



8-segment redundant fieldbus power system for use with Foxboro I/A Series® Control System

F810



- ◆ **Integrated redundant fieldbus power for FBM228 Foundation fieldbus™ modules**
- ◆ **High-density, compact design**
- ◆ **Fully isolated**
- ◆ **Low power dissipation**
- ◆ **No components on carrier**
- ◆ **Built-in "smart" termination**
- ◆ **Continuous physical layer diagnostic option**

The F810 fieldbus power system is designed to provide redundant FOUNDATION fieldbus™ power for Foxboro I/A Series control systems using FBM228 modules. Eight fieldbus segments are supported. The system comprises a baseplate which accommodates two redundant pairs of Foxboro FBM228 modules and two MTL-Relcom F801 power modules operating in redundant configuration. Failure alarms, galvanic isolation, power conditioning and segment termination are incorporated into each F801 module. In applications requiring simplex power, a single F801 module may be used.

For extreme reliability, the module baseplate has no components and only provides interconnections between FBM228 modules, the power modules and external connections.

Each F801 module has indicator LEDs to show both its status and that of the eight segments under power. In normal operation, each green 'Segment' LED is lit, showing that the segment is powered. If a segment is shorted, this LED is extinguished, and the red 'Alarm' LED is lit. In the alarm condition, a normally closed, galvanically-isolated relay contact goes to an open condition. Connections to the alarm relay are made via screw terminals on the F810 baseplate. If multiple F810 units are used, a common alarm circuit can be achieved by 'daisy-chaining' the alarm circuits.

The F801 module provides galvanic isolation between the 24V DC input power and the fieldbus segments, as required by the IEC61158-2 fieldbus standard and the Fieldbus Foundation™

FF-831 validation test for power conditioners. There is also galvanic isolation between the fieldbus segments, thereby preventing multiple segment failures from ground faults on more than one segment. Each segment has its own fieldbus power conditioner and current limitation. Termination of the fieldbus segment is automatically maintained when single or redundant F801 modules are fitted.

An F809F diagnostic module may optionally be installed on the carrier, to automatically collect and distribute diagnostic information on each of the eight fieldbus segments. Measured parameters may be viewed in the Foxboro control system by either assigning the F809F as a fieldbus device to one of the powered segments, or by means of a separate ninth segment. Connections for the ninth segment are provided on the baseplate. For more information see the F809F product specification.

Redundant 24V DC (nom.) input power can be connected to the F810 baseplate using Foxboro I/A standard 3-way power connectors. In densely populated equipment cabinets, requiring higher current levels, the F801 modules can also be powered individually via additional board-mounted terminals.

Field wiring connections are available with either pluggable screw terminals (F810-PC) or pluggable spring clamp terminals (F810-PS).

FOUNDATION fieldbus™ is a trademark of Fieldbus Foundation™, Austin, Texas.
I/A Series® is a registered trademark of Invensys Systems, Inc.



SPECIFICATION

Location of equipment

Safe area

OUTPUT

Number of channels

Eight

Voltage

Minimum 21.5V DC
Maximum 24.0V DC

Design current

0 to 350 mA per segment

Current limit

> 370 mA

Minimum load

No load

Isolation

Fieldbus to power supply: 250 V AC rms withstand

INPUT

Input voltage

19.2 - 30.0 V DC

Current consumption (8 segments each with 350mA output load)

4.4A @ 24V DC input, max. †

Power dissipation (8 segments each with 350mA output load)

42.5W max. †

ALARMS

Alarm contact rating

1 A max. @ 30 V DC max.

Alarm contact status

Normally closed

Alarm threshold

Segment output: <19V DC

MECHANICAL

Mounting method

Six holes for M5 screw mounting

SYSTEM CONNECTIONS

Foxboro 'Fieldbus' LAN

9-way subminiature D, female

Address switches

Baseplate I.D.		
	Sw.1	Sw.2
0	ON	ON
1	ON	OFF
2	OFF	ON
3	OFF	OFF

Posn.	Sw.3
1 - 4	ON
5 - 8	OFF

Fieldbus wiring

Segment 1-8 and diagnostic segment – each has 3-way pluggable connector in screw terminal or spring clamp version, 0.14 to 2.5mm² (See ordering information)

