



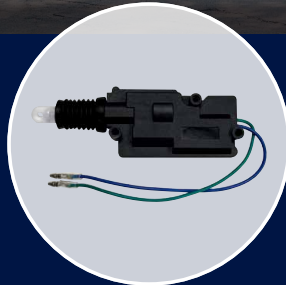
# EBERHARD®



ELECTRONIC ROTARY LATCHES



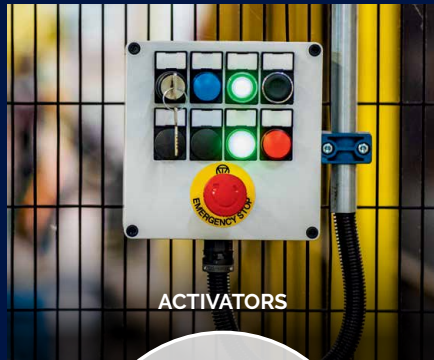
LINEAR MOTION DEVICES



ES/EM POWER MODULES



CONTROLLERS



ACTIVATORS



ELECTRO-MECHANICAL DEVICES



# ELECTRO-MECHANICAL

PRODUCT CATALOG 2023

# EBERHARD MANUFACTURING

Established in 1877, The Eberhard Manufacturing Company is a global leader in the engineering and manufacturing of access & security hardware. We have a standard product line of rotary latches, compression latches, draw latches, hinges, cam locks, key switches, padlocks, and handles to name a few. We also offer full development and program management services for custom electromechanical and mechanical systems designed for specific OEM's and customer applications. Our products are found in an expansive range of applications and products globally, virtually unnoticed in our everyday lives. Typically, you are never more than 6 feet from one of our solutions.

The Eberhard Manufacturing Company is a registered ISO9001:2015 and ISO14001:2015 company based in Strongsville, Ohio. Our core manufacturing capabilities are in die-casting, injection molding, stamping, machining and final assembly. Our passion for engineering drives us forward. Developing new products to meet our customer's design challenges is our main objective. Adding haptics and functionality to our products ultimately supports our customer's brand equity and increases the value of their end products.

Eberhard is a division of The Eastern Company (Nasdaq stock ticker EML).

Eberhard registered trademarks referenced: Eberhard®, Power Up®, i-Lock®, i-Beam®, and Load N Lock® (LNL).

## LOCATIONS

### USA

#### Corporate/Manufacturing

Eberhard Manufacturing Company  
21944 Drake Road  
Strongsville, OH 44149-9712

#### Sales & Engineering

Eberhard Manufacturing Company  
3930 N Ventura Drive  
Arlington Heights, IL 60004

### CHINA

#### Manufacturing

Eberhard – Dongguan  
Building 13, No. 199 Pulong Road, Tangxia Town  
Shenzhen Shi Guangdong Sheng Dongguan City,  
Guangdong Province 523719, China

#### Manufacturing

Eberhard – Eastern Industrial, Ltd. (Shanghai)  
20 Lane 2248 Liuxiang Road  
Shanghai, China 201801

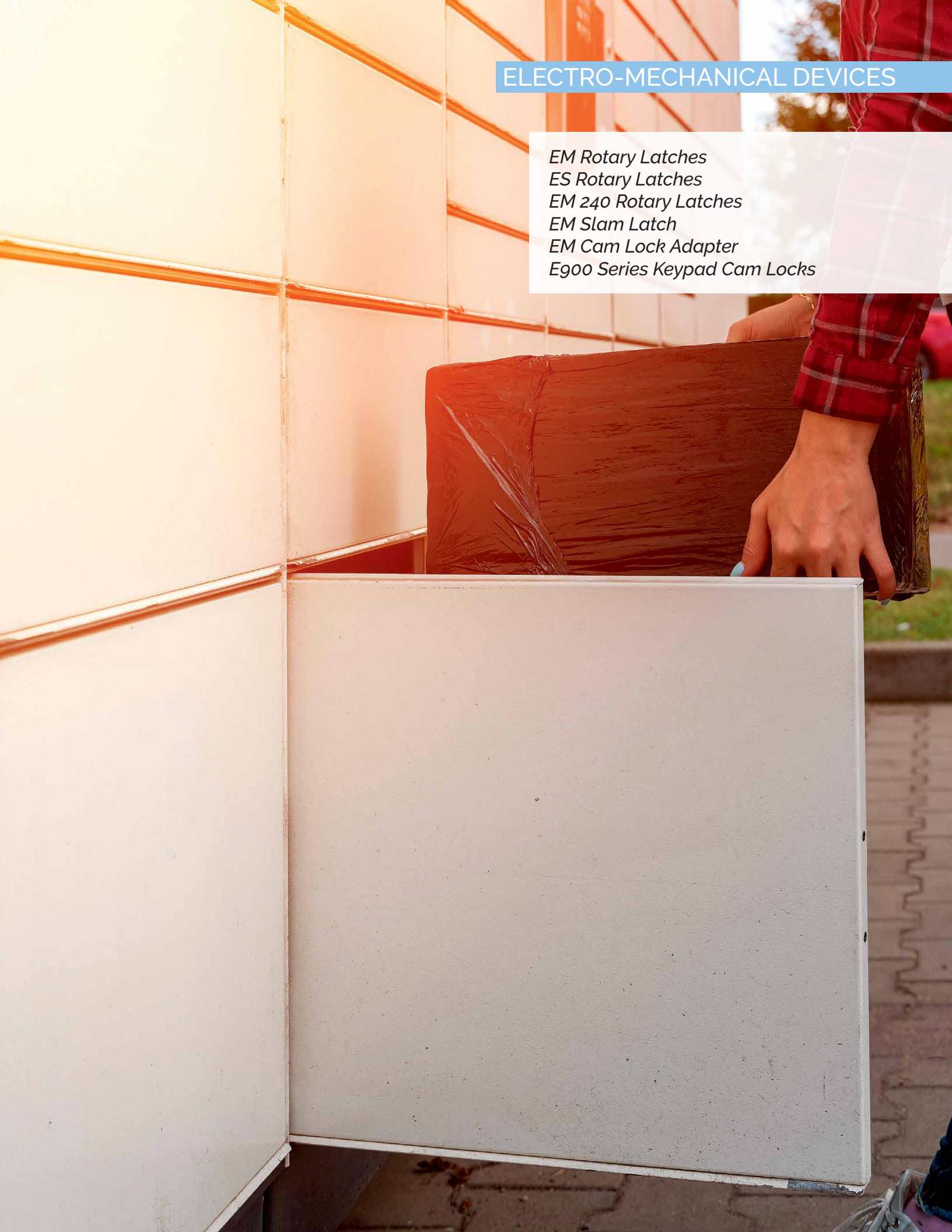
### MEXICO

#### Manufacturing

Eberhard – Reynosa  
Villas del Parque, 88780 Reynosa,  
Tamaulipas, Mexico

## ELECTRO-MECHANICAL DEVICES

*EM Rotary Latches*  
*ES Rotary Latches*  
*EM 240 Rotary Latches*  
*EM Slam Latch*  
*EM Cam Lock Adapter*  
*E900 Series Keypad Cam Locks*



## 17241 SERIES

### EM ELECTRONIC ROTARY LATCH



#### FEATURES

- Integrated mechanical release
- Industry standard mounting hole locations
- Mounting: 1/4" thru hole, m6 or 1/4-20 thread
- i-Lock Blue/Bluetooth® compatible
- Spring activated plunger option
- Internal relay option
- Electrical motor based system
- RoHS compliant
- REACH compliant

#### SPECIFICATIONS

##### POWER SPECIFICATIONS

VOLTAGE: 9-24V

OPERATING CURRENT: 250mA

STALL CURRENT: <500mA

##### ACTUATION SPECIFICATIONS

TRANSVERSE LOAD: 750 lbs.

STRIKER SIZE: .375"

RESPONSE TIME: 500ms

OPERATION: 12V signal pulse, Bluetooth®

*Does not meet FMVSS206*

##### MATERIAL SPECIFICATIONS

LATCH: Steel, fluorocarbon

CASE: Zinc plated steel

##### ENVIRONMENTAL SPECIFICATIONS

OPERATING TEMPERATURE RANGE:

-20°C to 70°C

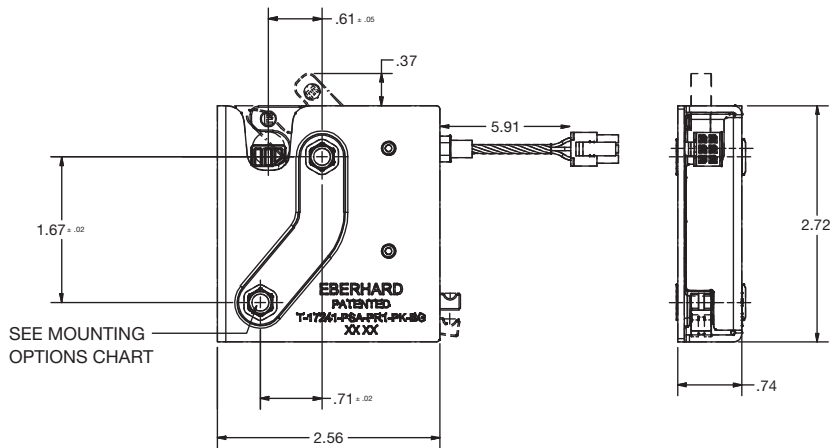
HUMIDITY: 95%

##### OPTIONS

Bare wire, 20 gauge, Molex® Micro-Fit (6 pin), relay – closed and/or open position, integrated spring plunger, single or dual stage

