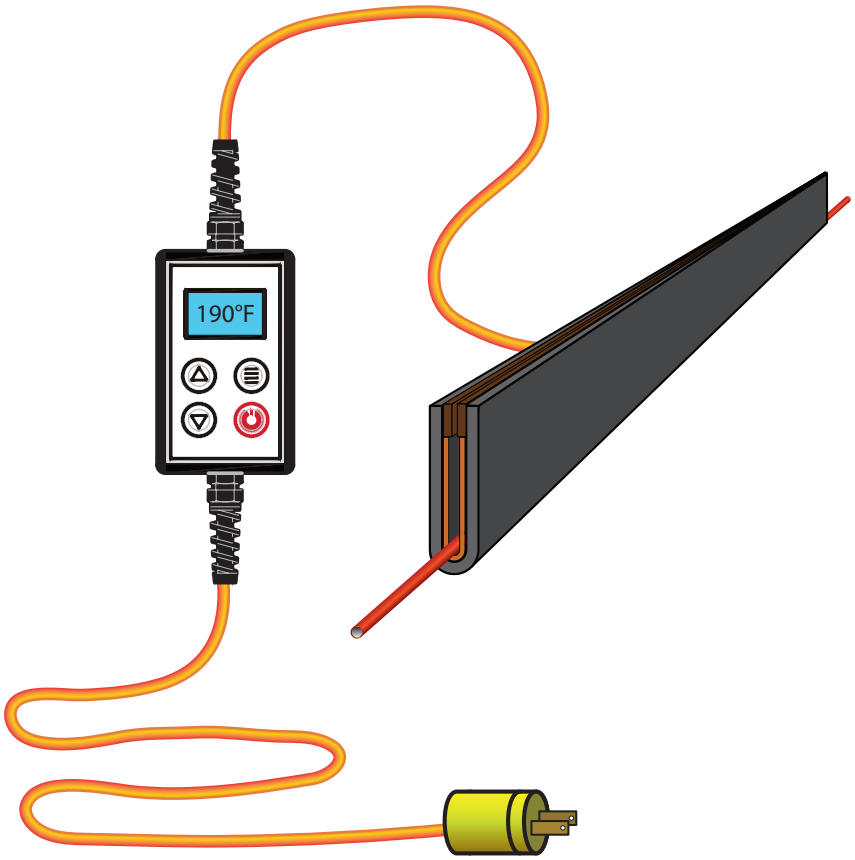
PROTECTOWIRE® FireSystems

F1 Fiber Optic Test Kit
User Guide



F1 Fiber Optic Test Kit
URG-1001
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IMPORTANT SERVICE NOTICE: When requesting service assistance, or ordering parts for a detector, you are required to provide the Model Number and Serial Number. This product information is recorded on the bottom of the detector housing. Please have this information available before calling your Authorized Protectowire Distributor or the Factory.

Testing and maintenance of detectors shall be performed by competent personnel having jurisdiction over the protective signaling system.

NOTE: It is required to disconnect all pre-action, deluge or extinguishing systems prior to testing.

IMPORTANT: Be sure to read and understand the entire operation DTS detection system guide and F1 DTS thermal tester before installing or operating the DTS thermal test kit. Any deviation from the recommendations in this or the DTS system guide may impair system performance and compromise safety.

INTRODUCTION

The F1-Kit is a tool designed to assist in the commissioning and/or testing of a fiber-optic linear heat detector, specifically The Protectowire Company's PFS-654-MF and PFS-554-FR fiber optic linear heat detectors. This testing kit allows the user to verify the fiber optic linear heat detector's functionality. When testing your fiber optic linear heat detector, it is necessary to follow applicable state/provincial, national, or international codes and standards. If there are any questions regarding the application of the F1-Kit, please consult your local Authority Having Jurisdiction (AHJ) for approval prior to use.

The fiber optic testing tool consists of two flexible heating sleeves and a test control unit. The heat sleeves are designed with convenient easy to use connectors allowing the sleeves to be easily fastened to the test control unit. The test control unit can simulate an overheat condition without damaging the linear heat detector's outer jacket. The test control unit has and LCD display that indicates the tester's status.

