

SYSTEM 50



- SYSTEM 50
- MicroDAC
- MicroDAC LT
- Promux
- Microlon
- Various I/O Racks

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SYSTEM 50 RACKS OVERVIEW

I/O Racks Part Number Explanation

70MRCK16-HL

Series Number

Input Connection/Mounting
 Blank = Edge Card Connector Only for Std. I/O (Note 1)
 EC = Edge Card Connector only for Mini I/O (Note 1)
 HL = Header Connector: long ejector levers (Note 2)
 HS = Header Connector: short ejector levers (Note 2)
 DIN = DIN Rail Mount
 48 = 48-pin Euro DIN Connector (Note 3)

Number of Modules or Rack Positions
 4 = 4 Modules
 4R = 4 Modules, Positive or Negative True Logic
 8 = 8 Modules
 16 = 16 Modules
 16T = Terminal Blocks for Control and Field Wiring
 16I = Terminal Blocks for Control and Field Wiring:
 Positive or negative true logic
 24 = 24 Modules
 32 = 32 Modules

Mounting Rack Type
 K = 1 Row of Modules in Line
 Q = 2 Rows of Modules (Mini racks replace Quad racks)
 M = Special 32 Position G5 Rack for MicroDAC
 P = Special 32 Position G5 Rack for Parallel
 Controller Board

RC = Mounting Rack

Module Type
 L = OpenLine® I/O Modules
 G = G5 I/O Modules
 M = Mini I/O Modules
 Blank = Standard I/O Module

Note 1 – 50-pin card edge mates with 3M part number 3415-0001 or equivalent.
Note 2 – Racks with long ejector levers mate with ribbon cable connectors with strain relief (Molex part number 15-29-9350 or equivalent) or discrete wire connectors (Molex part number 22-55-2502 or equivalent).
Note 3 – Racks with 48-pin Euro DIN connector are special 16 position OpenLine® racks for OpenDAC® controllers.

Not all combinations are valid, see Ordering Information on each page.

I/O Racks

I/O racks are passive backplanes into which I/O modules can be installed and removed. I/O racks connect one of the “logic side” terminals from each module to an associated pin on the logic side connector for interface to the controller. I/O bases have an integral processor and dual port memory chip. The I/O handles scanning and storage of the I/O information which can be accessed over the bases address/databus. Up to 8 racks can be stacked along a DIN rail.

Standard Mounting Racks

Mounting racks provide a convenient method of connecting to I/O modules. Most racks have the option of a card edge or header connector for the logic signals. Field wires are connected to open or closed terminal blocks.

The modules are plugged into receptacle cups or connectors and are held in place by hold down screws, bars or clips. An LED indicates the status of each digital module. A five amp replaceable fuse protects the outputs from short circuits.

G5 Mounting Racks

G5 mounting racks are designed to accommodate G5 modules, which incorporate a status LED in the module. The G5 output modules also have an integral fuse. This eliminates the need for module fuses and LED status indicators on the rack. The G5 modules are slightly thinner than the standard modules. When used with the MicroDAC or MicroLON® controllers, analog and digital I/O modules can be intermixed on the same G5 rack.

Miniature-Sized Racks

Our mini racks are much smaller than the industry standard racks. In addition to saving precious panel space, mini racks save installation time by replacing the individual module screws with a single hold down bar which is installed with two thumb screws.

UL Recognition/CSA Certification

Those I/O racks indicated as UL and CSA certified are listed in UL file E94540 and CSA file LR38763.

Replacement Fuses

All I/O locations on standard and mini I/O racks are fused with five amp Littelfuse 251-005 or Bussman GFA5 fuses. Logic supply on 24 and 32 position standard and mini I/O racks are fused with one amp Littelfuse 251-001 or Bussman GFA1 fuses. Logic supply on 16, 24 and 32 position G5 I/O racks are fused with 5 x20mm glass fuses rated one amp or five amps.

Custom I/O Racks and Termination Assemblies

For applications where our standard I/O racks do not fit your application, we offer custom I/O racks and termination assemblies. We have provided custom I/O racks with the following features:

- Special control logic connectors
- DIN rail mounting
- Depluggable terminal strips
- Options for sinking and/or sourcing of field power
- 19” Rack for mounting options
- Signal conditioning and transient protection

Our application engineers are ready to help you design your I/O termination assembly. If you have a unique application, give us a try.

I/O Module and Fuse Sockets

We recommend customers designing their own mini, standard or G5 I/O racks use Mill-Max part number 0355-0-15-01-02-01-10-0 sockets or equivalent for the I/O module leads and Mill-Max part number 0660-0-15-01-20-02-10-0 or equivalent for Littelfuse pico fuse leads. Custom OpenLine® I/O racks should use Crane connectors for the input and for the output.

Logic Supply

To power an I/O rack, connect a power supply to the 2 position logic supply terminal block, taking care that the polarity is correct. Alternately, the I/O rack may be powered through the 50-pin connector. Pin #49 on all other racks is +Vcc. Installation of a jumper or fuse may be necessary on the I/O rack to complete this connection. See details on the following pages.

**Field Terminal Block-
Wire Size Quantity per Terminal**

I/O Rack Type	AWG			
	10	12	14	16
Mini	–	–	1	2
G5	1	1	2	3
OpenLine®	–	–	1	2

RACKS

4 Channel

FEATURES

- Use for Isolating and Coverting Signal Types to Standard Logic Voltages
- Terminal Block Connection for Input and Output
- Available for Standard and G5 I/O Modules
- Panel and DIN Rail Mount Versions
- UL, CSA Certified

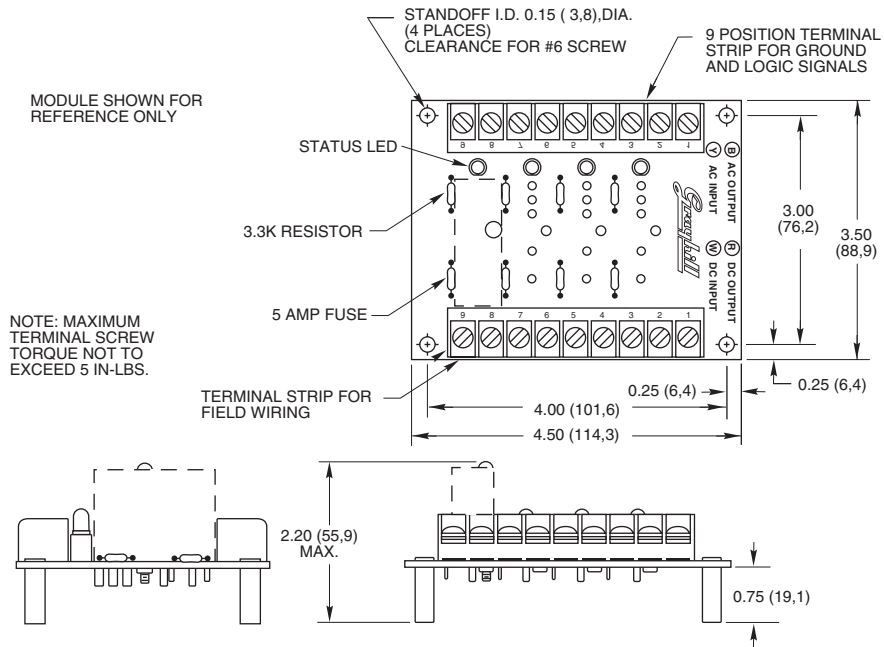


4 CHANNEL RACK: Standard

Part No. 70RCK4

Dimensions are shown in inches (and millimeters). All tolerances are ± 0.010 (0,25) unless otherwise specified.

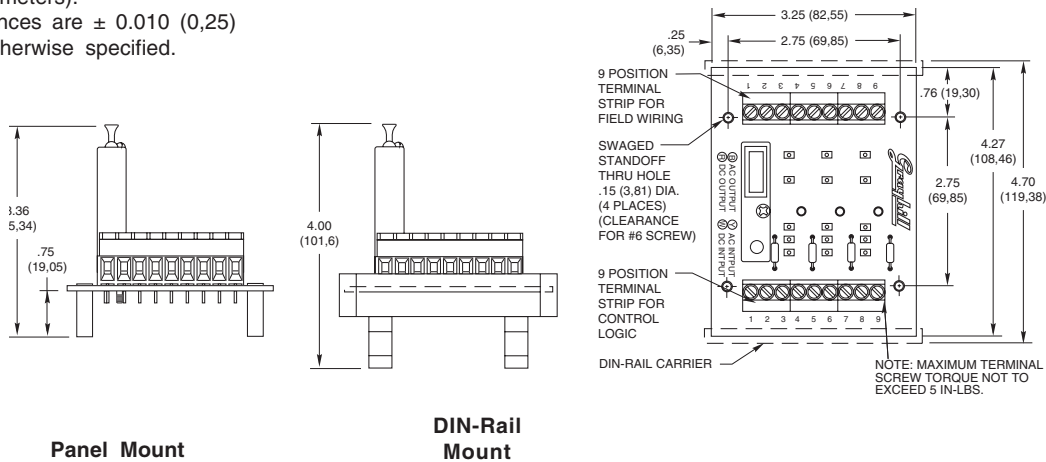
MODULE SHOWN FOR REFERENCE ONLY



4 CHANNEL RACK: G5

Part No. 70GRCK4

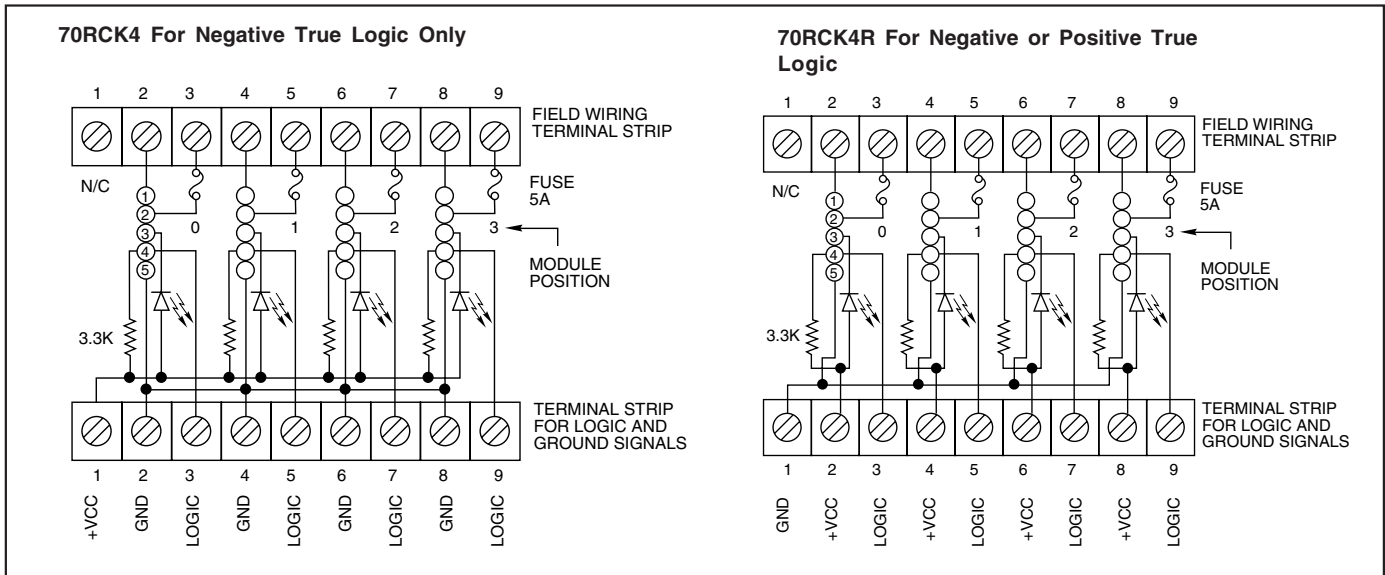
Dimensions are shown in inches (and millimeters). All tolerances are ± 0.010 (0,25) unless otherwise specified.



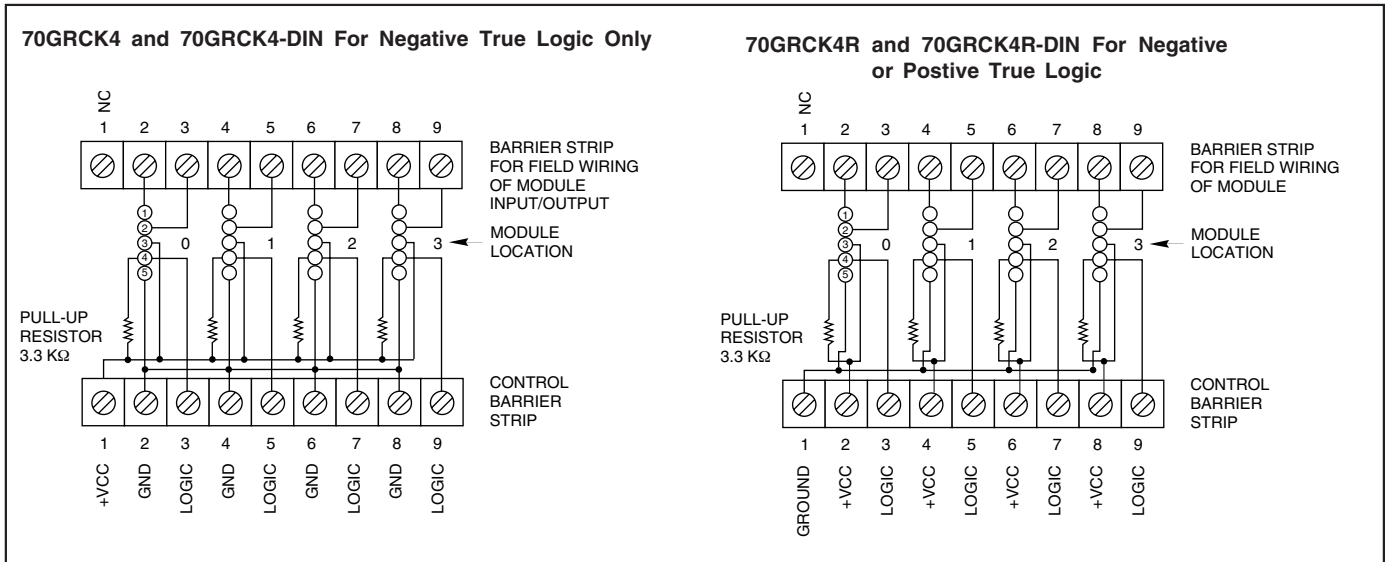
Panel Mount

DIN-Rail Mount

SCHEMATICS: Part No. 70RCK4



SCHEMATICS: Part No. 70GRCK4



ORDERING INFORMATION (modules ordered separately)

Part Number	I/O	Description	UL	CSA	Style
70RCK4	4	Negative true logic	X	X	Standard
70RCK4R	4	Positive or negative true logic*	X	X	Standard
70GRCK4	4	Negative true logic	X	X	G5
70GRCK4R	4	Positive or negative true logic*	X	X	G5
70GRCK4-DIN	4	Negative true logic-DIN rail mount	X	X	G5
70GRCK4R-DIN	4	Positive or negative true logic*-DIN rail mount	X	X	G5

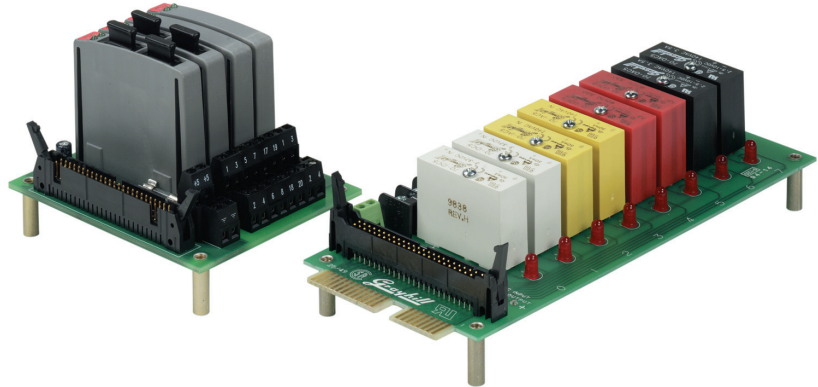
Available from your local Grayhill Distributor. For prices and discounts, contact a local Sales Office, an authorized local Distributor, or Grayhill.

