

9000 Series MLR

Motorized Latch Retraction Device

Installation instructions

95071186 - 01-2021

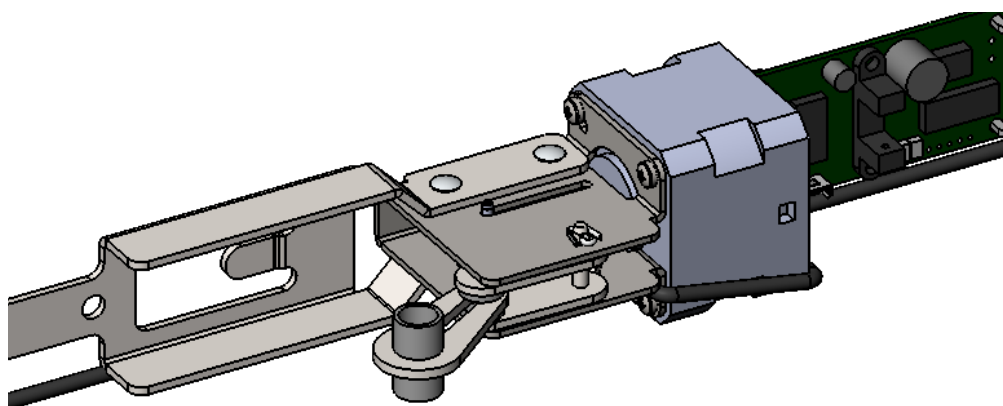
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1 Installation



Specifications:

Electrical input requirements:

24VDC + 10% filtered and regulated power supply; i.e. (DKPS-2A). (40PSU9000MLR- UK)
 The unit may also be powered by the dormakaba operator.
 Current: .88A max, inrush, 400mA max. hold
 Non polarized leads

Provides simultaneous electric latch retraction and dogging (depressed touch bar)

Size A:

Fit 48: door opening without cutting
 Can be cut to fit a 34: minimum door opening

Size B:

Fit 36: door opening without cutting
 Can be cut to fit a 28: minimum door opening

Size C:

Fits 36: door opening without cutting
 Using a shorter touch pad than the standard "B" size allows it to be cut to 25" door opening.

Minimum Wire Gauge Chart (AWG) for 24V AC/DC								
	Distance in Feet for 2 Conductors from Power Source to Locking Device							
AMPS	25	50	75	100	150	200	250	300
.25	18	18	18	18	18	18	18	18
.50	18	18	18	18	18	18	18	16
.75	18	18	18	18	18	16	16	14
1.00	18	18	18	18	16	16	14	14
1.50	18	18	18	16	16	14		
2.00	18	18	16	16	14			
2.50	18	18	16	14				
3.00	18	16	14	14				

Additional options available such as MS, CD, LM, BPA, etc. However, minimum cut lengths may be different than shown.

See additional pages for typical wiring diagrams. For additional diagrams or a custom project specific diagram please contact dormakaba at number below.

2.1 ED Low Energy Operator Single Door Motorized Latch Retraction x Hard Wired Actuators x Input Device

OPERATION: Door is locked and secure. Authorized entrance by presenting valid credentials at exterior input device which trigger the low energy operator to retract the latch bolt of the 9000 MLR exit device, and enables the exterior WS-1 wall actuator. Pedestrian then has option of automatic entrance by depressing the exterior WS-1 which triggers the low energy operator to open the door or manual entrance by exterior trim. Authorized entrance also possible by key unlocking exterior trim to retract latch bolt of 9000 MLR exit device by-passing motorized latch retraction. Egress by depressing interior WS-1 signals operator to retract latch bolt of 9000 MLR exit device. After delay time (set in field) the low energy operator opens the door. Manual egress is always possible by depressing the touch bar of the 9000 MLR exit device.

