

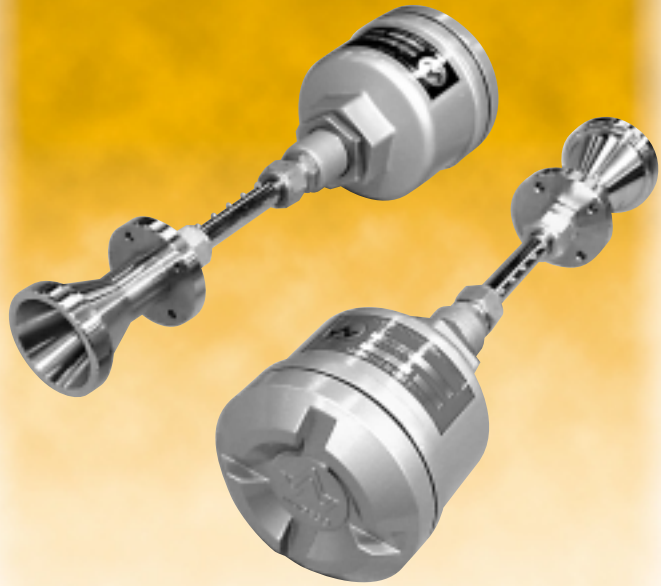
MICROWAVE SENSOR FOR HOT / COLD PRODUCT TRACKING

UNAFFECTED BY HEAT, FLAMES, AIRBORNE PARTICLES OR VAPOR!

Specifically designed to replace
laser product tracking sensors.

MWS-ST/SR-2WG Micro-Gunn consists of a pair of transmitting and receiving antennae, connected to separate controllers by circular waveguide tubing. The antennae, which are unaffected by heat, are installed in the high temperature zone, while the controllers are located in normal room temperature areas. The detection signal outputs with the interruption of the rotary microwave beam between the two antennae.

This is the first high temperature rotary microwave sensor ever developed. This maintenance free model **operates perfectly in high vapor areas**, whereas lasers will not. With a high degree of precision (repeatability), Micro-Gunn provides an economical and reliable solution for Product Tracking.



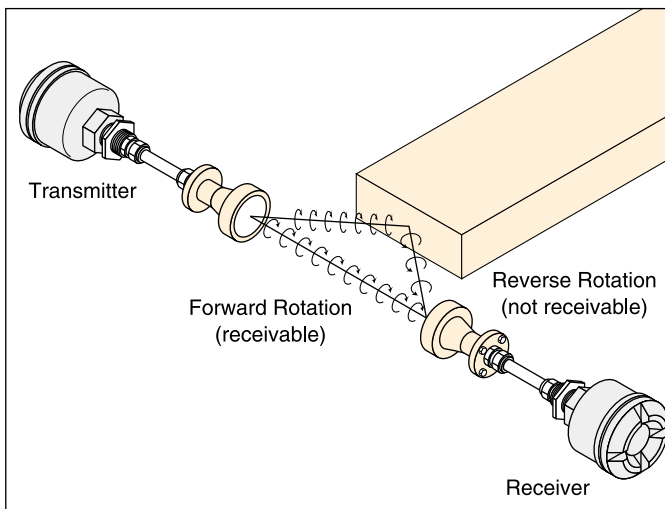
Features

- **Increased operating range**

The operating distance is three times that of the conventional model.

- **Rotary microwaves eliminate false detection**

When rotary microwaves are reflected off an object their direction of rotation is reversed. The receiver is tuned to reject spurious reflections according to their rotation. False actuation caused by reflected waves is thus eliminated.



- **Unaffected by adverse environments**

This sensor is unaffected by heat, flames, airborne particles or vapor.

- **Simple beam alignment**

Easy initial beam alignment at installation, due to the wide beam angle.

- **Selectable detection mode**

Either broken beam (BLOCK) or unbroken beam (UNBLOCK) detection method may be selected.

- **No set-to-set interference**

Four channels are available, selectable by rotary switch. This permits the use of multiple units in close proximity to each other.

- **Power level & sensitivity indicators**

The received power level and the sensitivity-set-point are indicated on the receiver by a bank of 15 LEDs, allowing for easy adjustment and maintenance of the sensors.

- **Inspection window (Optional)**

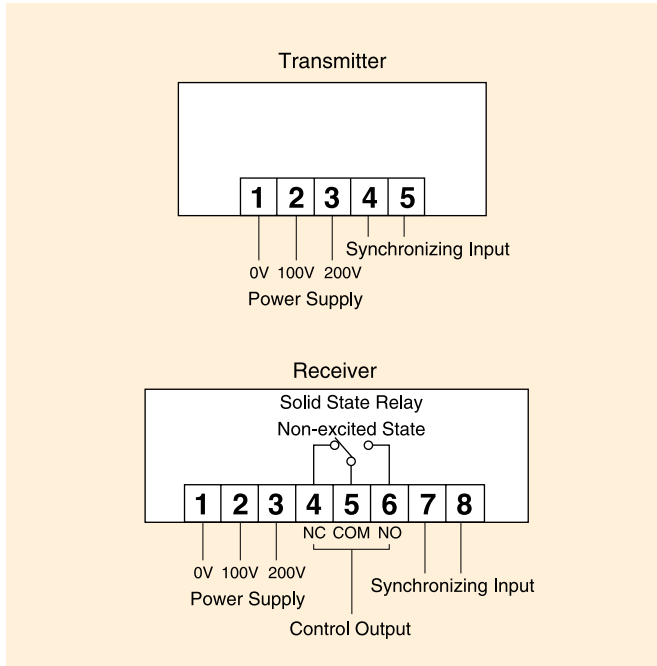
The received power level and the sensitivity-set-point are easily seen, without removing the controller cover.

