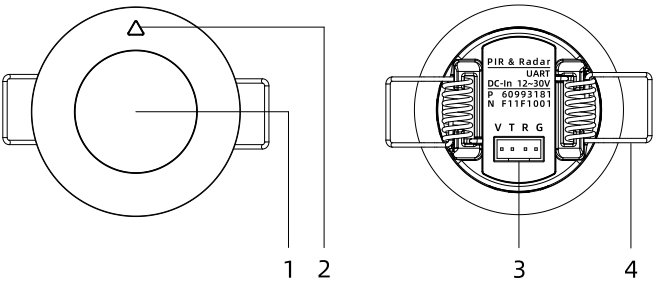


Mini-DTP-UART

The CTL-SEN-Mini/3181 is an advanced Dual-Tech Presence Sensor designed for high-precision occupancy detection. The sensor utilizes a Pyroelectric Infrared (PIR) sensor to detect biological movement characteristics, while simultaneously using 24 GHz FMCW radar to detect active motion, micro-motion, and stationary presence. By performing dual-signal cross-verification, the device triggers only when both technologies consistently confirm human activity, thereby minimizing false alarms to the maximum extent.



Interface



1. Dual-Tech Sensor Detection Surface
2. Orientation Marker
3. Connector (V: DC Input DC 12 to 30 V positive; T: Serial data transmission output; R: Serial data reception input; G: DC Input GND)
4. Spring Clip

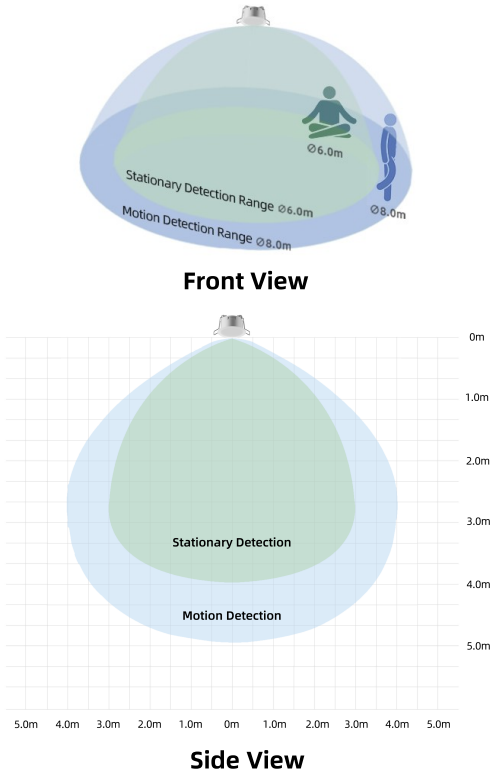
Features

- Dual-technology fusion of PIR (Passive Infrared) and 24GHz FMCW radar minimizes false triggers.
- Accurately identifies motion, micro-motion, and Presence.
- Sensitivity and detection distance can be adjusted independently.
- Integrated high-precision sensor for accurate indoor illuminance monitoring.
- Supports multiple protocols via RS485, including Modbus-RTU and Active Reporting.
- Adjustable lighting threshold.
- Supports parameter configuration and status readout via IR remote control.
- Indicator LED brightness automatically adjusts to ambient light levels.
- Powered by a proprietary module with advanced signal processing algorithms.

Specifications

Communication Type	UART
Input Voltage	DC 12 to 30 V
Power Consumption	0.5 W (Max)
Serial Port Settings	Baud Rate: 1200 to 115200 Data Bits: 8 Parity: None, Even, Odd Stop Bits: 1, 2 Default: 115200, 8, None, 1
Address Range	01 to 99 (Decimal)
Indicator Light	LED
Detection Mode	PIR + 24GHz FMCW Radar
Operating Frequency	24.00 to 24.25 GHz
Transmit Power	≤ 10 dBm
Installation Method	Recessed Ceiling Mount
Mounting Height	2.0 to 4.0 m
Detection Angle	360°
Detection Coverage	Installation at 3.0 m Height: ① Motion & Micro-motion: Detection diameter at least 8.0 m ② Stationary Presence: Detection diameter at least 6.0 m
Detection Range	1.5 to 8.0 m (sensor to target)
Sensitivity	0 to 100%
Illuminance Monitoring	0 to 32,000 Lux (Accuracy ±4%)
Delay Time	1 to 3,600 seconds
Product Size	Φ43 mm × 25 mm
Cutout Size	Φ35 mm
Product Weight	16.5 g
Cable Assembly	UL1007 22AWG Cable Length: 150 mm
Operating Environment	Indoor -20 to 45°C Humidity < 95% RH (Non-condensing)
Storage Temperature	-40 to 85°C
Protection Level	IP20
Housing Material	PC

Detection Range



Installation Notes

Interference Avoidance: Avoid installing near constantly moving objects (e.g., curtains, plants) or large reflective surfaces (e.g., metal ducts, mirrors) to minimize false alarms or unintended triggering.

