MCL488

Multi-Channel Loads

Plug & Play

Features

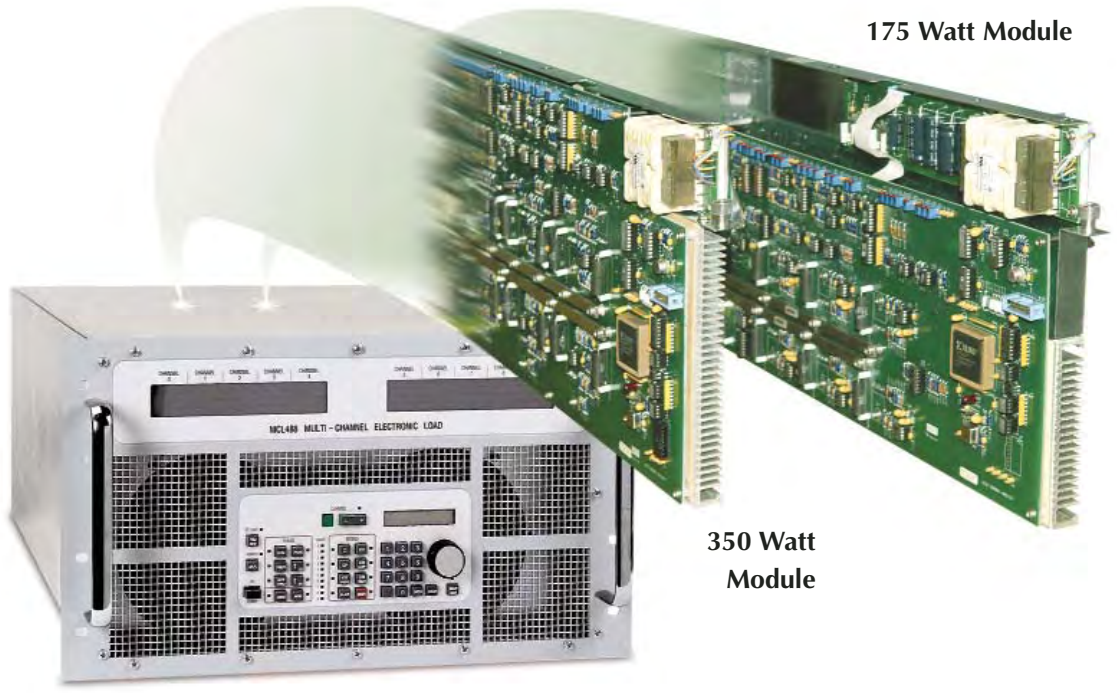
- **Front Panel, Analog IEEE 488, or RS232 Control**
- **60 Amp, 350 Watt Modules 30 Amp, 175 Watt Modules**
- **Channels in 50V, 100V, 400V, or 600V Configurations**
- **Paralleling Channels for Simultaneous control**
- **Operation to a Fraction of a Volt**
- **Current, Resistance, Voltage and Power Loading**
- **Pulse Operation, Including Three Step Staircase**
- **Channels May be Easily Added in the Field**

Product Overview

The MCL488 series of multi-channel electronic loads are ideal for ATE system and bench-top applications that require a multiple channel load with maximum flexibility. Each system consists of a sub-rack housing and modules. The load modules are rated at 50V, 100V, 400V or 600V and are rated for 175 watt and 350 watt operation. Up to 10 modules fit into a 19"W x 10.5"H x 23"D sub-rack. The MCL488 is easily upgraded in the field by adding modules.

