

**Miller Edge, Inc.**

**Monitored Device**

**Radio**

**MW-MDTR-20**

**315 MHz**

Transmitter

FCC ID: OYE-MDTR3

TRADE NAME: Miller Edge

MODEL: ME-MDTX-20

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Installation Instructions for

## **Miller Edge Inc.**

### **Monitored Device Ping Radio**

#### **MW-MDTX-20 and MW-MDRX-20**

##### **Kit Contents:**

1. MW-MDTX-20  
Transmitter Unit
2. (2) AA Lithium Batteries
3. MW-MDRX-20  
Receiver Unit
4. Receiver Antenna

##### **Customer Supplied:**

1. Terminated Edge  
(or Device)
2. Source of 12 to 24V AC  
or DC, @ 100mA, min.

Tools Required:

1. 3/32" Flat blade screwdriver
2. 1/4" Flat blade screwdriver
3. #1 Philips Head screwdriver
4. Optional VOM  
for test purposes
5. Mounting screws  
(as required)

Transmitter Test and Installation:

**Step 1.** Open and unpack the transmitter and receiver unit.  
Unpack the antenna and batteries.  
Unpack the optional receiver wiring harness.

**Step 2.** Remove the Transmitter cover (using the  $\frac{1}{4}$ " Flat screwdriver) and place the cover to the left of the unit for reference.

**Step 3.** Remove the Transmitter PCB from the enclosure using the #1 Philips screw driver on the 4 corner screws.

**Step 4.** Route the cable from the monitored device (Edge) through the cable gland for approximately four inches.

Strip 2" of sheathing from the cable end.

Strip the insulation from the two wires back  $\frac{1}{2}$ ".

Twist the wires to tighten the strands and fold each back  $\frac{1}{4}$ ".

See Fig. 1.

**Step 5.** Place the two AA Lithium batteries in their holders paying attention to their polarity. Note: A wrongly installed battery will not do harm to the unit but the transmitter will not operate, and the PCB will have to be removed to correct the error.

**Step 6.** Tuck the wires connected to the **SE** terminal block neatly between the batteries and pull the excess wire back through the cable gland; re-seat the PCB and replace the 4 mounting screws. Tighten the cable gland.

**Step 7.** Set the Termination Device switch to either 10K resistive, or 9.1V Diode. This selection must match the Safety Edge Termination type.

**Step 8.** Transmitter Quick Test:

Set the Tx/Rx Group and Address switches to the desired positions.

If the Group switch is set to 0, the address switch may be set to any position between 0 and F.

If the Group switch is set to 1, the Address switch may be set to any position between 0 and B.

The remaining positions, C, D, E, and F are reserved for factory testing.

**Momentarily** press the TEST

button to load the address and group data.

The Red and Green LEDs used to indicate Tx Data and Low Battery condition will flash momentarily during the power on sequence (when the batteries are installed). The Green Tx Data LED should flash. The Red Low Battery LED will only light when the batteries fall below 2.4v.

Note: Low Battery data is also sent to the receiver and displayed there.

[Step. 9](#) Replace the cover on the Transmitter. Tighten the screws.

[Step 10](#). Mount the Transmitter on the bottom bar of the door.

The mounting holes are located under the cover mounting screws. The transmitter must be mounted with its top cover facing upward.

CONNECT SAFETY EDGE WIRES TO 'SE'

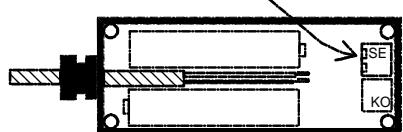


Fig. 1

#### Receiver Installation and Test:

Step 1. Remove the cover from the Receiver Unit (MW-MDRX-20) and place it alongside of the receiver.

Step 2. Route the wires from the operator source (12 to 24v AC/DC) to the Power Terminal block on the receiver. The power input is polarity independent and accepts either AC or DC. Note: An external wall transformer may be used if 12 – 24 VAC/DC is not available from the operator unit.

Step 3. Set the Rx Group and Address switches to match the transmitter switch settings.

Step 4 Connect the antenna to the receiver RF board. See Fig. 2.

Step 5 The termination header has a jumper that can be pulled straight up and re-inserted into the proper position. Set the termination selection jumper to either 10K resistive or 9.1V Diode. See Fig.3.

