

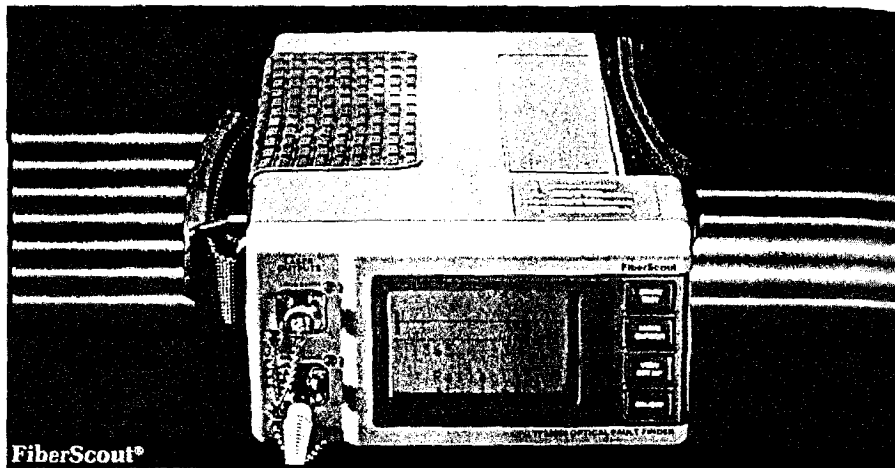


## Handheld Optical Fault Finder TFS2020 FiberScout®

### ★ Features

#### FiberScout

- Simple Symbolic Display
  - Graphics
  - Event Descriptions
- Fast Restoration Capability
- Small, Lightweight, Easy to Handle
- Easy One-button Operation
- Low Cost – High Performance
- Long Range
- Multimode Short Range
- Dual Port Capability
- High Distance Accuracy
- User-selectable Fault Thresholds
- Internal Battery Operation
- Internal Test Result Storage
- RS-232C Output Port: PC Interface, Seiko DPU-201G Printer, Seiko DPU-411 Printer
- PC Interface Software
- Rackmount Available



### FiberScout Handheld Optical Fault Finder

Weighing just five pounds (2.3 kg), the battery-operated Tektronix TFS2020 FiberScout reports the status of the fiber through four easy-to-understand symbols.

Designed to locate events and faults in optical cable, the FiberScout is priced for widespread use in the cable restoration environment.

No waveform interpretation is necessary – making the FiberScout so simple to use, it allows fault finding by virtually any user, regardless of the person's level of training.

The FiberScout gives you faster restoration capability and greater service staff effectiveness, since it can be deployed in far greater numbers than the more complex, more expensive OTDRs.

Documentation is fast and simple when using either of the lightweight, portable Seiko thermal printers. FiberScout comes standard with non-volatile memory for internal storage of test results which can later be transferred to a PC.

For advanced documentation and storage needs, we also offer the FSTIP test interface package. Files are saved to the PC in ASCII form, which allows easy analysis of the representative trace and annotations of the results through virtually any word processor.

For your local Tektronix representative see the list in the back of this catalog or outside the U.S. call: 1-503-627-1933, inside the U.S. call: 1-800-426-2200.



See Tektronix on the World Wide Web:  
<http://www.tek.com>



Tektronix Measurement products are manufactured in ISO registered facilities.

# Handheld Optical Fault Finder

## TFS2021 FiberScout®

### CHARACTERISTICS

#### OPERATING PERFORMANCE\*1

	Multimode Short Range	Long Range
Operating Distance Range*2	≥3.0 km @ 3.5 dB/km	≥40.0 km @ 0.4 dB/km
Fault Detection Range (one way)	≥10.5 dB @ 62.5 μm	≥16 dB*3
Distance Measurement Accuracy*4		
To Reflective Event	±2 meters	±5 meters
To Non-reflective Event	±2 meters	±5 to 20 meters*5
Distance Readout Resolution	1 meter or 1 foot	1 meter or 1 foot
Two Event Resolution*6		
Distance to Detect 2nd Reflection	≤10 meters	≤40 meters
Loss Measurement Repeatability	±0.2 dB	±0.3 dB
Loss Readout Resolution	±0.1 dB	±0.1 dB
Fault Threshold Selections	1, 2, 3, or 4 dB	1, 2, 3, or 4 dB*7
Optical Output Wavelength	835 nm ±35 nm	1300 nm ±25 nm
Output Core Size	50 or 62.5 microns	8 to 10 microns
Display	Backlit LCD, Graphics and Text	
Laser Safety	Complies with Class I, 21 CFR 1040.10/1040.11	
Power	Internal Rechargeable NiCad Battery Pack. Typical operation life between charges: 6 hours. Typical shelf life between charges: 6 months. External AC/DC External Power/Charger Adapter.	