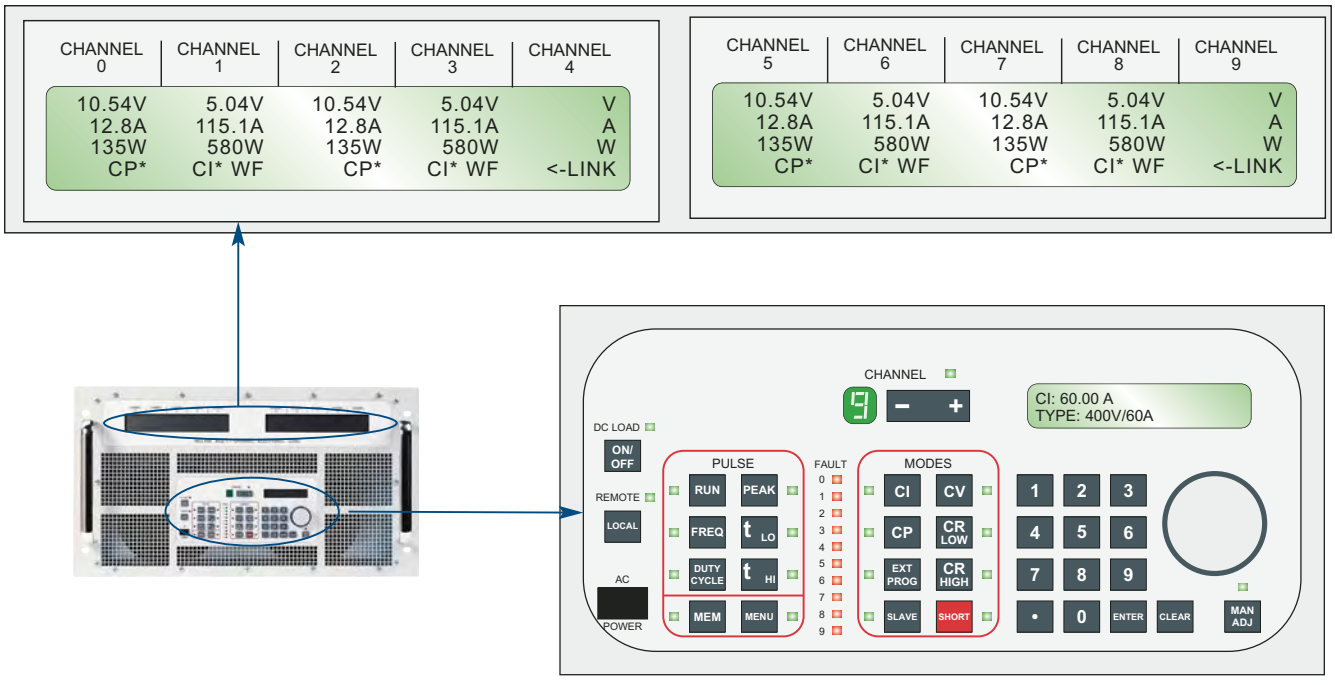
Once in the sub-rack, the modules are user configurable. The load modules can be paralleled using the paralleling straps provided, configured either from the front panel or computer bus, and controlled as a single channel. 350 watt and 175 watt modules may be used in any configuration, providing maximum flexibility. All functions that are available for a single module are available in the multi-channel configuration.

Complete operation including Constant Current, Constant Resistance, Constant Power and Constant Voltage is available when operating a single module or when the modules are paralleled. All functions, including linking modules in parallel through software, are programmed via the user-friendly front panel, IEEE-488 bus or the optional RS232 interface. The front panel simultaneously displays voltage, current, wattage and mode for each installed module.



MCL488

The user enabled password protection locks out the front panel for ATE applications. Front panel control can be restored by entering a user selectable four-digit pass code.



Series Specifications

ANALOG MODE

Ext. Prog: 0 to 10 Volts input yields 0 to full scale loading in all operating modes.
Input Impedance: 330K Ohms
Prog. Response: Limited by internal adjustable slew rate limiter
Pulse Mode: Two level or three level pulsing available in any mode.
Min Pulse Duration(Any level): 10mSec
Max Pulse Duration(Any level): 16 Sec or 71 Min. with reduced resolution and minimum duration
Resolution: 1mSec
Adjustable Slew Rate:
Max: 0 to full scale in 10µS
Min: 0 to full scale in 10mS

OUTPUT SIGNALS

Current Sample Output:
Scaling: 10 Volts = full scale Current
Accuracy: ±0.5% of full scale

PROTECTION

Current Limit: 105% of full scale current
Power Limit: Approximately 370 Watts
Overvoltage: Load disconnect at approximately 105% of full scale voltage
Thermal: Load disconnect at internal temperature of 105°C
Undervoltage: Load inhibited at less than1 Volt, when enabled

METERS

Voltmeter Accuracy: ±0.25%, ±1 Digit
Ammeter Accuracy: ±0.25%, ±1 Digit
Wattmeter Accuracy: ±0.5%, ±2 Digits

IEEE-488 READBACKS

Current:
Resolution: 1/4000 of Full Scale
Accuracy: ±0.5% ±1 Digit
Voltage:
Resolution: 1/4000 of Selected Full Scale
Accuracy: ±0.5% ±1Digit
Power:
Resolution: 87.5 mW
Accuracy: ±0.5% ±1Digit

