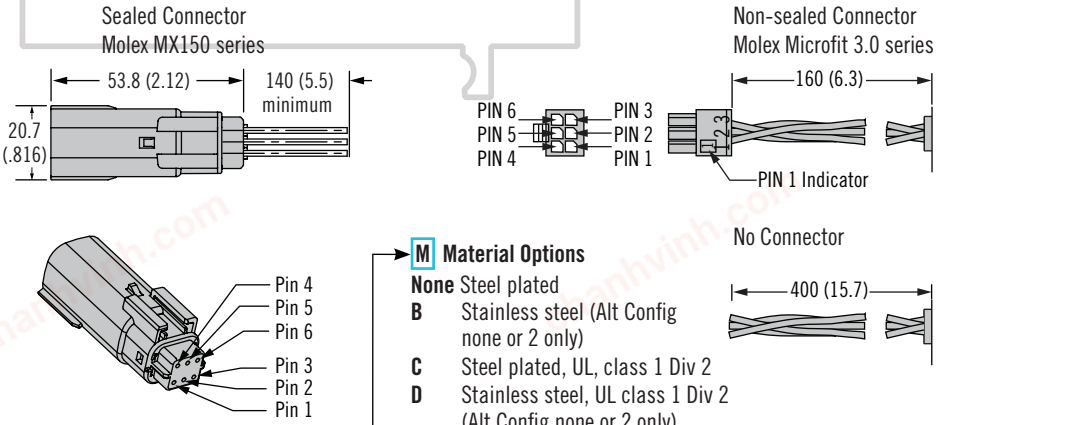
12V

24V





Latch Wiring Connections



M Material Options
- **None** Steel plated
- **B** Stainless steel (Alt Config none or 2 only)
- **C** Steel plated, UL, class 1 Div 2
- **D** Stainless steel, UL class 1 Div 2 (Alt Config none or 2 only)

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**

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

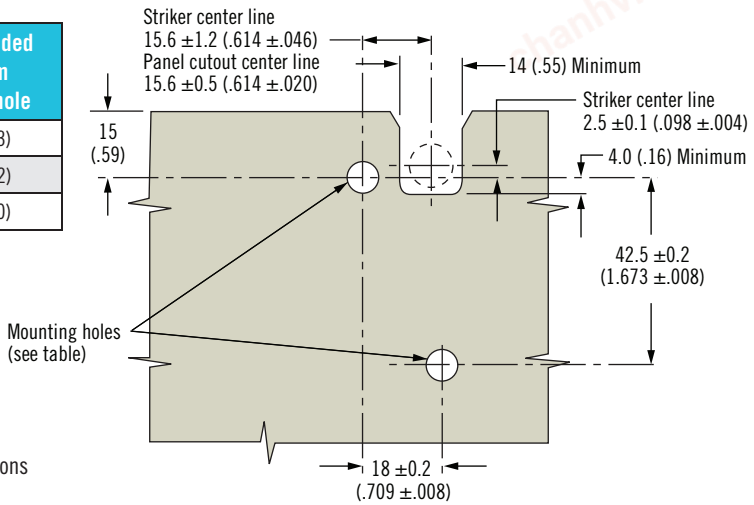
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Installation

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 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*



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

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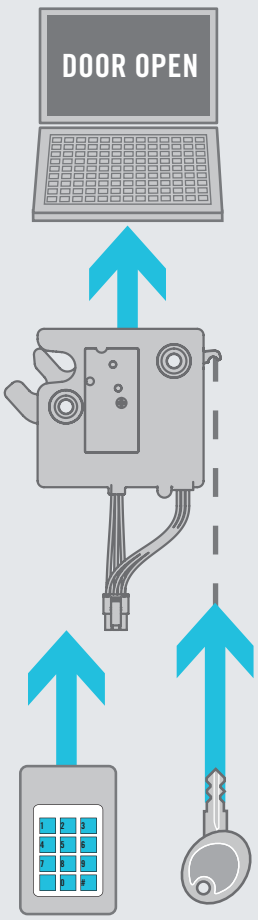
R4-EM 4 & 6 Series Electronic Rotary Latch