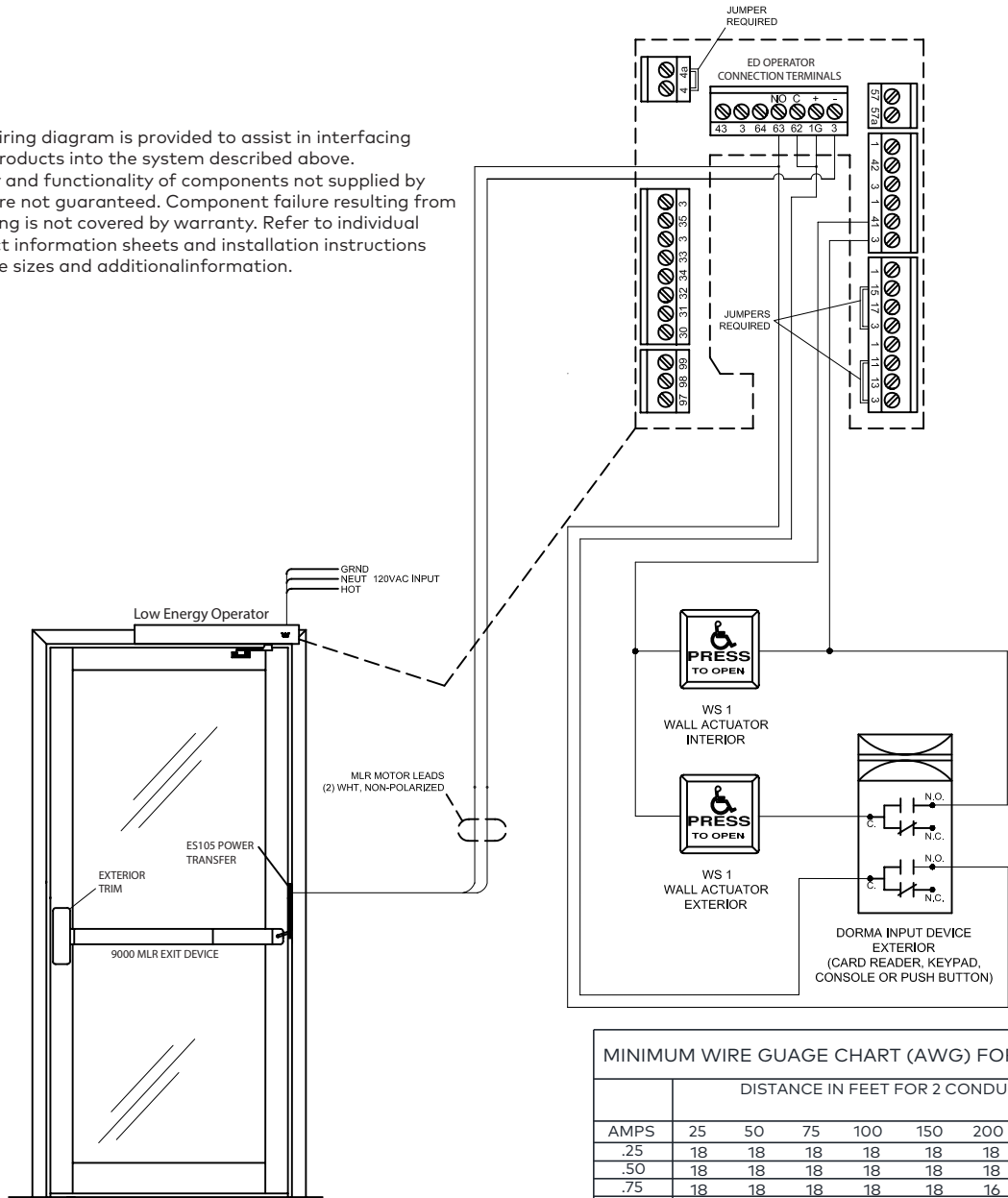
LOSS OF POWER: ED low energy operator and 9000 MLR exit device are de-energized. Latch bolt of 9000 MLR exit device is released and ED low energy operator allows door to close providing positive latching. Immediate egress is possible by depressing the touch bar of the 9000 MLR exit device.

