Permit 2021 1949607 -LT RSN 1528550

City of Aurora Building Division
Project: *TMCOA - L0033 - ACCESS CONTROL*
Address: *1501 S POTOMAC ST*
Occupancy Group: *I2*
Construction Type: *1A-Spk*
RSN: *1528550*
Permit: *2021 1949607-LT*

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: *Kirk Nagle*
Date: *Mar 30, 2021*
2015 INTERNATIONAL CODES & 2020 NEC

Field Inspection consultation is available upon request. Call 303-739-7420 to request a consultation

PLAN CHANGES WILL REQUIRE AN APPROVED REVISION BEFORE INSPECTION CAN BE APPROVED

Must be available on jobsite for Inspections and printed in color full size.

Code violations that are found during inspection are required to be corrected. Permit issuance does not grant approval of a code violation.

SEPARATE FIRE SPRINKLER PERMIT REQUIRED:
Due to the proposed work the general contractor is required to obtain the services of a fire sprinkler contractor to determine if a separate sprinkler permit is required. If it is determined that the spacing of the fire sprinkler heads is not in compliance, then a separate fire sprinkler permit is required. Approval of the documents is required prior to system installation or any request for inspection. A certificate of occupancy or final approval cannot be issued by the Building Division without this fire protection system. **2015 IFC, Section 105.7.1.**

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1501 SOUTH POTOMAC STREET
AURORA, CO 80012

SCOPE OF WORK

CONVERGINT TECHNOLOGIES LLC HAS BEEN CONTRACTED TO ADD 2 DOORS TO AN EXISTING ACCESS CONTROL SYSTEM. THE WORK INCLUDES THE INSTALLATION OF A NEW ACCESS CONTROL BOARD AND ACCESS CONTROL DEVICES. THE ACCESS CONTROL PANEL AND POWER SUPPLY ARE GOING TO SUPPORT 2 ADDITIONAL DOORS. THE DEVICES SUPPORTED INCLUDE: CARD READERS, MAGNETIC LOCKS, DOOR CONTACTS, REQUEST TO EXIT BUTTONS, CRASH BARS, A FIRE ALARM RELAY IS EXISTING.

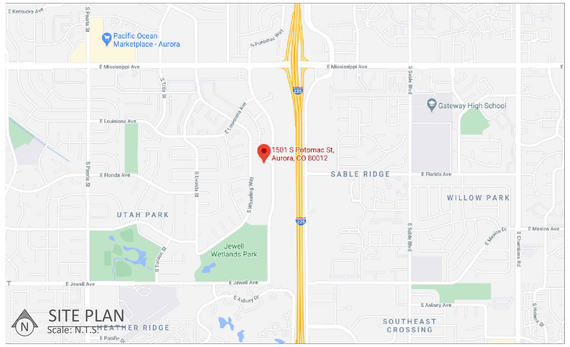
BUILDING INFORMATION

OCCUPANCY TYPE: I
FIRE SPRINKLERED: YES
HIGH RISE: YES
STORIES: 5

APPLICABLE CODES

2018 INTERNATIONAL BUILDING CODE
2018 INTERNATIONAL FIRE CODE
2020 NATIONAL ELECTRIC CODE

Project Manager: KEVIN TAPLIN
Phone #: 303-932-0757



DRAWING INDEX

SEC-01	COVER SHEET
FL-01	FLOOR PLAN SECURITY LAYOUT
OL-01	ONE-LINE DIAGRAM
DE-01	DOOR ELEVATIONS & WIRING DETAILS

EQUIPMENT LEGEND

SYMBOL	DESCRIPTION	PROVIDED BY	MANUFACTURER	PART NUMBER
ACP	ACCESS CONTROL PANEL(EXISTING)	OTHERS	MANUFACTURER	PART #
-----	ACCESS CONTROL CONTROLLER	CONVERGINT	LENEL	LNL-1320-S3
ACP	ACCESS CONTROL POWER SUPPLY	CONVERGINT	ALTRONIX	AL600ULACMJ
CR	CARD READER	CONVERGINT	ADI	MT15
M	MAGNETIC LOCK	CONVERGINT	SCHLAGE	M490
CB	CRASH BAR	OTHERS	SARGENT	SERIES 88
DC	DOOR CONTACT	CONVERGINT	GRI	180-12WG-G
ADO	AUTO DOOR OPENER	OTHERS	DITEC	HA-8
FA	FIRE ALARM RELAY(EXISTING)	OTHERS		

Convergint TECHNOLOGIES
7330 S. Alton Way Ste. 12K
Centennial, Colorado 80112
Phone: 303-932-0757 Fax: 303-932-1333

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REV	DESCRIPTION	DATE	APPROVED
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2			
3			
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5			

DRAWN BY: MATHEW PHIBBS
PROJECT ENGINEER: BOB ROWLAND
PROJECT MANAGER: KEVIN TAPLIN
JOB NUMBER: 350SNL0033
SCALE: AS SHOWN DATE: 03/12/2021

ACCESS CONTROL

COVER SHEET

DRAWING: SEC-01

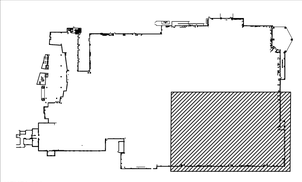
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Exit signs per IBC 1013 if needed

SECURITY LAYOUT VIEW - 1ST FLOOR
Scale: 1/8" = 1'-0"
0 2 5 10 20 30



KEYPLAN:
HATCHED AREA DENOTES AREA SHOWN

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ACCESS CONTROL

FLOOR PLAN
SECURITY LAYOUT

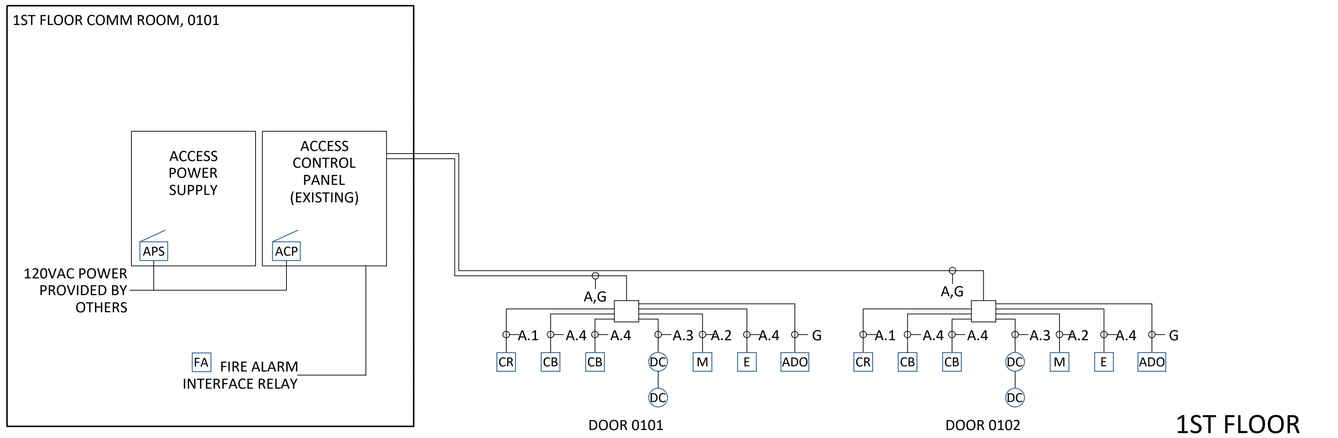
DRAWING: FL-01

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This sheet of drawings has not been reviewed for code compliance.

CABLE SCHEDULE

WIRE NO.	CABLE FUNCTION	CABLE TYPE	OUTSIDE DIAMETER
A	COMBINATION CABLE	- PLENUM	.415" NOM
A.1	- CARD READER CABLE	- 22/6 TWISTED, SHIELDED, STRANDED	
A.2	- LOCK POWER CABLE W/ OPTIONAL INTEGRATED REX CABLE	- 18/4 TWISTED STRANDED	
A.3	- DOOR CONTACT CABLE	- 22/2 TWISTED STRANDED	
A.4	- REQUEST TO EXIT CABLE	- 22/4 TWISTED STRANDED	
B	CARD READER CABLE	- 22/6 TWISTED, SHIELDED, STRANDED PLENUM	.163" NOM
C	LOCK POWER CABLE W/ OPTIONAL INTEGRATED REX CABLE	- 18/4 TWISTED STRANDED PLENUM	.184" NOM
D	PASSIVE INFRARED REQUEST TO EXIT CABLE	- 22/4 TWISTED STRANDED PLENUM	.150" NOM
E	DOOR CONTACT CABLE	- 22/2 TWISTED STRANDED PLENUM	.126" NOM
F	KEY SWITCH CABLE	- 18/2 TWISTED STRANDED PLENUM	.158" NOM
G	EMERGENCY EXIT BUTTON CABLE	- 22/2 TWISTED STRANDED PLENUM	.126" NOM
H	CAMERA CABLE	- CAT 6	.175" NOM
J	485 BUS COMMUNICATION CABLE	- 18/4 TWISTED STRANDED PLENUM	.184" NOM