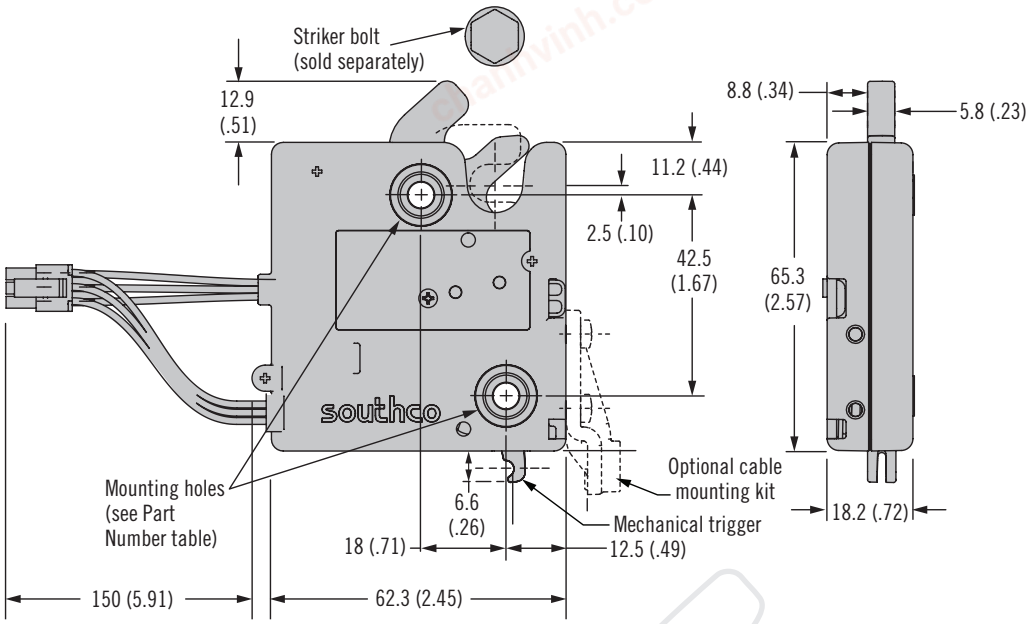
Compact size · Lightweight
Electronic access with internal motor control

- 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

12V

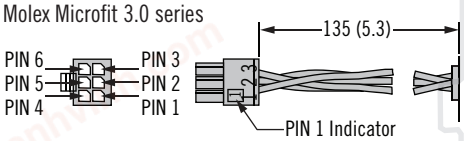
24V



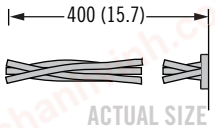


Latch Wiring Connections

With Connector
Molex Microfit 3.0 series



Without connector



Part Number Selection

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

T Trigger Styles
- **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)

S Switch Options
- **3** No switch
- **6** Internal latch status switch

C Connector Options
- **1** With connector
- **2** Without connector

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

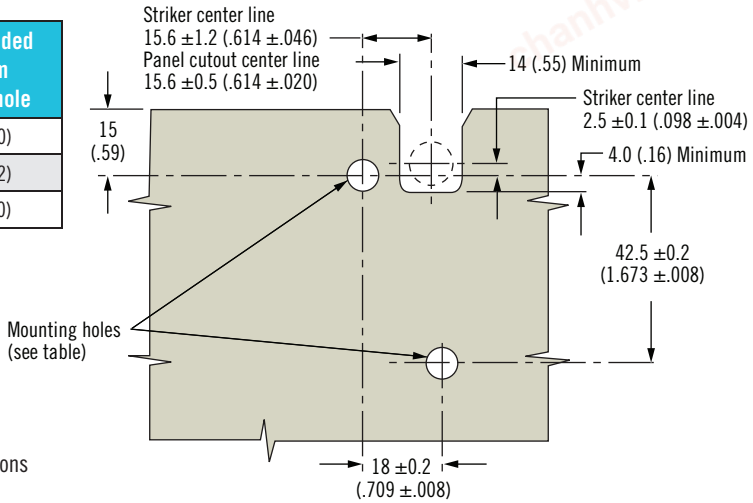
Dimensions in millimeters (inch) unless otherwise stated