*Note: Positive True Logic applies to output modules only.

RACKS 8 Channel

FEATURES

- For use with System 50 Style Controllers
- Available for Standard Miniature and OpenLine® Modules
- Panel and DIN Rail Mount Versions
- UL, CSA Certified

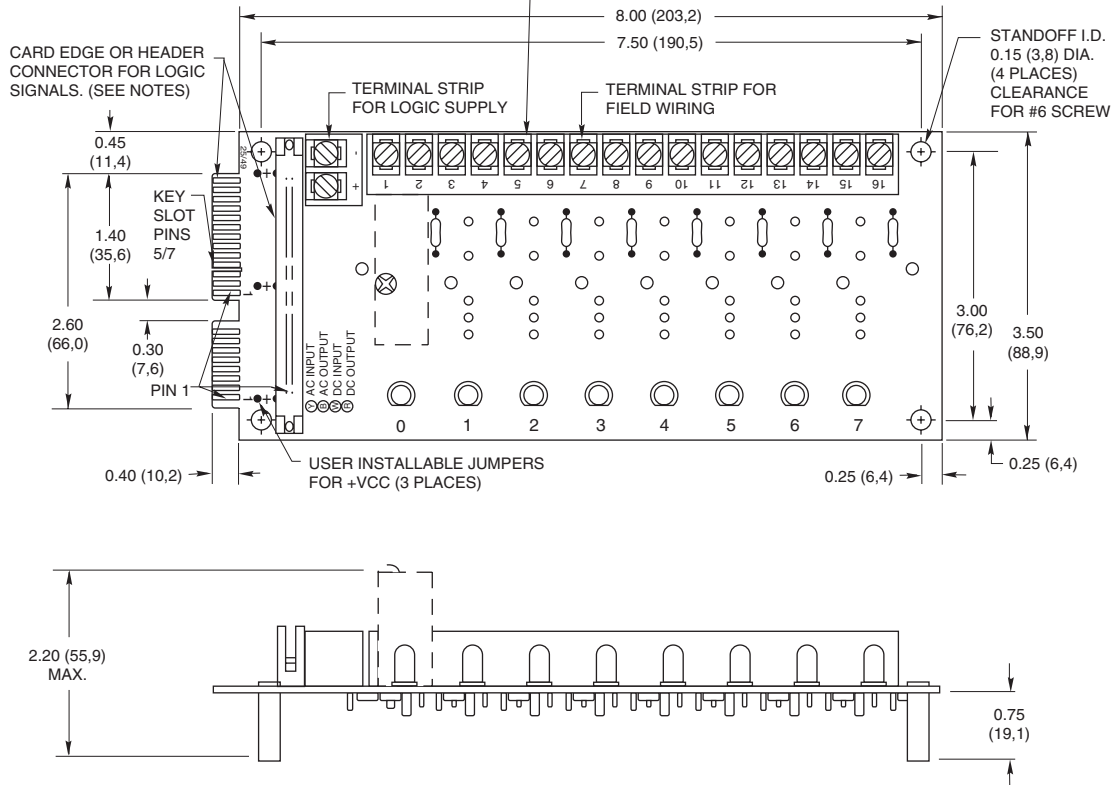


8 CHANNEL RACK: Standard

Part No. 70RCK8

Dimensions are shown in inches (and millimeters).
All tolerances are ± 0.010 (0,25) unless otherwise specified.

NOTE: MAXIMUM TERMINAL SCREW TORQUE NOT TO EXCEED 5 IN-LBS.

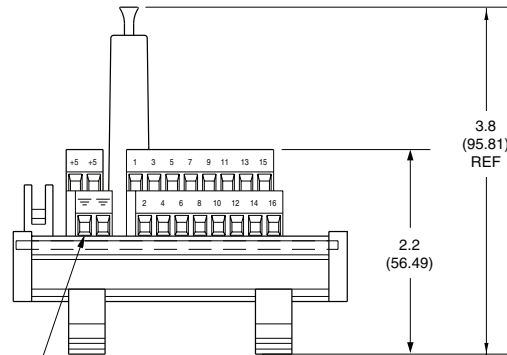
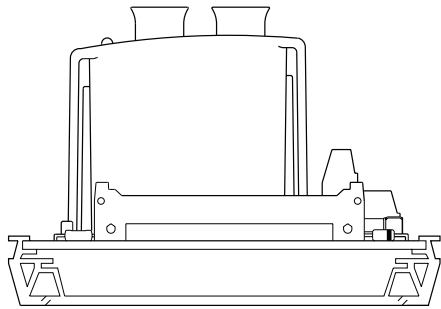
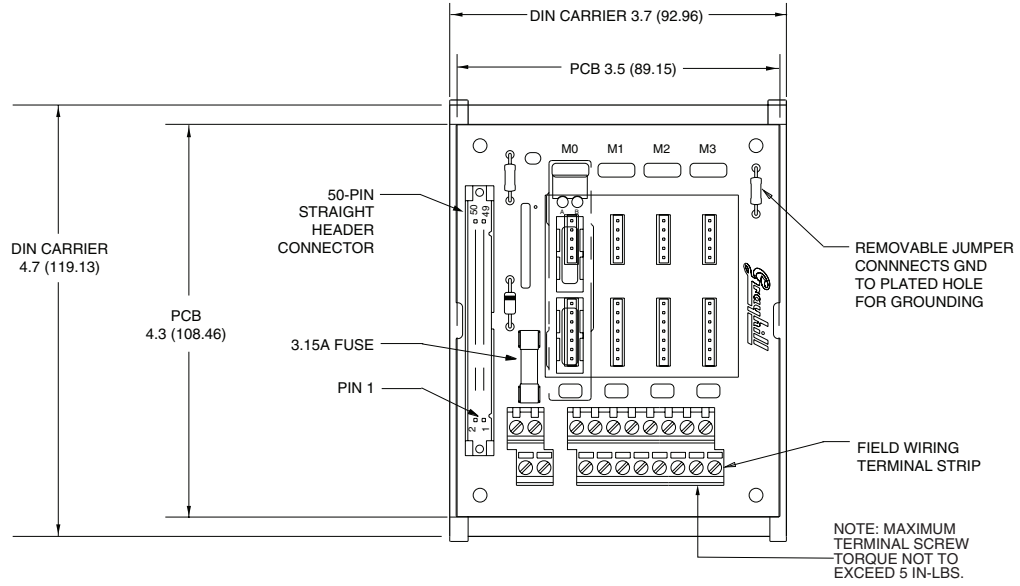


8 CHANNEL RACK: DIN Rail Mount

Part No. 70LRCK8-DIN

Dimensions are shown in inches (and millimeters).

All tolerances are ± 0.010 (0,25) unless otherwise specified.

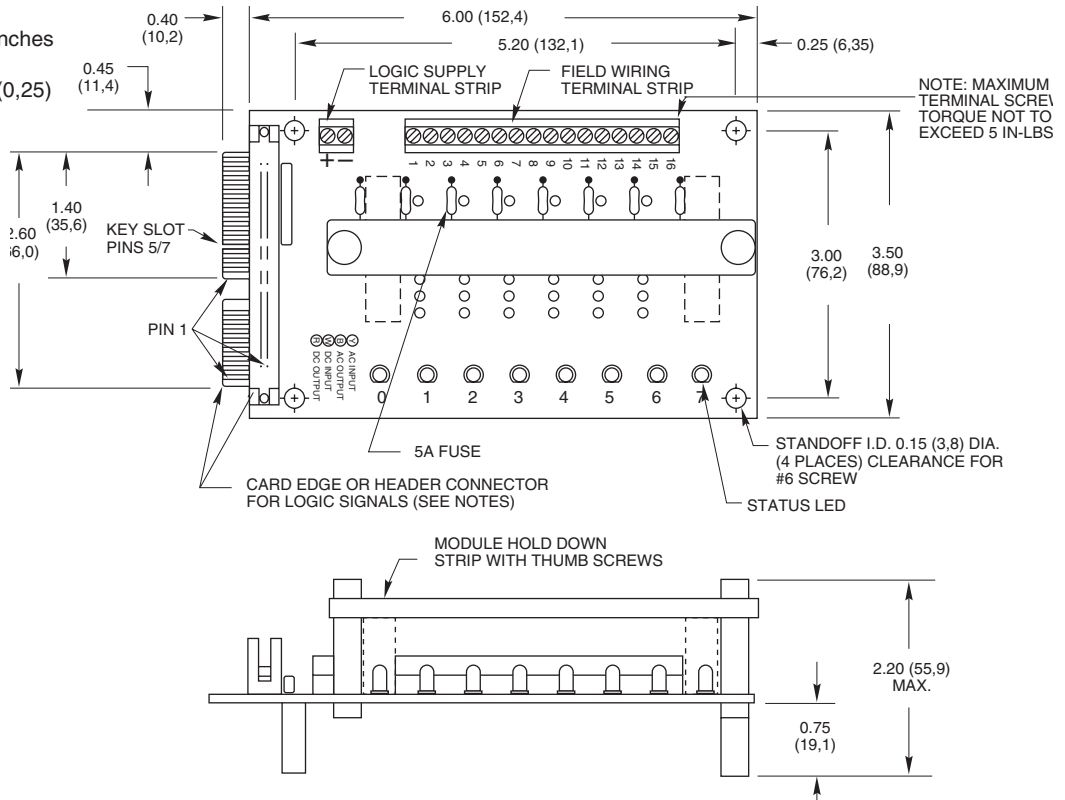


LOGIC SUPPLY TERMINAL STRIP
TOP ROW: + LOGIC SUPPLY
BOTTOM ROW: GND

8 CHANNEL RACK: Miniature

Part No. 70MRCK8

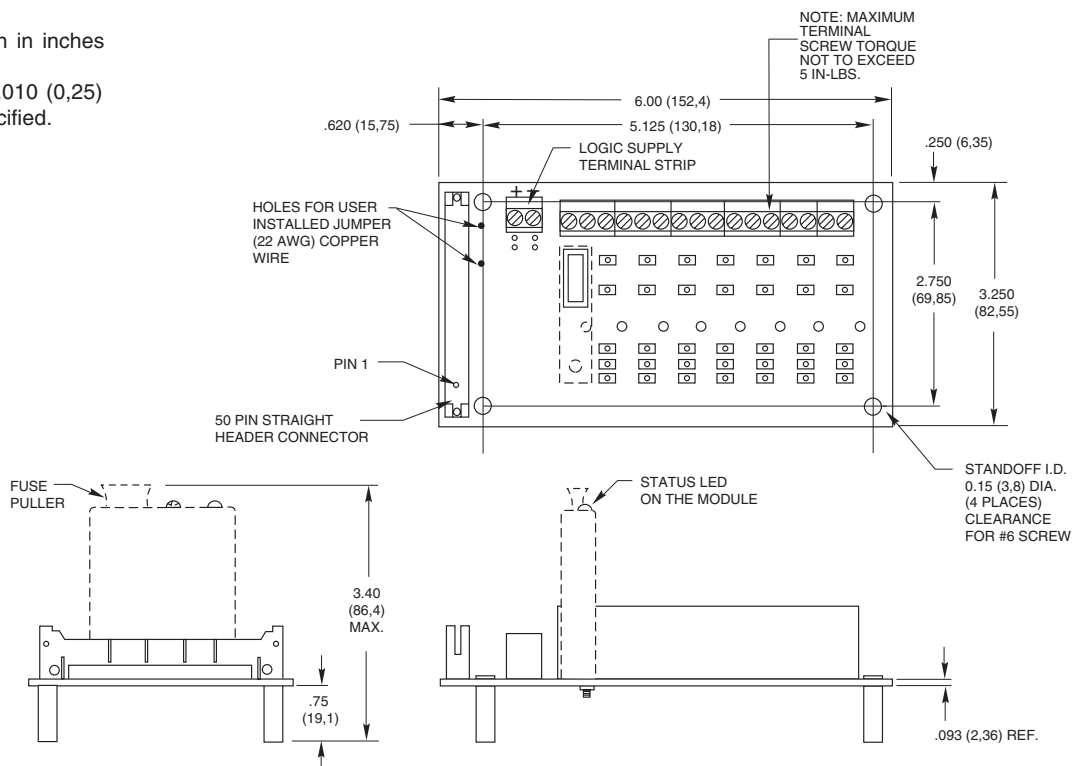
Dimensions are shown in inches (and millimeters).
All tolerances are ± 0.010 (0,25) unless otherwise specified.



8 CHANNEL RACK: G5

Part No. 70GRCK8

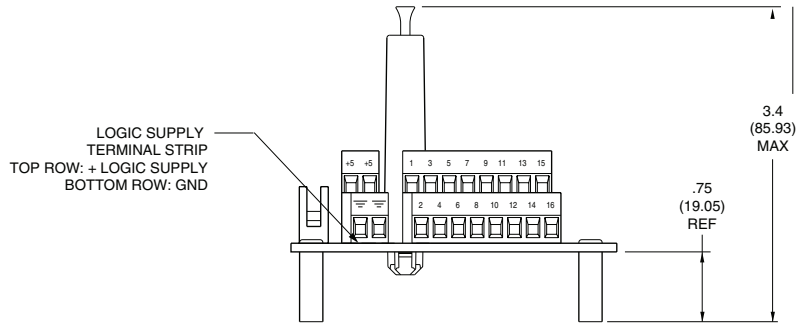
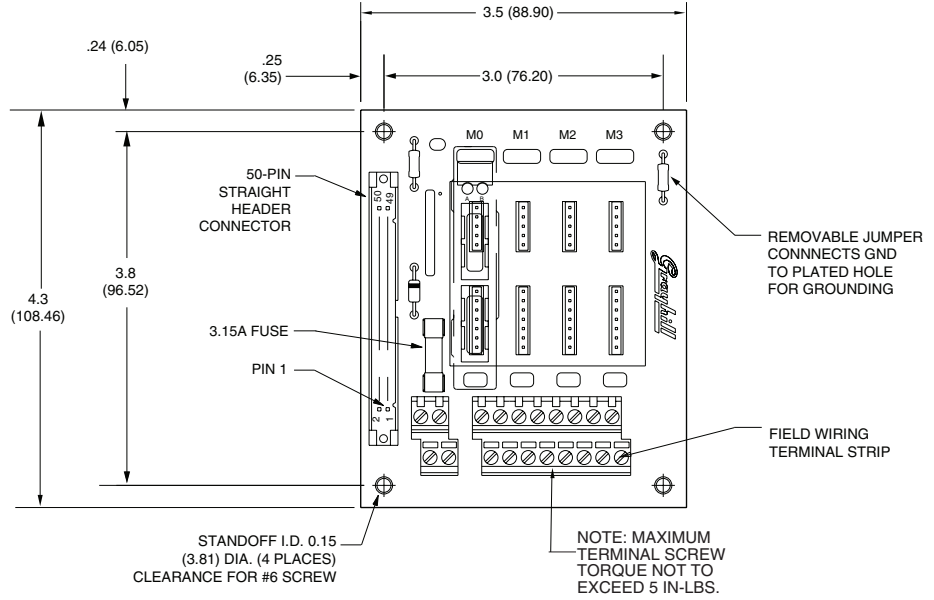
Dimensions are shown in inches (and millimeters).
All tolerances are ± 0.010 (0,25) unless otherwise specified.