ACCESS CONTROL SYSTEM ONE-LINE DIAGRAM

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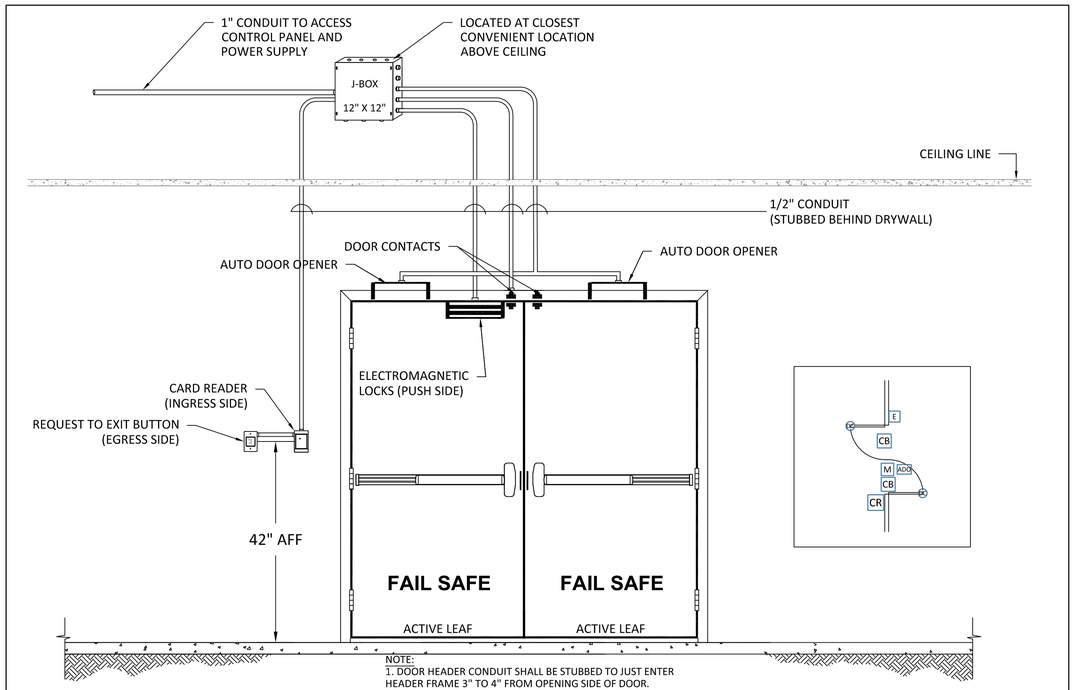
ACCESS CONTROL

ONE-LINE DIAGRAM

DRAWING: OL-01

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NOTE:
1. DOOR HEADER CONDUIT SHALL BE STUBBED TO JUST ENTER HEADER FRAME 3" TO 4" FROM OPENING SIDE OF DOOR.
2. ALL CONDUIT AND WIRING BY ELECTRICAL CONTRACTOR.
3. ADJUST DEVICE ROUGH-IN FOR APPROPRIATE DOOR SWING

1 DOUBLE DOOR WITH READER, MAGNETIC LOCK, DOOR CONTACTS, AND PUSH-TO-EXIT BUTTON

SCALE: NONE

SEQUENCE OF OPERATIONS:

DOOR WILL BE LOCKED AT ALL TIMES. THE DOOR WILL HAVE TWO DOOR CONTACTS THE DOOR CONTACTS ARE FOR DOOR POSITION STATUS ONLY.

INGRESS: PASSING A CARD VALIDATED FOR ENTRY OVER THE CARD READER WILL ACTIVATE THE DOOR RELAY ON THE CONTROL BOARD, DE-ENERGIZING THE MAGNETIC LOCK AND CRASH BARS TO UNLOCK THE DOORS AND THEN ACTIVATING THE AUTO DOOR OPENER AND ALLOWING PERSONNEL TO ENTER THE DOOR.

AFTER A PROGRAMMABLE TIME PERIOD THE DOOR RELAY ON THE CONTROL BOARD WILL DE-ACTIVATE CAUSING THE AUTO DOOR OPENER TO CLOSE AND MAGNETIC LOCK TO RE-ENERGIZE, SECURING THE DOORS FROM THE ENTRANCE SIDE.

EGRESS: FREE MECHANICAL EGRESS WILL BE MAINTAINED AT ALL TIMES. THE MAGNETIC LOCK IS ONLY ON THE INGRESS SIDE. AS AN INDIVIDUAL APPROACHES THE DOORS, THE REQUEST TO EXIT BUTTON WILL DE-ENERGIZE THE MAGNETIC LOCK ON THE EGRESS DOOR AND CRASH BAR ON BOTH DOORS AND ACTIVATE THE AUTOMATIC DOOR OPENER, ALLOWING PERSONNEL TO EXIT FREELY. IN THE EVENT OF REQUEST TO EXIT BUTTON FAILURE, THE CRASH BAR CAN BE DEPRESSED ALLOWING PERSONNEL TO EGRESS.

ONLY THE INGRESS DOOR HAS A MAGNETIC LOCK, ALL EGRESS DOORS WILL ONLY HAVE ELECTRIFIED CRASH BARS, WHERE FREE MECHANICAL EGRESS IS MAINTAINED AT ALL TIMES.

AN ACCESS CONTROL CARD WILL BE LOCATED IN THE KNOX BOX FOR EMERGENCY PERSONNEL TO HAVE ACCESS TO ALL ACCESS CONTROLLED DOORS.

APPLICABLE DOORS:

DOOR #0101
DOOR #0102

Convergint TECHNOLOGIES

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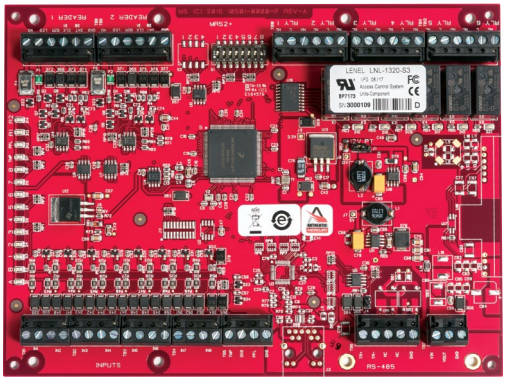
DOOR ELEVATIONS & WIRING DETAILS

DRAWING: DE-01

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LNL-1320 Series 3

Dual Reader Interface Module



Overview

Lenel offers a Dual Reader Interface (DRI) module for access control solutions. Most access control card readers, keypads, or readers with keypads that use standard Wiegand Data1/Data0 or Clock/Data communication are supported, as are those that support the bidirectional RS-485 Open Supervised Device Protocol (OSDP™). Lock, unlock, and facility code offline access modes are supported on all readers connected to the DRI. Each DRI supports up to 16 different card formats as well as issue codes for both magnetic and Wiegand card formats.

The DRI provides a vital link between the Intelligent System Controller (ISC) and the card reader attached to the interface. As many as 32 DRI modules can be multidropped using RS-485 2-wire or 4-wire communication up to 4,000 feet per port away from the ISC. Each DRI module is individually addressed for increased reporting capabilities with OnGuard® access control software applications. The DRI includes eight inputs that support normally open, normally closed, supervised, and non-supervised circuits. In addition, six output relays support fail-safe or fail-secure operation.

Features & Functionality

- 12 or 24 VDC power supply
- Supports Data1/Data0, Clock/Data, Supervised and Unsupervised F2F and OSDP-compatible RS-485 readers and keypads
- Supports Open Supervised Device Protocol (OSDP) readers, including biometric template transfer and Secure Channel encryption
- Downloadable firmware
- Six Form-C 5 A at 28 VDC relay outputs
- Up to 16 different formats
- Issue code support for magnetic and Wiegand formats
- Door contact supervision (open/closed)
- REX push-button monitor
- Strike control output
- Bicolor reader status LED support and 2-wire LED support
- Beeper control
- Dedicated tamper and power failure circuits
- Support for offline reader access mode
- On-board jumpers for termination
- On-board regulator allows 12 VDC reader support from 24 VDC power source
- DIP switch-selectable addressing
- Advanced Encryption Standard (AES) 128-bit or 256-bit encryption supported, depending on ISC and OnGuard version
- Supports Schlage® Handkey® template download
- Compatible with current and previous versions of OnGuard

