

# **BR-1022**

## **User Manual**

Preliminary



Rev. 02

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## Important Safety Instructions

1. Carefully read all of the instructions provided and save them for later use. Heed all warnings and instructions marked on the BR-1022.
2. Do not place the BR-1022 on an unstable stand or surface as it may fall resulting in serious damage.
3. The BR-1022 must be operated from a 120 Volts AC 60Hz @ TBDA power source for the North America model, or from a 240 Volts AC 50Hz @ TBDA power source for the European model. Operating voltage is factory set.
4. The BR-1022 power cord is equipped with a three-prong grounding plug that will only fit into a grounding type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact a qualified person to replace the obsolete outlet. Do not tamper with the grounding prong to force fit into the outlet.
5. Do not allow any objects to rest on the power cord or place the BR-1022 where the power cord will be trampled on.
6. If an extension cord is used with the BR-1022, make sure that the total ampere ratings of the devices plugged into the extension cord do not exceed the extension cord ampere rating.
7. **Warning: No operator serviceable parts inside the BR-1022 radar unit. Please refer servicing to service qualified personnel.**

## 1. General

The BR-1022 radar can be used to measure the radial velocity of any moving object located in the radar beam coverage. The output of the radar is an analog signal with a frequency and amplitude proportional to the radial velocity and distance of the moving object.

## 2. Microwave Safety Warning



**Based on limits specified by the Federal Communication Commission (FCC) on Radio Frequency (RF) emissions in a general population environment, continued exposure to radiation should be avoided within 4.0 meter in front of the radar. Radiation levels outside this region fall within regulations of 1 mW/cm<sup>2</sup> and are not considered safety hazards. When setting up the antenna, special care should be taken to avoid situations where the antenna radiates towards individuals. The antenna should be positioned such that bystanders are located behind the antenna. During antenna setup, the antenna power cord should be unplugged to avoid accidental hazardous exposures to radiations. Always turn the antenna transmitter off during periods of inactivity. Direct visual contact with the radar when transmitting should be avoided at all times.**

## 3. Specifications

Description	Specification
Nominal Frequency	10.525 GHz
Nominal Transmitting Power	2.0 W – 0.1 W, selectable
Antenna Gain	27 dBi (nominal)
Transmitter Stability	±5 ppm
Beamwidth	4° x 4°
Dimension (without yoke)	30.75" x 15.25" x 3.00"

## 4. Installation

The BR-1022 is mounted on a yoke that has a 3/8"-16 hole for installation on a tripod. The yoke provides the flexibility for radar alignment in both azimuth and elevation.

## 5. Operation

The BR-1022 is powered on 120/240 VAC, 50-60 Hz using a conventionnal power cord for connection in standard power outlet. It is interfaced to a processing unit using a single four-wire cable equipped with military connectors. This cable is used to carry out the radar Doppler signal to the processing unit and the antenna transmission control. You should connect your radar cable from this connector to the appropriate radar input on your processing unit.

The radar head has an override transmitter control switch that can be used to activate the transmitter locally at the antenna.

In addition, the radar has a transmitter power control switch to select between low or high output power. At the low setting, the transmitter output power is 0.1 Watt and at the high setting, the output is 2.0 Watts.

The BR-1022 has three LED indicators, one for the main power, one for the transmitter on/off status and the one for the transmitter output power selection (low or high).

Also, the BR-1022 has a provision for connecting a 12 VDC (2 amperes maximum) warning device. The warning device is automatically enabled when the radar transmitter is switched on. This safety feature is useful to warn bystanders when the radar is radiating.

## 6. Maintenance

The BR-1022 radar does not require much maintenance. Attention should however be paid to a few points:

- Keep the connectors clean from dirt and moisture to avoid corrosion and bad connections.
- Now and then wipe the radar enclosure and antenna panels with a soft and wet cloth.

The radar fuses are located inside the radar unit. To replace them, refer the radar system to qualified personnel.



Warning: No operator serviceable parts inside the radar unit. Please refer servicing to service qualified personnel

## 7. Power Connector Specification

Connector type: Amphenol T3110-000

Pin	Description
1	AC Neutral
2	120Vac
3	240Vac
4	Protective ground

## 8. Antenna Connector Specification

Connector type: ITT CANNON MS3124E16-8P

Pin	Description
A	Not Connected
B	Not Connected
C	Not Connected
D	Remote Make for Antenna Transmitter Control (+ 5 Vdc Output)
E	Make Ground
F	Doppler Signal + (5 Vpp max.)
G	Doppler Signal - (5 Vpp max.)
H	Ground

The processor does the remote activation of the transmitter by short circuiting pins D and E of the connector.

## 9. Antenna Warning Device Connector Specification

Connector type: ITT CANNON MS3124E12-3S

Pin	Description
A	12 Vdc, 2 amperes maximum
B	Not Connected
C	Ground

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