FIELDBUS POWER SUPPLIES

F800 Series
F600 Series
FPS-I
FPS-DT
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 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

INPUT

<table>
<thead>
<tr>
<th>F801</th>
<th>F802</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input voltage (DC)</td>
<td>19.2 - 30.0V</td>
</tr>
<tr>
<td>Current consumption</td>
<td>3.5A*</td>
</tr>
<tr>
<td>Total Power dissipation</td>
<td>20W*</td>
</tr>
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</table>

OUTPUT

<table>
<thead>
<tr>
<th>F801</th>
<th>F802</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of channels</td>
<td>Eight (8)</td>
</tr>
<tr>
<td>Voltage (DC)</td>
<td>21.5V - 24.0V</td>
</tr>
<tr>
<td>Design current</td>
<td>0 to 350mA</td>
</tr>
<tr>
<td>Current limit</td>
<td>&gt; 370mA</td>
</tr>
<tr>
<td>Minimum load</td>
<td>0mA</td>
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ALARMS

<table>
<thead>
<tr>
<th>F801</th>
<th>F802</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm contact rating</td>
<td>1A maximum @ 30V DC maximum</td>
</tr>
<tr>
<td>Alarm contact status</td>
<td>Normally closed</td>
</tr>
<tr>
<td>Alarm threshold</td>
<td>&lt;19V DC</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>F801</th>
<th>F802</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating (full load)</td>
<td>−40°C to +65°C</td>
</tr>
<tr>
<td>Operating (60% load)</td>
<td>−40°C to +65°C</td>
</tr>
<tr>
<td>Storage</td>
<td>−40°C to +85°C</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>PART NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrier, unpopulated</td>
<td>F892-CA,P*</td>
</tr>
<tr>
<td>8-segment power module: 21.5V, 350mA</td>
<td>F801</td>
</tr>
<tr>
<td>8-segment power module: 28V, 500mA</td>
<td>F802</td>
</tr>
<tr>
<td>F892-CA,P* and two F801 modules</td>
<td>F892-P*</td>
</tr>
<tr>
<td>F892-CA,P* and one F801 module</td>
<td>F892-2-P*</td>
</tr>
<tr>
<td>F892-CA,P* and two F802 modules</td>
<td>F892-2-P*</td>
</tr>
<tr>
<td>F892-CA,P* and one F802 module</td>
<td>F892-2-P*-NR</td>
</tr>
<tr>
<td>Blanking modules included with -NR systems</td>
<td>F800-BLK</td>
</tr>
<tr>
<td>Fieldbus diagnostic module</td>
<td>F809F</td>
</tr>
</tbody>
</table>

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

Product specifications are subject to change without notice
F801 PARAMETERS

Input vs Output Current - Simplex F801 System

Power Dissipation - Simplex F801 System

F802 PARAMETERS

Input vs Output Current - Simplex F802 System

Power Dissipation - Simplex F802 System

Input vs Output Current - Redundant F801 System

Power Dissipation - Redundant F801 System

Input vs Output Current - Redundant F802 System

Power Dissipation - Redundant F802 System

Linking alarm circuits

F80x module top panels showing indicators
**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

<table>
<thead>
<tr>
<th>Region (Authority)</th>
<th>Standard</th>
<th>Certificate</th>
<th>Approved for</th>
<th>Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU (Relcom)</td>
<td>EN61326</td>
<td>PS001700 - (F801)</td>
<td>Class A Industrial Locations</td>
<td>CE</td>
</tr>
<tr>
<td>(FIELDBUS foundation™)</td>
<td>FF-831</td>
<td>PS001900 - (F802)</td>
<td>Power Supply Type 132</td>
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</tbody>
</table>
| US (FM)            | 3600     | 3025124 - (F801) | Class I, Div 2, ABCD, T4 | $V_{max} = 24V$ (F801) $
|                    | 3611     | 3033657 - (F802) | Class I, Zone 2, IIC, T4 |
|                    | 3610     |             |              | $= 30V$ (F802) |
| Canada (FM)        | C22.2 No. 213 | 3025124C - (F801) | Class I, Div 2, ABCD, T4 | $V_{max} = 24V$ (F801) $
|                    | C22.2 No. 142 | 3033657C - (F802) | Class I, Zone 2, IIC, T4 |
|                    |          |             |              | $= 30V$ (F802) |
| EU (Relcom)        | IEC 60079-0:2004 | RELCO7ATEX1002X (F801 + F802) | Ex nA IIC T4 |
|                    | IEC 60079-15:2005 |             |              | $U_r = 24V$ (F801) $
|                    |          |             |              | $= 30V$ (F802) |
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 **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 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).

---

**Features**

- 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

---

* Gas clearance certificate needed in Zone 2 hazardous areas
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 | 3.5A* | 6A*
Total Power dissipation
(24V input, all outputs fully loaded) | 20W* | 24W*

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

ELECTRICAL CONNECTIONS

System, Field, Power & Alarm terminals
Pluggable rising cage-clamp screw terminals [P]
Conductor size: 0.14 to 2.5 mm²
Pluggable spring-clamp screw terminals [P]
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

ORDERING INFORMATION

DESCRIPTION | PART NO
--- | ---
Carrier, unpopulated | F890-CA-P*
B-segment power module: 21.5V, 350mA | F801
B-segment power module: 28V, 500mA | F802
F890-CA-P* and two F801 modules | F890-P*
F890-CA-P* and one F801 module | F890-P*-NR
F890-CA-P* and two F802 modules | F890-2-P*
F890-CA-P* and one F802 module | F890-2-P*-NR
Blanking modules included with -NR systems | F800-BLK
Fieldbus diagnostic module | F809F

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

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

E-mail: enquiry@mtl-inst.com  MTL web site: www.mtl-fieldbus.com  Relcom web site: www.relcominc.com

Product specifications are subject to change without notice.
F801 PARAMETERS

Input vs Output Current - Simplex F801 System

Power Dissipation - Simplex F801 System

Input vs Output Current - Redundant F801 System

Power Dissipation - Redundant F801 System

F802 PARAMETERS

Input vs Output Current - Simplex F802 System

Power Dissipation - Simplex F802 System

Input vs Output Current - Redundant F802 System

Power Dissipation - Redundant F802 System

Linking alarm circuits

F80x module top panels showing indicators
### APPROVALS

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

<table>
<thead>
<tr>
<th>Region (Authority)</th>
<th>Standard</th>
<th>Certificate</th>
<th>Approved for</th>
<th>Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU (Relcom)</td>
<td>EN61326</td>
<td>P5001700 - (F801)</td>
<td>Class A Industrial Locations</td>
<td>CE</td>
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<tr>
<td>[FIELDBUS foundation™]</td>
<td>FF-831</td>
<td>P5001900 - (F802)</td>
<td>Power Supply Type 132</td>
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<td>US (FM)</td>
<td>3600</td>
<td>3025124 - (F801)</td>
<td>Class I, Div 2, ABCD, T4</td>
<td>$V_{max} = 24V$ (F801)</td>
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<td>3033657 - (F802)</td>
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<td>$V_{max} = 30V$ (F802)</td>
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<td>Class I, Div 2, ABCD, T4</td>
<td>$V_{max} = 24V$ (F801)</td>
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<td>IEC 60079-0:2004</td>
<td>RELCO7ATEX1002X (F801 + F802)</td>
<td>Ex nA IIC T4</td>
<td>U$_o$ = 24V (F801)</td>
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<tr>
<td></td>
<td>IEC 60079-15:2005</td>
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<td></td>
<td>U$_o$ = 30V (F802)</td>
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</table>

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
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 voltfree 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.

