

STS 3192-FL Fault Locate Module

CLEI™ Code: T1FLB606AA

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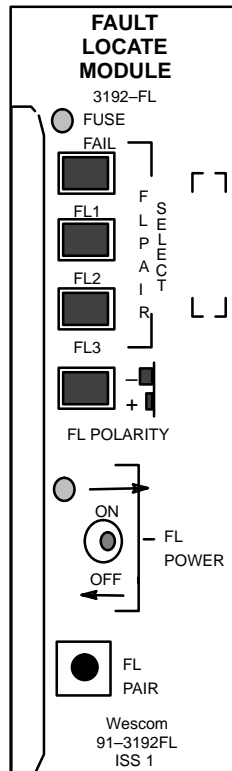


Figure 1. 3192-FL Fault Locate Module

1. GENERAL

1.1 Document Purpose

This document provides general and installation information for the 3192-FL Fault Locate module, shown in Figure 1.

1.2 Document Status

This document is reprinted to incorporate a general editorial update.

1.3 Equipment Function

The 3192-FL Fault Locate module is a plug-in unit typically used at the Central Office (CO) for single- or dual-ended fault locating of a T1 span. It can also be used at a remote fiber hub that has T1 extensions. One unit provides access and termination to three fault locate pairs.



Units are shipped in static-protective material to protect static-sensitive devices. Use static-preventive measures for storage and handling.

Table 1. 3192FL Fault Locate Module Description

Front Panel Components	Function
FL POWER INDICATOR GREEN LED	Indicates power is being applied to the fault locate pair.
FUSE FAIL INDICATOR RED LED	Indicates the 3192–FL internal power fuse has opened (located on the PCB).
FL POWER SWITCH	In the ON position will activate the switching power supply and apply power to the selected fault locate pair.
FL PAIR SELECT PUSHBUTTONS FL1, FL2, FL3	Used to select a fault locate pair and allow power to be applied to that pair. Pushbuttons are interlocked to allow selection of only one pair at a time. Test set access to the selected pair is available at the FL pair jack.
FL PAIR JACK (BANTAM TYPE)	Test set access to the fault locate pair. This is where the fault locate signal from the digital line is available for detection.
FL POLARITY SWITCH (PUSH/PUSHBUTTON)	Used to select polarity of the voltage applied to the fault locate pair by turning on active FL filters in one direction or the other. When the pushbutton is out the tip is negative (–polarity) with respect to the ring. When the pushbutton is in the tip is positive (+polarity) with respect to the ring.

2. APPLICATION GUIDELINES

Table 1 describes the 3192–FL front panel functions and the fuse functions on the PCB. Figure 2 shows a schematic block diagram of the 3192-FL for applications reference.

The FL PAIR SELECT is an interlocking set of pushbutton switches that allows the selection of only one of three Fault Locate Pairs (FL1, FL2, or FL3). When a fault pair is selected, power is applied to the pair only when the FL POWER switch is placed in the ON position. A front panel green LED will also indicate if power is being applied to the pair. The Fault Locate Return Signal is internally coupled to the FL PAIR jack.

Unselected fault pairs are terminated in a 900 ohm+1uf RC network at the pushbutton switch. If a fault pair is selected and the FL PAIR jack is not accessed, termination is provided by a 900 ohm+1uf RC network connected across the contacts of the FL PAIR jack.

Selecting the fault pair by depressing the pushbutton switch and inserting a bantam plug in the FL PAIR jack disconnects the RC termination from the fault locate pair. Placing the FL POWER switch to the ON position applies –48V to the switching power supply. The switching power supply limits the current and generates an output of

130Vdc at the FL POLARITY switch. The FL POLARITY switch routes power of either a positive or negative polarity to the selected fault pair. The green FL POWER LED is lit when power is applied to the Fault Locate Line.

The front panel red FUSE FAIL LED will light when the Fault Locate module's internally located fuse opens. This fuse will not open unless the module's circuitry is damaged beyond field repairs, causing it to be non-field replaceable.