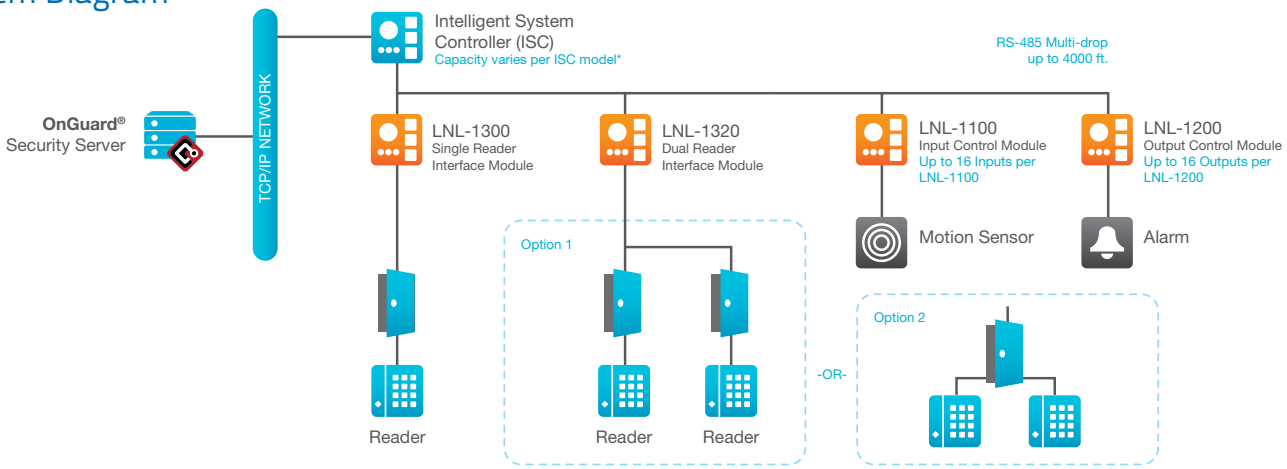
Extended Functionality

- Connect FIPS-201 readers for embedded authentication (when used with LNL-4420 and appropriate HID® and OnGuard software and licenses)

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LNL-1320 Series 3

System Diagram



* See ISC datasheets for specific capacities.

Power Supplies & Enclosures

LNL-AL400ULX	UL Listed 4A, 110VAC Power Supply – 12VDC 4A output, 115VAC input, continuous supply current with enclosure (15.5" x 12.5" x 4.5"), lock, tamper switch, UPS capable (Battery Optional) UL & CUL Approved
LNL-AL600ULX-4CB6	UL Listed Power Supply – 12VDC 6A output, 115VAC (1.6 amps) input, continuous supply current with enclosure (24" x 18" x 4.5"), lock, tamper switch, power distribution module, UPS capable (Battery Optional) UL & CUL Approved
ABT-12	Battery Kit - 12VDC, 12 AH battery (PS-12120)

Specifications

Primary Power	12 to 24Vdc ±10%, 550mA maximum (plus reader current) 12Vdc @ 550mA (plus reader current) maximum, 22.5 BTUs 24Vdc @ 330mA (plus reader current) maximum, 27.0 BTUs
Outputs	6 outputs, Form-C contacts: Normally Open (NO) Contact: 5A @ 30 Vdc, Normally Closed (NC) Contact: 3A @ 30 Vdc
Inputs	8 unsupervised/supervised, standard EOL: 1k/1k ohm, 1% 1/4 watt 2 unsupervised, dedicated for cabinet tamper and UPS fault monitoring
Reader Interface	Reader power: 12Vdc ±10% regulated, 300mA maximum each reader (jumper selectable and input voltage (VIN) must be 20Vdc minimum) or 12 to 24Vdc ±10% (input voltage passed through) 300mA maximum each reader
Reader Port Compatibility	Wiegand Data 1/Data 0 Magnetic Clock/Data Supervised and Unsupervised F2F Open Supervised Device Protocol
Mechanical	Dimension: 6" (152mm)W x 8" (203mm)L x 1" (25mm)H Weight: 11 oz. (312g) nominal
Environmental Temperature	Operating: 32°F to 158°F (0°C to +70°C) Storage: -67°F to 185°F (-55°C to +85°C)
Humidity	5% to 95% RHNC
Compliance Approvals	FCC Part 15, CE, RoHS, UL 294, UL 1076, ULC CSA-C22.2, CAN/ULC-S319-05, cUL/ORD-C1076

lenel.com

(866) 788-5095

Specifications subject to change without notice.

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2017/12 (GSP-2463)

Patent 8021164/8371867 - LT RSN 1528550

AL600ULACMJ
Power Supply/Chargers with Multi-Output Access Power Controllers

Rev. DSAL600ULACMJ_05182015



AL600ULACMJ

Overview

AL600ULACMJ converts a 115VAC 60Hz input into eight (8) independently controlled 12VDC or 24VDC Fail-Safe and/or Fail-Secure outputs with a total of 6 amp continuous supply current. These power outputs can be converted to dry form "C" contacts. Outputs are activated by an open collector sink or normally open (NO) dry trigger input from an Access Control System, Card Reader, Keypad, Push Button, PIR, etc. This unit will route power to a variety of access control hardware devices including Mag Locks, Electric Strikes, Magnetic Door Holders, etc. The outputs will operate in both Fail-Safe and/or Fail-Secure modes. This unit is designed to be powered by one common power source (factory installed) which will provide power for both the board operation and locking devices, or two (2) totally independent power sources, one (1) providing power for board operation and the other for lock / accessory power. The FACP Interface enables Emergency Egress, Alarm Monitoring, or may be used to trigger other auxiliary devices. The fire alarm disconnect feature is individually selectable for any or all of the eight (8) outputs.

Specifications

Input:

- Input 115VAC 60Hz rated @ 3.5 amp.
- Power supply input options:
  a) One (1) common power input for ACM8 and lock power (factory installed).
  b) Two (2) isolated power inputs - One (1) to power the ACM8 and one (1) for lock accessory power, (external power supply is required). Current is determined by the power supply connected, not to exceed a maximum of 10 amp total.
- Eight (8) Access Control System trigger inputs. Input options:
  a) Eight (8) normally open (NO) inputs.
  b) Eight (8) open collector inputs.
  c) Any combination of the above.

Output:

- 12VDC or 24VDC @ 6 amp supply current.
- Eight (8) independently controlled outputs. Output options:
  a) Eight (8) Fail-Safe and/or Fail-Secure power outputs.
  b) Eight (8) form "C" 5 amp rated relay outputs
  c) Any combination of the above.
- Eight (8) auxiliary power outputs (unswitched)
- Output ratings:
  - Fuses are rated @ 3.5 amp.
- Filtered and electronically regulated outputs (built-in power supply).

Supervision:

- AC fail supervision (form "C" contacts).
  - Notification trigger is selectable for 30 seconds (factory set) or 6 hours.
- Low battery and battery presence supervision (form "C" contact).

Features:

- Fire Alarm disconnect (latching or non-latching) is individually selectable for any or all of the eight (8) outputs.
- Fire Alarm disconnect input options:
  a) Normally open (NO) or normally closed (NC) dry contact input.
  b) Polarity reversal input from FACP signaling circuit.
- Alarm output relay indicates that FACP input is triggered (form "C" contact rated @ 1 amp 28VDC not evaluated by UL).
- Short circuit and thermal overload protection.

Visual Indicators:

- Red LEDs indicate outputs are triggered (relays energized).
- Green LED indicates FACP disconnect is triggered.
- AC input and DC output LED indicators.

Battery Backup:

- Built-in charger for sealed lead acid or gel type batteries.
- Power Supply Board maximum charge current 0.7 amp.
- Automatic switch over to stand-by battery when AC fails.
- Zero voltage drop when unit switches over to battery backup (AC failure condition).

Electrical:

- Operating temperature: 0º C to 49º C ambient.
- ACM8 board main fuse is rated at 10 amp.
- BTU/Hr.:
  - 12VDC: 36.85 BTU/Hr.
  - 24VDC: 73.70 BTU/Hr.

Mechanical:

- 18" x 14.5" x 4.625" (457.2mm x 368.3mm x 117.48mm).
- Enclosure accommodates up to two (2) 18AH batteries.
- Product weight (approx.): 14.85 lbs. (6.74 kg).
- Shipping weight (approx.): 17.1 lbs. (7.76 kg).

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Agency Approvals

UL Listed for Access Control Systems Units (UL 294).

