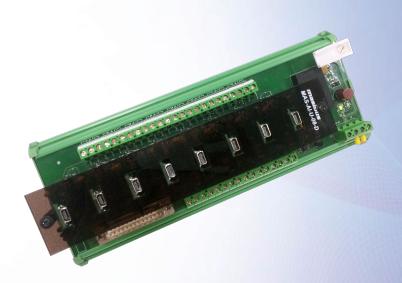# masibus

Field Interface Board

MAS-AI-U-08-D

8 Channel Linearized RTD/TC input

Masibus Linearized RTD / TC Field Interface Board have 8 nos of independent Thermocouple or Pt-100 RTD (3W) input channels. All 8 channels have factory set either Current or Voltage Output signal. Optionally offered Windows based User friendly mTRAN configuration software allows user to configure each channel for different type of TC/RTD input. Field interface Board has channel wise open sensor indication that allows user to identify channel wise faults.

The interface boards are built using the latest Technology to deliver high performance in Accuracy, Resolution, Stability and Isolation.

Linearized RTD / TC Field Interface Board have Zero/Span adjustments, sensor break detection/protection, Reverse output and Reverse Polarity protection features.

Software techniques like polynomial Linearization gives Linearized output to deliver high accuracy. High level of isolation between Input and output prevents ground loop errors and protects costly measurement and control systems under fault conditions in harsh industrial conditions.

Features

- Universal input (RTD, thermocouple)
- 1.5 KV AC RMS Isolation between Input, Output and Power
- Linearized Output
- Fully Programmable for Input type & Range
- Fast Response time: <500 ms
- Optional Windows mTRAN software for Configuration, Calibration & Monitoring
- Reverse polarity protection
- Direct/Reverse output settable
- Sensor break detection

Applications

- Reduce cost/channel for RTD / TC input
- Eliminate Ground Loop problems
- Protect Expensive control systems against field faults
- Isolate and Translate Field Signals
- Eliminate Common Mode Voltages
- Industrial process control, Factory automation, SCADA and DAS

Technical Specifications

Input

No. of Channels	8
Input type	**RTD**: PT 100 3-wire (0.1 °C) (Automatic 3 wire Compensation) **TC:** E, J, K, T, B, R, S, N (ANSI Standard)
Input Range	As per Table - 1
Input Impedance	>1M Ω
Input Resolution	16 bits
Burnout Current for TC	<1uA
CJC Error	+/-2.0 °C
RTD Excitation Current	0.3048 mA
CMRR	> 120 dB
NMRR	> 40 dB
Temp Co	≤150 PPM
Max I/P voltage	20 V
Min Spans	TC: 5mV; Pt100: 50 °C
LED Indication	Red LED ON for Sensor Open status
Input Terminals	Screw type PCB Terminal Block (2.5mm² conductor size)

Output

Output Type	Voltage / Current (Factory Set)
Sensor Break Output	Upscale or Downscale*
Output Direction	Direct or Reverse*
Response Time	≤ 500ms at full load
Load Impedance Current Voltage	≤750 Ω ≥4.7K Ω
Accuracy	0.25 % Full Span ± 1 Degree
Drift	0.2 % per year
Calibration	Zero and Span calibration through mTRAN software
Resolution	0.005% of Full Span
Output Terminals	Screw type PCB Terminal Block (2.5mm² conductor size) or 25 pin D-Type connector

Note: * Selectable through mTRAN configuration software.

Power Supply

Power Supply	24VDC ±10%
Fuse Rating	2 Amp (Fast Blown)
Power Consumption	<10VA
LED Indication	Green LED - Healthy Status Red LED - Fault Status

Physical

Dimension (in mm)	225(L) x 90(W) x 92(D)
Mounting	DIN Rail (35 mm width)
Profile Material	PVC
Weight	Approximately 400 gms.

Environmental

Operating Temperature	0 to 50 °C
Humidity	30 to 95% RH non-condensing
Environmental Protection	Conformal Coating on PCB

Table - 1

Input Type	Input Range
E	-200 to 1000 °C
J	-200 to 1200 °C
K	-200 to 1370 °C
T	-200 to 400 °C
B	450 to 1820 °C
R	0 to 1750 °C
S	0 to 1750 °C
N	-200 to 1300 °C
Pt-100	-200 to 850 °C

Ordering Code

Model	Input Type & Range		Output Type & Range		Output Connection	
MAS-AI-U-08-D	X		X		X	
	1	E	1	4-20mA	0	PCB Terminal Block
	2	J	2	0-20mA	1	D Type Connector
	3	K	3	1-5V DC		
	4	T	4	0-5V DC		
	5	B	5	0-10V DC		
	6	R				
	7	S				
	8	N				
	9	Pt-100				

*For Special Range consult factory

Optional Accessories

Sr. No.	Description of Accessories	Part No.	Qty
1	Configuration cable	TT7SCC	1
2	mTRAN Configuration Software CD		1

CONNECTION DETAILS

- FP Main Power Supply Fuse
- Electronics Grounding
- Main Power Supply
- MKDS Interface connector for O/P
- D Type Male Connector for O/P
- Product serial no.
- Power ON Indication
- Fuse Fault Indication
- Tag Holder
- Field Input Terminals
- To PC Connection