Step 6 Preliminary Test Check:  
Confirm that the Transmitter is ON, and power to the receiver is ON.  
(Confirm that the Blue LED Power light is On.)

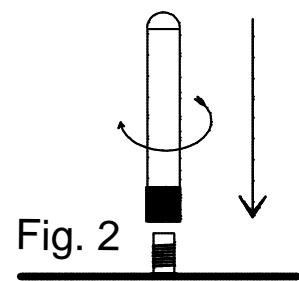
Activate the Safety Edge (or monitored device) and check that the Address Valid (Yellow LED) is ON.

IF the Address Valid LED is not on, check that the Group and Address switches match the transmitter's switch settings

Check that the Photo-Eye and Safety-Edge LEDs (red and green respectively) are lit.  
Clear the Edge (or safety device) and note that the Photo-eye and Safety Edge LEDs go OFF.

Step 7. If the above tests pass, mount the receiver close to the operator and in the line-of-sight of the transmitter. Proceed to connect the receiver's SE or PE output to the operator.

Step 8. Operator - Safety Device Test: Confirm UL operator requirements for momentary pressure operators.



### **Functional Door Test:**

Idle Indications, NO problems:

- Tx No lights ON
- Rx Only Blue LED (power) ON

PRESS & HOLD the Safety Edge:

- Tx A brief blink of Green LED
- Rx A brief blink of Yellow LED
- Red (PhotoEye) LED ON
- Green (Safety Edge) LED ON
- and, after a second,
- Red (Ping Loss) LED comes ON

RELEASE the safety Edge:

- Tx A brief blink of Green LED
- Rx A brief blink of Yellow LED
- Red (PhotoEye) LED is OFF
- Green (SafetyEdge) LED is OFF
- and, after 1-2 seconds,
- Red (PingLoss) LED is OFF

**Preliminary Specifications:**

RF Frequency	315 MHz
Modulation	OOK
Data Rate	19.2Kbps
Discrete addresses	28
Tx to Rx Range	3' – 100'
Enclosure	polycarbonate

**Transmitter:**

Tx Battery	Li/FeS <sub>2</sub> (Energizer L91, 2- AA cells)
Avg. Battery Life, 23°C:	12 Months
Operating Voltage:	2.2V to 3.6V
Operating Temp.:	-40°F to 140°F
Operating Humidity:	0 to 100%

Mounting: 4 - #6 self-tap screws

Size: 5 5/8" x 1 3/4" x 1 3/4"

Antenna: Integral helical 1/4 λ

Indicators: (2)

low battery/test mode (Red)

transmission ON (Green)

Input Connections:

Safety Edge sensor, 2 wire;

w/switch selectable termination:

(10KΩ or 9.1V TVS diode)

Knock Out sensor; N/O or N/C

Input connectors:

Terminal Block, 16 to 26 AWG

**Receiver:**

Operating Voltage: 12-24 VAC/DC  
@ 100 mA, max.

Operating Temp. -40°F to 140°

Operating Humidity: 0 to 98%,  
non-condensing

Size: L W H  
4 5/8" x 3 3/4" x 1 1/4 " + Ant.  
(total height w/ antenna is 2 3/4")

Antenna: helical, 1/4 λ, SMA

Mounting: 2 - #6 self-tap screws

Indicators: (7)

Power On	(Blue)
Address Valid	(Yellow)
Ping Loss	(Red)
Photo-Eye	(Red)
Safety Edge	(Green)
Knock Out	(Green)
Low Battery	(Green)

Operator Interface Connections:

Power, 12/24V      input

S.E. PhotoEye      output

S.E. Relay      output

(S.E. Termination options;

10KΩ, 9.1V diode, none)

Knock Out Relay      output

Low Battery Relay      output

(all relays provide N/O & N/C)

**unterminated 10K R selected**

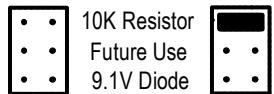


Fig. 3

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which may be determined by turning the equipment off and on, the user

is encouraged to try to correct the interference by one or more of the following measures:

1. Re-orient or relocate the receiving antenna
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
4. Consult the dealer or an experienced radio/TV technician for help.

**Changes Or Modifications**

**Not Expressly Approved By  
The Party Responsible For  
Compliance Could Void The  
User's Authority To Operate  
The Equipment.**