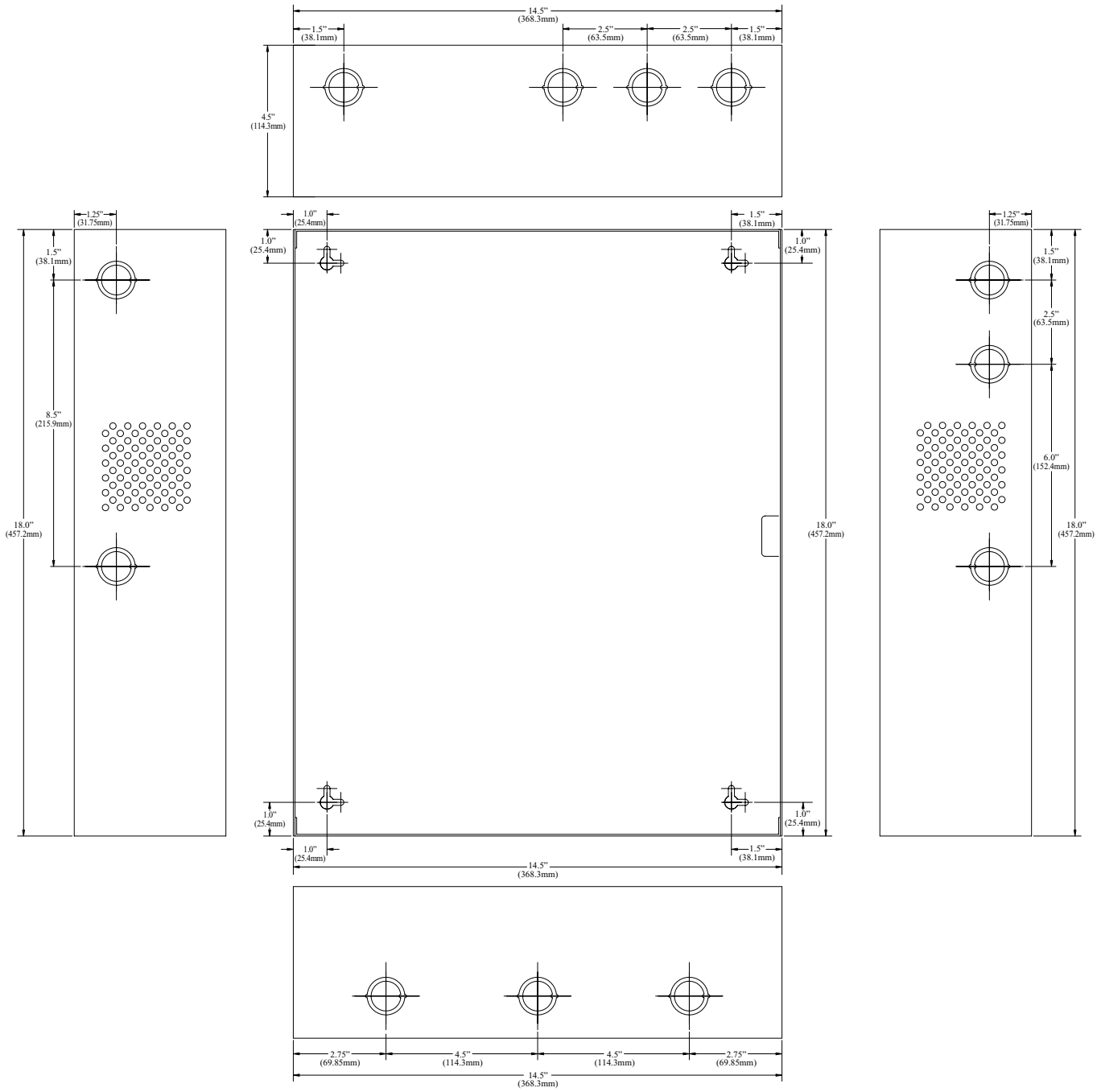
CUL Listed - CSA Standard C22.2 No.205-M1983 Signal Equipment.

MEA Approved — MEA - NYC Department of Buildings Approved.

CSFM - California State Fire Marshal Approved.

Enclosure Dimensions *(H x W x D approximate)*:

18” x 14.5” x 4.625” (457.2mm x 368.3mm x 117.48mm)



ALLEGION

SCHLAGE

Multi-technology readers



Overview

Schlage® multi-technology readers are designed to simplify your access control solutions and allow a transition from existing population proximity or magnetic stripe to more secure encrypted card technology at your own pace—without having to change readers as new technologies are available. Five available models to fit any need and works with multiple form factors including wristbands, cards, fobs and tags.

MT11: Mullion mount multi-technology reader
MT15: Single gang mount multi-technology reader
MTK15: Single gang mount multi-technology reader with keypad reader
MTMS15: Single gang mount multi-technology reader with magnetic stripe reader
MTMSK15: Single gang mount multi-technology reader with magnetic stripe reader and keypad

Features and benefits

Schlage multi-technology readers contain both 125 kHz proximity and 13.56 MHz contactless smart card capability in one-unit handling multiple formats simultaneously.
Wiegand and RS-485 output available for simple interface with most access control panels.

- Compatible with NFC-enabled mobile devices
- Limited lifetime warranty
- Accommodates interior, exterior, metal and non-metal installation environments
- Quick-connect cable allows for easy installation
- Easy-to-install mounting bracket
- Available finishes include: Black (standard), cool-tone gray, cream and warm-tone brown

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CYBERSECURITY
Learn about Allegion's commitment

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Model*	MT11	MT15	MTK15	MTMS15	MTMSK15
Reader type	Multi-technology mullion	Multi-technology single gang	Multi-technology with keypad single gang	Multi-technology with magnetic stripe	Multi-technology with magnetic stripe and keypad
Frequency	13.56 MHz and 125 kHz			13.56 MHz and 125 kHz and magnetic stripe	
FIPS 201-1 & 201-2 compliant	Yes				
Standard default PIV output	75 bit PIV**				
Standards	SO 14443A, 14443B, 15693				
Certifications	FCC Certification • IC Certification • UL 294 Listed • RED Directive (15 EU Countries) • CE Mark • IP65				
Voltage range	5-16 VDC				
Power supply	Linear DC				
Current requirement (at 12 VDC and 25 C; mAmps)	MT11 Avg. 100 mA Peak 170 mA / MT11-485 Avg. 115 mA Peak 145 mA	MT15 & MT15-485 Avg. 120 mA Peak 200 mA	MTK15 & MTK15-485 Avg. 120 mA Peak 230 mA	MTMS15 & MTMS15-485 Avg. 120mA Peak 200mA	MTMSK15 & MTMSK15-485 Avg. 120mA Peak 230mA
Read range	Proximity: Up to 5" (12.7 cm) MIFARE Classic: Up to 4" (10 cm) MIFARE Plus: Up to 1" (2.5 cm) MIFARE DESFire EV1: Up to 2" (5.1 cm) PIV credential: Up to 2.5" (6.5 cm)				
Cable specification	18 AWG, 5 conductor stranded/shielded				
System interfaces	Wiegand / Clock & Data / RS-485*** (OSDP)				
Cabling distance	Wiegand output: 500 ft (152 m)				
Physical dimensions (H x W x D)	5.91" x 1.72" x 0.81" 15 cm x 4.4 cm x 2.1 cm	5.1" x 3.25" x 0.76" 12.9 cm x 8.3 cm x 1.9 cm	5.1" x 3.25" x 0.76" 12.9 cm x 8.3 cm x 1.9 cm	4.43" x 5.17" x 1.15" 11.25 cm x 13.13 cm x 2.92 cm	4.43" x 5.17" x 1.15" 11.25 cm x 13.13 cm x 2.92 cm
Operating temperatures	-40° to 158°F (-40° to 70°C)	-40° to 158°F (-40° to 70°C)	-40° to 158°F (-40° to 70°C)	-31° to 151°F (-35° to 67°C)	-31° to 151°F (-35° to 67°C)
Weight	5.7 oz	9.1 oz	9.3 oz	8.9 oz	9.5 oz
Material	PBT Polymer				
Technologies supported in default mode					
Schlage Proximity	■	■	■	■	■
HID® Proximity	■	■	■	■	■
GE/CASI ProxLite®	■	■	■	■	■
AWID® Proximity	■	■	■	■	■
LenelProx®	■	■	■	■	■
Schlage smart cards using MIFARE Classic	■	■	■	■	■
Schlage smart cards using MIFARE Plus	■	■	■	■	■
Schlage smart cards using MIFARE DESFire EV1	■	■	■	■	■
DESFire® CSN	■	■	■	■	■
HID iCLASS® CSN	■	■	■	■	■
Inside Contactless PicoTag® CSN	■	■	■	■	■
ST Microelectronics® CSN	■	■	■	■	■
Texas Instruments Tag-It® CSN	■	■	■	■	■
Phillips I-Code® CSN	■	■	■	■	

Color options†

- Black (standard)
- Cool tone gray
- Cream
- Warm tone brown

* Some features and benefits listed on the front may not be applicable to the smart-only and proximity-only readers.

** Other output options available through configuration.

*** RS-485 model numbers include "-485" after the original model number. For example, MT11-485 is the RS-485 version of the multi-technology mini-mullion reader. Multi-drop, Open Standard Device Protocol (OSDP).