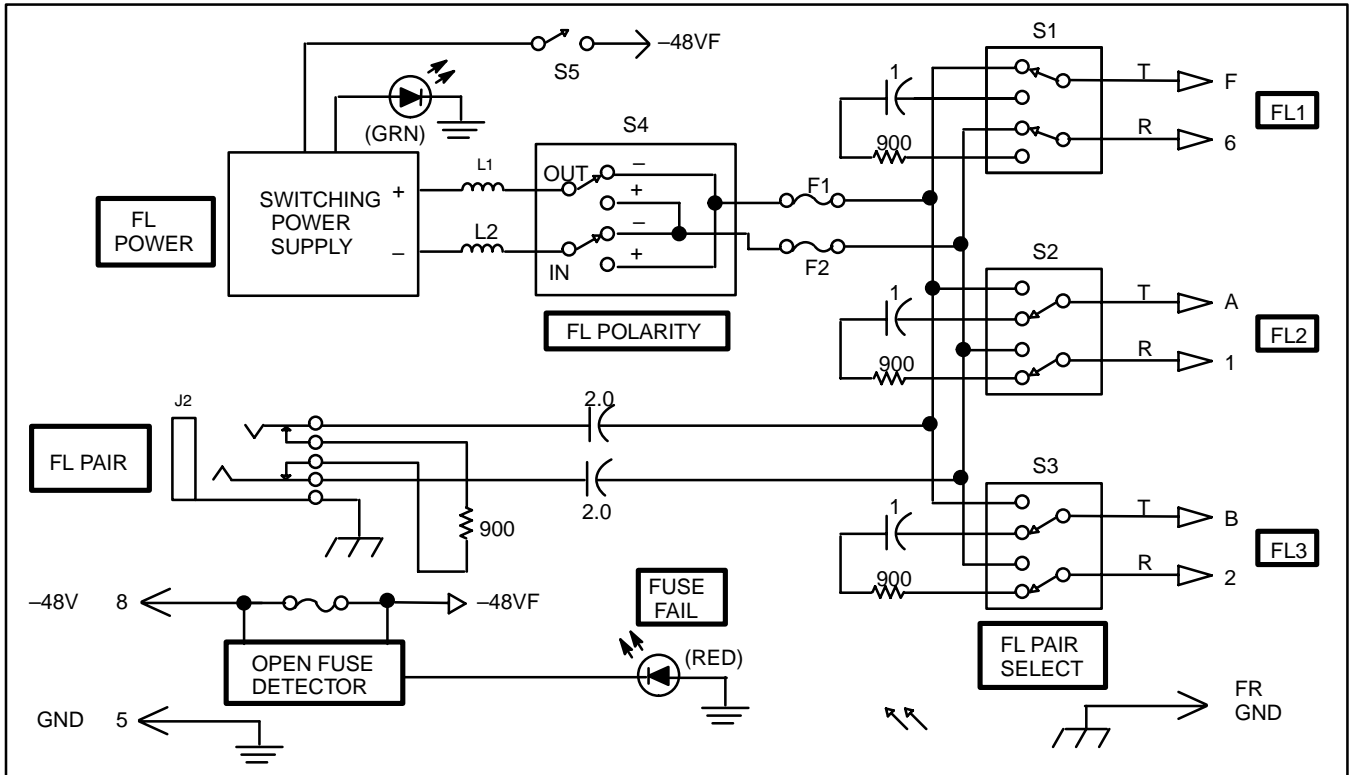


Figure 2. 3192–FL Fault Locate Module, Block Diagram

3. CIRCUIT DESCRIPTION

The Fault Locate Module consists of a power supply and switches to power and access the fault locate pairs.

4. INSPECTION

Inspect the equipment thoroughly upon delivery. If the equipment has been damaged in transit, immediately report the extent of damage to the transportation company.

Wescam equipment is identified by a model and issue number imprinted on the front panel or located elsewhere on the equipment. Each time a major engineering design change is made on the equipment, the issue number is advanced by one number on any subsequent models that are manufactured. Therefore, be sure to include both the model number and its issue number when making inquiries about the equipment.

Each module is shipped in static-protective packaging to prevent electrostatic charges from damaging static-sensitive devices. Use approved static-preventive measures, such as static-conductive wrist straps and a static-dissipative mat, when handling modules outside of their protective packaging. A module intended for future use should be tested as soon as possible and returned to its original protective packaging for storage.

CAUTION

Do not ship or store modules near strong electrostatic, electromagnetic, or magnetic fields, or in a highly radioactive environment. Also, make sure to use the original static-protective packaging for shipping or storage.

5. MOUNTING

The 3192–FL Fault Locate Module mounts in the first 27 slots of a 23-inch STS shelf or in the first 21 slots of a 19-inch STS shelf.