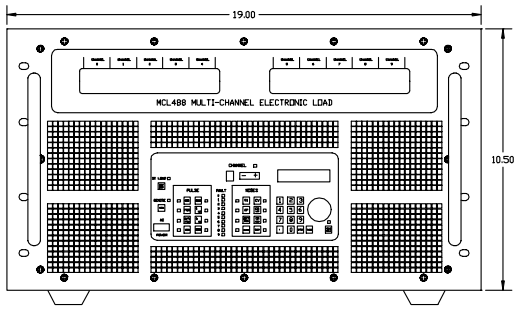
MECHANICAL

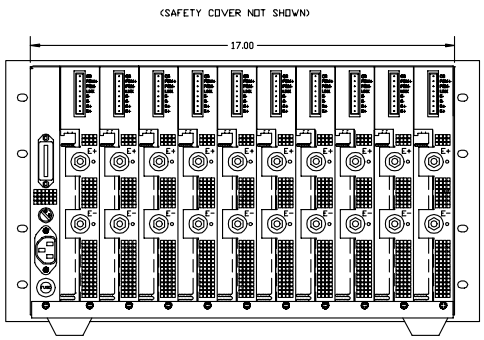
Module Size: 1.58″W x 10.5″H x 24″D
40mm W x 267mm H x 610mm D
Module Weight: 12 lbs. / 5.44kg
Chassis Size: 19″W x 10.5″H x 24″D
483mm W x 267mm H x 610mm D
Rack Mountable
Full Chassis Weight: 125 lbs. / 56.70kg

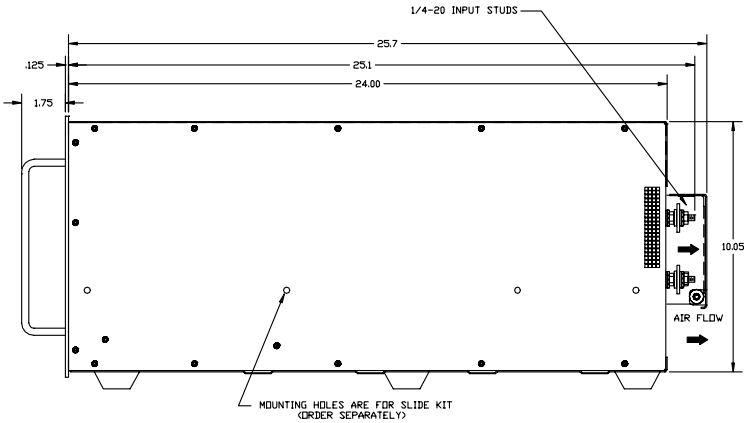
MISCELLANEOUS

AC Input: User Selectable
110VAC/220VAC,±10%, 48 - 62Hz @ 350W
Ambient Temp: 0°C to 40°C

Chassis Outline







Module Specifications

MCL488 50-100-350

OPERATING MODES

Constant Current: 0 to 100A

Prog. Accuracy: ±0.50%

Regulation: 100mA

Constant Resistance: Amps/Volt or Ohms

High A/V Mode: 0 - 200 A/V

Low Res. Mode: Infinite - 0.005Ω

Low A/V Mode: 0 - 20 A/V

High Res. Mode: Infinite - 0.05Ω

Prog. Accuracy: ±3% of Full Scale

Regulation: ±3% of Full Scale

Constant Voltage: 0 - 50V

Prog. Accuracy: ±0.50%

Regulation: ±0.075V

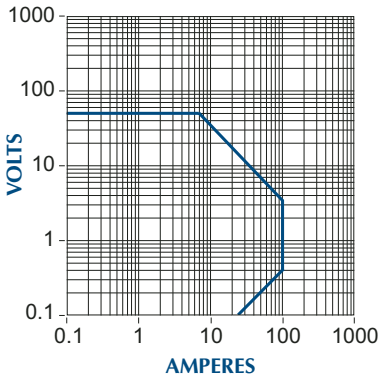
Constant Power: 0 to 350 Watts

Prog. Accuracy: 10 Watts

Regulation: 10 Watts

Short Circuit: 0.004Ω Max.

