WL-19D RF Modem Installation and Operating Instructions

Read Instructions Completely Before Installing Equipment

Installation and Wiring

1. The WL-19D should be mounted high above ground and in a place that gives clear line of sight to the other wireless unit it will be communicating with. The directional yagi antenna is manufactured by CUSHCRAFT and comes with its own set of instructions. Carefully read all instructions before installing the antenna. The cable from the antenna directly connects to the cable from the WL-19D. These N-type connectors are weather proof, however, added sealant over the mated connectors is recommended.

IMPORTANT: The antennas at each end of the wireless link should be mounted such that their element(s) have the same orientation. Normal practice is to mount all antennas with their elements vertical as shown **Figure 1**.

LIGHTNING: A low resistance earth ground on the antenna and mast is critical for lightning protection. Some additional degree of lightning protection may be provided by not mounting the yagi antenna as the highest point on a structure. An optional lightning arrester kit is available from BinMaster and should be used in areas where lightning is of concern. The antenna with lightning arrester is shown in **Figure 2**.

2. The WL-19D will operate from 115 VAC, 230 VAC or 12 to 24 VDC. A voltage selector on the WL-19D circuit board must be set to match the AC input voltage. A separate set of polarized input terminals are provided for DC operation. The DC power may be either ungrounded or have a negative ground. Refer to the wiring diagram shown in **Figure 3**. All wiring to the unit should be in accordance with the National Electrical Code and any applicable local codes. In all cases, a good electrical earth ground should be connected to the G terminal of the WL-19.

3. A quality shielded twisted pair communication cable such as Belden 9463 should be used for the RS485 network. Connect the RS485 communication cable to the appropriate WL-19D terminals. **NOTE:** The RS485 network is a polarized (+/-) system. Take care to maintain consistent wire polarity throughout the entire network when connecting to all other devices.

4. **TERM:** The jumper on the WL-19D circuit board labeled TERM is typically set to the ON position. This is because the WL-19D is usually at one end of the RS485 network cable. If, however, the WL-19D is in the middle of a long network then the TERM jumper would be set to OFF and the devices at each end of the network would have their terminations set to ON.

5. **BIAS:** Both BIAS jumpers on the WL-19D circuit board are typically set to ON. However, if a computer interface device or other BinMaster controller is also connected to the same wired RS485 network, then that device may be biasing the network in which case the WL-19D BIAS jumpers would be set to OFF.

Operation

1. The WL-19D does not require any operator adjustments or actions for operation.

2. The red POWER indicator light located near the RS485 connector on the WL-19D circuit board should be ON whenever power is applied to the unit.

3. There are four other LED indicator lights on the WL-19D circuit board which indicate the following:

DI	Data In, flashes whenever data on the RS485 network is coming into the WL-19D.
DO	Data Out, flashes whenever data is moving out of the WL-19D onto the RS-485 network.

RX Receive, flashes whenever data is being received by the RF modem.

TX Transmit, flashes whenever data is being transmitted by the RF modem.

