



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 segment 1 or 8 of the powered segments, or by means of a separate fieldbus segment. Connections for the separate 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 AMP connectors. F801 power modules and the F809F fieldbus diagnostic module can either be powered from the same source or, alternatively, for installations in which standard Foxboro power supplies are unable to provide sufficient current capacity, an external 24V DC supply may be connected.

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



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

Oct 2007

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)

Foxboro primary and secondary power inputs

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

Alternative power inputs

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

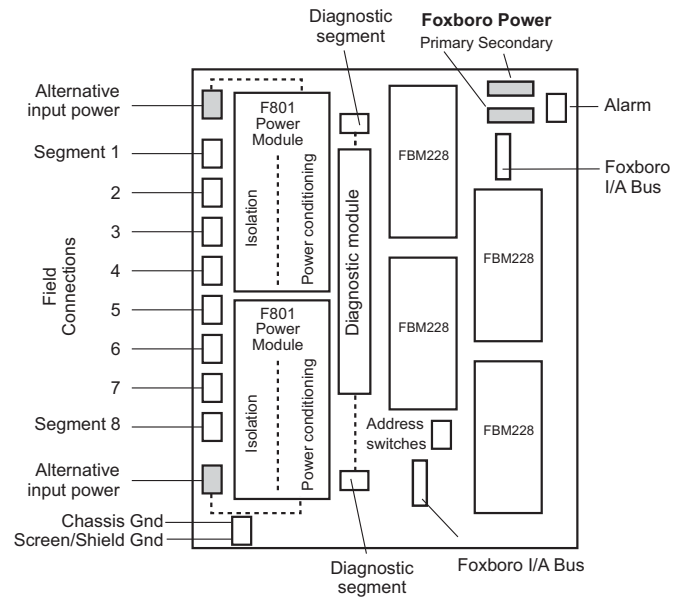
Chassis and ground

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

Alarm contacts

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

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

ORDERING INFORMATION

COMPONENTS AND ACCESSORIES

Part No	Description
F810-CA-PS	F810 carrier, pluggable screw terminal connectors
F810-CA-PC	F810 carrier, pluggable spring clamp connectors
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 ‡

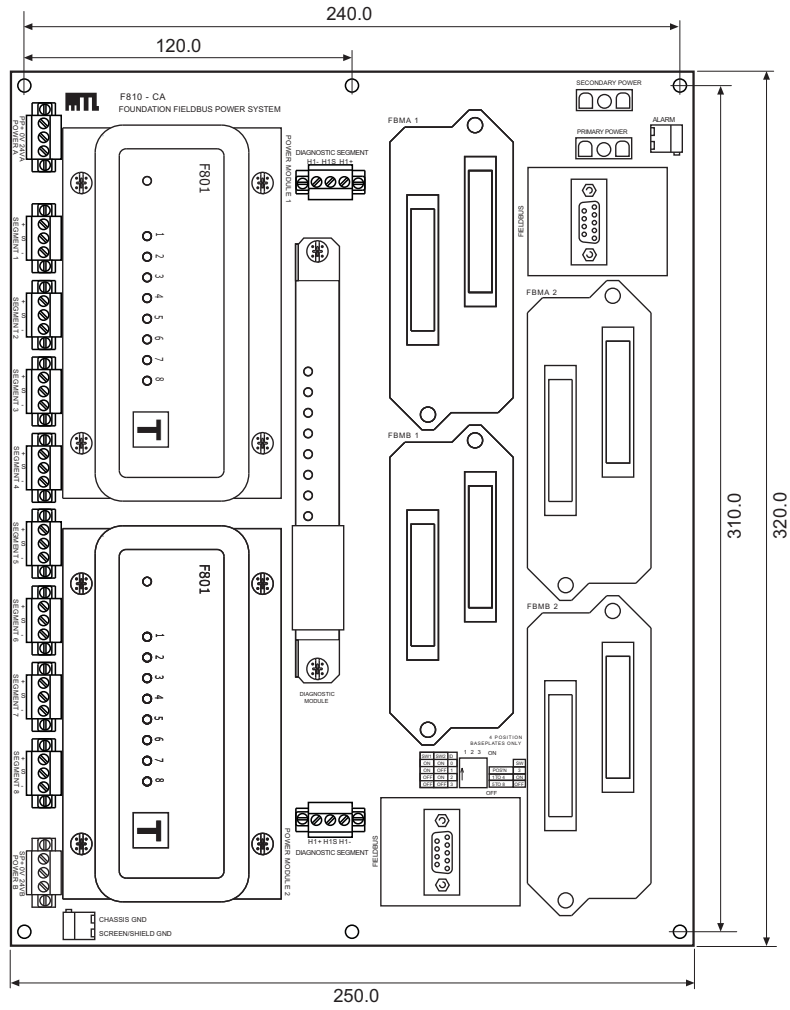
* Used, in place of an F801 power module, for **non-redundant operation**, in order to defeat the failure alarm caused by the absence of the F801.

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

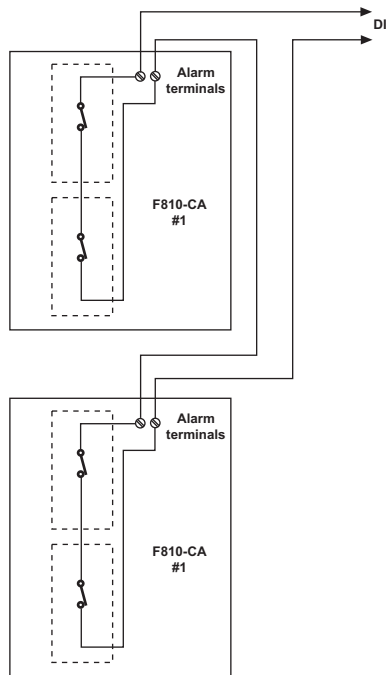
† Figures based upon fully populated F810 baseplate, including all F801, FBM228 and F809F modules



DIMENSIONS



Linking alarm circuits



APPROVALS - FOR THE LATEST CERTIFICATION INFORMATION VISIT WWW.MTL-INST.COM/CERTS_1.NSF

Country	Authority	Standard	Certificate	Approved for	Ratings
-	Fieldbus Foundation™	FF-831	PS001700	H1 Profile - 132	-



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F860

8-segment redundant fieldbus power IOTA



- ◆ **redundant power for 8 fieldbus segments**
- ◆ **"Series C" I/O compatible**
- ◆ **high-density, compact design**
- ◆ **11.6 inch IOTA format**
- ◆ **highest levels of availability**
- ◆ **fully isolated**
- ◆ **low power dissipation**
- ◆ **remote-alarm facility**
- ◆ **on-line diagnostics option**
- ◆ **F801 output 21.5V, 350mA**
- ◆ **F802 output 28V, 500mA**

The F860 is designed to provide redundant power for eight FOUNDATION fieldbus™ H1 segments when used with Honeywell Experion "Series C" Fieldbus Interface Modules (FIMs). The module carrier complies with the mechanical and electrical requirements of 11.6 inch I/O Termination Assemblies (IOTAs), for direct fitting into Honeywell mounting channel. Power for the fieldbus segments is provided by two power modules - F801s or F802s - operating in a redundant configuration. Failure alarms, galvanic isolation, power conditioning and segment termination are incorporated into each F80x module. In simplex applications, a single F80x module may be used. Termination of the fieldbus segments is automatically maintained when single or redundant F80x modules are fitted.

For extreme reliability, the F860 IOTA is passive and only provides interconnections between the power modules and the external connections.

The IOTA has two multi-pin connectors, each of which is connected to a FIM IOTA by means of a standard system cable. Different lengths are available, to accommodate mounting of the F860 and its respective FIM IOTAs in various locations within a Series C I/O cabinet. Field wiring is connected at the FIM IOTA.

Each F80x module provides galvanic isolation between the 24V DC input power and the fieldbus segments, as recommended by the IEC61158-2 fieldbus standard and the Fieldbus Foundation™ FF-831 validation test for power conditioners.

There is galvanic isolation between the fieldbus segments, thereby preventing segment failure in the event of ground faults in the field wiring.

Each F80x 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. An alarm is also triggered by faults inside the F80x modules, or by the loss of 24V DC power to either module. In the alarm condition, fault inputs for segments 1–8 are alerted automatically via dedicated signal lines in the interconnecting cable to the FIM IOTAs. Separate digital input modules are not needed to detect alarms.

A separate physical layer diagnostics module may be installed on the carrier to automatically collect and distribute additional diagnostic information for each of the eight fieldbus segments. For more information see the F809F product specification.

Power for the IOTA is taken via mounting screws from 24V DC busbars that are embedded in the Series C mounting channel. Alternatively, for installations in which the internal Series C power supplies are unable to provide sufficient current capacity, two independent (for redundancy) external 24V DC supplies may be connected to the IOTA via two-part pluggable connectors. Each F80x power module is protected by its own replaceable anti-surge fuse, to provide reliable bulk power.

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SPECIFICATION

Location of equipment

Safe area,
Class I Div 2 Groups ABCD T4* or
Class I Zone 2 IIC T4*
*F802 power module certification is pending

INPUT	F801	F802
Input voltage (DC)	19.2 - 30.0V	19.2 - 30.0V
Current consumption (24V input, all outputs fully loaded)	3.5A*	6A*
Total Power dissipation (24V input, all outputs fully loaded)	20W*	24W*
	* Redundant operation	
OUTPUT	F801	F802
Number of channels	Eight (8)	Eight (8)
Voltage (DC)	21.5V - 24.0V	28.0V - 30.0V
Design current (per segment)	0 to 350mA	0 to 500mA
Current limit	> 370mA	> 520mA
Minimum load	0mA	0mA
Isolation	Fieldbus to input power: 250V AC rms withstand Segment to segment: 200V DC withstand	

ALARMS

Alarm contact rating

1A maximum @ 30V DC maximum

Alarm contact status

Normally closed

Alarm threshold

F801	F802
<19V DC	<24V DC

POWER INPUT CONNECTIONS

Channel Busbars

Via mounting screws onto busbar

OR

External power supply

Pluggable rising cage-clamp screw terminals
Conductor size: 0.14 to 2.5 mm²

FIM IOTAS

16-way multipin connectors using FCAB-0x cable
(2 off required)

TERMINATORS

A single termination per segment is provided automatically when using either 1 or 2 power modules.

ENVIRONMENTAL

Ambient temperature	F801	F802
Operating (full load)	-40°C to +65°C	-40°C to +50°C
Operating (60% load)	-40°C to +65°C	-40°C to +65°C
Storage	-40°C to +85°C	-40°C to +85°C

Note: Temperature range applies only when mounted on a vertical IOTA channel.