\*1 In some cases, varying test conditions may affect measurement performance.

\*2 With no events present.

\*3 At the 4 dB fault threshold setting.

\*4 Actual distance accuracy includes: timebase accuracy (±0.005%) quantization error in the Index of Refraction setting.

\*5 With extended averaging invoked.

\*6 The FiberScout automatically uses the optimal pulse width to separate the loss measurements between two adjacent events.

\*7 For singlemode fiber, the FiberScout will report any loss ≥1 dB. For multimode fiber, the FiberScout will report any significant fault.

### ORDERING INFORMATION

For price information: Outside the U.S. contact your local Tektronix representative, inside the U.S. see the price list in the back of this catalog.

#### FiberScout

Handheld Optical Fault Finder. Order TFS2020.

**Includes:** Battery Pack (146-1000-01); 110 V AC/DC, Power Supply – USA/Canada (119-2731-00); Travel Case (016-1024-00); Accessory Pouch (016-0993-00); Operator Manual and Supplement (070-7167-04); Reference Label (062-9360-01).

With each FiberScout ordered, select one of the option groups listed below:

**Opt. 02** – Equip with Long Range Port.

**Opt. 09** – Equip with Multimode (62.5 μm) Short Range Port.

**Opt. MC** – Equip with Multimode (50 μm) Short Range Port.

**Opt. MM** – Equip with Long Range and Multimode (62.5 μm) Short Range Ports.

**Opt. MN** – Equip with Long Range and Multimode (50 μm) Short Range Ports.

With each FiberScout ordered, select one of the connector options:

#### CONNECTOR OPTIONS – LONG RANGE

**Opt. 20** – Biconic.

**Opt. 21** – FC.

**Opt. 22** – D4.

**Opt. 24** – ST.

**Opt. 25** – DIN.

**Opt. 28** – SC.

#### CONNECTOR OPTIONS – MULTIMODE SHORT RANGE

**Opt. 40** – Biconic.

**Opt. 41** – FC.

**Opt. 42** – D4.

**Opt. 44** – ST.

**Opt. 45** – DIN.

**Opt. 46** – SMA 905/906.

**Opt. 48** – SC.

#### AC/DC POWER SUPPLY OPTIONS

The FiberScout is equipped for use in the U.S.A. and Canada. If use is for other than in the U.S.A. or Canada, order one of the following options:

**Opt. 1C** – 220 V AC/DC Power Supply (Europe).

**Opt. 2C** – 240 V AC/DC Power Supply (UK).

#### SERVICE ASSURANCE OPTIONS

**REP4400** – Provides one year of post-warranty Repair Protection.

**CAL4400** – Provides one year of Calibration Services.

**Note:** Units are not modular or customer modifiable. Any change in capability from originally ordered configuration, if available, must be performed by the factory or authorized Tektronix service center. Additional charges will apply.

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# TEK TFS 2020

## Multimode Short Range Port, Option MC

Option MC is used for testing multimode fibers with total lengths approximating 3 km (9840 ft.).

The launch condition from Option MC is a Gaussian mode distribution in a 50-micron fiber (accuracy specifications are based on the testing of a 50-micron fiber). However, any size core multimode fiber can be tested, but FiberScout may not meet the specifications listed below.

Option MC features a user-selectable loss threshold that allows you select a fault threshold of either 1, 2, 3 or 4 dB. This allows you to choose a fault detection level that is significant for the system under test. For information about choosing a threshold, refer to the *Operator Manual Supplement*. The factory-set threshold is 3 dB.

### Specifications

Category	Performance Requirement <sup>1,2</sup>	Supplemental Information <sup>3</sup>
Fault Measurement Range	≥10.5 dB	Up to 3 km (9840 ft.)
Distance Accuracy <sup>4</sup>		
To Reflective Event	±2 m (6.56 ft.)	
To Non-Reflective Fault	±2 m (6.56 ft.)	
Loss Measurement Repeatability	±0.2 dB	
Reflective Event Detection	Reflections >3 dB above backscatter @ 5 m pulsewidth	Typical minimum reflectivity of -44 dB up to ~3 km
Two-Event Resolution		
Reflective Event to Reflective Event		
Distance to Detect a Secondary Reflection	≤10 m (32.8 ft.)	≤5 m (16.4 ft.) typical
Reflective Event to Reflective Event, or Reflective Event to Non-Reflective Fault		
Distance to Separate Loss Between Events	≤40 m (131.2 ft.) ≤60 m (196.8 ft.)	Up to 1.5 km (4920 ft.) Up to 3 km (9840 ft.)
Non-Reflective Fault to Non-Reflective Fault		
Distance to Separate Loss Between two Non-Reflective Faults	≤15 m (49.2 ft.)	≤13 m (42.6 ft.) typical
Optical Output		
Wavelength	850 nm +20 nm, -50 nm	
Peak Optical Power Output	≥450 mW	
Pulsewidths	10 ns ±20%, 50 ns ±10%	
Laser Safety	Class I, 21 CFR 1040	
Output Core Size	50 microns	