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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 21 for operating instructions

Accessories

Striker Bolt
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*



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

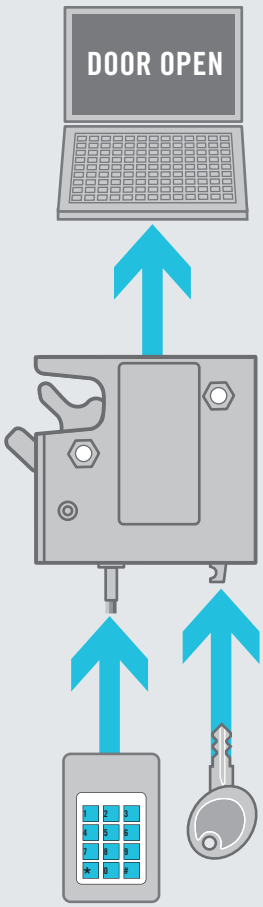
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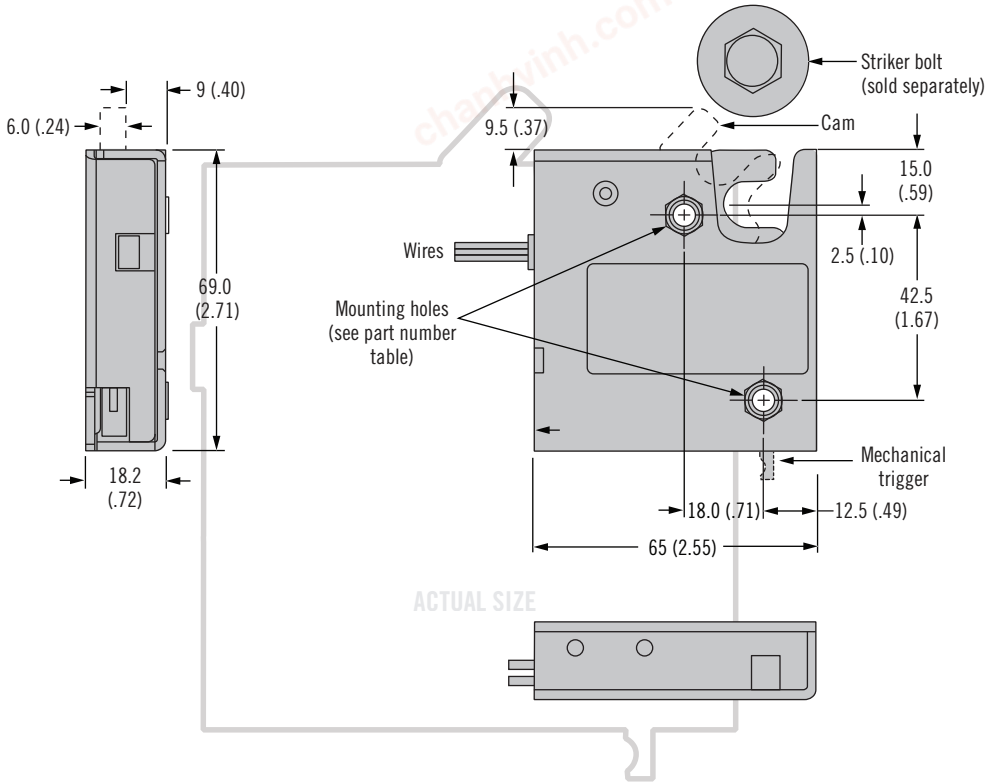