† Lead time may apply for non-standard colors

About Allegion

Allegion (NYSE: ALLE) is a global pioneer in safety and security, with leading brands like CISA®, Interflex®, LCN®, Schlage®, SimonsVoss® and Von Duprin®. Focusing on security around the door and adjacent areas, Allegion produces a range of solutions for homes, businesses, schools and other institutions. Allegion is a $2 billion company, with products sold in almost 130 countries. For more, visit **www.allegion.com.**

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ALLEGION™

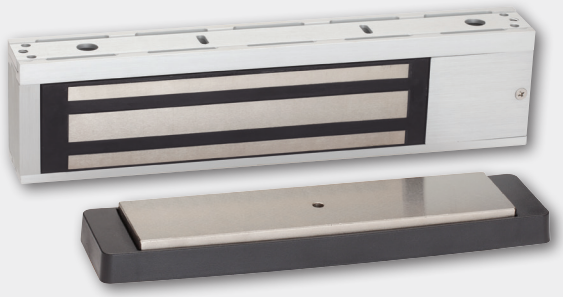
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ALLEGION

SCHLAGE

M490/492

Electromagnetic locks



Overview

M400 Series electromagnetic locks from Schlage are designed with the customer in mind to be robust, easy-to-install, and secure. The unique bayonet mounting feature makes installation easier, allowing the installer to have their hands free during the mounting process.

All M400 Series electromagnetic locks are symmetrical with field-selectable handing, allowing optimum placement of the magnet no matter the application. They are designed to provide automatic voltage sensing for 12 and 24 volts along with polarity protection to make wiring less complex. M490 models are tested and certified to meet or exceed UL 1034 and BHMA 1500 lb hold force requirements.

The M490 electromagnetic locks come in four configurations to meet your specific security needs. Single and double door models are offered in standard configurations. Plus versions of these models with “P” designations add intelligent sensing and reporting features needed to integrate with access control systems along with additional available options. Kits are also available for top jam, double door, and glass door applications.

Features and benefits

- 1500 lb. hold force rating for maximum security applications
- “Plus” models offer magnetic bond sensor (MBS), adjustable relock time delay (RTD) and door position switch (DPS)
- Automatic voltage selection (AVS)
- Symmetrical design with field-selectable handing for optimum placement
- Bayonet mount simplifies installation by eliminating the need to hold lock overhead while securing
- Armature mount pivot feature compensates for slight opening imperfections
- Optional mounting kits available for top jamb mount, double door and HERCULITE® brand glass doors
- Aluminum housing in 628 satin finish
- ANSI/BHMA 156.23 Grade 1, UL 1034, UL 10C, UL 294, cUL, CFSM certifications
- Limited lifetime warranty on magnetic coil assembly

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Additional features

All models

- Automatic Voltage Selection (AVS) senses the voltage applied to the lock and responds accordingly

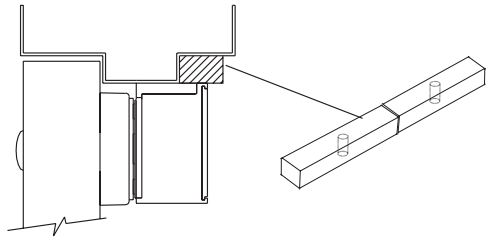
M490P/M492P

- Magnetic Bond Sensor (MBS) monitors the strength of the bond between the lock and armature so you know the door is secure
- Door Position Switch (DPS) monitors whether the door is open or closed
- Relock Time Delay (RTD) provides a relock delay that is adjustable from 0.5 to 30 seconds
- Optional accessories (P models only) ATS/LED Combines anti-tamper switch (ATS) with magnetic bond sensor in one kit.
  - ATS provides an indication that the cover of the magnet is securely fastened to the lock and that the on board circuitry is secure
  - Magnetic bond sensor indicator (LED) provides visual indication of magnetic bond at the lock

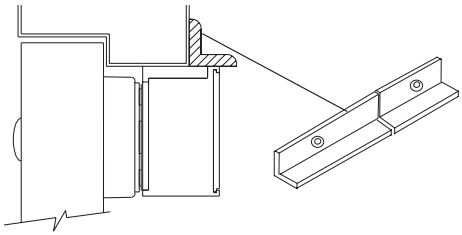
Optional accessories (for all)

- Glass door bracket kit designed for use with Herculite® brand glass door.
- Top jamb (inswinging doors) kit
- Double door connector kit (converts two single magnetic locks to a double)

Filler Plate



Angle Bracket



M490/M492 electromagnetic lock specifications

Specification	M490/M490P	M492/M492P
Holding force	Meets or exceeds BHMA standard of 1500 lbs	Meets or exceeds BHMA standard of 1500 lbs
Door type	Single	Double
Input voltage (auto selected)	12/24 VDC	12/24 VDC
Current draw	.65A @ 12 VDC .35A @ 24 VDC	1.3A @ 12 VDC .7A @ 24 VDC
Height	3"	3"
Length	12 1/2"	25 1/16"
Depth	1 3/4"	1 3/4"
Weight (approximate)	14 lbs	28 lbs
Certifications	UL 10C, UL 1034, UL 294, ANSI/BHMA A156.23, cUL, CSFM	UL 10C, UL 1034, UL 294, ANSI/BHMA A156.23, cUL, CSFM
Temperature	0° to 49°C (32° to 120° F)	0° to 49°C (32° to 120° F)
Wire gauge	14-22 AWG	14-22 AWG

Filler plates and angle brackets specifications

Length	12 1/2"

Filler plates

Width x Height	Plate no.
1 1/4" x 1/8"	4901F
1 1/4" x 1/4"	4902F
1 1/4" x 3/8"	4903F
1 1/4" x 1/2"	4904F
1 1/4" x 5/8"	4905F
3/4" x 1/2"	4906F
3/4" x 5/8"	4907F
3/4" x 3/4"	4908F

Angle brackets

Width x Height	Bracket no.
1" x 1"	4901A
1 1/2" x 1"	4902A
1 1/2" x 1 1/2"	4903A
1 1/2" x 2"	4904A
1 1/2" x 2 1/2"	4905A

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About Allegion

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Product Catalog

SARGENT
ASSA ABLOY

80 Series
Exit Device



Experience a safer
and more open world

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8800 Rim Exit Device

80 Series

SARGENT
ASSA ABLOY

8800 Series
Rim Exit Device



8800 Features

- Designed for standard width stile applications on wood and metal doors
- Also available as an HC8800 or WS8800 for hurricane-resistant applications, see Hurricane-Resistant section of this catalog
- Single point rim latching device
- Single door & double door applications with mullions
- Quiet operation and solid security
- ANSI/BHMA A156.3 - Grade 1
- UL10C (Fire) and UL305 (Panic) Listed

Specifications — 8800 Series Rim Exit Device

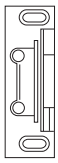
Door Type	Metal Doors
Door Thickness	1-3/4" (44mm) minimum thickness. For doors over 1-3/4" to 2 1/4" thick, specify thickness and order as 31-
Stile	4-1/2" (114mm) minimum stile width
Rail sizes as determined by door width	Rails are available in 4 sizes, use door width to determine size needed. Rails will be factory cut to size, if door width is supplied • E Rail for 24" to 32" door widths, No cutting required for 32" door • F Rail for 33" to 36" door widths, No cutting required for 36" door • J Rail for 37" to 42" door widths, No cutting required for 42" door • G Rail for 43" to 48" door widths, No cutting required for 48" door
Strike	649 Standard Black Nylon Coated
Optional Strikes	642, 644 and 613
Dogging Feature	Hex key dogging standard on non fired rated devices; specify 16- for cylinder dogging (#41 cylinder supplied)
Electric Options	AL- Alarm PL- SARGuide Photoluminescent Coated TL- SARGuide Illuminated Touchpad
	49- Indicator 53- LX Latchbolt Monitor 54- Outside Lever Monitoring 55- Request-to-Exit Signal - Rail Monitoring 56- Remote Latch Retraction 57- Delay Egress & Electromagnets 58- Electric Dogging 59- Electroguard – Self Contained Delayed Egress
Mounting Fasteners	Supplied standard with wood and machine screws Available with through-bolts and mortise (sex) nuts
Latch Bolt	Stainless steel, 3/4" (19mm) throw
Device Centerline from Finished Floor	41" (1041 mm) for Standard Applications
Center Case Dimensions	8-3/8" (213mm) x 2-5/8" (67mm)
Projection	Pushbar Neutral – 3" (76 mm) Pushbar Depressed – 2-1/8" (54 mm)
Fire Exit Hardware	See Chart – Page 6

49- Lock/Unlock Indicator Option



- Displays whether the door has been secured by the inside cylinder.
- Red icon indicates locked
- White icon indicates unlocked
- Dogging overrides 49- functionality (must order less dogging)
- Available on 8816 and 8866 functions only

649 Strike



- Supplied standard for panic & fire rated openings
- Surface applied
- Black nylon coated

688 Trim Retrofit Kit



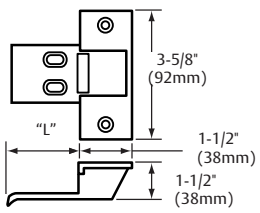
- 688 Trim Retrofit kit allows an 8800* Series rim exit with an ET to replace Von Duprin's 98/99 Series exit with trim with minimal door prep.

