Six Channel Digital Input Multiplexer
Voltage/Current
IODIM6-MI-*

Description:

The IODIM6-MI multiplexes 6 VFC or 24Vac/dc signals into a single analogue output. 0-10Vdc,2-10Vdc or 4-20mA, and 0-20mA output variants are available, making the unit compatible with a large range of BMS equipment. The input registers as active when the contact is closed. Additionally, jumpers are fitted to allow each input to be manually overridden for commissioning and testing purposes. The output sequence can also be reversed as required by some types of controller and control strategies.

Features:

- 6 x VFC or 24Vac/dc inputs
- Voltage and current output variants
- Operates from 24Vac/dc power supply
- Input simulation
- Reverse Action
- DIN rail mounting
- LED input status indication

Technical Specification:

Inputs:	6 x Volt free contacts or 24Vac/dc input signals
Voltage Output:	0-10Vdc at maximum load 10mA (2-10Vdc link selectable)
Current Output:	4 to 20mA (link selectable 0-20mA), max. resistance of load 500Ω
LED Indication:	ON when input is ON
Power Supply:	24Vac/dc (±15%)
Power Consumption:	24Vdc 40mA max. 24Vac 60mA max.
Terminals:	Rising clamp for 0.5-2.5mm² cable
Ambient Temperature:	0-50˚C
Dimensions:	68(W) x 82(H) x 44(D) (max.)
Weight:	120g
Country of Origin:	United Kingdom

Installation:

The IODIM6 should be installed by a suitably qualified technician in conjunction with any guidelines for the equipment which it is to be connected to. Field wiring should be installed to satisfy the requirements set out by the manufacturer of the equipment that the module is being connected to using screened cabled where necessary. Please note that these modules are not suitable for use with the mains voltage.

The IODIM6 would typically be located within the controller section of a BMS control panel. The module can be snapped on to a standard "top hat" profile DIN rail by levering the clip downwards to allow the unit to locate without the need for excessive force.

Order Codes:

IODIM6-MI-I	Six Channel Digital Input Multiplexer (Current)
IODIM6-MI-V	Six Channel Digital Input Multiplexer (Voltage)

Connection:

The diagram below shows the terminal designations for the IODIM6.
The digital input terminals are for use with volt free contacts or 24V signals or a combination of either signals.
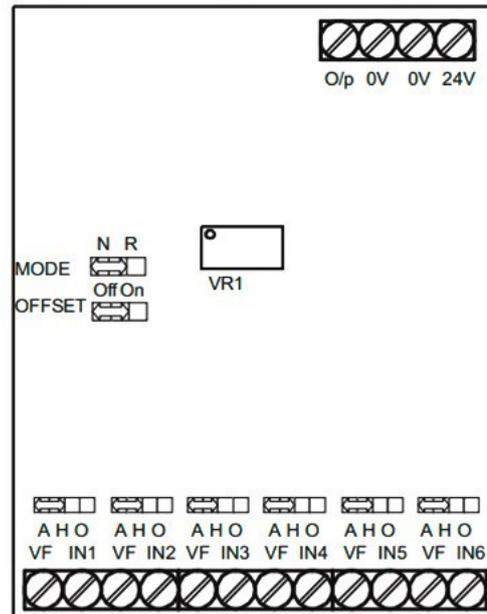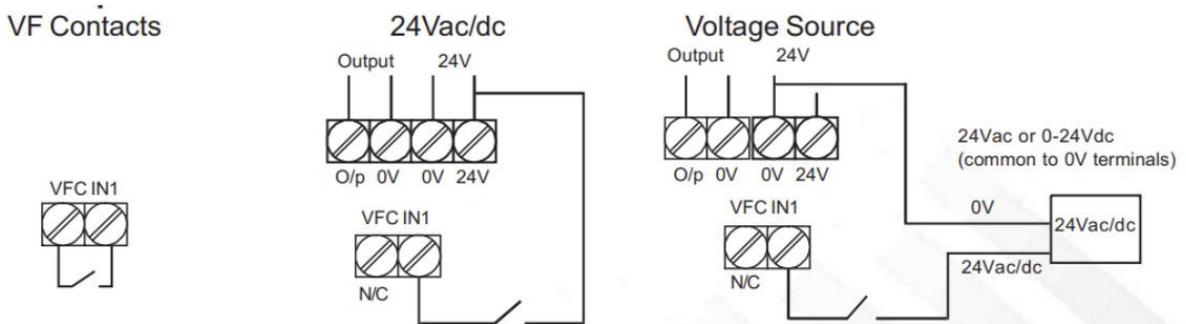

Jumpers:

Mode: Normal or reverse action
N = Normal
R = Reverse

Offset: Voltage versions
Off = 0-10V
On = 2-10V

Current versions
Off = 0-20mA
On = 4-20mA

Example Connections:

Commissioning and Testing:

The module has six independent inputs giving a total number of 64 different output values. The output value is calculated based on binary encoding method as shown in the table below. Each input status has an output value associated with it. The module output value is the sum of all these output values.

Outputs	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6
0-10Vdc	0.15625	0.3125	0.625	1.25	2.5	5
2-10Vdc	0.125	0.25	0.5	1	2	4

For 2-10Vdc outputs, it is necessary to add 2V to the total value

Outputs	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6
0-20mA	0.3125	0.625	1.25	2.5	5	10
4-20mA	0.25	0.5	1	20	4	8

For 4-20mA outputs, it is necessary to add 4mA to the total value

Outputs	Steps	Minimum	Maximum
0-10Vdc:	0.15625Vdc	0Vdc	9.84Vdc
2-10Vdc:	0.125Vdc	2Vdc	9.87Vdc
0-20mA:	0.3125mA	0mA	19.6875mA
4-20mA:	0.25mA	4mA	19.75mA

Examples:

0-10Vdc:	Inputs 1, 2 and 6 are ON	=>	0.15625 + 0.3125 + 5	5.47Vdc
2-10Vdc:	Inputs 1, 2 and 6 are ON	=>	2V + 0.125 + 0.25 + 4.0	6.27Vdc
0-20mA:	Inputs 1, 2 and 6 are ON	=>	0.3125 + 0.625 + 10	10.94mA
4-20mA:	Inputs 1, 2 and 6 are ON	=>	4mA + 0.25 + 0.5 + 8	12.75mA

Factory settings:
The module is factory tested and set to normal mode
No offset for V and offset for I (0-10Vdc & 4-20mA)

Trend Scaling:

Scaling Type	5 - characterise
Input 1	0
Output 1	2
Input 2	9.84
Output 2	254
Input Type	Voltage
Upper Limit	User defined
Lower Limit	User defined
Points Used	2