TRANS

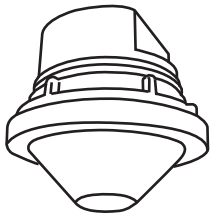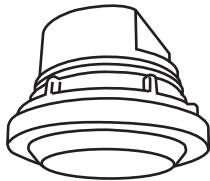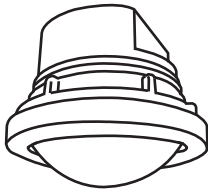## MOD-510 series
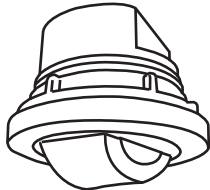DALI Occupancy Sensor

INSTALLATION INSTRUCTIONS

w/Lens A/B/C

w/Lens D

w/Lens F

w/Lens G

*More lens options are available for this sensor.
 Please refer to the Lens Datasheet for more details.

OVERVIEW

The MOD-510 series member of the TRANS family is a DALI occupancy sensor that can be set as a master/slave sensor for single/multi-sensor DALI lighting control. The sensor can be powered by either AC mains or DALI bus to provide multi-mode occupancy sensing control for DALI drivers or ballasts.

The master sensor will command the connected DALI driver(s) to provide full output when any networked sensor detects the presence of an occupant or vehicle. Only the photocell of master sensor will be enabled to provide ambient light sensing capability for daylight harvesting control. The slave sensor will only report occupancy signal to the DALI network upon detecting the movement. All controlled lighting will be automatically dimmed to the low-level or shut off after the whole area is completely vacant for a period of time. Total seven different control schemes can be easily set via the rotary DIP switch of the master sensor. 7 different delay times and low-dim levels can be fast and accurately set by Accu-Set potentiometers on the master sensor.

Like all sensors in the TRANS family, the MOD-510 series can be directly integrated or attached to a lighting fixture. Additionally, the sensor can be flexibly mounted on the ceiling by combining specific mounting bracket. Interchangeable lenses provide different coverage options for the sensor mounted at different heights.

SPECIFICATIONS

Operating power	230~240 VAC or DALI bus power
Power consumption	<0.5W @ 240 VAC, <15 mA with DALI bus
Infrared sensor	Omni-directional quad element pyroelectric
Photo sensor	Digital ambient light sensor
DALI bus power*	Max. 100 mA (powered by line voltage)
Control command	DALI Broadcast
Delay time*	T/3'/5'/10'/15'/20'/30', T:10 sec. for testing
Low dim setting*	0/5/10/20/25/33/50% selectable
Time Off delay*	10 min. (OSLATO/OSMATO/OSHATO)
Detectable speed	0.15 ~ 3 m/sec. (0.5~10 ft/sec.)
Mounting height	Subject to the lens applied
Detection range	As per lens applied and mounting height
Op. humidity	Max. 95% RH
Op. temperature	-40°C ~70°C (-40°F~158°F)
Dimensions	Ø60 x H37 mm (Ø2.36"x H1.45")

 * Available only if the sensor is set as "master".

INSTALLATION NOTES

1. The sensor is more sensitive to the movements "crossing" the detection zones than "toward" or "away" the sensor unit. To obtain better sensitivity, avoid placing the sensor in line with occupant path, if possible.

2. The closer the movement is to the sensor, the more sensitive the sensor is. The higher the sensor is installed, the larger movement is required to be detected.

3. Ensure to place the sensor at least at 1.5m (5 ft.) away from air supply ducts as rapid air flow may cause false activations.

4. The sensor cannot "see" the movements behind obstacles, such as furniture, shelf, glass or partition. As a general rule, each occupant should be able to clearly view the sensor unit.

5. For open office areas with partition which could block the sensor view to occupant movements, it is best to place the sensors over the intersection of multiple workstations. For large areas of open office or space, place multiple sensors so that there is overlap coverage with each adjacent sensor.
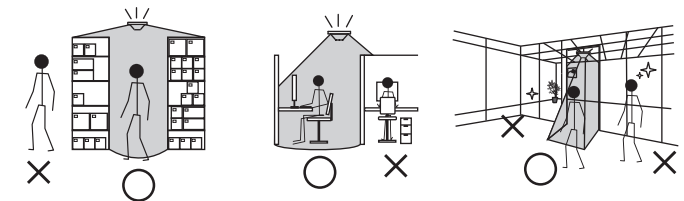
IMPORTANT !

