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## 16-Channel Digital Input Module

Masibus Digital Input Field Interface Board has 16 channels that accepts various types of AC/DC Wet voltages and potential free contacts with common External Field Excitation supply and converts them to isolated Open Collector/24V Digital output with external System side Excitation supply.

### APPLICATION

- Translate and isolate AC/DC Field voltages to 24V signals
- Protect expensive control systems against field faults
- Digital field interface for PLC/DCS/SCADA systems
- Output compatible with source/Sink system side modules

### SPECIFICATION

Input	
No. of Channels & Type	16 Channel Digital Input (AC/DC) (Factory Set)
Input Range	Refer Table 1
On State Voltage (V <sub>on</sub> )	<b>Refer Table 1</b>
Off State Voltage (V <sub>off</sub> )	Refer Table 1
I/P connection	MKDS connector
Output	
Output Type	<b>Open collector, source or sink</b>
Nominal/Max. Voltage	24V/28V DC
Nominal/Max. Current	<b>5mA/50mA</b>
Output ON status LED	Green
O/P connection	25 pin D-sub male connector/20 pin FRC connector
Supply	24VDC
Power supply	
Isolation	1.5KV AC between filed and system side
Environmental	
Operating temperature	Operating at 0 to 50°C
Relative humidity	30 to 95% RH non- condense
Environmental Protection	Conformal Coating on PCB
Physical	
Mounting Type	DIN Rail (35 mm width)
Profile Material	PVC
Dimensions	200mm(L) x 90mm(W) x 60mm(D)
Weight	Approx 250 gm
Terminal Detail	
Terminal Block	UL, CSA standard
Terminal Cable Size	Up to 2.5mm <sup>2</sup> conductor

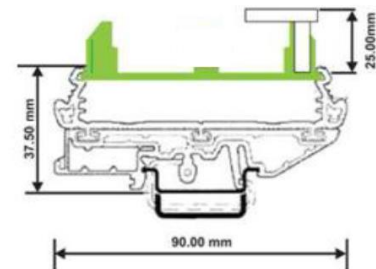
### 16-CHANNEL DIGITAL INPUT MODULE



- AC / DC Voltage Input Range
- Output open collector (Source or Sink)
- Signal healthy indication for each channel

### Dimension

225(L) x 90(W) x 90(D)



All Dimension in mm.

Voltage Category	Operating voltage	Number of input	On state voltage (V <sub>on</sub> )	Nominal Input Current	Off state voltage (V <sub>off</sub> )	Response Time
12V(DC)	7-15V(DC)	16	≥ 7V(DC)	3mA at 12 VDC	≤ 4V(DC)	≤2mSec
24V(DC)	15-30V(DC)	16	≥ 15V(DC)	3mA at 24 VDC	≤ 5V(DC)	≤ 2mSec
48V(DC)	30-55V(DC)	16	≥ 30V(DC)	3.2mA at 48 VDC	≤ 9V(DC)	≤ 2mSec
110V(DC)	70-132V(DC)	16	≥ 75V(DC)	2mA at 110VDC	≤ 30V(DC)	≤ 15mSec
220V(DC)	110-250V(DC)	16	≥ 110V(DC)	2mA at 220VDC	≤ 50V(DC)	≤ 20mSec
110V(AC)	70-132V(AC)	16	≥ 70V(AC)	12 mA at 120VAC	≤ 30V(AC)	≤ 100mSec
230V(AC)	110-265V(AC)	16	≥ 110V(AC)	12 mA at 230VAC	≤ 50V(AC)	≤ 100mSec

## SAFETY AND WARNING

As MAS-DI-16-D with front panel potentiometer calibration, must not be exposed to heavy shocks or vibration which may cause SCM to get out of calibration.

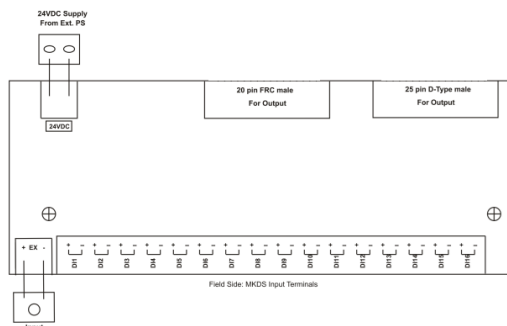
To avoid Electrostatic Discharge (ESD) to the SCM, which may cause permanent damage, always ground yourself by touching some ground equipment.