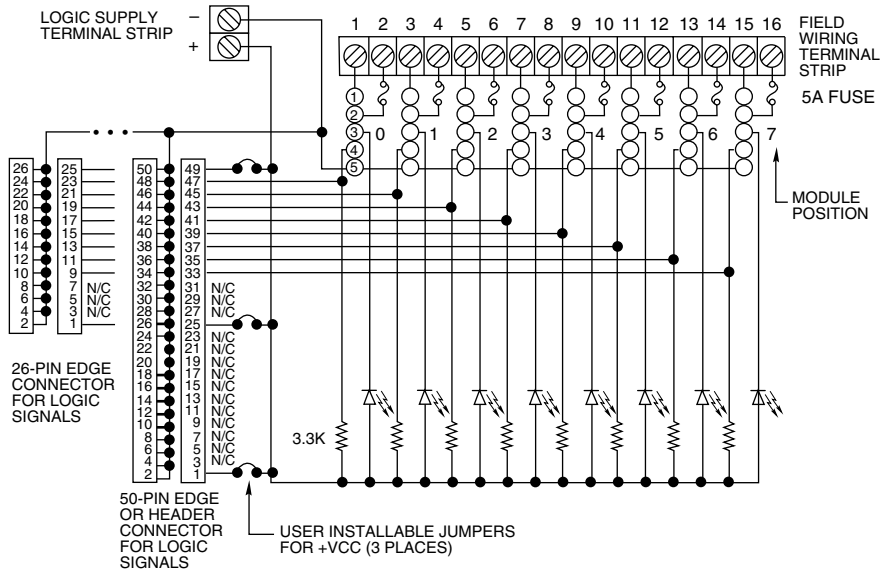
8 CHANNEL RACK: OpenLine® System 50

Part No. 70LRCK8

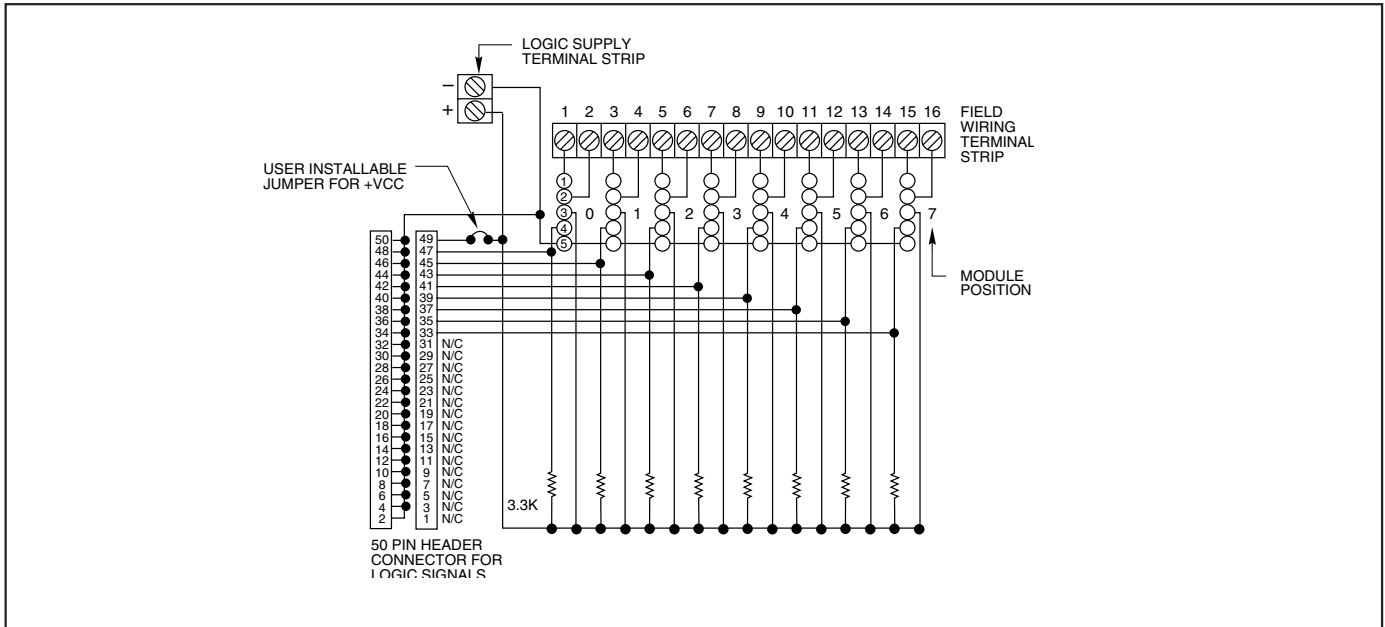
Dimensions are shown in inches (and millimeters).
All tolerances are ± 0.010 (0,25) unless otherwise specified.



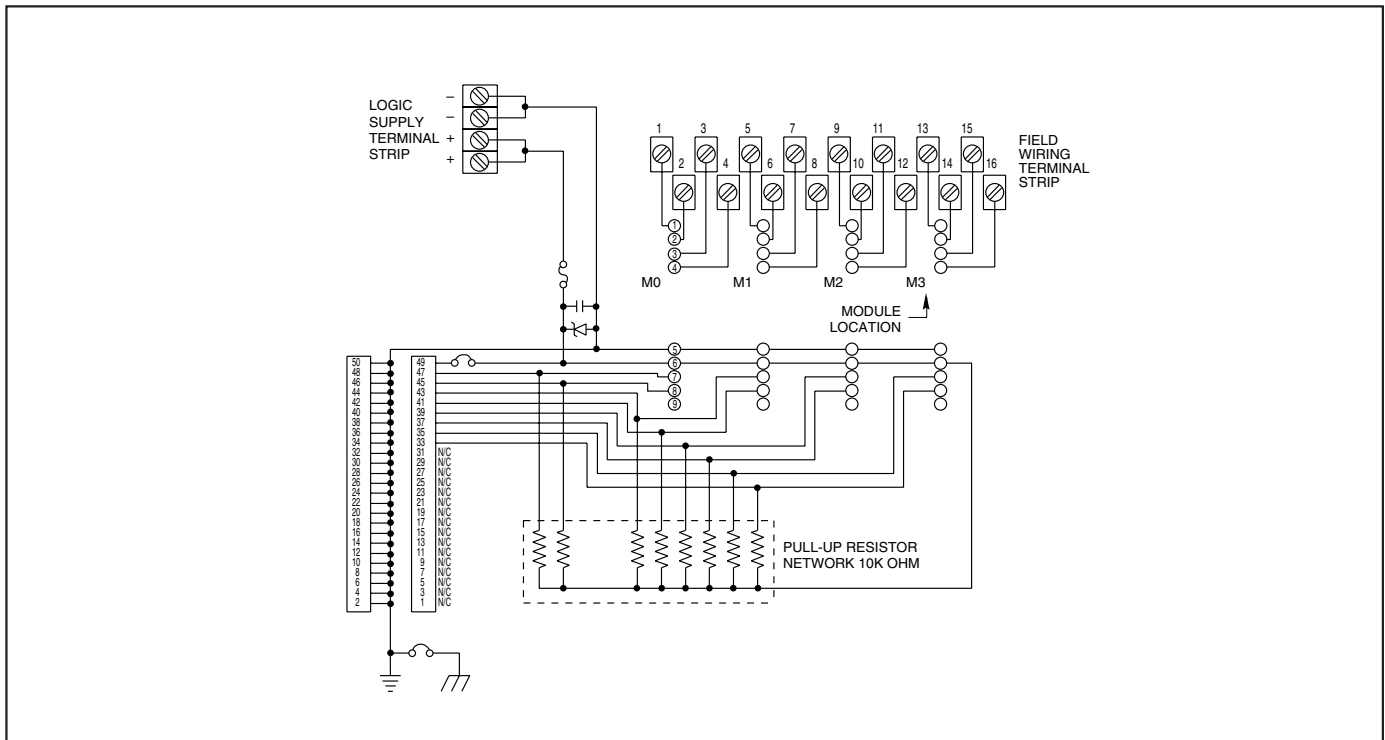
SCHEMATIC: Part Nos. 70RCK8, 70MRCK8



SCHEMATIC: Part No. 70GRCK8



SCHEMATIC: Part No. 70LRCK8



ORDERING INFORMATION (modules ordered separately)

Part Number	I/O	Description	UL	CSA	Style
70RCK8	8	Card edge	X	X	Standard
70RCK8-HL	8	50-pin header with ejector levers	X	X	Standard
70MRCK8-EC	8	Card edge	X	X	Mini
70MRCK8-HL	8	50-pin header with ejector levers	X	X	Mini
70GRCK8-HL	8	50-pin header with ejector levers	X	X	G5
70LRCK8-HL	8	50-pin header with ejector levers	Pend	Pend	OpenLine®
70LRCK8-DIN	8	50-pin header with DIN rail mount	Pend	Pend	OpenLine®

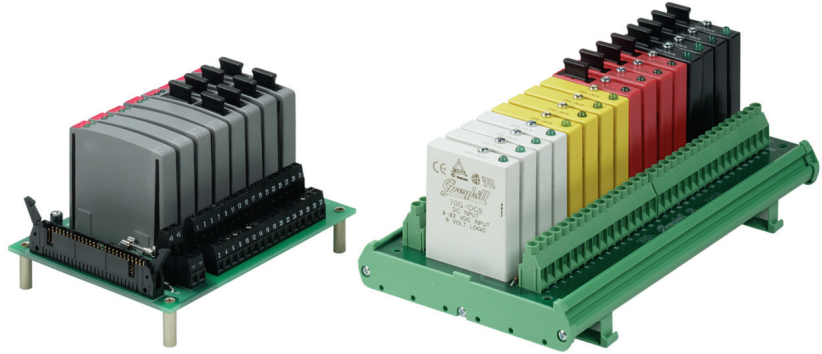
Available from your local Grayhill Distributor. For prices and discounts, contact a local Sales Office, an authorized local Distributor or Grayhill.

System 50

RACKS 16 Channel

FEATURES

- For use with System 50 Style Controllers
- Available for Standard, Miniature, G5 and OpenLine® Modules
- Panel and DIN Rail Mount Versions
- UL, CSA Certified



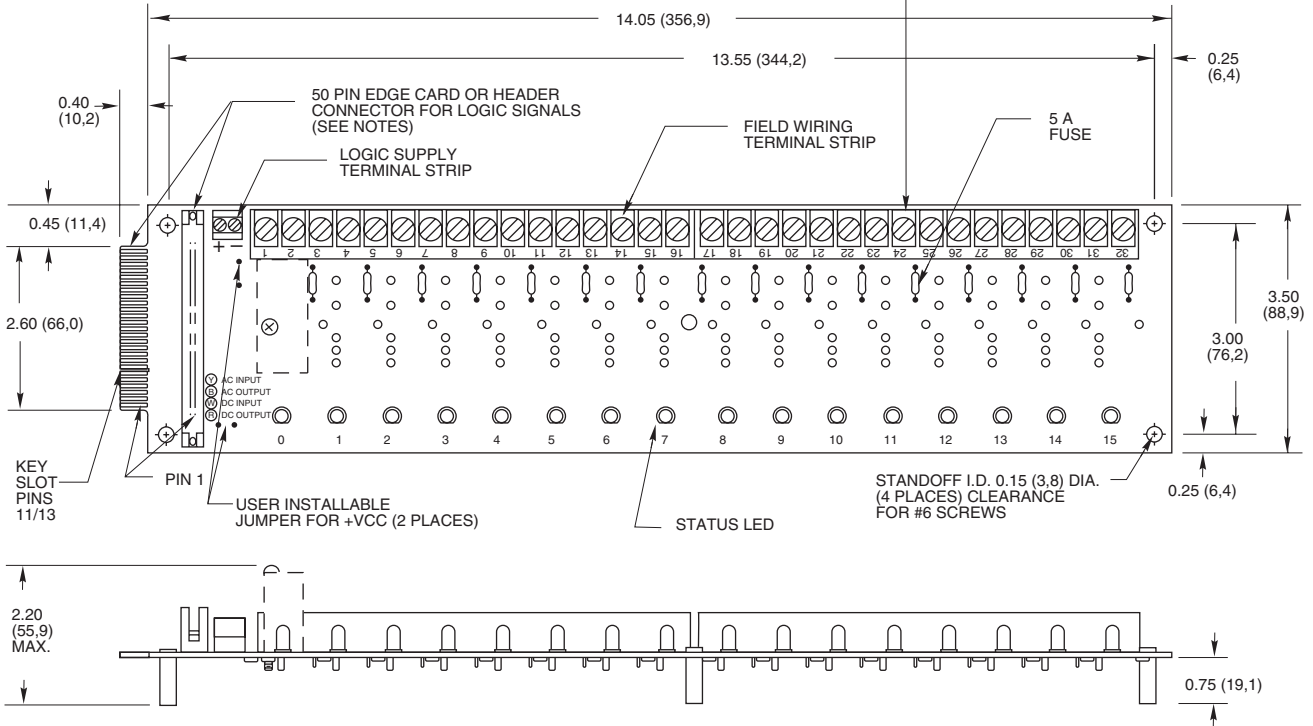
16 CHANNEL RACK: Standard

Part No. 70RCK16

Dimensions are shown in inches (and millimeters).

All tolerances are ± 0.010 (0,25) unless otherwise specified.