- **Solid state output**

Highly reliable solid state output relay minimizes mechanical failure.

- **Enclosure rating IP65 equivalent**

Wiring



- * Phase of power supply must be the same for both transmitter and receiver.
- * Synchronizing input terminals are not used under normal conditions.
- * May operate in single channel mode by selecting CH0; doing so will disable the multi-channel function.

Selection of detection mode and relay configuration.

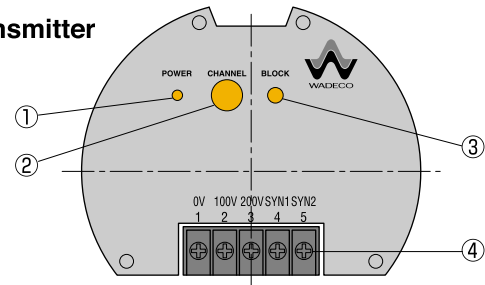
| Detection mode | | Beam broken BLOCK | | Beam unbroken UNBLOCK | |
|-----------------|---------------------|-------------------|--------|-----------------------|--------|
| Terminal number | | 4 & 5 | 5 & 6 | 4 & 5 | 5 & 6 |
| Unpowered state | | Closed | Open | Closed | Open |
| Powered state | Non-detecting state | Open | Closed | Open | Closed |
| | Detecting state | Closed | Open | Closed | Open |

Specifications

| | |
|----------------------------------|--|
| Type | Transmitter Controller: MWS-ST-2WG Receiver Controller: MWS-SR-2WG Antenna: WG-6N (without cover) WG-6C (ceramic cover) WG-6G (heat resistant glass cover) WG-6T (Teflon cover) |
| Power Supply | AC100~120V or AC200~240V $\pm 10\%$, 50/60Hz |
| Operating range | Without waveguide: <80m With waveguide: <10m (varies) |
| Frequency and Transmission power | 24GHz approx. Less than 10mW |
| Radiation Angle | $\pm 8^\circ$ approx. (angle in half of receiving value) |
| Number of channels | 4 or 1 |
| Received power level | Indicated by 1 of 15 LED indicators |
| Sensitivity-set-point | Indicated by 1 of 15 LED indicators |
| Control output | Solid state relay DC24V, 0.1A (standard) or IC relay contacts AC250V, 3A, $\cos \theta = 1$ (optional) |

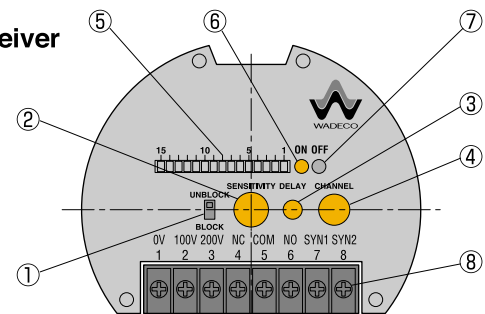
Function of switches, indicators & rheostats

Transmitter



| Part Name | Description |
|--------------------|------------------------|
| ① Power indicator | Green when power is on |
| ② Channel selector | CH1-4 or CH0 |
| ③ Block button | Blocks transmission |
| ④ Terminals | |

Receiver



| Part Name | Description |
|-----------------------------------|---|
| ① Mode selection switch | BLOCK: Outputs on broken beam UNBLOCK: Outputs on unbroken beam |
| ② Sensitivity rheostat | To adjust sensitivity |
| ③ Delay time rheostat | 0.1 - 10 sec. |
| ④ Channel selector | CH1-4 or CH0 |
| ⑤ Received power level indicators | Received power level: indicated by one of 15 LEDs Sensitivity set-point: indicated by one of 15 LEDs |
| ⑥ Output indicator | ON(red): Illuminates on output |
| ⑦ Output indicator | OFF(green): Illuminates on no output |
| ⑧ Terminals | |

| | |
|--------------------------------------|--|
| Response time | Multi CH (CH1-4) 15msec. or Single CH (CH0) 5msec. |
| Delay function | Off delay 0.1-10 sec. (adjustable) |
| Delay time from power on to function | 5sec. approx. |
| Power consumption | Transmitter Controller: 2VA Receiver Controller: 2VA |
| Noise immunity | Pulse noise from noise simulator $\pm 1.5KV$ (normal and common mode) |
| Ambient operating temperature | Antenna WG-6N: Approx. $-50^\circ C \sim +600^\circ C$ WG-6C: Approx. $-50^\circ C \sim +600^\circ C$ WG-6G: Approx. $-50^\circ C \sim +600^\circ C$ WG-6T: Approx. $-20^\circ C \sim +150^\circ C$ Controller: Approx. $-10^\circ C \sim +55^\circ C$ |
| Enclosure rating | IP65 equivalent |
| Construction | Antenna: SUS304, Controller: Aluminium diecast |
| Color | Metallic silver grey |
| Weight | Transmitter (non-waveguide standard type): 2kg Receiver (non-waveguide standard type): 2kg |