CAUTION

- Do not use the F1-Kit in Classified Hazardous location or ATEX location. USE IN SAFE AREA ONLY
- Only use the F1-Kit with fiber-optic sensor cables that can withstand 230°F or 110°C for at least 15 minutes.
- The F1-Kit is designed to test fiber optic linear heat detection cables only. Do not use it for other applications.
- NEVER handle the F1-Kit while it is in operation; always disconnect the F1-Kit from the power source and allow the test sleeves to cool prior to handling. If handling is required while heated, appropriately rated thermal protective gloves must be used.
- Always inspect the test kit before use.
- Do not operate the F1-Kit outside the normal operating range.
- Do not repair a damaged or faulty F1-Kit.
- Do not crush or apply severe physical stress on F1-Kit controller, cords, or test sleeves.
- Testing with the F1-Kit should be performed by qualified personnel.
- The F1-Kit requires earth ground. Use an appropriate power supply to have an earth ground circuit
- Keep liquid away from the F1-Kit
- Keep sharp metal objects away from the F1-Kit
- The F1 kit is available in 120VAC and 240VAC models. Ensure you verify your model and required voltage before connecting to AC power.

Failure to observe these warnings may result in electric shock, risk of fire, and personal injury or death.

Overview

F1 Fiber Optic DTS Thermal Test Kit

For use with FiberSystem8000 and N45 Fiber Optic DTS Systems

The Protectowire Company's F1 Fiber Optic DTS Thermal Test Kit provides a simple method to test fiber optic DTS systems for thermal activation. By installing the provided thermal test sleeves over a small section of Fiber Optic sensing cable, the cable can be heated to simulate a thermal event and confirm activation of the appropriate DTS controller and any subsequent alarm signaling.

Description

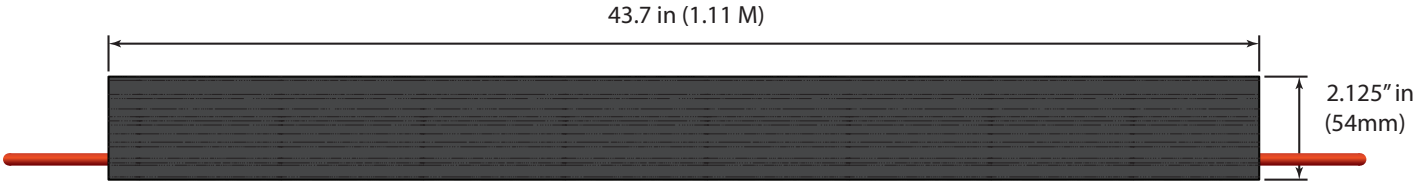
The Protectowire F1 Fiber Optic DTS Thermal Test Kit is comprised of two heating sleeves and two on/off programmable thermal controllers. Each sleeve is approximately 1m (3ft) long and combined allows a 2m (6.5ft) section of contiguous cable to be heated to a pre-set temperature.

By providing two 1M sleeves each can be located to either side of mounting fiber optic cable mounting clips and allows for a suitable cross section of fiber greater than a 1m (3ft) spatial resolution to be heated. A cross section of fiber 2x the sampling interval of the DTS Controller settings is required for optimal temperature accuracy.

F1 Fiber Optic DTS Thermal Test Kit Specifications

Description	Specification
Power Supply:	F1-120 = 120VAC 50/60 Hz @ 1.5A F1-240 = 240VAC 50/60Hz @ 0.75A
Current Consumption:	1.5A Maximum
Power Rating:	250W Maximum
Temperature Range:	Ambient to 210°F (99°C)
Timer:	Programable (1-minute increments)
Sleeve Dimensions:	43.7 in (1.11M) x 4.3 in (110mm)

