

CWB-3000-W

MICROWAVE DETECTOR

***NON-CONTACT, NON-INVASIVE
CONTINUOUS AND RELIABLE MEASUREMENT
EVEN IN DUST, STEAM, VAPORS, NOISE, and HIGH
TEMPERATURES***



FEATURES:

- **High Penetration** - penetrates accumulated ash buildup due to increased operating range, which is approximately 300% greater than that of the conventional model.
- **Unaffected by Adverse Environments**
- **Simple Beam Alignment**
- **Selectable Detection Mode**
- **Small Sensing Head** -- approximately 100m range with 027mm antenna

APPLICATIONS:

- **Microwave barrier**
- **Hot metal edge detection**
- **Hot strip detection**

DESCRIPTION:

The CWB-3000 microwave sensor is a level switch, which consists of a transmitter and a receiver, installed face to face. The transmitter transmits microwaves toward the receiver and an output relay in the receiver is released when the beam is obstructed. Harsh environments may result in a buildup of contaminants on the sensing surfaces. However, the sensor easily penetrates this buildup, due to the high penetrability of microwaves.

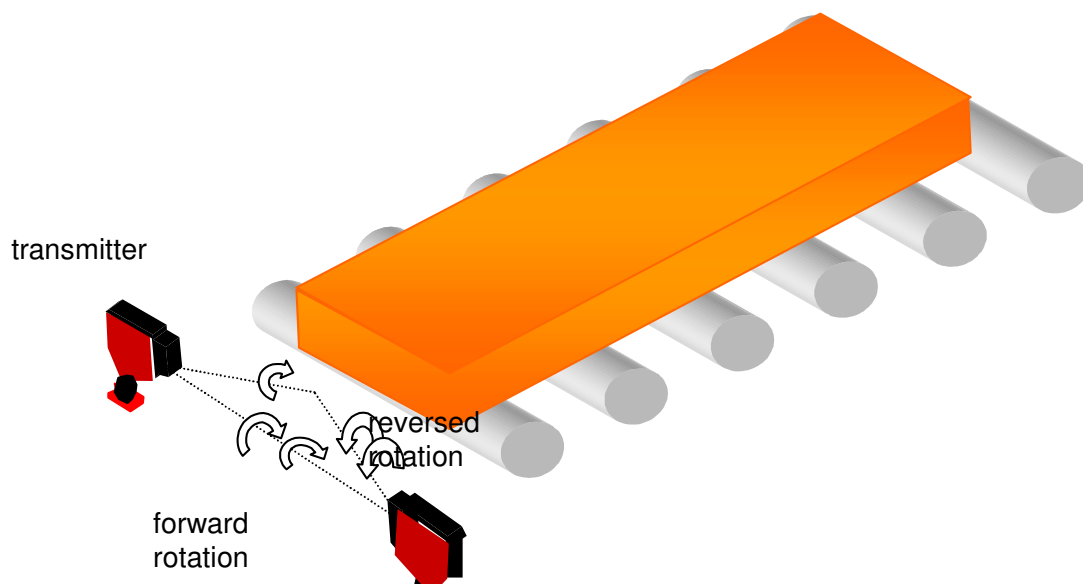
PRINCIPLE of OPERATION:

When microwaves transmitted through the air encounter an object, some microwaves will be reflected, some will be absorbed and the remainder will pass through the object. The amount of microwaves passing through the object depends on its composition. Generally speaking, microwaves cannot penetrate metals and are reflected; water absorbs the most microwaves. Microwaves can easily pass through plastics, glass, ceramic, paper etc.

All substances other than metals can be penetrated when attached to the sensing surface. Penetrability depends on the thickness and composition of the attached material, the quantity of metallic substances and the amount of water contained in said material.

By providing detecting windows on both side of a tank through which the microwaves can pass, the unit may be protected from high temperatures, hazardous materials, vibration and shock. The microwave sensors should be installed away from such surroundings. These windows should be made of ceramic, Teflon or polypropylene materials having no water content, through which there is minimum loss of microwaves.