Primary and secondary power inputs

a) 2 x 3-way socket headers type AMP Universal MATE-N-LOK

b) 2 x 3-way pluggable connector in screw terminal or spring clamp version, 0.14 to 2.5mm² (See ordering information)

Chassis and ground

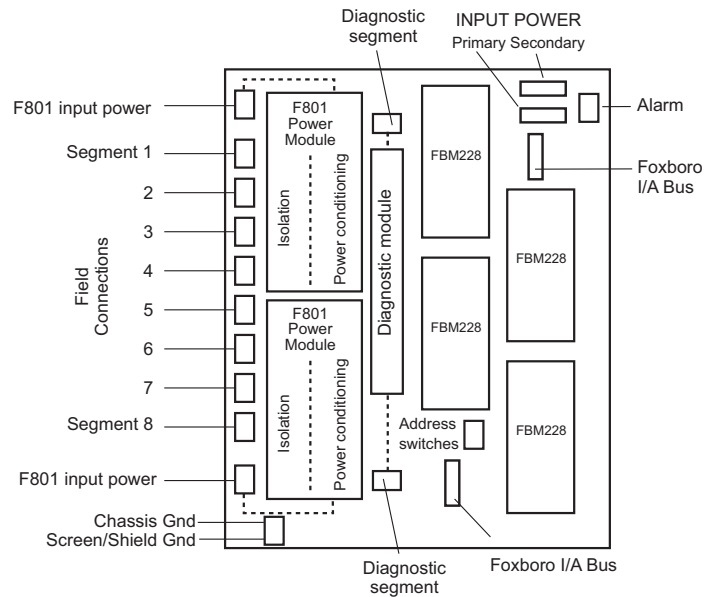
2-way fixed screw terminal connector, 0.14 to 2.5mm²

Alarm contacts

2-way fixed screw terminal connector, 0.14 to 2.5mm²

† Figures based upon fully populated F810 baseplate, including all F801, FBM228 and F809F modules

F810 - Block diagram



ENVIRONMENTAL

Ambient temperature

Operating -40°C to +65°C (See note)
Storage -40°C to +85°C

Note: This temperature range applies only when the F801 modules are in a vertical orientation and mounted on a vertical surface.

Ingress protection

IP20 to BS EN60529

(For additional protection mount the equipment in an enclosure)

ELECTRICAL

EMC Compliance

To EN61326:1998 Electrical equipment for measurement, control and laboratory use - EMC requirements

PHYSICAL NETWORKS

IEC61158-2

ISA-S50.02 Part 2-1992

FOUNDATION fieldbus™ H1

Profibus PA

ORDERING INFORMATION

COMPONENTS AND ACCESSORIES

Part No	Description
F810-CA	F810 module carrier, unpopulated
F801	8-segment power module
F809F	Fieldbus diagnostic module
F800-BLK	Blanking module *
F810-PS	F810 system, pluggable screw terminal connectors, comprising F810 carrier and two F801 modules ‡
F810-PC	F810 system, pluggable spring clamp connectors, comprising F810 carrier and two F801 modules ‡

* Used, in place of an F801 power module, for **non-redundant operation**, in order to defeat the failure alarm caused by the absence of the F801.

‡ Foxboro FBM228 modules are not included and must be obtained separately.