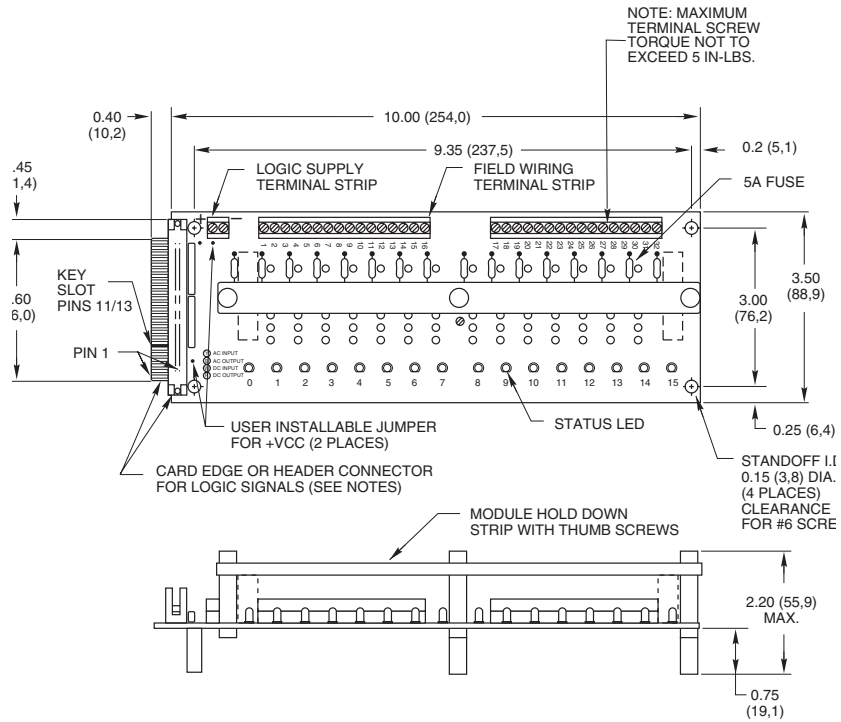
NOTE: MAXIMUM TERMINAL SCREW TORQUE NOT TO EXCEED 5 IN-LBS.



16 CHANNEL RACK: Miniature

Part No. 70MRCK16

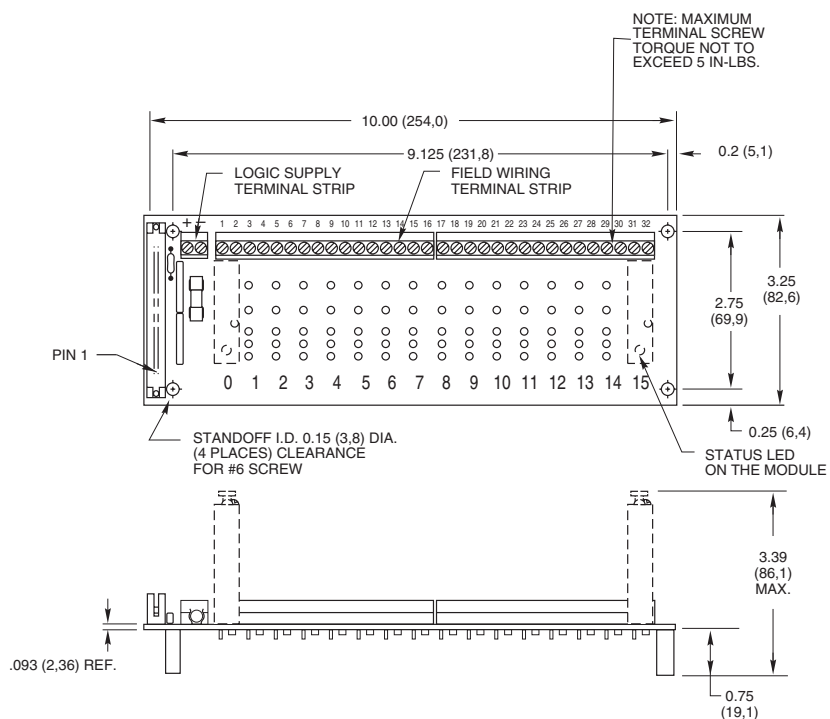
Dimensions are shown in inches (and millimeters).
All tolerances are ± 0.010 (0,25) unless otherwise specified.



16 CHANNEL RACK: G5

Part No. 70GRCK16

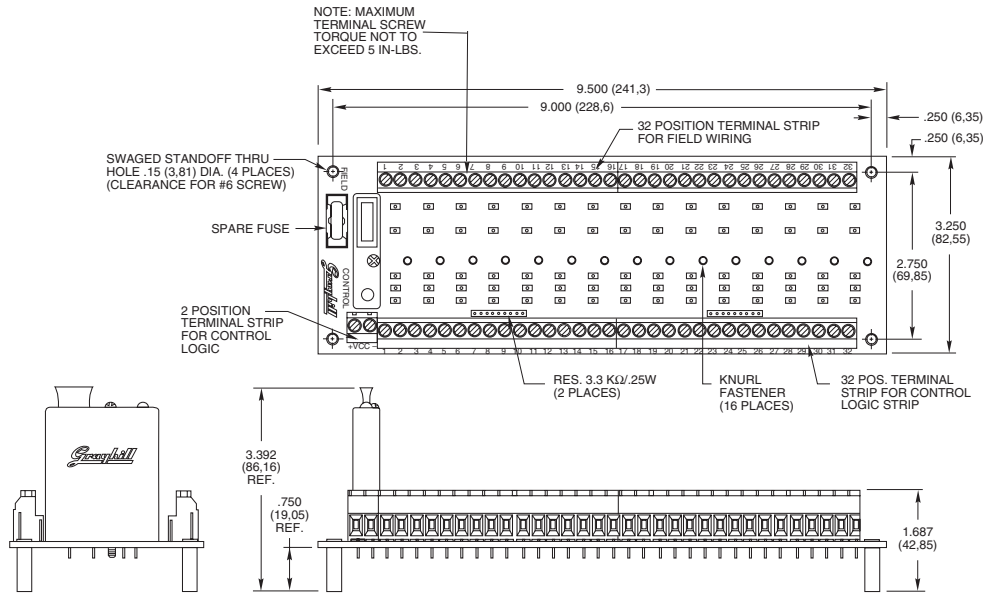
Dimensions are shown in inches (and millimeters).
All tolerances are ± 0.010 (0,25) unless otherwise specified.



System 50

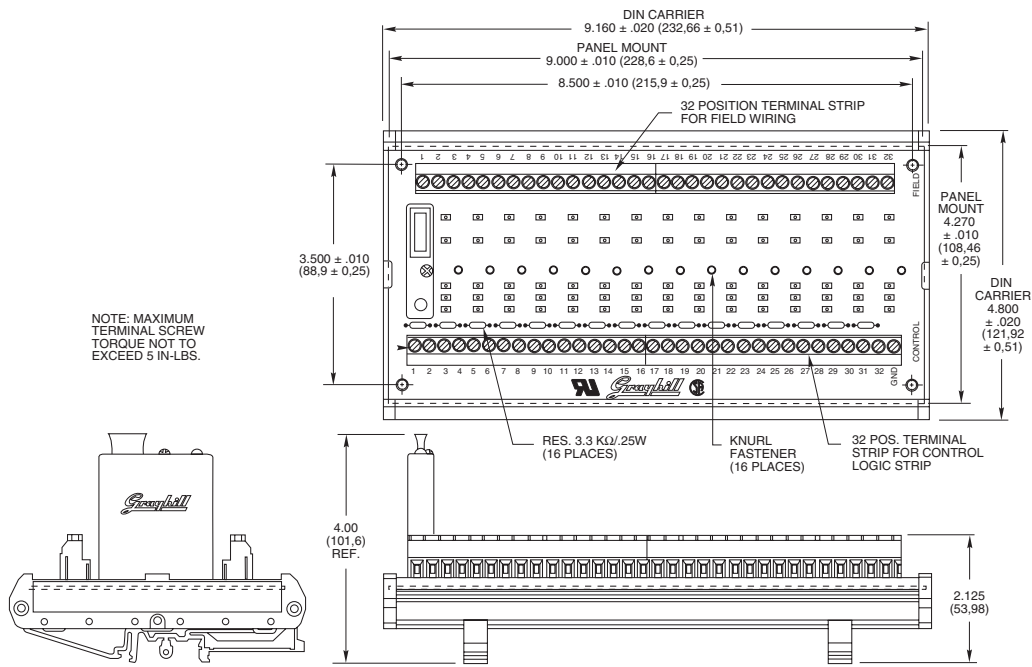
16 CHANNEL RACK: G5 Control and Field Connection Terminal Blocks

Part No. 70GRCK16T
 Dimensions are shown in inches
 (and millimeters).
 All tolerances are ± 0.010 (0,25)
 unless otherwise specified.



16 CHANNEL RACK: G5 Channel-to-Channel Isolation

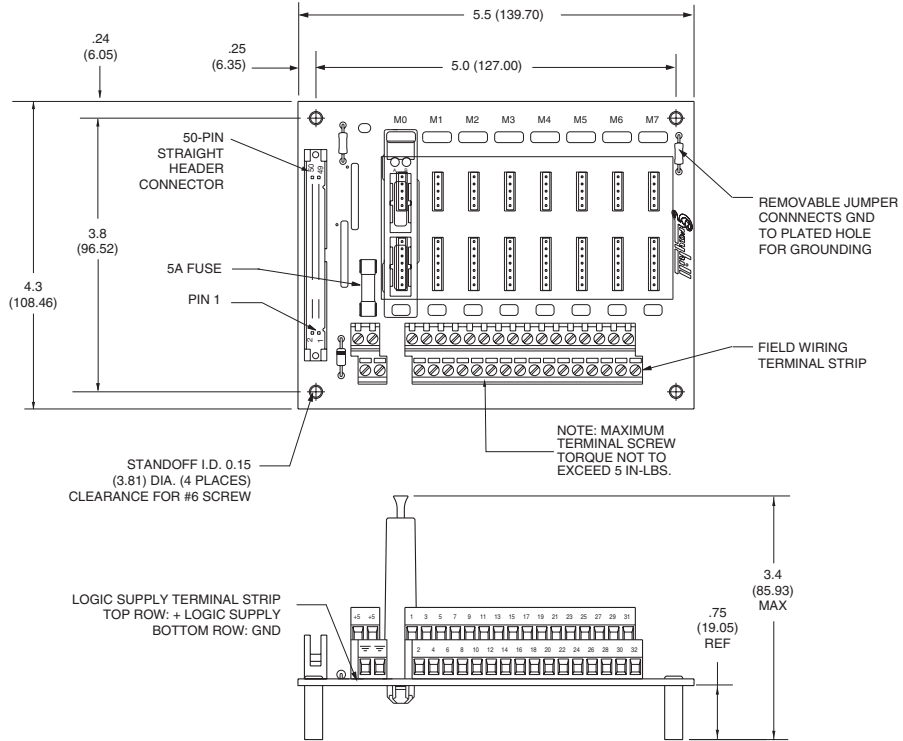
Part No. 70GRCK16I and 70GRCK16I-DIN
 Dimensions are shown in inches
 (and millimeters).
 All tolerances are ± 0.010 (0,25)
 unless otherwise specified.



16 CHANNEL RACK: OpenLine® for System 50

Part No. 70LRCK16-HL

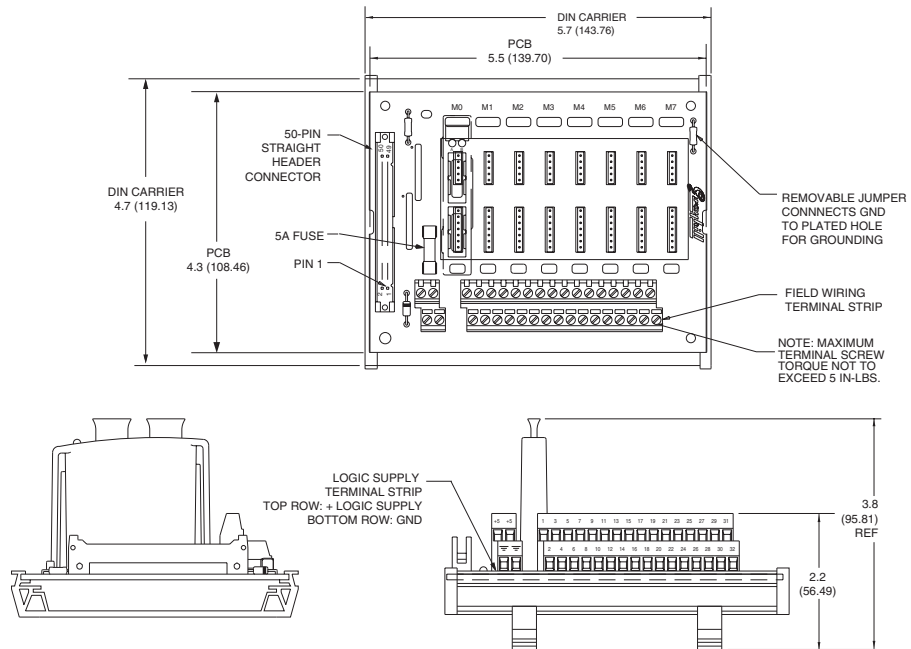
Dimensions are shown in inches (and millimeters).
All tolerances are ± 0.010 (0,25) unless otherwise specified.



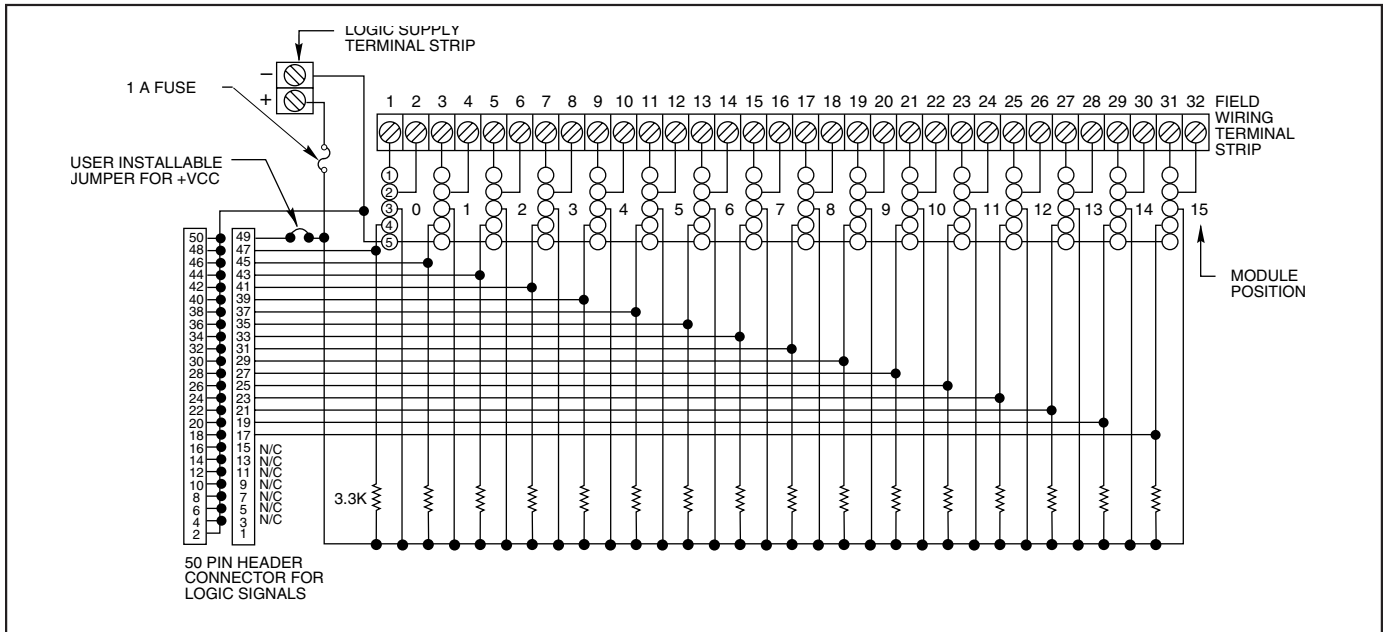
16 CHANNEL RACK: OpenLine® w/ DIN Rail Mount for System 50