The detecting windows should be at least 60 mm in diameter as microwaves pass more easily through larger apertures. The distance between the window and the unit should be less than 200 mm, however, for larger windows this distance may be greater.

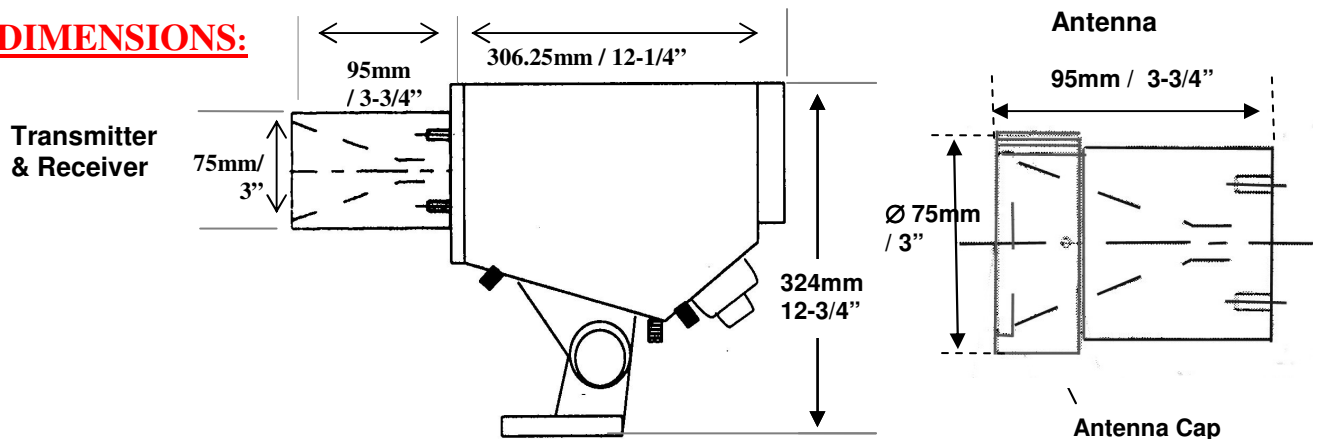


SPECIFICATIONS:

| | |
|--------------------------------------|---|
| Power Supply | 100V AC or 200V AC ± 10%, 50/60 Hz. |
| Operating Range | Without wave guide 80m or less With wave guide 10m or less (may be increased or decreased according to wave guide transmission loss) |
| Frequency & Transmission Power | Approx. 24 GHz Less than 10Mw |
| Output Contacts | 1C relay contacts 250V ac, 3A (cos Ø = 1) |
| Response Time | Less than 20msec. |
| Delay Function | Off delay 20 ~ 500msec. |
| Delay Time from Power On to Function | Transmitter Controller: Approx. 50 msec. Receiver Controller: Approx. 50 msec. |
| Power Consumption | Transmitter Controller: 2VA Receiver Controller: 2VA |
| Noise Immunity | Square wave noise from noise simulator Rising time: 1 nanosecond, Width: 1 microsecond; ± 1.5KV (normal and common modes) |
| Ambient Operating Temperature | Antenna -50°C to +600°C Controller -10°C to +55°C |
| Housing | Cast aluminium housing rating IP66 (NEMA4) |
| Construction | Antenna: SUS 304; Controller: Aluminium die cast |
| Total Weight | Transmitter 13 kg / 28 lbs. Receiver 13 kg / 29 lbs |

* The operating distance may vary from sensor to sensor and according to installation.

DIMENSIONS:



ORDERING INFORMATION:

| Model | Input Voltage | Waveguide |
|--|--|--|
| CWB-3000-W includes: CWB-3000-WT Transmitter with Antenna and CWB-3000-WR Receiver | <ul style="list-style-type: none"> • 100-240 VAC • 24VDC | <ul style="list-style-type: none"> • Straight • 60° Bent • 90° Bent |