927-0264

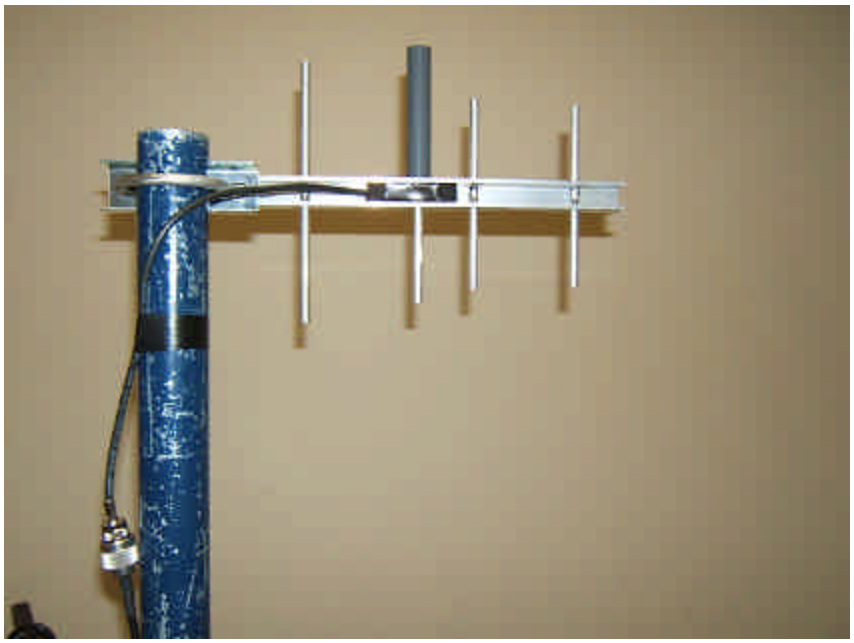

Figure 1

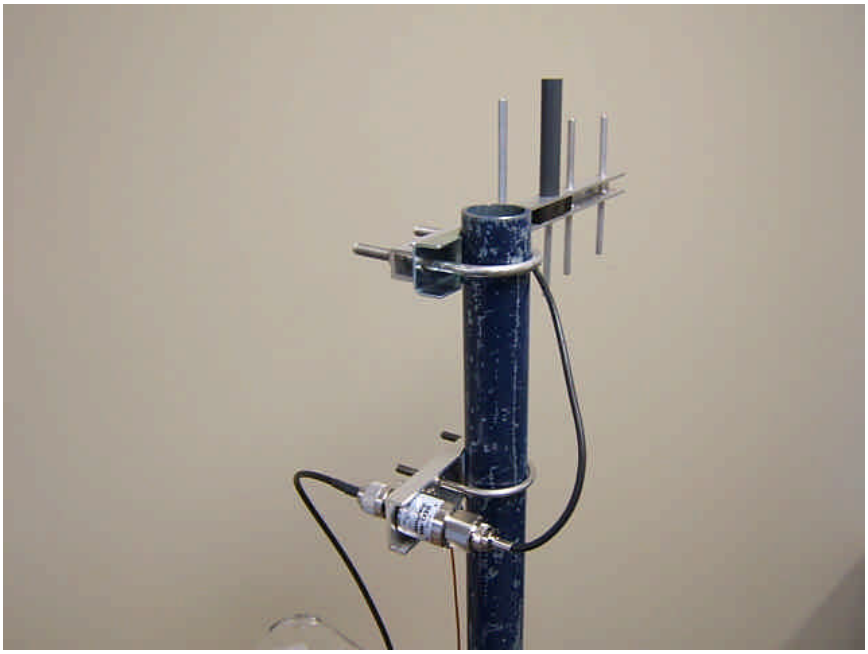

Figure 2

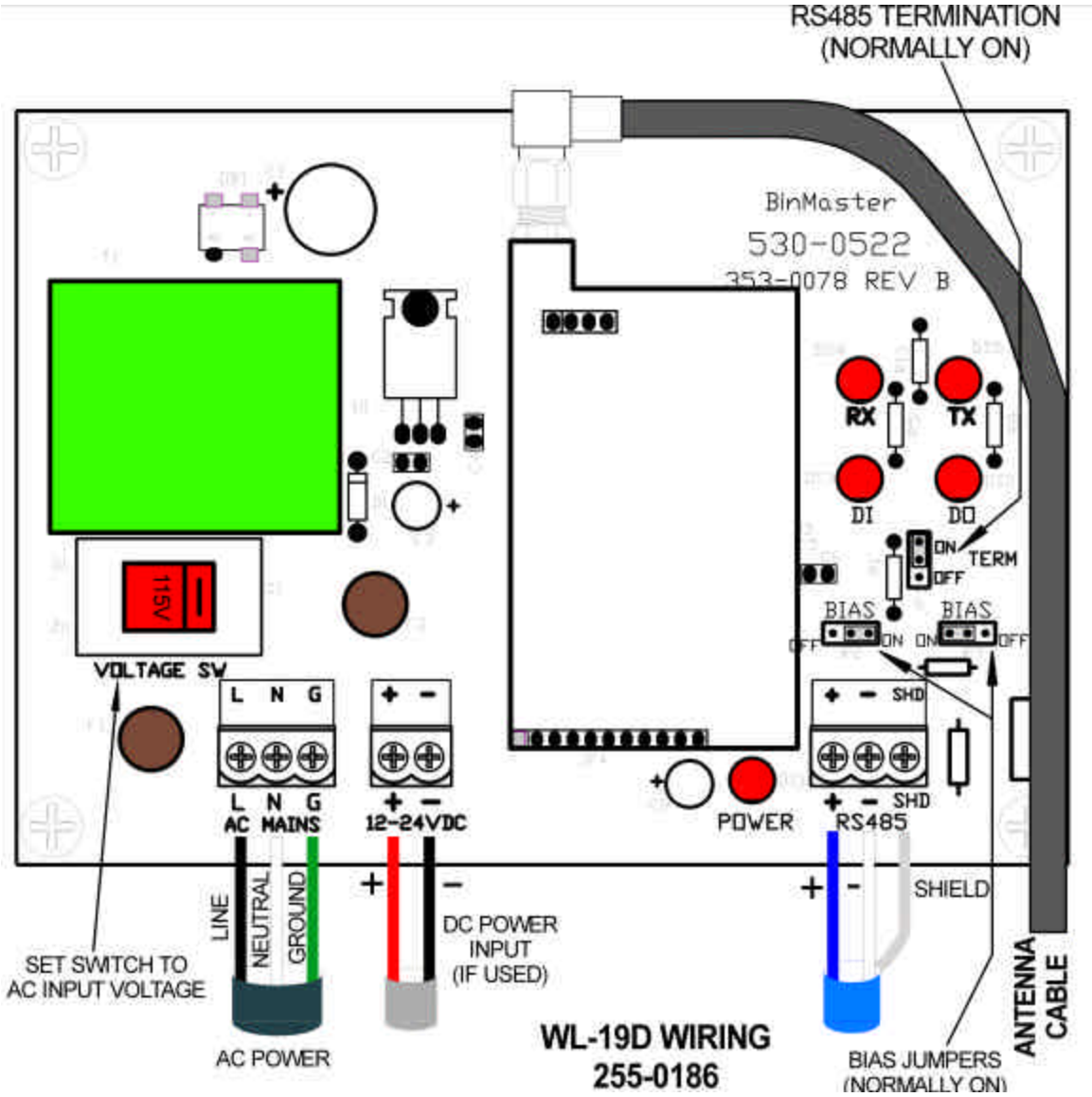
RS485 TERMINATION
(NORMALLY ON)
BinMaster
530-0522
353-0078 REV B
RX
TX
DI
DO
ON
OFF
TERM
BIAS
BIAS
VOLTAGE SW
115V
L N G
L N G
AC MAINS
12-24VDC
POWER
SHD
SHD
RS485
LINE
NEUTRAL
GROUND
DC POWER
INPUT
(IF USED)
SHIELD
ANTENNA
CABLE
SET SWITCH TO
AC INPUT VOLTAGE
AC POWER
WL-19D WIRING
255-0186
BIAS JUMPERS
(NORMALLY ON)

Figure 3