##### CERTIFICATIONS

RoHS – all, REACH – EU, FCC – USA



*Recommended strikers: #240-52U-25, #LNL-77E-00627 and #1-16645-PK-64.*



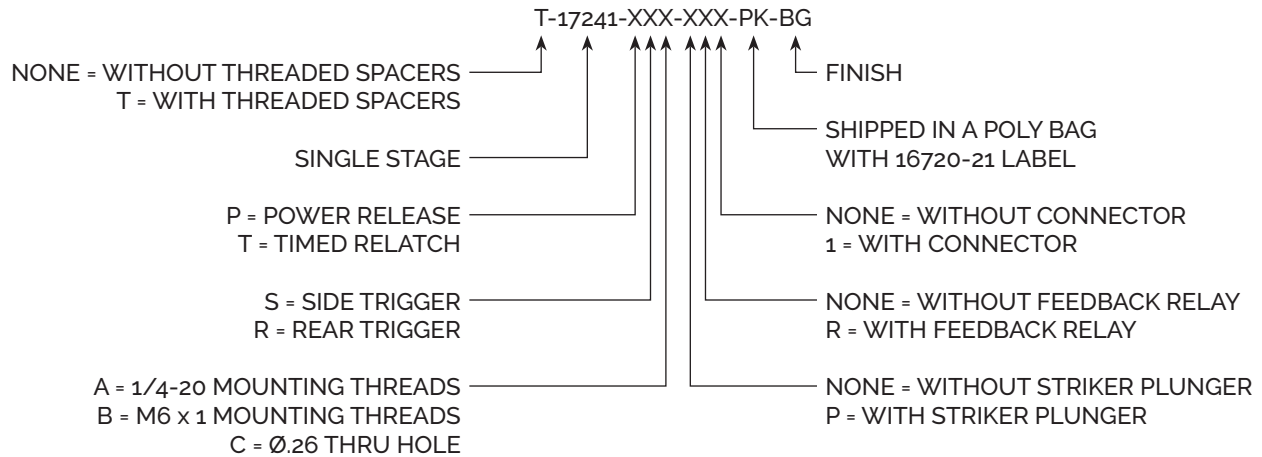
# 17241 SERIES

## EM ELECTRONIC ROTARY LATCH

PART #	STAGE	RELEASE TYPE	MANUAL TRIGGER	MOUNTING	STRIKER SIZE	CONNECTOR	FEEDBACK/SENSOR	STRIKER PLUNGER
T-17241-PSA-PR1-PK-BG	Single	Electrical	Side	(2) 1/4"-20	.375"	Micro-Fit	Yes	Yes
T-17241-PSB-PR1-PK-BG	Single	Electrical	Side	(2) M6 x 1.0	.375"	Micro-Fit	Yes	Yes
17241-PSC-PR1-PK-BG	Single	Electrical	Side	(2) 1/4" thru	.375"	Micro-Fit	Yes	Yes
T-17241-PRA-PR1-PK-BG	Single	Electrical	Rear	(2) 1/4"-20	.375"	Micro-Fit	Yes	Yes
T-17241-PRB-PR1-PK-BG	Single	Electrical	Rear	(2) M6 x 1.0	.375"	Micro-Fit	Yes	Yes
17241-PRC-PR1-PK-BG	Single	Electrical	Rear	(2) 1/4" thru	.375"	Micro-Fit	Yes	Yes

Product can be supplied with or without connectors, based on application needs.

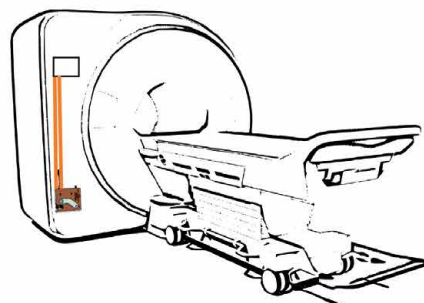
### PART NUMBER LEGEND



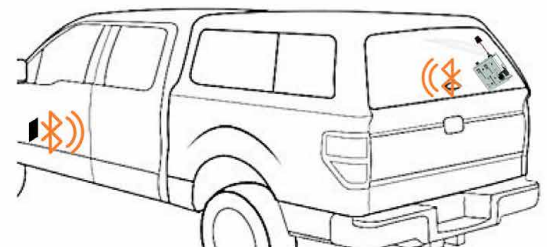
### INSTALLATION



**OPTION 1**  
5-Wire Activation with Feedback Sensor  
Power +/-, Activation Signal  
Feedback Sensor NO/C



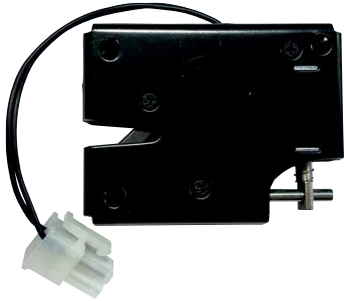
**OPTION 2**  
2-Wire Activation  
Power +/- (Requires 2 Second Pulse)



**OPTION 3**  
Bluetooth® Activation  
Power +/- on Transmitter  
Power +/- on EM Rotary Latch

## 77E SERIES

### ES COMPACT – ELECTRONIC ROTARY LATCH



#### FEATURES

- Integrated mechanical release (2 locations)
- Universal thru hole mounting
- Solenoid based system

#### SPECIFICATIONS

##### POWER SPECIFICATIONS

VOLTAGE: 12V

MAX CURRENT DRAW: 3A

##### ACTUATION SPECIFICATIONS

TRANSVERSE LOAD: 200 lbs.

STRIKER SIZE: .12"

RESPONSE TIME: 30ms (DC12V)

OPERATION: Pulse

*Does not meet FMVSS206*

##### MATERIAL SPECIFICATIONS

HOOK/CATCH: A3 plated steel

LOCK STRIKE: Stainless steel

CASE: Black electro-coated steel

##### ENVIRONMENTAL SPECIFICATIONS

OPERATING TEMPERATURE RANGE:

-20°C to 80°C

HUMIDITY: 95%

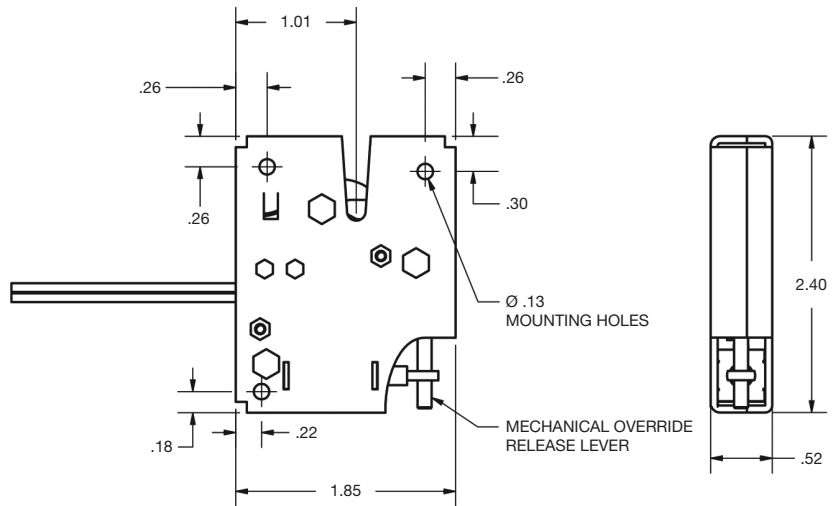
ENDURANCE (FULL CYCLES): ≥200,000 times

##### OPTIONS

Bare wire, single stage

##### CERTIFICATIONS

RoHS, UL



Recommended strikers: #LNL-77E-24STRK and #LNL-77E-29STRK.



PART #	STAGE	RELEASE TYPE	MANUAL TRIGGER	MOUNTING	STRIKER SIZE	CONNECTOR	FEEDBACK/ SENSOR	STRIKER PLUNGER
LNL-77E-4761-3	Single	Electrical	Rear	(3) 1/8" thru/tap	.12"	Yes	No	No
LNL-77E-4761-5	Single	Electrical	Rear	(3) 1/8" thru/tap	.12"	No	No	No

# 77E SERIES

## ES MEDIUM – ELECTRONIC ROTARY LATCH



### FEATURES

- Integrated mechanical release (2 locations)
- Universal thru hole mounting
- Internal sensor – closed position (option)
- Solenoid based system

### SPECIFICATIONS

#### POWER SPECIFICATIONS

VOLTAGE: 12V

MAX CURRENT DRAW: 3A

#### ACTUATION SPECIFICATIONS

TRANSVERSE LOAD: 500 lbs.

STRIKER SIZE: .12"

RESPONSE TIME: 30mS (DC12V)

OPERATION: Pulse

*Does not meet FMVSS206*

#### MATERIAL SPECIFICATIONS

HOOK/CATCH: A3 plated steel

LOCK STRIKE: Stainless steel

CASE: Black electro-coated steel

#### ENVIRONMENTAL SPECIFICATIONS

OPERATING TEMPERATURE RANGE:

-20°C to 80°C

HUMIDITY: 95%

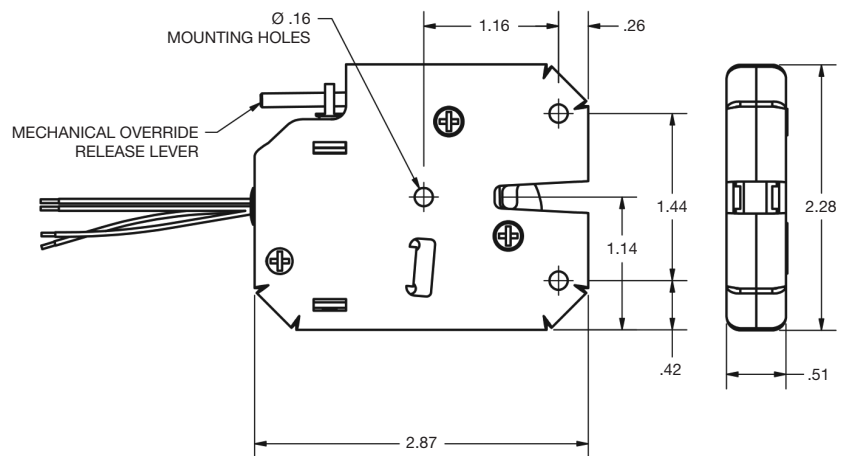
ENDURANCE (FULL CYCLES): ≥200,000 times

#### OPTIONS

Bare wire, internal switch – closed position, integrated spring plunger, single stage

#### CERTIFICATIONS

RoHS, UL



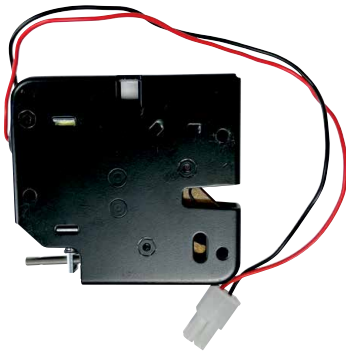
Recommended strikers: #LNL-77E-24STRK and #LNL-77E-29STRK.



PART #	STAGE	RELEASE TYPE	MANUAL TRIGGER	MOUNTING	STRIKER SIZE	CONNECTOR	FEEDBACK/ SENSOR	STRIKER PLUNGER
LNL-77E-5873-73	Single	Electrical	Rear	(3) 1/8" thru/tap	.12"	Yes	No	No
LNL-77E-5873-75	Single	Electrical	Rear	(3) 1/8" thru/tap	.12"	No	No	No
LNL-77E-5873-93	Single	Electrical	Rear	(3) 1/8" thru/tap	.12"	Yes	Yes	No
LNL-77E-5873-95	Single	Electrical	Rear	(3) 1/8" thru/tap	.12"	No	No	No

## 77E SERIES

### ES HEAVY-DUTY – ELECTRONIC ROTARY LATCH



#### FEATURES

- Integrated mechanical release (2 locations)
- Universal thru hole mounting
- Integral spring push rod (option)
- Internal sensor – closed position (option)
- Solenoid based system

#### SPECIFICATIONS

##### POWER SPECIFICATIONS

VOLTAGE: 12V

MAX CURRENT DRAW: 3A

##### ACTUATION SPECIFICATIONS

TRANSVERSE LOAD: 600 lbs.