• **To enable master and slave control, ensure to have one sensor set as master (mode: B-H) and all other sensors set as slave (mode: A) per DALI lighting control network.**
• **The area lighting will be abnormal if no sensor or multiple sensors are set as master in a DALI lighting control network.**
• **The ambient light sensor (ALS) will work only if the sensor is set as master. For area lighting controlled by master and slave sensors, set the sensor at proper position as the master if daylight harvesting control is required.**
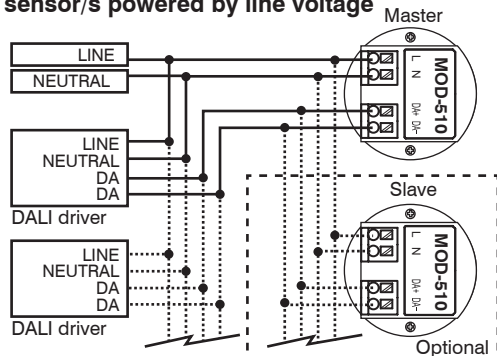
WIRING DIAGRAM

All sensor/s powered by line voltage

Master

LINE
NEUTRAL

MOD-510

DALI driver

LINE
NEUTRAL
DA
DA

Slave

MOD-510

LINE
NEUTRAL
DA
DA

DALI driver

Optional

NOTE: 1. Ensure no DALI bus power output from DALI driver(s).
2. Ensure total DALI power consumption of driver(s) does not exceed 100mA.

Master powered by line voltage, slave powered by DALI bus from master
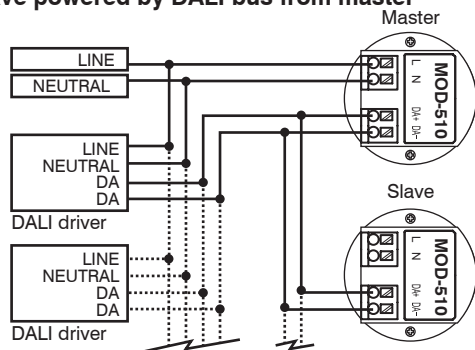
Master

LINE
NEUTRAL

MOD-510

LINE
NEUTRAL
DA
DA

DALI driver

Slave

MOD-510

LINE
NEUTRAL
DA
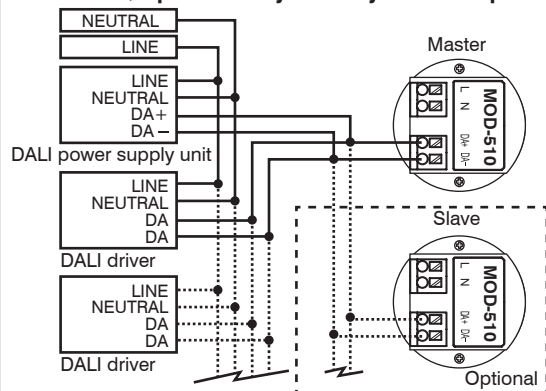DA

DALI driver

NOTE: 1. Ensure no DALI bus power output from DALI driver(s).
2. Ensure total DALI power consumption of driver(s) and slave sensor(s) does not exceed 100mA (max 4 slave sensors).
3. Power consumption of slave sensor is 15mA (max) each.

All sensor/s powered by DALI system bus power supply

NEUTRAL
LINE

Master

LINE
NEUTRAL
DA+
DA−

MOD-510

DALI power supply unit

LINE
NEUTRAL
DA
DA

DALI driver

Slave

MOD-510

LINE
NEUTRAL
DA
DA

DALI driver

Optional

NOTE: 1. Ensure no DALI bus power output from DALI driver(s).
2. Power consumption of master and slave sensor is 15mA (max) each.

