Controlinc Mini-Master M124N, a small package with large features and functions

Common valve actuator control functions are pre-configured, ready to monitor and control valves from the LCD panel or the host computer. Process control may be customized by adding event driven logic functions, interlocks, timers, real-time scheduling, ramp and soak, etc. when the optional Software Developers kit is purchased. Up to four PID loops may be configured. Modbus network port(s) are available for networking with DCS, SCADA or PLCs for total plant control. Ideal for water and waste-water processing plants. The M124 Master supports Controlinc E>Net network, including ring topology, with up to 124 valve actuators per master.

Enclosure is NEMA/EEMAC Type 4X IEC IP66 wall mount with sealed rear mounting holes or mounting brackets. Includes (5) five NEMA 4X liquid tight strain relief compression type cable entries or will accept ½ inch conduit. Separate entries are provided for power (1), actuator networks (2) and host links (2).

Network Master Features

- Automate process with up to 124 valves and hundreds of auxiliary digital and analog I/O.
- Network multiple M124 masters to your host to automate thousands of actuators and tens of thousands of auxiliary discrete and analog I/O points.
- LCD panel provides valve actuator monitoring and control of up to 124 actuators per master for backup if host link fails.
- LCD panel is a valuable troubleshooting tool during system commissioning.
- All system setup and configuration is performed via the host network using EIM CCU software (free program).
- Master supports Report-By-Exception (RBE) with all actuators on the network.
- Priority scanning ensures fast status updates of moving valves. Moving valves are interlace scanned with all other actuators on the network. Typical update time is 100mS for a moving valve. Eight moving valves will have an update time of less than one second regardless of the number of actuators on the network.
- Supports Controlinc E>Net ring network with up to 124 valve actuators per master.
- System pre-configured at the factory with user tag names and is ready to monitor and control standard valve actuator functions.
- Control process with valve sequencing, interlocking, scheduling and PID closed loop control.
- Redundant isolated Network Interface Units (NIU) provide redundant valve actuator network connections.
- Hot standby redundancy with bumpless transfer in the same enclosure as standard.
- Modbus host links with RS232 and RS422/485 standard.
- Redundant configurable DCS link(s) for isolated RS-422/485, 4-wire or 2-wire standard.
- Optional redundant host link available.
- Optional I/O module with four 24VDC inputs and four relay outputs.
- Plug-in modular construction and DIN-rail mounting of components ensures minimum MTR (meantime to repair), minimizing down time.
- 316 stainless steel enclosure conforms to NEMA/EEMAC Types 4X and 12 IEC IP66 standards.
- Five NEMA 4X liquid tight cable entries for all required cable connections.
- Powered from 115 or 220/230 VAC, 50 or 60 Hz. 24VDC versions available on request; you provide battery backup/UPS.
- Ethernet (TCP/IP) wired or fiber optic host links available with optional DDE server software for Windows 95, 98, 2000 or NT. Consult factory for details.

Specification

Controlinc Network Master Model M124N

Redundant valve actuator network in a single enclosure uses two identical chassis with identical software. One is the primary master and the other is a hot stand-by master. Supports E>Net ring network for up to 124 valve actuators using standard RS-485 and Modbus RTU protocol. Includes Network Interface Modules with redundant isolated ports for communication from the master to the slave (valve actuator) devices. Plug-in modular construction and DIN-rail mounting of components. LCD screen and keypad provide valve actuator monitoring and control of all valves in case the host link or redundant host links fail. Displays valve status and alarms for maintenance purposes.

Environmental

Storage temperature:	-20C to 70C
Ambient operating temperature:	0C to 55C
Ambient Humidity:	5% to 95% (non- condensing)
Vibration resistance:	MIL STD 810C, Method 514.2
Shock resistance:	MIL STD 810C, Method 516.2
Enclosure:	NEMA 4X, IEC IP66, constructed of 316 Stainless steel

Electrical

Standard input voltage:	117 VAC @50/60 Hz (100-240VAC) (other options available)
Total current @nominal voltage:	0.65 Amps (includes LCD panel)
Maximum inrush current:	60 Amps
Total power consumption:	25VA nominal (includes LCD)
Isolation resistance:	>10 MegOhms @ 500 VDC
Dielectrics withstand voltage:	1500 VAC @ 1 minute

LCD panel specifications

Display type:	2-Lines x 16-Character LCD, LED Status lights
LCD enclosure:	NEMA 4 (IP65)
Input voltage:	8-32 VDC
Power consumption:	5 VA @ 24 VDC
Operating temperature:	0C to 50C

M124PLC Port 2 Setup for Database Exchange Link (DxL)

Primary Master	Secondary Master
DirectNet	DirectNet
Base Timeout x 1	Base Timeout x 1
RTS/CTS 0mS, 0mS	RTS/CTS 0mS, 0mS
Station address 2	Station address 1
38400, 1, Odd, Hex	38400, 1, Odd, Hex

PLC to PLC cable is RS232, 3-wire, rolled, with 15-pin D connectors