Ingress protection

IP20 to BS EN60529 (Additional protection by use of enclosure)

MECHANICAL

Mounting method

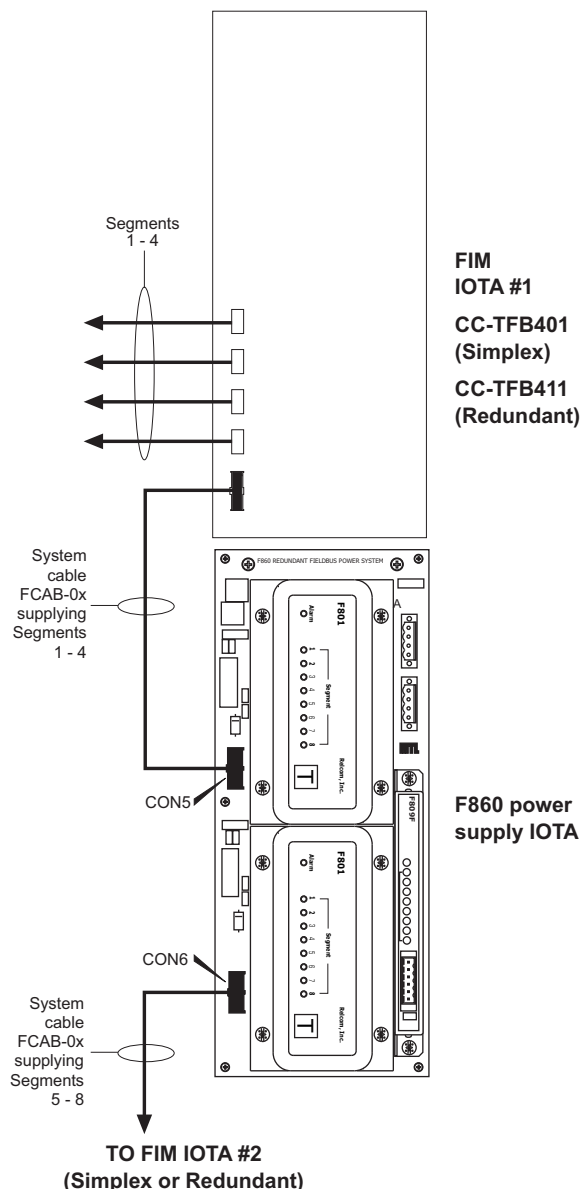
Standard Honeywell 'Series C' I/O mounting channel

ELECTRICAL

EMC Compliance

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

Diagram showing interconnection scheme



PHYSICAL NETWORKS

IEC61158-2
ISA-S50.02 Part 2-1992
FOUNDATION fieldbus™ H1
Profibus PA

ORDERING INFORMATION

DESCRIPTION	PART NO
IOTA, unpopulated	F860-CA
8-segment power module: 21.5V, 350mA	F801
8-segment power module: 28V, 500mA	F802
IOTA power cable, 30cm	FCAB-05
IOTA power cable, 1m	FCAB-06
IOTA power cable, 2m	FCAB-07
IOTA power cable, 4m	FCAB-08
F860 system comprising two F801 modules and an F860-CA IOTA	F860
F860 system comprising two F802 modules and an F860-CA IOTA	F860-2

Product specifications are subject to change without notice



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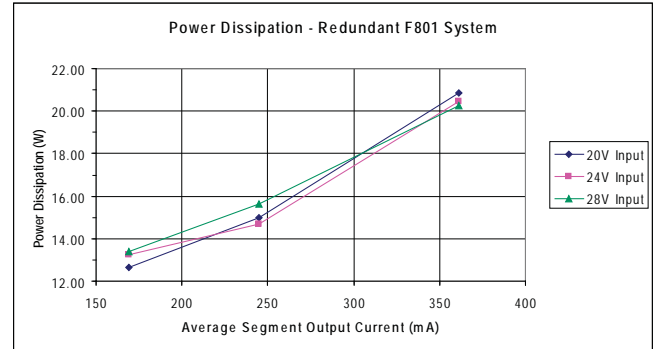
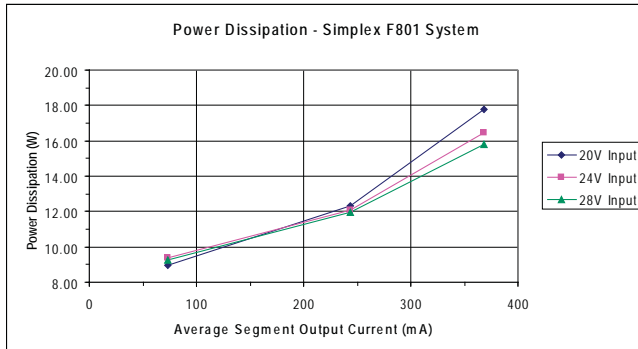
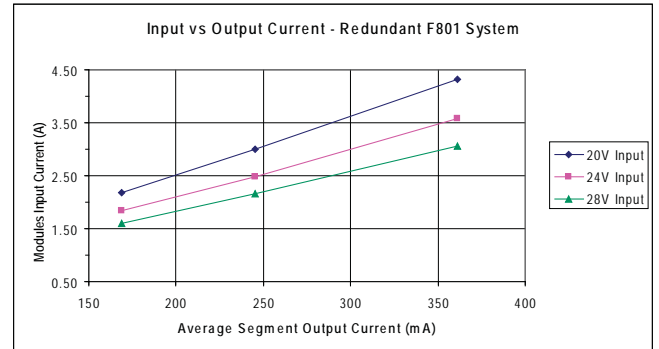
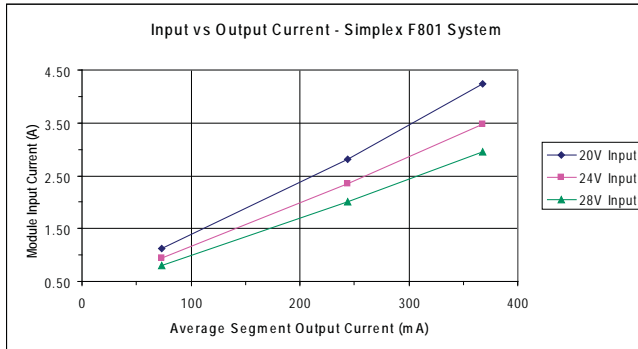
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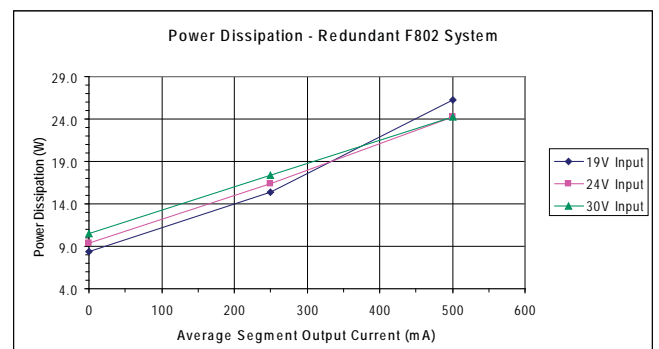
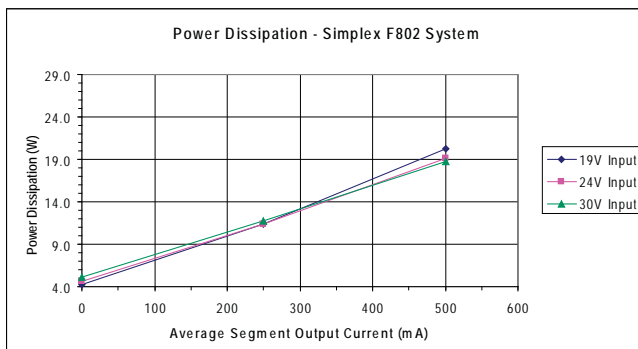
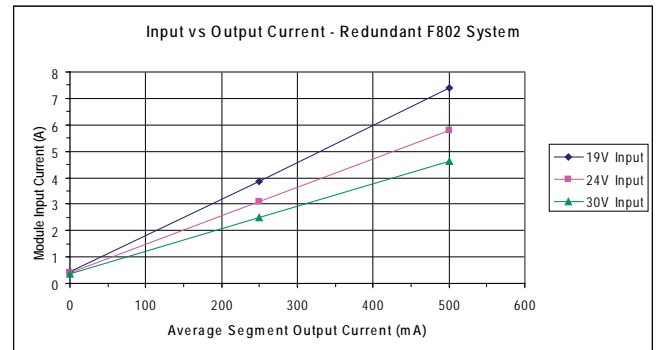
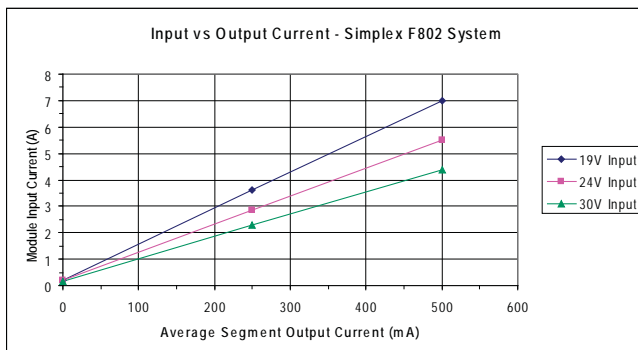
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F801 PARAMETERS



F802 PARAMETERS



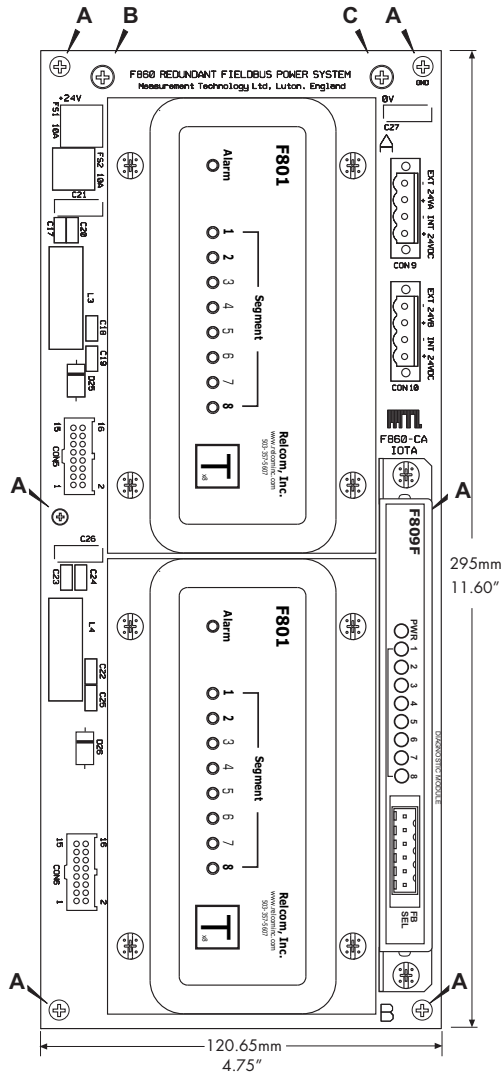
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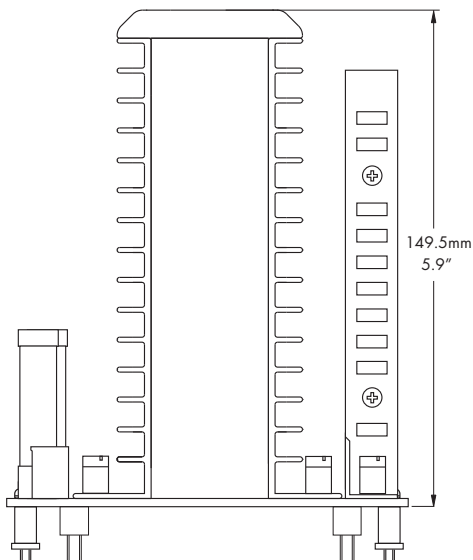
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F860 DIMENSIONS