STRIKER SIZE: .12"

RESPONSE TIME: 30ms (DC12V)

OPERATION: Pulse

*Does not meet FMVSS206*

##### MATERIAL SPECIFICATIONS

HOOK/CATCH: A3 plated steel

LOCK STRIKE: Stainless steel

CASE: Black electro-coated steel

##### ENVIRONMENTAL SPECIFICATIONS

OPERATING TEMPERATURE RANGE:

-20°C to 80°C

HUMIDITY: 95%

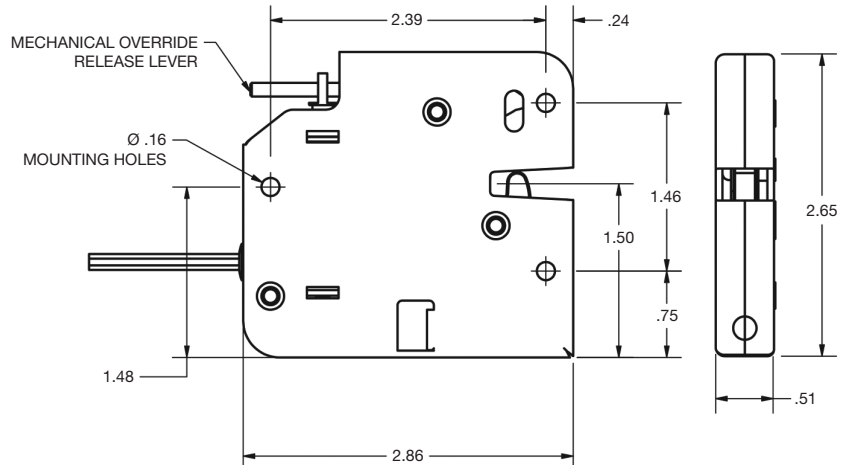
ENDURANCE (FULL CYCLES): ≥200,000 times

##### OPTIONS

Bare wire, internal switch – closed position, integrated spring plunger, single stage

##### CERTIFICATIONS

RoHS, UL



Recommended strikers: #LNL-77E-24STRK and #LNL-77E-29STRK.



PART #	STAGE	RELEASE TYPE	MANUAL TRIGGER	MOUNTING	STRIKER SIZE	CONNECTOR	FEEDBACK/ SENSOR	STRIKER PLUNGER
LNL-77E-6772-75	Single	Electrical	Rear	(3) 1/8" thru/tap	.12"	Yes	No	No
LNL-77E-6772-74	Single	Electrical	Rear	(3) 1/8" thru/tap	.12"	No	No	No
LNL-77E-6772-93	Single	Electrical	Rear	(3) 1/8" thru/tap	.12"	Yes	Yes	No
LNL-77E-6772-95	Single	Electrical	Rear	(3) 1/8" thru/tap	.12"	No	No	No

# 16240 SERIES

## EM 240 POWER ROTARY LATCH



### FEATURES

- Mechanical release, based on 240 rotary latch
- Eberhard® 240 Series rotary mounting locations
- Mounting: 1/4" thru hole, m6 or 1/4-20 thread
- Internal switch option
- Electrical motor based system
- RoHS compliant

### SPECIFICATIONS

#### POWER SPECIFICATIONS

VOLTAGE: 9V-12V  
 OPERATING CURRENT: 1.5A  
 STALL CURRENT: 2.5A

#### ACTUATION SPECIFICATIONS

TRANSVERSE LOAD: 750 lbs.  
 STRIKER SIZE: .375"  
 RESPONSE TIME: 600ms  
 OPERATION: FWD polarity 600mS,  
 REV polarity 600mS

*Does not meet FMVSS206*

#### MATERIAL SPECIFICATIONS

LATCH: Steel, fluorocarbon  
 CASE: Zinc plated steel

#### ENVIRONMENTAL SPECIFICATIONS

OPERATING TEMPERATURE RANGE:  
 -40°C to 80°C  
 HUMIDITY: 95%

#### SPRING RATE

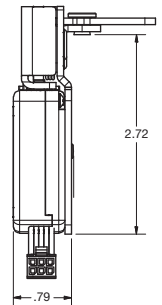
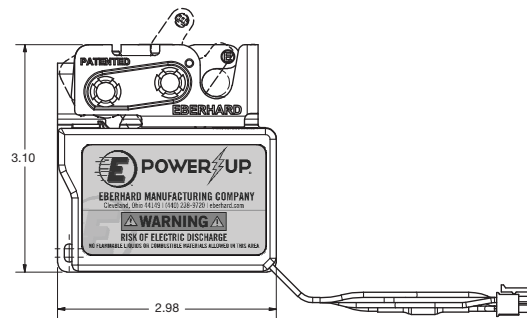
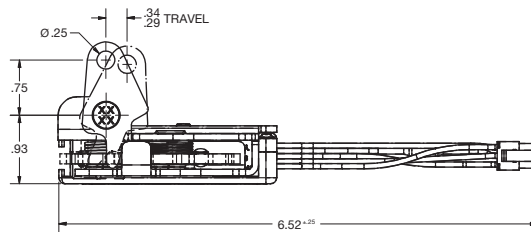
LATCH: .410 in.-lbs. unlatched position  
 PAWL: .471 in.-lbs. actuated position  
 SPRING: Color coded white

#### OPTIONS

Bare wire, Molex® Micro-Fit (6 pin),  
 internal switch – closed and/or open position,  
 single or dual stage

#### CERTIFICATIONS

RoHS – all



Recommended strikers: #240-52U-25, #LNL-77E-00627 and #1-16645-PK-64.



PART #	STAGE	RELEASE TYPE	MANUAL TRIGGER	MOUNTING	STRIKER SIZE	CONNECTOR	FEEDBACK/ SENSOR	STRIKER PLUNGER
1-16241-NTAL-BG	Single	Electrical	LH Side	(2) 1/4" thru	.375"	Yes	No	No
1-16240-NTAL-BG	Dual	Electrical	LH Side	(2) 1/4" thru	.375"	Yes	No	No

## 16240 SERIES

### EM 240 POWER-UP ROTARY LATCH – V2



#### FEATURES

- Mechanical release, based on 240 rotary latch
- Eberhard® 240 Series rotary mounting locations
- Mounting: 1/4" thru hole, m6 or 1/4-20 thread
- i-Lock Blue/Bluetooth® compatible (optional)
- Motor control required
- Internal relay option
- Electrical motor based system
- RoHS compliant
- REACH compliant

#### SPECIFICATIONS

##### POWER SPECIFICATIONS

VOLTAGE: 9-12V

OPERATING CURRENT: 250mA

STALL CURRENT: <500mA

##### ACTUATION SPECIFICATIONS

TRANSVERSE LOAD: 750 lbs.

STRIKER SIZE: .375"

RESPONSE TIME: 500mS

OPERATION: FWD polarity 500mS,  
REV polarity 500mS

*Does not meet FMVSS206*

##### MATERIAL SPECIFICATIONS

LATCH: Steel, fluorocarbon

CASE: Zinc plated steel

##### ENVIRONMENTAL SPECIFICATIONS

OPERATING TEMPERATURE RANGE:  
-40°C to 80°C

HUMIDITY: 95%

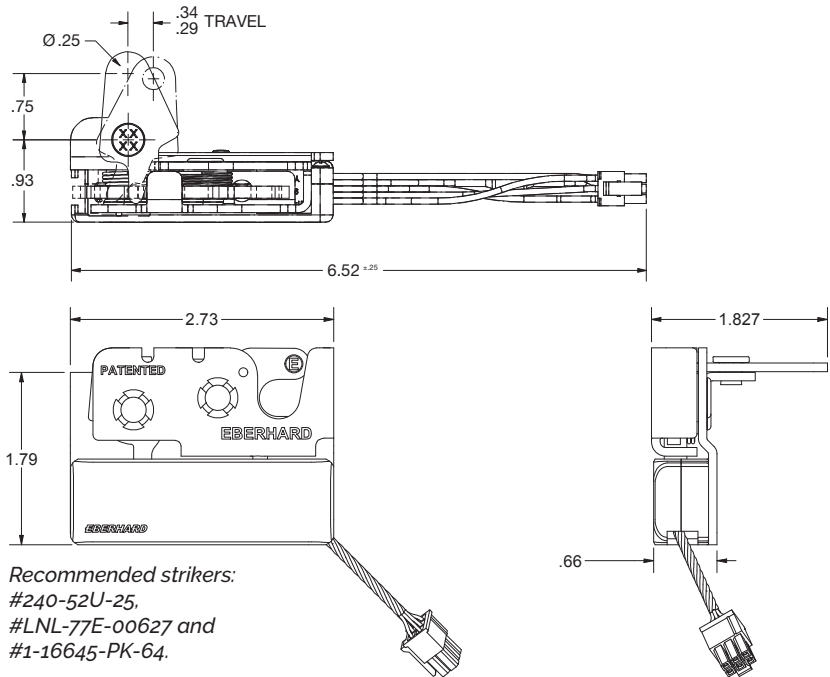
ENDURANCE (FULL CYCLES): ≥70,000 times

##### OPTIONS

Bare wire, 20 gauge, Molex® Micro-Fit (6 pin),  
internal switch – closed and/or open position,  
single or dual stage

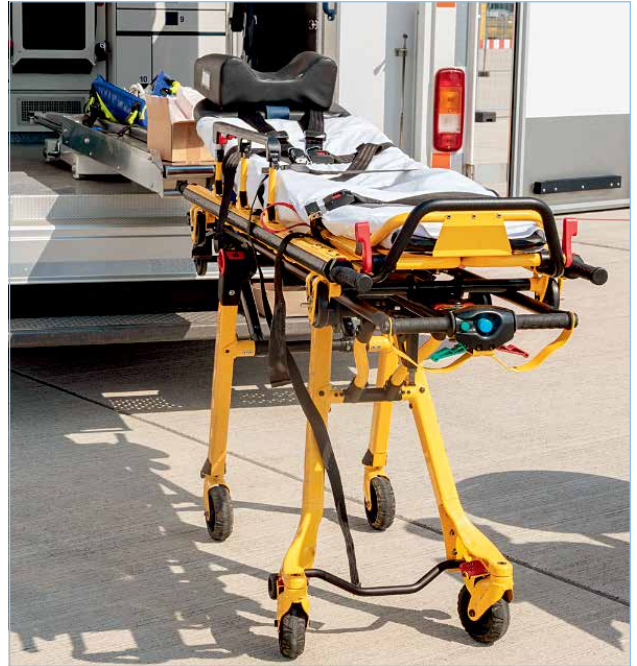
##### CERTIFICATIONS

RoHS – all, REACH – EU, FCC – USA



PART #	STAGE	RELEASE TYPE	MANUAL TRIGGER	MOUNTING	STRIKER SIZE	CONNECTOR	FEEDBACK/ SENSOR	STRIKER PLUNGER
2-16241-NTAL-BG	Single	Electrical	LH Side	(2) 1/4" thru	.375"	Yes	No	No
2-16240-NTAL-BG	Dual	Electrical	LH Side	(2) 1/4" thru	.375"	Yes	No	No

## ROTARY LATCH OPTIONS

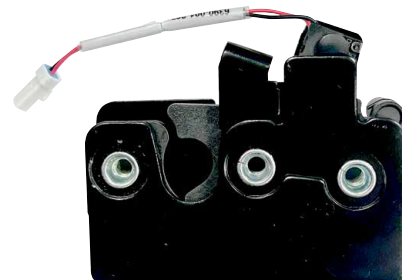


### LINEAR ACTUATOR MOUNTING KITS (SEE LINEAR ACTUATORS PAGES 17-18 FOR SPECIFICATIONS)



Mechanical rotary latches also have power adaptable capabilities by installing our linear actuators.

