

Micro III Control Panel



The FES Systems, Inc. Micro-III Control Panel is the product of choice for many industrial control applications. This panel combines the best features of FES' industry leading Micro-III and MicroMASTER control panels and greatly expands upon their capabilities to lead FES controls and the industry through the 21st century. A proven hardware design provides features and expansion capabilities that allow the Micro-III to be a cost-effective solution in many applications previously served by PLC's.

The Micro-III incorporates the FES high-speed peer-to-peer ComMENT network interface to make external data acquisition a breeze. The panel can also be supplied in various sizes to accommodate additional relays, switches, and other general purpose components that may be needed to complete an application. All enclosures are Nema-4, with a UL Type 4 label.

Applications:

- Compressor sequencing
- Condenser control
- Vessel monitoring and control
- Evaporator control
- Single and multi-unit compressor controller
- Any other applications that requires automation.

Display:

- high contrast super-twist LCD display with yellow/green LED backlight
- long life and reliability.
- Operation in harsh industrial refrigeration environments which include heavy vibration and temperature extremes.
- Alphanumeric/graphics 128 x 160 pixel resolution allowing for more data (approximately 16 lines x 24 characters), various font sizes, reverse video, and simple graphics representations.
- a large display viewing area of 3.7" x 2.9" (92.8mm x 74.2mm)

Keypad:

- Keypad has 46 tactile feel keys.
- Direct access to displays and functions without "menu searches" or numeric entries for selections.
- A full numeric section; with up, down, left and right cursor keys, edit and entry keys, and change display, alarm, and clear keys.
- Two advanced sections totaling 24 keys; each with LED status indication to Micro 111 show present selections and insertable legends for key descriptions based on the product functionality.

I/O Rack:

- An electrician-friendly digital I/O rack provides 40 slots (expandable to 4 racks for a total of 160 slots) for industry standard solid state isolated modules.
- All digital I/O positions can accept either input or output modules as determined by the software operating in the panel.
- Each I/O point is provided with a glass fuse that gives visual indication when blown.
- Each I/O rack includes an on-board fuse tester with a LED indication.
- A hand-off-auto board with plug-in switches is available as an option. Field wiring connections unplug from the I/O board and HOA option board; allowing for board replacement without removing wiring terminations.
- Two screw type terminals are provided for each connection point to allow for more field wiring connections to be made without additional external terminals.



Micro-III Processor Board:

Microprocessor Basics: The Micro-III is powered by a Motorola microprocessor, using a battery-backed RAM to hold set-point and failure data, and flash memory to hold program software and configuration information. Flash memory allows for software changes to be downloaded via serial communications without 'chip' replacements. The real-time clock is maintained with a replaceable lithium battery.

Communications: The Micro-III supports the high-speed peer-to-peer COMMENT network interface with easily wired screw terminal connections. The board also supports a 9-pin RS-232 or a 5-terminal screw-type connector RS-422 serial interface port. The RS-232/422 serial interface is currently used for program downloads to