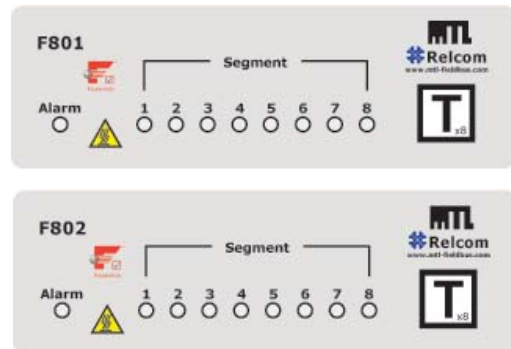


Shown using F801 power modules.
Overall dimensions are the same
when F802 modules are fitted.

CAD drawings are available on-line at www.mtl-fieldbus.com



F80x module top panels showing indicators



APPROVALS - for the latest certification information visit www.mtl-inst.com/certs_1.nsf

Country	Authority	Standard	Certificate	Approved for	Ratings
-	Fieldbus Foundation™	FF-831	PS001700 (F801) PS001900 (F802)	H1 Profile - 132	-



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Apr 2008

8-segment redundant fieldbus power system for use with Yokogawa CENTUM 3000 R3 Control System

F880



- ◆ Integrated redundant fieldbus power for ALF111 FOUNDATION fieldbus™ cards
- ◆ High-density, compact design
- ◆ Fully isolated
- ◆ Hot swappable power modules
- ◆ Low power dissipation
- ◆ Zero component carrier
- ◆ On-line diagnostics option
- ◆ Redundant power & conditioning
- ◆ Vertical DIN-rail mounting
- ◆ F801 output 21.5V, 350mA
- ◆ F802 output 28V, 500mA

The **F880 fieldbus power system** is designed to provide redundant power for eight FOUNDATION fieldbus™ H1 segments when used with Yokogawa ALF111 fieldbus cards. The F880 module carrier has system connectors for direct connection to two redundant pairs of fieldbus cards using Yokogawa AKB336 cables. Power for the fieldbus segments is provided by two power modules - F801s or F802s - operating in a redundant configuration (load sharing). Failure alarms, galvanic isolation, power conditioning and segment termination are incorporated into each F80x module. In simplex applications, a single F80x module may be used. Termination of the fieldbus segments is automatically maintained when single or redundant F80x modules are fitted.

For extreme reliability, the module carrier has no components and only provides interconnections between the power modules and external connections. It is supported in a rigid metal frame that protects the circuit board from mechanical damage. Secure DIN-rail mounting is provided by integrated fixings.

Each F80x module monitors the output of the eight fieldbus segments and indicates an alarm, by means of a built-in, normally closed relay, if any of the segments is shorted or below the minimum output voltage threshold. Failure of either of the bulk power input supplies is also annunciated. The alarm contacts are volt-free and galvanically isolated from other circuitry. Connections to the alarm relays are made via terminals on the F880-Cx carrier. A separate alarm module is not required for this function. LED indicators also show the status of each F80x module and the eight individual segments. In normal operation,

each segment LED is lit, showing that the segment is powered. If a segment is shorted, this LED is extinguished, and the module Alarm LED is lit.

A separate physical layer diagnostics module may be installed on the carrier to automatically collect and distribute additional diagnostic information for each of the eight fieldbus segments. For more information see the F809F product specification.

The F80x 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 fieldbus power supplies. There is also galvanic isolation between the fieldbus segments, thereby preventing multiple segment failures due to ground faults on more than one segment. Each segment has its own fieldbus power conditioner and current limitation.

Redundant 24V DC (nom.) input power is connected to the F880 carrier using two-part pluggable connectors. Field wiring connections are available with either pluggable screw terminals (F880-xS) or pluggable spring clamp terminals (F880-xC).

Three variants of carriers are available in the F880 family, to be used in two different types of installations. For large installations, where multiple F880 systems will be installed in a cabinet, there are Left (F880-CL) and Right (F880-CR) hand versions that make cabinet wiring symmetrical. In smaller installations, where carriers are not installed side-by-side, the F880-CA carrier provides terminal numbering and consistent connector polarity.

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SPECIFICATION

Location of equipment

Safe area,
Class I Div 2 Groups ABCD T4* or
Class I Zone 2 IIC T4*
*F802 power module certification is pending

INPUT	F801	F802
Input voltage (DC)	19.2 - 30.0V	19.2 - 30.0V
Current consumption (24V input, all outputs fully loaded)	3.5A*	6A*
Total Power dissipation (24V input, all outputs fully loaded)	20W*	24W*

* Redundant operation

OUTPUT	F801	F802
Number of channels	Eight (8)	Eight (8)
Voltage (DC)	21.5V - 24.0V	28.0V - 30.0V
Design current (per segment)	0 to 350mA	0 to 500mA
Current limit	> 370mA	> 520mA
Minimum load	0mA	0mA
Isolation	Fieldbus to input power: 250V AC rms withstand Segment to segment: 200V DC withstand	

ALARMS

Alarm contact rating

1A maximum @ 30V DC maximum

Alarm contact status

Normally closed

Alarm threshold

	F801	F802
Segment output	<19V DC	<24V DC

ELECTRICAL CONNECTIONS

System connectors

Host 1A, Host 1B, Host 2A, Host 2B via AKB336 cables to ALF111 modules

Field, Power & Alarm terminals

Pluggable rising cage-clamp screw terminals (-PS)
Conductor size: 0.14 to 2.5 mm²
Pluggable spring-clamp screw terminals (-PC)
Conductor size: 0.2 to 2.5 mm²

Chassis ground

2-way fixed screw terminal connector 0.14 to 2.5 mm²

Terminators

A single termination is provided automatically when using either 1 or 2 power modules

ENVIRONMENTAL

Ambient temperature	F801	F802
Operating (full load)	-40°C to +65°C	-40°C to +50°C
Operating (60% load)	-40°C to +65°C	-40°C to +65°C
Storage	-40°C to +85°C	-40°C to +85°C

Note: Temperature range applies only when mounted on a vertical DIN rail.

Ingress protection

IP20 to BS EN60529 (Additional protection by use of enclosure)

MECHANICAL

Mounting method

Integrated fixings for 'Top hat' DIN rail, 35mm x 7.5mm to EN50022

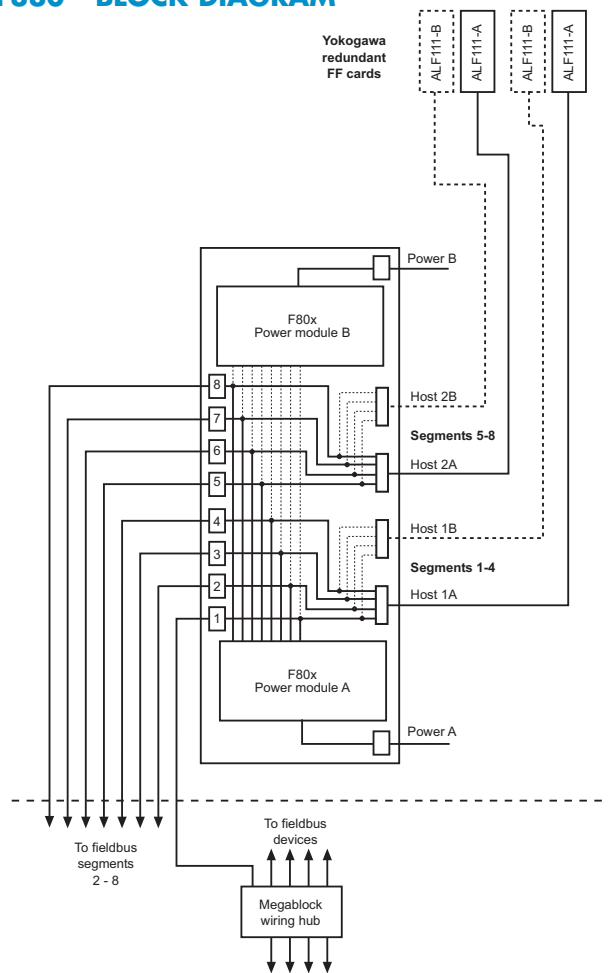
ELECTRICAL

EMC Compliance

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

Product specifications are subject to change without notice

F880 - BLOCK DIAGRAM



The above diagram shows a block diagram of how the F880 is wired. Note that the Chassis Ground and Alarm connection are not shown. The Diagnostic module is also not shown (see the F809F product specification). For detailed wiring information see the Installation Instructions for the F880 (Document number 502-089).