### INTERNAL/INTEGRATED SENSOR/LIMIT SWITCH OPTIONS



Sensors and limit switches can be added to our standard line of mechanical rotary latches to indicate open/close state of latch.

## E904 SERIES EM SLAM LATCH



### FEATURES

- Based on Eberhard® 4597 slam bolt mounting
- Manual override
- i-Lock Blue/Bluetooth® compatible (optional)
- Motor control required
- Spring load options
- Electrical motor based system

### SPECIFICATIONS

#### POWER SPECIFICATIONS

VOLTAGE: 12V nominal, 9-16V range

STALL CURRENT: <850mA @ 12V

FULL LOAD CURRENT: <120mA

#### ACTUATION SPECIFICATIONS

OPERATION: FWD polarity 1.7S,  
REV polarity 1.7S

#### MATERIAL SPECIFICATIONS

PLUNGER: POM, black

SLIDE CASE: Steel, black electro-coated

MOTOR HOUSING: Zinc diecast, black electro-coated

#### ENVIRONMENTAL SPECIFICATIONS

OPERATING TEMPERATURE RANGE:

-20°C to 70°C

HUMIDITY: 5-95% RH

IP RATING: IP66

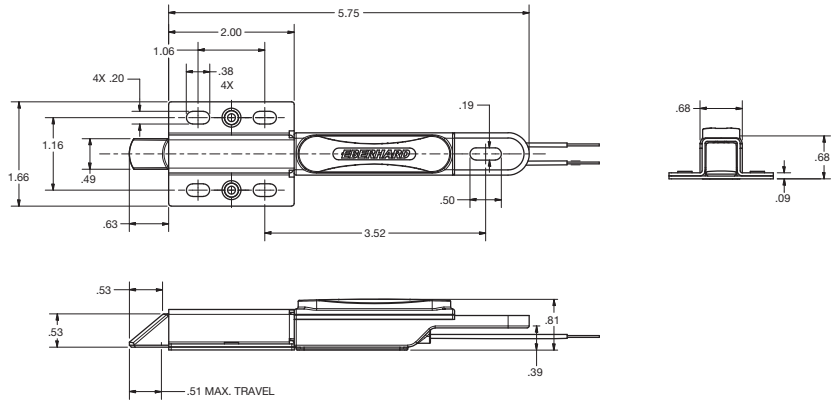
ENDURANCE (FULL CYCLES): ≥70,000 times

#### OPTIONS

Bare wire, 20 gauge

#### CERTIFICATIONS

RoHS



PART #	RETRACT FORCE	MANUAL PULL FORCE	MOUNTING	BLUETOOTH® (OPTIONAL)
E904V1B	2.5 lbs.	2.5 lbs.	Horizontal	No
EBX904V1B	2.5 lbs.	2.5 lbs.	Horizontal	Yes

# E905 SERIES

## EM CAM LOCK ADAPTER



### FEATURES

- Make any standard cam lock electronic with our electronic cam lock adapter
- Installs with single screw on back of cam, maintains cam lock function
- i-Lock Blue/Bluetooth® compatible (optional)
- Motor control required
- Electrical motor based system

### SPECIFICATIONS

#### POWER SPECIFICATIONS

VOLTAGE: 12V nominal, 9-16V range

STALL CURRENT: <500mA @ 12V

FULL LOAD CURRENT: <240mA

#### ACTUATION SPECIFICATIONS

OPERATION: FWD polarity 300mS,  
REV polarity 300mS

#### MATERIAL SPECIFICATIONS

MOTOR HOUSING: Zinc diecast, black electro-coated

CAM: Zinc plated steel

#### ENVIRONMENTAL SPECIFICATIONS

OPERATING TEMPERATURE RANGE:  
-20°C to 70°C

HUMIDITY: 5-95% RH

IP RATING: IP66

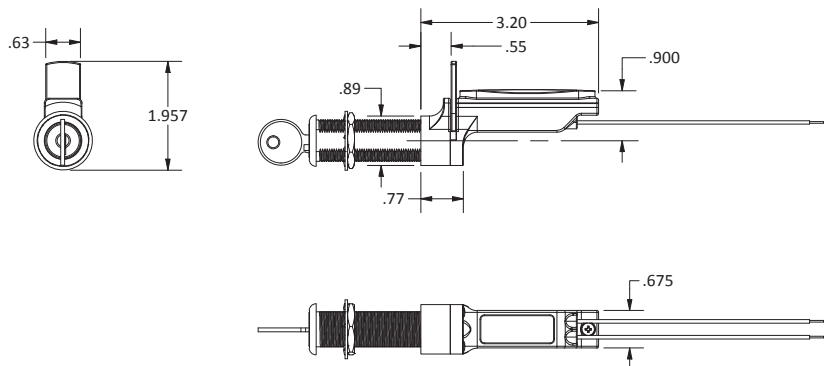
ENDURANCE (FULL CYCLES): ≥90,000 times

#### OPTIONS

Bare wire, 20 gauge

#### CERTIFICATIONS

RoHS



PART #	ROTATION	MOUNTING	BLUETOOTH® (OPTIONAL)
E905V1S	90°	Horizontal	No
EBX905V1S	90°	Horizontal	Yes

## E901 SERIES

### i-LOCK ELECTRONIC KEYPAD CAM LOCK



#### FEATURES

- 4 button keypad
- Horizontal or vertical mounting options
- Battery backup (CR2032)
- Low battery alarm
- Connector for external AC supply (micro USB)
- 1-8 digit passcode available
- Serial numbered for traceability

#### SPECIFICATIONS

##### POWER SPECIFICATIONS

BATTERY: 3V CR2032

OPTIONAL: Micro-USB

##### MATERIAL SPECIFICATIONS

HOUSING: ABS, silver

CAM: Stainless steel

##### ENVIRONMENTAL SPECIFICATIONS

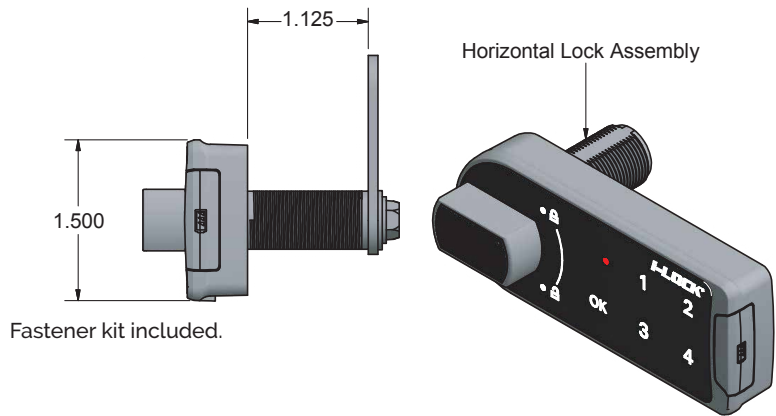
OPERATING TEMPERATURE RANGE:

-25°C to 65°C

HUMIDITY: 10-95% RH

##### OPTIONS

Clutch knob, straight cam



Fastener kit included.



PART #	KEYPAD	MOUNTING	MODE
E901RSS	4 button	Horizontal	Standard
E901R1S	4 button	Horizontal	One-Time
E901VSS	4 button	Vertical	Standard
E901V1S	4 button	Vertical	One-Time

# E902 SERIES

## i-LOCK ELECTRONIC KEYPAD CAM LOCK



### FEATURES

- 10 button keypad
- Horizontal or vertical mounting options
- Battery backup (CR2032)
- Low battery alarm
- Connector for external AC supply (micro USB)
- 1-15 digit passcode available
- Clutch knob
- Blue backlight buttons
- Serial numbered for traceability

### SPECIFICATIONS

#### POWER SPECIFICATIONS

BATTERY: 3V CR2032

OPTIONAL: Micro-USB

#### MATERIAL SPECIFICATIONS

HOUSING: Zinc alloy diecast, silver

CAM: Stainless steel

#### ENVIRONMENTAL SPECIFICATIONS

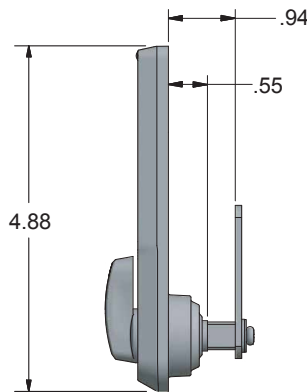
OPERATING TEMPERATURE RANGE:

-25°C to 65°C

HUMIDITY: 10-95% RH

#### OPTIONS

Connecting rod cam, straight cam



Fastener kit included.



