ON-MRD-210S

SmartDALI OS-NET Sensor

Flexibility • Functionality • Simplicity

OVERVIEW

The ON-MRD-210S is a low profile 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 Mini ONS, this sensor can be integrated with general office luminaires through a 1" hole. A flat lens provides excellent detection to the office activities within its coverage. With ON-MRD-210S, you can effortlessly achieve code-compliant, energy efficient smart lighting control through a wireless sensor mesh network effortlessly deployed while installing the OS-NET enabled luminaires in commercial environments.

FEATURES

- Omni-directional digital pyroelectric infrared sensor
- Line voltage operation with wireless connectivity
- 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
- Available for integrating with Troffer or LED panel

APPLICATION

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

The ON-MRD-210S sensor can be integrated with Troffer or side-lit LED panel 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.

APPLICABLE REMOTE (order separately)

Model	Description	Remarks
SRP-281	OS-NET Remote Programmer	Full functionality
URP-100	User Remote	Manual ON/OFF/DIM TIME/LUX setting

UK CA CE

iR-TEC Specializing in Building Sensors

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SENSING CONTROL SCHEMES

The ON-MRD-210S can be programmed to 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.

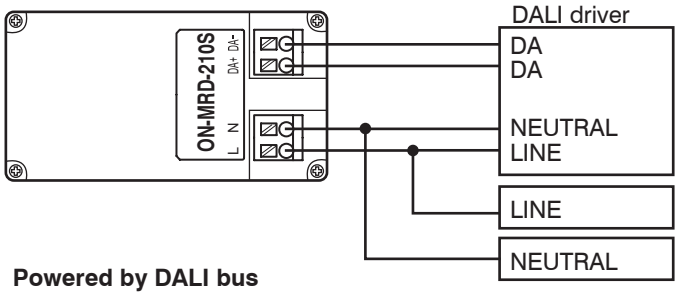
Mode	Status	Day*	Night*	Remarks
ON/OFF	Vacant	OFF	OFF	For non-dimmable lighting [1]ALS enabled
	Occupied	ON/OFF[1]	ON	
OSO	Vacant	LD	LD	LD : Low Dim, HD : High Dim SD : SmartDIM
	Occupied	SD/HD	SD/HD	
OSLA	Vacant	OFF	LD	Automatic low dim during vacant nighttime
	Occupied	SD/OFF	SD/HD	
OSLATO	Vacant	OFF	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

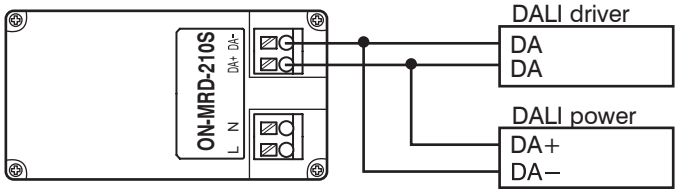
ON/OFF : On-Off Switching **OSO** : Occupancy Sensing Only
OSLA : Occupancy Sensing at Low Ambient
OSLATO : Occupancy Sensing at Low Ambient with Time-Off
DSVM: Daylight Sensing with Virtual Midnight **DSC**: Daylight Sensing Control
VSC: Vacancy Sensing Control
OSB: Occupancy Sensing with Background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

WIRING DIAGRAM

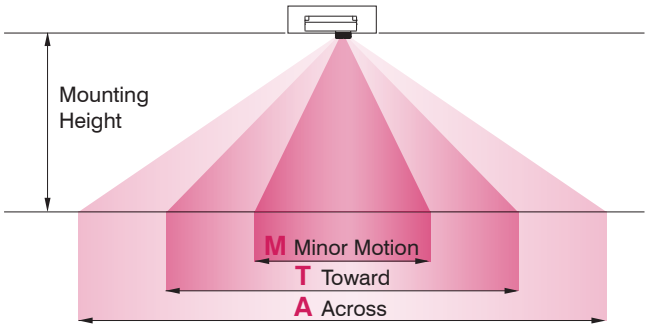
Powered by line voltage



Powered by DALI bus



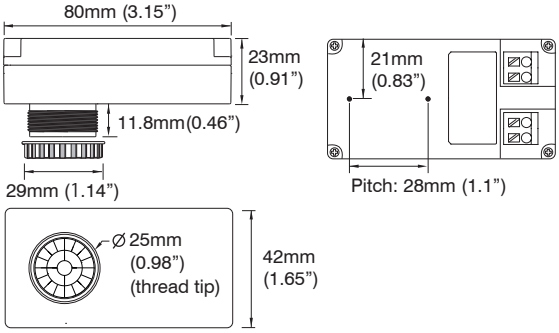
DETECTION COVERAGE



Mounting Height		2.4 m (8 ft)	3.0 m (10 ft)	3.6 m (12 ft)	6.0 m (20 ft)
Coverage Diameter	M	1.0 m (3 ft)	2.0 m (7 ft)	3.0 m (10 ft)	--
	T	3.0 m (10 ft)	4.0 m (13 ft)	5.0 m (16 ft)	6.0 m (20 ft)
	A	5.0 m (16 ft)	6.0 m (20 ft)	7.0 m (23 ft)	9.0 m (30 ft)

NOTE: High ambient temperature (above 28°C/82°F) could reduce the coverage of PIR sensor. If ambient temperature at the covered area are expected to be high sometimes, consider adding more sensors or reduce the mounting height, if possible.

DIMENSIONS



SPECIFICATIONS

Power supply	230-240 VAC or DALI bus power
Power consumption	<0.5W @AC230-240V or <60 mA with DALI bus
Infrared sensor	Omni-directional pyroelectric
Photo sensor	Digital ambient light sensor
DALI bus power	60 mA max.
Control protocol	DALI Broadcast
Wireless protocol	Modified Zigbee Light Link (ZLL)
Radio frequency	2,405~2,480 MHz
Radio channel	16
Radio range	*5 m (16 ft) @ indoor only
Radio output power	7.58dBm
Detectable speed	0.15 ~ 3 m/sec. (0.5~10 ft./sec.)
Mounting height	2.4 ~ 6 m (8 ~ 20 ft)
Op. humidity	Max. 95% RH
Op. temperature	-40°C~70°C (-40°F~158°F)
Dimensions	80x42x34.8mm (3.15"x1.65"x1.37")

*Actual radio range may differ depending on environmental conditions.