Part No. 70LRCK16-DIN

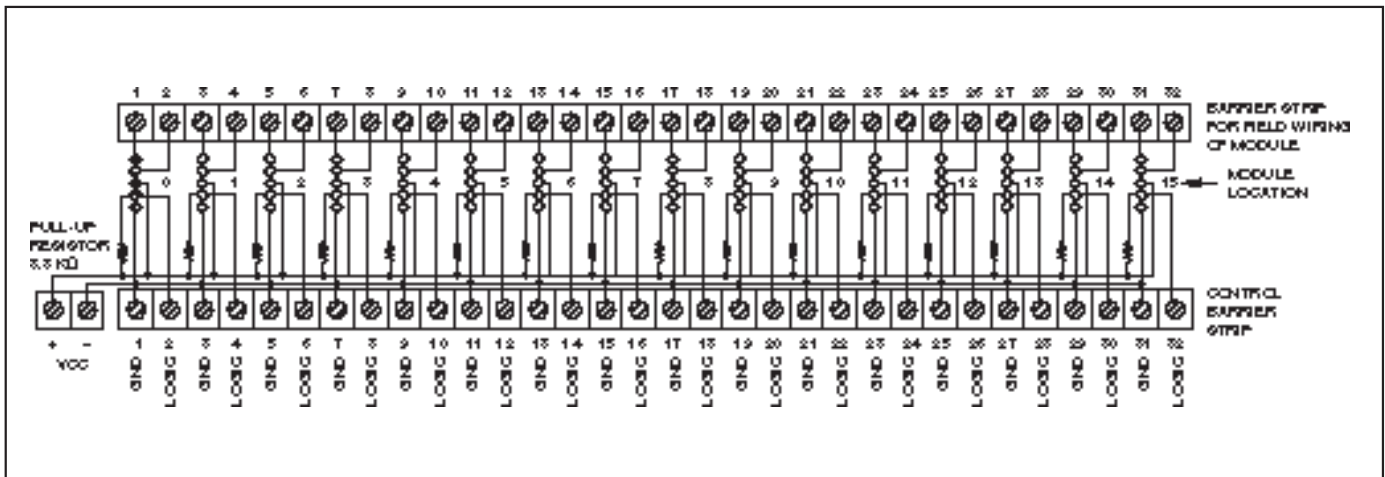
Dimensions are shown in inches (and millimeters).
All tolerances are ± 0.010 (0,25) unless otherwise specified.



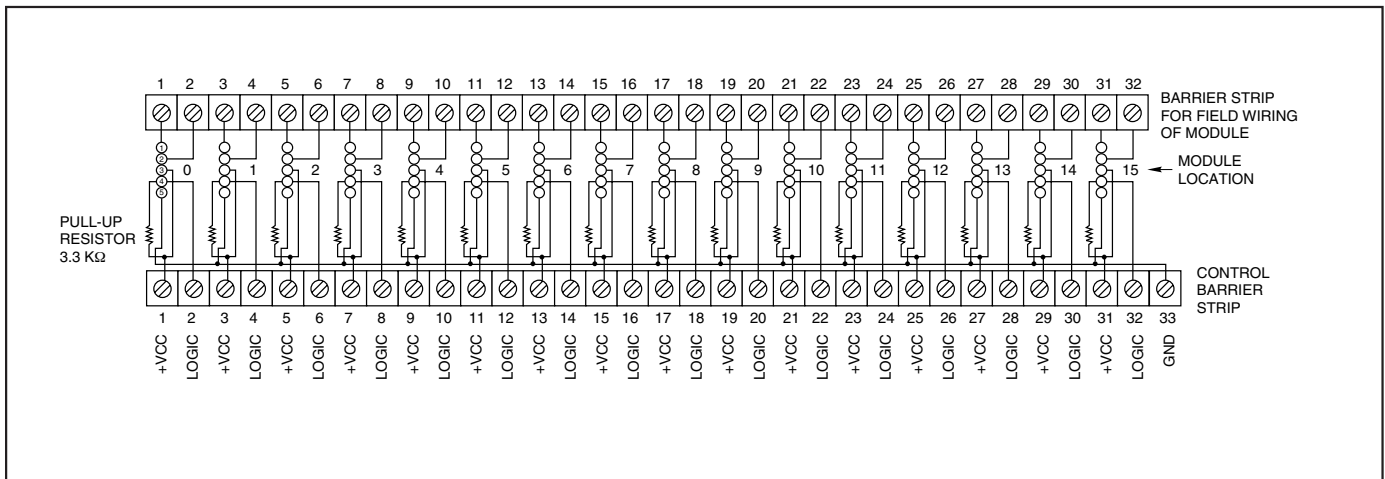
SCHEMATIC: Part No. 70GRCK16



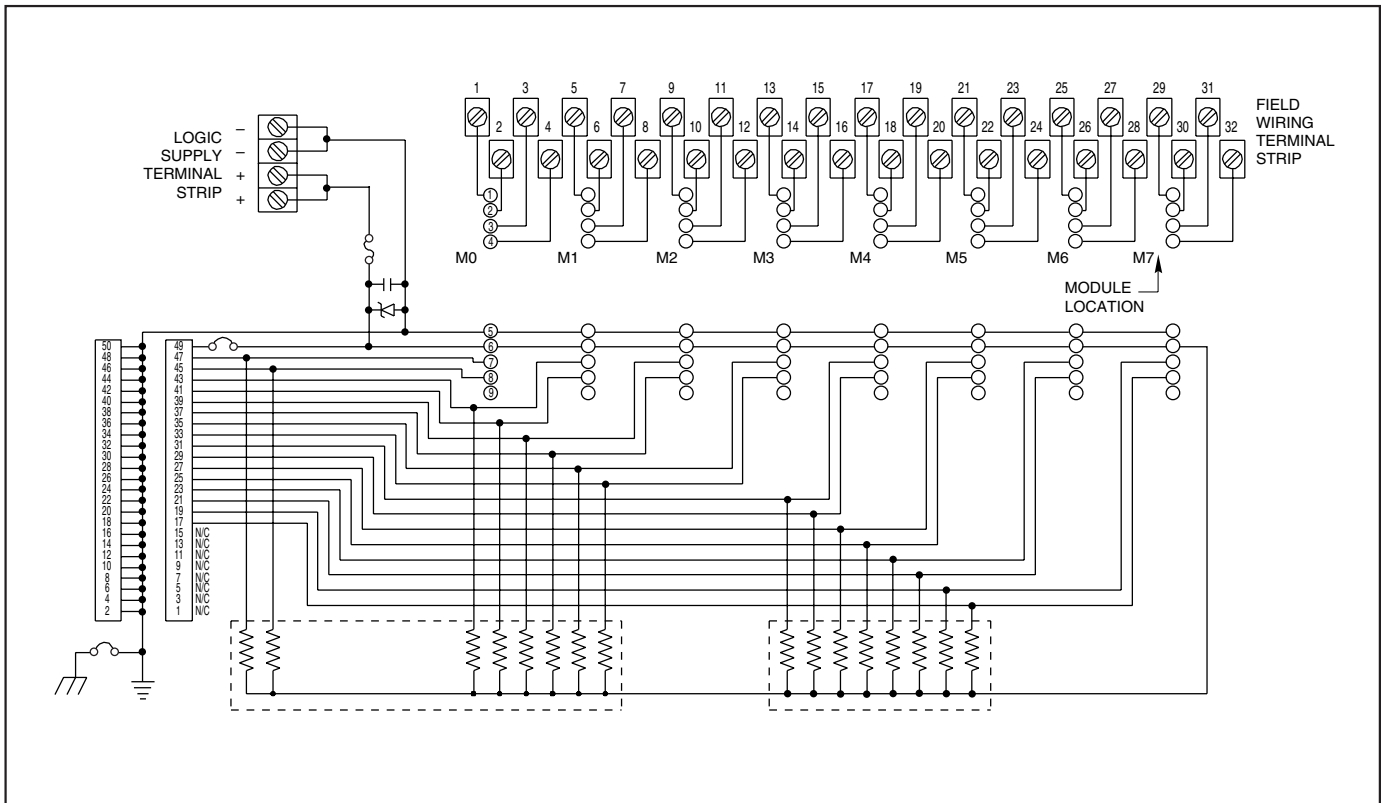
SCHEMATIC: Part No. 70GRCK16T



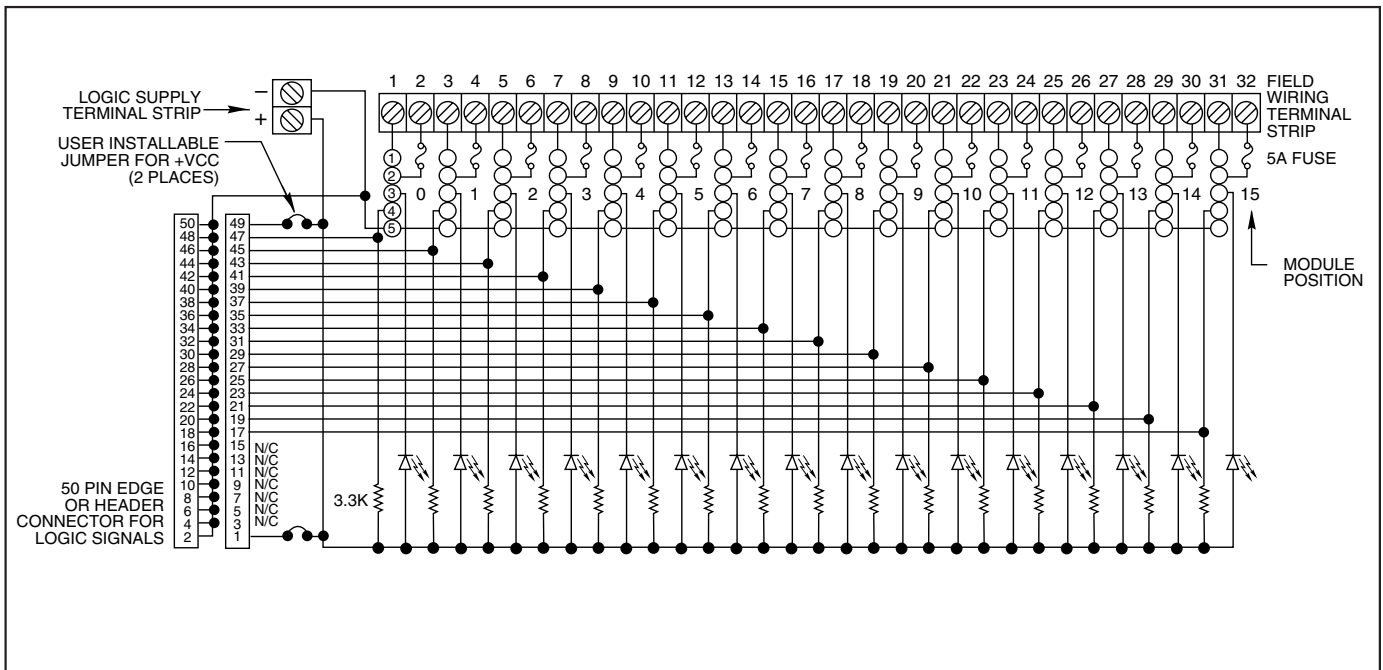
SCHEMATIC: Part Nos. 70GRCK16I AND 70GRCK16I-DIN



SCHEMATIC: Part No. 70LRCK16-HL, -DIN



SCHEMATIC: Part Nos. 70RCK16 and 70MRCK16



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ORDERING INFORMATION (modules ordered separately)

Part Number	I/O	Description	UL	CSA	Style
70RCK16	16	Card edge	X	X	Standard
70RCK16-HL	16	50-pin header with ejector levers	X	X	Standard
70MRCK16-EC	16	Card edge	X	X	Mini
70MRCK16-HL	16	50-pin header with ejector levers	X	X	Mini
70GRCK16-HL	16	50-pin header with ejector levers	X	X	G5
70LRCK16-HL	16	50-pin header with ejector levers	X	X	OpenLine®
70LRCK16-DIN	16	50-pin header with DIN rail mnt.	X	X	OpenLine®
70GRCK16I	16	Positive or negative true logic* -Panel Mount	X	X	G5
70GRCK16I-DIN	16	Positive or negative true logic* -DIN rail mount	X	X	G5
70GRCK16T	16	Negative true logic*-Panel Mount	X	X	G5

Available from your local Grayhill Distributor. For prices and discounts, contact a local Sales Office, an authorized local Distributor, or Grayhill.

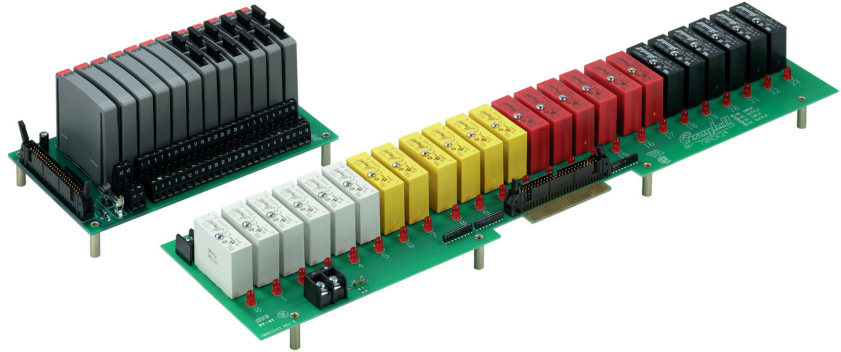
* Positive true logic applies to output modules only.

RACKS

24 Channel (In-Line)

FEATURES

- For use with System 50 Style Controllers
- Available for Standard, Miniature, G5 and OpenLine® Modules
- UL, CSA Certified

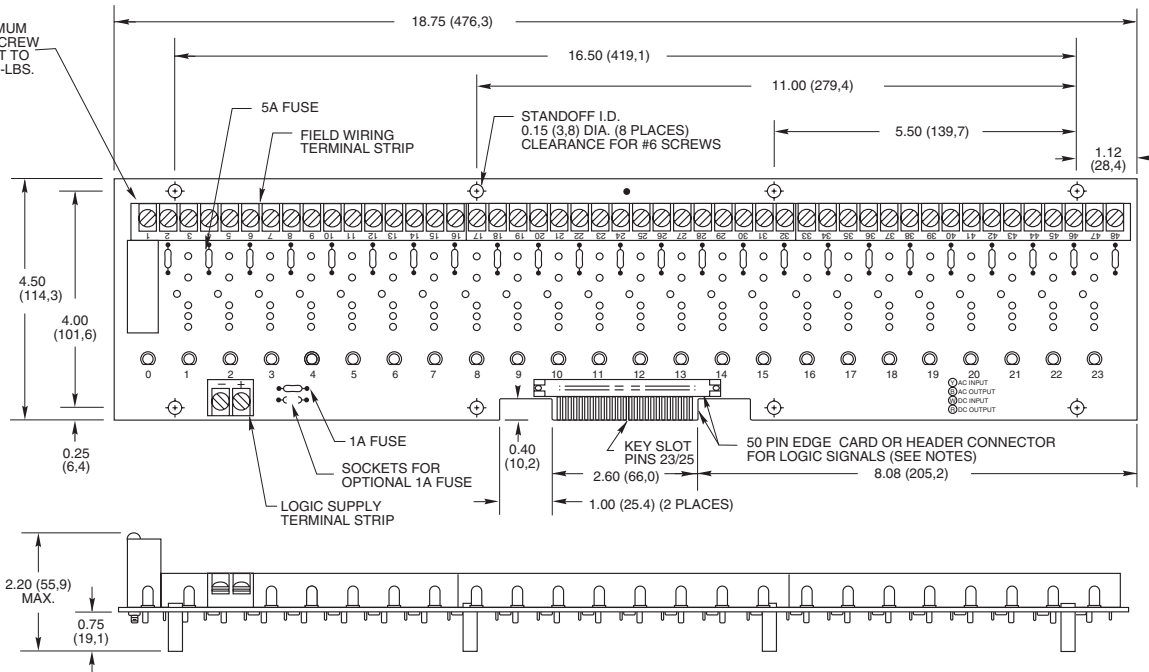


24 CHANNEL RACK: Standard

Part No. 70RCK24

Dimensions are shown in inches (and millimeters).
Tolerances are ± 0.010 (0,25) unless indicated otherwise.