Heating Sleeve Dimensions

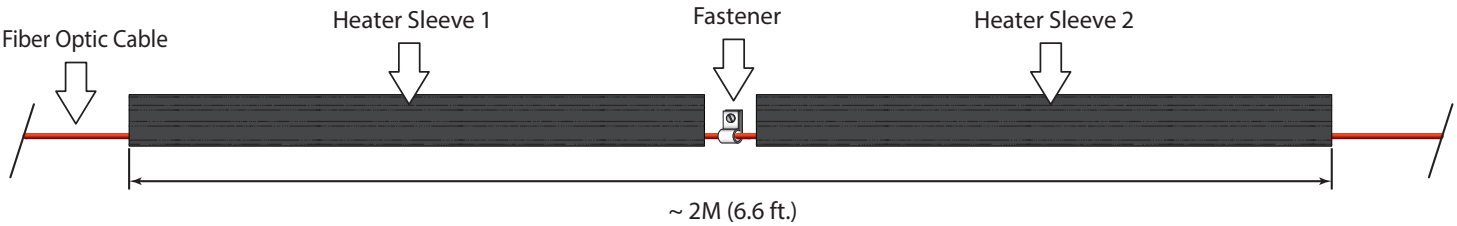


Sleeve shown in closed position

Heating Sleeve Installation

Each sleeve should be opened along the Velcro seam and placed over the fiber optic cable with the cable seated firmly in the crease of the folded sleeve. The sleeve should then be closed around the fiber optic cable and fastened in place with the Velcro seam firmly closed in place.

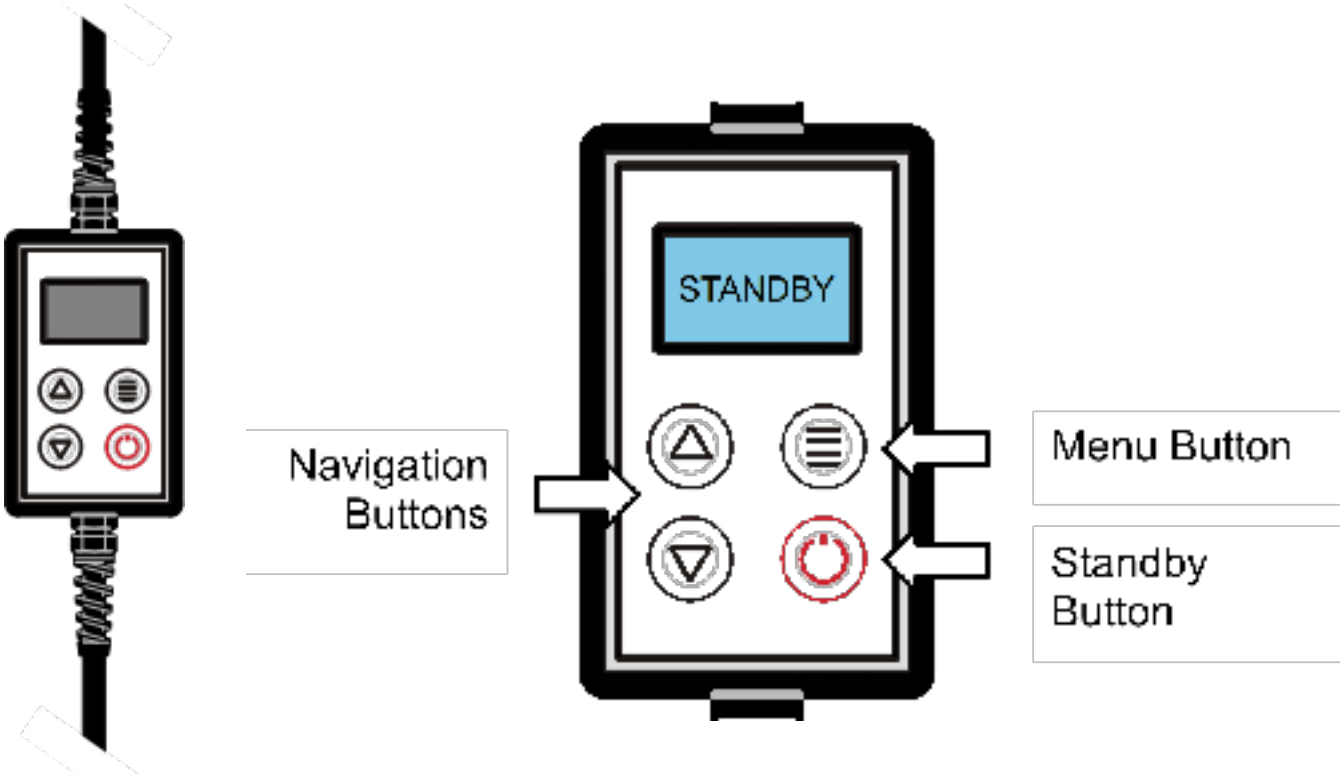
Care should be taken to not damage or place mechanical stress on the fiber optic cable.



