



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 (1 DO only possible in case of Ethernet or USB o/p in Main Controller), 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. Ethernet port and USB port is also available as an option.

Features

- 16 - 128 channels configuration
- Scans 128 channels in 3 seconds
- Two user dedicated serial communication Ports + one OT/HMI port
- Ethernet port / USB port (optional)
- 2 x 16 character LCD Operator display terminal
- Universal input for each channel
- Channel to channel input isolation option
- Battery backed memory with RTC
- Periodic Memory (25 MB)
- 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		Communication Output Ethernet ⁽¹⁾ (Optional)		
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 port	1 no max	
No of Inputs	16 Nos per card	Interface	RJ45	
Input Range	Refer Table-1	Protocol	Modbus-TCP/IP (Modnet) Slave	
Accuracy	±(0.1% of Full Scale +/- 1digit)	Speed	10/100 Mbps	
ADC Resolution	16 bits	USB Port⁽¹⁾ (Optional)		
CJC Error	±2 °C maximum	No of port	1 no max	
Sensor Burnout current	0.4µA	Standard	2.0	
RTD Excitation current	500µA	Fetched Data Format	Standard Tabular or AES-128 bit encrypted (Optional)	
Data Update Rate	3 sec	Data File Format	*.xls	
NMRR	> 40dB	Max. USB pen drive size	4GB supported with FAT16/FAT32 formatting	
CMRR	> 120dB	Data Logging[^]		
Temp-co	< 100ppm	Logged data retrieval	Through mAC-plus software using Modbus protocol in excel / pdf format (optional)	
Input Impedance	> 2 MΩ	Periodic Logging Memory Size	25 MB	
Max Voltage	20VDC	Operator Terminal (Optional)		
Field to logic Isolation	1500VAC	Display	2 X16 Large Character LCD Display with backlit	
Channel to channel Isolation for Isolated Mux Card option	125VAC/300VDC	Keys	24 keys membrane keypad	
Open Sensor for TC/RTD/V	Programmable upscale or downscale common for all channels	Communication Interface	RS422 – 4 wire	
Status Indication		Power Supply		
Status LEDs	Power ON Main Controller Module: Status, Communication Analog Module: Status , Relay and OC Module: Channel Status and Module status	Datalogger	85 to 265VAC or 120 to 370VDC; 50/60Hz +/- 3%	
Switch	Power ON/OFF Switch	Operator Terminal	24V DC +/-10%	
Main Controller		Power Consumption	Datalogger ≤ 35 VA Operator Terminal < 2.5 VA	
CPU	32 Bit Micro – Controller	Isolation (Withstanding voltage)		
Watchdog Timer	Yes	Between primary terminals* and secondary terminals**: At least 1500 V AC for 1 minute		
Real Time Clock	Yes	Between primary terminals* and grounding terminal: At least 1500 V AC for 1 minute		
Width	10T(Std) 16T(in case Ethernet or USB port option selected)	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.		
Output		Physical		
Relay Output (Optional)		Dimension (mm)	Datalogger:132.5(H) x 482(W) x 260(D) Operating Terminal:192(H) x 96(W) x 45(D)	
Relays	8 Nos per card	Mounting	Datalogger: 19” sub-Rack Mount Operating Terminal: Panel Mount	
Connector	25 PIN D type	Weight	Datalogger: 4.5 Kg; OT: 650 gms	
Rating	2A @ 250 V AC, 30V DC max	Environmental		
Set Points	2 or 4	Operating Temperature	0-55 °C	
Types	L-VL, L-H, H-VH, VL-L-H-VH	Humidity	30 to 90% RH non condensing	
Response time	3 sec max	Table 1: Display Range		
Open Collector Output (Optional)		Input Type	Ranges	Resolution
No. of outputs	16 Nos per card	J	-200 °C to +760 °C	1 °C
Connector	25 PIN D type	K	-200 °C to +1350 °C	1 °C
Rating	100mA @ 30V DC max	T	-200 °C to +400 °C	1 °C
OC response time	3 sec max	E	-200 °C to +1000 °C	1 °C
Communication Output RS422 for OTU		B	+450 °C to 1750 °C	1 °C
No of port	1 no max	S	0 °C to +1750 °C	1 °C
Interface	RJ45	R	0 °C to +1750 °C	1 °C
Protocol	Modbus-RTU Slave	N	-230 °C to +1270 °C	1 °C
Baud Rate	19200 bps	Pt100	-200.0 °C to +850.0 °C	0.1 °C
Communication Output RS485 / RS232 (switch selectable)		NI-120	-70.0 °C to 279.0 °C	0.1 °C
No of ports	2 nos max	0/4 to 20mA (Ext. 250Ω)	-19000 to 19000	1 count
Interface	2 Wire, EIA RS485	0/1 to 5V		
Protocol	Modbus-RTU Slave			
Baud Rate	9600 or 19200 bps			

Ordering code

Model	No of Input (max 8 cards)	Input Type/ Configuration	Operator Terminal	Aux Output per (max 2 cards ⁽¹⁾)	Signal Termination	Communication	USB Port ⁽¹⁾
8040	X	X	X	X	X	XX	X
A	16	N Non Isolated	1 E	N None	XX	0 0	N None
B	32	I Isolated	2 J	1 Yes	RX	1 0	1 Pre Fab cable
C	48		3 K		RO	1 1	2 Pre Fab cable with
D	64		4 T		XO	0 1	DIN terminal Modules
E	80		5 B		OO ⁽¹⁾	0 2	
F	96		6 R		RR ⁽¹⁾	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 [#]				

X - Specify from table

- Consult Factory

⁽¹⁾ with Ethernet or USB option: Only One No of DO Slot will be available & Width of Main Controller will be 16T

^ Logging Period in Days = (Total records x Logging time in seconds) / (3600 x 24)

Total records = 26000000 / [12+(No. of channels x 2)]