

TELEFIRE

TFB-180

TFB-180

Standard Detector Base

Technical Manual



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Note

The terms "**Trouble**" as used in NFPA 72 guideline and UL 864 standard and "**Fault**" as used in EN 54 standards are used interchangeably throughout this manual.

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Note

Do not install, operate, and maintain this product before fully reading this manual.

1 Introduction

Telefire's TFB-180 Standard Detector Base is intended for internal installation.

2 Compatibility

2.1 Control Panels

The TFB-180 is compatible with the following control panels:

- Telefire's ADR-7000 family
- Telefire's ADR-3000 analog addressable control panel
- All TSA-1000 models
- TSA-1000X
- TSA-200 and TSA-200X
- All GSA-1000 models
- GSA-2B

2.2 Analog Addressable Detectors

The TFB-180 is compatible with the following analog addressable detectors:

- TFO-770A analog addressable smoke detector
- TPH-482A analog addressable multisensor detector
- TFO-480A analog addressable smoke detector
- TFH-280A analog addressable heat detector

2.3 Conventional Detectors

The TFB-180 is compatible with the following conventional detectors:

- TPH-482 conventional multisensor detector
- TFO-480 conventional smoke detector
- TFH-280F conventional heat detector

3 Installation

3.1 Pre-Installation Planning

Refer to NFPA 72E "Automatic Fire Detectors" and applicable local codes for detector location and spacing between detectors.

3.2 Wiring

Characteristic	Effect on SLC	Effect on Input Lines
Electric Resistance	Minimal	Minimal
Capacitance	High	No affect
Inductance	High	Minimal
Mechanical Strength	High	High

Table 1 Wiring Characteristics' influence on System Performance

Use a two-wire cable – it is recommended to use a twisted pair cable of 18 – 12 AWG. Refer to the following table for maximum branch length per gives cable cross-section. Use a shielded twisted-pair when connecting between buildings.

Cable Type		Max. cable length for given cross-section as an input of			
Wire Type	Cross Section	ADR-3000	ADR-812 and ADR-818	TSA-1000 and TSA-200	GSA-1000 and GSA-2B
18 AWG	0.8 mm ²	950 m	1,200 m	1,200 m	1,100 m
16 AWG	1.3 mm ²	1,520 m	1,900 m	1,900 m	1,780 m
14 AWG	2.0 mm ²	2,420 m	3,000 m	3,000 m	2,830 m
12 AWG	3.3 mm ²	3,830 m	4,800 m	4,800 m	4,480 m

Table 2 Maximum SLC Loop Length

3.3 Resistance Testing

Short the end of one branch and measure the resistance from the connections of the loop to the control panel. Make sure that the resistance does not exceed 40 Ω. Repeat for each input or SLC. For analog addressable systems that have an NFPA SLC style 4 T branching repeat the test for each branch separately.

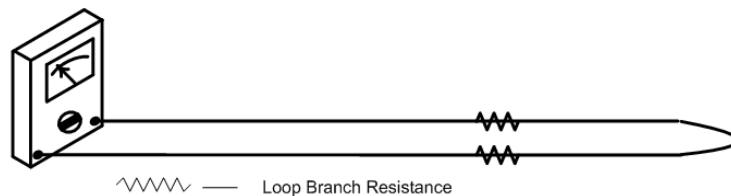


Figure 1 Measuring Loop Resistance – Single Branch

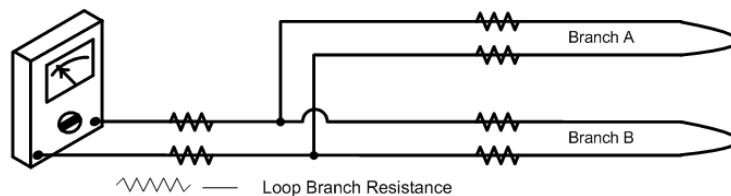


Figure 2 Measuring Loop Resistance – Multiple Branches

3.4 Capacitance Testing

Connect all branches in a loop and make sure that the total capacitance of the SLC loop does not exceed 1.0 μ F.

