matko

ELECTRONIC DISPLAYS

Matko Wireless Installation Manual

XT Series:
-XT100
-XT200
-XT300
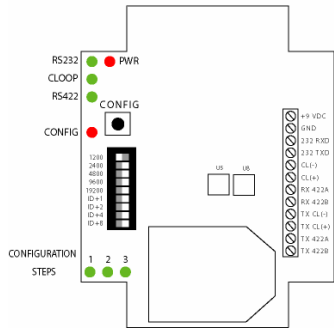## -XT400

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Transceiver Setup

Figure 2 –XT300 Transceiver

1. Set the upper 5 DIP switches on the transceiver to the same baud rate as the indicator. If all switches are set to off or more than one switch is turned on then the unit will default to 9600 baud
2. Set the dip switch 1to 4 on the transceiver for a system ID. There are 16 possible system IDs available 0 (all off) to 15 (all on). If more than one wireless system are present each system requires a unique ID
3. Press the CONFIG button on the transceiver to save the dip switch settings. The three green configuration LEDs will illuminate as setup progresses. LED 1 indicates setup initiated. LEDs 1 and 2 indicate internal communication established. LEDs 1, 2, and 3 indicate setup complete. If there is a problem with configuration the red CONFIG LED will blink every 5 seconds up to 6 times as internal communication is re-established. The red CONFIG LED will then blink several times rapidly. Wait a minimum of 5 seconds before pressing CONFIG again.
4. Wire the transceiver to the indicator according to Figure 1. When properly wired the corresponding LED (RS232, CLOOP, or RS422) will blink with each data transmission
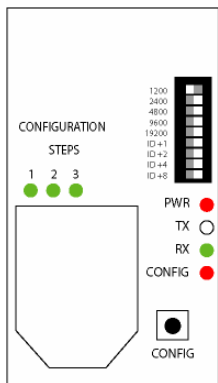
Receiver Setup

Figure 3 – XT300 Receiver

1. Set the dip switch 5 to 9 on the transceiver to the same baud rate as the indicator. If all switches are set to off or more than one switch is turned on then the unit will operate at 9600 baud
2. Set the dip switch 1to 4 on the transceiver for a system ID. There are 16 possible system IDs available, 0 (all off) to 15 (all on) for the XT300, 2 IDs for the XT200 and 1 ID for the XT100. If more than one wireless system is present each system requires a unique ID. All transmitters and receivers on the same system must have the same system ID
3. Press the CONFIG button on the transceiver to save the dip switch settings. The three green configuration LEDs will illuminate as setup progresses. LED 1 indicates setup initiated. LEDs 1 and 2 indicate internal communication established. LEDs 1, 2, and 3 indicate setup complete. If there is a problem with configuration the red CONFIG LED will blink every 5 seconds up to 6 times as internal communication is re-established. The red CONFIG LED will then blink several times rapidly. Wait a minimum of 5 seconds before pressing CONFIG again.
4. The RX LED will blink to indicate that the scoreboard is receiving the wireless signal

Wiring Diagram

	Indicator	Pin	Display
Indicators with Active 20 mA Output	+20 mA	6	CL (+)
	-20 mA	5	CL (-)
Indicators with Passive 20 mA Output	+20 mA	1	+9 VDC
		2	GND -JUMP
		5	CL (-) -JUMP
	-20 mA	6	CL (+)
Indicators with RS232 Output	GND	2	GND
	TXD	3	232 RXD
Indicators with RS422 Output	TX 422A (+)	7	RX 422A
	TX 422B (-)	8	RX 422B

Figure 1 – Wiring Diagram

Notes:
-Mount all units in a direct line of sight with each other with all antennas on the same plane (all vertical for example)

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Product Comparison

	XT100	*XT200*	*XT300*	*XT400*
Baud Rate				
1200		▲	▲	▲
2400		▲	▲	▲
4800	9600 (Fixed)	▲	▲	▲
9600		▲	▲	▲
19200		▲	▲	▲
Line of Sight Distance				
Outdoor				
¼ Mile	▲	▲	▲	▲
½ Mile		▲	▲	▲
1 Mile			▲	▲
Indoor				
75 Feet	▲	▲	▲	▲
150 Feet		▲	▲	▲
300 Feet			▲	▲
Protocol				
RS232	▲	▲	▲	▲
20 ma CL Active		▲	▲	▲
20ma CL Passive		▲	▲	▲
RS422		▲	▲	▲
RS485			▲	▲
Approvals				
US (FCC)	▲	▲	▲	▲
Canada (IC)			▲	▲
Europe (ETSI)			▲	▲
Network ID's	1	2	16	16
TTL Line Passing	0	0	0	4
Configuration	Fixed	In Field	In Field	In Field
Enclosure	NEMA 4	NEMA 4	NEMA 4	NEMA 4

XT400 Input Output Setup

The XT400 units have the ability for up to 4 lines of digital IO line passing, useful for stop and go light control. A built in Switch can be added for inputs. Relays can be added to outputs for remote zero and remote printing for many indicators. Each transceiver can either be set up for inputs or outputs, but not both. To make a transceiver accept digital inputs place the blue jumper on IN and place the two MCT62 ICs in the sockets under the label "IN", closest to the heat sink on the far right hand side. To make the transceiver output TTL levels place the blue jumper on OUT and place the two MCT62 ICs in the sockets under the label "OUT".

Replacement Part Numbers

Part Number	Description
XT-ANT	2.4 GHz antenna for all XT Series models
XT100 Receiver	XT100 Series receiver mounted internally to an SBL Series Remote Display. Fixed at 9600 Baud rate and 1 System ID
XT200 Receiver	XT200 Series receiver mounted internally to an SBL Series Remote Display. Selectable Baud Rate and 2 System IDs
XT300 Receiver	XT300 Series receiver mounted internally to an SBL Series Remote Display. Selectable Baud Rate and 16 System IDs
XT400 Receiver	XT300 Series receiver mounted internally to an SBL Series Remote Display. Selectable Baud Rate and 16 System IDs. 2 Digital output
XT100 Transceiver*	XT100 Series Transmitter/Receiver in a NEMA 4 case. Fixed at 9600 Baud rate and 1 System ID
XT200 Transceiver*	XT200 Series Transmitter/Receiver in a NEMA 4 case. Selectable Baud Rate and 2 System IDs
XT300 Transceiver*	XT300 Series Transmitter/Receiver in a NEMA 4 case. Selectable Baud Rate and 16 System IDs
XT400 Transceiver*	XT300 Series Transmitter/Receiver in a NEMA 4 case. Selectable Baud Rate and 16 System IDs. 4 Digital inputs or 4 digital outputs.

*Any serial devices can be connected using XT Series Wireless transceivers. PCs can be connected to printers or multiple indicators can be networked together… Matko remotes are not required for a wireless system.

RF Exposure

 WARNING: To satisfy FCC RF exposure requirements for mobile transmitting devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended. The antenna used for this transmitter must not be co-located in conjunction with any other antenna or transmitter. The preceding statement must be included as a CAUTION statement in OEM product manuals in order to alert users of FCC RF Exposure compliance.