Heating Sleeve Temperature Controller

Each F1 Fiber Optic DTS Thermal Test Kit includes two digital temperature controllers which operate on mains line voltage. Each controller should be connected to each heating sleeve via the provided circular connector. The heater controller is then plugged into an appropriate mains outlet. Confirm the required mains voltage based on the F1 test kit model number mains outlet.

The controllers should power on with the LCD illuminated and display the current state of the controller. The controllers will return to its last state upon powering on. Caution: If the controller was actively heating when last powered off it will return to actively heating when powered on. If the controller was in standby mode or not actively heating it will return to a standby state or not actively heating when powered on.

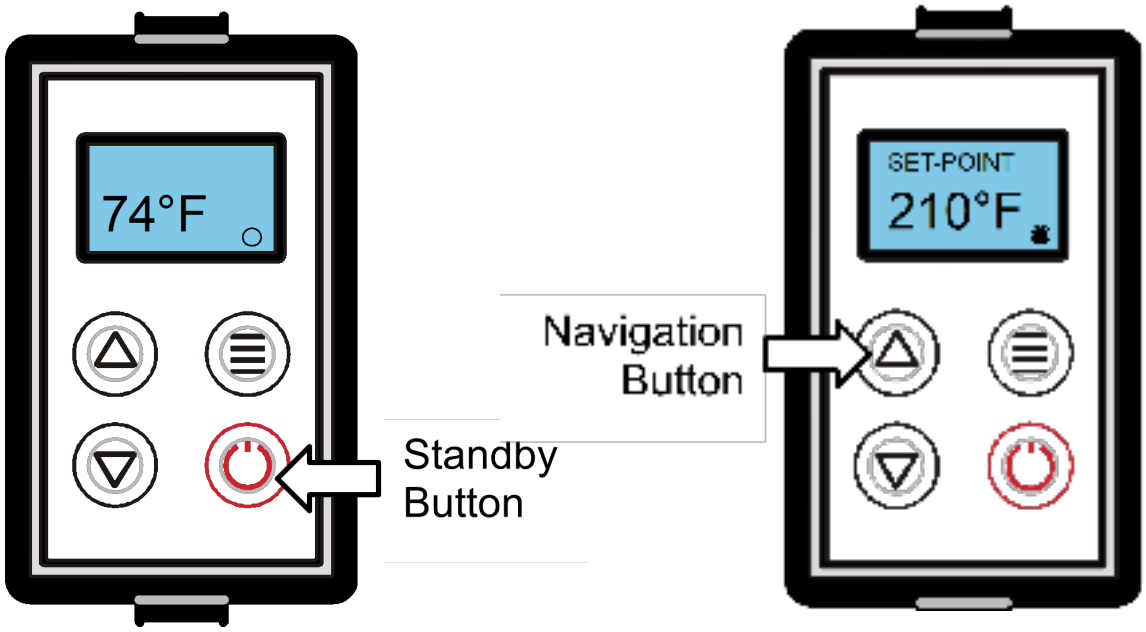


After installation of the heating sleeves on the fiber optic cable to be tested, begin a heating test by depressing the controllers “Standby Button” for 3 seconds. Each controller unit will display the current sleeve temperature and will begin heating to the current set-point.

