WADECO

MICROWAVE SENSOR
FOR CRANE CRASH AVOIDANCE

MWS-CAS-2A/B PAT.

MICRO-ROBO

Multi Channel type with Received Power Level Indicators.

WADECO CO.,LTD.

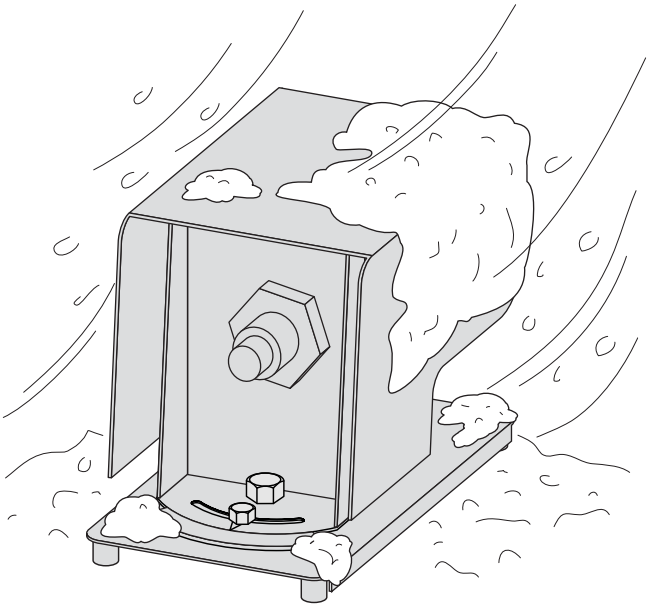
MWS-CAS-2A/B

MICROWAVE SENSOR FOR CRANE CRASH AVOIDANCE

MICRO-ROBO

MWS-CAS-2A/B Micro-Robo is a microwave sensor developed specifically for use on overhead cranes as a crash avoidance sensor.

The sensors are installed face-to-face on adjacent overhead cranes running on the same rails. When one crane approaches the detection area of an adjacent crane, its sensor detects the microwaves transmitted by the sensor mounted on the other crane and an alarm is generated, thus preventing collision.



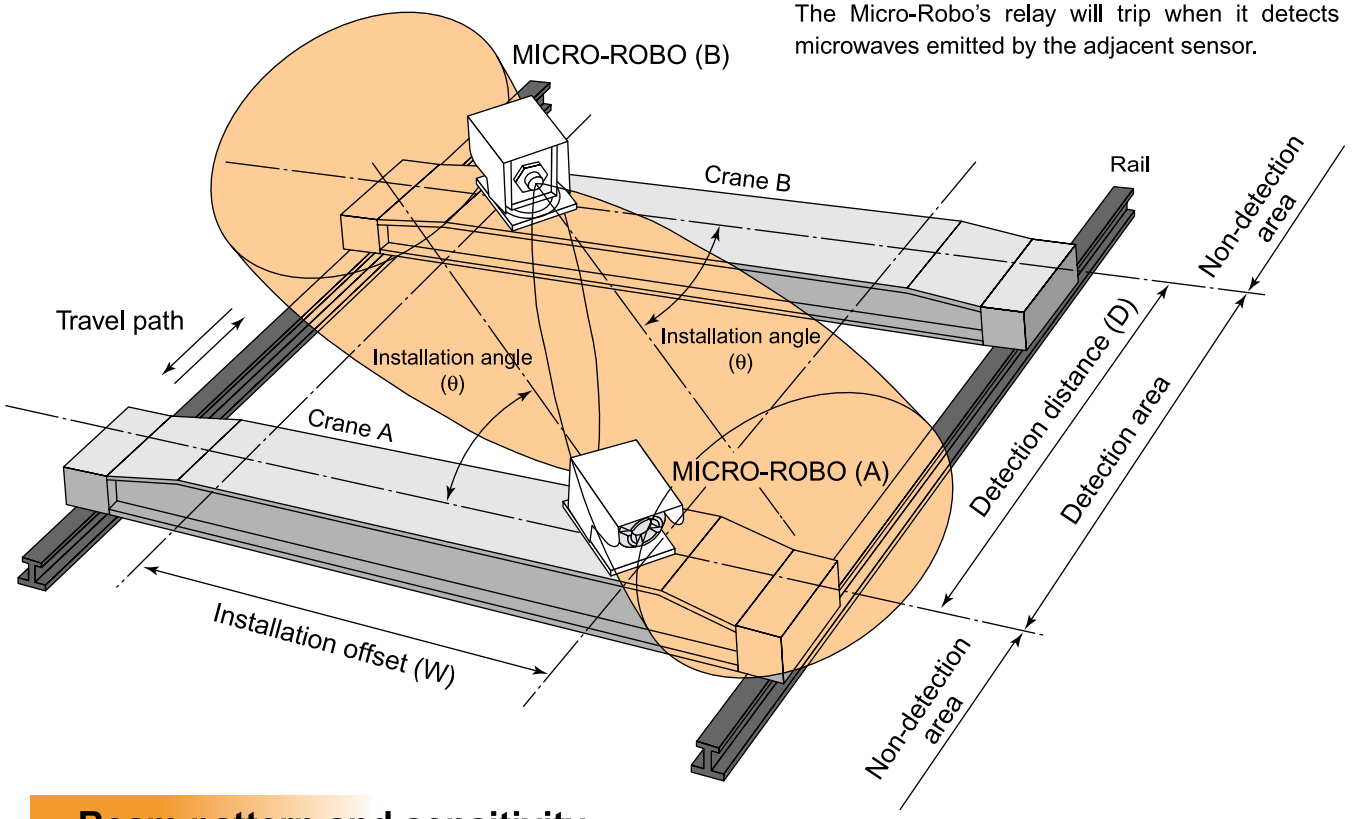
Reliable detection under all weather conditions.