Before installation or beginning of any troubleshooting procedures the power to all equipment must be switched off and isolated. Units suspected of being faulty must be disconnected and removed first and brought to a properly equipped workshop for testing and repair.

Component replacement and internal adjustments must be made by a company person only. Wiring must be carried out by personnel, who have basic electrical knowledge and practical experience.

All wiring must confirm to appropriate standards of good practice and local codes and regulations. Wiring must be suitable for voltage, current, and temperature rating of the system. Beware not to over-tighten the terminal screws.

## CONNECTION



Connect rated power at terminal where 24VDC+ & 24VDC- described in wiring diagram.

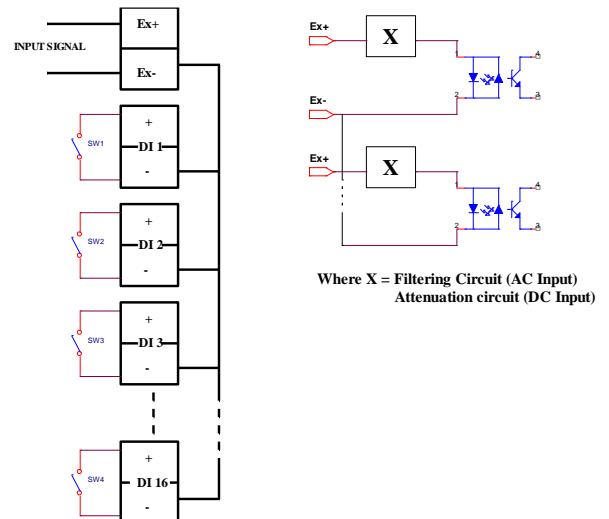
Field Input/output Terminals:

Connect input between terminal where Input+ & Input- for particular channel for Input & take output from 25 pin D type PCB mounted male connector or from terminal where Output+ & Output- described in Connection Details.

## Output Connection Details for 25 Pin D type

Terminals	25 pin D-Type Connector	20 pin FRC Connector
1	DI 16	DI 16
2	DI 15	DI 15
3	DI 14	DI 14
4	DI 13	DI 13
5	DI 12	DI 12
6	DI 11	DI 11
7	DI 10	DI 10
8	DI 9	DI 9
9	DI 8	DI 8
10	DI 7	DI 7
11	DI 6	DI 6
12	DI 5	DI 5
13	DI 4	DI 4
14	DI 3	DI 3
15	DI 2	DI 2
16	DI 1	DI 1
17	NC	NC
18	NC	NC
19	NC	+24V
20	NC	GND
21	NC	
22	NC	
23	NC	
24	+24V	
25	GND	

## BLOCK DIAGRAM



## INSTALLATION

### Mounting:

Place the module with the DIN rail guide way on the **bottom edge** of the DIN rail and then snap it **downwards**.

The housing is mounted on the DIN rail by swiveling it into place.

The Horizontal mounting arrangement Shown here, allows good vertical air circulation. It is also recommended to keep adequate gap between two SCM.

### Removal:

Release the snap-on catch using a screwdriver and then detach the module from the **bottom edge** of the DIN Rail.

## TROUBLE SHOOTING

### ⚠ Unit Not Turning ON?

Check connections and supply applied.

### ⚠ Not getting proper output.

Check connections and supply applied or any loose connections

**masibus Automation & Instrumentation Pvt. Ltd.**  
B/30, GIDC Electronics Estate, Sector- 25,  
Gandhinagar-382044, Gujarat, India  
Ph: +91 79 23287275-77  
Email: [support@masibus.com](mailto:support@masibus.com)  
Web: [www.masibus.com](http://www.masibus.com)

## ORDERING CODE

Model No	INPUT TYPE	Input Voltage		Output Type		Output Protection		Output Connection	
MAS-DI-16-D-XXXXX	X	X		X		X		X	
	AC	1	230VAC	0	SOURCE	0	NON FUSE	0	D-TYPE
		2	110VAC	1	SINK	1	WITH FUSE	1	FRC
	DC	1	220VDC						
		2	110VDC						
		3	48VDC						
		4	24VDC						
		5	12VDC						

CABLE ORDERING CODE		
Model	Input Type & Range	
m-PC-D25F-LG	XX	
	C	2.5 Meter
	D	3.0 Meter
	E	3.5 Meter
	F	5.0 Meter
	G	7.0 Meter
	S	Special

Note: 20 Core 0.14mm<sup>2</sup> with DB 25 Female connector at one end and lug at another end.