ON-MRD-510 series

SmartDALI OS-NET Sensor

OS·NET

Flexibility • Functionality • Simplicity

OVERVIEW

The ON-MRD-510 series is an OS-NET Sensor (ONS) packed with multiple sensing control functionalities including occupancy/vacancy sensing, daylight harvesting, bi-level StepDIM or continuous SmartDIM, and wireless mesh networking capability for top-notch intelligent lighting control.

The sensor not only controls the connected lighting in the programmed mode independently when it detects the presence of an occupant/vehicle or change of ambient light level, but also acts as a network node to broadcast the OS-NET command for group lighting activation wirelessly. All network setup, grouping and control settings; including sensing control scheme, delay times, ambient light level threshold, ramp up/fade down speed, sensitivity, burn-in duration…etc. can be easily and intuitively configured via a 2-way handheld remote programmer from the floor.

Being a member of Omni ONS, this sensor can be flexibly integrated with an OEM luminaire, or mounted on the ceiling in a variety of options. Changeable lens options allow the sensor to be mounted at various heights with different detection patterns for all applications. With ON-MRD-510, you can effortlessly achieve energy efficient, code-compliant smart lighting control through a wireless sensor mesh network effortlessly deployed while installing the OS-NET enabled lighting.

FEATURES

- Omni-directional digital quad element PIR sensor
- Switched AC mains or DALI bus power operation
- All functionalities in one and one for all controls
- 2-way IR remote programming tool for all settings
- Single device can be members of multiple groups
- SmartDIM or multi-level high/low StepDIM control
- Exceptionally long range of remote programming
- Flexible fixture integration or ceiling mount options
- Multiple lens options allow broadest applications

APPLICATION

☑ Multiple Sensing Controls with
DALI SmartDIM or Bi-level StepDIM

The ON-MRD-510 sensor can be flexibly integrated with OEM luminaire or mounted on the ceiling in a variety of options to provide multi-scheme occupancy/vacancy/daylight sensing, with continuous or multi-level dimming control to the connected lighting and the assigned groups via OS-NET wireless communication.

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Specializing in Building Sensors

ON-MRD-510 series
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SENSING CONTROL SCHEMES

The ON-MRD-510 employs a top-notch digital passive infrared (PIR) sensor to detect the occupancy status within its range and control the connected light in one of the following schemes, while also transmits wireless command for lighting group activation control through mesh network. For more details of specific control, please visit www.irtec.com or contact an IR-TEC team member directly

Mode	Status	Day*	Night*	Remarks
ON/OFF	Vacant	OFF	OFF	For non-dimmable lighting [1]ALS enabled
	Occupied	ON/OFF[1]	ON	
OSO	Vacant	LD	LD	LD : Low Dim, HD : High Dim SD : SmartDIM
	Occupied	SD/HD	SD/HD	
OSLA	Vacant	OFF	LD	Automatic low dim during vacant nighttime
	Occupied	SD/OFF	SD/HD	
OSLATO	Vacant	OFF	LD-OFF	Low dim during Time Off (TO) delay
	Occupied	SD/OFF	SD/HD	
DSVM	Vacant	OFF	HD-LD	Dusk - Virtual midnight : High Dim Virtual midnight - Dawn : Low Dim
	Occupied	OFF	HD-LD	
DSC	Vacant	OFF	SD/HD	Occupancy sensing is disabled, Daylight sensing control only
	Occupied	OFF	SD/HD	
VSC	Vacant	OFF	OFF	Press OS-NET Button to turn on the light, automatic shut-off
	Occupied	Manual	Manual	
OSB	Vacant	OFF	OFF/LD[2]	[2]As background lighting before the entire group area is vacant
	Occupied	OFF	SD/HD	
OFF	Vacant	OFF	OFF	Occupancy sensing enabled, but the light stays off all the time
	Occupied	OFF	OFF	

*Day/Night: While ambient light level is higher/lower than the threshold set

ON/OFF : On-Off Switching   **OSO** : Occupancy Sensing Only
OSLA : Occupancy Sensing at Low Ambient
OSLATO : Occupancy Sensing at Low Ambient with Time-Off
DSVM: Daylight Sensing with Virtual Midnight   **DSC**: Daylight Sensing Control
VSC: Vacancy Sensing Control
OSB: Occupancy Sensing with Background   **OFF**: Light off all the time

MOUNTING OPTIONS

The ON-MRD-510xXx series can be mounted into the ceiling or integrated with an OEM luminaire. The mounting options are available by combining a specific mounting bracket from the table below. The bracket will be shipped with the device when ordered with the respective code.

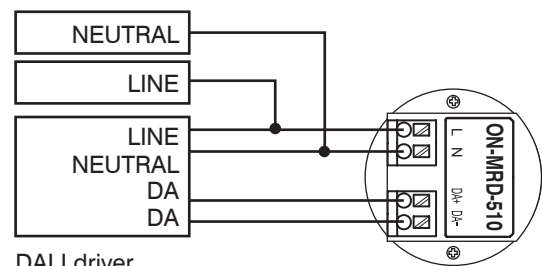| Code	Mounting Option	Mounting Bracket
F	Fixture Integrated	---
W	IP-66 Fixture Integrated	---
E	Fixture External	EMB-500
P	IP-66 Fixture External	PMB-500
S	Ceiling Surface	SMB-500
C	Junction Box	CMB-500
L	Ceiling Recess	LMB-500

LENS OPTIONS

The ON-MRD-510xx**X** series is available with following lens options which provide different coverage at different mounting height (H). When adding the lens code, the lens is then automatically shipped with the sensor.

	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.	2.4~3.0 m	6X height

WIRING DIAGRAM

Powered by line voltage

Powered by DALI bus

SPECIFICATIONS

Power supply	230-240VAC or DALI bus power
Infrared sensor	Digital quad-element pyroelectric sensor
DALI bus power	60 mA max. (can be disabled)
Control protocol	DALI Broadcast
Wireless protocol	Modified Zigbee Light Link (ZLL)
Radio frequency	2405~2480MHz
Number of Channel	16ch
Radio range	15/90 m @indoor/outdoor, open space
Radio Power Output	6.98dBm
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
Remote range	Typ. 10 m (33 ft), indoor with 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")

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