NOTES: 1) All wiring and interface between EAC components and ED low energy operator to be determined and supplied by others.
2) All settings for ED low energy operator to be determined and set in field by others.

PARTS LIST:

- 1 EA. - ED J8 Low Energy Operator: 115 VAC +/- 10% 50/60 Hz, 6.6 Amp max. (DORMAKABA)
- 2 EA. - WS-1 Wall Actuator (DORMAKABA)
- 1 EA. - 9000 MLR Exit Device, .88 Amp @ 24VDC x Exterior trim (DORMAKABA)
- 1 EA. - Input Device (DORMAKABA)
- 1 EA. - ES105 Power conduit (DORMAKABA)

NOTE: This wiring diagram is provided to assist in interfacing dormakaba products into the system described above. Compatibility and functionality of components not supplied by dormakaba are not guaranteed. Component failure resulting from improper wiring is not covered by warranty. Refer to individual device product information sheets and installation instructions for wire guage sizes and additional information.



MINIMUM WIRE GAUGE CHART (AWG) FOR 24V AC/DC

AMPS	DISTANCE IN FEET FOR 2 CONDUCTORS							
	25	50	75	100	150	200	250	300
.25	18	18	18	18	18	18	18	18
.50	18	18	18	18	18	18	18	16
.75	18	18	18	18	18	16	16	14
1.00	18	18	18	18	16	16	14	14
1.50	18	18	18	16	16	14		
2.00	18	18	16	16	14			
2.50	18	18	16	14				
3.00	18	16	14	14				

2.2 Single Door: F9300 MLR Exit Device x PS610RF Power Supply x ES105 Power Transfer x Input Device

Operation: Door is locked and secured. Entrance by presenting valid credentials at exterior input device which triggers the PS610RF Power Supply to energize motor of F9300 MLR Exit Device retracting latch bolt on 9300 MLR Exit Device for time set on input device N.C. relay output. Entrance is also possible by key in rim cylinder of YP03 trim which retracts latch bolt of F9300 MTR Exit Device by-passing motorized latch retraction. Egress is always possible by depressing touch bar of F9300 MLR Exit Device.

Fire Alarm Activation: F9300 MLR Exit Device is de-energized releasing latch bolt allowing positive latching when door is closed. Immediate egress is possible by depressing touchbar of F9300 MLR Exit Device.

NOTES:

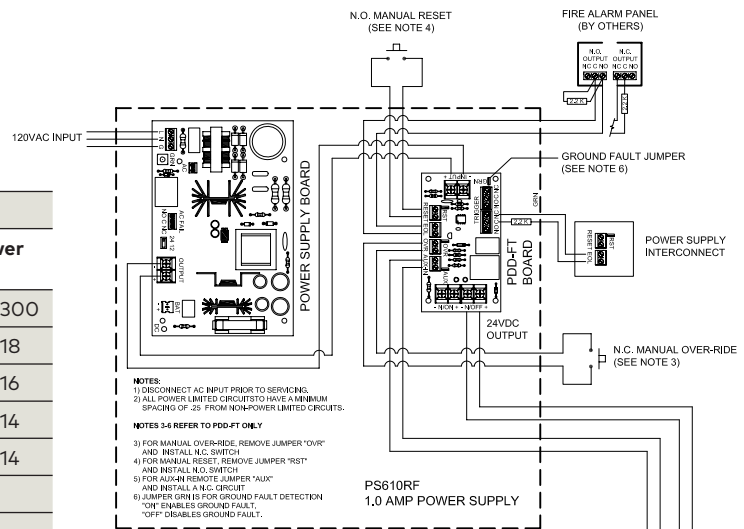
1. All Wiring and interface between EAC components and to fire alarm panel to be determined and supplied by others.
2. PS610RF Power Supply to be set for 24VDC output.
3. PS610RF Power Supply to be controlled by UL listed fire alarm panel.
4. Input device N.C. relay output unlock time to be determined and set in field by others.