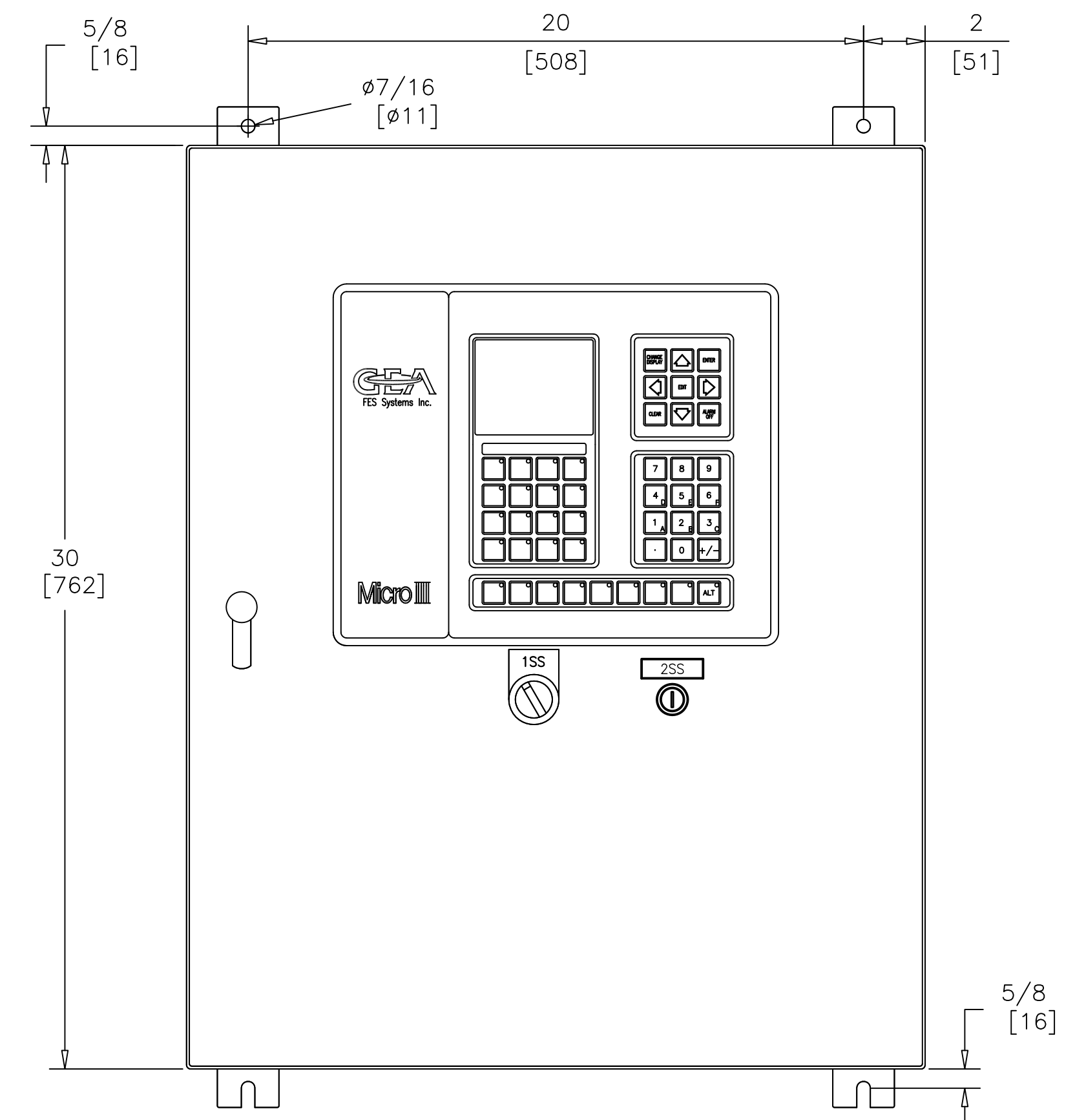
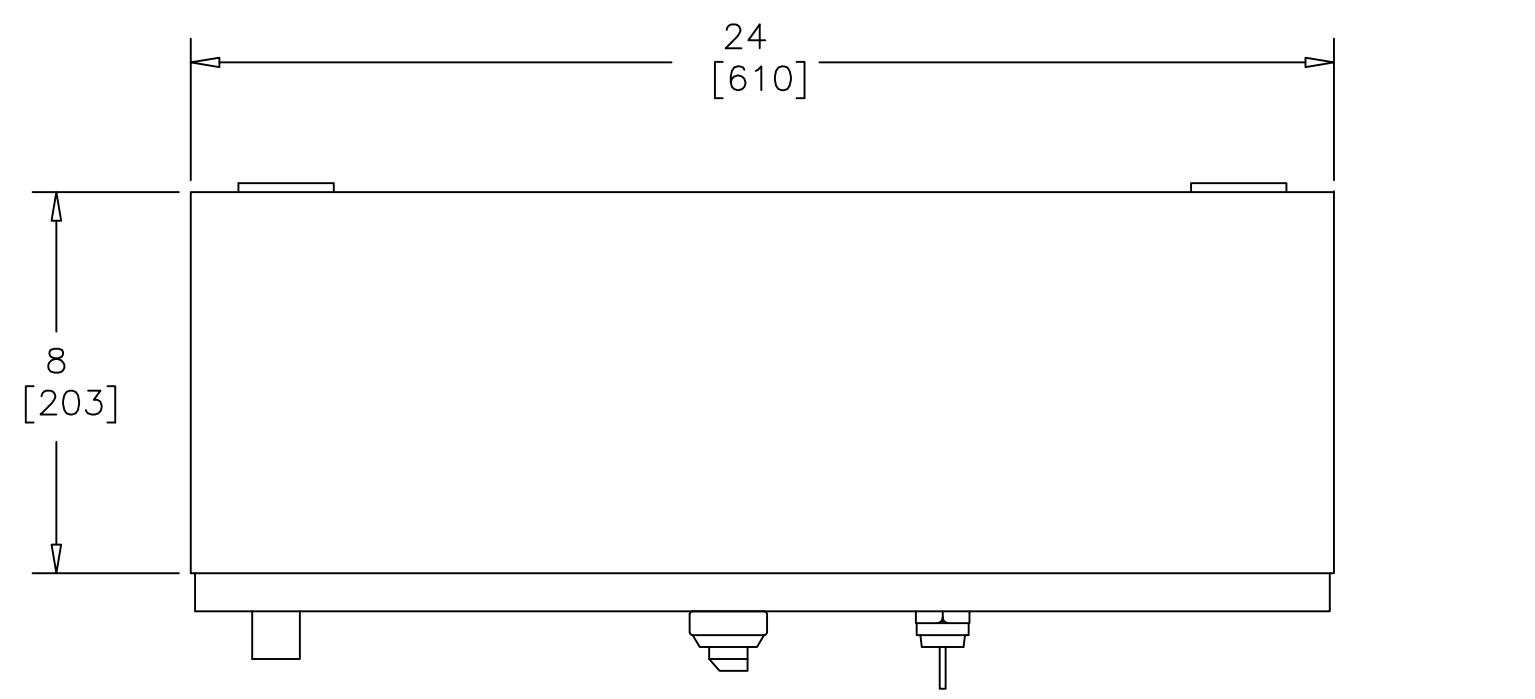
flash memory.

