

Schneider Service Manual

FBM216

1. Description

FBM216

3. Product Information

FBM216 | Foxboro (by Schneider Electric) | HART Communication Redundant Input Interface Module

Field Device Channels

SUPPORTED HART INSTRUMENT TYPES

HART instruments compliant to Version 5, 6, or 7

of the HART specifications may be used

INTERFACE

8 individually isolated channels

COMMUNICATION TO THE DEVICE

Point-to-point, master/slave, asynchronous, halfduplex, at 1200 baud

ERROR CHECKING

Parity on each byte, and one CRC check byte

SPEED

2 messages per second

FASTEST ALLOWED ECB BLOCK PERIOD

100 msec - However, it is recommended that you

refer to the Sizing Guidelines and Excel Workbook

appropriate for your Control Processor to

determine the optimal loading for a 100 msec

Block Processing Cycle (BPC).

MAXIMUM DISTANCE (FBM216b TO FIELD

DEVICE)

Meets HART FSK physical layer specification

HCF_SPEC-54, Revision 8.1 [up to 3030 m

(10000 ft)](1)

INTERNAL LOOP SUPPLY COMPLIANCE

VOLTAGE AT TERMINATION ASSEMBLY

18.5 V DC minimum at 20.5 mA

CURRENT INPUTS

Sense Resistor

280 Ω $\pm$ 0.02%

Total Input Resistance Including

Redundancy Adapter

280 Ω nominal

CURRENT INPUTS (CONT.)

Analog Accuracy (Includes Nonlinearity)

$\pm$ 0.075% of full scale

Temperature Coefficient

50 PPM/ $^{\circ}$ C

Resolution

15 bits

Update Rate

100 ms

Integration Time

500 ms

Common Mode Rejection

>100 db at 50 or 60 Hz

Normal Mode Rejection

>35 db at 50 or 60 Hz

LOOP POWER SUPPLY PROTECTION

Each channel is individually galvanically isolated,

current limited and voltage regulated. All field

connections are limited by their design to less

than 37 mA with a single module installed (72 mA

when redundant modules are installed).

I/A SERIES®/CONTROL CORE SERVICES

Requires I/A Series software v8.2 to v8.8 or

Foxboro Evo Control Core Services software v9.0

or later.

INPUT RESISTANCE INCLUDING

TERMINATION ASSEMBLY AND REDUNDANCY

ADAPTER

Externally Powered

282 Ω

Internally Powered

302 Ω

FBM INTERNAL POWER FOR FIELD DEVICE

Per channel isolated 24 V DC ±10% supply. Loop supply output impedance is 20 Ω including the termination assembly.

ISOLATION

The individual channel inputs and loop supplies are galvanically isolated from each other, ground and module logic.

The module's isolation is designed to withstand, without damage, a common mode potential of 600 V AC applied for one minute between the isolated input circuits and earth (ground), or between a given channel and any other channel

Power Requirements

INPUT VOLTAGE RANGE (REDUNDANT)

24 V dc +5% -10%

CONSUMPTION

7 W (maximum)

HEAT DISSIPATION

4 W (maximum)

Operating

TEMPERATURE

Module

-20 to +70°C (-4 to +158°F)

Termination Assembly

-20 to +70°C (-4 to +158°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

Suitable for use in Class G3 (Harsh) environments as defined in ISA Standard S71.04, based on exposure testing according to EIA Standard 364-65, Class III.

Vibration

7.5 m/S2 (0.75 g) from 5 to 500 Hz