R4-EM 1 & 2 Series Electronic Rotary Latch

All-metal construction
Electronic access with internal motor control

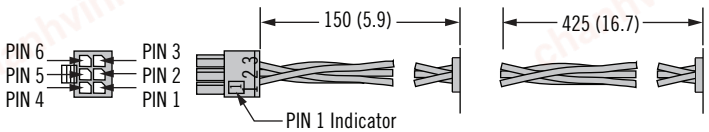
- High strength, steel construction
- Operates against high mechanical loads
- Push-to-close, electronic release
- Versatile rotary mechanism
- Concealed latching
- Microprocessor control
- Minimal power draw
- Simple mechanical override
- Optional internal microswitch for latch open/close output signal





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

Dimensions in millimeters (inch) unless otherwise stated

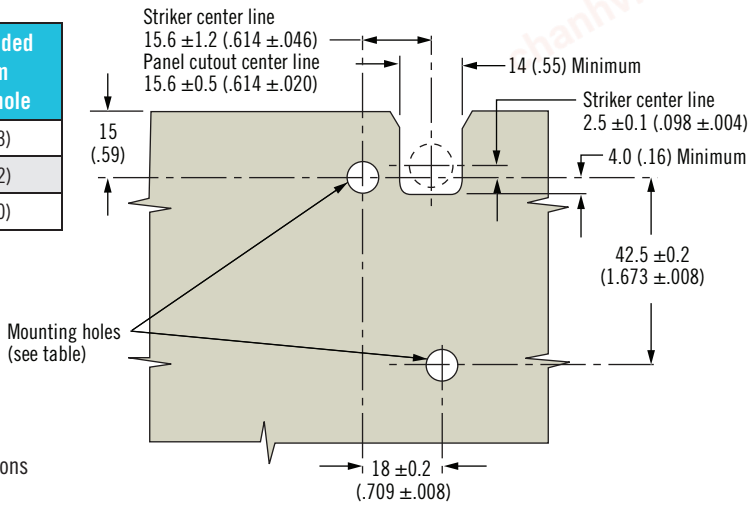
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Installation

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 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*



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

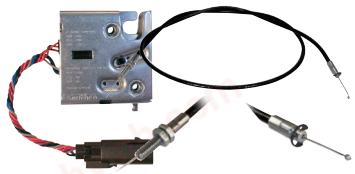
Electrical Specifications

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

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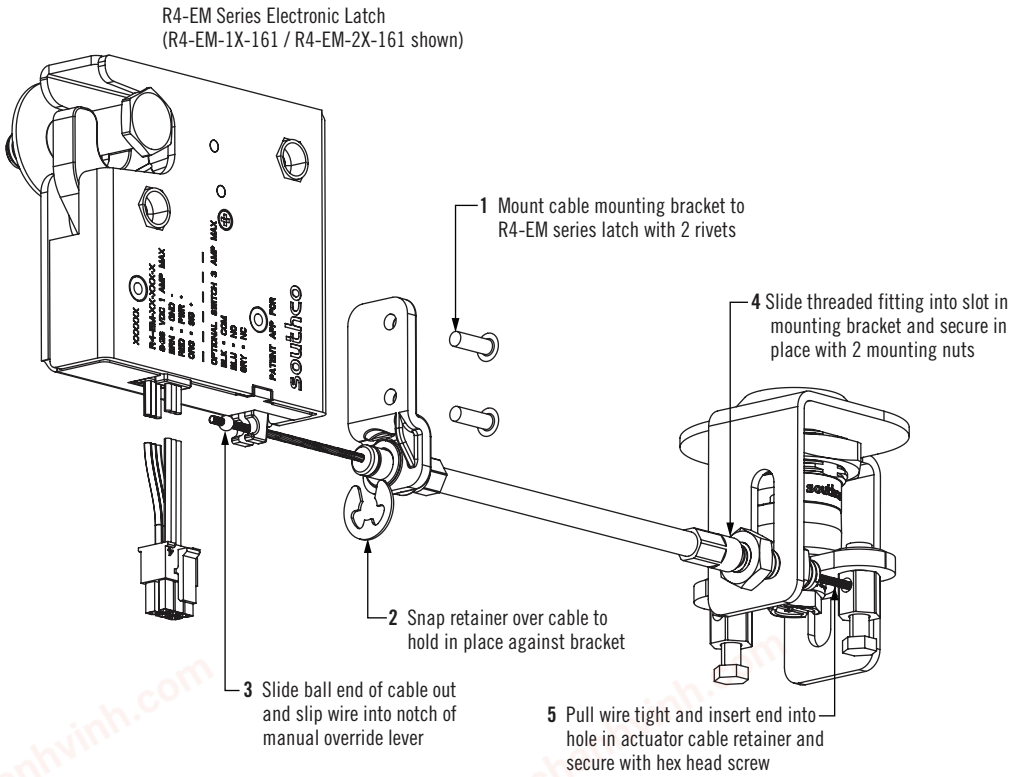


