



## 8040 Data logger

Masibus Datalogger Model 8040 is a high performance Data Acquisition/Data logging Device, designed to work as a standalone unit or with PC Interface. Model 8040 is available in 19" sub-rack with 10 I/O slots, the architecture supports a max of 8 universal Analog input modules and max of 2 Digital output modules, Power Supply and Main Controller Module.

The 16 channel Analog Input (AI) Module is Universal and supports 8 thermocouples types, 2 RTD types and Voltage, each module has a high resolution, fast ADC and delivers data update rate in 3 seconds for all 16 channels, the AI module is available in channel to channel Non-Isolated differential and channel to channel Isolated Differential configurations. Each channel has 4 programmable Alarm/Trip set points for comparison and generation of hard/soft digital outputs

The Logging function allows user to setup channels for real-time logging with time-stamp, Masibus mACplus software works on windows platform and is used for datalogger configuration, calibration and retrieving logged data to PC.

Optionally, operator terminal is used for local display, configuration and programming of datalogger, Operator terminal is equipped with 24 keys and 2x16 alphanumeric LCD screen as Human machine interface.

Two types of digital output modules are available as option, 8 Channel relay module and 16 Channel open collector module, the digital outputs are freely mapped to input channels and generate Alarm/Trip or status outputs to annunciate input channels condition.

For communication the unit has 2 serial ports dedicated for user interface, enabled with Modbus RTU protocol, one additional serial port is provided for operator terminal or HMI interface.

### Features

- 16 - 128 channels configuration
- Scans 128 channels in 3 seconds
- Two user dedicated serial communication Ports + one OT/HMI port
- 2 x 16 character LCD Operator display terminal
- Universal input for each channel
- Channel to channel input isolation option
- 512Kb battery backed memory with RTC
- Host computer/ operator terminal programmable
- Pre Fab cable with DIN terminal Modules as accessories
- Field to Logic Isolation on Input cards

### Applications

- Data acquisition and control application
- Transformer monitoring and protection
- Gas detection
- Process monitoring
- Vibration Monitoring
- Boiler tubes monitoring
- Pharma process validation
- Heat Tracing circuit monitoring and control
- RTU
- Remote I/O for PLC/DCS/SCADA
- Environmental data monitoring

# Technical Specifications

Input	
Input Type (Field selectable for each channel)	Thermocouple: E, J, K, T, B, R, S, N RTD: PT-100 (3 wire), NI-120 Voltage: 0/1-5V; Current: 0/4-20mA (Ext.250Ω)
No of Input	8 Nos per card
Input Range	Refer Table-1
ADC Resolution	16 bits
CJC Error	±2 °C maximum
RTD 3 Wire compensation	Built in
Accuracy	±(0.1% of Full Scale +1digit)
Data Update Rate	3 sec
Input Impedance	> 2 MΩ
NMRR	> 40dB
CMRR	> 120dB
Temp-co	< 100ppm
Field to logic Isolation	1500VAC
Channel to channel Isolation for Isolated Mux Card option	125VAC/300VDC
Open Sensor for TC/RTD/V	Programmable upscale or downscale common for all channels

Status Indication	
Status LEDs	Power ON Main Controller Module: Status, Communication Analog Module: Status , Relay and OC Module: Channel Status and Module status
Switch	Power ON/OFF Switch

Main Controller	
CPU	16 Bit Micro – Controller
RAM	8 KB Volatile RAM, 512 KB NV RAM (Battery Backed)
ROM	64 KB
Watchdog Timer	Yes
Real Time Clock	Yes

Output	
<b>Communication Output RS422 for Single OTU</b>	
No of port	1 no max
Interface	RJ45
Protocol	Modbus-RTU Slave
Baud Rate	19200 bps

<b>Communication Output RS485 / RS232 (switch selectable)</b>	
No of ports	2 nos max
Interface	2 Wire, EIA RS485
Protocol	Modbus-RTU Slave
Baud Rate	9600 or 19200 bps

Relay Output	
Relays	8 Nos per card
Connector	25 PIN D type
Rating	2A @ 250 V AC, 30V DC max
Set Points	2 or 4
Types	L-VL, L-H, H-VH, VL-L-H-VH
Response time	3 sec max