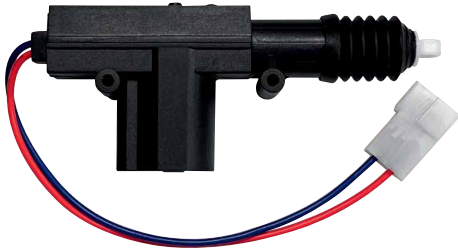
PART #	KEYPAD	MOUNTING	MODE
E902RSS	10 button	Horizontal	Standard
E902R1S	10 button	Horizontal	One-Time
E902VSS	10 button	Vertical	Standard
E902V2S	10 button	Vertical	One-Time

## LINEAR MOTION DEVICES/POWER MODULES

*EM Linear Actuators*  
*Eberhard® Power Adaptable Handles*  
*ES LNL Power Module*  
*EM LNL Power Module*  
*LNL Power Adaptable Handles*



## 16720 SERIES EM LINEAR ACTUATOR



### SPECIFICATIONS

#### POWER SPECIFICATIONS

VOLTAGE: 12V

STALL CURRENT: 4.5A +/- 10%

FULL LOAD CURRENT: 1.2A±10%

MOTOR: Equipped with 12V thermal protection

#### ACTUATION SPECIFICATIONS

ACTUATING FORCE: >6kgs

ACTUATION TRAVEL: 21mm

OPERATION: FWD polarity 500mS,  
REV polarity 500mS

#### MATERIAL SPECIFICATIONS

HOUSING: ABS, black

PLUNGER: POM, white

#### ENVIRONMENTAL SPECIFICATIONS

ENDURANCE (UP AND DOWN): ≥201,500 times

OPERATING TEMPERATURE RANGE:  
-40°C to 80°C

#### WIRING OPTIONS

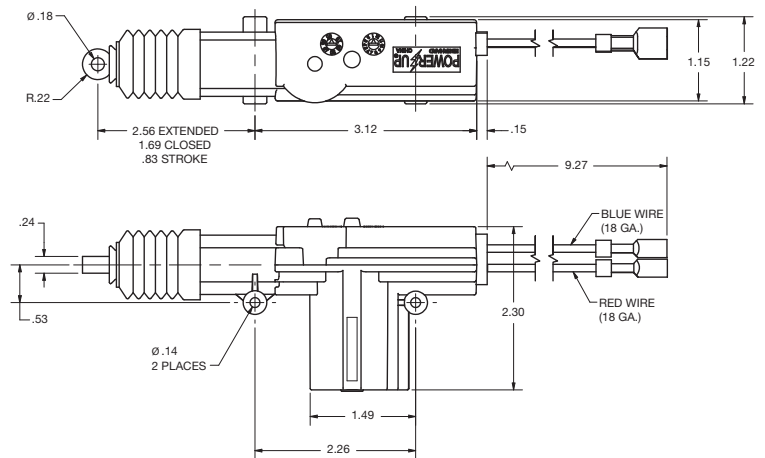
Deutsch connector, bare wire, 18 gauge

#### CERTIFICATIONS

CE, IPX3

### FEATURES

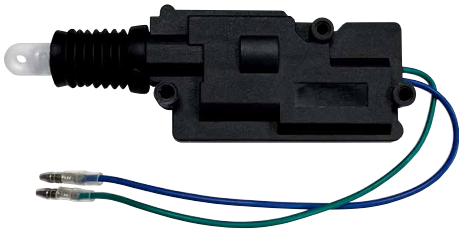
- Universal thru mounting holes
- Standard industry mounting
- Thermal overload protection on motor
- Electrical motor based system



PART #

16720-1-PK-01

## 16952 SERIES EM LINEAR ACTUATOR



### SPECIFICATIONS

#### POWER SPECIFICATIONS

VOLTAGE: 12V nominal, 9-16V range

FULL LOAD CURRENT: <2A @ 15V

MOTOR: Equipped with 12V thermal protection

#### ACTUATION SPECIFICATIONS

ACTUATING FORCE: 4.5kgs

ACTUATION TRAVEL: 21mm

OPERATION: FWD polarity 500mS,

REV polarity 500mS

#### MATERIAL SPECIFICATIONS

HOUSING: ABS, black

PLUNGER: POM, white

#### ENVIRONMENTAL SPECIFICATIONS

ENDURANCE (UP AND DOWN): ≥30,000 times

STROKE: 21mm

OPERATING TEMPERATURE RANGE:

-30°C to 85°C

#### WIRING OPTIONS

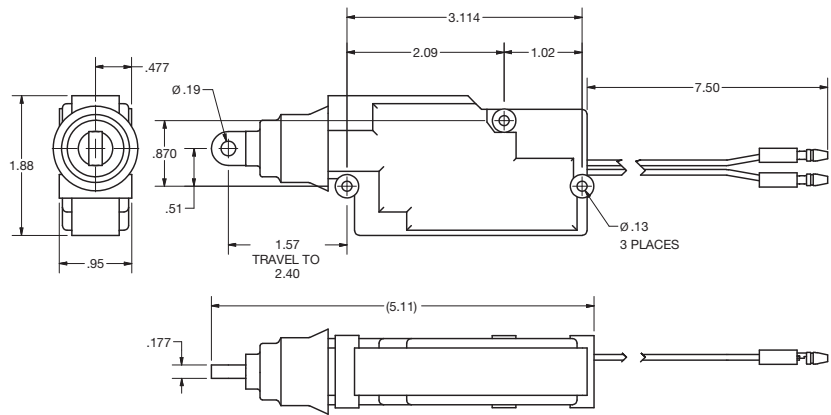
Bullet connectors, bare wire, 18 gauge

#### CERTIFICATIONS

CE, IPX3

### FEATURES

- Universal thru mounting holes
- Thermal overload protection on motor
- Reduced housing size compared to 16720



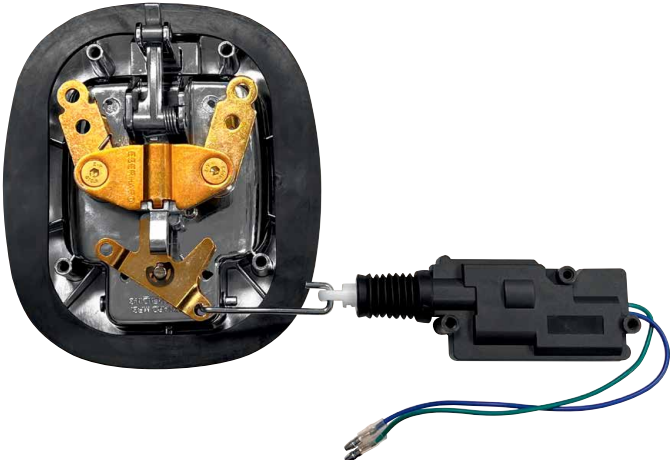
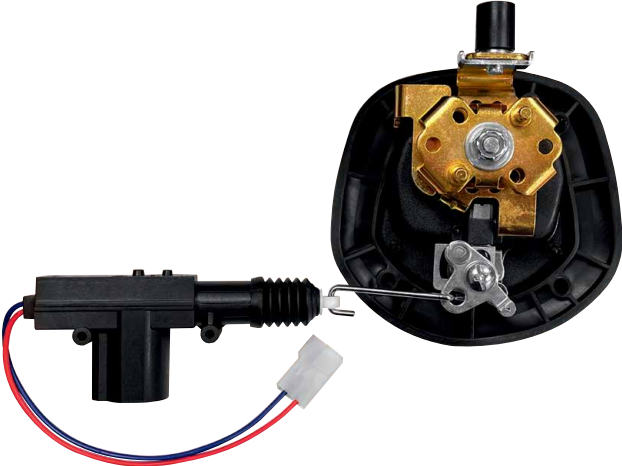
PART #

16952-01

# EM LINEAR ACTUATORS

## POWER ADAPTABLE HANDLES

Eberhard® EM Linear Actuators work with these series of handles. Additional brackets and linkages required.



### PADDLE HANDLES

### T-HANDLES



9872 SERIES



7940 SERIES



3691 SERIES



28400 SERIES

### D-RINGS

### PULL HANDLES



9000 SERIES



90320 SERIES

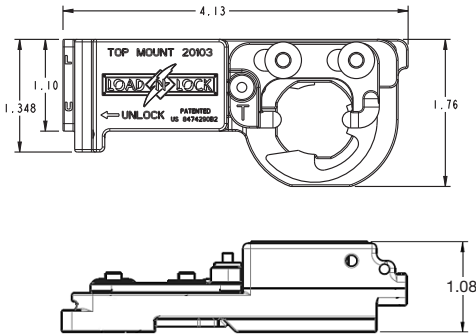


21100 SERIES



31100 SERIES

## LOAD N LOCK SERIES ES POWER MODULES



### FEATURES

- Dedicated power module for LNL handle series
- Top and bottom mounting options
- Sealed housing
- Install with E-Clip
- Solenoid based system

### SPECIFICATIONS

#### POWER SPECIFICATIONS

VOLTAGE: 13V  
CURRENT DRAW: 2.2A  
PEAK: 3.8A +/- 10%

#### ENERGIZING SPECIFICATIONS

ENERGIZING FORCE: 2 lbs. +/- .100 lbs.  
LATCHING FORCE: 1 lbs. +/- .25 lbs.  
ACTUATION TRAVEL: .180"  
OPERATION: FWD pulse 30mS,  
REV pulse 30mS

#### MATERIAL SPECIFICATIONS

HOUSING: ABS, black

#### ENVIRONMENTAL SPECIFICATIONS

OPERATING TEMPERATURE RANGE:  
-30°C to 65°C  
STROKE: .180" travel  
ENDURANCE (FULL CYCLES):  
≥ 1,000,000 times

#### OPTIONS

Spade quick connector

#### CERTIFICATIONS

RoHS, UL

#### POWER SPECIFICATIONS

VOLTAGE: 12V  
CURRENT DRAW: 2A  
PEAK: 4.2A +/- 10%

#### ENERGIZING SPECIFICATIONS

ENERGIZING FORCE: 2 lbs. +/- .100 lbs.  
LATCHING FORCE: 1 lbs. +/- .25 lbs.  
ACTUATION TRAVEL: .180"  
OPERATION: FWD pulse 30mS,  
REV pulse 30mS

#### MATERIAL SPECIFICATIONS

HOUSING: ABS, black

#### ENVIRONMENTAL SPECIFICATIONS

OPERATING TEMPERATURE RANGE:  
-30°C to 65°C  
STROKE: .180" travel  
ENDURANCE (FULL CYCLES):  
≥ 1,000,000 times

#### OPTIONS

Spade quick connector

#### CERTIFICATIONS

RoHS, UL



#### TOP MOUNT PART #

LNL-72-20103

#### BOTTOM MOUNT PART #

LNL-72-20101

#### TOP MOUNT PART #

LNL-72-00651

#### BOTTOM MOUNT PART #

LNL-72-00652

Parts are kitted with harnesses and hardware.

# LOAD N LOCK SERIES

## EM POWER MODULE



### FEATURES

- Dedicated power module for LNL handle series
- Seal housing
- Installed with E-Clip
- Electrical motor based system
- i-Lock Blue/Bluetooth® compatible (optional)
- Motor control required

### SPECIFICATIONS

#### POWER SPECIFICATIONS

VOLTAGE: 12V nominal, 9-16V range

STALL CURRENT: <500mA @ 12V

FULL LOAD CURRENT: <240mA

#### ENERGIZING SPECIFICATIONS

ACTUATION TRAVEL: .180"

OPERATION: FWD pulse 230mS,

REV pulse 230mS

#### MATERIAL SPECIFICATIONS

HOUSING: ABS, black

#### ENVIRONMENTAL SPECIFICATIONS

OPERATING TEMPERATURE RANGE:

-20°C to 70°C

HUMIDITY: 5-95% RH

ENDURANCE (FULL CYCLES):

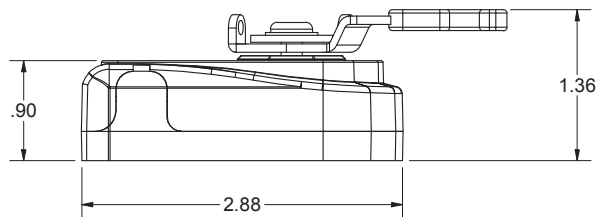
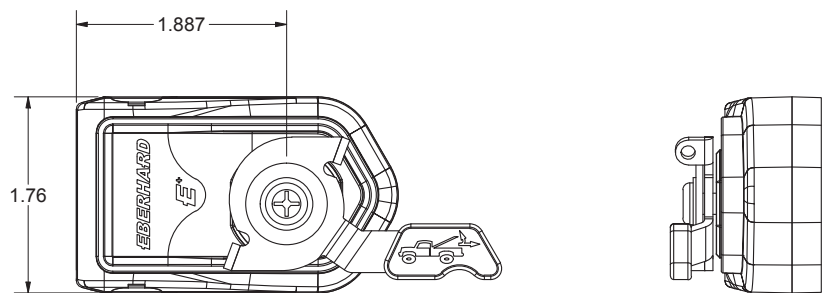
≥ 70,000 times

#### OPTIONS

Bare wire, 20 gauge

#### CERTIFICATIONS

RoHS



PART #

LNL-72-21007

## LNL HANDLE SERIES

### ES/EM POWER MODULES – HANDLE OPTIONS

LNL mechanical handles are designed and built to be power adaptable. The power module can be installed by the OEM or as aftermarket addition.



