technical datasheet

# F610A

## redundant fieldbus power system for Foxboro I/A Series® Control System

- Integrated redundant fieldbus power for FBM228 FOUNDATION™ fieldbus modules
- Two levels of power redundancy with component failure alarm
- Proven FPS-IPM power modules
- DIN rail or panel mount
- Integrated fieldbus terminators


FOUNDATION

**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.*



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## 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**

| Baseplate I.D. | | | FBM I.D. | | |
|---|---|---|---|---|---|
| | Sw.1 | Sw.2 | | Sw.3 | Sw.4 |
| 0 | ON | ON | A | ON | ON |
| 1 | OFF | ON | B | ON | OFF |
| 2 | ON | OFF | C | OFF | ON |
| 3 | OFF | OFF | D | OFF | OFF |

### 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 2.5mm$^2$

**Fieldbus Terminals**
Pluggable spring clamp terminals (-PC)
Conductor size: 0.2 to 2.5mm$^2$ flexible or rigid
Pluggable rising cage clamp screw terminals (-PS)
Conductor size: 0.14 to 2.5mm$^2$

**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

| PART No | DESCRIPTION |
|---|---|
| F610A-CL | F610A Backplate |
| FPS-IPM | Power module |
| FPS-ALM | Alarm module |
| FPS-BLK10 | Blanking module, pack of 10 |
| F610A | F610A system |

The F610A system comprises the following components:

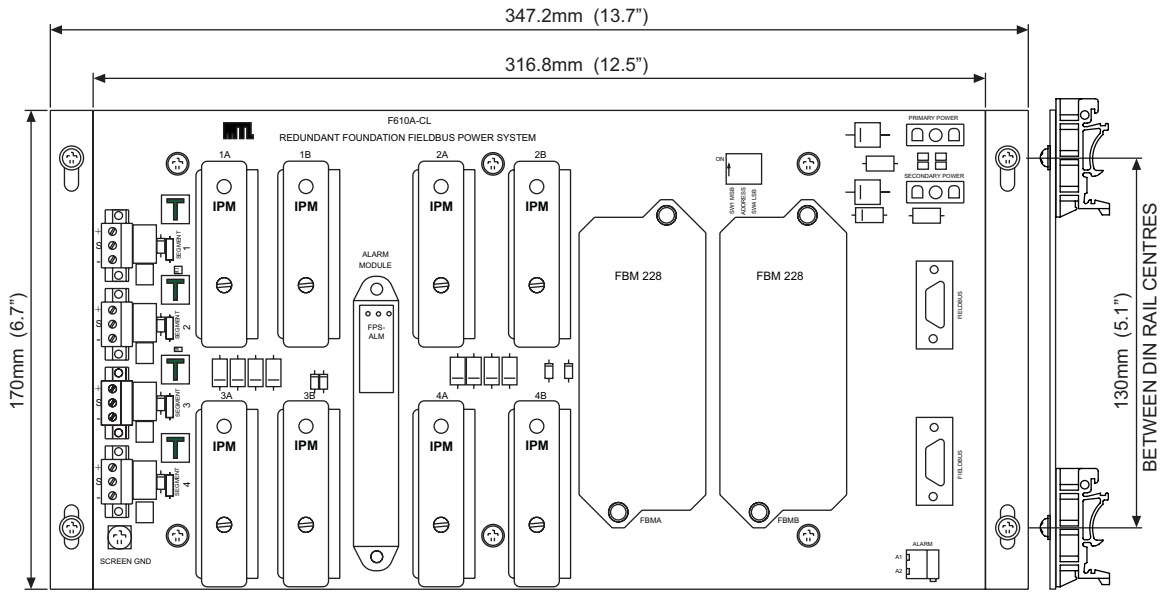
| | |
|---|---|
| F610A-CL | Qty 1 |
| FPS-IPM | Qty 8 |
| FPS-ALM | Qty 1 |

**Note**: The F610A does NOT include the Foxboro FBM228 Foundation fieldbus™ interfaces illustrated.

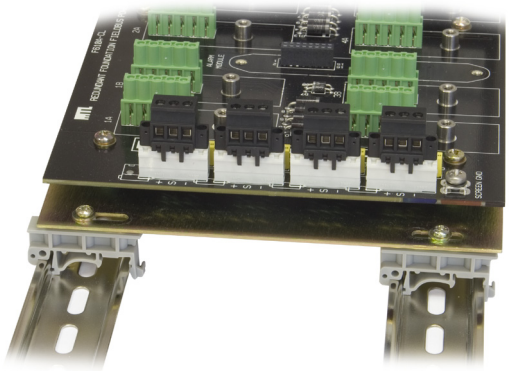
*The given data is only intended as a product description and should not be regarded as a legal warranty of properties or guarantee. In the interest of further technical developments, we reserve the right to make design changes.*

# F610A REDUNDANT FIELDBUS POWER SYSTEM

## Board & DIN-rail mounting dimensions




## DIN-rail mounting technique



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