* Gas clearance certificate needed in Zone 2 hazardous areas

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

**INPUT**

<table>
<thead>
<tr>
<th></th>
<th>F801</th>
<th>F802</th>
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</thead>
<tbody>
<tr>
<td>Input voltage (DC)</td>
<td>19.2 - 30.0V</td>
<td>19.2 - 30.0V</td>
</tr>
<tr>
<td>Current consumption</td>
<td>3.5A*</td>
<td>6A*</td>
</tr>
<tr>
<td>Total Power dissipation</td>
<td>20W*</td>
<td>24W*</td>
</tr>
</tbody>
</table>

**OUTPUT**

<table>
<thead>
<tr>
<th></th>
<th>F801</th>
<th>F802</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of channels</td>
<td>Eight (8)</td>
<td>Eight (8)</td>
</tr>
<tr>
<td>Voltage (DC)</td>
<td>21.5V - 24.0V</td>
<td>28.0V - 30.0V</td>
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<tr>
<td>Design current (per segment)</td>
<td>0 to 350mA</td>
<td>0 to 500mA</td>
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<td>Minimum load</td>
<td>0mA</td>
<td>0mA</td>
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**ALARMS**

<table>
<thead>
<tr>
<th></th>
<th>F801</th>
<th>F802</th>
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</thead>
<tbody>
<tr>
<td>Alarm contact rating</td>
<td>1A maximum @ 30V DC maximum</td>
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<tr>
<td>Alarm contact status</td>
<td>Normally closed</td>
<td></td>
</tr>
<tr>
<td>Alarm threshold</td>
<td>Segment output</td>
<td>( &lt;19V \text{ DC} ) ( &lt;24V \text{ DC} )</td>
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</tbody>
</table>

**ELECTRICAL CONNECTIONS**

**System connectors**
- Host 1A, Host 1B, Host 2A, Host 2B via AKB336 cables to A111 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
- A single termination is provided automatically when using either 1 or 2 power modules

**ENVIRONMENTAL**

<table>
<thead>
<tr>
<th></th>
<th>F801</th>
<th>F802</th>
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</thead>
<tbody>
<tr>
<td>Ambient temperature</td>
<td>Operating (full load)</td>
<td>(-40°C \text{ to } +65°C) (-40°C \text{ to } +50°C)</td>
</tr>
<tr>
<td></td>
<td>Operating (60% load)</td>
<td>(-40°C \text{ to } +65°C) (-40°C \text{ to } +65°C)</td>
</tr>
<tr>
<td></td>
<td>Storage</td>
<td>(-40°C \text{ to } +85°C) (-40°C \text{ to } +85°C)</td>
</tr>
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</table>

**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

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>PART NO.</th>
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<tbody>
<tr>
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<td>F880CAP*</td>
</tr>
<tr>
<td>Left hand carrier, unpopulated</td>
<td>F880-CLP*</td>
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<tr>
<td>Right hand carrier, unpopulated</td>
<td>F880-CRP*</td>
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<tr>
<td>8-segment power module: 21.5V, 350mA</td>
<td>F801</td>
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<tr>
<td>8-segment power module: 28V, 500mA</td>
<td>F802</td>
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<tr>
<td>Blanking modules included with -NR systems</td>
<td>F800BLK</td>
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<tr>
<td>Fieldbus diagnostic module</td>
<td>F809F</td>
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</table>

**PHYSICAL NETWORKS**

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

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).

**Product specifications are subject to change without notice**
F801 PARAMETERS

Input vs Output Current - Simplex F801 System

Power Dissipation - Simplex F801 System

F802 PARAMETERS

Input vs Output Current - Simplex F802 System

Power Dissipation - Simplex F802 System

Input vs Output Current - Redundant F801 System

Power Dissipation - Redundant F801 System

Input vs Output Current - Redundant F802 System

Power Dissipation - Redundant F802 System

Linking alarm circuits

F80x module top panels showing indicators
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**

![CAD drawings are available online at www.mtl-fieldbus.com](Image)

**APPROVALS** - for the latest certification information visit [www.mtl-inst.com/certs_1.nsf](http://www.mtl-inst.com/certs_1.nsf)

<table>
<thead>
<tr>
<th>Region (Authority)</th>
<th>Standard</th>
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<th>Approved for</th>
<th>Ratings</th>
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<tr>
<td>EU (Relcom)</td>
<td>EN61326</td>
<td>P5001700 - (F801)</td>
<td>Class A Industrial Locations</td>
<td>Power Supply Type 132</td>
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<td>[Relcom]</td>
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<td>P5001900 - (F802)</td>
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<td>US (FM)</td>
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<td>3025124 - (F801)</td>
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<td></td>
<td>IEC 60079-15:2005</td>
<td>(F801 + F802)</td>
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</table>

Shown using F801 power modules. Overall dimensions are the same when F802 modules are fitted.
The F600A is designed to provide redundant fieldbus power conditioners for the Yokogawa ALF111 card, supporting four H1 fieldbus segments. Each F600A includes two FPS-IPM plug-in power modules for each of the fieldbus segments. These modules function as power conditioners, providing impedance between the input DC power supply and the fieldbus. This impedance is necessary to prevent the input DC power supply from degrading the digital fieldbus signal. One fieldbus segment terminator is built into each segment.

A separate alarm module monitors the state of each of the eight power conditioning modules and the redundant power inputs. If a fault is detected on any of these components, the alarm relay opens and an LED provides visual indication of the fault. This allows failed components to be replaced so that power system integrity is maintained. The alarm circuitry is galvanically isolated from the fieldbus segments and input power supplies.

Green LEDs on each power module and two input power supply LEDs on the alarm module give clear visual indication that components are functioning properly.

The F600A is available in left- and right-hand versions to allow flexibility in cabinet design; the F600A-Lx provides field connections on the left side of the carrier whilst the F600A-Rx provides field connections on the right side of the carrier. Field wiring connections are available with pluggable screw terminals (-PS), pluggable spring terminals (-PC and -PC2) and fixed screw terminals (-ST). Accessories are available for T-section and G-section DIN rail or surface mounting.

For testing the fieldbus segments, the Relcom FCS-A11 test probe accessory is designed for use with the pluggable screw terminal versions (-PS). Standard test probes are used with the pluggable spring clamp terminals (-PC, -PC2) and separate fixed screw terminals for + and – connections are provided on the -ST versions.
**SPECIFICATION**

Location of equipment
Safe area

OUTPUT

Number of channels
Four

Voltage
Minimum 25.0V DC

Current
0 to 350mA

Output ripple
Complies with clause 22.6.2 of IEC 61158-2

Minimum load
No load

Isolation
Fieldbus to power supply: 250V AC rms withstand

INPUT

Input voltage
19.2 - 30V DC

Current consumption (4 segments each with 350mA output load)
3.4A (typical) at 19.2V
2.4A (typical) at 24V
2.1A (typical) at 28V

Power dissipation (4 segments each with 350mA output load)
20.3W (typical)

ALARMS

Alarm contact rating: 1A max @ 30V DC max
Alarm contact status: Normally closed
Alarm threshold: Input <18V DC Output <22V DC

MECHANICAL

Mounting method
DIN-rail or surface mounting kit

DIN-rail types
‘Top hat’, 35mm x 7.5mm or 35mm x 15mm to EN50022

Mounting - (vertical surface recommended)

Power Input and Alarm Contact Terminals
Fixed rising cage clamp screw terminals (-ST, -PC & -PS)
Pluggable spring clamp terminals (-PC2)

Fieldbus Terminals
Fixed rising cage clamp screw terminals (-ST)
Pluggable spring clamp terminals (-PC & -PC2)
Pluggable rising cage clamp screw terminals (-PS)

Terminal capacities
Screw terminals conductor size: 0.14 to 2.5mm² flexible or rigid
Spring clamp conductor size: 0.2 to 2.5mm² flexible or rigid

System Connections
Redundant CONIA and CONIB via AKB336 cables to connectors:
ALF111 cards.
Screen Ground: to connect all fieldbus cable screens to a common point (cabinet earth).
Terminators: Fixed terminator for each fieldbus segment.