R4-EM Mechanical Override System

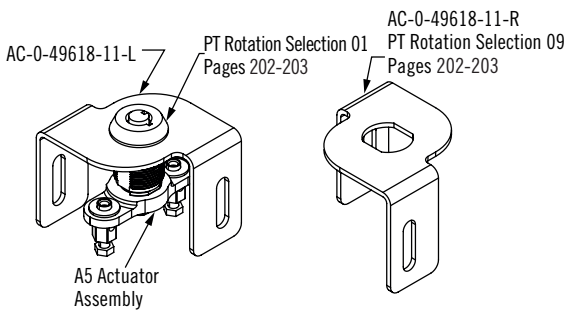
- **Adapts to any standard Southco R4-EM Electronic Rotary Latch**
- **Choose from flat key or tubular key cam latch for remote key lock**
- **Simple installation with multiple adjustments and customized cable lengths to suit any application.**
- **Accommodates clockwise or counter clockwise key rotation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

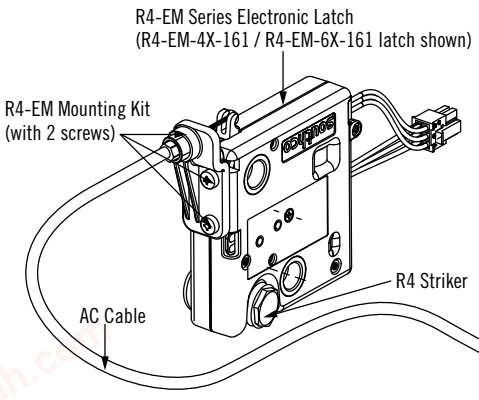
Southco now offers a standard solution for remote mechanical actuation of the R4-EM Electronic Rotary Latch. The cable based solution provides a simple means of mechanically releasing the electronic lock in the event of electrical power loss providing fully redundant access.

Installation

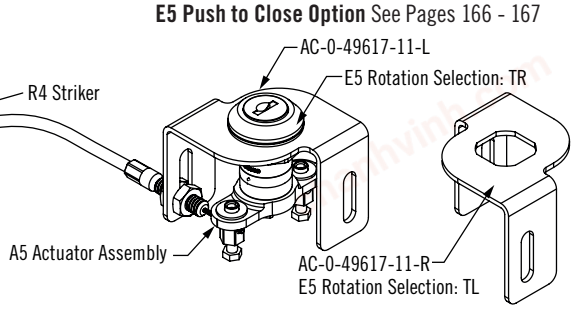


PT Latch Option See Pages 202 - 203





E5 Push to Close Option See Pages 166 - 167



Dimensions in millimeters (inch) unless otherwise stated

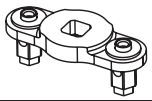
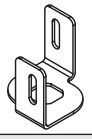
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How to Order

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

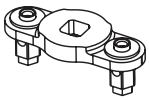
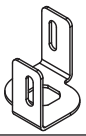