* Except for 16 function

- Order as: 688 Kit

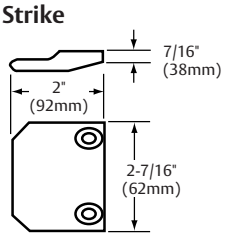
Alternate Strikes For 8800 Rim Devices

642 Strike



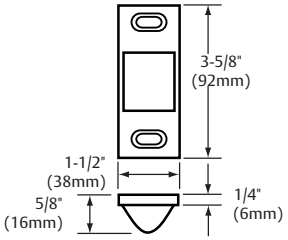
- Mortised. Dimension "L" equals door thickness plus 1/2" (13mm). Black nylon coated on lip only

644 Strike



- Surface applied. For use on pairs of doors without mullion. Ductile Iron. Black nylon coated

613 Strike



- Half mortised. Black nylon coated

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8800 Functions and Trims

80 Series

SARGENT ASSA ABLOY

Options	Series	Function	Rail Lgth	Trim	Hand	Outside Finish	Inside Finish	Door Width
F1-83-56	88	13	F	ETL	RHR	26D	32D	36"

700 Series ET Trim



Exits with ET Trim, specify lever design after the ET designation (e.g., ETL)

Lever Designs for ET Controls

A, B, E, F, J, L, P, W

Also available with Coastal Series & Studio Collection Levers

ET Designation with Suffix (Used to order ET without device)

8800 Series: 704, 706-8, 710, 713-8, 715-8, 716, 740, 743-8, 744, 746-8, 773-8, 774-8, 775-8 & 776-8

Freewheeling Trim

The lever rotates when the door is locked preventing excessive force from being applied to the horizontal lever

Electrified ET Trim

Voltage must be specified for the following functions: 73, 74, 75 and 76. Specify: 12VDC or 24VDC

SARGENT Function Numbers	ANSI Function Numbers	Description & Cylinder Info (1-3/4" Door)	ANSI Type 1 8800 Panic & Fire
04	03	Night Latch Key Retracts Latch #34 Cylinder Supplied	8804 x ET_
06	09	Key unlocks Trim, Trim retracts latch/ Trim relocks when key is removed #41 Cylinder Supplied	8806 x ET_
10	01	No outside operation (No Cylinder)	8810
10	02	No outside operation (No Cylinder) ET Control is used as Pull Only	8810 x ET_
13	08	Key Outside Unlocks/locks Trim #41 Cylinder Supplied	8813 x ET_
15	14	Passage Only (No cylinder)	8815 x ET_
16	10	Key Outside Retracts Latch; Key Inside Unlocks/Locks O/S Trim O/S #34 Cylinder & I/S #44 Cylinder Supplied	8816 x ET_
40	02	Freewheeling Trim - No outside operation (No Cylinder) Dummy Trim	8840 x ET_
43	08	Freewheeling Trim - Key Outside Unlocks/locks Trim #41 Cylinder Supplied	8843 x ET_
44	03	Freewheeling Trim - Key Retracts Latch #34 Cylinder Supplied	8844 x ET_
46	09	Freewheeling Trim - Key unlocks Trim, Trim retracts latch/ Trim relocks when key is removed #41 Cylinder Supplied	8846 x ET_
73		Electrified ET Trim - Fail Safe Power Off, Unlocks Lever (No Cylinder)	8873 x ET_
74		Electrified ET Trim - Fail Secure Power Off, Locks Lever (No Cylinder)	8874 x ET_
75		Electrified ET Trim - Fail Safe Power Off, Unlocks Lever, Key Retracts Latch #34 Cylinder Supplied	8875 x ET_
76		Electrified ET Trim - Fail Secure Power Off, Locks Lever, Key Retracts Latch #34 Cylinder Supplied	8876 x ET_

Note: Exit devices are available in all standard finishes, except 14, 15, 26 & 26D. With these finishes, exit devices are supplied in 32 or 32D to match accordingly. 32 or 32D is automatically supplied when 26 or 26D is specified. For nickel finishes, specify 14/32 or 15/32D to receive nickel finished trims and stainless exit devices

Pull & Thumbpiece Trim Section

Trim Designations

- Use three letter designations (Ex "PTB") when ordering the Exit Device with trim
- Use the six digit designation (Ex "866-MAL") when ordering trim without an Exit Device, always specify finish

Series



8800
Panic & Fire



SARGENT Function Numbers	ANSI Function Numbers	Description & Cylinder Info. (1-3/4" Door)							
04	03	Night Latch Key Retracts Latch #34 Cylinder Supplied	814-FSL*	814-FSW*	814-MSL*	814-PSB*	814-STS	862 Pull	8804 x Trim Designation
10	02	No O/S Operation or Cylinder (Pull Only)	810-FLL	810-FLW	810-MAL	810-PTB	810-STS	862 Pull	8810 x Trim Designation
28	15	Passage Only (No cylinder)	828-FLL	828-FLW	828-MAL	828-PTB	828-STS	N/A	8828 x Trim Designation
63	05	Key Outside Unlocks/ Locks Thumbpiece #34 Cylinder Supplied	866-FLL	866-FLW	866-MAL	866-PTB	866-STS	N/A	8863 x Trim Designation
66	07	Key Outside Retracts Latch; Key Inside Unlocks/Locks O/S Trim O/S #34 & I/S #44	866-FLL	866-FLW	866-MAL	866-PTB	866-STS	N/A	8866 x Trim Designation

* FSL, FSW, MSL and PSB trims are used with (HC-& 12-) 8888 and 8804 only and are the same as FLL, FLW, MAL and PTB pulls except for cylinder hole located 3/8" (9mm) lower.
Note: Thumbpiece trims for 63 and 66 function devices are identical and are identified as 66 function when trim is ordered separately.
Note: FLW & FSW trims are not available in 32(629) or 32D(630).
Note: Pulls and thumb piece trims are not available in 14, 15, 26 or 26D.

Options

8800

Mechanical Options:
12-
16-
19-
31-
36-
37-
43-
53-
54-
55-
56-
56-HK-
57-
58-
59-
5CH-
BC-59-
76-
85-
86-
87-
AL-
BT-
CPC-
GL-
LD-
PL-
** SG-
TB-
TL-

Cylinder Options:
10-
10-21-
10-63-
11-
11-21-
11-60-
11-63-
11-64-
11-70-7P-
11-72-7P-
11-73-7P-
11-65-73-7P-
21-
22-
51-
52-
60-
63-
64-
70-
72-
73-
65-73-
65-73-7P-
73-7P-
81-
82-
F1-82-
83-
F1-83-
84-
BR-
LC-
*SC-
*SE-

* Options are not available with 8816
** Only available with 15, 26D and 32D finishes

Available Finishes

SARGENT Finishes	BHMA Finishes
03	605
04	606
09	611
10	612
10B	613
10BE	613E
10BL	613L
14	618
15	619
20D	624
26	625
26D	626
32	629
32D	630
BSP	—
WSP	

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180 Series 3/4" and 1" Steel Door Recessed Switch Sets