### TEAR-DROP HANDLES

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#LNL-70-00585



#LNL-70-01475

### T-SHAPE HANDLES

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#LNL-70-00655



#LNL-70-00775



#LNL-70-02475

### LEVER HANDLES

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#LNL-70-01760



#LNL-70-01780



#LNL-70-22180

*RF vs Bluetooth®  
i-Lock Blue Controller  
i-Beam Transmitter  
RF Controllers*



## WIRELESS INFORMATION

	RADIO FREQUENCY CONTROL (RF)	BLUETOOTH®
Frequency	303 MHz/433 MHz	2.4 GHz
Range	Longer range: up to 150 feet	Shorter range: 30-70 feet
Data Rate	Up to 2 Kbps	Up to 5 Mbps
Control	Key fob control	Cell phone controlled and pairing of componentry
Power	>12mA for RF radios	6mA for Bluetooth® radios
Communication Direction	One way	Two way
Security	Rolling code transmission	End-to-end encryption

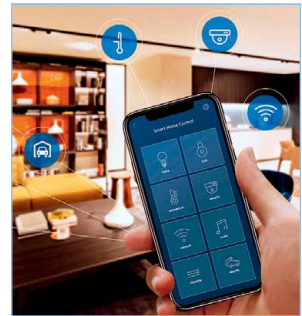
### RADIO FREQUENCY TECHNOLOGY

An affordable technology that provides longer and usable range compared to Bluetooth®. The technology consists of an RF remote transmitter (such as a key fob) and a receiver (control box). A control signal is transmitted from the remote side to the receiver in the form of messages over electromagnetic radio waves. The signal is received at the control box end and is interpreted to determine an action. The RF signal is not an end-to-end encrypted communication, however can be secured using a rolling code which changes with every transmission.



### BLUETOOTH® TECHNOLOGY

Bluetooth® allows devices to communicate with each other peer to peer without cables or wires. Bluetooth relies on short-range radio frequency, and any device that incorporates the technology can communicate if it is within the required distance. The technology is an electronics standard which means manufacturers can include all features in their personal devices such as smart phones. These specifications ensure that the devices can recognize and interact with other devices that all use Bluetooth technology. Once a connection is made, the connection is locked, secured, and encrypted end to end between devices. Bluetooth also allows for meshing the wireless signals. It uses other Bluetooth devices within range that can relay communications to reach devices that are out of range of the origin device.



# i-LOCK BLUE CONTROL SYSTEM CONTROLLER



## SPECIFICATIONS

### POWER SPECIFICATIONS

**12VDC OPERATION:** Constant power source such as vehicle/machine power

**LOW POWER CONSUMPTION MODE:** Draws 6mA of continuous electrical current in standby mode

### COMMUNICATION

**2.4 GHz RF BLUETOOTH® 4.0:** Multi user connectivity; other devices in system connect via Bluetooth®

**i-LOCK BLUE APP:** iOS; Android OS

### OUTPUTS

**3 INDIVIDUAL OUTPUTS**

**6VDC – 12VDC (+/- 10%)**

**OUTPUT CURRENT:** 9A peak, 4.5A continuous, per output

*Output can be programmed to device specification types via app*

### INPUTS

**2 INPUTS:** Via push button or other normally open switching device

**3.3V SUPPLY USED FOR LED ILLUMINATION:** Voltage supply turned on when connected device is in range

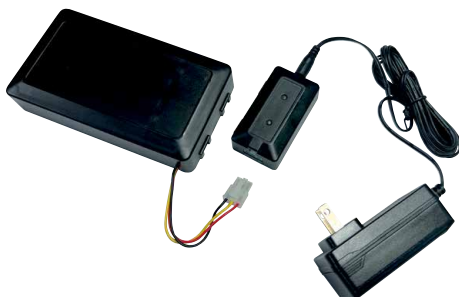
**OUTPUT CONTROL:** Multi-button press responses; multi-output control (set up via app)

### ENVIRONMENTAL SPECIFICATIONS

**OPERATING TEMPERATURE RANGE:**  
-20°C to 80°C ~95% RH

### CERTIFICATIONS

RoHS



## FEATURES

- i-Lock Blue/Bluetooth® control system, connects to Android™ and iPhone app for setup and controlling
- 12VDC power
- LED indicator; pairing and battery life (if connected)
- 3 outputs, 2 inputs
- Discreet connectors on outputs/inputs
- Can pair with multiple devices in the i-Lock series of products

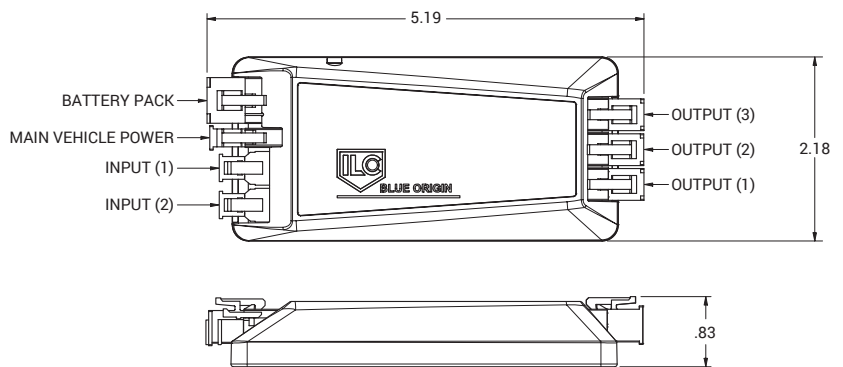
## SYSTEM OPTIONS

### INPUT:

- i-Beam
- LED button switch
- Foot swipe sensor

### OUTPUT:

- Locking power module
- Linear powered rotary latch
- Electronic rotary latch
- LED light



PART #	DESCRIPTION
EBX800-010	i-Lock Blue control module
EBX800-018	Lithium battery pack charger
EBX800-019	12V power adapter

## i-LOCK BLUE i-BEAM CONTROLLER



i-Beam pairs with i-Lock Blue to transmit signal from vehicle door (or other device) to i-Lock Blue to activate devices that are connected to the outputs on i-Lock Blue.

### SPECIFICATIONS

#### POWER SPECIFICATIONS

12VDC OPERATION: Constant power source such as vehicle/machine power

#### COMMUNICATION

2.4 GHz RF BLUETOOTH® 4.0:

Wirelessly connects to other i-Lock accessories; i-Lock Blue

i-LOCK BLUE APP: iOS; Android OS

#### OUTPUTS

SENDS BLUETOOTH® ACTIVATION SIGNAL TO CONNECTED i-LOCK DEVICES

#### INPUTS

READS SIGNAL FROM OEM KEY FOB ACTIVATION

LOCK/UNLOCK:

Unlock signal from door actuator;

lock signal from door actuator

#### ENVIRONMENTAL SPECIFICATIONS

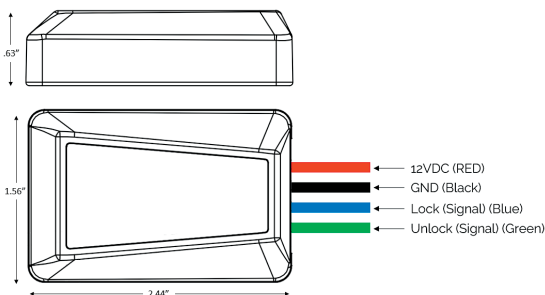
OPERATING TEMPERATURE RANGE:

-20°C to 80°C ~95% RH

#### CERTIFICATIONS

RoHS

PART #
EBX800-011



## i-LOCK BLUE SERIES APP



Control the i-Lock Blue family of products only by Eberhard®

### i-Lock Blue 2.0

- Available on the App Store
- Google Play - Coming Soon



### FEATURES

- All new user interface
- Control more wired devices on i-Lock Blue controllers
- Personalize names for your devices or controllers
- Add multiple i-Lock controllers and/or devices to your app
- Enhanced security
- Control the new EM Rotary Latch
- Allows for a push button input to release multiple devices with a single click
- App branding: Allows for other manufacturers to brand the app utilizing the i-Lock technology

# 433 Hz RF CONTROL SYSTEM

## LOAD N LOCK



### FEATURES

- 433 Hz RF control system
- (2) 3 button key fobs
- 12VDC power
- 1 output, 2 inputs paired
- Gang style plug

### SPECIFICATIONS

#### POWER SPECIFICATIONS

**12VDC OPERATION:** Constant power source, such as vehicle/machine power

**LOW POWER CONSUMPTION MODE:** Draws 12mA of electrical current in standby mode

#### COMMUNICATION

**433 MHz RADIO FREQUENCY (RF):** Communication with up to 3 total paired key fobs (range up to 60 ft.)

#### OMNIDIRECTIONAL ANTENNA

#### OUTPUTS

1 OUTPUT SPLIT TO 2 + 1 LED

12VDC (+/- 10%): Max amp draw (20A peak, 4.5A continuous) per output

**OUTPUT OPERATIONAL TIMING SEQUENCE:** 500 mS pull, 500 mS push, off

**LED OPERATIONAL TIMING SEQUENCE:** On/off; turns off in 5 minutes

#### INPUTS

2 INPUTS PAIRED WITH OUTPUTS

**INPUT SIGNALS DEFAULTED TO HIGH 12VDC:** Low setting available via jumper

**INPUT 1:** Output all

**INPUT 2:** Output controlled by key fob

**DISABLE:** Turns off all outputs when on

#### ENVIRONMENTAL SPECIFICATIONS

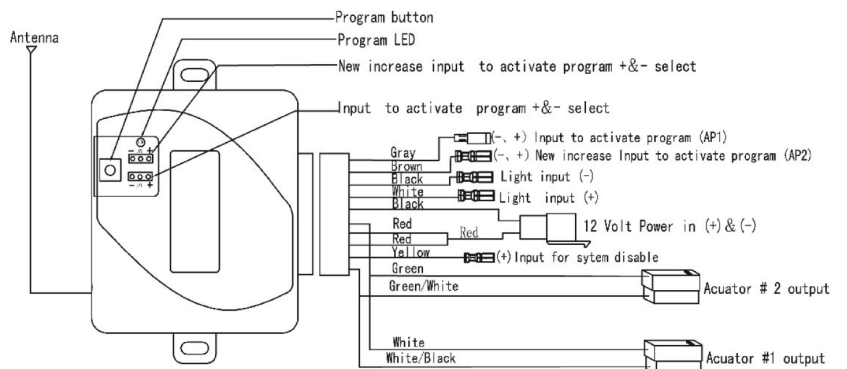
**OPERATING TEMPERATURE RANGE:** -20°C to 80°C ~95% RH