NOTE: MAXIMUM TERMINAL SCREW TORQUE NOT TO EXCEED 5 IN-LBS.

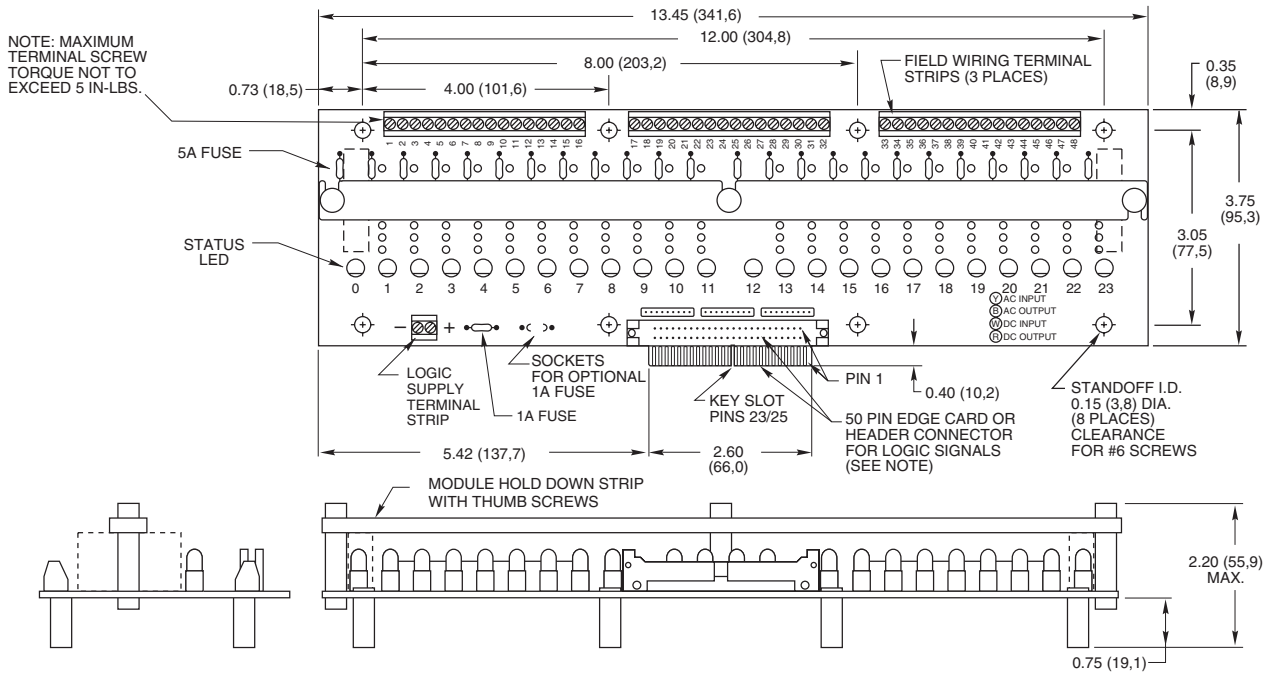


System 50

24 CHANNEL RACK: Miniature

Part No. 70MRCK24

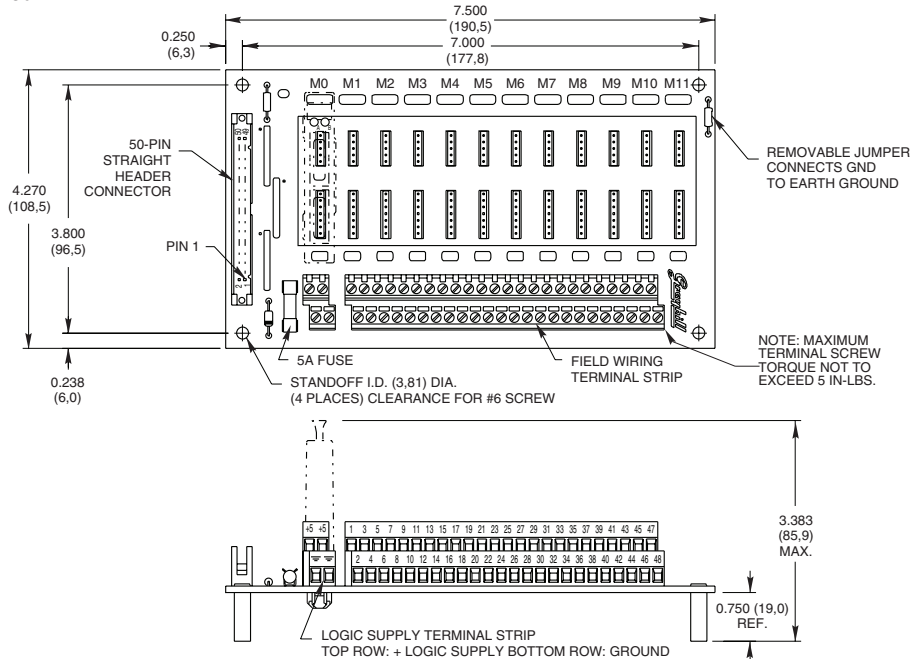
Dimensions are shown in inches (and millimeters).
All tolerances are ± 0.010 (0,25) unless otherwise specified.



24 CHANNEL RACK: OpenLine®

Part No. 70LRCK24

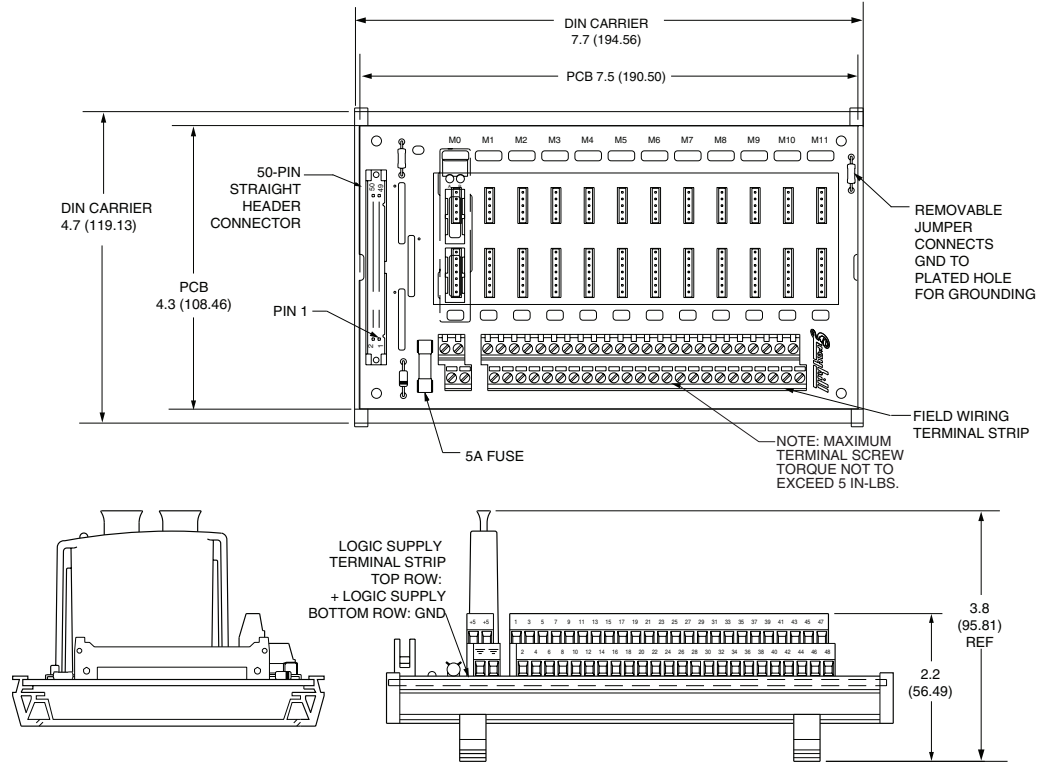
Dimensions are shown in inches (and millimeters).
All tolerances are ± 0.010 (0,25) unless otherwise specified.



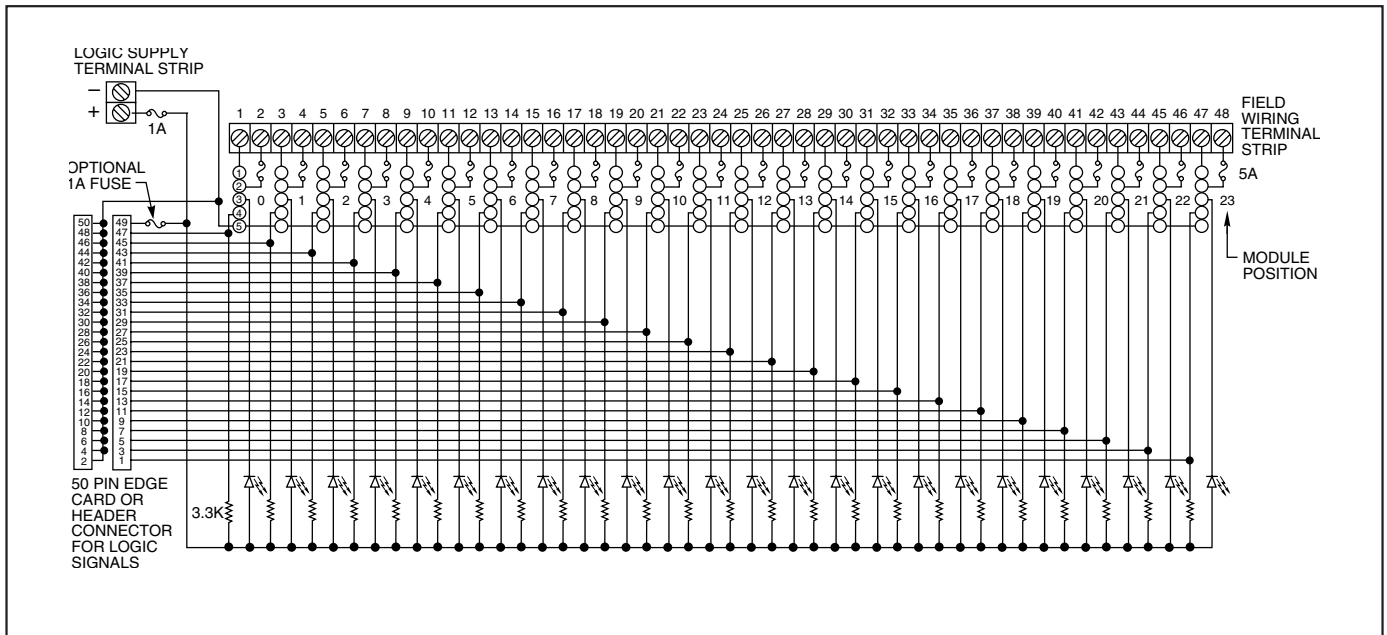
24 CHANNEL RACK: OpenLine® DIN Rail Mount for System 50

Part No. 70LRCK24-DIN

Dimensions are shown in inches (and millimeters).
 All tolerances are ± 0.010 (0,25) unless otherwise specified.

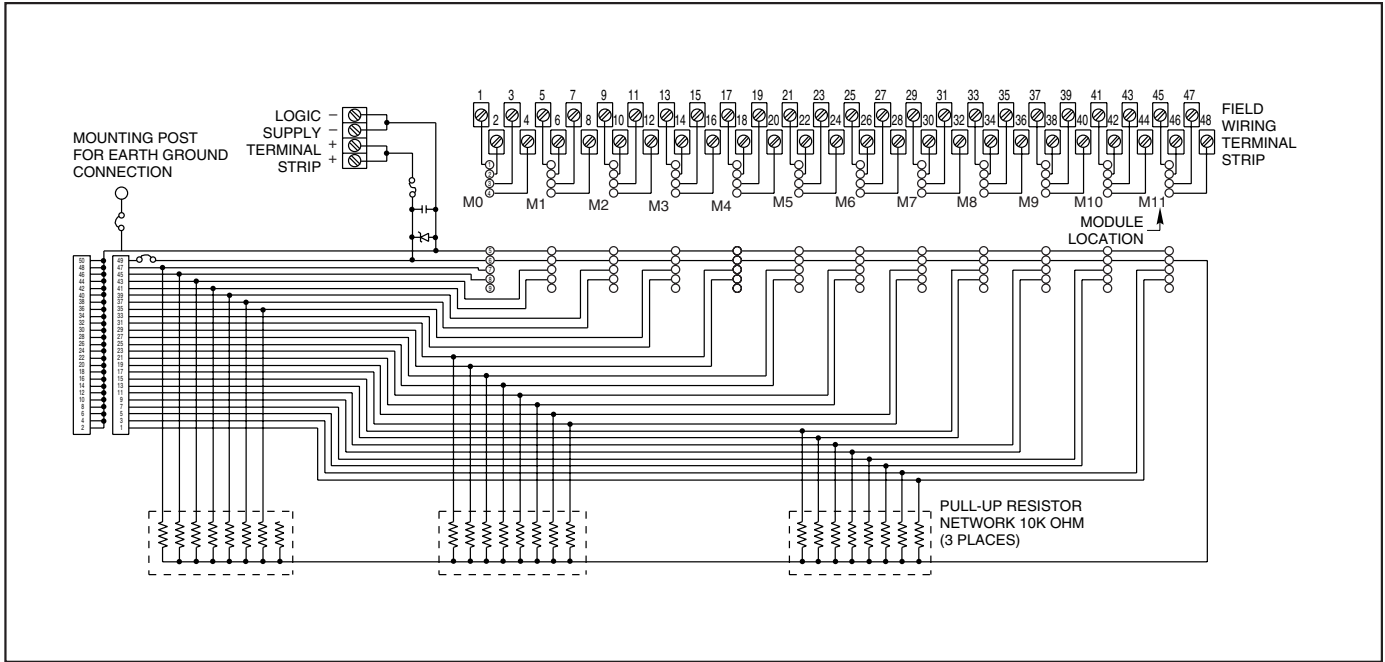


SCHEMATIC: Part Nos. 70RCK24 and 70MRCK24



System 50

SCHEMATIC: Part No. 70LRCK24



ORDERING INFORMATION (modules ordered separately)

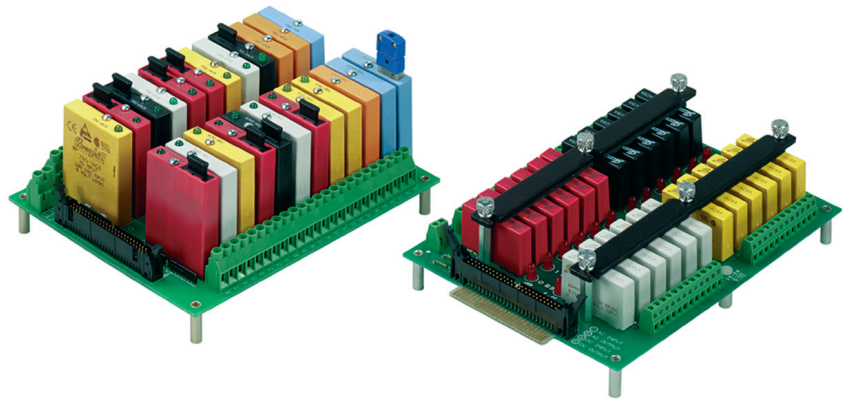
Part Number	I/O	Description	UL	CSA	Style
70RCK24	24	Card edge	X	X	Standard
70RCK24-HL	24	50-pin header with ejector levers	X	X	Standard
70MRCK24-EC	24	Card edge	X	X	Mini
70MRCK24-HL	24	50-pin header with ejector levers	X	X	Mini
70LRCK24-HL	24	50-pin header with ejector levers	X	X	OpenLine®
70LRCK24-DIN	24	50-pin header, DIN rail mount	X	X	OpenLine®

Available from your local Grayhill Distributor. For prices and discounts, contact a local Sales Office, an authorized local Distributor, or Grayhill.