INPUT CHARACTERISTICS:



MCL488 100-15-350

OPERATING MODES

Constant Current: 0 to 15A

Prog. Accuracy: ±0.25%

Regulation: 2mA

Constant Resistance: Amps/Volt or Ohms

High A/V Mode: 0 - 15 A/V

Low Res. Mode: Infinite - 0.666Ω

Low A/V Mode: 0 - 1.5 A/V

High Res. Mode: Infinite - 6.66Ω

Prog. Accuracy: ±3% of Full Scale

Regulation: ±3% of Full Scale

Constant Voltage: 0 - 100V

Prog. Accuracy: ±0.5%

Regulation: ±0.15V

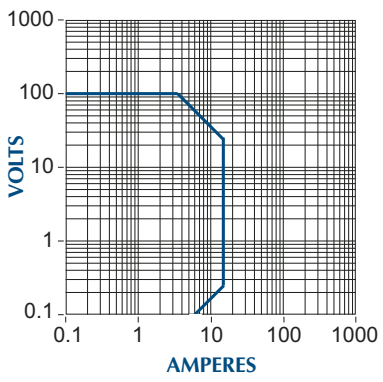
Constant Power: 0 to 350 Watts

Prog. Accuracy: 10 Watts

Regulation: 10 Watts

Short Circuit: 0.016Ω Max.

INPUT CHARACTERISTICS:



MCL488 100-60-350

OPERATING MODES

Constant Current: 0 to 60A

Prog. Accuracy: ±0.25%

Regulation: 60mA

Constant Resistance: Amps/Volt or Ohms

High A/V Mode: 0 - 60 A/V

Low Res. Mode: Infinite - 0.0167Ω

Low A/V Mode: 0 - 6 A/V

High Res. Mode: Infinite - 0.167Ω

Prog. Accuracy: ±3% of Full Scale

Regulation: ±3% of Full Scale

Constant Voltage: 0 - 100V

Prog. Accuracy: ±0.5%

Regulation: ±0.15V

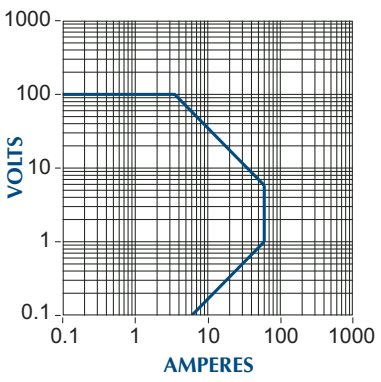
Constant Power: 0 to 350 Watts

Prog. Accuracy: 10 Watts

Regulation: 10 Watts

Short Circuit: 0.016Ω Max.

INPUT CHARACTERISTICS:



Module Specifications

MCL488 400-60-350

OPERATING MODES

Constant Current: 0 to 60A

Prog. Accuracy: ±0.25%

Regulation: 60mA

Constant Resistance: Amps/Volt or Ohms

High A/V Mode: 0 - 15 A/V

Low Res. Mode: Infinite - 0.0667Ω

Low A/V Mode: 0 - 1.5 A/V

High Res. Mode: Infinite - 0.667Ω

Prog. Accuracy: ±3% of Full Scale

Regulation: ±3% of Full Scale

Constant Voltage: 0 - 400V

Prog. Accuracy: ±0.25%

Regulation: ±0.6V

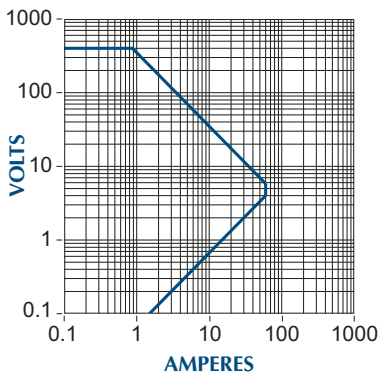
Constant Power: 0 to 350 Watts

Prog. Accuracy: 10 Watts

Regulation: 10 Watts

Short Circuit: 0.08Ω Max.

INPUT CHARACTERISTICS:



MCL488 600-20-350

OPERATING MODES

Constant Current: 0 to 20A

Prog. Accuracy: ±0.25%

Regulation: 20mA

Constant Resistance: Amps/Volt or Ohms

High A/V Mode: 0 - 3 A/V

Low Res. Mode: Infinite - 0.333Ω

Low A/V Mode: 0 - 0.333 A/V

High Res. Mode: Infinite - 3Ω

Prog. Accuracy: ±3% of Full Scale

Regulation: ±3% of Full Scale

Constant Voltage: 0 - 600V

Prog. Accuracy: ±0.5%

Regulation: ±0.9V

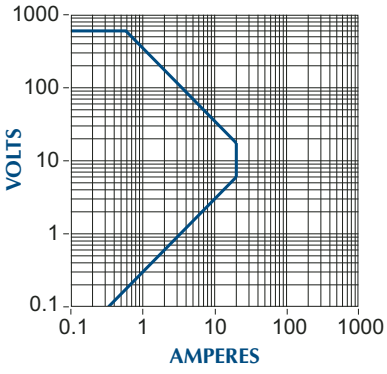
Constant Power: 0 to 350 Watts

Prog. Accuracy: 10 Watts

Regulation: 10 Watts

Short Circuit: 0.33Ω Max.