#### OPTIONS

Includes 2 key fobs

#### CERTIFICATIONS

RoHS



PART #	DESCRIPTION
LNL-72-00901	RF Controller with 2 keys
LNL-72-01901	Key fobs

## 433 Hz RF CONTROL SYSTEM

### i-LOCK



### FEATURES

- 433 Hz RF control system
- (2) 4 button key fobs
- 12VDC power
- 4 outputs, 2 inputs, paired
- Discreet connectors for outputs/inputs
- Programmed for auto relock (optional)

### SPECIFICATIONS

#### POWER SPECIFICATIONS

12VDC OPERATION: Constant power source, such as vehicle/machine power

LOW POWER CONSUMPTION MODE: Draws 12mA of electrical current in standby mode

#### COMMUNICATION

433 MHz RADIO FREQUENCY (RF):  
Communication with up to 3 total paired key fobs (range up to 60 ft.)

ROLLING SECURITY CODE PAIRING

OMNIDIRECTIONAL ANTENNA

#### OUTPUTS

3 INDIVIDUAL OUTPUTS + 1 LED  
(2 PIN MOLEX CONNECTORS)

12VDC (+/- 10%)

OUTPUT CURRENT: 20A per output

OUTPUT OPERATIONAL TIMING SEQUENCE:  
500 mS pull, 500 mS push, off

LED OPERATIONAL TIMING SEQUENCE:  
On/off; turns off in 5 minutes

#### INPUTS

2 INPUTS PAIRED WITH OUTPUTS

INPUT SIGNALS DEFAULTED TO HIGH 12VDC:  
Ground (-) signal available via jumper

INPUT 1: Key fob input to output

INPUT 2: Output all + LED

DISABLE: Turns off all outputs when on

#### ENVIRONMENTAL SPECIFICATIONS

OPERATING TEMPERATURE RANGE:  
-20°C to 80°C ~95% RH

IP RATING: IP42 when installed in horizontal position

#### OPTIONS

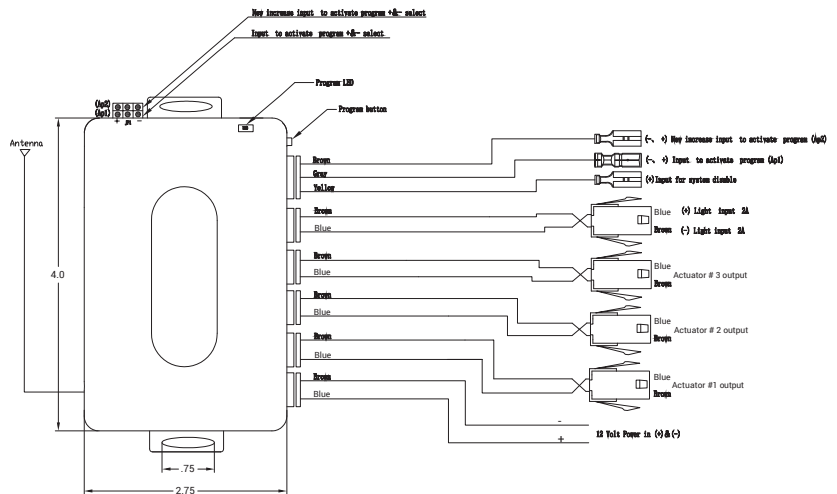
Includes 2 key fobs

#### CERTIFICATIONS

LNL-72-00912: IP42

LNL-72-01912: IC-ID – Canada,  
C-Tick – AUS/New Zealand, FCC – USA

RoHS



PART #	DESCRIPTION
LNL-72-00910	RF Controller with 2 keys
LNL-72-01910	Key fobs

# 303 Hz RF CONTROL SYSTEM POWER-UP



## FEATURES

- 303 Hz RF control system
- (2) 4 button key fobs
- 12VDC power
- 1 output for devices/1 output for LED

## SPECIFICATIONS

### POWER SPECIFICATIONS

**12VDC OPERATION:** Constant power source, such as vehicle/machine power

**LOW POWER CONSUMPTION MODE:** Draws 15mA of electrical current in standby mode

**PASS THRU OUTPUT POWER:** 40A peak per output

### COMMUNICATION

**303 MHz RADIO FREQUENCY (RF):** Communication with up to 4 total paired key fobs (range up to 150 ft.)

**ROLLING SECURITY CODE PAIRING**

**OMNIDIRECTIONAL ANTENNA**

### OUTPUTS

**1 INDIVIDUAL OUTPUT + 1 LED:** Multiple devices daisy chained together; up to 16 devices with special cable

**12VDC (+/- 10%):** Max amp draw (40A peak) per output

**OUTPUT OPERATIONAL TIMING SEQUENCE:** 500 mS pull, 500 mS push, off

**LED OPERATIONAL TIMING SEQUENCE:** On/off

### INPUTS

**KEY FOB**

**LOCK/UNLOCK WIRE**

### ENVIRONMENTAL SPECIFICATIONS

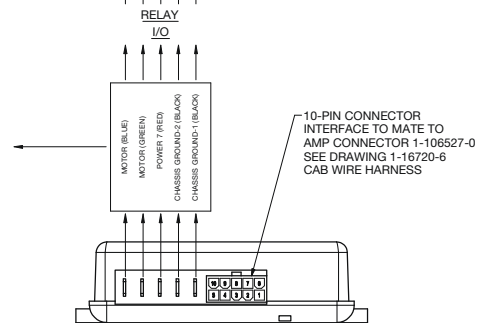
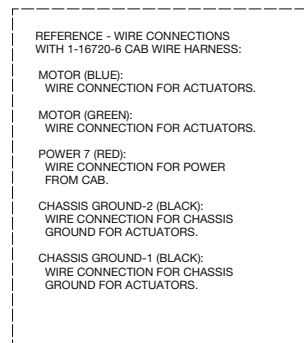
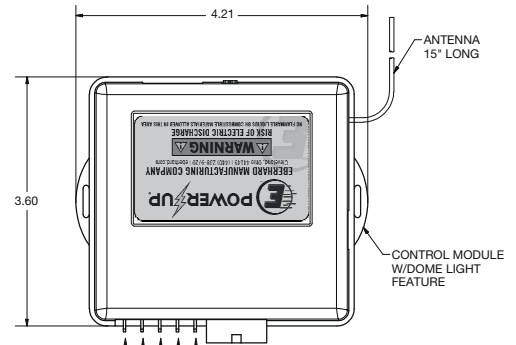
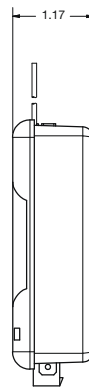
**OPERATING TEMPERATURE RANGE:** -20°C to 80°C ~95% RH

### OPTIONS

Includes 2 key fobs

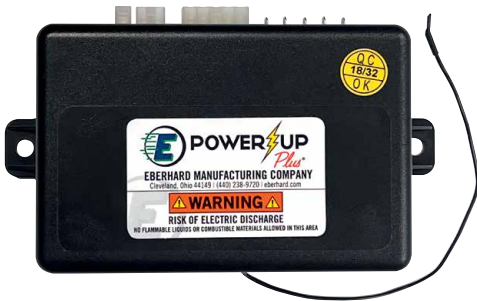
### CERTIFICATIONS

FCC – USA, RoHS



PART #	DESCRIPTION
1-16720-50PK-01	RF Controller with 2 keys
16720-5-01	Key fobs

## 433 Hz RF CONTROL SYSTEM POWER-UP PLUS



### FEATURES

- 433 Hz RF control system
- (2) 4 button key fobs
- 12VDC power
- Programmed for siren and/or light function

### SPECIFICATIONS

#### POWER SPECIFICATIONS

**12VDC OPERATION:** Constant power source, such as vehicle/machine power

**LOW POWER CONSUMPTION MODE:** Draws 15mA of electrical current in standby mode

**PASS THRU OUTPUT POWER:** 40A peak per output

#### COMMUNICATION

**433 MHz RADIO FREQUENCY (RF):** Communication with up to 3 total paired key fobs (range up to 100 ft.)

**ROLLING SECURITY CODE PAIRING**

**OMNIDIRECTIONAL ANTENNA**

#### OUTPUTS

**1 INDIVIDUAL OUTPUT + 1 LED + SIREN:** Multiple devices daisy chained together; up to 16 devices with special cable

**12VDC (+/- 10%):** Max amp draw (40A peak) per output

**OUTPUT OPERATIONAL TIMING SEQUENCE:** 500 mS pull, 500 mS push, off

**LED OPERATIONAL TIMING SEQUENCE:** On/off

#### INPUTS

**KEY FOB**

**LOCK/UNLOCK WIRE**

#### OPTIONS

Includes 2 key fobs

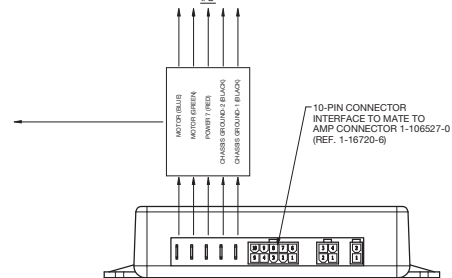
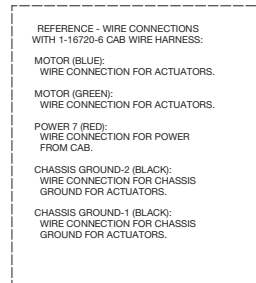
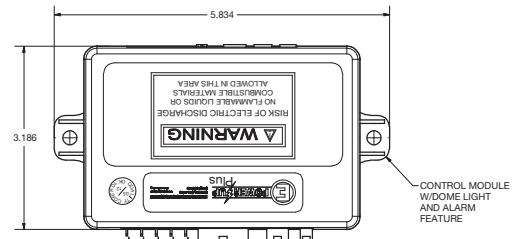
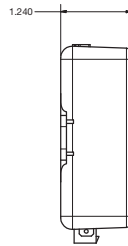
#### ENVIRONMENTAL SPECIFICATIONS