RACKS 24 Channel

FEATURES

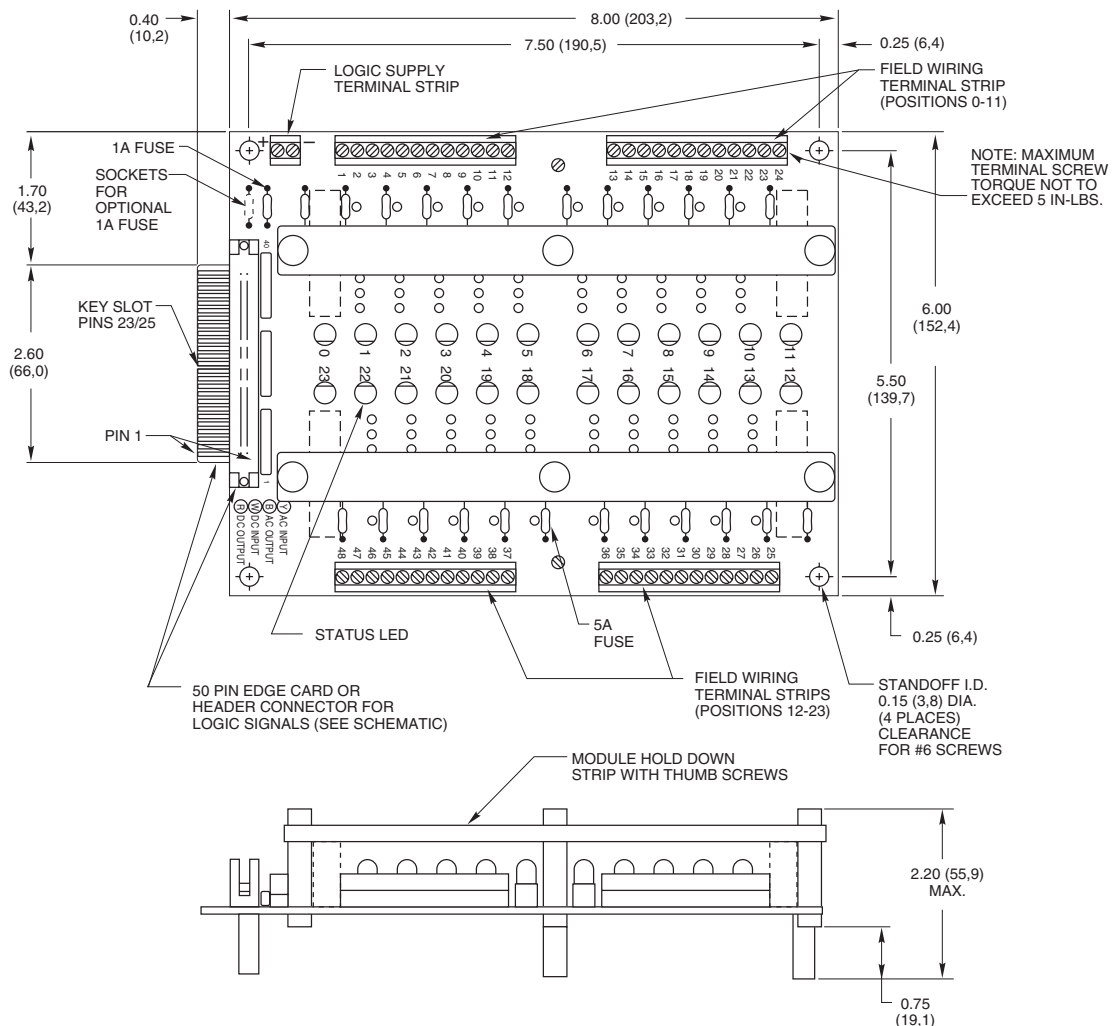
- For use with System 50 Style Controllers
- Available for Miniature, G5 and OpenLine® Modules
- UL, CSA Certified



24 CHANNEL RACK: Miniature

Part No. 70MRCQ24

Dimensions are shown in inches (and millimeters).
Tolerances are ± 0.010 (0,25) unless otherwise specified.



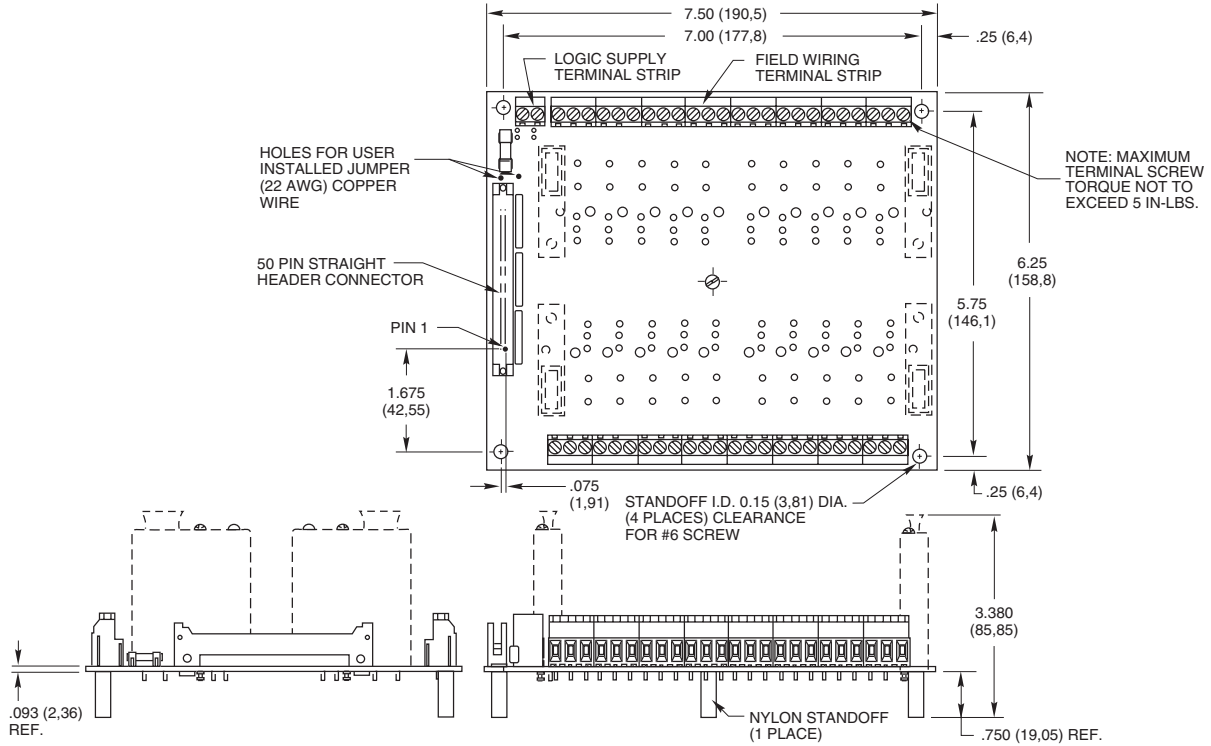
System 50

24 CHANNEL RACK: G5

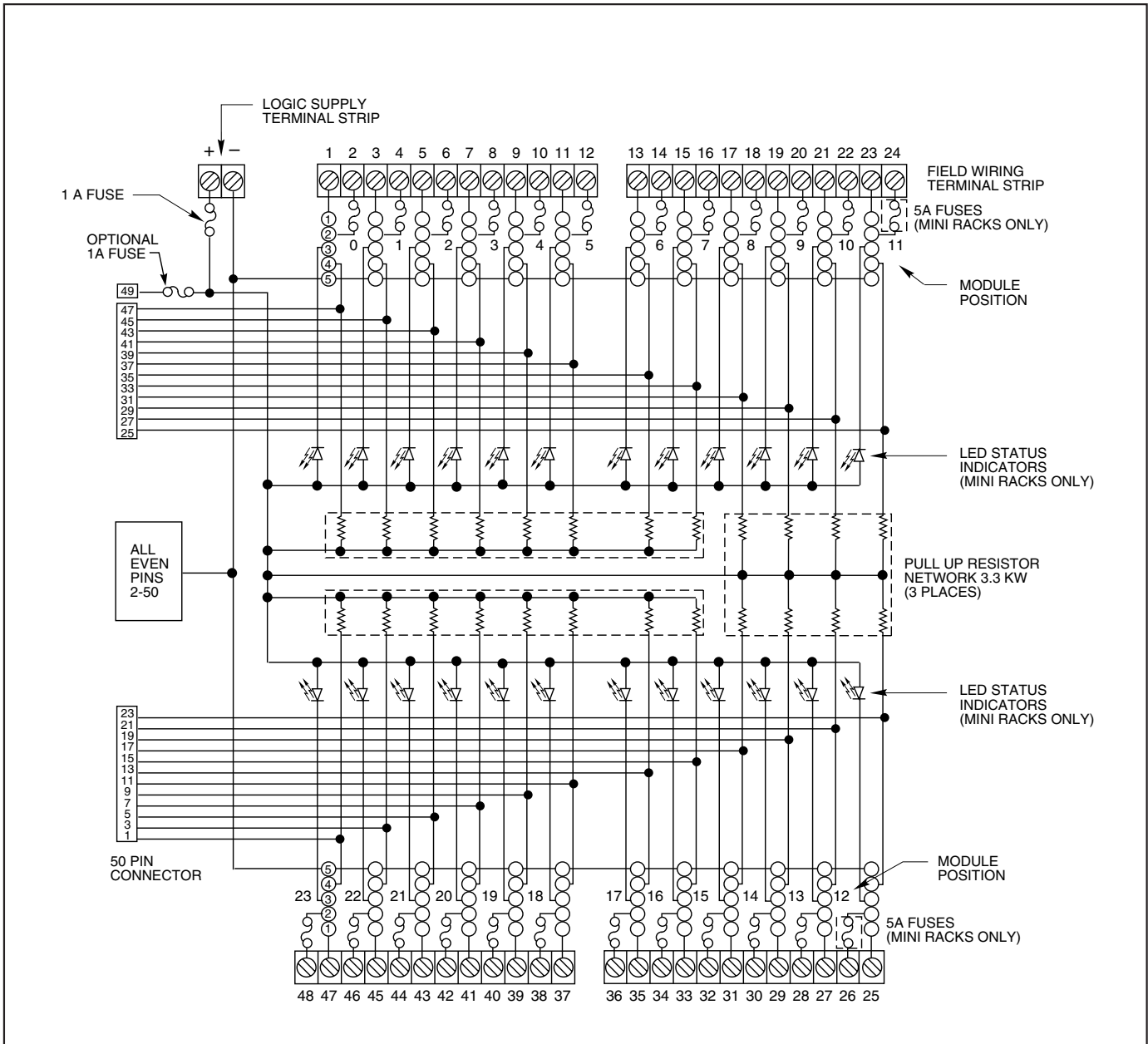
Part No. 70GRCQ24

Dimensions are shown in inches
(and millimeters).

All tolerances are ± 0.010 (0,25)
unless otherwise specified.



SCHEMATIC: PART NO. 70MRCQ24 AND 70GRCQ24



ORDERING INFORMATION (modules ordered separately)

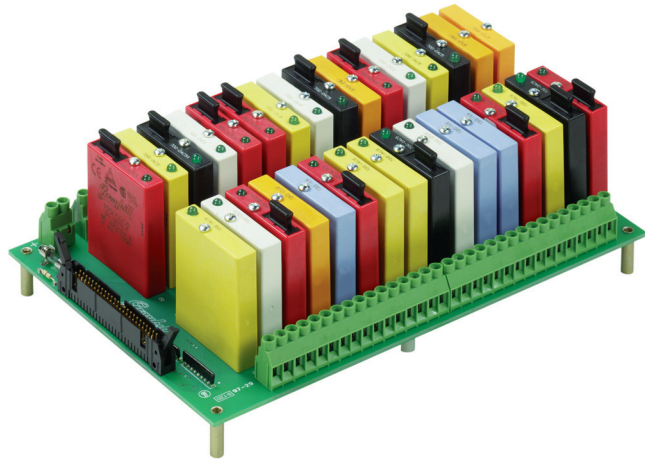
Part Number	I/O	Description	UL	CSA	Style
70MRCQ24-EC	24	Card edge	X	X	Mini
70MRCQ24-HL	24	50-pin header with ejector levers	X	X	Mini
70GRCQ24-HL	24	50-pin header with ejector levers	X	X	G5

Available from your local Grayhill Distributor. For prices and discounts, contact a local Sales Office, an authorized local Distributor, or Grayhill.