ENVIRONMENTAL

Ambient temp
Operating, optimum orientation* -40°C to +65°C
Storage -40°C to +85°C

*Optimum orientation is when the DIN rail is mounted horizontally on a vertical surface

Ingress Protection
IP20 to BS EN 60529 (Additional protection by means of enclosure)

ELECTRICAL

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

PHYSICAL NETWORKS

IEC61158-2
FOUNDATION™ Fieldbus H1

ORDERING INFORMATION

COMPONENTS AND ACCESSORIES

<table>
<thead>
<tr>
<th>PART No</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPS-IPM</td>
<td>Power Module</td>
</tr>
<tr>
<td>FPS-ALM</td>
<td>Alarm Module</td>
</tr>
<tr>
<td>F600A-CL-ST</td>
<td>F600A carrier, left hand, screw terminals</td>
</tr>
<tr>
<td>F600A-CR-ST</td>
<td>F600A carrier, right hand, screw terminals</td>
</tr>
<tr>
<td>F600A-CL-PC</td>
<td>F600A carrier, left hand, pluggable spring clamp</td>
</tr>
<tr>
<td>F600A-CR-PC</td>
<td>F600A carrier, right hand, pluggable spring clamp</td>
</tr>
<tr>
<td>F600A-CL-PS</td>
<td>F600A carrier, left hand, pluggable screw terminals</td>
</tr>
<tr>
<td>F600A-CR-PS</td>
<td>F600A carrier, right hand, pluggable screw terminals</td>
</tr>
<tr>
<td>F600A-CL-PC2</td>
<td>F600A carrier, left hand, pluggable spring clamp</td>
</tr>
<tr>
<td>F600A-CR-PC2</td>
<td>F600A carrier, right hand, pluggable spring clamp</td>
</tr>
<tr>
<td>DMK01</td>
<td>DIN-rail mounting kit, T or G section (pack of 40)†</td>
</tr>
<tr>
<td>SMS01</td>
<td>Surface mounting kit, (pack of 40)†</td>
</tr>
<tr>
<td>BMK08</td>
<td>Mounting kit for one F600A</td>
</tr>
<tr>
<td>FPS-BLK10</td>
<td>Blanking Module (pack of 10)</td>
</tr>
</tbody>
</table>

†Sufficient to mount 10 x F600A systems

Redundant fieldbus power supply systems include the following parts: (see component part numbers below)

<table>
<thead>
<tr>
<th>Power and alarms</th>
<th>Fixed screw terminal</th>
<th>Pluggable spring clamp</th>
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</thead>
<tbody>
<tr>
<td><strong>Fieldbus terminals</strong></td>
<td><strong>Screw terminal</strong></td>
<td><strong>Pluggable spring clamp</strong></td>
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<tr>
<td></td>
<td>Left hand</td>
<td>Right hand</td>
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<tr>
<td>FPS-IPM</td>
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<td>x 8</td>
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<tr>
<td>FPS-ALM</td>
<td>x 1</td>
<td>x 1</td>
</tr>
<tr>
<td>F600A-CL-ST</td>
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<tr>
<td>F600A-CR-ST</td>
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<td>F600A-CL-PC</td>
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<td>F600A-CR-PC</td>
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<td>F600A-CR-PS</td>
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<tr>
<td>F600A-CL-PC2</td>
<td>x 1</td>
<td>x 1</td>
</tr>
<tr>
<td>F600A-CR-PC2</td>
<td>x 1</td>
<td>x 1</td>
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</tbody>
</table>
The given data is only intended as a product description and should not be regarded as a legal warranty of proper-
Redundant 24V dc input connections, each with an LED indicator, provide power to the FISCO/FNICO power supplies. Mounting clips are ready fitted for easy DIN-rail mounting and each fieldbus segment has its own built-in terminator.

A ready-made cable assembly (FCAB-02) eliminates the need for additional wiring between the F606 termination panel and the host side of the NET9000 supplies.
SPECIFICATION
Location of equipment
Safe area

OUTPUTS
Number of channels
Four

MECHANICAL
Mounting method
DIN-rail mounting kit

DIN-rail types
‘Top hat’, 35 mm x 7.5 mm or 35 mm x 15 mm to EN 50022

24V DC input terminals
Two-part, pluggable connector with rising-cage-clamp screw terminals
Conductor size: 0.14 to 2.5 mm²

System connections
Redundant connectors CN1A and CN1B via AKB336 cables to ALF111 cards.

Terminators
Fixed terminator for each fieldbus segment

ENVIRONMENTAL
Ambient temp
−40°C to +70°C

Storage
−40°C to +85°C

Ingress protection
IP20 to BS EN 60529 (Additional protection by means of enclosure)

PHYSICAL NETWORKS
IEC 61158-2
FOUNDATION™ fieldbus H1

ORDERING INFORMATION
PART No | DESCRIPTION
--- | ---
F606 | Fieldbus Termination Board
FCAB–02 | Cable Assembly, NET9000

The given data is only intended as a product description and should not be regarded as a legal warranty of proper-
F606 used with NET9000 FISCO power supplies and FCAB-02 cable assembly

The given data is only intended as a product description and should not be regarded as a legal warranty of properties or guarantee. In the interest of further technical developments, we reserve the right to make design changes.
The F610A fieldbus power system is designed to provide redundant Foundation fieldbus power for Foxboro I/A Series control systems using FBM228 modules. Four fieldbus segments are supported. The system comprises a baseplate which accommodates two Foxboro FBM228 modules operating in redundant configuration, and two MTL-Relcom FPS-IPM power modules for each fieldbus segment. The FPS-IPM modules function as redundant power conditioners, providing impedance between the input DC power supply and the fieldbus. One fieldbus terminator is built into each segment. Connectors are provided on the baseplate for primary and secondary 24V DC input power, together with two-part pluggable terminals for the fieldbus wiring.

Two sub-minature 9-way ‘D’ connectors provide the means of connection for the Foxboro ‘fieldbus’ between FBM modules.

A separate alarm module (type FPS-ALM) monitors the state of each of the eight power conditioning modules and the redundant power inputs. If a fault is detected in any of these components, the alarm relay opens and an LED provides visual indication of the fault. This allows failed components to be replaced so that the integrity of the power system is maintained. The alarm circuitry is galvanically isolated from the fieldbus segments and input power supplies. Connections to the alarm relay are made via screw terminals on the baseplate. Green LEDs on each power module and two LEDs on the alarm module give clear visual indication that the components are functioning properly.

The baseplate has a rigid metal back plate, which provides excellent mechanical security and is designed for mounting onto either horizontal DIN rails or a flat panel. DIL switches on the circuit board allow the address of each baseplate to be set in accordance with Foxboro requirements.

Accessories include blanking modules to allow the baseplate to be operated in non-redundant powered mode with a single FPS-IPM module per segment.

The F610A is supplied fitted with screw terminal connectors for the fieldbus wiring, together with a pack of four spring-clamp connectors.

