technical datasheet

F618D

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
- On-line diagnostics module
- Proven FPS-IPM power modules
- DIN rail or panel mount
- Integrated fieldbus terminators

The F618D 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 that accommodates two redundant pairs of Foxboro FBM228 modules, and two MTL-Relcom FPS-IPM power modules for each fieldbus segment. The FPS-IPM modules function as redundant power conditioners, providing isolation and 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.

Two separate alarm modules (type FPS-ALM) are fitted. Each one monitors the state of 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 output is galvanically isolated from the fieldbus segments and input power supplies. Connections to the alarm relays are made via screw terminals on the baseplate. Green LEDs on the power modules and two LEDs on each alarm module gives clear visual indication that the components are functioning properly.

The baseplate may be mounted onto either vertical 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.

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

F618D
REDUNDANT FIELDBUS POWER SYSTEM

SPECIFICATION

(Refer to Invensys product data for specification of FBM228)

Location of equipment
Safe area
Zone 2, IIC T4 hazardous area (certification pending)
Class I, Division 2, Groups A –D T4 hazardous area (certification pending)

OUTPUT

Number of channels
Eight

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 (8 segments each with 350mA output load)
5.6A typ. (6.1A max.) at 24V *

Power dissipation (8 segments each with 350mA output load)
62.2W 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 (x2)

Address switches (SW1 - SW3)

SW1	SW2	ID
ON	ON	0
ON	OFF	1
OFF	ON	2
OFF	OFF	3

	SW3
POSN.	
1 - 4	ON
5 - 8	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 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)

Corrosive Atmospheres
Equipment for installation in the Process Interface Buildings is suitable for installation in environments containing corrosive gases in concentrations defined as G3 by ISA standard S71.04. However, the nature of the installation shall ensure that gases shall not be trapped or contained within sealed enclosures in such a way as to increase these concentrations or to accelerate the effects of corrosion. Adequate ventilation, consistent with an environment in which personnel are present for long periods of time, shall also ensure that the equipment is not exposed to high concentrations.

ELECTRICAL

EMC compliance
Refer to individual module data sheets for details

PHYSICAL NETWORKS

IEC61158-2
FOUNDATION™ fieldbus H1

ORDERING INFORMATION

COMPONENTS AND ACCESSORIES

PART No	DESCRIPTION
F618D-CL	F618D baseplate
FPS-IPM	Power module
FPS-ALM	Alarm module
F809F	Fieldbus diagnostics module
FPS-BLK10	Blanking module, pack of 10

An F618D system comprises the following components:

F618D-CL	Qty 1
FPS-IPM	Qty 16
FPS-ALM	Qty 2

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

* *Figures based upon fully populated F618D baseplate which would include FPS-IPM, FPS-ALM, F809F and FBM228 modules.*

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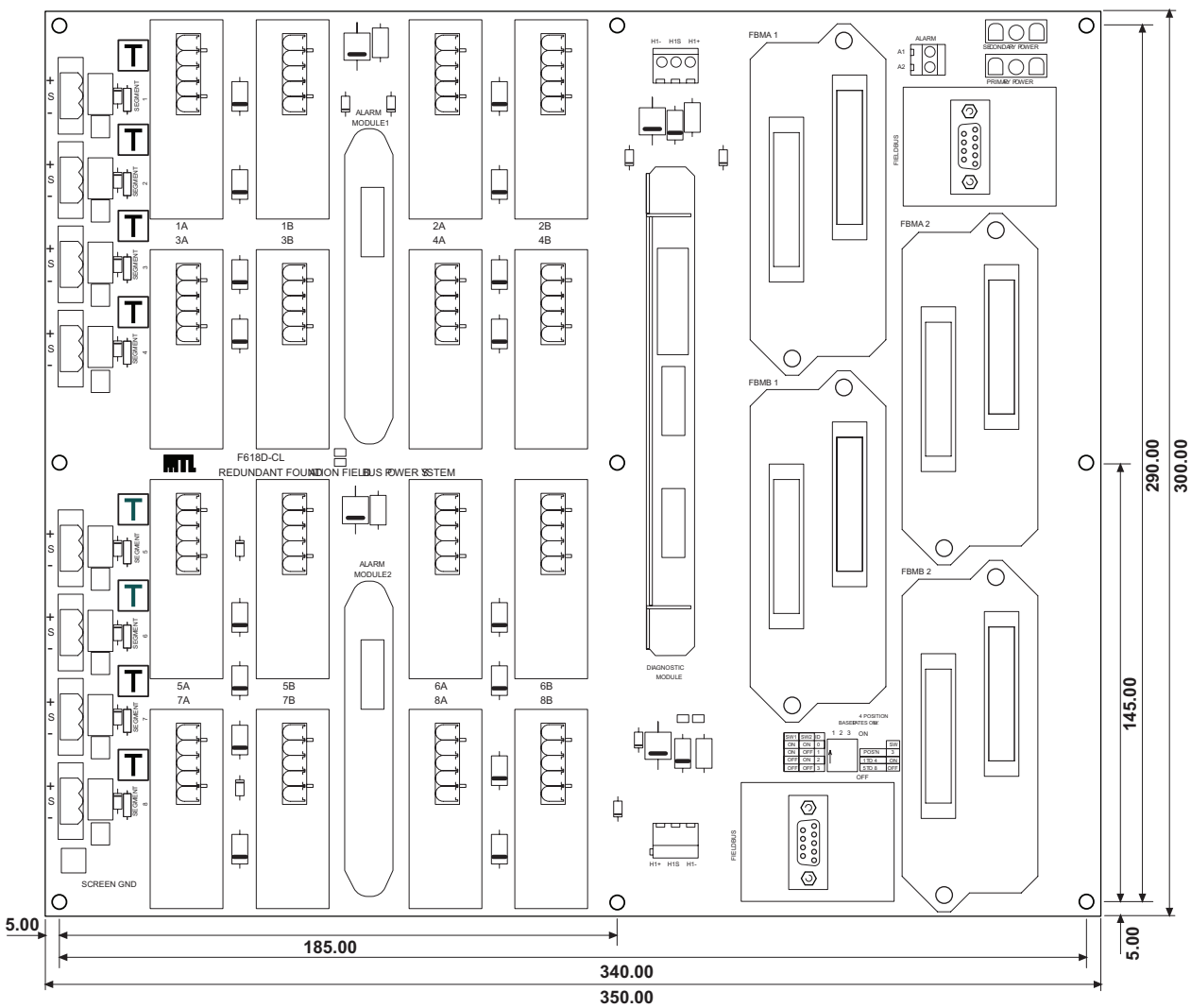
F618D
REDUNDANT FIELDBUS POWER SYSTEM

Board & mounting hole dimensions



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