Parts List:

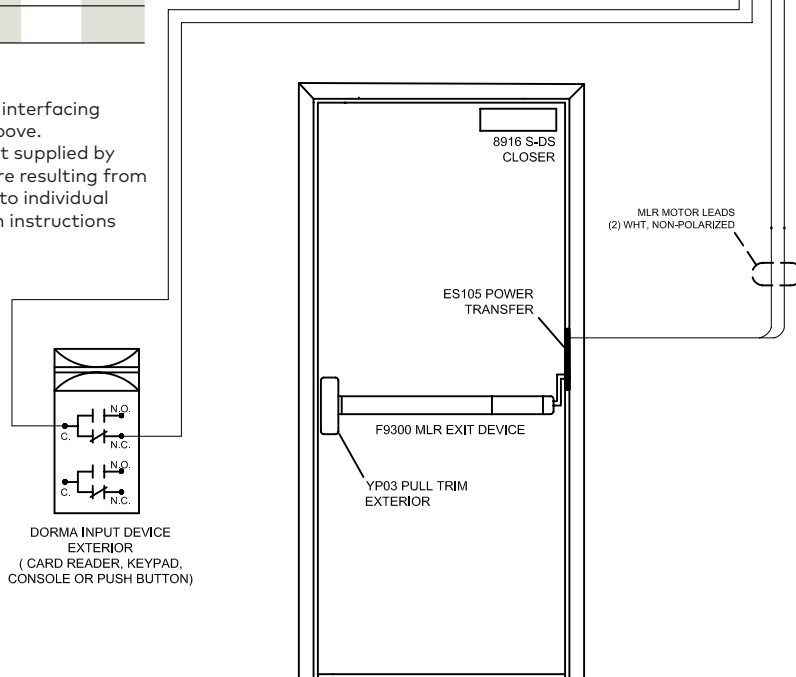
- 1 EA. - PS610RF Power Supply, Input: 115VAC/60 Hz, 0.8 Amps, Output: 1.0 Amps @ 24VDC, regulated and filtered (dormakaba)
- 1 EA. - F9300 MLR Exit Device, .88 Amp @ 24VDC x YP03 Pull Trim (dormakaba)
- 1 EA. - ES105 Power Transfer (dormakaba)
- 1 EA. - Input device (dormakaba)
- 1 EA. - 8916 S-DS surface door closer (dormakaba)

Minimum Wire Gauge Chart (AWG) for 24V AC/DC

AMPS	Distance in Feet for 2 Conductors from Power Source to Locking Device							
	25	50	75	100	150	200	250	300
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NOTE: This wiring diagram is provided to assist in interfacing dormakaba products into the system described above. Compatibility and functionality of components not supplied by dormakaba are not guaranteed. Component failure resulting from improper wiring is not covered by warranty. Refer to individual device product information sheets and installation instructions for wire gauge sizes and additional information.



2.3 Field troubleshooting guide

dormakaba makes every effort to ensure all MLR units are adjusted properly and tested prior to shipping with units attached to the respective chassis assembly they will be used with, along with the proper power supply. This is a guide to assist in field trouble shooting should the need arise.

Remove input power prior to attempting to make any corrections or changes listed on the following pages.

1. When energized the touch bar attempts to pull in and retract latches but pops back out or jumps.

- a. Check rod adjustments if being used with a surface vertical rod or concealed vertical rod device. If rods are too long the above will happen. Re-adjust rods and re-energize device and check again. The touch bar should travel almost completely down and almost flush with the rear filler and hold as long as energized.

Note: Flat head screws **MUST** be used to mount chassis to door.

"Specified fastener's should be used at all times during installation. Improper fastener's may cause product to fail or void UL listings or warranty."