Foundation fieldbus® is a trademark of Fieldbus Foundation®, Austin, Texas.
SPECIFICATION

Location of equipment
Safe area

OUTPUT

Number of channels
Four
Voltage
Minimum 25.0V DC
Design Current
0 to 350mA
Current limit
385mA nominal
Output ripple
Complies with Clause 22.6.2 of IEC 61158-2
Minimum load
No load
Isolation
Fieldbus to power supply: 250V AC rms withstand

INPUT

Input voltage
19.2 - 30V DC
Current consumption (4 segments each with 350mA output load)
3.4A (typical) at 19.2V
2.4A (typical) at 24V
2.1A (typical) at 28V
Power dissipation (4 segments each with 350mA output load)
20.3W (typical)

ALARMS

Alarm contact rating
1A max. @ 30V DC max.
Alarm contact status
Normally closed
Alarm contact opens if either:
24V input falls below 18V DC or
the output of any FPS-IPM module falls below 22V DC

SYSTEM CONNECTIONS

Foxboro 'Fieldbus' LAN
9-way subminiature D, female
Address switches

<table>
<thead>
<tr>
<th>Baseplate I.D.</th>
<th>FBM I.D.</th>
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<tbody>
<tr>
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<tr>
<td>Sw.1</td>
<td>Sw.2</td>
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<tr>
<td>Sw.3</td>
<td>Sw.4</td>
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<tr>
<td>2</td>
<td>ON</td>
</tr>
<tr>
<td>3</td>
<td>OFF</td>
</tr>
</tbody>
</table>

MECHANICAL

Mounting method
DIN rail or vertical flat panel
DIN-rail types
'Top hat', 35mm x 7.5mm or 35mm x 15mm to EN50022
Mounting
Mounting on a vertical surface is recommended
Alarm Contact Terminals
Fixed rising cage clamp screw terminals
Conductor size: 0.14 to 2.5mm²
Fieldbus Terminals
Pluggable spring clamp terminals (-PC)
Conductor size: 0.2 to 2.5mm² flexible or rigid
Pluggable rising cage clamp screw terminals (-PS)
Conductor size: 0.14 to 2.5mm²
Primary and secondary power inputs
3-way socket header type AMP Universal MATE-N-LOK
Fieldbus cable screen ground
M4 stud

ENVIRONMENTAL

Ambient temp
Operating, optimum orientation*
-40°C to +60°C
Storage
-40°C to +85°C
Ingress Protection
IP20 to BS EN 60529 (Additional protection by means of enclosure)
*Optimum orientation is when the DIN rail is mounted horizontally on a vertical surface

ELECTRICAL

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

PHYSICAL NETWORKS

IEC61158-2
FOUNDATION™ fieldbus H1

ORDERING INFORMATION

COMPONENTS AND ACCESSORIES

<table>
<thead>
<tr>
<th>PART No</th>
<th>DESCRIPTION</th>
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<tr>
<td>F610A-CL</td>
<td>F610A Backplate</td>
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<tr>
<td>FPS-IPM</td>
<td>Power module</td>
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<tr>
<td>FPS-ALM</td>
<td>Alarm module</td>
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<tr>
<td>FPS-BLK10</td>
<td>Blanking module, pack of 10</td>
</tr>
<tr>
<td>F610A</td>
<td>F610A system</td>
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</table>

The F610A system comprises the following components:

| F610A-CL | Qty 1 |
| FPS-IPM | Qty 8 |
| FPS-ALM | Qty 1 |

Note: The F610A does NOT include the Foxboro FBM228 Foundation fieldbus™ interfaces illustrated.
F610A REDUNDANT FIELDBUS POWER SYSTEM

Board & DIN-rail mounting dimensions

DIN-rail mounting technique
The F650A is designed to provide redundant fieldbus power conditioners for the Honeywell Experion PKS Fieldbus Interface Module (FIM), supporting two H1 fieldbus segments. Each F650A includes two FPS-IPM plug-in power modules for each of the fieldbus segments. These modules function as power conditioners, providing impedance between the input DC power supply and the fieldbus. This impedance is necessary to prevent the input DC power supply from degrading the digital fieldbus signal. One fieldbus segment terminator is permanently connected in each segment.

A separate alarm module monitors the state of each of the four power conditioning modules and the redundant power inputs. If a fault is detected on any of these components, a red alarm LED provides visual indication of the fault and an alarm signal is sent to the Honeywell control system via the multi-way connectors. This allows failed components to be replaced so that power system integrity is maintained. The alarm circuitry is galvanically isolated from the fieldbus segments and input power supplies. Green LEDs on each power module and two input power supply LEDs on the alarm module give clear visual indication that components are functioning properly.

The F650A has the same dimensions as a size A Honeywell Remote Termination Panel (RTP), and is suitable for the standard mounting channel. Alternatively, the panel may be mounted on DIN rail using the DMK-HONA mounting plate, available from MTL.

The F650A provides connections to redundant Honeywell Experion PKS FIM’s using standard Remote Termination Panel cables from Honeywell (type TC-FFC0XX). Field connections are via pluggable screw terminal connectors. For redundant operation, two separate DC power supplies should be connected to each F650A. A separate terminal is also provided to connect the fieldbus and host cable screens to a common point, such as the local cabinet ground.

- Integrated redundant fieldbus power system for Honeywell control systems
- Replace power modules without interrupting the fieldbus
- High power output
- Two levels of power redundancy
- Component failure alarm
- Integrated fieldbus terminators
**ENVIRONMENTAL**

**Ambient temp**
- Operating, optimum orientation*  
  -40°C to +65°C
- Storage  
  -40°C to +85°C

**Ingress Protection**
- IP20 to BS EN 60529 (Additional protection by means of enclosure)

*Optimum orientation is when the RTP is mounted on a vertical surface with the IPM modules in a vertical orientation

**ELECTRICAL**

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

**PHYSICAL NETWORKS**

- IEC61158-2
- Foundation™ Fieldbus H1

**ORDERING INFORMATION**

The F650A-LS Redundant fieldbus power supply system includes the following component parts: (see component part numbers below):

- 4 x FPS-IPM
- 1 x FPS-ALM
- 1 x F650A-CL-PS

**COMPONENTS AND ACCESSORIES**

<table>
<thead>
<tr>
<th>PART No</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPS-IPM</td>
<td>Power Module</td>
</tr>
<tr>
<td>FPS-ALM</td>
<td>Alarm Module</td>
</tr>
<tr>
<td>F650A-CL-PS</td>
<td>F650A Carrier, Screw Terminals</td>
</tr>
<tr>
<td>DMK-HONA</td>
<td>Size A FTA mounting plate</td>
</tr>
<tr>
<td>FPS-BLK10</td>
<td>Blanking Module (pack of 10)</td>
</tr>
</tbody>
</table>

**SPECIFICATION**

**Location of equipment**
- Safe area

**OUTPUT**

**Number of channels**
- Two

**Voltage**
- Minimum 25.0V DC

**Current**
- 0 to 350mA

**Output ripple**
- Complies with clause 22.6.2 of the fieldbus standard

**Minimum load**
- No load

**Isolation**
- Fieldbus to power supply: 250V AC rms withstand

**INPUT**

**Input voltage**
- 19.2 - 30V DC

**Current consumption (2 segments each with 350mA output load)**
- 1.7A (typical) at 18V
- 1.2A (typical) at 24V
- 1.1A (typical) at 28V

**Power dissipation (2 segments each with 350mA output load)**
- 10.7W (typical)

**ALARMS**

**Alarm threshold:**
- Either 24V DC input  <18V DC
- Either IPM output to fieldbus  <22V DC
- Alarm signalled to Honeywell control system via RTP cables.  
  (No separate alarm wiring necessary)

**MECHANICAL**

**Mounting method**
- Standard Honeywell channel (size A) or DIN rail using DMK-HONA mounting plate

**DIN-rail types**
- 'Top hat', 35mm x 7.5mm or 35mm x 15mm to EN50022

**Alarm Contact Terminals**
- Fixed rising cage clamp screw terminals
- Conductor size: 0.14 to 2.5mm²

**Fieldbus Terminals**
- Two-part pluggable connector with fixed rising cage clamp screw terminals
- Conductor size: 0.14 to 2.5mm²

**Power Input Connections**
- Standard Honeywell FTA power connectors

**System Connections**
- Redundant Connections: standard cables to Experion Fieldbus Interface Module.
- Screen Ground: to connect all fieldbus cable screens to a common point (cabinet earth).