Analog Inputs: The Micro-III supports 16 analog input channels (expandable to 40 channels) with 12-bit resolution. Each channel is jumper selectable for 1-5 VDC, 4-20 mA, or JCTD input. Two channels have special circuitry, one for a side valve pot and one for direct connection of a 5 amp motor current CT.

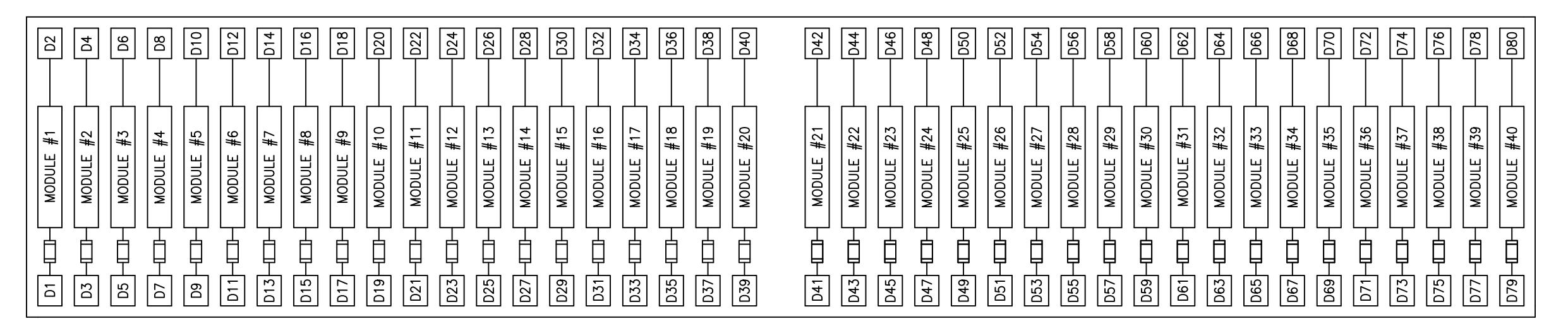
Analog Outputs. The Micro-III supports 4 analog output channels (expandable to 12 channels) of 16-bit resolution. The channels are jumper configurable as isolated (4-20 mA loop externally powered) or non-isolated (4-20 mA loop powered from the Micro III).

Line Voltage Detection: Sophisticated integral line voltage detection circuitry allows for AC line voltage from 65 VAC to 245 VAC to be continuously monitored and displayed.

LED Status Indicators: Six LED's (5 additional on I/O expander) provide indication of proper Micro-III operation, ComMENT network communications, software download status and troubleshooting.