180-12



184-12

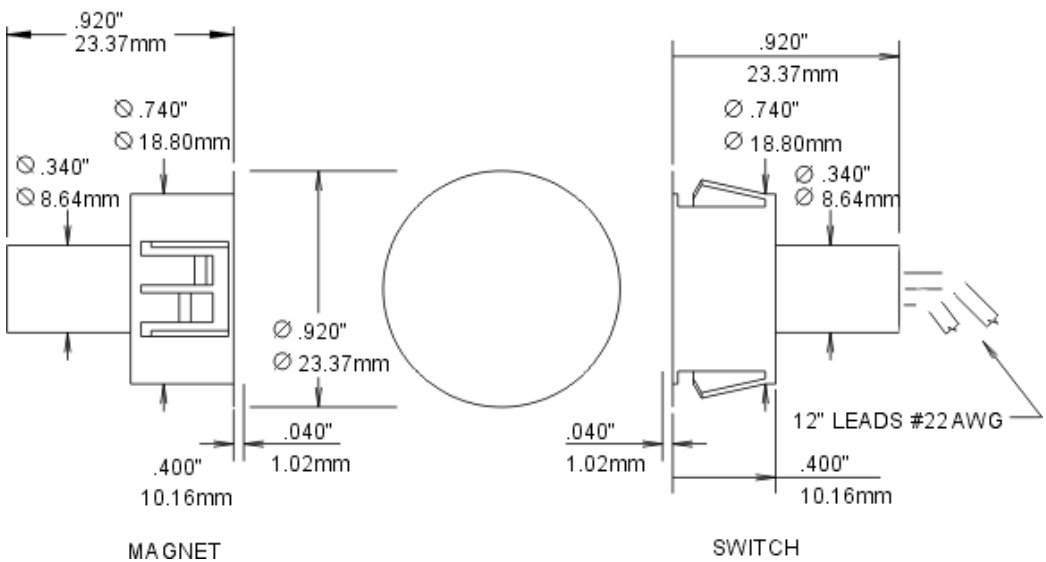


8080-T

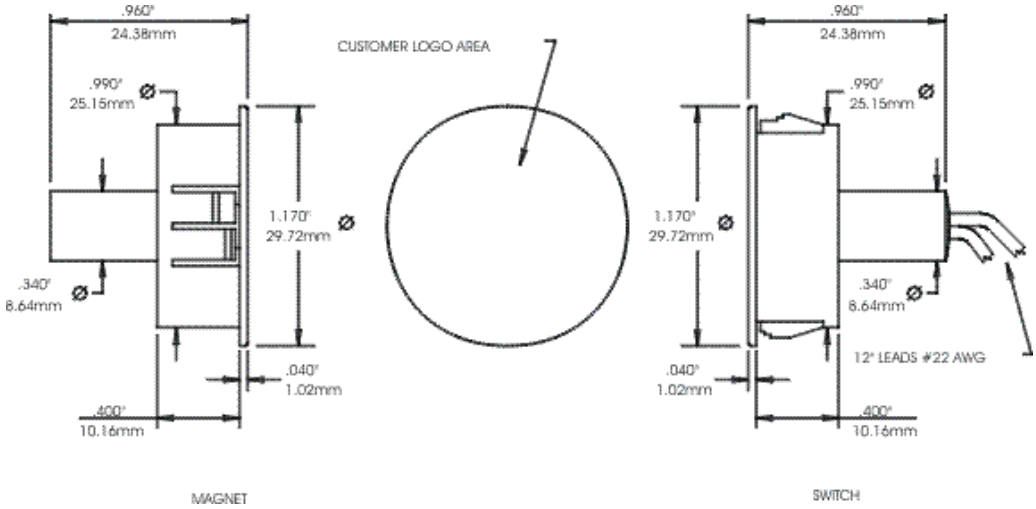
- Lifetime Warranty
- Colors: White, Brown, Grey or Black
- UL and ULC Approved
- 180-12 & 184-12 UL 10C Fire Rated
- Available in Closed Loop, Open Loop and SPDT
- 3/4" and 1" Diameter Mounting
- Standard 12" Leads or Terminals
- Self-Locking
- Solid, One Piece Design
- 7/8" Diameter also Available - Call Factory
- Switches or Magnets are Available Separately
- Standard 1/2"+ Gap on Steel
- Wide Gap 1"+ Gap on Steel
- Supervisory Loops Available

The GRI 180 Series is the industry standard 3/4" diameter recessed steel door switch set with 12" leads. The 184 Series is a 1" diameter switch set.

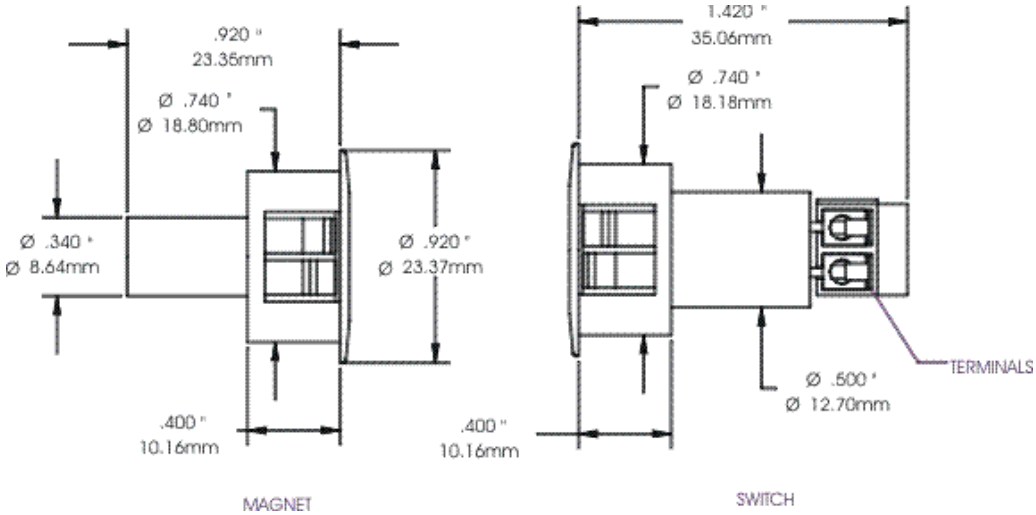
The innovative GRI 8080-T Series is a 3/4" diameter recessed switch set designed for residential, commercial and industrial steel doors and frames. The shorter length and the introduction of PC board type terminals makes the installation of the set quick and simple with no soldering, B connectors or tape to catch during installation or removal, reducing the cost of installation and creating greater profitability.



180-12 Series Recessed Steel Door Switch Set



184-12 Series Recessed Steel Door Switch Set



8080-T Series Recessed Steel Door Switch Set

RECESSED 3/4" & 1" STEEL DOOR SWITCH SET

180/184/8080-T SERIES

UL LISTED ULC LISTED

- Recessed Magnetic Contact
- 12" #22AWG Leads or Screw Terminals
- Longer Leads, Zip Cord or Jacketed Cable Upon Request
- Built-in E.O.L. Resistors and Diodes Upon Request
- Supervisory Loops Upon Request
- Switches and Magnets Available Separately
- Colors: White, Brown, Gray, Black
- C CLASSIFIED U 10C Indicates U.L. 10C Fire Rated



180-12 C CLASSIFIED U 10C



8080-T

PART NUMBERS:

		Closed Loop	Open Loop	SPDT	DPDT
Standard Gap Up To 1/2" On Steel*	3/4" Dia.	180-12 C CLASSIFIED U 10C	185-12	190-12	195-12
	1" Dia.	184-12 C CLASSIFIED U 10C	189-12	194-12	199-12
	3/4" Dia.	8080-T	8585-T		
	1" Dia.	8484-T	8989-T		
Wide Gap 3/4" + On Steel*	3/4" Dia.	180-12WG C CLASSIFIED U 10C	185-12WG	190-12WG	195-12WG
	1" Dia.	184-12WG C CLASSIFIED U 10C	189-12WG	194-12WG	199-12WG
	3/4" Dia.	8080-TWG	8585-TWG		
	1" Dia.	8484-TWG	8989-TWG		

*Gaps will increase substantially for installations other than steel
*Gaps up to one inch on steel when paired with MC-180 Door Channel Magnet

7/8" Diameter Also Available. P/N 81-12 and 81-12WG. White or Black only. Please call factory.

WARRANTY:
Lifetime warranty against workmanship, material and factory defects.

GEORGE RISK INDUSTRIES, INC.
G.R.I. PLAZA
KIMBALL, NE 69145

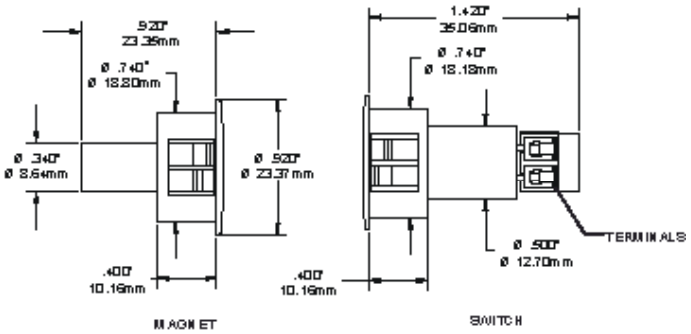
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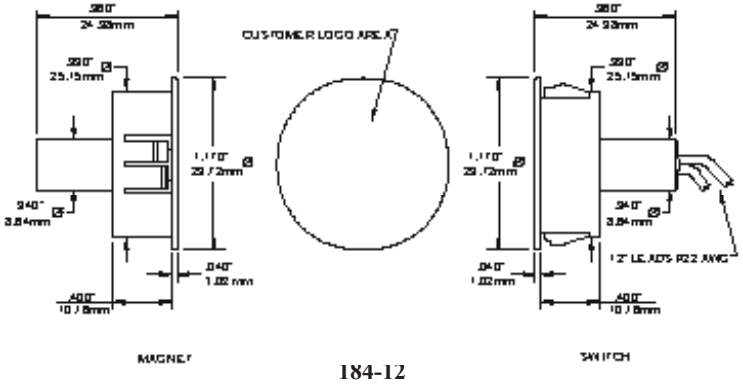
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RECESSED 3/4" & 1" STEEL DOOR SWITCH SET

INSTALLATION APPLICATIONS: The G.R.I. 180-12 is the industry standard 3/4" diameter recessed steel door switch set with 12" leads. The innovative G.R.I. 8080-T series is a 3/4" diameter recessed switch set designed for residential, commercial and industrial steel doors and frames. The shorter length terminals makes the installation of the set quick and simple.