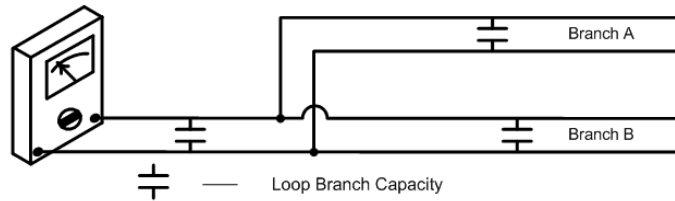


Figure 3 Measuring Loop Capacitance

3.5 Installation

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Note

Notify the operator or the security personnel that the system will be temporary disconnected before adding detectors to the control panel.

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Warning

Measure the wiring to ensure that there are no shorts, open wiring, or ground loops before connecting the base to the control panel. Adding or removing bases shall be done when all power to the control panel (AC and batteries) is disconnected.

3.6 Connecting to the ADR-7000/3000 SLC Line

Connect the bases to the SLC loop as per the following figure.

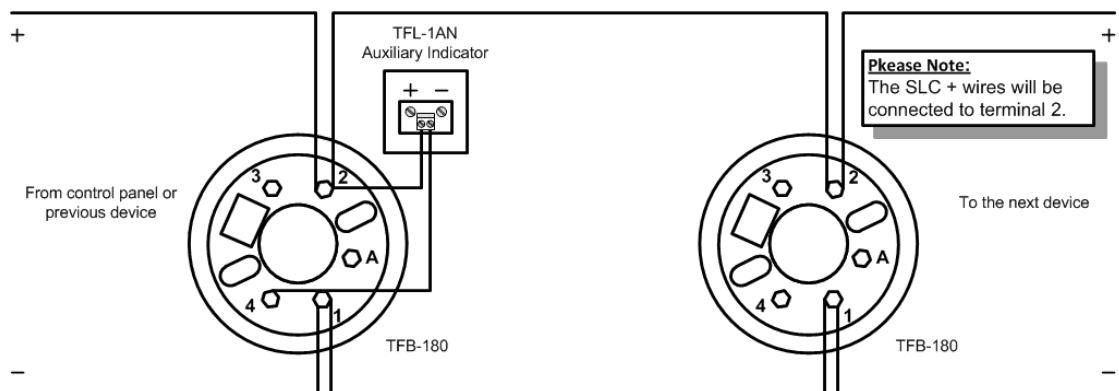
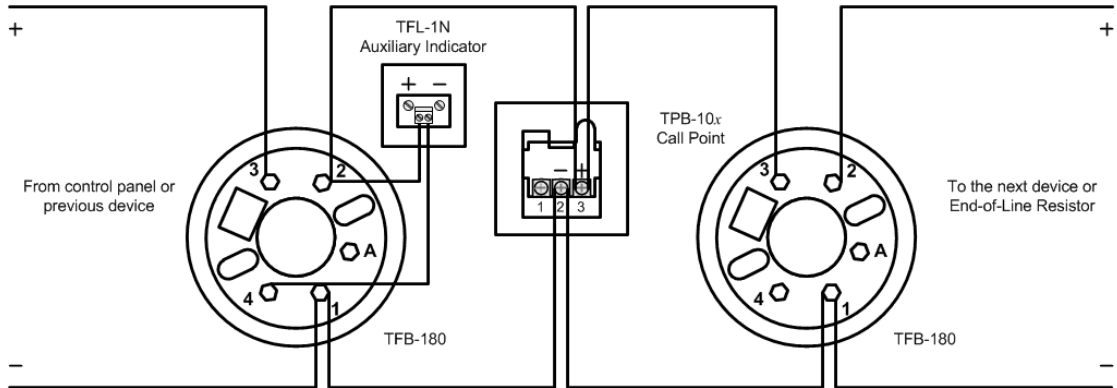


