# Electric 2300 Mortise Exit Devices — Wiring Instructions

BEST dormakaba Group

## INTRODUCTION

These instructions, along with the standard 2300 and FL2300 installation instructions describe how to install and wire you 2300 series electric mortise device.

The electric mortise device controls entry by remotely locking and unlocking the outside trim.

The electric mortise includes four functions:

| Lock nomenclature | 24 VDC | Lock/unlock monitoring | Fire-rated | Latch-bolt monitoring |
|---|---|---|---|---|
| EM303 | ■ | ■ | | |
| EM303F | ■ | ■ | ■ | |
| LSEM303 | ■ | ■ | | ■ |
| LSEM303F | ■ | ■ | ■ | ■ |

**Components:**

- Temperature Control Module (TCM), PN`3183406
- Exit hardware with wires

## 1 PREPARING DOOR AND FRAME FOR ELECTRIC POWER AND MONITORING

1.1 Follow standard instructions (step 1) to prepare door and device for 2300 series mortise exit device.

1.2 Drill a minimum 3/8" [9.53] diameter wire raceway through door, from center hinge to center back of mortise cavity ±1" vertically (a 2" [50.8] range) shown in **Figure 1**.

**CAUTION! Consult door manufacturer for clearance dimensions for electric wires. Make sure to dress and protect all wires from abrasion.**

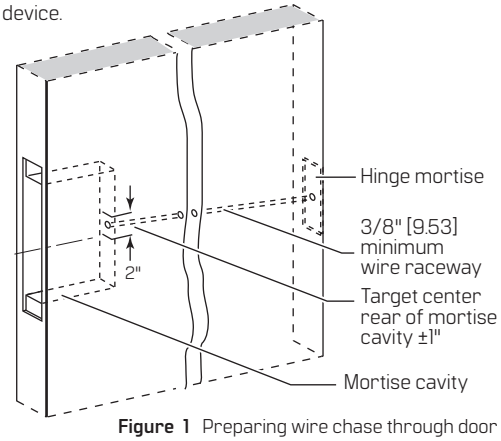



**Figure 1** Preparing wire chase through door

## 2 PULLING WIRE

⚠ **CAUTION! Make sure to understand and follow all national, state and local electric and fire building codes**

⚠ **CAUTION! Turn off all power before making any wire runs or connections**

1.1 Pull wire from 24VDC power source to electric hinge using 18 AWG and 2-conductor wire.

**NOTE: Use a Stanley Model CECB-18 electric hinge or equivalent.**

1.2 Pull wire from electric hinge to mortise cavity using 28 AWG and 2-conductor wire, leaving enough excess to make connections.

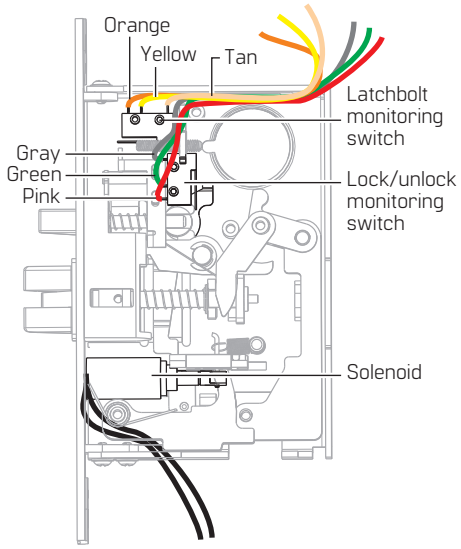



**Figure 2** Locating switches and solenoid, LSEM303 shown.

## 3 MAKING CONNECTIONS

⚠ **CAUTION! When routing wires, ensure wires are not routed across any sharp edges or over any surface that could damage their sleeving or wire insulation.**

One solenoid and two switches (one switch for EM303 and EM303F) are located inside mortise case. See **Figure 3** for locations of switche(s) and solenoid.

**NOTE: This instruction does not require direct access to switches. This is informational only.**

1.1 Make power to hinge wire connections according to hinge manufacturer's specifications.

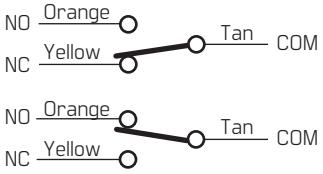
1.2 Make mortise lock connections according to specifications in **Figure 3**, **Figure 4**, and **Figure 5**.

1.3 Use tables below to determine how switches will function when lock is used.

| Wire connection | Color | No. of wires | Wire type |
|---|---|---|---|
| 24VDC power | Black | 2 | Non-polarized |
| Latch status censor | Orange | 1 | NO |
| | Yellow | 1 | NC |
| | Tan | 1 | COM |
| Lock/unlock status censor | Pink | 1 | NO |
| | Green | 1 | NC |
| | Gray | 1 | COM |

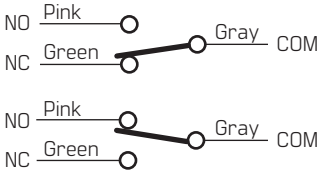
**Figure 3** Power, switch colors and definitions

**Latchbolt monitoring states**




| Touchbar | Switch | Yellow & tan wires | Orange & tan wires |
|---|---|---|---|
| At rest | Depressed | Closed | Open |
| Pushed | Released | Open | Closed |

**Lock and unlock states**




| Solenoid | Switch | Green & gray wires | Pink & gray wires |
|---|---|---|---|
| At rest | Released | Closed | Open |
| Energized | Depressed | Open | Closed |

**Figure 4** Understanding switch contact states





T93671_B

## 4 CONNECTING TEMPERATURE CONTROL MODULE (TCM)

The Temperature Control Module (TCM), included with the electric exit device, reduces the amount of current that flows through the lock. It is required for proper operation.