CAUTION

Installation and removal of modules should be done with care. Do not force a module into place. If excessive resistance is encountered while installing a module, remove the module, and check the card guides and connector to verify proper alignment and the absence of foreign material.

6. INSTALLER CONNECTIONS

All connections to the 3192–FL are made through the shelf. Refer to Section 319–211–200 (Installation And Application) for additional information.

7. OPTIONS

The 3192-FL module contains no options.

8. TESTING

Verify 3192-FL module function as described in Table 1.

9. TECHNICAL ASSISTANCE

9.1 Technical Assistance — U.S.

If technical assistance is required, contact Charles Industries' Technical Services Center at:

847–806–8500

847–806–8556 (FAX)

800–607–8500

techserv@charlesindustries.com (e-mail)

9.2 Technical Assistance — Canada

Canadian customers contact:

905–821–7673 (Main Office)

905–821–3280 (FAX)

10. WARRANTY & CUSTOMER SERVICE

10.1 Warranty

Charles Industries, Ltd. offers an industry-leading, 5-year warranty on products manufactured by Charles Industries. Contact your local Sales Representative at the address or telephone numbers below for warranty details. The warranty provisions are subject to change without notice. The terms and conditions applicable to any specific sale of product shall be defined in the resulting sales contract.

Charles Industries, Ltd.

5600 Apollo Drive

Rolling Meadows, Illinois 60008–4049

Telephone: 847–806–6300 (Main Office)

847–806–6231 (FAX)

10.2 Field Repairs (In-Warranty Units)

Field repairs involving the replacement of components within a unit are not recommended and may void the warranty and compatibility with any applicable regulatory or agency requirements. If a unit needs repair, contact Charles Industries, Ltd. for replacement or repair instructions, or follow the *Repair Service Procedure* below.

10.3 Advanced Replacement Service (In-Warranty Units)

Charles Industries, Ltd. offers an “advanced replacement” service if a replacement unit is required as soon as possible. With this service, the unit will be shipped in the fastest manner consistent with the urgency of the situation. In most cases, there are no charges for in-warranty repairs, except for the transportation charges of the unit and for a testing and handling charge for units returned with no trouble found. Upon receipt of the advanced replacement unit, return the out-of-service unit in the carton in which the replacement was shipped, using the pre-addressed shipping label provided. Call your customer service representative at the telephone number above for more details.

10.4 Standard Repair and Replacement Service (Both In-Warranty and Out-Of-Warranty Units)

Charles Industries, Ltd. offers a standard repair or exchange service for units either in- or out-of-warranty. With this service, units may be shipped to Charles Industries for either repair and quality testing or exchanged for a replacement unit, as determined by Charles Industries. Follow the *Repair Service Procedure* below to return units and to secure a repair or replacement. A handling charge applies for equipment returned with no trouble found. To obtain more details of this service and a schedule of prices, contact the CI Service Center at 217–932–5288 (FAX 217–932–2943).

Repair Service Procedure

1. Prepare, complete, and enclose a purchase order in the box with the equipment to be returned.
2. Include the following information:
 - Company name and address
 - Contact name and phone number
 - Inventory of equipment being shipped
 - Particulars as to the nature of the failure
 - Return shipping address
3. Ship the equipment, purchase order, and above-listed information, transportation prepaid, to the service center address shown below.

CI Service Center
Route 40 East
Casey, IL 62420–2054
4. Most repaired or replaced units will be returned within 30 or 45 days, depending on the product type and availability of repair parts. Repaired units are warranted for either 90 days from the date of repair or for the remaining unexpired portion of the original warranty, whichever is longer.

11. SPECIFICATIONS

The specifications for the 3192-FL Fault Locate module are as follows:

11.1 Electrical

- (a) INPUT VOLTAGE: –42 to –56VDC.
- (b) MAXIMUM INPUT CURRENT: 90MA.
- (c) FAULT PAIR RIPPLE: <1.5V P–P.
- (d) FAULT PAIR OPEN CIRCUIT VOLTAGE: 145 maximum.

11.2 Physical

See Table 2 for the physical characteristics of the 3192-FL Fault Locate module.

Table 2. Physical Specifications

Feature	U.S.	Metric
Height	4.75 inches	12.06 centimeters
Width	0.687 inch	1.746 centimeters
Depth	10.5 inches	26.67 centimeters
Weight	10.5 ounces	297.7 grams
Temperature	–40 to 150°F	–40 to 65°C
Altitude	Up to 15,000 feet (AMSL)	

