



## FOUNDATION Fieldbus Input/Externally Powered Output Modules

461054 - (Flat mount)

465015 - (DIN rail mount)

These I/O Modules are designed to function as FOUNDATION Fieldbus nodes with termination points for connecting switches/sensors (discrete and analog), as well as relay outputs to operate devices such as low power solenoid valves and relays. Outputs can be configured to "Fail On" or "Fail Off".

### Inputs and Outputs

- Two (2) Discrete Inputs
- Two (2) Discrete Externally Powered Outputs
- One (1) Analog Input (4-20mA)
- One (1) Analog Output (4-20mA)

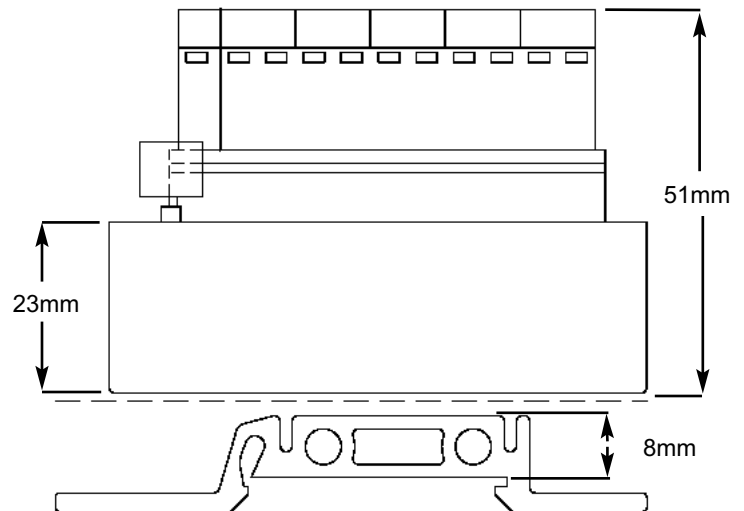
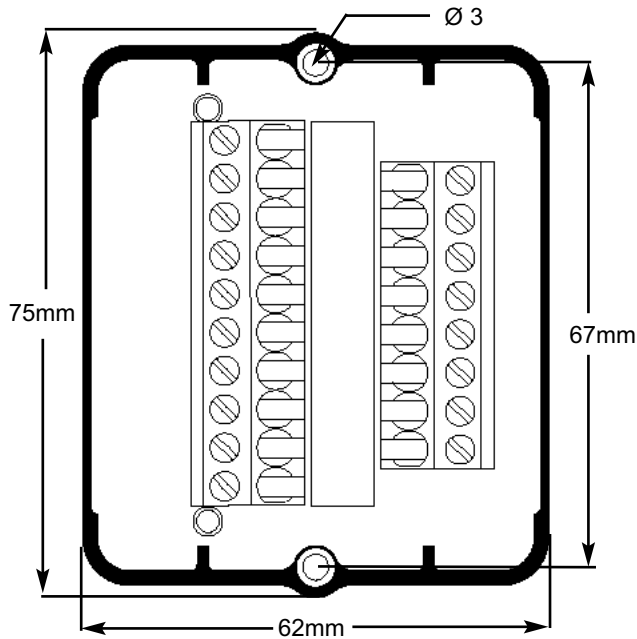
### Features

- LED input displays for Inputs 1 & 2
- Date of Last Service
- Pre-determined output Fail State



(See Page 3 detailed wiring instructions)

### Input/Relay Output Module Dimensions (in mm)



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## Specifications

Operating Voltage	9-32 VDC via Foundation Fieldbus voltage
Bus Current Draw	16mA
External Voltage	24 VDC (For Analog I/O and Discrete Outputs)
External Power Max Current	Analog Input - 25mA; Analog Output - 25mA; Discrete Outputs - Total 166mA available
Discrete Inputs	(2) Low power dry contact capable of operating at <.045mA @ 6.5 VDC or solid state PNP capable of operating at <1mA and 6.5 VDC
Discrete Outputs	(2) 24 VDC (4 Watts total power available)
Analog Input	(1) Analog input (4-20 mA). 10 bit resolution (0.1%)
Analog Output	(1) Analog output (4-20 mA). 10 bit resolution (0.1%)
Function Blocks	2 DI; 2 DO; 1 AI; 1AO
Indication	Input 1 = Red LED Input 2 = Green LED

## Standard Channel Assignments

Channel 1 (DI1) - Discrete Input 1 (Red LED);	1 = True; 0 = False
Channel 2 (DI2) - Discrete Input 2 (Green LED);	1 = True; 0 = False
Channel 3 (DO1) - Discrete Output 1 (OUT 1);	1 = True; 0 = False
Channel 4 (DO2) - Discrete Output 2 (OUT 2);	1 = True; 0 = False
Channel 5 (AI1) - Analog Input (AIN);	% of 4-20mA Input Range (0 = 4mA; 100 = 20mA)
Channel 6 (AO1) - Analog Output (AOUT);	% of 4-20mA Input Range (0 = 4mA; 100 = 20mA)

