



## Three Input/Output Device (3IOD)

A FireFinder™ compatible product

PDS201-0309

### Description

The 3IOD is a versatile device designed for use on an Apollo XP95 or Discovery Protocol loop. The 3IOD is capable of providing the user with 3 monitored inputs and 3 voltage free relay outputs using only one (1) loop address.

The 3IOD is available in a DIN rail chassis or housed in an enclosure. The device is easy to install and provides access for termination of field wiring of up to 2.5mm<sup>2</sup>.

Each of the three (3) inputs of the 3IOD can be configured to respond to an 'Alarm', 'Fault' or 'Isolate' input condition. Each is monitored for open or short circuit, and conditioned with debounce circuitry for enhanced noise rejection. Each input is also protected from high transient voltages.

On board status indication is also available for each input and output. These are generally used for commissioning purposes. A facility is provided to disable this feature during normal operation to reduce the current draw on the loop.

The 3IOD is available in Loop Powered or Externally Powered versions. Low powered relays are a feature of this device reducing the overall current draw during operation.

### Technical

#### Input Interface

The inputs are monitored for both open and short circuit. The resistor value used to achieve this monitoring function, are 20k End-of-Line and 4.7k ohm In-Line. Each input to the device has an "Input Operated" status indicator.

#### Chart showing the relationship of the Device Analogue value to input resistance:

Input Resistance	Status	Analogue Value
< 500 ohms	S/C fault	4
500 – 15k	Switch closed	64
15 – 30 k	Switch opened	16
> 30 k	O/C fault	4

### Output Interface

The device outputs are relay driven. The contacts for the relay outputs are rated at 1A @ 24VDC Normally open or close contact options are available. There is an "Output Operated" indicator for each output.

The relay contacts can be used to switch 1A @ 24 volts AC, providing the AC voltage is floating. It is strongly recommended that the ac voltage is not referenced to earth; otherwise corruption of the loop communications data may result.

### Loop Powered Device

The 3IOD is designed to operate on the Apollo loop and derive power from the loop. To reduce loop loading, turn off all visual indication selecting position 8 of the DIP switch SW1 to 'OFF'. Only voltage free contacts are available in this mode

### Externally Powered Device

External +24 V DC power may be terminated to the 3IOD. This ensures that each device draws a minimum amount of loop current. Reduced current loading permits the user to proportionally add more devices on the loop.

Note: *The external power only supplies the relay circuits*

### Device Addressing

Each 3IOD installed must be correctly addressed using SW1, the 8-way DIP switch found on the circuit board. 126 addresses are available. Switches 1 to 7 sets the address for this device. Switch 8 enables or disables LED indication during operation.

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### Status Indication

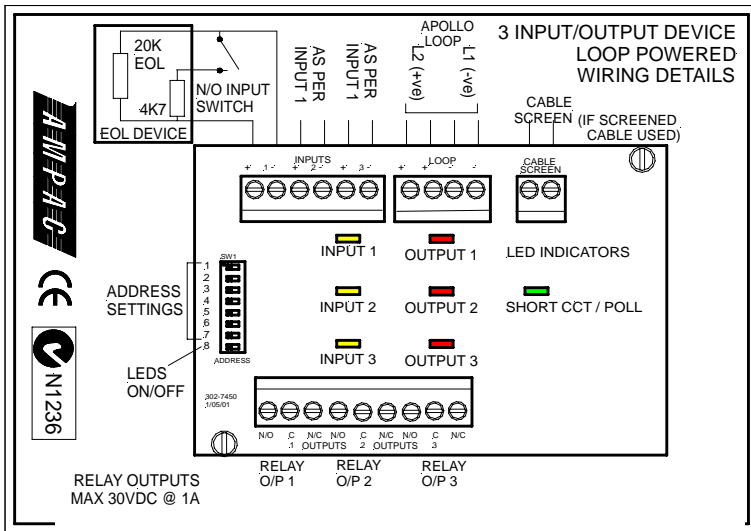
Function	Colour	Mode	Description
Input	Yellow	Steady	Input is active
Input	Yellow	Flashing	Input is in fault
Output	Red	Steady	Output is active
Power	Green	On	External power healthy
SCI / Poll	Green	Flashing	Device is being polled
SCI / Poll	Green	On	Loop Short Circuit detected

### Specification

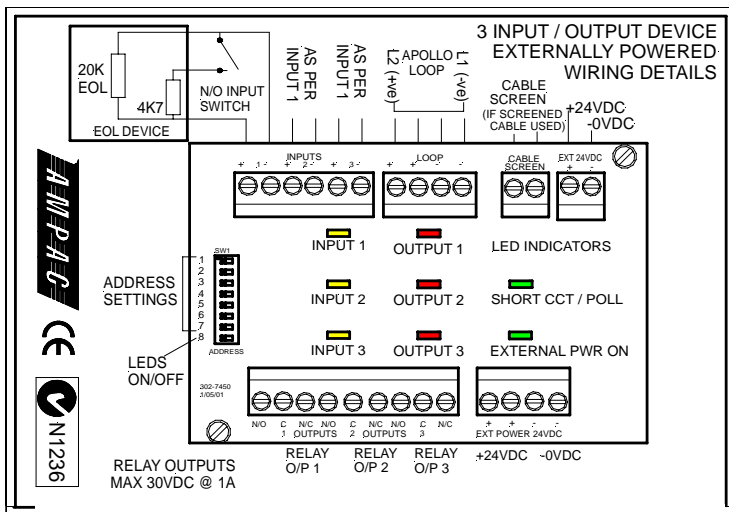
Loop Powered Version (mA @ 29V DC)		
	LED's ON	LED's OFF
Quiescent Current	2.06	2.01
1 INPUT ON	2.71	2.02
2 INPUTS ON	3.42	2.09
3 INPUTS ON	4.14	2.13
1 OUTPUT ON	7.23	6.41
2 OUTPUTS ON	12.19	10.64
3 OUTPUTS ON	17.15	14.90
<b>Total Current Draw</b>	<b>19.23</b>	<b>15.02</b>

### Externally Powered Version

	Current draw (mA) from:		
	Loop		Ext Power @ 24V DC
	LED's On	LED's OFF	
Quiescent Current	1.51	1.45	5.08
1 INPUT ON	2.30	1.54	5.08
2 INPUTS ON	2.95	1.56	5.08
3 INPUTS ON	3.64	1.59	5.08
1 OUTPUT ON	2.69	1.59	10.15
2 OUTPUTS ON	3.89	1.92	14.87
3 OUTPUTS ON	5.07	2.41	19.55
<b>Total Current Draw</b>	<b>7.2</b>	<b>3.02</b>	<b>19.55</b>
	Enclosed		DIN Rail



**Internal layout of the Three Input Output Device Loop powered**



**Internal layout of the Three Input Output Device Externally powered**

Size (mm)		
Length	200	98
Width	150	72
Depth	60	40
<b>Cable entry</b>	16 drill-outs	N/A
<b>Enclosure</b>	Grey ABS	N/A
<b>IP Rating</b>	IP 41	N/A
Item Number	Loop Power	Ext. Power
Enclosed	201-0309	201-0310
DIN Rail Mounted	201-0359	201-0360
EOL Device	4210-0001 (20 pieces per pack)	