EUROPE (EMEA)
AMERICAS
ASIA PACIFIC
E-mail: enquiry@mti-inst.com

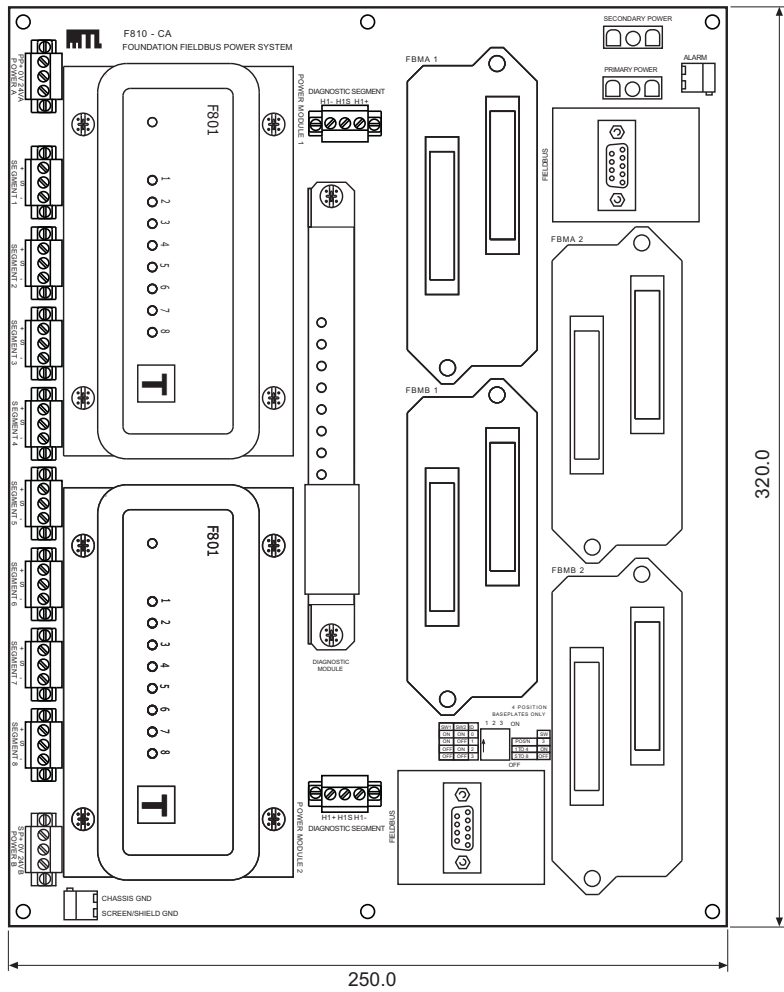
Tel: +44 (0)1582 723633
Tel: +1 603 926 0090
Tel: +65 6 487 7887

Fax: +44 (0)1582 422283
Fax: +1 603 926 1899
Fax: +65 6 487 7997

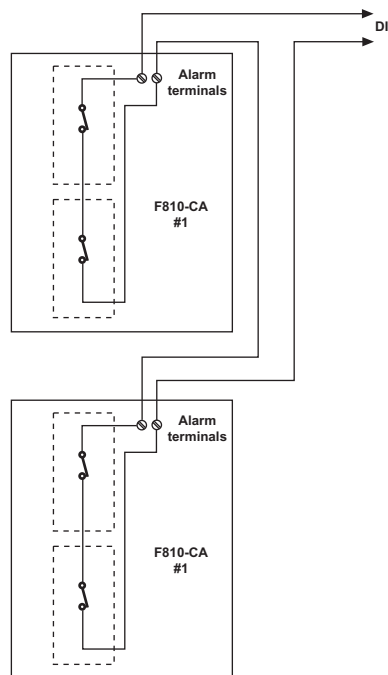
MTI web site: www.mti-fieldbus.com Relcom web site: www.relcominc.com

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DIMENSIONS



Linking alarm circuits



EUROPE (EMEA)
AMERICAS
ASIA PACIFIC
E-mail: enquiry@mtl-inst.com

Tel: +44 (0)1582 723633
Tel: +1 603 926 0090
Tel: +65 6 487 7887

Fax: +44 (0)1582 422283
Fax: +1 603 926 1899
Fax: +65 6 487 7997

MTL web site: www.mtl-fieldbus.com Relcom web site: www.relcominc.com

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