Features

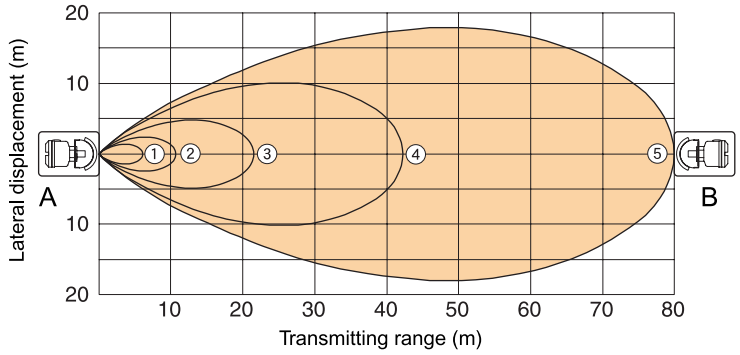
- **Simple construction**
  The transmitter and receiver are combined in one compact and economical unit.
- **Unaffected by adverse environments**
  Microwaves are generally unaffected by environmental conditions, thus this sensor is unaffected by rain, wind, snow, frost, heavy dust, smoke or vapor.
- **High penetration**
  Easily penetrates dirt and dust accumulation on the antenna, thanks to the high penetrability of microwaves
- **Three dimensional detection area**
  The sensor has a conical shaped beam pattern, detection occurs when one sensor enters the detecting area of the others. The detecting area can be adjusted by setting the sensitivty.
- **No set-to-set interference**
  Four channels are available, selectable by rotary switch.
  This permits the use of multiple Micro-Robos in close proximity to each other.
- **Power level & sensitivity indicators**
  The received power level and sensitivity-set-point are indicated on the receiver by a bank of 15 LEDs, allowing for easy visual adjustment and maintenance of the sensors.
- **Enclosure rating IP65 equivalent**

MICRO-ROBO

Each Micro-Robo transmits and receives microwaves. The Micro-Robo's relay will trip when it detects the microwaves emitted by the adjacent sensor.



Beam pattern and sensitivity



Beam pattern	Sensitivity
1	5
2	6
3	7
4	8
5	10

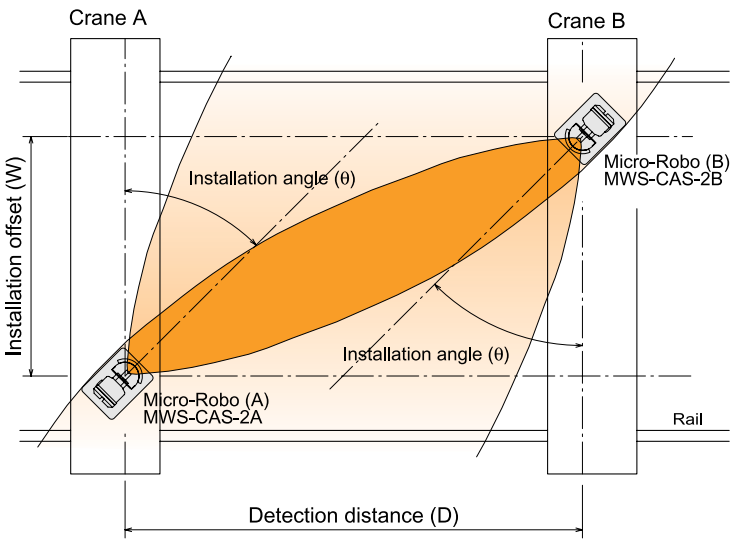
- Micro-Robo A is fixed, Micro-Robo B moves parallel to the face of Micro-Robo A.
- Detection range varies depending on the sensor and circumstances.

