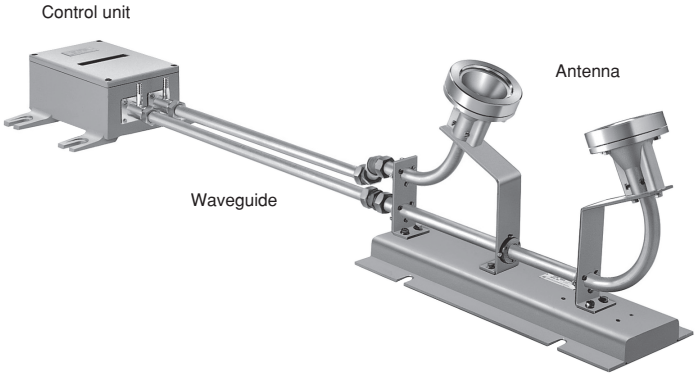
Waveguide Type Detector

MBX-301CA

Microwave type which isn't affected by vapor, disturbance light or smoke etc.

This is a microwave detector. It consists of an antenna as detecting part and control unit composed of oscillator, wave detector and amplifier, and these two components are coupled together by a wave guide. Since the antenna is free from any electronic part which may be affected by heat, it can be used in high temperature environment without being cooled by water.

- This device is suitable for using under bad environment because microwave isn't affected by vapor, disturbance light, smoke etc.
- This device is reflective type. It is possible to detect small pipe, too.
- This device provides monitor output that is monitoring oscillation of microwave.

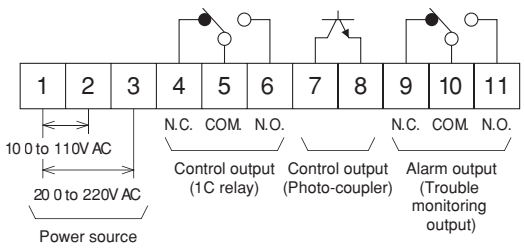


■ Specifications

Type	Microwave type
Model	**Control unit: MBX-301CA** **Antenna: MAR-201(without air purge), MAR-251(with air purge)** **Waveguide: MWG-20(Semi-seamless・2m long), MWG-25(Seamless・2m long)** **MFG-20(Flexible・0.5m long)** **Joint: MSJ-20(Socket), MBJ-20(Elbow), MCJ-20(Elbow with 45°)**
Power source	100 to 110VAC/200 to 220VAC(±10% 50/60Hz)
Power consumption	4.5VA or less
Detecting distance	Approx. 300mm from antenna surface
Detectable objects	Steel plate with reflection surface, 50 x 50mm
Hysteresis	1mm to 30mm(Adjustable)
Microwave	10.525GHz ±15MHz
Allowable waveguide length	25m or less(Total of transmission and reception)
Air blowing of waveguide	Air quality: Industrial clean air, Air amount: 20 lit/min., Air pressure: 980kPa(In case of MAR-251)
Response time	Contact output: 10ms, photo-coupler output: 3ms
Control output	1C relay(250VAC 3A, 30VDC 5A, cosϕ=1), Photo-coupler(75V 100mA)
Alarm output*1	1C relay(250VAC 3A, 30VDC 5A, cosϕ=1)
Indicators	Power lamp, operation lamp, alarm lamp, 5-step reception level lamp*2
Connection	M4 screw terminal, hub body with gland(Hole dia.ϕ18)
Ambient temperature	Control unit: -10 to +60℃, Antenna/waveguide: -20 to +600℃
Case	Antenna: Bronze casting, Control unit: Aluminum die-casting
Weight	Control unit: Approx. 10kg, antenna: Approx. 11kg

*1. When oscillation of microwave is stopped by power failure or circuit trouble, this output is executed.
*2. Reception level is indicated with 5 steps.