Device Spacing: Maintain a minimum distance of 4 m between multiple sensors to prevent mutual interference.

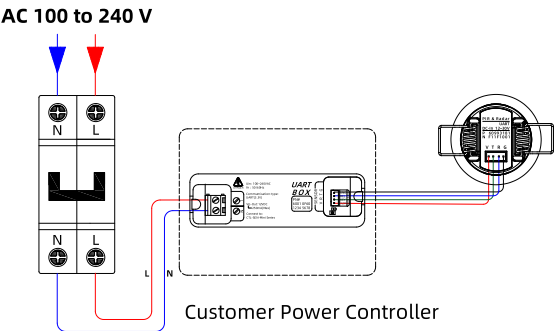
Mounting: Ensure the installation surface is vibration-free. Note that radar signals can penetrate non-metallic surfaces; avoid moving objects directly behind the installation wall/ceiling.

Wiring Safety: Disconnect power before wiring. Use certified cables and ensure the circuit includes appropriate short-circuit and overload protection.

Disclaimer:Product specifications are subject to change without prior notice for improvement purposes. Please follow all wiring diagrams strictly. The manufacturer is not liable for issues caused by improper installation.

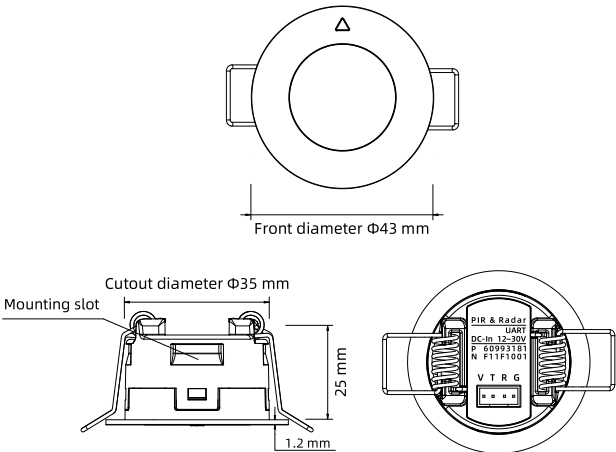
Available Accessories

Wiring Diagram

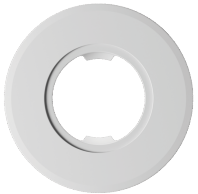


Dimensions

The product features an outer diameter of 43 mm and a depth of 25 mm, requiring a 35 mm cutout. Designed for recessed installation, it is also compatible with optional kits for surface mounting, wall mounting, or external installation via a universal bracket.



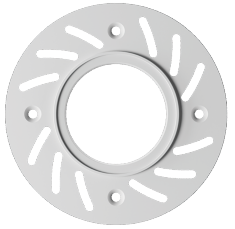
Remote Controller
(60.99.00C1)



Cover Ring
(60.99.0A55)



In-wall Mounting 86 Panel Frame
(60.99.0A86)



Borderless Embedded Parts
(60.99.0A40)



Surface Mounting Socket
(60.99.0A50)



Surface Mounting Universal Bracket
(60.99.A360)

Ordering Information

P/N	Short Name	Model	Remarks
60.99.3181	Mini-DTP-UART	CTL-SEN-Mini/3181	White (Default)
60.9B.3181	Mini-DTP-UART/B	CTL-SEN-Mini/3181B	Black
60.99.00C1	RC1	RC1	Accessory
60.99.0A55	Mini-ASSY-55	A55	Accessory
60.99.0A86	Mini-ASSY-86	A86	Accessory
60.99.0A40	Mini-ASSY-BL	A40	Accessory
60.99.0A50	Mini-ASSY-CYL	A50	Accessory
60.99.A360	Mini-ASSY-360	A360	Accessory