BINMASTER

WL-19/WL-20 RF Modem Installation and Operating Instructions

Read Instructions Completely Before Installing Equipment

Installation and Wiring

1. The WL-19/WL-20 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. To provide OMNI (all) directional transmission and reception, the unit must be mounted such that its antenna is vertical as in **Figure 1**. The antenna at the other end of the wireless link should likewise have the element(s) of its antenna vertical. To provide some degree of lightning protection, the WL-19/WL-20 should not be mounted as the highest point on a structure. A good electrical earth ground should be connected to the G terminal of the WL-19/WL-20. An optional mounting kit which provides easy mast or rail mounting is available from BinMaster, see **Figure 1** and **Figure 2**.

2. The WL-19/WL-20 will operate from 115 VAC, 230 VAC or 12 to 24 VDC. The voltage selector switch on the WL-19 circuit board must be set to match the AC input voltage. A separate set of input terminals are provided for DC operation. Observe correct DC polarization. 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. A good electrical earth ground should be connected to the G terminal of the WL-19/WL-20.

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 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-19/WL-20 circuit board labeled TERM is typically set to the ON position. This is because the WL-19/WL-20 is usually at one end of the RS485 network cable. If, however, the WL-19/WL-20 is in the middle of a long network then the TERM jumper would be set to OFF position and the devices at each end of the network would have their terminations set to ON.

5. **BIAS:** Both BIAS jumpers on the WL-19/WL-20 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-19/WL-20 BIAS jumpers would be set to OFF.

Operation

1. The WL-19/WL-20 does not require any operator adjustments or actions for operation.

2. The red POWER indicator light located near the RS485 connector on the WL-19/WL-20 circuit board should be ON whenever power is applied to the unit.

3. There are four other LED lights on the WL-19/WL-20 circuit board which indicate the following:

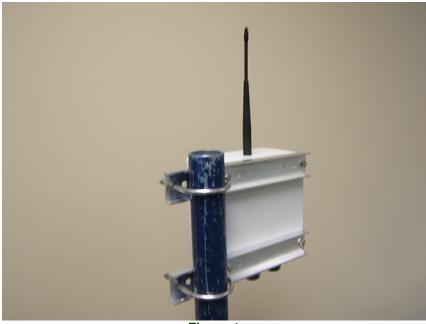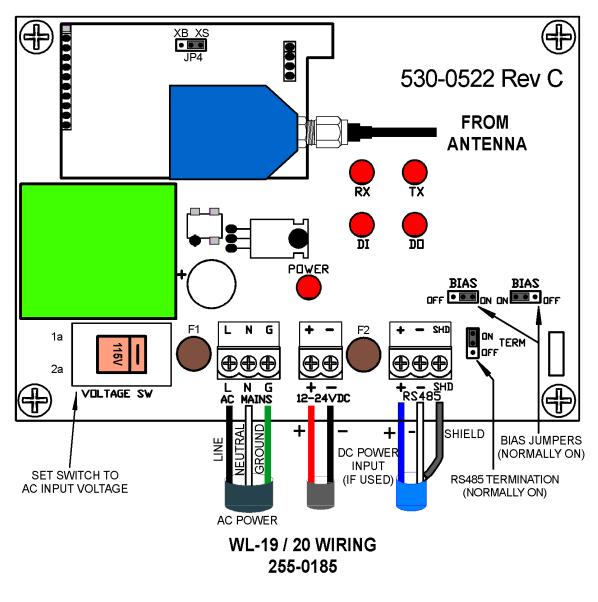|	
DI	Data In, flashes whenever data on the RS485 network is coming into the WL-19/WL-20.
DO	Data Out, flashes whenever data is moving out of the WL-19/WL-20 onto the RS-485 network.
RX	Receive, flashes whenever data is being received by the RF modem.
TX	Transmit, flashes whenever data is being transmitted by the RFmodem.

Figure 1

Figure 2

WL-19 / 20 WIRING
255-0185

Figure 3

XB XS
JP4

530-0522 Rev C

FROM ANTENNA

RX   TX

DI   DO

POWER

BIAS   BIAS
OFF ● ON   ON ● OFF

ON
TERM
OFF

1a
2a
115V
VOLTAGE SW

F1

L N G
L N G
AC MAINS

+ −
+ −
12−24VDC

F2

+ − SHD
+ − SHD
RS485

SET SWITCH TO
AC INPUT VOLTAGE

LINE
NEUTRAL
GROUND
AC POWER

+
−
DC POWER
INPUT
(IF USED)

+
−
SHIELD

BIAS JUMPERS
(NORMALLY ON)

RS485 TERMINATION
(NORMALLY ON)