Note: Pan head screws (3) **MUST** be used to mount latches to door. Round head screws can cause the rods to bind and not move properly up and down.



Top latch fully extended and deadlatched. Rod shown is too long. Adjust upward by rotating counter clockwise until flush with bell crank.



Top latch fully extended and deadlatched. Rod fully extended and flush with bell crank.



Rod fully extended and flush with bell crank. Retaining plate installed flat against bell crank with leg extending through rod and mating hole in bell crank.



Top latch fully extended and deadlatched.

2. When energized the touch bar pulls completely in, however latches are not retracted far enough to exit door.

- a. Check rod adjustments if being used with a surface vertical rod or concealed vertical rod device. If rods are too short the above will happen, rotate rod clockwise to lengthen. Readjust rods and re-energize device and check again.

3. When energized the touch bar does nothing.

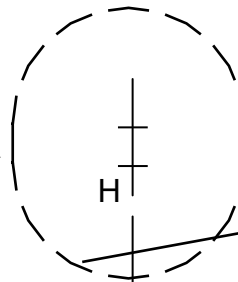
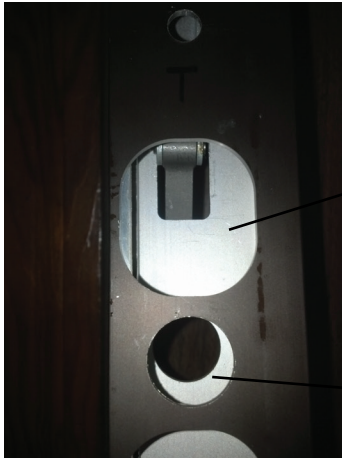
- a. Verify all wire connections and that the power supply has power from main power source.
- b. Verify proper power supply DORMA PS610RF/PS532RF is being used as well as **24VDC** output.
- c. Verify proper card is being presented to card reader (if being used).
- d. Verify wire size and run distances are to required specifications. (See page 1 of instruction sheet)

4. When de-energized the touch bar stays down or rods do not drop and latches do not extend.

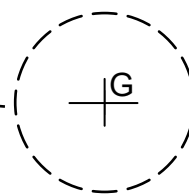
- a. Check to ensure the touch bar is not bound in the filler or chassis cover area. Check to ensure rods are not bound by mounting screws or cover screws. Ensure device has been de-energized. Ensure top strike is aligned properly with latch to engage tripping lever and release latch bolt.

2.4 Field troubleshooting guide (continued)

Check to ensure door is prepared correctly to allow clearance for spindle and actuator of trim to move freely.

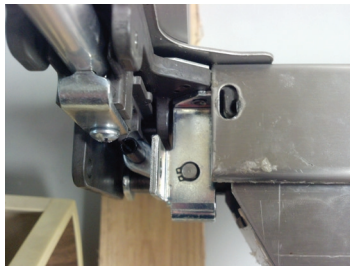


H 1 1/2" Dia. x 1 3/4" High outside face for cylinder clearance. If actuator has nylon sleeve installed; additional material may be required to be removed at bottom.

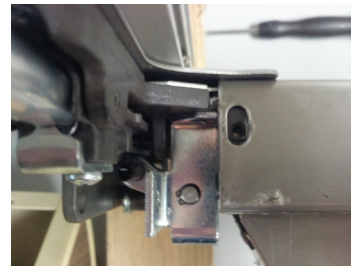


G 1" Dia. thru for spindle clearance

Touch bar and rail assembly should be installed to chassis using supplied screw located in chassis. Hole in chassis should align with slotted hole in rail as show approximately centered. **Rail does not set against rear of chassis.**



Incorrect



Correct

The slotted hole should not be modified; This causes the nose of the touch bar to make contact with the bracket located on the chassis which in turn can cause it to bind, as well as mess up the timing of the moving parts. It may also cause malfunction of the outside trim assembly by putting it in a bind. Tighten screws until they make contact with rail surface do not over tighten.