PHYSICAL NETWORKS

IEC61158-2
ISA-S50.02 Part 2-1992
FOUNDATION fieldbus™ H1
Profibus PA

ORDERING INFORMATION

DESCRIPTION	PART NO.	
Carrier, unpopulated	F880-CA-P*	
Left hand carrier, unpopulated	F880-CL-P*	
Right hand carrier, unpopulated	F880-CR-P*	
8-segment power module: 21.5V, 350mA	F801	
8-segment power module: 28V, 500mA	F802	
Blanking modules included with -NR systems	F800-BLK	
Fieldbus diagnostic module	F809F	
F880-CA-P* and two F80x modules	with F801 F880-P*	with F802 F880-2-P*
F880-CL-P* and two F80x modules	F880-L*	F880-2-L*
F880-CR-P* and two F80x modules	F880-R*	F880-2-R*
F880-CA-P* and one F80x module	F880-P*-NR	F880-2-P*-NR
F880-CL-P* and one F80x module	F880-L*-NR	F880-2-L*-NR
F880-CR-P* and one F80x module	F880-R*-NR	F880-2-R*-NR

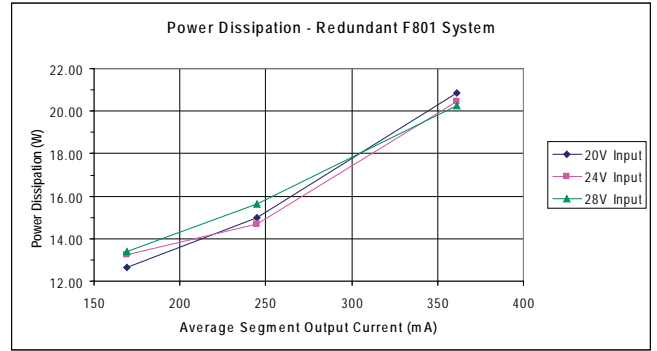
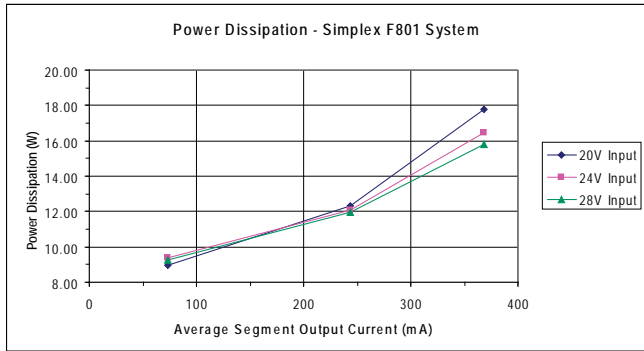
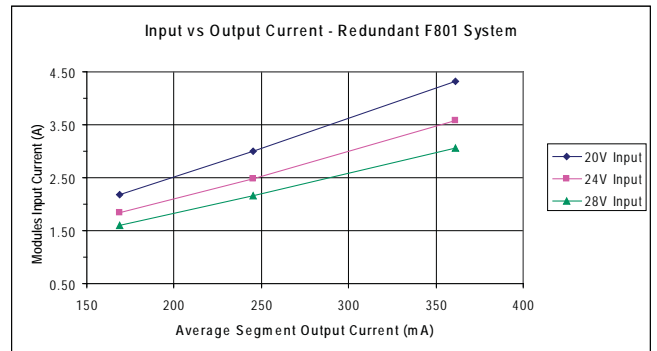
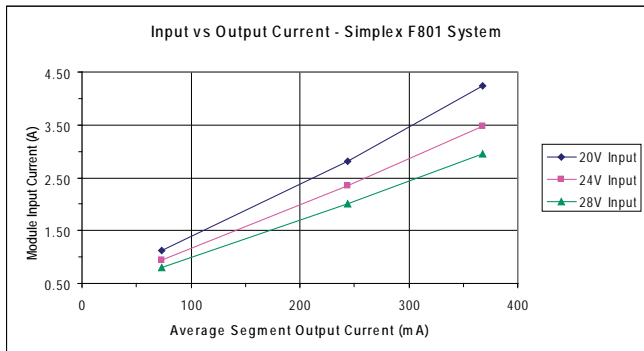
* = S or C

S = Pluggable Screw Terminal Connectors
C = Pluggable Spring Clamp Connectors

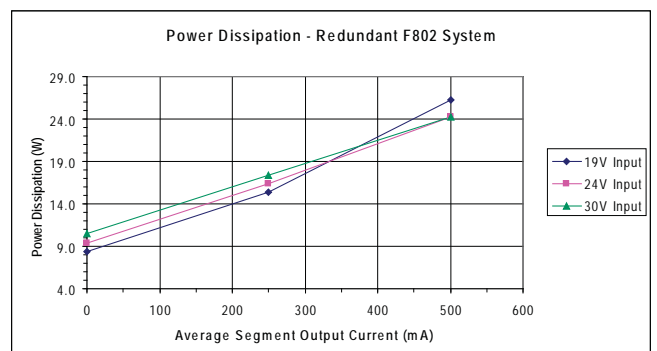
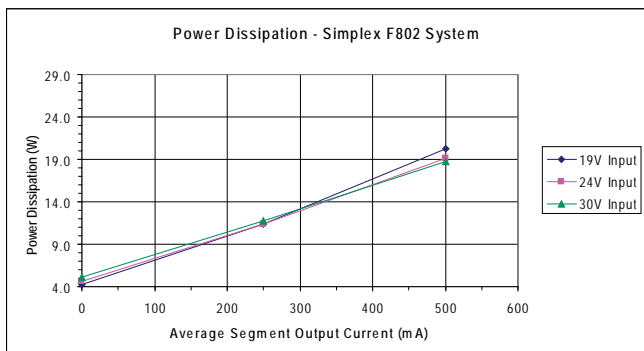
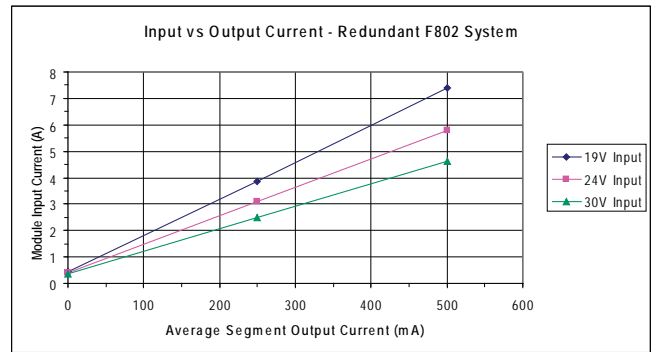
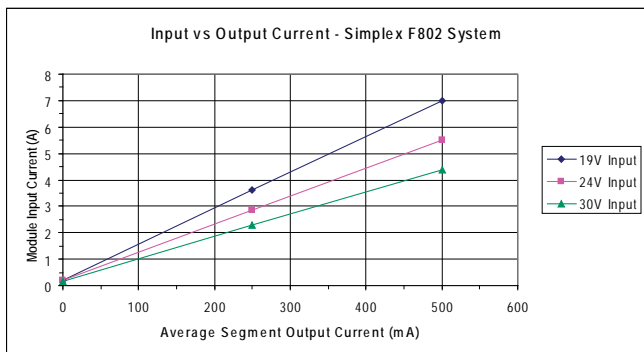


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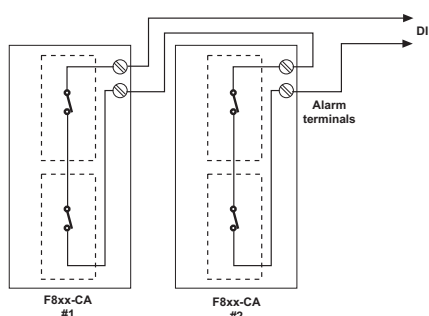
F801 PARAMETERS



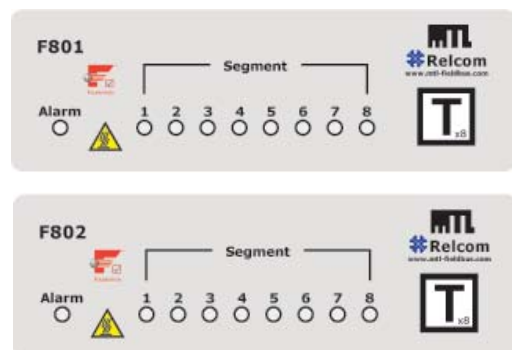
F802 PARAMETERS



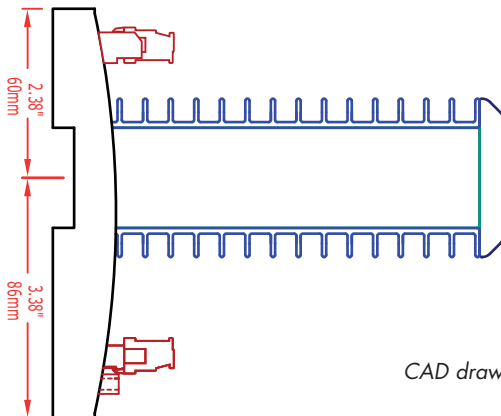
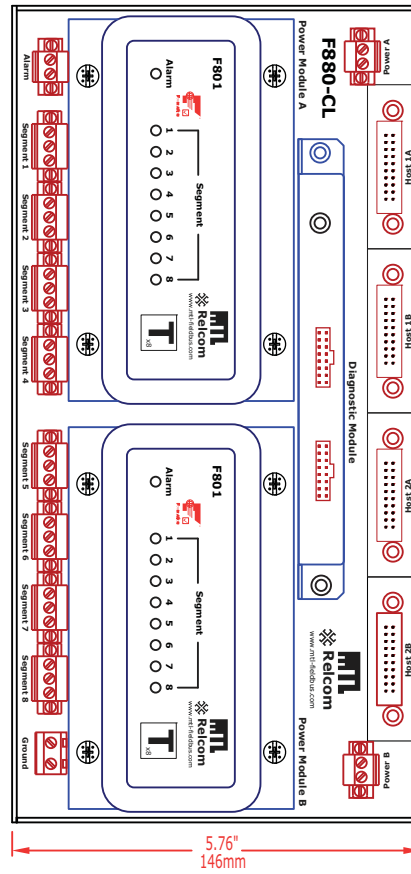
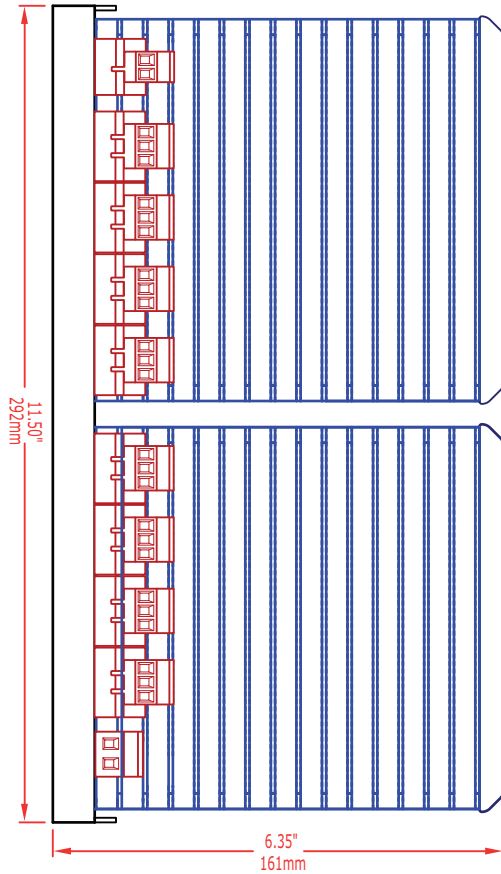
Linking alarm circuits



