

## **I/A Series® Hardware**

### **0 to 20 mA Output Interface Module (FBM37)**



The 0 to 20 mA Output Interface Module (FBM37) contains eight 20 mA dc analog output channels. Each output channel drives an external load and produces a 0 to 20 mA output. The module performs the signal conversion required to interface the electrical output signals to the field sensors and actuators from the redundant Fieldbus. The module is a main type, and independently connects to the redundant Fieldbus.

This module executes the analog output application program. The configurable options for this program are Analog Output Fail-Safe Fallback Data, (on a per channel basis), Fieldbus Switching Enable, and Fieldbus Switching Time.

The discrete wire style termination cable assembly includes built-in bypass jacks for each output channel on the field connection end of the cable assembly. The jacks accept a bypass plug from the I/A Series Output Bypass Station.

**FUNCTIONAL SPECIFICATIONS**

**Common Characteristics**

**POWER REQUIREMENTS**

*Input Voltage Range (Redundant)*  
26 to 42 V dc

*Consumption*  
14 W (maximum)

*Heat Dissipation*  
12 W (maximum)

**Isolation**

The module withstands, without damage, a potential of 600 V ac applied for one minute between any channel and earth (ground), or between a given channel and any other channel.

**NOTE**

This does not imply that these channels are intended for permanent connection to hazardous voltage circuits. Connection of these channels to voltages greater than 30 V ac or 60 V dc violates electrical safety code requirements and may expose users to electric shock.

**Output Channels**

**OUTPUT**

8 isolated and independent channels  
**OUTPUT RANGE (EACH CHANNEL)**

0 to 20.4 mA dc

**OUTPUT LOAD (MAXIMUM)**

735  $\Omega$

**COMPLIANCE VOLTAGE**

18.6 V nominal at 20 mA dc at I/O field terminals

**ACCURACY**

$\pm 0.05\%$  of span (25°C)

**OUTPUT TEMPERATURE COEFFICIENT**

100 ppm/°C

**COMMUNICATION**

Via a redundant Fieldbus

**SETTLING TIME**

100 ms to settle within a 1% band of steady state for a 10 to 90% input step change

**LINEARITY ERROR**

$\pm 0.025\%$  of span (monotonic)

**RESOLUTION**

12 bits

**ENVIRONMENTAL SPECIFICATIONS(a)**

**Operating**

**TEMPERATURE**

0 to 60°C (32 to 140°F)

**RELATIVE HUMIDITY**

5 to 95% (noncondensing)

**ALTITUDE**

-300 to +3,000 m (-1,000 to +10,000 ft)

**Storage**

**TEMPERATURE**

-40 to +70°C (-40 to +158°F)

**RELATIVE HUMIDITY**

5 to 95% (noncondensing)

**ALTITUDE**

-300 to +12,000 m (-1,000 to +40,000 ft)

**Contamination**

Class G3 (Harsh) as defined in ISA Standard, S71.04

(a) The environmental limits of this module may be enhanced by the type of enclosure containing the module. {Refer to the applicable Product Specification Sheet (PSS) which describes the specific type of enclosure that is to be used.}

**PHYSICAL SPECIFICATIONS****Mounting****WITH Y-ADAPTER**

Installable in the 1x8 Mounting Structure,  
I/A Series Industrial Enclosures and Field  
Enclosure 8

**WITHOUT Y-ADAPTER**

Installable in I/A Series Field Enclosure 4 and the  
1x8 FBM Mounting Structure

**Mass**

1 kg (2.2 lb)

**Indicators (mounted on termination connector)****OPERATIONAL STATUS**

Red and green light-emitting diodes (LEDs)

**Bypass Jacks**

Standard on the discrete wire style termination cable  
assemblies

**Field Termination Connections****DISCRETE WIRE BLOCK WITH BYPASS JACKS***Output Channels*

16 screw-clamp terminals

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