E5 Latch
Push-to-Close assembly
See page 166
See drawing J-E5-53-A

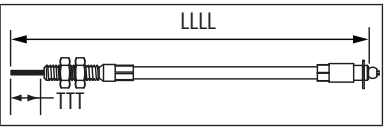
Description	Part Number		Latch Rotation Selection
A5 Actuator	A5-99-136		
AND			
AC Cable Bracket	AC-0-49617-11-R		E5-T-LF-TL-1K See pages 166 - 167
OR			
AC Cable Bracket	AC-0-49617-11-L		E5-T-LF-TR-1K See pages 166 - 167



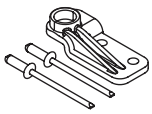
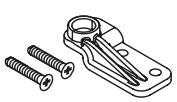
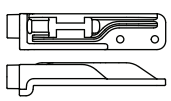
PT Latch
Tubular Key cam Lock
See page 202
See drawing J-PT-1

Description	Part Number		Latch Rotation Selection
A5 Actuator	A5-99-157		
AND			
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-C0H0-4-LLLL-TTT	LLLL - Length from behind ball end to end of cable TTT - Raw cable extension portion of LLLL length	

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

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R4-EM Electronic Rotary Latch

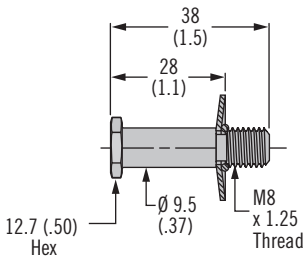
Strikers

Material and Finish

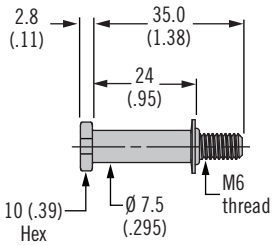
Striker bolts: Steel, zinc plated or stainless steel
Cast strikers: Zinc alloy

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

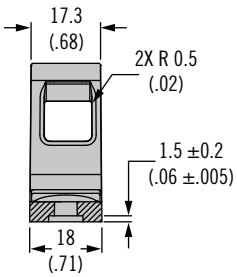
Striker Bolt - Large
Part number R4-90-121-10
R4-90-121-20

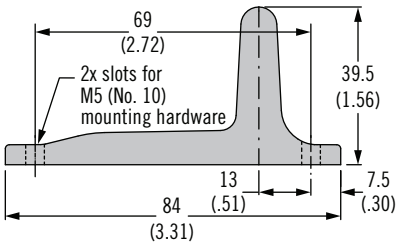


Striker Bolt - Small
Part number R4-90-511-20



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





	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	✔		✔	

Dimensions in millimeters (inch) unless otherwise stated

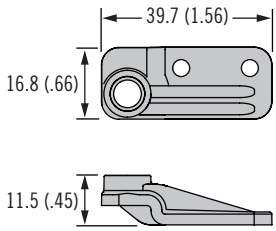
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R4-EM Electronic Rotary Latch

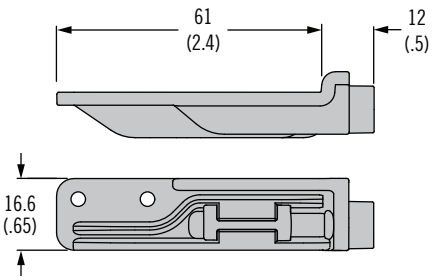
Cable mounting kits



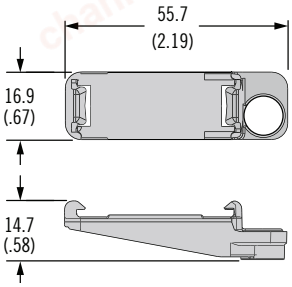
Cable Mounting Kit
Part number R4-EM-52 – Rivets included
Part number R4-EM-72 – Screws included



Part number R4-EM-87 – Rivets included



Part number R4-EM-952



	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		✔		
 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.