masibus
MAS-DI-16-D
16 Channel
Digital Input
Module

Masibus MAS-DI-16-D 16 Channel Digital Input Module Installation Guide

Contents

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Masibus MAS-DI-16-D 16 Channel Digital Input Module

Product Specifications

Parameter	Details
Input No. of Channels & Type	16 Channel Digital Input (AC/DC)
Input Range	Refer to Table 1
On State Voltage (Von)	Refer to Table 1
Off State Voltage (Voff)	Refer to Table 1

Product Usage Instructions

Safety and Warning

- Avoid heavy shocks or vibrations to prevent calibration issues.
- Ground yourself before handling the product to prevent Electrostatic Discharge (ESD).
- Always switch off the power before installation or troubleshooting.
- Component replacement and adjustments should be done by authorized personnel.
- Wiring should adhere to electrical standards and regulations.

Connection

1. Connect rated power to the terminals marked 24VDC+ & 24VDC- as per the wiring diagram.
2. For Field Input/Output Terminals: Connect input between Input+ & Input- for each channel and take output from the designated connectors.

Mas ibus 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

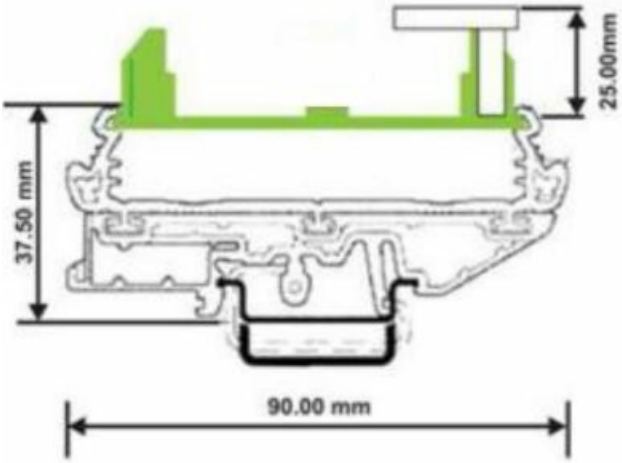
- Translate and isolate AC/DC Field voltages to 24V signals
- Protect expensive control systems against field faults
- Digital field interface for PLC/DCS/SCADA systems
- Output compatible with source/Sink system side modules

SPECIFICATION

- **Input**
  - **No. of Channels & Type** 16 Channel Digital Input (AC/DC) (Factory Set)
  - **Input Range** Refer to Table 1
  - **On State Voltage (Von)** Refer to Table 1
  - **Off State Voltage (Voff)** Refer to Table 1
  - **I/P connection** MKDS connector
- **Output**
  - **Output Type:** Open collector, source, or sink
  - **Nominal/Max. Voltage** 24V/28V DC
  - **Nominal/Max. Current** 5mA/50mA
  - **Output ON status LED** Green
  - **O/P connection** 25-pin D-sub male connector/20-pin FRC connector
  - **Supply** 24VDC
- **Power supply**
  - **Isolation 1.5 kV** AC between field and the 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 2.5mm² conductor