■ Connection



● **Control output**

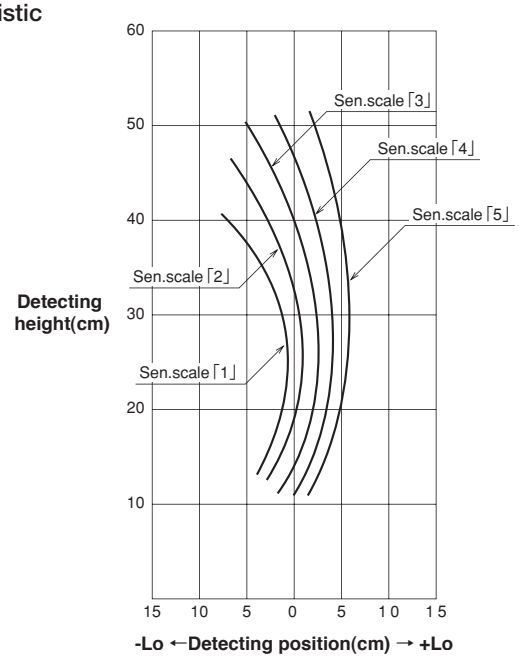
Terminal No.		4—5	5—6	7—8
Power-off state		CLOSE	OPEN	——
Power-on state	When non-detecting	OPEN	CLOSE	ON
	When detecting	CLOSE	OPEN	OFF

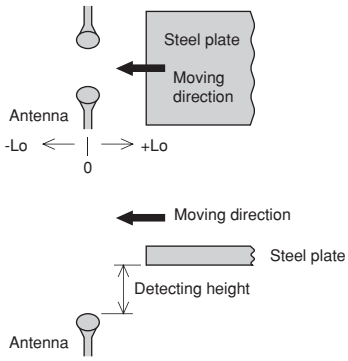
● **Alarm ouput(Trouble monitoring output)**

Terminal No.		9—10	10—11
Power-off state		CLOSE	OPEN
Power-on state	When normal	OPEN	CLOSE
	When troubled	CLOSE	OPEN

■ Characteristic data(Typical example)

Detecting characteristic

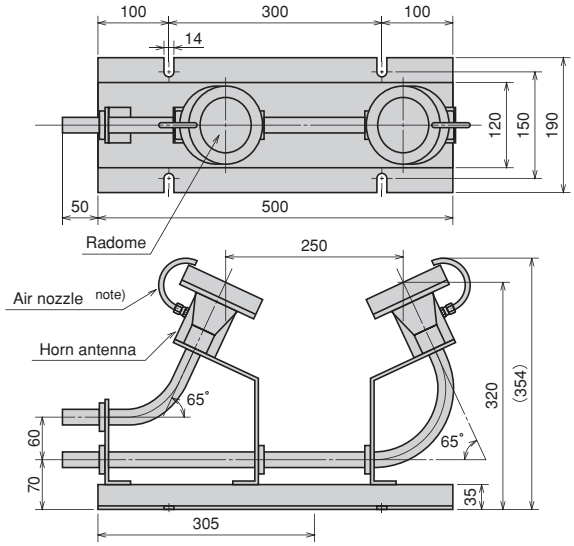




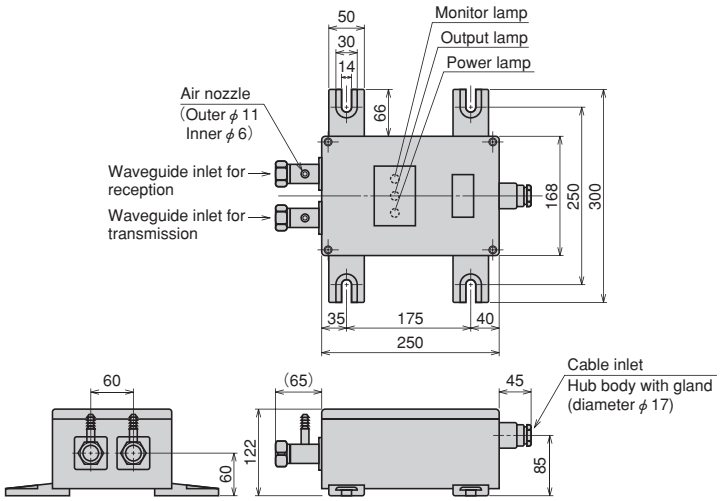
- Antenna: MAR-201
  Antenna interval 250mm
  Antenna angle 65°
- Waveguide length: 16m
- Amplifier hysteresis: scale「5」

■ External dimensions

Antenna(MAR-201/MAR-251)



Control unit



Note) Only MAR-251