**Terminators**
- Fixed terminator for each fieldbus segment
F650A REDUNDANT POWER SYSTEM

F650A DIMENSIONS (mm)
Applications requiring redundant power may be satisfied using the F656A with two FPS-I supplies, but the F650A redundant power system is recommended where redundancy of power and host communications are required.

To minimise wiring effort in FISCO and FNICO applications, a cable assembly is available for easy connection to MTL’s NET9000 power supplies. The cable eliminates the need for additional wiring between the termination panel and the host side of the NET9000 supplies. When used with other external fieldbus conditioners, such as the MTL-Relcom FPS Series, the field wiring to each segment is connected by means of a two-part pluggable connector.

Optionally redundant 24V dc connections provide power to the termination panel and, where appropriate, to the FISCO/FNICO power supplies. Failure of either 24V dc supply is signalled by means of a volt-free relay contact. An LED indicator is provided on each 24V dc input. Easy DIN-rail mounting is achieved by means of built-in mounting clips. Each segment has a switchable fieldbus terminator.

The F656A Remote Termination Panel provides a compact, low-cost interface between Honeywell’s Experion PKS Fieldbus Interface Module (FIM) and external fieldbus power supplies. It provides a single FIM connection using a standard Honeywell RTP cable. The unit accommodates the fieldbus conditioning components required to support two FOUNDATION™ Fieldbus H1 segments.

The RTP does not power the fieldbus segments, but is intended to be used with external fieldbus supplies such as the MTL5995 or MTL-Relcom FPS Series. For non-redundant power, select the FPS-D/-DT dual power supply.
**SPECIFICATION**

**Location of equipment**
Safe area

**OUTPUT**
Number of channels
Two

**DC INPUT**
Input voltage
19.2 - 30V DC

Current consumption
- (stand-alone, without NET9000 power supplies)
  - 1mA (typical) at 19V
  - 10mA (typical) at 19V
  - 20mA (typical) at 24V
  - 25mA (typical) at 25V
- Isolation
  - Fieldbus to power supply: 250V AC rms withstand

**ALARMS**
Alarm contact rating
1A max @ 30V DC max

Alarm contact status
- Normally closed; open on alarm

Alarm threshold
- Input <18V DC; no overvoltage protection

**MECHANICAL**
Mounting method
DIN-rail mounting kit

DIN-rail types
- ‘Top hat’, 35mm x 7.5mm or 35mm x 15mm to EN 50022

**24V DC Input and Alarm Contact Terminals**
Two part pluggable connector with fixed rising cage clamp screw terminals
Conductor size: 0.14 to 2.5mm²

**Fieldbus Terminals**
Two-part pluggable connector with fixed rising cage clamp screw terminals
Conductor size: 0.14 to 2.5mm²

**System Connections**
System Connections:
- standard RTP cables to Experion - PKS Fieldbus Interface Module.

Screen Ground:
- to connect all fieldbus cable screens to a common point (cabinet earth).

**ENVIRONMENTAL**
Ambient temp
- -40°C to +65°C

Storage
- -40°C to +85°C

Ingress Protection
- IP20 to BS EN 60529 (Additional protection by means of enclosure)

**PHYSICAL NETWORKS**
- IEC 61158-2
  - Foundation Fieldbus H1

**ORDERING INFORMATION**
The cable assembly FCAB–01 should be ordered separately if the F656A is to be used with NET9000 FISCO or FNICO power supplies.

<table>
<thead>
<tr>
<th>PART No</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>F656A</td>
<td>Fieldbus Remote Termination Panel</td>
</tr>
<tr>
<td>FCAB–01</td>
<td>Cable Assembly, NET9000</td>
</tr>
</tbody>
</table>
F656A Fieldbus Remote Termination Panel

F656A Dimensions

F656A used with NET9000 FISCO power supplies and FCAB-01 cable assembly

Cable assembly type FCAB-01
The F660A is designed to provide redundant power for four H1 fieldbus links when used with Honeywell Experion ‘Series C’ Fieldbus Interface Modules (FIMs). The module complies with the mechanical and electrical requirements of Size B I/O Termination Panels (IOTAs), for direct fitting into Honeywell mounting channel. The F660A includes two FPS-IPM plug-in power modules for each of the four fieldbus links. These modules function as power conditioners, providing impedance between the input DC power supply and the fieldbus. A switchable fieldbus segment terminator is provided for each fieldbus link.

Each power module provides galvanic isolation of 250V AC between the fieldbus segment and the input power supplies. Each segment is supplied with 350mA at 25V DC. This output is maintained, even if only one power module is installed per segment. This level of output power allows for construction of very long fieldbus segments with a large number of bus-powered transmitters.

Power for the IOTA is picked up via mounting screws from 24V DC busbars that are embedded in the mounting channel. Two separate 24V DC power trains are derived on the IOTA, each protected by a replaceable fuse, to provide reliable bulk power to the redundant conditioning modules.

A separate alarm module monitors the state of each of the eight power conditioning modules and the 24V DC power input. In the event of a failed conditioning module, the FIM receives a signal indicating which segment is affected, and a red LED on the alarm module illuminates. Failure of either of the power supply fuses initiates an alarm across all four fieldbus segments. Green LEDs on each power module, and two input power supply LEDs on the alarm module give clear visual indication of the health of each system component.

The F660A has a multi-pin connector for direct connection to the FIM IOTA by means of a standard system cable, available from MTL. Different lengths are available to accommodate mounting of the F660A, and its respective FIM IOTA, in various locations within a Series C I/O cabinet. Field wiring is connected at the FIM IOTA.

For fieldbus segments that do not require the high availability provided by redundant power conditioning, the F660A-NR should be specified. Each segment of the F660A-NR is powered by a single IPM module. Unwanted alarm signals are suppressed by blanking modules that are installed in the unused module slots. Alternatively, individual segments of an F660A system may be operated in non-redundant mode by replacing one IPM per segment with a blanking module. These are obtainable in a pack of 10 as part number FPS-BLK10.
SPECIFICATION

Location of equipment
Safe area
Zone 2, IIC T4 hazardous area (approval pending)
Class I, Division 2, Gps A-D T4 hazardous area (approval pending)

OUTPUT

Number of channels
Four
Voltage
Minimum 25.0V DC
Current
0 to 350mA
Output ripple
Complies with clause 22.6.2 of the fieldbus standard
Minimum load
No load
Isolation
Fieldbus to power supply: 250V AC rms withstand

ELECTRICAL

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

PHYSICAL NETWORKS

IEC61158-2
FOUNDATION™ Fieldbus H1

ORDERING INFORMATION

The F660A Redundant fieldbus power supply IOTA includes the
following component parts: (see component part numbers below):
8 x FPS-IPM
1 x F660A-ALM
1 x F660A-C

The F660A-NR Non-Redundant fieldbus power supply IOTA includes
the following component parts: (see component part numbers below):
4 x FPS-IPM
1 x F660A-ALM
1 x F660A-C
4 x FPS-BLK

COMPONENTS AND ACCESSORIES

<table>
<thead>
<tr>
<th>Part No</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPS-IPM</td>
<td>Power module</td>
</tr>
<tr>
<td>F660A-ALM</td>
<td>F660A IOTA, unpopulated</td>
</tr>
<tr>
<td>F660A-C</td>
<td>Alarm module</td>
</tr>
<tr>
<td>FPS-BLK10</td>
<td>Blanking module type FPS-BLK, pack of 10</td>
</tr>
<tr>
<td>FCAB-05</td>
<td>IOTA power cable, 30cm</td>
</tr>
<tr>
<td>FCAB-06</td>
<td>IOTA power cable, 1m</td>
</tr>
<tr>
<td>FCAB-07</td>
<td>IOTA power cable, 2m</td>
</tr>
<tr>
<td>FCAB-08</td>
<td>IOTA power cable, 4m</td>
</tr>
</tbody>
</table>

