



MINT Intelligent I/Os & Communication Processor

DI-16 16-Channel Digital Input Module
DO-16 16-Channel Digital Output Module
AI-08 8-Channel Analog Input Module
AO-08 8-Channel Analog Output Module
MINT CP - Communication Processor
MINT IO Pair



Masibus' MINT I/O series is the most cost effective field interface module for smart systems whether it is DAS, SCADA, PLC or DCS. The MINT I/Os are available in universal 8 channel analog Input, 8 channel analog output, 16 channel digital input and 16 channel digital output.

Using MINT I/Os supervisory system one can read remote process values and events as well as communicate for process control. These I/Os consist of powerful processors suited for high-speed communication and enhanced hardware features.

The MINT I/O family has Modbus RTU & Ethernet-Modnet port that integrates with same type of existing network in plant.

MINT DI module has unique filter time selection feature for input noise cancellation and debounce time feature to prevent extra events from a single contact closure. MINT DI can also store counter input of frequency up to 1KHz.

MINT CP is a communication processor which connects MINT I/Os and any make of serial Modbus-RTU devices to a Modnet Ethernet network.

mINT PLUS configuration software configures all communicating parameters in MINT series.

The MINT series is best suited for processes that require reliable and efficient control with high speed connectivity for system monitoring and information exchange up to the corporate network.

Features

MINT I/O

- 2 Modbus serial ports RS-485
- 1 RS-485 + 1 Modbus over TCP/IP port - Modnet (Optional)
- 2 masters can be connected at a time in MINT with 2 RS-485 port option
- Compact DIN-Rail enclosure
- High-speed communication
- Supports up to 15 clients on TCP/IP
- LEDs for fault, communication and power

MINT CP

- No. of Modbus serial slave devices supports on RS-485 - 15 max.
- Modbus over Ethernet (Modnet) - 10/100Mbps- auto-detecting
- Serial RS-485 (Protocol supported: Modbus RTU master)

Free **mINT PLUS** Configuration Software

- Configuration and diagnostics
- Online excel sheet logging

Applications

- Pulse totalizing - Utility accounting
- Cost effective field interface to PLC/DCS
- Remote I/Os for monitoring and control
- SCADA
- Security systems
- Solar string monitoring
- Building automation
- Gas detection systems
- Pipeline monitoring
- Environmental monitoring
- Infrastructure monitoring
- Asset management

TECHNICAL SPECIFICATIONS: MINT I/O RS485 - ETHERNET

AI-08 Module				DO-16 Module			
Input Specifications				Output Specifications			
Input Types		No. of Channels		8			
		Thermocouple	E	-200 °C to 1000 °C			
			J	-200 °C to 1200 °C			
			K	-200 °C to 1350 °C			
			T	-200 °C to 400 °C			
			B	450 °C to 1800 °C			
			R	0 °C to 1750 °C			
			S	0 °C to 1750 °C			
		RTD	N	-200 °C to 1300 °C			
			Pt100 (3 wire)	-200 °C to 850 °C			
			Cu-53	-210 °C to 210 °C			
		Resistor Input	NI-120	-80 °C to 210 °C			
			Upto 2kΩ		0-2000		
		Current	0/4 -20mA (Ext. 50Ω resistor)		-2000 to +20000		
			Voltage	0 to +10V		-2000 to +20000	
				0 to +100mV		-2000 to +20000	
				-10mV to +50mV		-2000 to +20000	
0 to +250mV				-2000 to +20000			
0 to +5V		-2000 to +20000					
Accuracy		0.1% of FS					
Scan Rate		T/C & voltage/current: 50mSec./channel RTD: 100mSec./channel					
ADC Resolution		16 bit					
NMRR		>60dB					
CMRR		>120dB					
Temp-Co		100 ppm/°C					
CJC Error		±2°C (0 to 55°C)					
Input Impedance		V, mV, TC >1 MΩ					
Sensor Burnout Current		0.5μA					
RTD Excitation Current		250μA					
Max Voltage		20V DC					
Range Scaling		Current/voltage inputs only					
DI-16 Module							
Input Specifications							
No of Channels		16					
Counter Frequency		1 KHz max.					
Counter Resolution		32 bit					
Counter Mode		Up/Down					
Pulse Width		500μSec.					
Filter Time (ms)		0 to 65535 msec.					
De-bounce Time (ms)		0 to 65535 msec.					
Chatter Filter Time		0 to 65535 msec.					
Chatter Filter Counts		1 to 250 events					
Input Impedance		2200 Ω					
AO-08 Module							
Output Specifications							
No. of Channels		8					
Output Types	Current	0-20mA/ 4-20mA @ 750 Ω max. (external 24V DC required)					
	Voltage	0.05 -10/ 2-10 VDC @ 2KΩ min. (external 24V DC required)					
DAC Resolution		16 bit					
Accuracy		0.05% of FS					
Temp-Co		100 ppm/°C					

MINT CP MODULE

Performance		Ethernet Port	
Processor	32-bit CPU ARM core	Protocol	Modbus TCP/IP (Modnet)
Maximum No. of Read Registers	1024	No. of Port	1
Maximum No. of Write Registers	1024	Speed	10/100 Mbps (auto-detecting)
Maximum No. of Modbus Commands Supported	100	Connector	RJ45 (auto-crossover)
No. of Slave Devices Supported per Serial Port	No. of Modbus devices supports on serial port - 15	Power Supply	
No. of Clients Supported on TCP/IP	Up to 15	Logic Supply Voltage	18 - 32V DC
Configuration Software		Logic Supply Current	100mA max. @ 24VDC
		Power Consumption	< 2.5W
Communication		Isolation	Supply to RS-485: 1500V AC RMS Supply to Ethernet: 1000V AC RMS
		Physical	
mINT PLUS Software	Configuration and diagnostics	Enclosure Material	ABS plastic
RS-485 Serial Port		Mounting	DIN-Rail (35 mm)
		Dimension (H x W x D)	101 mm x 22.5 mm x 120 mm
Protocol	Modbus-RTU slave	Color	Black
No. of Port	2	Weight	160 g
Communication Speed (Baud Rate)	9600, 19200, 38400, 57600, 115200 bps	Environmental	
Parity	ODD, EVEN, NONE	Operating Temperature	0 °C to 55 °C
Data Bits	8	Storage Temperature	-10 °C to 70 °C
Stop Bit	1, 2	Humidity	30 to 95% RH non-condensing
Default Settings	9600, 8 data bits, 1 stop bit, no. parity	Ordering Code	
Connector	Plug-in screw terminals, 1.5mm ² cable size		
Recommended Cable	Shielded, twisted pair, size: 0.14mm ²		

Model MINT											
I/O Type		AI Channel Type		MINT I/O DO Type		AO Type		Communication			
XX		X		X		X			Port 1	Port 2	
AI	8 channel analog input	N	None	N	None	N	None	SS	RS-485	RS-485	
DI	16 channel digital input	0	8 Channel universal	0	Sink type	I	Current O/P	SE	RS-485	Ethernet	
AO	8 channel analog output	1	4 Channel Fix*	1	Source type	V	Voltage O/P	S0	RS-485	NA	
DO	16 channel digital output	2	8 Channel Fix*								

Note: *Fix - Current & Voltage

Model
MINT CP

Application