## Special Channel Assignments

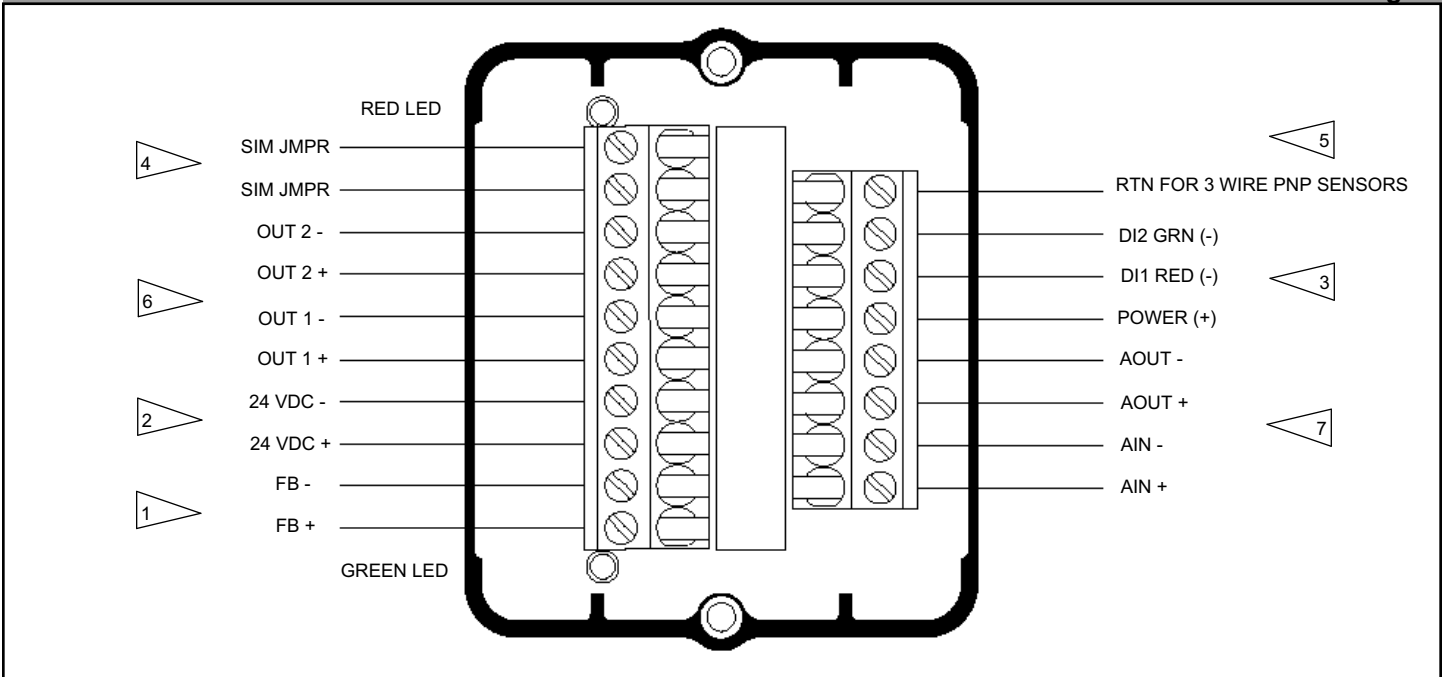
- Channel 7 (AO1) - Analog Output (AOUT) with state report from Analog Input (READBACK\_D)
- Channel 8 (DO1) - Discrete Output 1 (OUT 1) with state report from Discrete Input 1 (READBACK\_D)
- Channel 9 (DO2) - Discrete Output 2 (OUT 2) with state report from Discrete Input 2 (READBACK\_D)

## Valve Control Single Block Mode

Channel 10 (DO1) - Discrete Output 1 (OUT 1) with state report Discrete Inputs 1&2 (READBACK\_D):

READBACK\_D Values:

- 0 = None
- 1 = Discrete Input 1 is True
- 2 = Discrete Input 2 is True
- 3 = Both Discrete Inputs 1&2 are True



## INSTALLATION NOTES:

- 1 FOUNDATION Fieldbus bus communications connection points.
- 2 Connection points for external 24VDC power for Analog I/O and Discrete Outputs.
- 3 Bus powered Discrete Input connection points for low power dry contacts capable of operating at <.045mA @ 6.5VDC or solid state PNP sensors capable of operating at <1mA and 6.5VDC. Red LED is local indication of discrete input DI1 RED on/off status and the Green LED for DI2 GRN on/off status.

**NOTE: The Discrete Inputs (DI) are not galvanically isolated from the FOUNDATION signal wires.**

**Therefore, the DI connections should not be attached to ground. If the cable runs to the DI's are long or can be exposed to electrical noise, external Opto-isolators on the DI wires may be needed to provide isolation.**

- 4 These connection points not used by the consumer.
- 5 Connection point for the "return" of 3 wire PNP sensors. (See Note 3)
- 6 Connection points for 24VDC externally powered Discrete Outputs (4 watts total power available) for low power solenoid valves and relays. (See Note 2)
- 7 Connection points for 2 wire, 24VDC, 4-20mA analog devices. (See Note 2)