**To connect TCM:**

4.1 Ensure all power to circuit is shut off.

4.2 Connect the red (+) and black (-) wires of TCM to relay control board or other power source using appropriate connector (see **Figure 5**).

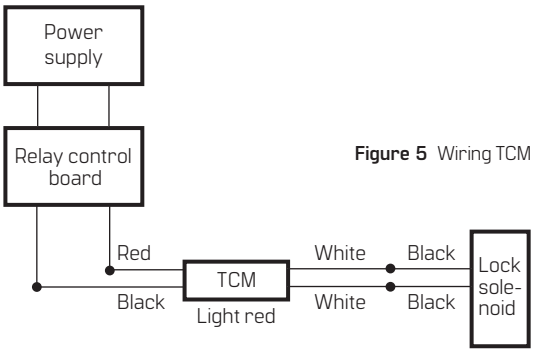



**Figure 5** Wiring TCM

## 5 CONVERTING LOCK FROM FAIL-SAFE TO FAIL-SECURE OR FAIL-SECURE TO FAIL-SAFE (OPTIONAL)

The electric mortise device comes from the factory as fail-secure (FSE). When power is off, trim is locked. Power is applied to unlock trim. Mortise device may be converted to fail safe (FS) mode, as needed.

**To convert a lock to fail-safe or fail-secure**

5.1 Remove solenoid mouting screw (located on back side of view in **Figure 6**.

**NOTE: Lay case flat while removing case cover to prevent parts from falling out.**

5.2 Remove three screws holding lock cover in place and set aside.

5.3 Remove lock cover carefully (not shown).

5.4 Disconnect spring and remove lock slide and solenoid (see **Figure 6**).

5.5 Remove lock slide from locking pin.

**NOTE: Use extra care to avoid breaking locking pin. It may be removed from solenoid with a punch, if necessary.**

5.6 Turn lock slide to desired mode and re-insert locking pin. Use table below to determine how to orient lock slide.

| Operation | When power is removed | Lock slide slots orientation |
|---|---|---|
| Fail-safe | Unlocked | Toward solenoid |
| Fail-secure | Locked | Away from solenoid |

5.7 Replace solenoid and lock slide, and reconnect spring.

5.8 Reinstall solenoid mounting screws carefully, ensuring no parts are displaced.

5.9 Check operation according to Figure 6 before reinstalling case cover with three case cover screws from step 5.1.

**NOTE: Ensure actuator is engaged in lock slide notch (see Figure 6).**

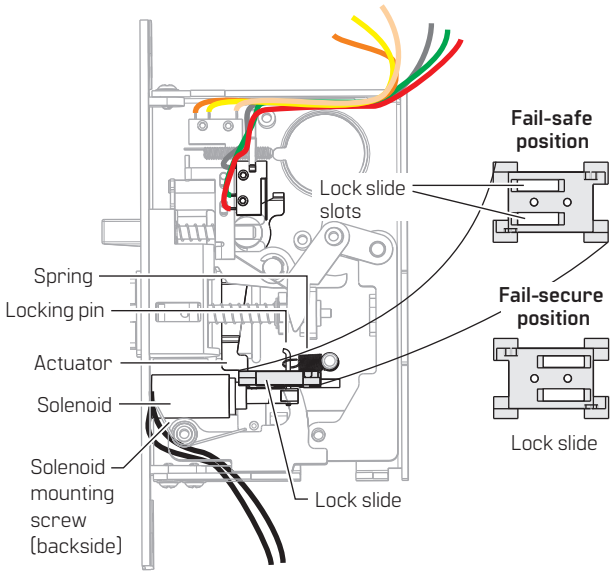



**Figure 6** Converting fail-safe/fail-secure (LSEM303 shown)

## 6 COMPLETING EXIT DEVICE INSTALLATION

6.1 Using 2300 series installation instructions and templates, complete remaining installation steps.

6.2 Turn on power to device.

## 7 TESTING DEVICE

**Once exit device is completely installed, perform the following tests:**

7.1 Turn on power and operate remote unlock switch or function.

7.2 Remove power and ensure the lock fails safe or secure appropriately according to building specifications and codes.

7.3 For LSEM303 and LSEM303F devices, turn on power and operate touchbar. Check if building alarm system recognizes latchbolt monitor.

**Document translations available.**
**Scan for product details and downloads.**

Call 1-800-392-5209 or visit https://dhwsupport.dormakaba.com/hc/en-us for assistance and warranty information.

**⚠ WARNING! This Manufacturer advises that no lock can provide complete security by itself. This lock may be defeated by forcible or technical means, or evaded by entry elsewhere on the property. No lock can substitute for caution, awareness of your environment, and common sense. Builder's hardware is available in multiple performance grades to suit the application. In order to enhance security and reduce risk, you should consult a qualified locksmith or other security professional.**