ENVIRONMENTAL

Ambient temp
Operating, optimum orientation*
−40°C to +65°C
Storage
−40°C to +85°C
Ingress Protection
IP20 to BS EN 60529 (Additional protection by means of
enclosure)

*Optimum orientation is when the IOTA is mounted on a vertical surface
with the IPM modules in a vertical orientation

MECHANICAL

Mounting method
Standard Honeywell channel (size B)
Power Input Connections
Via mounting screws onto bus bar
Terminators
Switchable terminator for each fieldbus segment

ALARMS

Failure alarm signal (per link) via system connector

INPUT

Input voltage
19.2 - 30V DC
Current consumption (4 segments each with 350mA output load)
3.4A (typical) at 18V
2.4A (typical) at 24V
2.2A (typical) at 28V

The given data is only intended as a product description and should not be regarded as a legal warranty of proper-
lines or guarantees. In the interest of further technical developments, we reserve the right to make design changes.
The given data is only intended as a product description and should not be regarded as a legal warranty of proper-
ness or guarantees. In the interest of further technical developments, we reserve the right to make design changes.
The F690A is part of a range of MTL-Recom redundant fieldbus power systems (FPS-Series), which provides redundant power conditioning, and facilitates the connection of redundant input power supplies. The F690A supports four fieldbus segments and provides redundant fieldbus power conditioners for host systems that do not use a “standard” system cable to connect to the fieldbus.

Each fieldbus segment has two FPS-IPM plug-in, power-conditioning modules that provide impedance between the input DC power supply and the fieldbus. This impedance is necessary to prevent the incoming DC power supply from degrading the digital fieldbus signal. A fieldbus segment terminator is built in to each segment.

A single or redundant host connection option is provided. The single connection option is ideal for use with Emerson’s Delta V system which has one segment connection in single and redundant fieldbus card configurations. The redundant host connection option would suit the ABB LD800HSE linking device when redundant linking devices are selected.

A separate FPS-ALM alarm module, galvanically isolated from the fieldbus segments and input power supplies, monitors the eight power conditioning modules and the redundant power inputs. If a fault is detected on any of these components, the alarm relay opens and a red alarm LED indicates a fault condition. This allows failed components to be replaced so that power system integrity is maintained. Green LEDs on each power module and two input power supply LEDs on the alarm module give clear visual indication that components are functioning properly.

Left- and right-hand carrier versions are available, providing flexibility in cabinet design. The F690A-Lx kits provide field connections on the left side of the carrier while the F690A-Rx kits have them on the right. Accessories are available for T-section and G-section DIN rail or surface mounting.

The F690A provides connections to fieldbus host cards and field wiring. Field connections are available with either screw terminal (-PB & -PS versions), or pluggable spring clamp terminals (-PA & -PC versions).

For redundant operation, two separate DC power supplies should be connected to each F690A. Connections are also provided for redundant power input, screen grounding and the alarm contacts. The alarm contacts from several backplanes can be bussed together and connected to a control system DI channel.

Each segment is supplied with 350mA at 25V DC. This output is maintained, even if only one power module is installed per segment. This level of output power allows for construction of very long fieldbus segments with a large number of bus-powered transmitters.

The system is fully ‘hot-swappable’ meaning that individual power conditioning modules and input power supplies can be replaced without interrupting power or communication on the fieldbus segment.
SPECIFICATION

Location of equipment
Safe area

OUTPUT
Number of channels
Four
Voltage
Minimum 25.0V DC
Current
0 to 350mA
Output ripple
Complies with clause 22.6.2 of the fieldbus standard
Minimum load
No load
Isolation
Fieldbus to power supply: 250V AC rms withstand

INPUT
Input voltage
19.2 - 30V DC
Current consumption (4 segments each with 350mA output load)
3.4A (typical) at 19.2V
2.4A (typical) at 24V
2.1A (typical) at 28V
Power dissipation (4 segments each with 350mA output load)
20.3W (typical)

ALARMS
Alarm contact rating: 1A max @ 30V DC max
Alarm contact status: Normally closed
Alarm threshold: Input <18V DC
Output <22V DC

MECHANICAL
Mounting options
DIN-rail (G-section, T-section, 35mm x 7.5mm or 35mm x 15mm) to EN 50022, using mounting kit DMK01, or flat surface using mounting kit - SMS01.
A vertical surface is recommended for mounting the F690A.

CONNECTIONS
Power Input and Alarm Contact
Fixed rising cage clamp screw terminals
Conductor size: 0.14 to 2.5mm²
Fieldbus Terminals
Pluggable rising cage clamp screw terminals (-PB, -PS versions)
Conductor size: 0.14 to 2.5mm²
Pluggable spring clamp terminals (-PA, -PC versions)
Conductor size: 0.2 to 2.5mm² flexible or rigid
Host connectors:
Separate connections to redundant host cards (-PA, -PB).
Single connection to host cards (-PC, -PS).
Fixed rising cage clamp screw terminals (-PA, -PB).
Conductor size: 0.14 to 2.5mm²
Pluggable rising cage clamp screw terminals (-PS).
Conductor size: 0.14 to 2.5mm²
Pluggable spring clamp terminals (-PC).
Conductor size: 0.2 to 2.5mm²
Screen Ground
To connect all fieldbus cable screens to a common point (cabinet earth).

TERMINATORS
Fixed terminator for each fieldbus segment.

ENVIRONMENTAL
Ambient temp
Operating, optimum orientation*
−40°C to +65°C
Storage
−40°C to +85°C
Ingress Protection
IP20 to BS EN 60529 (Additional protection by means of enclosure)
*Optimum orientation is when the DIN rail is mounted horizontally on a vertical surface

ELECTRICAL
EMC compliance
To EN 61326:1998 Electrical equipment for measurement, control and laboratory use - EMC requirements
LED indicators
Alarm module
Input power health - PWR A, PWR B (green)
Alarm condition - ALM (red)
IPM module power - Power on (green)

PHYSICAL NETWORKS
IEC 61158-2
Foundation Fieldbus H1
Profibus PA
The given data is only intended as a product description and should not be regarded as a legal warranty of proper-
ORDERING INFORMATION

For simplicity, the F690A can be purchased as a system kit that includes a carrier, power modules and an alarm module. The following table explains what each F690A-xx system kit is comprised of.

<table>
<thead>
<tr>
<th>Host Connection</th>
<th>Redundant host connection to host card</th>
<th>Single host connection to host card</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fixed screw terminal</td>
<td>Pluggable-spring clamp</td>
</tr>
<tr>
<td></td>
<td>Pluggable-screw terminal</td>
<td>Pluggable-screw terminal</td>
</tr>
<tr>
<td>Segment Connection</td>
<td>Left hand</td>
<td>Right hand</td>
</tr>
<tr>
<td>Includes:</td>
<td>FPS-IPM</td>
<td>FPS-ALM</td>
</tr>
<tr>
<td>FPS-IPM</td>
<td>x 8</td>
<td>x 1</td>
</tr>
<tr>
<td>FPS-ALM</td>
<td>x 1</td>
<td>x 1</td>
</tr>
<tr>
<td>F690A-CL-PA</td>
<td>x 1</td>
<td>x 1</td>
</tr>
<tr>
<td>F690A-CL-PB</td>
<td>x 1</td>
<td>x 1</td>
</tr>
<tr>
<td>F690A-CL-PC</td>
<td>x 1</td>
<td>x 1</td>
</tr>
<tr>
<td>F690A-CL-PS</td>
<td>x 1</td>
<td>x 1</td>
</tr>
<tr>
<td>F690A-CL-PC</td>
<td>x 1</td>
<td>x 1</td>
</tr>
</tbody>
</table>
| Individual components can also be ordered; please refer to the component and accessories list below.