8080-T



184-12

GRI products meet or exceed these minimum general specifications:

PART NUMBER	LOOP TYPE	ELECTRICAL CONFIG.	REED FORM	MAXIMUM INITIAL CONTACT RESISTANCE (Ω)	MAXIMUM CONTACT RATING (W)	MAXIMUM SWITCHING VOLTAGE (VDC)	MAXIMUM SWITCHING CURRENT (A)
180-12	Closed	N/O	A	.150	10	200	.400
180-12WG	Closed	N/O	A	.150	10	200	.400
184-12	Closed	N/O	A	.150	10	200	.400
184-12WG	Closed	N/O	A	.150	10	200	.400
8080-T	Closed	N/O	A	.150	10	160	.400
8080-TWG	Closed	N/O	A	.150	10	160	.400
8484-T	Closed	N/O	A	.150	10	160	.400
8484-TWG	Closed	N/O	A	.150	10	160	.400
185-12	Open	N/C	B	.140	5	175VDC	.250
185-12WG	Open	N/C	B	.140	5	175VDC	.250
189-12	Open	N/C	B	.140	5	175VDC	.250
189-12WG	Open	N/C	B	.140	5	175VDC	.250
8585-T	Open	N/C	B	.140	5	175VDC	.250
8585-TWG	Open	N/C	B	.140	5	175VDC	.250
8989-T	Open	N/C	B	.140	5	175VDC	.250
8989-TWG	Open	N/C	B	.140	5	175VDC	.250
190-12	Open/Closed	SPDT	C	.140	5	175VDC	.250
190-12WG	Open/Closed	SPDT	C	.140	5	175VDC	.250
194-12	Open/Closed	SPDT	C	.140	5	175VDC	.250
194-12WG	Open/Closed	SPDT	C	.140	5	175VDC	.250
195-12		DPDT	C X 2	.140	5	175VDC	.250
195-12WG		DPDT	C X 2	.140	5	175VDC	.250
199-12		DPDT	C X 2	.140	5	175VDC	.250
199-12WG		DPDT	C X 2	.140	5	175VDC	.250

CONTACT YOUR G.R.I. DISTRIBUTOR OR CALL:

GEORGE RISK INDUSTRIES, INC.
G.R.I. PLAZA
KIMBALL, NE 69145

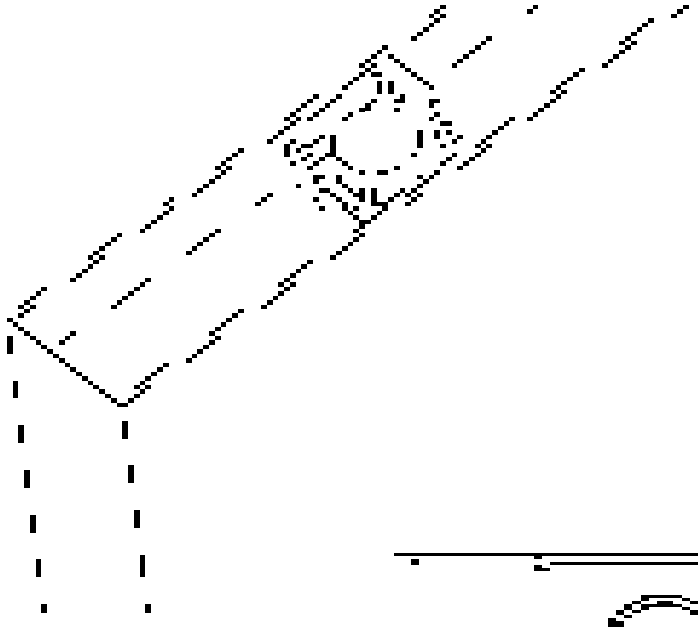
TOLL-FREE 1-800-445-5218
TOLL-FREE 1-800-523-1227
(308) 235-4645
FAX (308) 235-3561
E-MAIL: sales@grisk.com
WEB SITE: www.grisk.com

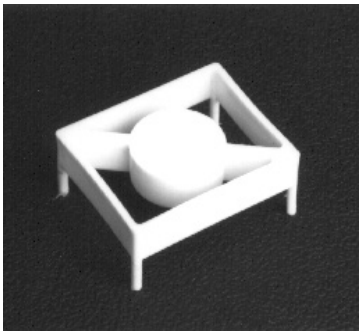
MADE IN U.S.A.

DOOR CHANNEL MAGNET

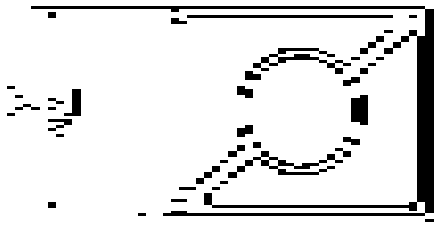
MC-180

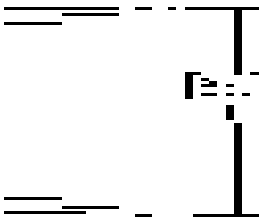
- The MC-180 is designed to be mounted in the top channel of a metal entry/exit door.
- Legs of the magnet case can be clipped to accommodate a more shallow channel.





MC-180









WARRANTY:
Lifetime warranty against workmanship, material and factory defects.

GEORGE RISK INDUSTRIES, INC.
G.R.I. PLAZA
KIMBALL, NE 69145



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fire rated UL 325 low energy push pull 24 VDC ADA

Ditec HA8-SP

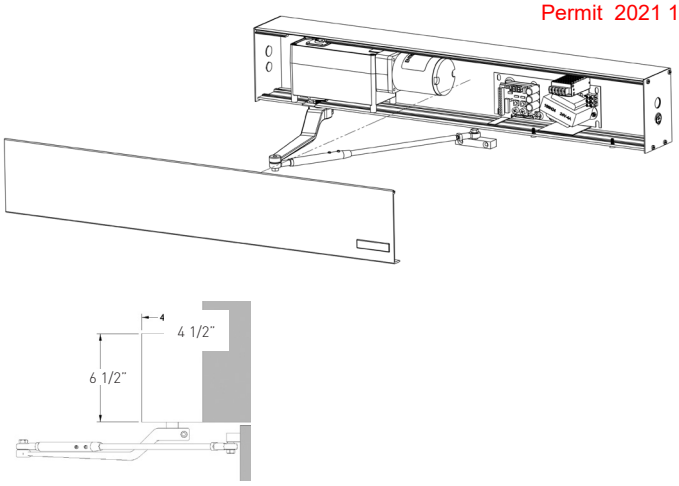
Standard Profile - Low Energy Operator

INSTALLED IN:

Hospitals - Retail Stores - Schools & Universities - Airports
Convention Centers - Casinos - Industrial Buildings - Offices

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HA8-SP Profile

QUALITY HEAVY DUTY COMMERCIAL CONSTRUCTION
High precision gears made for sustained long-term use
Electro Mechanical Design – for simple dependable operation
Permanent lubrication – maintenance free
Cast Alloy Gear Box
1/8th HP motor
Digital Control Board

ADVANCED TECHNOLOGY
On-board programming
Built in strike/mag lock relay – fail safe or fail secure
Separate inputs for activation and safety devices
Plug-n-Play design for fast trouble free installation
Compatible with most safety and activation devices
Integrates with building access & security systems
Adjustable spring tension overcomes high wind and stack pressures
One-way clutch – allows for easy manual door operation

POWERFUL AND QUIET, YET FORGIVING
XP Spring available for extra closing force
Concealed Adjustable Door Stop – eliminates external door stops
Ultra Quiet operation – noise free in both automatic and manual modes

DURABLE
Built to outlast the competition
Perfect for high traffic locations

VERSATILE INSTALLATION COMBINATIONS
Concealed (Hinge Hung, Offset Pivoted or Center Pivoted)
Surface Mounted Push or Pull
Dual or Double Egress
Side or Bottom Loading
Header length can be modified in the field

STANDARD PROFILE OPERATOR	
Drive Train Gear Box	Cast Aluminum-Closed Gearbox
Single and Dual Digital Control Box	Single HA-8 w/Data, 24 VDC, 3 AMP
Operating Voltage (Standard)	115VAC
Magnetic Limit Switches	Yes
Gear Grease	High Wear Protection
Motor	1/8th HP
Opening/Closing Force	Adjustable 5 to 30 lbs.
Arm Connection	1" Solid Spline Spindle
Adjustable Stop	Yes
Operator Switch	On-Off-Hold Open
Adjustable Spring Tension	Yes
Mechanical Clutch	Standard
Header Finish (Standard)	Clear, Dark Bronze, Extruded Aluminum
Header Finish (Optional)	Paint, Special Anodized Colors, Clad
Push or Pull Application	Yes
Easy Manual Operation	Yes
XP Spring	Optional
Surface Mounting	Yes
Concealed Mounting	Center Pivot, Hinge, or Offset Pivots
Bottom Loading	Optional
Push Reveal	0" to 14"
Pull Reveal	0" to 4"
Special Push & Pull Reveals	Call Manufacturer
Push And Go	Optional
Electric Strike Output Power	24 VDC
Fire Door Compatibility	UL10C Approved
Circuit Protection	3 amp Fuse
Total Weight w/ 39" Header	45 lbs.
Meets ANSI 156.19	Yes

Technical data subject to change without notice.



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