Open Collector Output	
No of Outputs	16 Nos per card
Connector	25 PIN D type
Rating	100mA @ 30V DC max
OC response time	3 sec max

Data Logging	
Logged data retrieval	Through mAC-plus software using Modbus protocol in excel format
Memory Storage	2417 records for any 100 channels
Logging Period in Days	(Total records x logging time in seconds) /3600 x 24

Operator Terminal (Option)	
Display	2 X16 Large Character LCD Display with backlight
Keys	24 keys membrane keypad
Communication Interface	RS422 – 4 wire

Power Supply	
Datalogger	85 to 265VAC or 120 to 370VDC; 50/60Hz +/- 3%
Operator Terminal	24V DC +/-10%
Power Consumption	Datalogger ≤ 35 VA Max Operator Terminal < 2.5 VA Max

**Isolation (Withstanding voltage)**  
 Between primary terminals\* and secondary terminals\*\*: **At least 1500 V AC for 1 minute**  
 Between primary terminals\* and grounding terminal: **At least 1500 V AC for 1 minute**  
 Between grounding terminal and secondary terminals\*\*: **At least 1500 V AC for 1 minute**  
 Between secondary terminals\*\*: **At least 500 V AC for 1 minute**  
 \* Primary terminals indicate power terminals and relay output terminals.  
 \*\* Secondary terminals indicate I/O signal and Communication O/P.  
**Insulation resistance:** 50MΩ @ 500V DC or more between power terminals and grounding terminal.

Physical	
Dimension (mm)	
19" Datalogger:	132.5(H) x 482(W) x 260(D)
Operator Terminal:	192(H) x 96(W) x 45(D)
Mounting	19" sub-Rack Mount
Weight	4.5 Kg (without OT)

Environmental	
Operating Temperature	0-55 °C
Humidity	30 to 90% RH non condensing

**Table 1: Display Range**

Input Type	Ranges	Resolution
J	-200 °C to +760 °C	1 °C
K	-200 °C to +1350 °C	1 °C
T	-200 °C to +400 °C	1 °C
E	-200 °C to +1000 °C	1 °C
B	+450 °C to 1750 °C	1 °C
S	0 °C to +1750 °C	1 °C
R	0 °C to +1750 °C	1 °C
N	-230 °C to +1270 °C	1 °C
Pt100	-200.0 °C to +850.0 °C	0.1 °C
NI-120	-70.0 °C to 279.0 °C	0.1 °C
0/4 to 20mA (Ext. 250Ω)	-19000 to 19000	1 count
0/1 to 5V		

## Ordering Code

Model	No of Input (max 8 cards)	Input Type/ Configuration				Operator Terminal	Aux Output per (max 2 cards)			Signal Termination		Communication	
		X	N	I			X	Relay (card)	OC (card)	X	Port-1	X	Port-2
8040	X					X							
	A 16	N	Non Isolated	1	E	N	None	XX	0	0	N	None	1 RS232 2 RS485
	B 32	I	Isolated	2	J	1	Yes	RX	1	0	1	Pre Fab cable	2 RS485
	C 48			3	K			RO	1	1	2	Pre Fab cable with DIN terminal Modules	
	D 64			4	T			XO	0	1			
	E 80			5	B			OO	0	2			
	F 96			6	R			RR	2	0			
	G 112			7	S								
	H 128			8	N								
				9	Pt 100, 3W								
				M	NI -120								
				C	4-20mA								
				D	0-20mA								
				E	1-5VDC								
				F	0-5VDC								
				S	Special*								

# - Consult Factory  
 X - Specify from table

**Head Office:**  
 Masibus Automation And Instrumentation Pvt. Ltd.  
 B-30, GIDC Electronics Estate, Sector-25, Gandhinagar-382044, Gujarat, India.  
 Tel: +91 79 23287275-79, Fax: +91 79 23287281-82.  
 E-mail: sales@masibus.com, Web: www.masibus.com

All specifications are subject to change without notice due to continuous improvements.  
 Doc. Ref. CB-2/8040/R3F/0914

**Masibus Representative:**