**OPERATING TEMPERATURE RANGE:**

-20°C to 80°C ~95% RH

#### CERTIFICATIONS

FCC – USA, RoHS



PART #	DESCRIPTION
16835-50PK-01	RF Controller with 2 keys
16835-15-01	Key fobs

# CONTROL SYSTEM COMPARISON CHART

	i-Lock Blue	i-Lock i-Beam	RF Control System LNL-72-00910-PK	RF Original LNL (00901)	RF Power-Up – Eberhard®	RF Power-Up Plus – Eberhard®
<b>Operating Voltage</b>						
	12	12	12	12	12	12
<b>Current Draw</b>						
Standby	6mA	6mA	12mA	12mA	15mA	15mA
Peak per Output	9A	–	20A	14A	40A	40A
<b>Number of Outputs (Max)</b>						
	3	–	3 + LED	2 + LED	16 + LED	16 + LED + Siren
<b>Communication</b>						
Type	Bluetooth®	Bluetooth®	RF	RF	RF	RF
Frequency	2.4 GHz	2.4 GHz	433 MHz	433 MHz	303 MHz	433 MHz
Range	30 ft.	30 ft.	Up to 100 ft.*	Up to 100 ft.*	Up to 200 ft.*	Up to 150 ft.*
<b>Control</b>						
Phone App	✓	✓	–	–	–	–
Key Fob	–	–	✓	✓	✓	✓
Works with OEM Key Fob	–	✓	✓	✓	–	–
Encrypted	✓	✓	✓	–	✓	✓
Over the Air Updates	✓	✓	–	–	–	–
<b>Output</b>						
Number of Output Types	∞	–	3	3	3	4
Forward and Reverse Sequence	✓	–	✓	✓	✓	✓
LED Light	✓	–	✓	✓	✓	✓
Siren	–	–	–	–	–	✓
Two-Way Operation	✓	–	–	–	–	–
One-Way Operation	✓	–	✓	✓	✓	✓
User Selectable	✓	–	–	–	–	–
<b>Inputs</b>						
Number of Inputs	2	–	3	3	2	2
3.3V Powered Input	✓	–	–	–	–	–
Multi-Activation	✓	–	–	–	–	–
<b>Environmental</b>						
IP Rated	–	–	✓	–	–	–
-20°C to 80°C	✓	✓	✓	✓	✓	✓

\*Line of sight in unobstructed conditions.

## ACTIVATORS

*LED Push Button Switches  
Wiring Harnesses*



# PUSH BUTTON SWITCHES



## FEATURES

- Indoor/outdoor rated, IP65
- Mechanical push button
- LED rim, blue
- Wire harness/connector options

## SPECIFICATIONS

### POWER SPECIFICATIONS

LED

3.3/12V, 20mA

12VDC, 15A

### ENVIRONMENTAL SPECIFICATIONS

OPERATING TEMPERATURE RANGE:

-30°C to 80°C

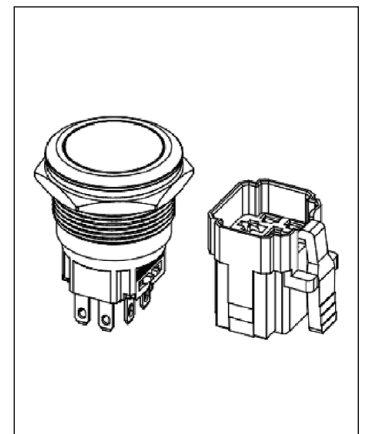
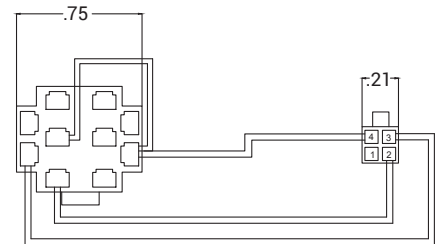
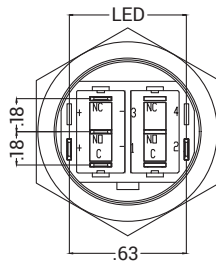
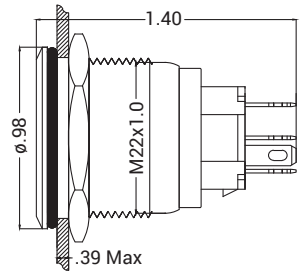
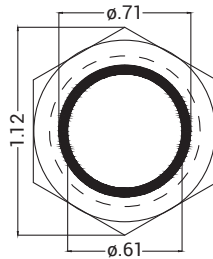
IP RATING: IP67

### INSTALLATION SIZE

22mm

### CERTIFICATIONS

RoHS, CE – EU



PART #	LED	MATERIAL/COLOR	CONNECTOR	CONTACT CURRENT	LED POWER
EBX810-001-87	White	Black oxide	Bare wire	15A	12V, 20mA
EBX800-016-66	Blue	Black anodized	Molex® Micro-Fit 4 pin	3A	3.3V, 20mA
EBX800-016-87	Blue	Black anodized	Molex® Micro-Fit 4 pin	3A	3.3V, 20mA

# WIRING HARNESSES

The following wiring harnesses can be supplied by Eberhard® to complete your electro-mechanical system:



POWER-UP RF CONTROLLER WIRING HARNESSES			
PART #	DESCRIPTION	WIRE GAUGE	CONNECTORS
16720-6-01	Truck cab wiring harness	18	Power (ring terminals) to vehicle (HULANE W06FW-M)
1-16720-6-01	Truck cab wiring harness with dome light	18	Power (ring terminals) to vehicle (HULANE W06FW-M)
16720-7-06	Utility body compartment wiring harness	14/18	HULANE W06MW-M to 2x HULANE W03FG-Y
16720-8-01	Relay wire harness – extension	14/18	Power (ring terminals) to vehicle (HULANE W06FW-M)
16720-9-01	Utility compartment body wiring harness – extension	14/18	HULANE W03MW-M to female spade terminals
i-LOCK BLUE CONTROLLER WIRING HARNESSES			
<b>Output Wire Harnesses</b>			
EBX800-100-03-01	3 ft. length	18	4C Molex® Micro-Fit to bare wire
EBX800-100-06-01	6 ft. length	18	4C Molex® Micro-Fit to bare wire
EBX800-100-10-01	10 ft. length	18	4C Molex® Micro-Fit to bare wire
EBX800-100-12-01	12 ft. length	18	4C Molex® Micro-Fit to bare wire
<b>Power Wire Harnesses</b>			
EBX800-101-03-01	3 ft. length	16	2C Molex® Micro-Fit to bare wire
EBX800-101-06-01	6 ft. length	16	2C Molex® Micro-Fit to bare wire
EBX800-101-10-01	10 ft. length	16	2C Molex® Micro-Fit to bare wire
EBX800-101-12-01	12 ft. length	16	2C Molex® Micro-Fit to bare wire
LOAD N LOCK CONTROLLER WIRING HARNESSES			
LNL-72-00551	Wire harness, truck, 3 wire, 00901	16	3 way amp to ring terminal x 2/female bullet
LNL-72-00552	Wire harness, tonneau, 3 wire, 00901	16-20	3 way amp to 2x bullet/female spade/2 way amp
LNL-72-00964	Wire harness, power lock module	16	10 pin amp to 2x amp/bullet/female spade
LNL-72-00995	Wire harness, tonneau, 2 wire, 00901	16-20	3 way amp to 2x bullet/female spade/2 way amp
LNL-72-01101	Button kit, black w/6 ft. wire harness	18	Female spades to ring/bullet
<b>Kits</b>			
LNL-72-01100	Keyless entry kit, tonneau	Various	LNL-72-00551/00552/00965/01101
LNL-72-01102	Wire harness kit, truck, 3 conductor	16	LNL-72-00551 and zipties
LNL-72-01104	Wire harness kit, tonneau, 2 conductor	16-20	LNL-72-00995 and cable ties and screws
LNL-72-01108	Keyless entry kit, truck	Various	LNL-72-00551/00552/00964/01101
EBERHARD® RF CONTROLLER WIRING HARNESSES			
<b>Output Wire Harnesses – Connector Color: Black - 00/White - 01/ Red - 02</b>			
LNL-72-013xx-03-01	3 ft. length	18	2C Molex® Micro-Fit to bare wire
LNL-72-013xx-06-01	6 ft. length	18	2C Molex® Micro-Fit to bare wire
LNL-72-013xx-10-01	10 ft. length	18	2C Molex® Micro-Fit to bare wire
LNL-72-013xx-12-01	12 ft. length	18	2C Molex® Micro-Fit to bare wire
<b>Power Wire Harnesses</b>			
LNL-72-01302-03-01	3 ft. length	16	2C Molex® Micro-Fit (red) to bare wire
LNL-72-01201-03-01	3 ft. length, waterproof	16	2C Molex® Micro-Fit (red) to TE C-282080 (weatherproof)
LNL-72-01302-06-01	6 ft. length	16	2C Molex® Micro-Fit (red) to bare wire
LNL-72-01201-06-01	6 ft. length, waterproof	16	2C Molex® Micro-Fit (red) to TE C-282080 (weatherproof)
LNL-72-01302-03-01	10 ft. length	16	2C Molex® Micro-Fit (red) to bare wire
LNL-72-01201-03-01	10 ft. length, waterproof	16	2C Molex® Micro-Fit (red) to TE C-282080 (weatherproof)
LNL-72-01302-03-01	12 ft. length	16	2C Molex® Micro-Fit (red) to bare wire
LNL-72-01201-03-01	12 ft. length, waterproof	16	2C Molex® Micro-Fit (red) to TE C-282080 (weatherproof)
<b>Input Wire Harness</b>			
LNL-72-01303	Input cable, 5.5 in.	18	3C Molex® Micro-Fit to 2x female spade/bullet

For technical information on any of our electro-mechanical products, please visit our website or contact us:

**Email:** [emtechsupport@eberhard.com](mailto:emtechsupport@eberhard.com)

**Phone:** 440-238-9720 ext. 8

**Website:** [www.eberhard.com/emtechsupport](http://www.eberhard.com/emtechsupport)



Below, are the installation manuals and technical documents available for download on our technical support page.

#### LOAD N LOCK

- Load N Lock Keyless Remote Entry Kit Instructions

#### REMOTE KEY FOB

- RF Keyless Entry Receiver with Key fob (4 Button, 4 Output)

#### POWER-UP & POWER-UP PLUS

- Power-Up Locking System Installation Instructions
- Power-Up Plus Locking System with Alarm Installation Instructions

#### RF CONTROL SYSTEM

- RF Keyless Entry Receiver with Key fob (3 Button, 2 Output)

#### POWER POP

- Power Pop Instructions

#### VEHICLE DOOR WIRING

- Vehicle Wiring for Door Locks





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