F80x module top panels showing indicators



F880-L* DIMENSIONS

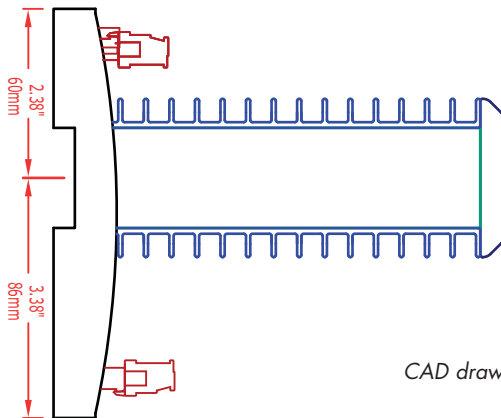
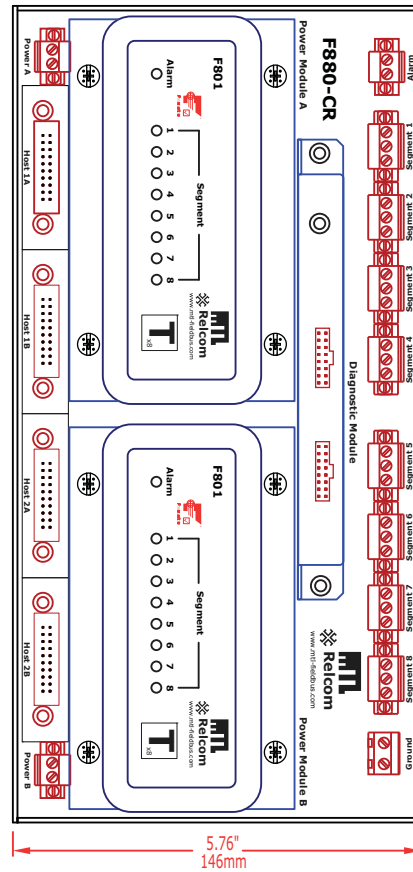
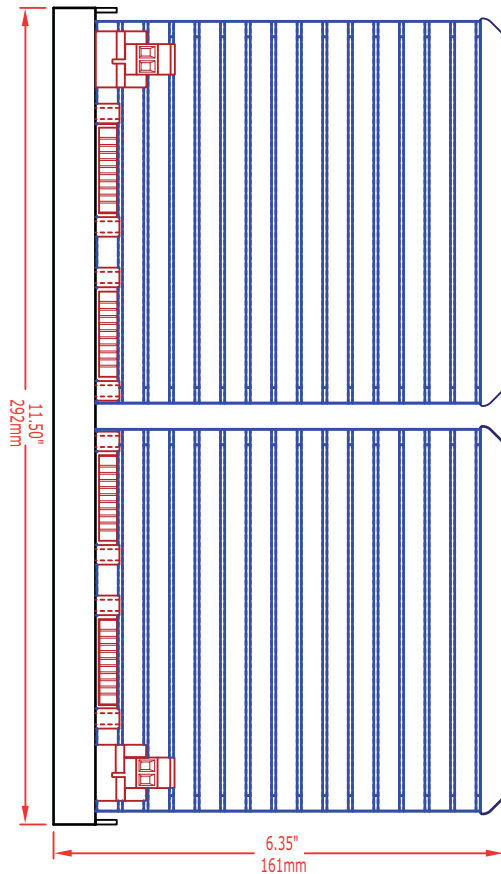


Shown using F801 power modules.
Overall dimensions are the same
when F802 modules are fitted.

CAD drawings are available on-line at www.mtl-fieldbus.com



F880-R* & F880-P* DIMENSIONS



Shown using F801 power modules.
Overall dimensions are the same
when F802 modules are fitted.

CAD drawings are available on-line at www.mtl-fieldbus.com

APPROVALS - for the latest certification information visit www.mtl-inst.com/certs_1.nsf

Region (Authority)	Standard	Certificate	Approved for	Ratings
EU (Relcom)	EN61326		Class A Industrial Locations	CE
(FIELDBUS foundation™)	FF-831	PS001700 - (F801) PS001900 - (F802)		Power Supply Type 132
US (FM)	3600 3611 3610	3025124 - (F801) pending - (F802)	Class I, Div 2, ABCD, T4 Class I, Zone 2, IIC, T4	$V_{max} = 24V$ (F801) $= 30V$ (F802)
Canada (FM)	C22.2 No. 213 C22.2 No. 142	3025124C - (F801) pending - (F802)	Class I, Div 2, ABCD, T4 Class I, Zone 2, IIC, T4	$V_{max} = 24V$ (F801) $= 30V$ (F802)
EU (Relcom)	IEC 60079-0:2004 IEC 60079-15:2005	RELCO7ATEX1002X pending - (F802)	Ex nA IIC T4	$U_o = 24V$ (F801) $= 30V$ (F802)



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F890

8-segment redundant fieldbus power supply for use with non-proprietary cabled systems



- ◆ Redundant fieldbus power for FOUNDATION fieldbus™ cards
- ◆ High-density, compact design
- ◆ Fully isolated
- ◆ Hot swappable power modules
- ◆ Low power dissipation
- ◆ Zero component carrier
- ◆ On-line diagnostics option
- ◆ Redundant power & conditioning
- ◆ Vertical DIN-rail mounting
- ◆ F801 output 21.5V, 350mA
- ◆ F802 output 28V, 500mA

The F890 fieldbus power system is designed to provide redundant power for eight FOUNDATION fieldbus™ H1 segments when used with the Emerson DeltaV or another non-proprietary cabled fieldbus system. Power for the fieldbus segments is provided by two power modules - F801s or F802s - operating in redundant configuration (load sharing). Failure alarms, galvanic isolation, power conditioning and segment termination are incorporated into each F80x module. In simplex applications, a single F80x module may be used. Termination of the fieldbus segments is automatically maintained when single or redundant F80x modules are fitted.

For extreme reliability, the module carrier has *no components* and only provides interconnections between the power modules and external connections. It is supported in a rigid metal frame that protects the circuit board from mechanical damage. Secure DIN-rail mounting is provided by integrated fixings.

Each F80x module monitors the output of the eight fieldbus segments and indicates an alarm by means of a built-in, normally closed relay if any of the segments is shorted, or below the minimum output voltage threshold. Failure of either of the bulk power input supplies is also annunciated. The alarm contacts are volt-free and galvanically isolated from other circuitry. Connections to the alarm relays are made via terminals on the F890-CA carrier. A separate

alarm module is not required for this function. LED indicators also show the status of each F801 module and the eight individual segments. In normal operation, each segment LED is lit, showing that the segment is powered. If a segment is shorted, this LED is extinguished, and the module Alarm LED is lit.

A separate physical layer diagnostics module may be installed on the carrier to automatically collect and distribute additional diagnostic information for each of the eight fieldbus segments. For more information see the F809F product specification.

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 supplies. There is also galvanic isolation between the fieldbus segments, thereby preventing multiple segment failures due to ground faults on more than one segment. Each segment has its own fieldbus power conditioner and current limitation.

Redundant 24V DC (nom.) input power is connected to the F890 carrier using two-part pluggable connectors. Field wiring connections are available with either pluggable screw terminals (F890-PS), or pluggable spring clamp terminals (F890-PC).

FOUNDATION fieldbus™ is a trademark of Fieldbus Foundation™, Austin, Texas.

SPECIFICATION

Location of equipment

Safe area,
Class I Div 2 Groups ABCD T4* or
Class I Zone 2 IIC T4*
*F802 power module certification is pending

INPUT

	F801	F802
Input voltage (DC)	19.2 - 30.0V	19.2 - 30.0V
Current consumption (24V input, all outputs fully loaded)	3.5A*	6A*
Total Power dissipation (24V input, all outputs fully loaded)	20W*	24W*

* Redundant operation

OUTPUT

	F801	F802
Number of channels	Eight (8)	Eight (8)
Voltage (DC)	21.5V - 24.0V	28.0V - 30.0V
Design current (per segment)	0 to 350mA	0 to 500mA
Current limit	> 370mA	> 520mA
Minimum load	0mA	0mA

Isolation

Fieldbus to input power: 250V AC rms withstand
Segment to segment: 200V DC withstand

ALARMS

Alarm contact rating

1A maximum @ 30V DC maximum

Alarm contact status

Normally closed

Alarm threshold

	F801	F802
Segment output	<19V DC	<24V DC

ELECTRICAL CONNECTIONS

System, Field, Power & Alarm terminals

Pluggable rising cage-clamp screw terminals (-PS)
Conductor size: 0.14 to 2.5 mm²
Pluggable spring-clamp screw terminals (-PC)
Conductor size: 0.2 to 2.5 mm²

Chassis ground

2-way fixed screw terminal connector 0.14 to 2.5 mm²

Terminators

A single termination is provided automatically when using either 1 or 2 power modules

ENVIRONMENTAL

Ambient temperature	F801	F802
Operating (full load)	-40°C to +65°C	-40°C to +50°C
Operating (60% load)	-40°C to +65°C	-40°C to +65°C
Storage	-40°C to +85°C	-40°C to +85°C

Note: Temperature range applies only when fitted to a vertical DIN rail mounted on a vertical plane.

Ingress protection

IP20 to BS EN60529 (Additional protection by use of enclosure)

MECHANICAL

Mounting method

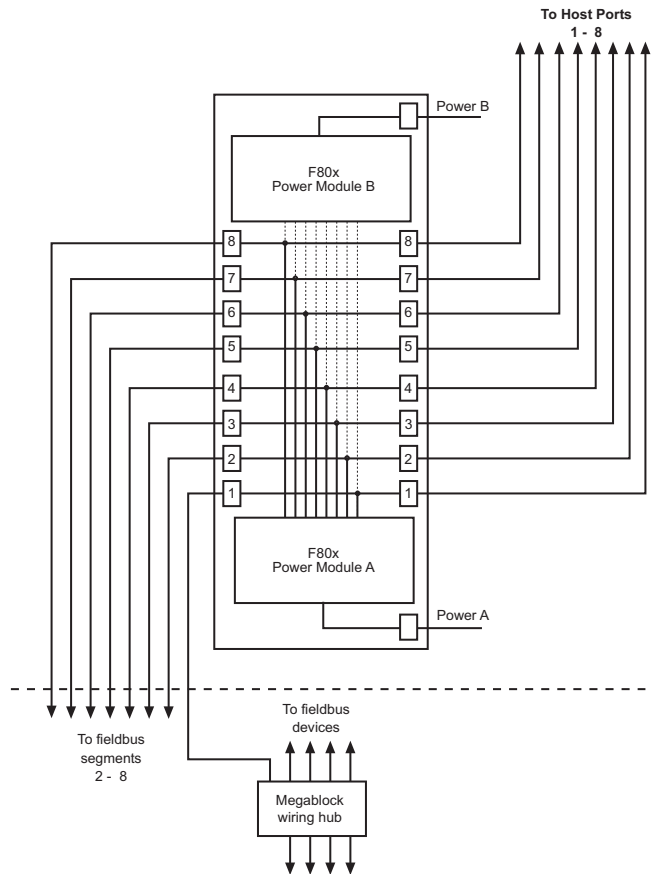
Integrated fixings for 'Top hat' DIN rail, 35mm x 7.5mm to EN50022

ELECTRICAL

EMC Compliance

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

F890 - BLOCK DIAGRAM



The above diagram shows a block diagram of how the F890 is wired. Note that the Chassis Ground and Alarm connection are not shown. The Diagnostic module is also not shown (see the F809F product specification). For detailed wiring information see the Installation Instructions for the F890 (Document number 502-090).