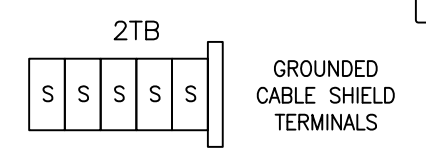
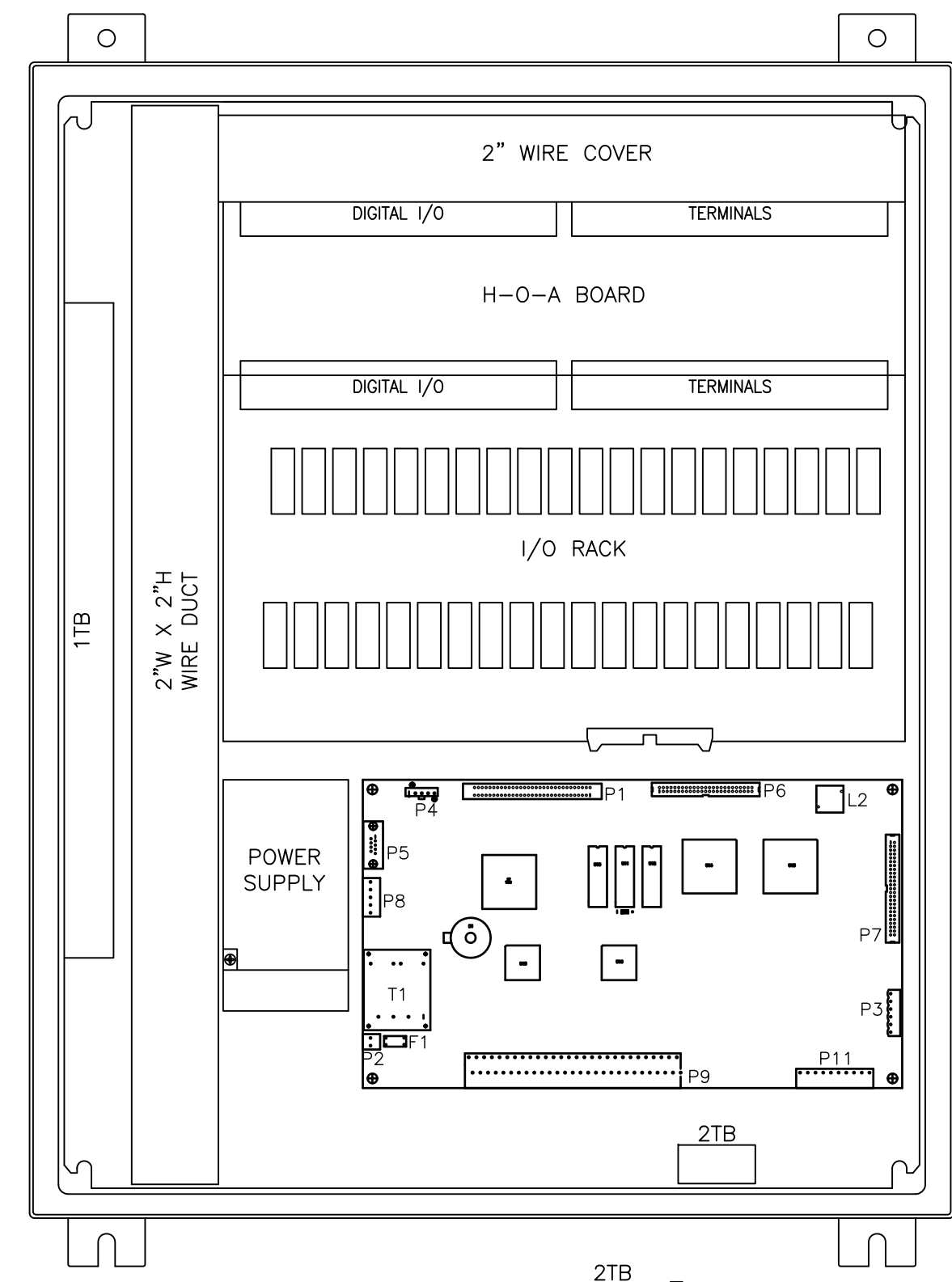
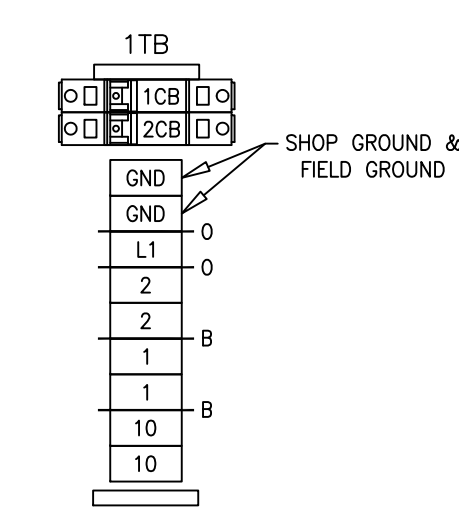
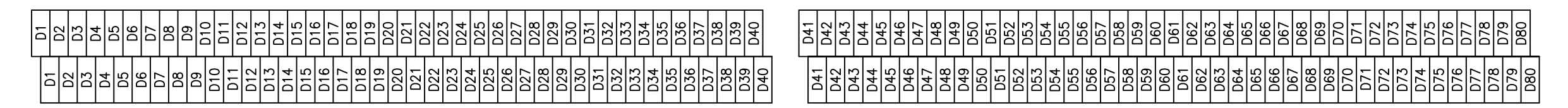