COMPONENTS AND ACCESSORIES

<table>
<thead>
<tr>
<th>PART No</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPS-IPM</td>
<td>Power Module</td>
</tr>
<tr>
<td>FPS-ALM</td>
<td>Alarm Module</td>
</tr>
<tr>
<td>F690A-CL-PA</td>
<td>F690A carrier, Left Hand</td>
</tr>
<tr>
<td>F690A-CR-PA</td>
<td>F690A carrier, Right Hand</td>
</tr>
<tr>
<td>F690A-CL-PB</td>
<td>F690A carrier, Left Hand</td>
</tr>
<tr>
<td>F690A-CR-PB</td>
<td>F690A carrier, Right Hand</td>
</tr>
<tr>
<td>F690A-CL-PC</td>
<td>F690A carrier, Left Hand, Pluggable spring clamp</td>
</tr>
<tr>
<td>F690A-CR-PC</td>
<td>F690A carrier, Right Hand, Pluggable spring clamp</td>
</tr>
<tr>
<td>F690A-CL-PS</td>
<td>F690A carrier, Left Hand, Pluggable screw terminals</td>
</tr>
<tr>
<td>F690A-CR-PS</td>
<td>F690A carrier, Right Hand, Pluggable screw terminals</td>
</tr>
<tr>
<td>DMK01</td>
<td>DIN-rail mounting kit, T or G section (pack of 40)*</td>
</tr>
<tr>
<td>SMS01</td>
<td>Surface mounting kit, (pack of 40)†</td>
</tr>
<tr>
<td>BMK08</td>
<td>Mounting kit for one F690A</td>
</tr>
<tr>
<td>FPS-BLK10</td>
<td>Blanking Module (pack of 10)†</td>
</tr>
</tbody>
</table>

† Sufficient to mount 10 x F690A systems

* Segments that do not require the high availability provided by redundant power conditioning may be operated with only a single FPS-IPM. In this event, a blanking module should be fitted to the unused slot to prevent an alarm condition.
Each power module provides galvanic isolation of 250V ac between the fieldbus segment and the input power supplies. Each FPS-I supplies 350mA at 25V dc to the fieldbus segment. This output is maintained even if only one power module is installed. This level of output power allows for construction of very long fieldbus segments with a large number of bus-powered transmitters. Each FPS provides both power conditioning and input power supply redundancy to each fieldbus segment.

LED indicators on each power module and near each of the two input power supply connections give clear visual indication that components are functioning properly. To minimize system downtime, an alarm circuit provides notification if any of the power supply components fail. This allows failed components to be replaced so that power system integrity is maintained.

The alarm circuitry is galvanically isolated from the fieldbus segments and input power supplies. The two power modules plug into a DIN rail mounted backplane (Redundant Coupler or RCT) that contains one segment terminator and provides connections to the two input power supplies, H1 host system, fieldbus trunk cable, and alarm circuitry. A bus configuration is used for the input power and alarm connections so that up to eight fieldbus power systems can be easily wired together to share input power supplies and provide a common alarm circuit. Pictured above is a Redundant Fieldbus Power Supply with connections to the Fieldbus H1 host shown at the top of the picture.

Segments that do not require the high availability provided by redundant power conditioning may be operated with only a single FPS-IPM. To prevent an unwanted alarm condition due to the second FPS-IPM not being fitted, a blanking module should be installed in the blank slot. These are supplied in a pack of 10 as part number FPS-BLK10.
**FPS-I**

**REDUNDANT FIELDBUS POWER SYSTEM**

**INSTALLATION**

**MOUNTING**
MTL-Relcom Redundant Fieldbus Power Systems (FPS) are designed for mounting on 35mm DIN rail. For maximum cooling, the DIN rail should be mounted horizontally so that air can flow vertically between the power modules.

**INPUT POWER SUPPLY CONNECTIONS**
For redundant operation, two separate DC power supplies should be connected to each FPS. Four pairs of terminals are provided on each FPS for this purpose; two pairs for each input power supply. The extra pair of terminals for each input power supply are intended to be used for connection to another FPS installed immediately adjacent to the first. Prefabricated jumper assemblies are included with each FPS-I for this purpose. When multiple Fieldbus Power Systems are wired together using jumper assemblies, redundant connections should be made to the input power supplies using the terminal pairs located at each end of the row of systems. Up to eight segments can be wired together using the supplied jumper assemblies. An example of three systems wired this way is shown below:

**ALARM WIRING CONNECTIONS**
Next to the input power terminals, terminal pairs are provided for the alarm circuit. Each prefabricated jumper assembly includes a pair of wires for the alarm circuit. To complete the alarm circuit, a jumper wire must be installed on the end module as shown below:

In normal operation, the alarm circuit is closed. It will open if:
- either input power supply < 18V dc
- output of either power module < 22V dc
- the fieldbus is shorted (short circuit resistance <14Ω)

**H1 HOST AND FIELDBUS TRUNK CONNECTIONS**
Two 3-conductor (+, shield, and −) connectors are provided for connection to the H1 host and to the fieldbus trunk cable. A green LED next to the connector labeled ‘Fieldbus’ indicates that power is being supplied to the fieldbus segment.

**FIELDBUS SEGMENT TERMINATORS**
Two terminators are required for each Fieldbus H1 network segment. One terminator is built into the RCT backplane of each FPS. The second Terminator should be positioned at the opposite end of the segment trunk cable.

A Redundant Coupler without a built-in terminator is also available (part number FPS-RC).

**WIRING**

**ORDERING INFORMATION**

**Description**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPS-I</td>
<td>Redundant Fieldbus Power System</td>
</tr>
<tr>
<td></td>
<td>Includes: 2 x FPS-IPM, 1 x FPS-RCT, 2 x FPS-A01, 1 x FPS-A03, 1 x FPS-A04</td>
</tr>
<tr>
<td>FPS-2</td>
<td>Redundant Fieldbus Power System (no terminator)</td>
</tr>
<tr>
<td></td>
<td>Includes: 2 x FPS-IPM, 1 x FPS-RCT, 2 x FPS-A01, 1 x FPS-A03, 1 x FPS-A04</td>
</tr>
</tbody>
</table>

**Components and Accessories**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPS-IPM</td>
<td>Power Module</td>
</tr>
<tr>
<td>FPS-RCT</td>
<td>Redundant Coupler</td>
</tr>
<tr>
<td>FPS-RC</td>
<td>Redundant Coupler (no Terminator)</td>
</tr>
<tr>
<td>FPS-A01</td>
<td>3-pin Fieldbus Connector</td>
</tr>
<tr>
<td>FPS-A03</td>
<td>Power and Alarm Connector</td>
</tr>
<tr>
<td>FPS-A04</td>
<td>Power and Alarm Jumper Assembly</td>
</tr>
<tr>
<td>FPS-BLK10</td>
<td>Blanking module (pack of 10)</td>
</tr>
<tr>
<td>ETL 7000</td>
<td>Heavy Duty DIN Rail End Stop</td>
</tr>
<tr>
<td>THR 7000</td>
<td>35mm DIN Rail, 1m Length</td>
</tr>
</tbody>
</table>

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SPECIFICATION

MECHANICAL
Mounting method
DIN-rail
DIN-rail types
‘Top hat’, 35mm x 7.5mm or 35mm x 15mm to EN50022
Terminals
Rising cage clamp screw terminals
Physical Dimensions