PHYSICAL NETWORKS

IEC61158-2
ISA-S50.02 Part 2-1992
FOUNDATION fieldbus™ H1
Profibus PA

ORDERING INFORMATION

DESCRIPTION

Carrier, unpopulated

8-segment power module: 21.5V, 350mA

8-segment power module: 28V, 500mA

F890-CA-P* and two F801 modules

F890-CA-P* and one F801 module

F890-CA-P* and two F802 modules

F890-CA-P* and one F802 module

Blanking modules included with -NR systems

Fieldbus diagnostic module

* = S or C S = Pluggable Screw Terminal Connectors

C = Pluggable Spring Clamp Connectors

Product specifications are subject to change without notice



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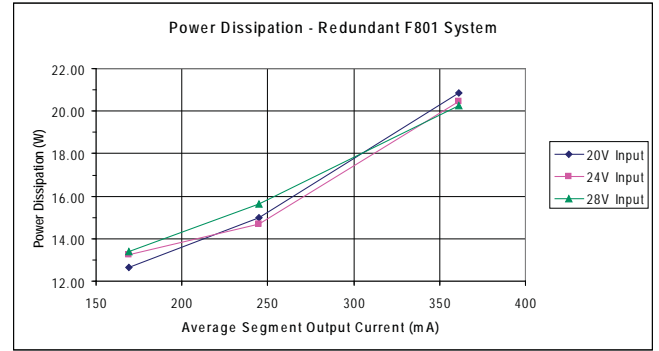
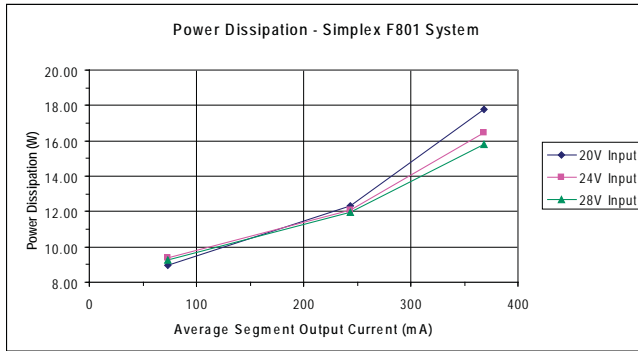
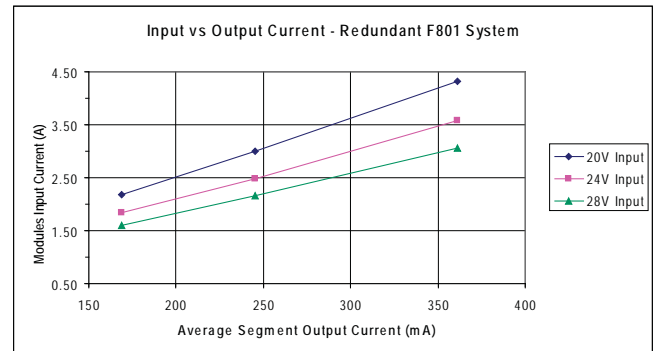
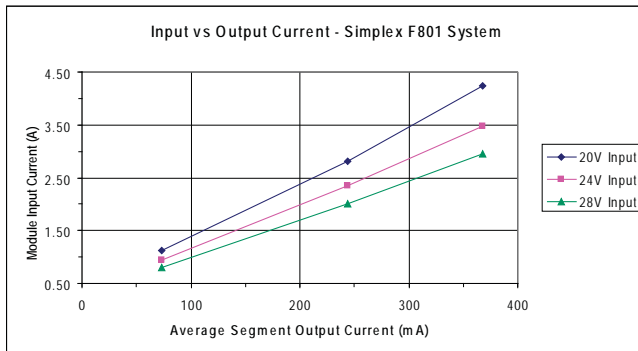
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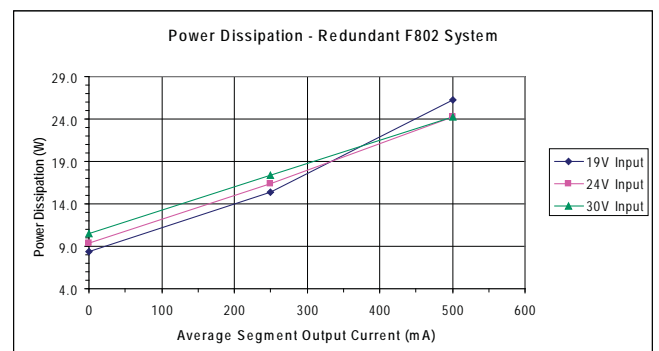
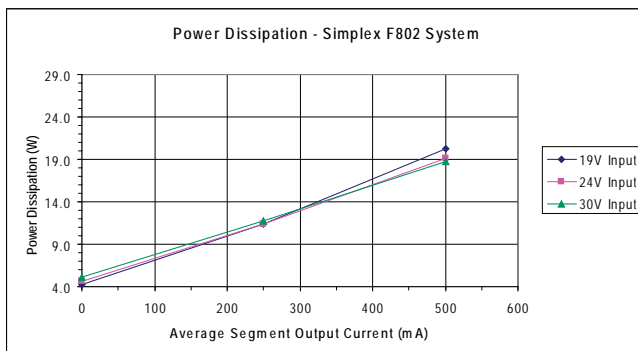
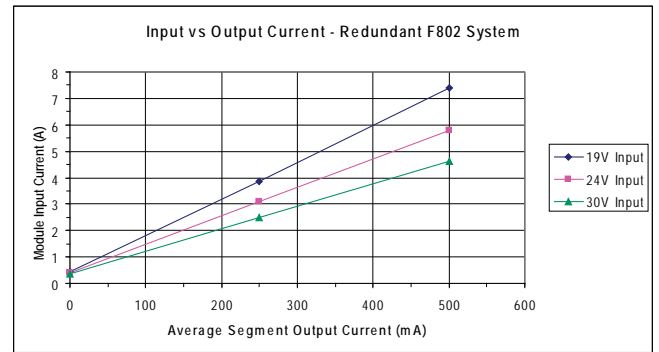
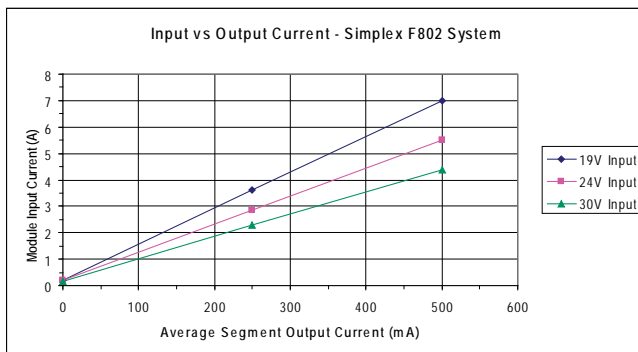
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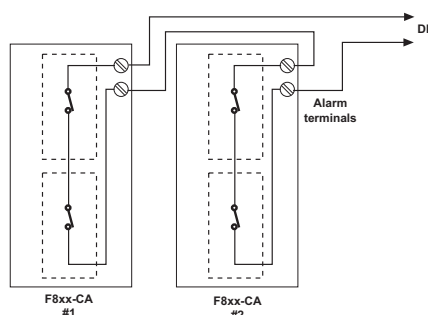
F801 PARAMETERS



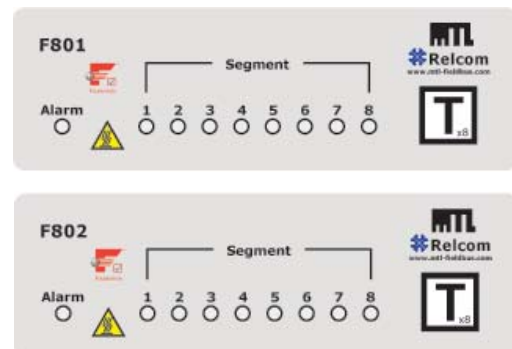
F802 PARAMETERS



Linking alarm circuits



F80x module top panels showing indicators



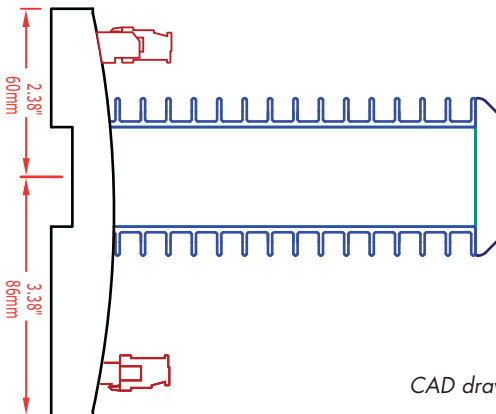
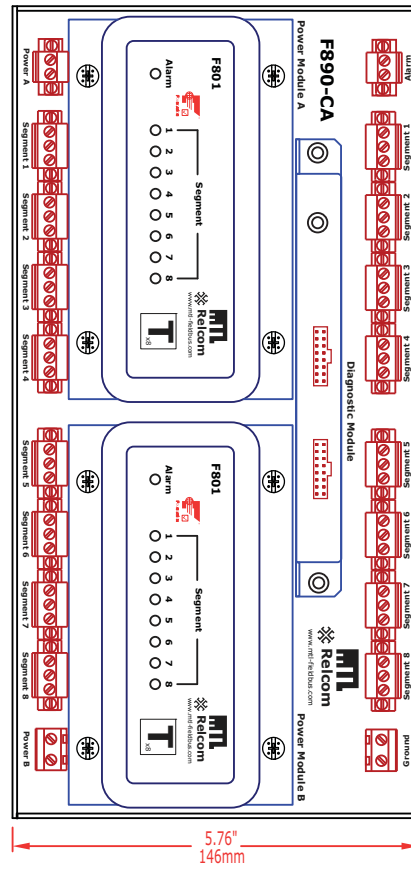
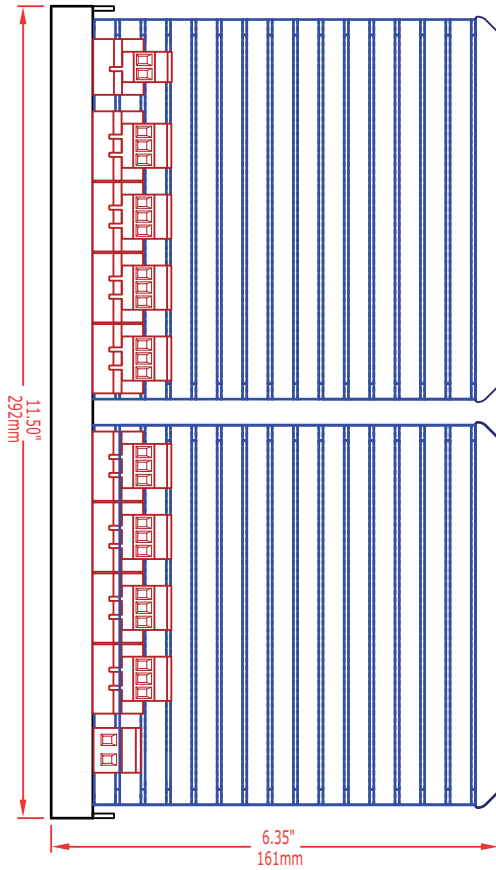
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F890-P* DIMENSIONS



Shown using F801 power modules.
Overall dimensions are the same
when F802 modules are fitted.

