

PROTECTOWIRE MANUAL FAULT LOCATOR SYSTEM MFL-92

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1. GENERAL

- 1.01 The Protectowire MANUAL FAULT LOCATOR System MFL-92 is comprised of two (2) modular units. A Tone Generator Model FDG-92 and a Tone Receiver Model FDR-92. (See figures 1 & 2)
- 1.02 A Protectowire MANUAL FAULT LOCATOR SYSTEM detects and locates the over - heated actuated (shorted) spot on the Protectowire Linear Heat Detector.

2. DESCRIPTION

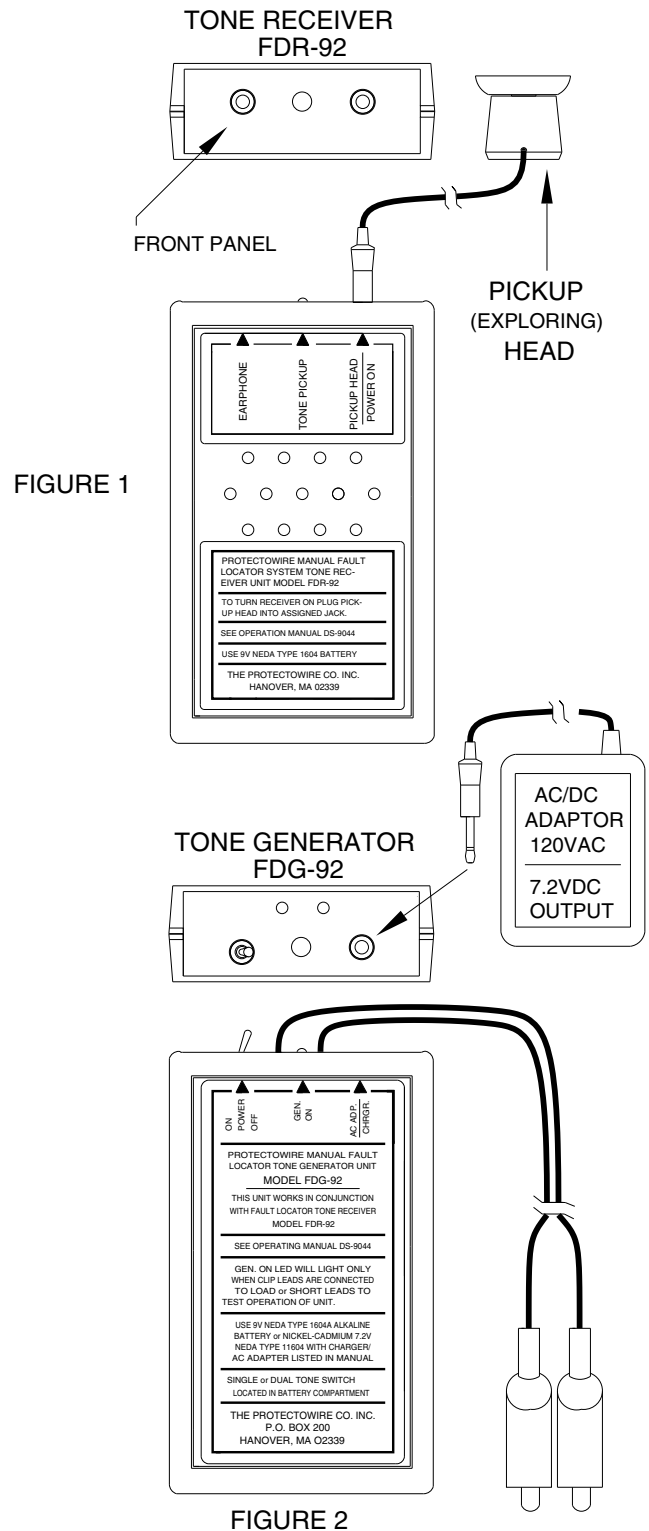
The Tone Generator and Receiver modules are both housed in a durable ABS plastic enclosure, which measures 4 5/6" x 2 3/4" x 1". Each module weighs less than 1/2 lb.

- 2.01 The TONE RECEIVER FDR-92 is powered by (1) 9v NEDA Type 1604 battery with an average life of 50 hours. Located on the enclosure front panel is a tone (signal) pickup L.E.D. indicator. Two (2) 1/8" phone jacks are also provided, one for the exploring Pickup Head and power-on when head is plugged in, the other jack is for an optional earphone, for use in areas where the ambient noise level is high.

- 2.02 The TONE GENERATOR FDG-92 is powered by (1) 9V NEDA Type 1604A Alkaline battery with a life from 4 to 20 hours. Battery life is determined by the load it is connected to. i.e If heat actuated spot is at the start of the Protectowire run the battery life would be approximately 4 hours, if the actuated spot is at the end of a 2500 ft run the battery life would be approximately 20 hours.

Note: This module may be powered by a rechargeable nickel-cadmium 7.2V NEDA Type 11604 battery or by the AC Adaptor/Battery charger as specified in the parts list (also host to the battery charger).

Located on the enclosure front panel is a 1/8" jack for connection of the optional AC adaptor/ battery charger, generator ON L.E.D. and a power on/off switch. In addition to and in series with the power on/off switch is an internal current sensing switch which automatically turns the unit on when connected to an overheated (shorted) Protectowire det. Red and black 4 foot long test leads with insulated standard size alligator clips for connection to the Protectowire under test are also provided.