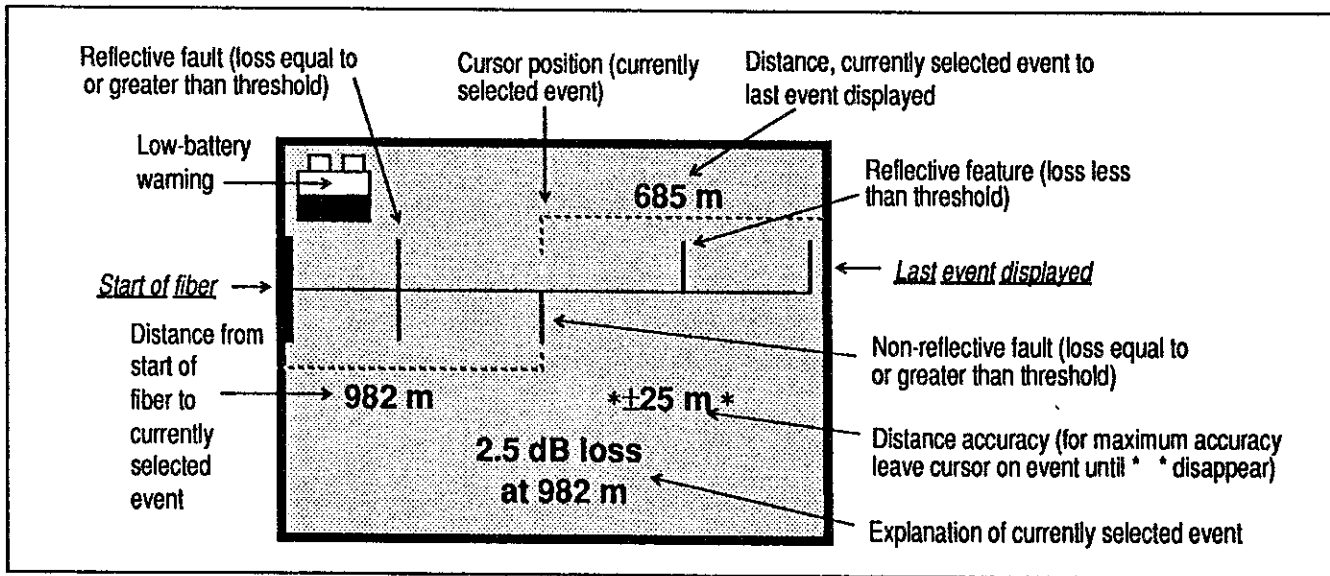
#### Notes:

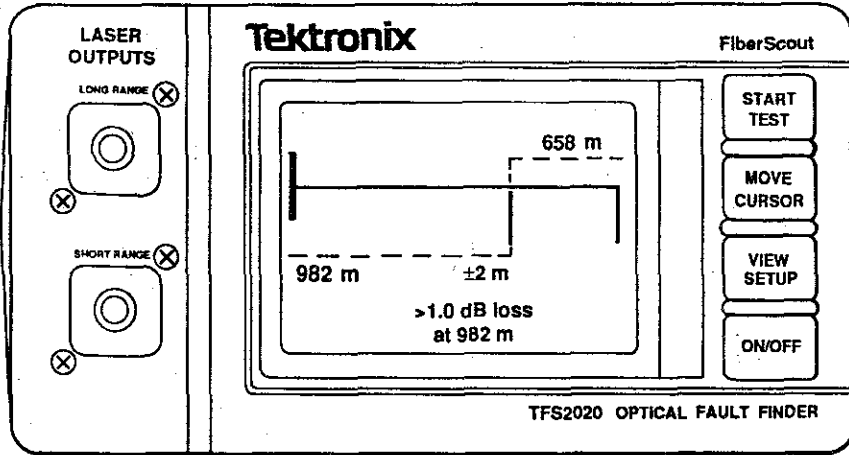
- Actual distances obtained depend upon threshold setting, number of events, reflective component size, loss value of each fault, fiber attenuation and the quality of the fiber's connection to FiberScout.
- Use of highly reflective jumpers or highly reflective fiber terminations can degrade these specifications.
- All distance values are based on an assumed fiber attenuation of 3.5 dB/km and an assumed core size of 62.5 nm.
- ± quantization error in the index of refraction setting and timebase accuracy: approximately 0.01% of distance measured.

# Front Panel Display and Pushbutton Descriptions (Generic)

Product Overview

## Front Panel Display Summary (Fault Finder Mode)





# TFS2020 FiberScout

## Optical Fault Finder

## Operator Manual