CAD drawings are available on-line at www.mtl-fieldbus.com

APPROVALS - for the latest certification information visit www.mtl-inst.com/certs_1.nsf

Region (Authority)	Standard	Certificate	Approved for	Ratings
EU (Relcom)	EN61326		Class A Industrial Locations	CE
(FIELDBUS foundation™)	FF-831	PS001700 - (F801) PS001900 - (F802)		Power Supply Type 132
US (FM)	3600 3611 3610	3025124 - (F801) pending - (F802)	Class I, Div 2, ABCD, T4 Class I, Zone 2, IIC, T4	V _{max} = 24V (F801) = 30V (F802)
Canada (FM)	C22.2 No. 213 C22.2 No. 142	3025124C - (F801) pending - (F802)	Class I, Div 2, ABCD, T4 Class I, Zone 2, IIC, T4	V _{max} = 24V (F801) = 30V (F802)
EU (Relcom)	IEC 60079-0:2004 IEC 60079-15:2005	RELCO7ATEX1002X pending - (F802)	Ex nA IIC T4	U _o = 24V (F801) = 30V (F802)





- ◆ Redundant fieldbus power for FOUNDATION fieldbus™ cards
- ◆ High-density, compact design
- ◆ Fully isolated
- ◆ Hot swappable power modules
- ◆ Low power dissipation
- ◆ Zero component carrier
- ◆ On-line diagnostics option
- ◆ Redundant power & conditioning
- ◆ Horizontal DIN-rail mounting
- ◆ F801 output 21.5V, 350mA
- ◆ F802 output 28V, 500mA

The F892 fieldbus power system is designed to provide redundant power for eight FOUNDATION fieldbus™ H1 segments when used with the Emerson DeltaV or another non-proprietary cabled fieldbus system. Power for the fieldbus segments is provided by two power modules - F801s or F802s - operating in redundant configuration (load sharing). Failure alarms, galvanic isolation, power conditioning and segment termination are incorporated into each F80x module. In simplex applications, a single F80x module may be used. Termination of the fieldbus segments is automatically maintained when single or redundant F80x modules are fitted.

For extreme reliability, the module carrier has no components and only provides interconnections between the power modules and external connections. It is supported in a rigid metal frame that protects the circuit board from mechanical damage. Secure DIN-rail mounting is provided by integrated fixings.

Each F80x module monitors the output of the eight fieldbus segments and indicates an alarm by means of a built-in, normally closed relay if any of the segments is shorted or below the minimum output voltage threshold. Failure of either of the bulk power input supplies is also annunciated. The alarm contacts are volt-free and galvanically isolated from other circuitry. Connections to the alarm relays are made via terminals on the F892-CA carrier. A separate

alarm module is not required for this function. LED indicators also show the status of each F80x module and the eight individual segments. In normal operation, each segment LED is lit, showing that the segment is powered. If a segment is shorted, this LED is extinguished, and the module Alarm LED is lit.

A separate physical layer diagnostics module may be installed on the carrier to automatically collect and distribute additional diagnostic information for each of the eight fieldbus segments. For more information see the F809F product specification.

The F80x 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 due to ground faults on more than one segment. Each segment has its own fieldbus power conditioner and current limitation.

Redundant 24V DC (nom.) input power is connected to the F892 carrier using two-part pluggable connectors. Field wiring connections are available with either pluggable screw terminals (F892-PS) or pluggable spring clamp terminals (F892-PC).

SPECIFICATION

Location of equipment

Safe area,
Class I Div 2 Groups ABCD T4* or
Class I Zone 2 IIC T4*
*F802 power module certification is pending

INPUT

	F801	F802
Input voltage (DC)	19.2 - 30.0V	19.2 - 30.0V
Current consumption (24V input, all outputs fully loaded)	3.5A*	6A*
Total Power dissipation (24V input, all outputs fully loaded)	20W*	24W*

* Redundant operation

OUTPUT

	F801	F802
Number of channels	Eight (8)	Eight (8)
Voltage (DC)	21.5V - 24.0V	28.0V - 30.0V
Design current (per segment)	0 to 350mA	0 to 500mA
Current limit	> 370mA	> 520mA
Minimum load	0mA	0mA

Isolation

Fieldbus to input power: 250V AC rms withstand
Segment to segment: 200V DC withstand

ALARMS

Alarm contact rating

1A maximum @ 30V DC maximum

Alarm contact status

Normally closed

Alarm threshold

	F801	F802
Segment output	<19V DC	<24V DC

ELECTRICAL CONNECTIONS

System, Field, Power & Alarm terminals

Pluggable rising cage-clamp screw terminals (-PS)
Conductor size: 0.14 to 2.5 mm²
Pluggable spring-clamp screw terminals (-PC)
Conductor size: 0.2 to 2.5 mm²

Chassis ground

2-way fixed screw terminal connector 0.14 to 2.5 mm²

Terminators

A single termination is provided automatically when using either 1 or 2 power modules

ENVIRONMENTAL

Ambient temperature	F801	F802
Operating (full load)	-40°C to +65°C	-40°C to +50°C
Operating (60% load)	-40°C to +65°C	-40°C to +65°C
Storage	-40°C to +85°C	-40°C to +85°C

Note: Temperature range applies only when mounted on a horizontal DIN rail attached to a vertical surface.

Ingress protection

IP20 to BS EN60529 (Additional protection by use of enclosure)

MECHANICAL

Mounting method

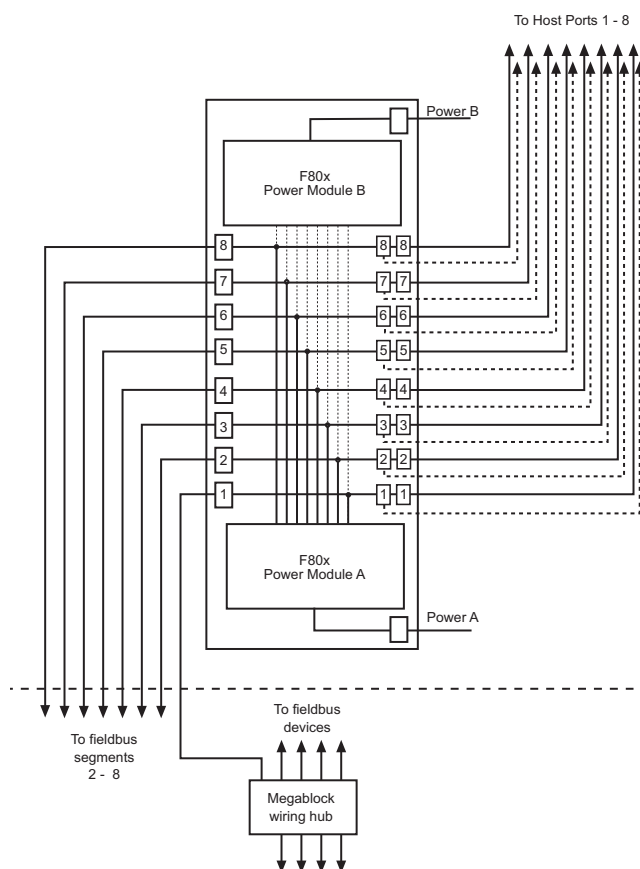
Integrated fixings for 'Top hat' DIN rail, 35mm x 7.5mm to EN50022

ELECTRICAL

EMC Compliance

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

F892 - BLOCK DIAGRAM



The above diagram shows a block diagram of how the F892 is wired. Note that the Chassis Ground and Alarm connection are not shown. The Diagnostic module is also not shown (see the F809F product specification). For detailed wiring information see the Installation Instructions for the F892 (Document number 502-091). The above diagram also shows two sets of 8 connectors for connection to the Host. Early versions of the F892 included only one set of connectors (unit date code 0711, and earlier) and so did not support redundant Host connection. Some Host systems such as the Emerson DeltaV provide their own method of connecting the Redundant Host port, in which case a Simplex connection to the F892 is all that is required, or desired.

PHYSICAL NETWORKS

IEC61158-2
ISA-S50.02 Part 2-1992
Foundation fieldbus™ H1
Profibus PA

ORDERING INFORMATION

DESCRIPTION

Carrier, unpopulated

8-segment power module: 21.5V, 350mA

8-segment power module: 28V, 500mA

F892-CA-P* and two F801 modules

F892-CA-P* and one F801 module

F892-CA-P* and two F802 modules

F892-CA-P* and one F802 module

Blanking modules included with -NR systems

Fieldbus diagnostic module

PART NO

F892-CA-P*

F801

F802

F892-P*

F892-P*-NR

F892-2-P*

F892-2-P*-NR

F800-BLK

F809F

* = S or C S = Pluggable Screw Terminal Connectors
C = Pluggable Spring Clamp Connectors