SENSOR SETTINGS

MODE (OSLATO)

POS.	A	B-H
MODE	SLAVE	MASTER

TIME (10 minutes)   (Factory set)   DIM (33%)
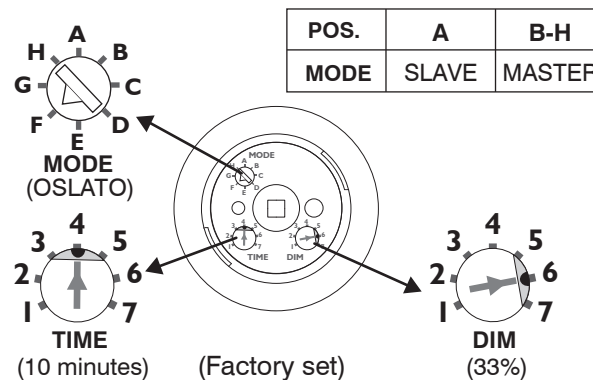
POS.	1	2	3	4	5	6	7
TIME	T	3'	5'	10'	15'	20'	30'
DIM	OFF	5%	10%	20%	25%	33%	50%

Factory Set

MODE - Mode Setting

The sensor can be set to control the light in one of seven control modes (B-H) or operate as a slave sensor (A). Rotate and point the arrowhead on rotary DIP switch to desired mode.
NOTE: Ensure to set the rotary DIP switch at "click" position while setting the mode.

Mode	Sensor Mode Description
A SLAVE	1. The sensor is set as SLAVE, and will report to master sensor when it detects the movement. Note: TIME and DIM setting are void.
B OSO	1. Ambient light sensor is disabled with this mode. 2. Dim the light to low level as DIM set all time under vacancy. 3. Turn the light to full-ON per delay TIME set under occupancy.
C OSLA D OSMA E OSHA	1. Light off while ambient light is higher than DAY threshold. 2. While ambient light is lower than NIGHT threshold, dim the light to low level as DIM set under vacancy. 3. Turn the light to full-ON per delay TIME set under occupancy. THRESHOLD / OSLA / OSMA / OSHA DAY / 50 lux / 130 lux / 600 lux NIGHT / 20 lux / 80 lux / 500 lux
F OSLATO G OSMATO H OSHATO	1. Light off while ambient light is higher than DAY threshold. 2. While ambient light is lower than NIGHT threshold, light stays off under vacancy. 3. Turn the light to full-ON per delay TIME set under occupancy. When delay time elapse, dim the light to low level as DIM set for 10 minutes as Time Off delay. 4. Turn the light to full-ON per delay TIME set if sensor detects occupancy during Time Off. Turn the light off if no occupancy detected during Time Off delay. THRESHOLD / OSLATO / OSMATO / OSHATO DAY / 50 lux / 130 lux / 600 lux NIGHT / 20 lux / 80 lux / 500 lux

Threshold table for C/D/E:

THRESHOLD	OSLA	OSMA	OSHA
DAY	50 lux	130 lux	600 lux
NIGHT	20 lux	80 lux	500 lux

Threshold table for F/G/H:

THRESHOLD	OSLATO	OSMATO	OSHATO
DAY	50 lux	130 lux	600 lux
NIGHT	20 lux	80 lux	500 lux

TIME - Delay Time

The light will remain ON if sensor detects occupant's movement before the set delay time expires. Point the arrowhead on the TIME potentiometer to the desired time.
NOTE: only available when sensor is set at mode B-H.

DIM - Low Dim Level

The connected lighting will be dimmed as the level set when condition of selected control mode applies. Point the arrowhead on the DIM potentiometer to the desired dim level.
NOTE: only available when sensor is set at mode B-H.

TESTING

To verify sensor control function normal, please proceed with the instructions as below to conduct test;

1. **Ensure that only ONE sensor is set as master per DALI lighting control network.**

2. Remove the lens. Set the arrow of MODE switch at the desired control mode (B-H), and set TIME potentiometer pointing at position "1" (TEST). Put the lens back.

3. Walk within the desired range* at normal speed. The sensor will switch ON (ALS disabled) the light for 10 seconds whenever sensor detects the movement, and then switch OFF or dim for 10 seconds as per the selected mode. The LED of sensor will also blink to indicate every motion detected.

4. After testing complete, ensure to set the TIME potentiometer to the position of desired time.
NOTE: If the TIME potentiometer has NOT been set to other position, the sensor will automatically change setting to factory default time delay after 10 minutes.

* The coverage may vary with the lens type and mounting height applied. Refer to the attached LENS DATASHEET for more details.

WARRANTY

IR-TEC International Ltd. warranties this product to be free of defects in materials or workmanship for a period of five years from date of shipment. There are no obligations or liabilities on the part of IR-TEC International Ltd. for consequential damages arising out or in connection with the use or performance of this product or other indirect damages with respect to loss of property, revenue, or profit, or cost of removal, installation or reinstallation.

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