ENVIROMENTAL
Ambient temp
Operating, optimum orientation *
–40°C to +65°C †
–40°C to +70°C (250mA max. design current) †
Storage
–40°C to +85°C
Ingress Protection
IP20 to BS EN 60529 (Additional protection by means of enclosure)
Case Material
Power Module – Black anodised aluminium
Redundant coupler – Lexan polycarbonate

ELECTRICAL
EMC compliance
To EN61326:1998 Electrical equipment for measurement, control and laboratory use - EMC requirements
Electrical safety
EN 61010-1
OUTPUT
Number of channels
One
Voltage
Minimum 25.0V dc
Design current
0 to 350mA
Current limit
385mA nominal

Output ripple
Complies with clause 22.6.2 of the fieldbus standard ††
Minimum load
No load
Isolation
Fieldbus to power supply 250V ac rms withstand

INPUT
Input voltage
19.2 - 30V dc
Current consumption with 350mA output load
820mA (typical) 895mA (max.) at 18V
630mA (typical) 685mA (max.) at 24V
540mA (typical) 600mA (max.) at 28V
Power dissipation with 350mA output load
5.7W (typical)
Maximum number of cascaded FPS-I modules
8 units
Alarm
Alarm contact rating: 1.0A max @ 30V dc max
Alarm threshold: input: <18V dc output: <22V dc

HAZARDOUS AREA APPROVALS
Location of module
Safe area, Zone 2, IIC T4 hazardous area or Class 1, Div 2, Groups A, B, C, D T4 hazardous location
Location of field wiring
Zone 2, IIC hazardous area or Class 1, Div 2, Groups A, B, C, D hazardous location
Field wiring protection
Normally non-arcing/Ex nA

CERTIFICATION
Region
Europe (ATEX) USA Canada
Authority
Relcom FM CSA
Standard
EN50021 3611 C22.2 No.213
Approval
E II 3 G EEx nA IIC T4 Class1, Div 2 Grps A-D, Temperature Class T4, Tamb = –40°C to +60°C
Cert no.
500-463 3021700 1279454

PHYSICAL NETWORKS
IEC61158-2
Foundation Fieldbus H1

* Optimum orientation is when the DIN rail is mounted horizontally on a vertical surface
† When installed in Division 2 or Zone 2 hazardous locations maximum temperature is reduced to 60°C

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ties or guarantee. In the interest of further technical developments, we reserve the right to make design changes.
The MTL-Relcom dual fieldbus power supplies provide power conditioning for two fieldbus network segments and facilitate the connection of input power supplies. An alarm circuit provides warning in case of a power conditioning module or input power supply failure. The system is designed so that power for several fieldbus segments can be provided from a single cabinet with minimal wiring.

Two fieldbus segment terminators are built into each FPS-DT power supply. Each FPS includes two plug-in Isolated Power Modules, or IPM’s. These modules function as power conditioners, providing impedance between the input DC power supply and the fieldbus. This impedance is necessary to prevent the input DC power supply from degrading the digital fieldbus signal.

Each isolated power module provides galvanic isolation of 250V ac between the fieldbus segment and the input power supplies. Each IPM, supplies 350mA at 25V dc to the fieldbus segment. This level of output power allows for construction of very long fieldbus segments with a large number of bus-powered field devices.

LED indicators on each IPM and near each of the two input power supply connections give clear visual indication that components are functioning properly. To minimize system downtime, an alarm circuit provides notification if any of the power supply components fail. This allows failed components to be replaced so that power system integrity is maintained.

The alarm circuitry is galvanically isolated from the fieldbus segments and input power supplies. The two IPM’s plug into a DIN rail mounted Dual Coupler Base that contains one segment terminator per IPM (-DT model) and provides connections to the two input power supplies, two H1 host systems, two fieldbus trunk cables, and alarm circuitry.

A bus configuration is used for input power and alarm connections to multiple FPS power supplies. Up to five power supplies can be connected together by the bus. Input 24 VDC power is fed to both ends of the interconnected group so that if a power supply needs to be added or changed, this can be done without disrupting the other power supplies. The connections between the power supplies use a jumper cable assembly (FPS-A04), supplied with each dual power system.

Each power supply has a normally-closed relay contact for the alarm circuit. The bus provides a common circuit for all the relays in series. If there is a failure in any of the supplies, the relay is opened to signal an alarm.

An alarm condition will be generated if FPS-IPM power modules are not installed in all available slots of the FPS carrier(s), e.g. on an unused segment. To prevent the alarm a blanking module can be fitted. These modules are available in packs of ten as part number FPS-BLK10.
**SPECIFICATION**

**MECHANICAL**
Mounting method
DIN-rail
DIN-rail types
'Top hat', 35mm x 7.5mm or 35mm x 15mm to EN50022
Terminals
Rising cage clamp screw terminals

**Physical Dimensions**

**ENVIRONMENTAL**
As FPS-I

**ELECTRICAL**
EMC compliance
To EN61326:1998 Electrical equipment for measurement, control and laboratory use - EMC requirements
Electrical safety
EN 61010-1

**OUTPUT**
Number of channels
Two
Voltage
Minimum 25.0V dc
Current
0 to 350mA
Output ripple
Complies with clause 22.6.2 of the fieldbus standard†
Minimum load
No load
Isolation
Fieldbus to power supply 250V ac rms withstand

**INPUT**
Input voltage
19.2 - 30V dc
Current Consumption
With 2 segments at 350mA load: 1.37A (typ) at 20V
1.14A (typ) at 24V
0.98A (typ) at 28V
Power dissipation with 350mA output load
10.2W (max) at rated output
Maximum number of cascaded FPS modules
5 units (10 Isolated Power Modules)
Alarm
Alarm contact rating: 1.0A max @ 30V dc max
Alarm contact status: Normally closed
Alarm threshold: input: <18V dc output: <22V dc

**HAZARDOUS AREA APPROVALS**
Location of module
Safe area, Zone 2, IIC T4 hazardous area or Class 1, Div 2, Groups A, B, C, D T4 hazardous location
Location of field wiring
Zone 2, IIC hazardous area or Class 1, Div 2, Groups A, B, C, D hazardous location
Field wiring protection
Normally non-arcing/Ex nA

**CERTIFICATION**
Region
Europe (ATEX)
USA
Canada
Authority
Relcom FM CSA
Standard
EN50021 3611 C22.2 No.213
Approval
II 3 G Ex nA IIC T4
Clasa1, Div 2 Grps A-D; Ex nA IIC T4
T_a = –40°C to +60°C
Class1, Div 2 Grps A-D; Ex na IIC T4
T_a = –40°C to +60°C
Cert no.
500-463 3021700 1279454

**PHYSICAL NETWORKS**
IEC61158-2
Foundation Fieldbus H1

**ORDERING INFORMATION**
System Description Part Number
Fieldbus Dual Power System with Terminator FPS-DT
Includes: 2 x FPS-IPM, 1 x FPS-DCT, 4 x FPS-A05, 1 x FPS-A03, 1 x FPS-A04
Fieldbus Dual Power System (no Terminator) FPS-D
Includes: 2 x FPS-IPM, 1 x FPS-DC, 4 x FPS-A05, 1 x FPS-A03, 1 x FPS-A04

Components and Accessories Part Number
Isolated Power Module FPS-IPM
Dual Power Back-Plane with Terminator FPS-DCT
Dual Power Back-Plane no Terminator FPS-DC
3-pin Fieldbus Connector (3.5mm) FPS-A05
5-pin Power and Alarm Connector FPS-A03
Power and Alarm Jumper Assembly FPS-A04
Heavy Duty DIN Rail End Stop ETL 7000
35mm DIN rail, 1m length THR 7000
Blanking module (pack of 10) FPS-BLK10

The given data is only intended as a product description and should not be regarded as a legal warranty of properties or guarantees. In the interest of further technical developments, we reserve the right to make design changes.