Dimension

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



Technical Data

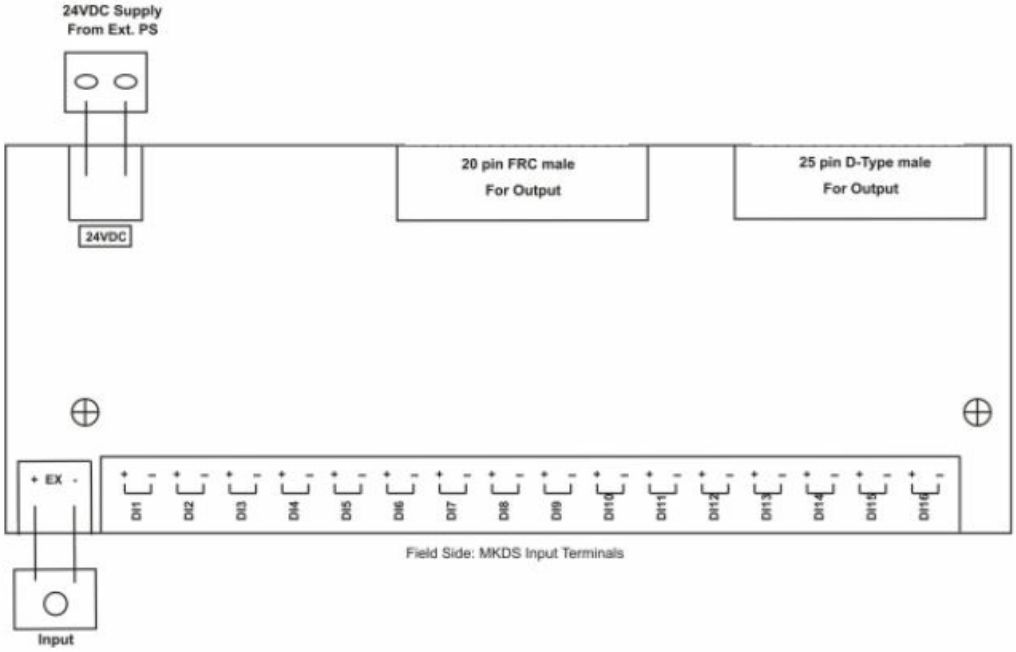
Voltage Category	Operating voltage	Number of input	On state voltage (Von)	Nominal Input Current	Off-state voltage (Voff)	Response Time
12V(DC)	7-15V(DC)	16	≥ 7V(DC)	3mA at 12 VDC	≤ 4V(DC)	≤2mSec
24V(DC)	15-30V(DC)	16	≥ 15V(DC)	3mA at 24 VDC	≤ 5V(DC)	≤ 2mSec
48V(DC)	30-55V(DC)	16	≥ 30V(DC)	3.2mA at 48 V DC	≤ 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 120V AC	≤ 30V(AC)	≤ 100mSec
230V(AC)	110-265V(AC)	16	≥ 110V(AC)	12 mA at 230V AC	≤ 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 grounded 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 conform to the appropriate standards of good practice and local codes and regulations. Wiring must be suitable for the voltage, current, and temperature rating of the system. Beware not to over-tighten the terminal screws.

CONNECTION

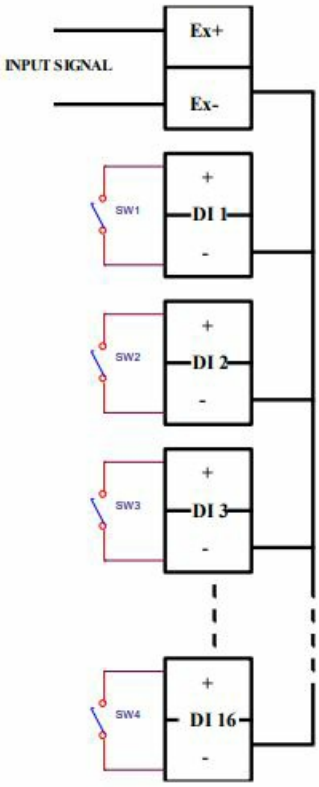


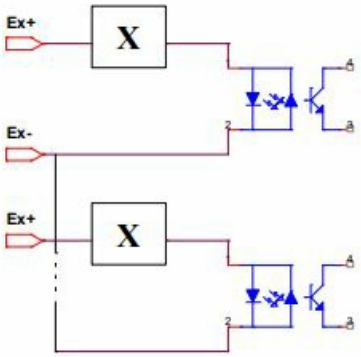
- Connect rated power at the terminal where 24VDC+ & 24VDC- are described in the wiring diagram.
- Field Input/Output Terminals:
  Connect input between terminal where Input+ & Input- for particular channel for Input & take output from a 25-pin D-type PCB mounted male connector or from terminal where 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





Where X = Filtering Circuit (AC Input)
Attenuation circuit (DC Input)

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.

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

TROUBLE SHOOTING

- **Unit Not Turning ON?**
  Check connections and the supply applied.
- **Not getting proper output.**
  Check connections and supply, applied or any loose connections

ABOUT COMPANY

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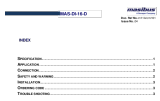
FAQs

- **What should I do if the product is exposed to heavy shocks?**
  Heavy shocks may cause calibration issues, so avoid exposing the product to such conditions.
- **Can I handle the product without grounding myself?**
  It is recommended to ground yourself before handling the product to prevent Electrostatic Discharge (ESD) damage.

Documents / Resources

	Masibus MAS-DI-16-D 16 Channel Digital Input Module [pdf] Installation Guide MAS-DI-16-D, MAS-DI-16-D 16 Channel Digital Input Module, MAS-DI-16-D, 16 Channel Digital Input Module, Digital Input Module, Input Module, Module

References

- User Manual