3. MODULE OPERATIONAL TEST

- 3.01 Module FDR-92 FAULT LOCATOR TONE GENERATOR can be powered up by inserting pickup head into the assigned jack. To test if unit is operating, place pickup head near speaker grill, audible feedback should occur, this will establish that the unit is operating.
- 3.02 Module FDG-92 FAULT LOCATOR TONE GENERATOR is powered up by placing switch to the ON position and connecting the alligator clip leads together. The GEN. ON L.E.D. should be lite, indicating unit is operating.
- To verify the generator is emitting a signal, place the Receiver Pickup Head near the Generator case or near (shorted) clip leads. The Receiver should sound an audible tone of 700 Hz or a dual tone of 700 to 1000 Hz. NOTE: Tone selectable, by selector switch located in the battery compartment.

4. HOW TO LOCATE A FAULT

The following is a general procedure for locating the overheated spot on the Protectowire heat sensitive cable.

- 4.01 Turn off the power for the fire alarm control system.
- 4.02 If detection (initiating) circuit is a two wire Class B (NFPA Style A or B) disconnect the detection circuit feed wires in the Zone Box and at least one wire at the ELR Box. (See figure 3)
- If detection circuit is a four wire Class A (NFPA Style D) label and disconnect all feed wires, the two going out to the start of the detection loop and the two returning. (See figure 4)
- 4.03 Connect the alligator clip leads of the Tone Generator to the Protectowire side of detection circuit as shown in figure 3 & 4.
- 4.04 For convenience, place Receiver in shirt pocket, take the Exploring Pickup Head and start troubleshooting near the beginning of the Protectowire run.
- 4.05 When the Pickup Head is held close to the Protectowire under test, a tone will sound from the speaker if a short is present further along the path of the detector.
- 4.06 As the Head is moved along the detector the tone will increase and decrease in strength at regular intervals. If no tone or a very faint tone can be heard which does not change as the Head is moved, the indication is that there is no short in the loop or you have passed it.
- 4.07 If a tone is heard, the exploring Head should be placed further along the cable. The Head does not have to be moved along every foot of the cable, in fact, after the initial test, try a convenient portion some distance away from the section initially tested.
- If the tone is maintained, all of the cable between the two (2) locations can be considered as being free from shorts.
- If the tone is not present at the second location, try again nearer to the initial location until a spot is found where the tone stops as the head is moved along the section. This is the location of the fault.
- 4.08 To correct the fault, remove at least six (6) feet of detector cable and splice in new detector cable in place using the procedure outlined in the "Specification for Installing Protectowire Linear Heat Detector" (Form # 7877) or "Directions for Use of PWSC Splicing Connectors (Form # 8903). Actually, the length of cable necessary to replace is dictated by the extent of the overheat condition or mechanical damage, caused to the cable. In general, no less than three (3) feet on each side of fault should be removed.
- NOTE: Remove the pickup head from the Receiver, turn off the power switch on the Generator while Fault Locator is not being used to avoid unnecessary drain on the batteries.
- 4.09 After the repair work is completed, another test should be made with the Fault Locator System to be sure that good splices were made and that there are no other shorts on the detector cable.

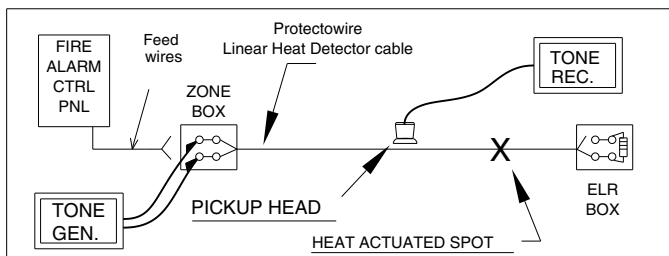


FIGURE 3 CLASS B DET. CKT. W/GEN. CONNECTED.

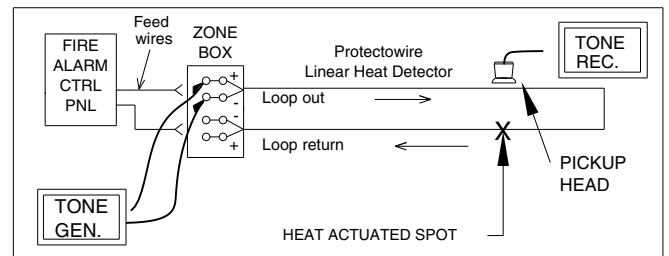


FIG. 4 CLASS A DET. CKT. W/GEN. CONNECTED.

- Components of the Manual Fault Locator System MFL-92 are packed in a water resistant, shock protection case and are allocated space as shown below in figure 5. Before storing, make sure the generator power switch is in the off position and the pickup head plug is removed from the receiver jack.

NOTE: Equipment that contains batteries should be stored in a cool location to extend battery life.

5.01 SYSTEM CONTENTS/PARTS LIST/REORDER NO.

Item	Description	Order SKU #	QTY
1	Fault Locator Sys. MFL-92	501750	1
2	Generator Model FDG-92	501751	1
3	Receiver Model FDR-92	501752	1
4	Pickup Head	501753	2
5	6-Ft Head Extension Cable	600238	1
6	Battery, 9V Alkaline	400681	2
7	AC Adaptor/Battery Charger	400685	1
8	Carryall Case	600239	1

5.02 SYSTEM ACCESSORIES (NOT FURNISHED)

- If Protectowire Linear Heat Detector is installed so that it cannot be reached from the floor, an extension handle can easily be made. Cut a piece of standard 1/2" PVC nonmetallic conduit to a convenient length, insert the pickup head into nipple end of conduit and attach the extender cable as illustrated in figure 6.
- Rechargeable Nickel-cadmium Battery 7.2v NEDA Type 11604.
- Monaural Earphone with 1/8" mini plug.