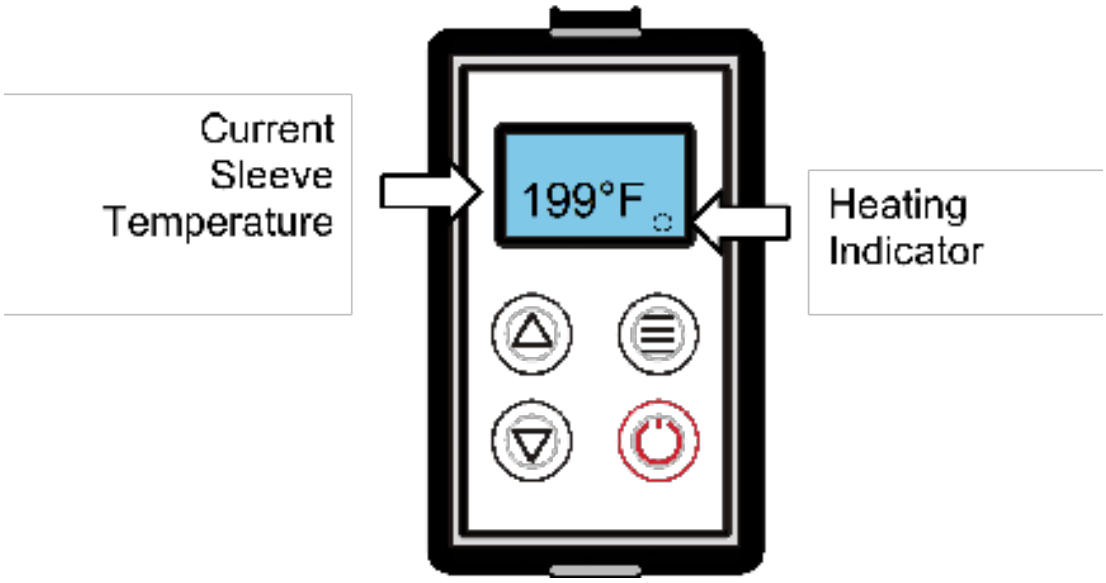
To adjust the current set-point, depress the up or down navigation button until the desired temperature is displayed on screen. After 3 seconds of inaction the display will return to the current sleeve temperature allowing the user to monitor the temperature as it ramps to the current set-point. Both controllers should always be set to the same set point so each heating sleeve reaches the same test temperature.

The circular “Heating Indicator” remains solid while the heater output is active and is a clear circle when inactive.

Application Note: For best results, adjust heater Set-Point temperature to 20°F (10°C) above test zone alarm activation point. Set-point should never be set to exceed 210°F (99°C).



The controller's display should indicate an increase in sleeve temperature until the set point is reached. The controllers will cycle on/off to maintain the sleeves at the current setpoint.



On completion of the test, depress the "Standby" Button for 3 seconds to return to standby mode and stop active heating of the sleeves. When testing is completed the controllers must be returned to standby mode prior to powering off. To power off, simply remove from power source.

IMPORTANT SAFETY NOTES

WARNING
Each heating sleeve can reach temperatures hot enough to cause burns. It is recommended that the heating sleeves not be handled while heated. Each sleeve should be allowed to cool down prior to handling. If handling is required while heated, appropriately rated thermal protective gloves must be used.

CAUTION
The operating procedures in this manual are intended to ensure proper functioning of the device under normal conditions. Any operation in adverse conditions falls outside the scope of the devices operation and the intend of the manual.

CAUTION
To prevent unwanted actuation or alarm, monitoring equipment, extinguishing devices or other connected equipment must be disabled prior to performing detection system tests or maintenance.

CAUTION
The F1 Fiber Optic DTS Thermal Test Kit is not rated for use in wet environments. The test kit heater sleeves and controllers should NOT be operated in damp or wet conditions.

CAUTION
When testing is completed the control units must be returned to standby prior to powering off. Failure to do so will result in the controllers returning to heating mode immediately on restoration of power source. To power off, simply remove power from power source.

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