Product specifications are subject to change without notice



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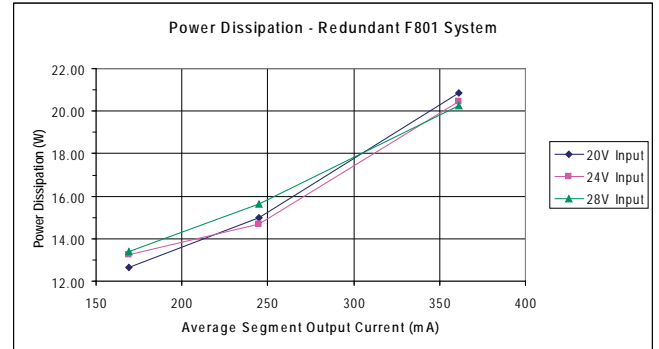
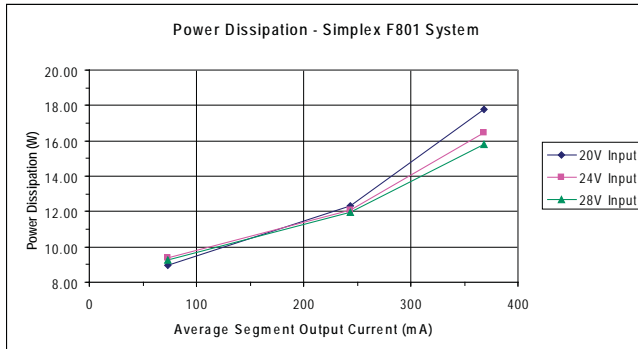
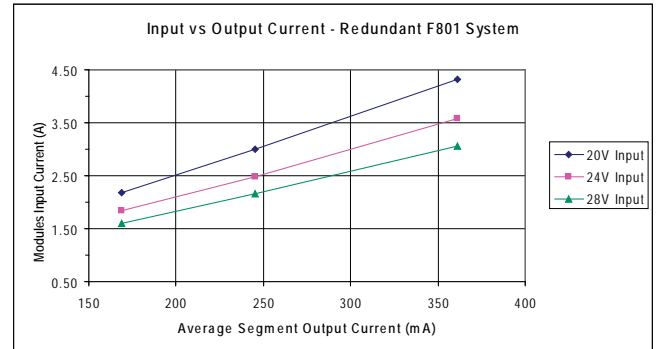
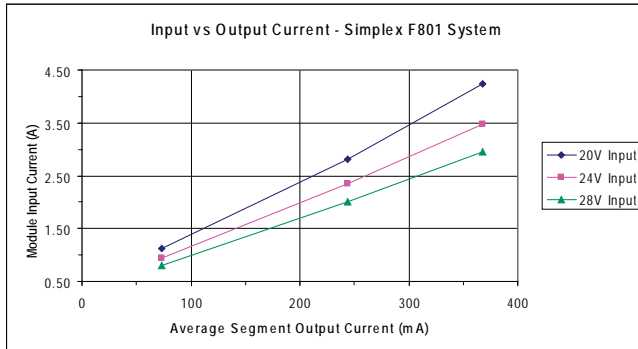
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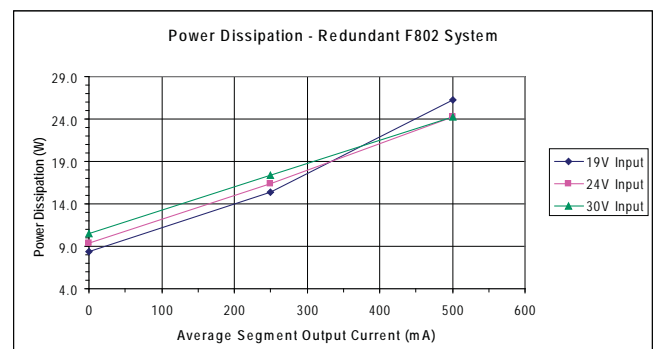
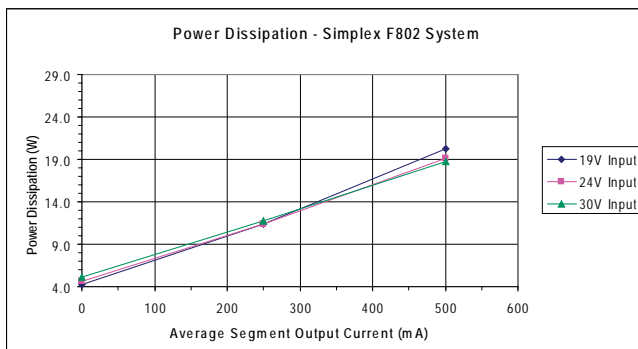
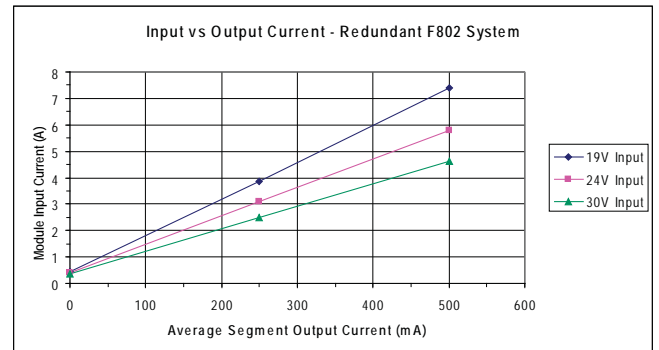
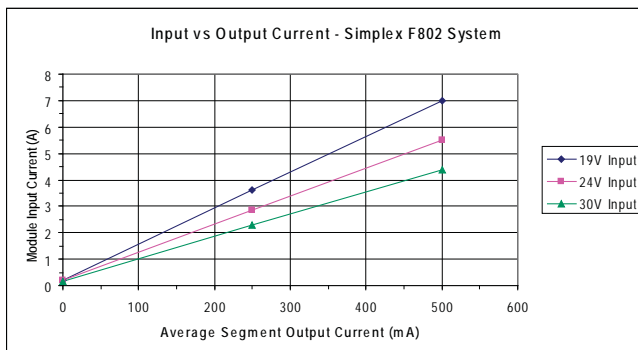
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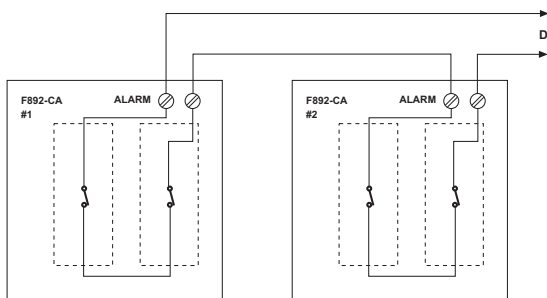
F801 PARAMETERS



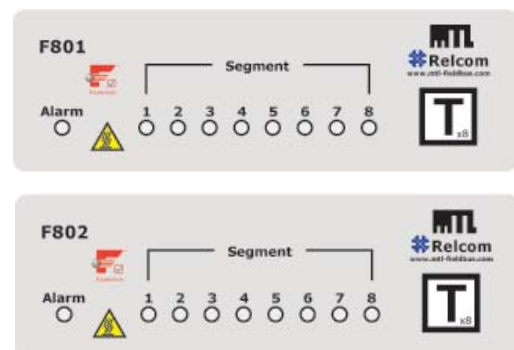
F802 PARAMETERS



Linking alarm circuits



F80x module top panels showing indicators



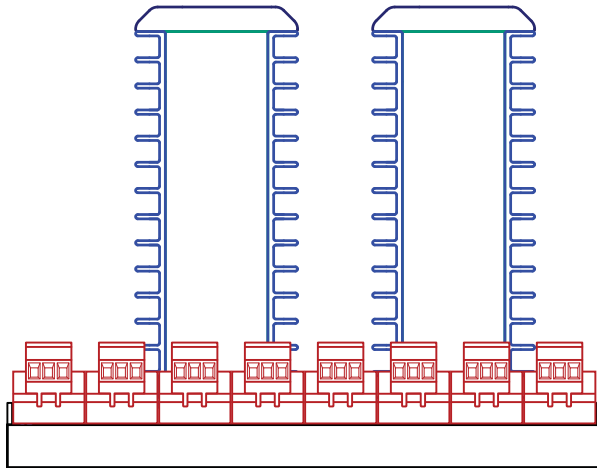
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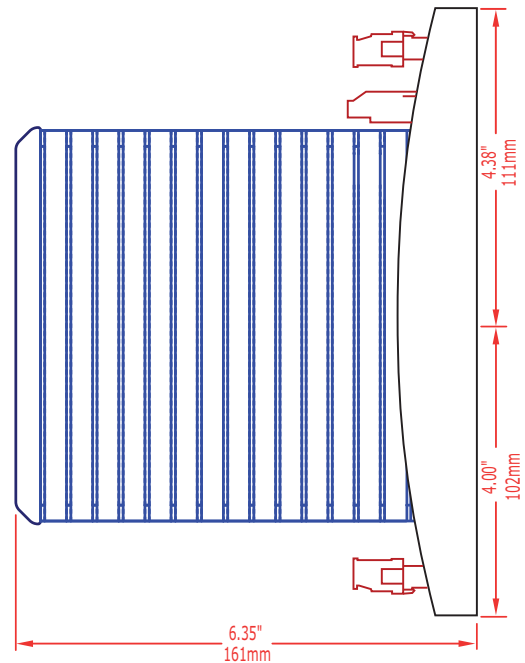
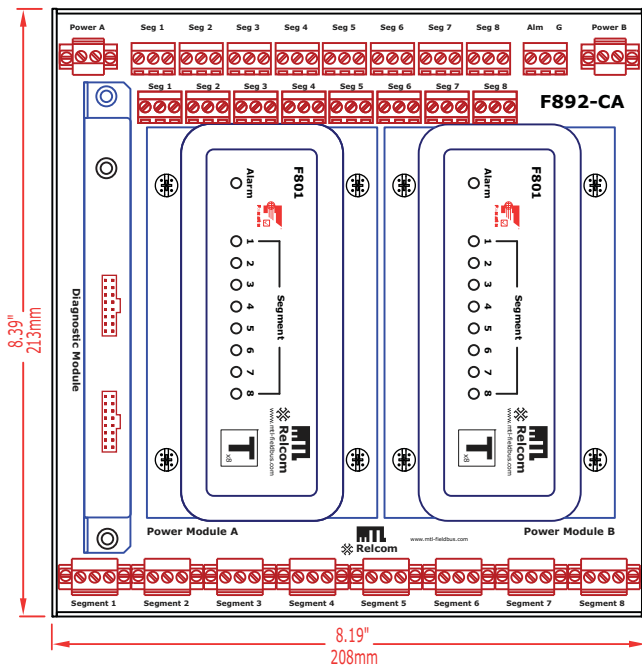
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F892-P* DIMENSIONS



Shown using F801 power modules.
Overall dimensions are the same
when F802 modules are fitted.



CAD drawings are available on-line at www.mtl-fieldbus.com

APPROVALS - for the latest certification information visit www.mtl-fieldbus.com

Region (Authority)	Standard	Certificate	Approved for	Ratings
EU (Relcom)	EN61326		Class A Industrial Locations	CE
(FIELDBUS foundation™)	FF-831	PS001700 - (F801) PS001900 - (F802)		Power Supply Type 132
US (FM)	3600 3611 3610	3025124 - (F801) pending - (F802)	Class I, Div 2, ABCD, T4 Class I, Zone 2, IIC, T4	$V_{max} = 24V$ (F801) $= 30V$ (F802)
Canada (FM)	C22.2 No. 213 C22.2 No. 142	3025124C - (F801) pending - (F802)	Class I, Div 2, ABCD, T4 Class I, Zone 2, IIC, T4	$V_{max} = 24V$ (F801) $= 30V$ (F802)
EU (Relcom)	IEC 60079-0:2004 IEC 60079-15:2005	RELCO7ATEX1002X pending - (F802)	Ex nA IIC T4	$U_o = 24V$ (F801) $= 30V$ (F802)