Installation

Micro-Robo (A & B) generate alarms when one Micro-Robo approaches the detection area of the other.

The detection distance (D) should be used to determine the installation offset (W) and the installation angle (θ).

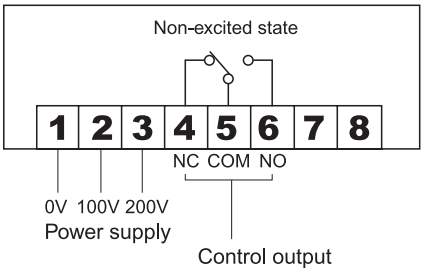
After installation is complete, the installation angle (θ) should be adjusted by loosening the installation angle adjustment bolt. The most desirable installation is obtained by minimizing the installation angle (θ) and maximizing the installation offset (W) for accurate detection.



Specifications

Type	MWS-CAS-2A or MWS-CAS-2B
Power supply	AC100 ~ 120V or AC200 ~ 240V ±10%, 50/60Hz
Operating range	80m/262ft or less
Frequency & transmission power	24GHz approx. Less than 10mW
Radiation angle	±20° approx. (angle in half of receiving value)
Number of channels	4
Received power level	Indicated by 1 of 15 LED indicators
Sensitivity-set-point	Indicated by 1 of 15 LED indicators
Control output	1C relay contact AC 250V, 3A, cosØ=1
Delay time from power on to function	Approx. 5sec.
Power consumption	2VA
Noise immunity	Pulse noise from noise simulator ±1.5KV (normal and common mode)
Ambient operating temperature	-10°C ~ +55°C (14°F ~ 131°F)
Neck rotation angle	± 45°
Enclosure rating	IP65/NEMA4 equivalent
Construction	Base & cover: SS400, Sensor: aluminum diecast
Color	Metallic silver grey
Weight	5kg (11lbs)

Wiring

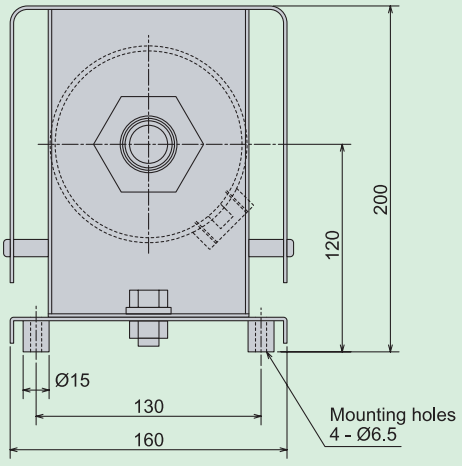


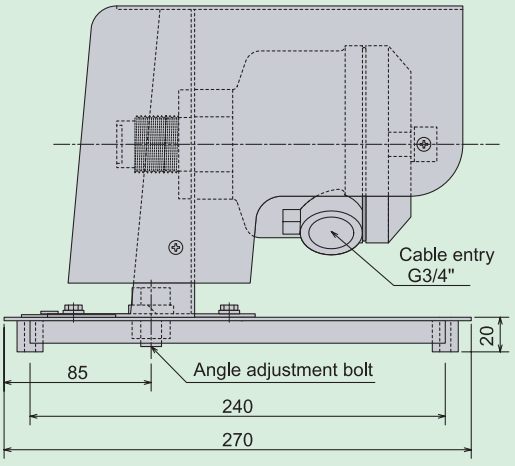
* Phase of power supply must be same from both transmitter and receiver.

Relay configuration

Terminal number		4 & 5	5 & 6
Unpowered state		Closed	Open
Powered state	Non-detecting state	Open	Closed
	Detecting state	Closed	Open

Dimensions





* Type A & B must be used together in a face-to-face position. A combination of type A & A or type B & B must not be used.
* Do not cut the power of one Micro-Robo unless both cranes are not in operation: they operate as a pair and cutting the power to one will render the other useless.

This specification may be changed without notice.

WADECO CO.,LTD.

HEAD OFFICE 1-12-9, Meishin-cho, Amagasaki-shi, Hyogo-ken, 661-0021, Japan
TEL(06)6422-1248 FAX(06)6422-1247

TOKYO BRANCH 202 Shibuya-homes,2-1,Udagawa-cho,Shibuya-ku,Tokyo 150-0042,Japan
TEL.+81-3-3770-5519 FAX.+81-3-3770-5520

www.wadeco.co.jp