RACKS 32 Channel

FEATURES

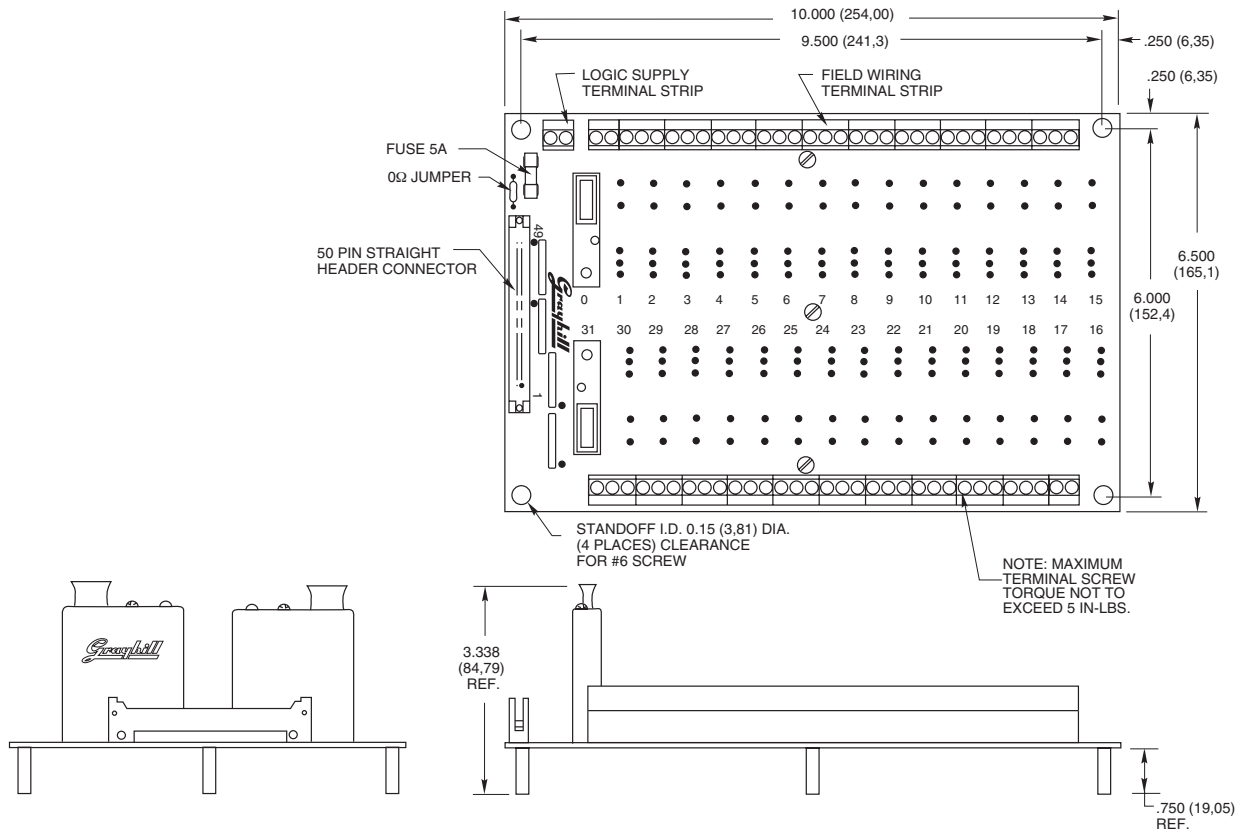
- For Use with MicroDac or PAMUX Controllers
- Available for G5 I/O Modules
- UL, CSA Certified



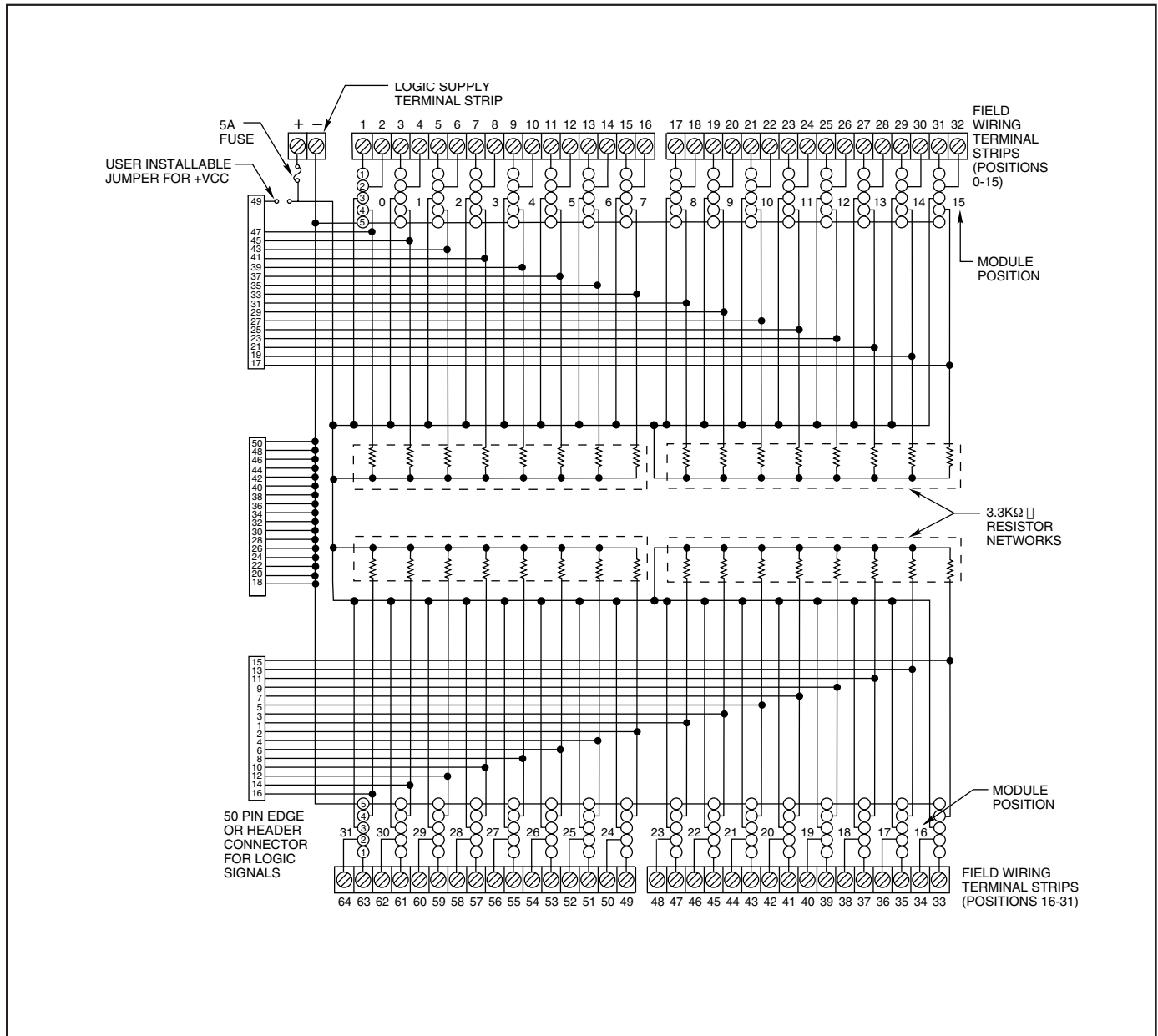
32 CHANNEL RACK: G5

Part No. 70GRCM32

Dimensions are in inches (and millimeters).
All tolerances are ± 0.010 (0,25) unless indicated otherwise.



SCHEMATIC: Part No. 70GRCM32



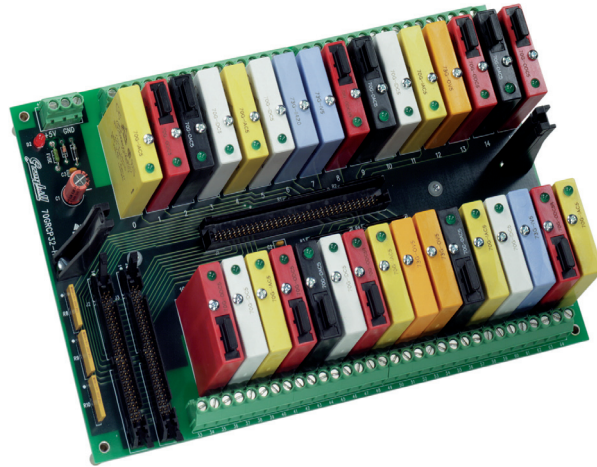
ORDERING INFORMATION (modules ordered separately)

Part Number	I/O	Description	UL	CSA	Style
70GRCM32-HL	32	50-pin header with ejector levers	X	X	G5

Available from your local Grayhill Distributor.
For prices and discounts, contact a local Sales Office, an authorized local Distributor, or Grayhill.

RACKS

32 Channel Parallel Controller Board for 72-PMX-32D



FEATURES

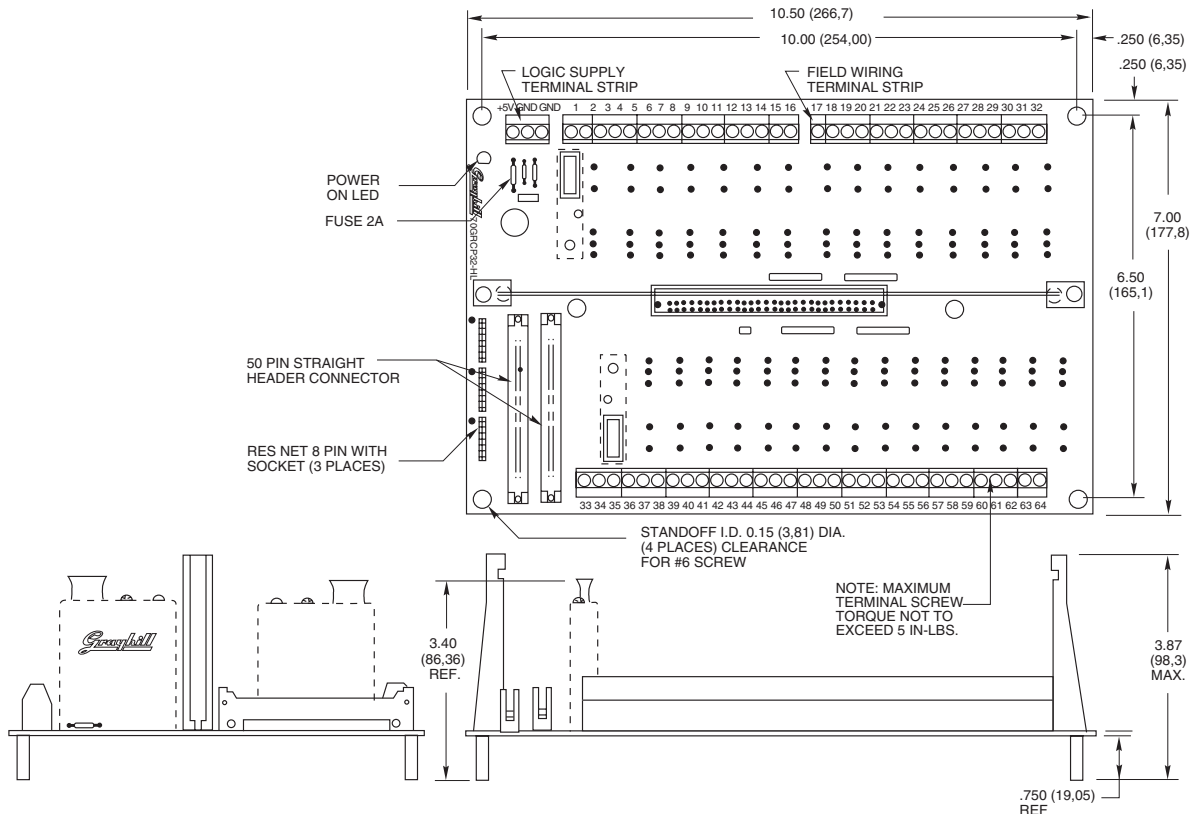
- For Use with PAMUX Controllers
- Available for G5 I/O Modules
- UL, CSA Certified



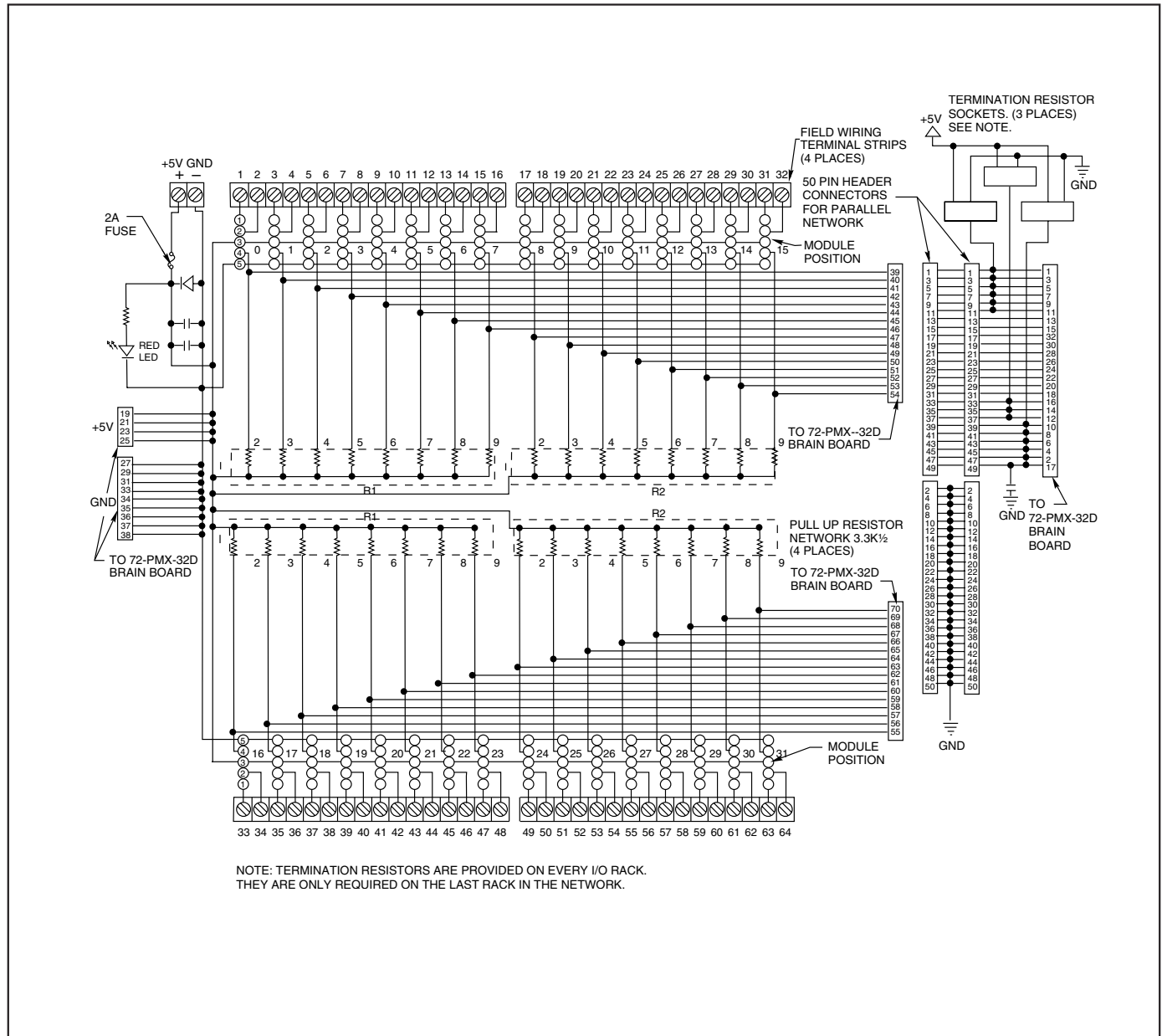
DIMENSIONS In inches (and millimeters)

Part No. 70GRCP32

Dimensions are shown in inches (and millimeters).
All tolerances are ± 0.010 (0,25) unless otherwise specified.



SCHEMATIC: Part No. 70GRCP32



ORDERING INFORMATION (modules ordered separately)

Part Number	I/O	Description	UL	CSA	Style
70GRCP32-HL	32	50-pin header with ejector levers	X	X	G5

Available from your local Grayhill Distributor. For prices and discounts, contact a local Sales Office, an authorized local Distributor, or Grayhill.