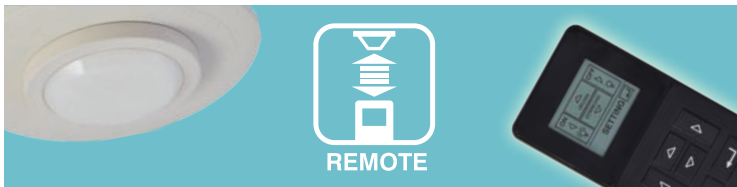


## MRD-510 series

### SmartDALI Occupancy Sensor



## OVERVIEW

The MRD-510 series member of the TRANS family is a two-way IR remote programmable DALI occupancy sensor featuring bi-level StepDIM or continuous SmartDIM control to lighting with DALI driver or ballast. The sensor can be powered by either line voltage or DALI bus to provide multi-scheme occupancy sensing control through DALI Broadcast commands.

The sensor will command DALI drivers to provide the programmed output when it detects the presence of an occupant or vehicle, and automatically dim to the low level or shut off the light after the area is vacant for a period of time. An exclusive two-way handheld remote programmer allows you to configure sensor control scheme and settings, or download the existing settings of the installed sensor from the floor.

Like all sensors in the TRANS family, the MRD-510 series can be directly integrated or attached to a luminaire. Additionally, the sensor can be flexibly mounted on the ceiling by combining specific mounting brackets. Interchangeable lens options provide different coverages for the sensor mounted at different heights. This innovative modular design provides second-to-none application and installation flexibility.

## FEATURES

- Omni-directional quad element infrared sensor
- Digital data control ALS for daylight harvesting
- Available with AC line voltage or DALI bus power
- DALI broadcast command for multi-driver control
- Multi-level high/low StepDIM or SmartDIM control
- Exceptionally long remote programming range
- Provides up to 100 mA of DALI bus power supply
- Flexible fixture integration or ceiling mount options
- Interchangeable lens options for all applications

## APPLICATION

### ☒ DALI Lighting Control

The MRD-510 series occupancy sensor can be used to directly control a DALI driver or ballast in different modes by sensing the presence and movements of the occupant. One sensor can control multiple DALI luminaires in the same scheme, while one DALI luminaire can only be controlled by a single sensor.

## MRD-510 series

### SmartDALI Occupancy Sensor

### CONTROL MODES

The sensor can be easily programmed to control the light in one of the following modes via remote programmer.

| Mode   | Day <sup>1</sup>         | Night <sup>2</sup>         | Remarks                                   |
|--------|--------------------------|----------------------------|---|
| ON/OFF | Vac: OFF<br>Occ: ON/OFF* | Vac: OFF<br>Occ: ON        | For non-dimmable lighting<br>*ALS enabled |
| OSO    | Vac: LD<br>Occ: SD/HD    | Vac: LD<br>Occ: SD/HD      | LD: Low Dim, HD: High Dim<br>SD: SmartDIM |
| OSLA   | Vac: OFF<br>Occ: SD/OFF  | Vac: LD<br>Occ: SD/HD      |   |
| OSLATO | Vac: OFF<br>Occ: SD/OFF  | Vac: LD*-OFF<br>Occ: SD/HD | *Low Dim during Time<br>Off delay         |
| OFF    | Vac: OFF<br>Occ: OFF     | Vac: OFF<br>Occ: OFF       | Light stays off                           |

ON/OFF : ON-OFF Switching

OSO : Occupancy Sensing Only

OSLA : Occupancy Sensing at Low Ambient

OSLATO : Occupancy Sensing at Low Ambient with Time-Off

OFF : Light OFF all the time

Vac : Vacant Occ : Occupied

<sup>1</sup> While ambient light level is higher than the threshold.

<sup>2</sup> While ambient light level is lower than the threshold.

### MOUNTING OPTIONS

The MRD-510Sxx series can be mounted into the ceiling, attached to a fixture or mounted into a junction box. Codes F and W allow the MRD-510Sxx to be directly integrated with OEM light fixtures in any environment.

| Code | Mounting Option          | Mounting Bracket |
|------|--------------------------|------------------|
| F    | Fixture Integrated       | ---              |
| W    | IP-66 Fixture Integrated | ---              |
| E    | Fixture External         | EMB-500          |
| P    | IP-66 Fixture External   | PMB-500          |
| S    | Ceiling Surface          | SMB-500          |
| C    | Junction Box             | CMB-500          |
| L    | Ceiling Recess           | LMB-500          |

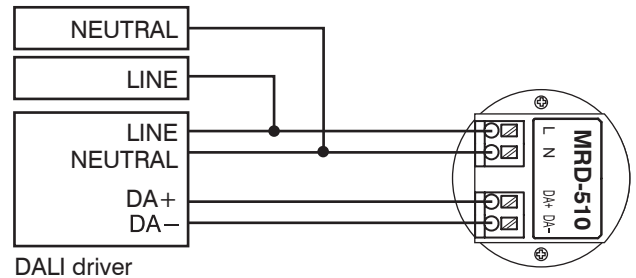
### LENS OPTIONS

The MRD-510Sxx series is available with following lens options which provide different coverage at different mounting heights (H).

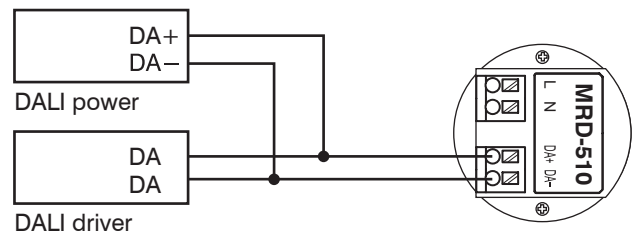
| Lens | Shape      | Mounting Height | Coverage                      |
|------|------------|-----------------|-------------------------------|
| A    | Standard   | Cone            | 8~15 ft. 2.4~4.5m 2X height   |
| B    | Extra wide | Cone            | 8~10 ft. 2.4~3.0m 6X height   |
| C    | High bay   | Cone            | 15~30 ft. 4.5~9.0m 3X height  |
| D    | Standard   | Round           | 8~20 ft. 2.4~6.0m 2X height   |
| F    | Extra wide | Dome            | 8~20 ft. 2.4~6.0m 4X height   |
| G    | Aisle way  | Arch            | 8~40 ft. 2.4~12.0m 3X height  |
| H    | High bay   | Dome            | 30~50 ft. 9.0~15.0m 1X height |
| L    | Long aisle | Arch            | 8~10 ft. 2.4~3.0m 6X height   |

### WIRING DIAGRAM

Powered by line voltage (DALI bus power enabled)



Powered by DALI bus



### SPECIFICATIONS

|                   |  |
|-------------------|--|
| Power supply      | 230-240VAC or DALI bus power                 |
| Power consumption | <0.5W @230VAC or <15 mA with DALI bus        |
| Infrared sensor   | Omni-directional quad element pyroelectric   |
| Photo sensor      | Digital ambient light sensor                 |
| DALI bus power    | 100 mA max.                                  |
| Control protocol  | DALI Broadcast                               |
| Detectable speed  | 0.3 ~ 3 m/sec. (1~10 ft/sec.)                |
| Mounting height   | Subject to the lens applied                  |
| Detection range   | Subject to the lens type and mounting height |
| Remote range      | 10 m (33 ft) typical, indoor, no backlight   |
| Op. humidity      | Max. 95% RH                                  |
| Op. temperature   | -40°C ~70°C (-40°F~158°F)                    |
| Dimensions        | Ø60 x H37mm (Ø2.36"x H1.45")                 |