Figure 4 Connecting to the ADR-7000/3000 SLC Line

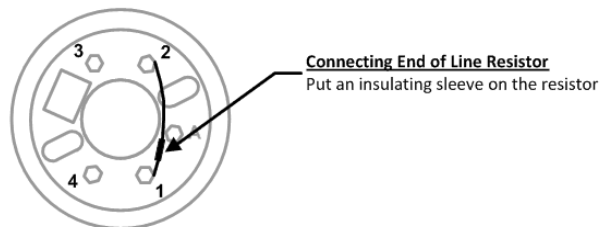
3.7 Connecting to Conventional Control Panel or Analog Addressable Input Modules

Connect the bases to the control panel's input (zone) or the analog addressable input module (IDC) as per the following figure. Connect the End-of-Line resistor to the last device as shown in Figure 7Figure 6.



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Figure 5 Connecting a TFB-180 base to conventional control panels or analog addressable input modules



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Figure 6 Connecting and end of line resistor to a TFB-180 base

3.8 Post-Installation Tests

Perform a walk test to ensure that the control panel receives alarm and trouble signals from the detectors. Refer to the control panel's technical manual for a detailed explanation how to perform a walk test.

4 Optional Relay Module

The TFB-180RL is an optional module for the TFB-180 that enables connecting Telefire's conventional detectors to intruder alarm control panels that operate on 12V and require an NO or NC relay contact as an input. The connection depends on system requirements.

The TFB-180RL is compatible with the following conventional detectors:

- TPH-482 conventional multisensor detector
- TFO-480 conventional smoke detector
- TFH-280F conventional heat detector

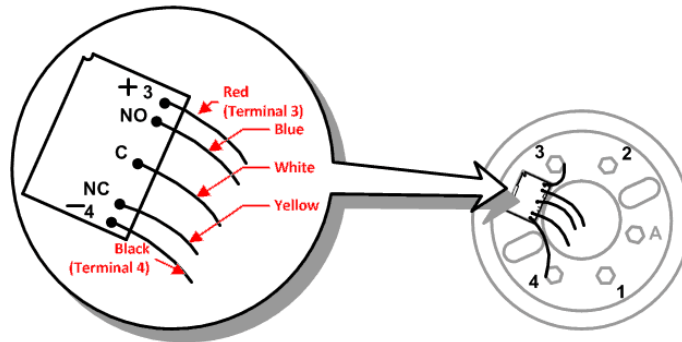
4.1 Installing the Relay Module

Insert the relay module in its designated location (note the notch – it will fit in when placed correctly). Connect the wiring to the base (terminals 3 and 4) and the three relay terminals (NO – blue; C – white; and NC – yellow) as required.



Warning

Do not connect the relay module to 24V systems.



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Figure 7 Location and connections of the TFB-180RL module

5 Specification

5.1 TFB-180 Base

Diameter (including base)	101 mm
Height (base only).....	16 mm
Weight	45 gr.
Operating Temperature range.....	-10°C – +60°C (14°F – 140°F)
Relative Humidity Range	10% – 93% non-condensing

5.2 Optional TFB-180 RL Relay Module

Module PCB dimensions (W / H).....	20 / 14 mm
Weight	5 gr.
Operating Temperature range.....	-10°C – +60°C (14°F – 140°F)
Relative Humidity Range	10% – 93% non-condensing
Operating Voltage (supplied by the detector)	12Vdc ±2V
Maximum Current Consumption.....	0mA (quiescence mode) 10mA (Alarm)
Relay	1, unsupervised
Relay activation	activated in alarm until reset
Max contact rating.....	1A 30Vdc
Relay contacts are unsupervised and are intended for same room connection only.	

All values are nominal. Specifications are subject to change without prior notice

6 Certification

Telefire's TFB-180 Standard Detector Base has the following approvals:

- EN 54-5 Approved
- EN 54-7 Approved
- IS 1220 Approved
- GOST Compliant
- UL 268 Approved
- CE Marked