ENCLOSURE: NEMA 4

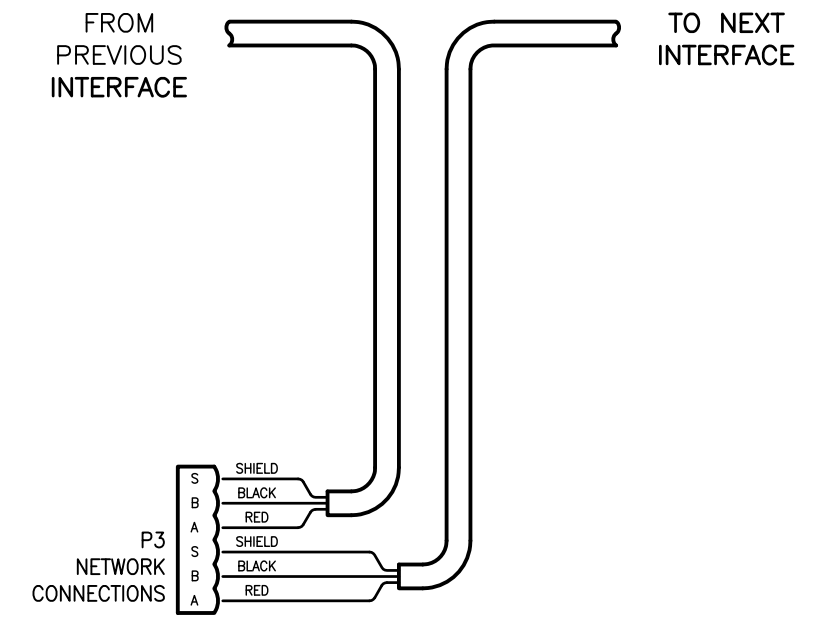


DIGITAL I/O

TERMINALS



COMMUNICATION NETWORK



CABLE SELECTION GUIDE								
CABLE TYPE	P3 TERMINAL NUMBERS	WIRE COLOR	TERMINATING RESISTOR R16 (END NODES ONLY)	AMBIENT TEMP RATING	MAXIMUM CABLE LENGTH (FT)			
					2.5 MBS	1.25 MBS	625 KBS	312 KBS
BELDEN 89182	S B A	SHIELD BLACK YELLOW	200 OHM	200°C	1000	1800	3000	4000
BELDEN 9841	S B A	SHIELD BLU/WHT WHT/BLU	120 OHM	80°C	800	1400	2400	3600

NOTE
1. DIMENSIONS ARE IN INCHES. DIMENSIONS IN BRACKETS ARE IN MILLIMETERS.

REV	DATE	REVISION	BY	AP	REV	DATE	REVISION	BY	AP	REV	DATE	REVISION	BY	AP	REV	DATE	REVISION	BY	AP	
A	11-20-02	ADDED 2 #1 TERMINALS.	GHA	BBC																
B	11-20-03	ADDED H-O-A BOARD PER CONTRACT UPGRADE 3A387101	LEK	LEK																

CUMBERLAND FARMS DAIRY
CANTON, MA

SPECIFICATIONS
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCE = ± 1/8
MAT'L =
WT. =
DO NOT SCALE



ENCLOSURE, MICRO III SYSTEM PANEL

DATE 11-12-2002	DWG. NO. 03039101-03
DWG. BY GHA	SHT. NO. 1 OF 1
APP. BY BBC	ORIG. NO. 02345105-03
SCALE NO SCALE	