Touch bar and rail along with chassis should sit flush on the door; any warping or unlevelness may cause bind issue with the motor assembly.

Read and follow all installation steps noted with in the standard installation manual supplied with the device. "The device must be installed properly and working properly mechanically prior to being energized electrically."

The pages have been compiled from actual installation issues in the field. Their intent is to assist other installers.

2.5 Field troubleshooting guide (continued)

There are two separate factory settings for the MLR units; the 9300 & 9700 require a different stroke setting than the 9400, 9800, 9100, 9600 or 9500. These are "preset at the factory". The adjustment can be made in the field as a last resort if for some reason it should be required. Follow the steps below, reverse steps to put touch bar and rail back together after adjustments are made.

1. Take the exit device off the door then remove the (6) screws attaching the Touch bar to the rail. These (6) are in 2 triangular Patterns



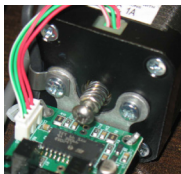
2. Remove the touch-bar from the rail assembly

3. Remove the rear arm assembly from the touch-bar by removing 2 screws on each side of the touch-bar.

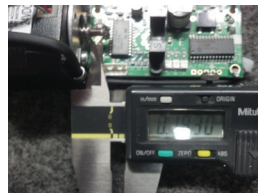
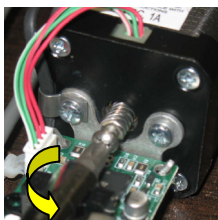


4. Pull the rear arm assembly out of the touch-bar

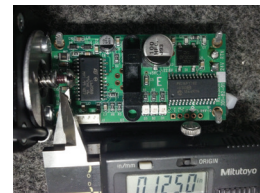
5. On the end of the black motor there is part of the worm gear sticking out of the motor. There is an adjusting screw extends out of the worm gear.



6. Using a Phillips screw driver turn the adjusting screw 1/4 to 2 full revolutions counter clockwise.

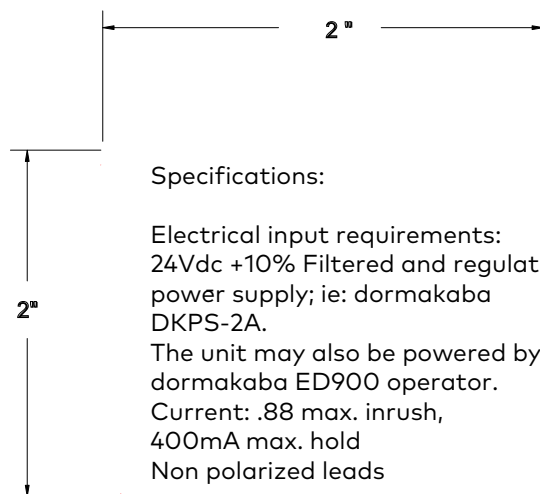


Standard factory setting for 9300 & 9700 is apx. 3/16" from front edge of worm lead screw to rear of adjusting screw.




Standard factory setting for 9100,9600,9400,9800 or 9500 apx. 1/8" from front edge of worm lead screw to rear of adjusting screw.

2.6 MLR Spec label



MATERIAL:
 WHITE PERMANENT ADHESIVE LABEL

DESCRIPTION: MLR Spec. Label - Place in end of rail						
MATERIAL:						
COIL WIDTH:	UNLESS NOTED OTHERWISE DECIMALS .XXX---±010 DECIMALS .XX---±015 FRACTIONS-----±1/32 ANGLES-----±2°		Update Inst.	2	TA	1-7-2021
PROGRESSION:			Update Inst.	1	TA	1-6-14
WEIGHT:			REVISIONS	NO.	BY	DATE
FINISH:		MLR-Label				
SCALE: 1"=1"T	DRAWN BY: .A.O	DATE: 7-25-13	CHKD BY: S.M.	DATE: 2-1-2020	DWG. NO.	