INPUT CHARACTERISTICS:



MCL488 100-30-175

OPERATING MODES

Constant Current: 0 to 30A

Prog. Accuracy: ±0.25%

Regulation: 30mA

Constant Resistance: Amps/Volt or Ohms

High A/V Mode: 0 - 30 A/V

Low Res. Mode: Infinite - 0.0333Ω

Low A/V Mode: 0 - 3 A/V

High Res. Mode: Infinite - 0.333Ω

Prog. Accuracy: ±3% of Full Scale

Regulation: ±3% of Full Scale

Constant Voltage: 0 - 100V

Prog. Accuracy: ±0.50%

Regulation: ±0.15V

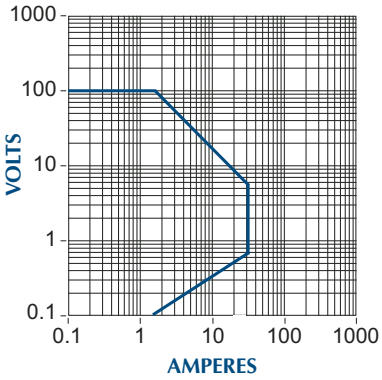
Constant Power: 0 to 175 Watts

Prog. Accuracy: 5 Watts

Regulation: 5 Watts

Short Circuit: 0.06Ω Max.

INPUT CHARACTERISTICS:



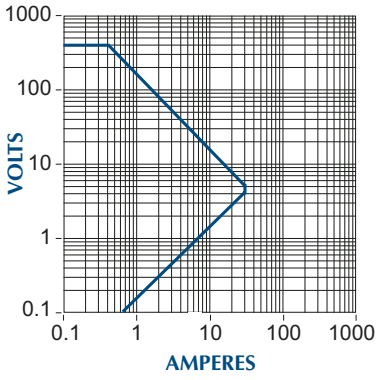
Module Specifications

MCL488 400-30-175

OPERATING MODES

Constant Current:	0 to 30A
Prog. Accuracy:	±0.25%
Regulation:	30mA
Constant Resistance:	Amps/Volt or Ohms
High A/V Mode:	0 - 7.5 A/V
Low Res. Mode:	Infinite - 0.1333Ω
Low A/V Mode:	0 - .75 A/V
High Res. Mode:	Infinite - 1.333Ω
Prog. Accuracy:	±3% of Full Scale
Regulation:	±3% of Full Scale
Constant Voltage:	0 - 400V
Prog. Accuracy:	±0.25%
Regulation:	±0.6V
Constant Power:	0 to 175 Watts
Prog. Accuracy:	5 Watts
Regulation:	5 Watts
Short Circuit:	0.16Ω Max.

INPUT CHARACTERISTICS:

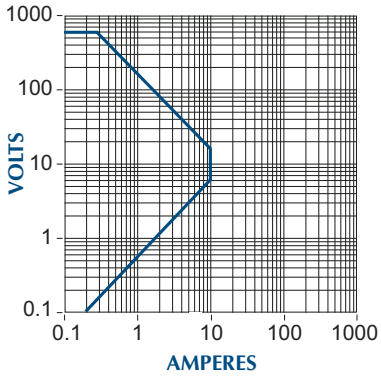


MCL488 600-10-175

OPERATING MODES

Constant Current:	0 to 10A
Prog. Accuracy:	±0.25%
Regulation:	10mA
Constant Resistance:	Amps/Volt or Ohms
High A/V Mode:	0 - 1.5 A/V
Low Res. Mode:	Infinite - 0.666Ω
Low A/V Mode:	0 - 1.5 A/V
High Res. Mode:	Infinite - 6.66Ω
Prog. Accuracy:	±3% of Full Scale
Regulation:	±3% of Full Scale
Constant Voltage:	0 - 600V
Prog. Accuracy:	.5%
Regulation:	±1.8V
Constant Power:	0 to 175 Watts
Prog. Accuracy:	±5 Watts
Regulation:	±5 Watts
Short Circuit:	0.66Ω Max.

INPUT CHARACTERISTICS:



MCL488 100-5-175

OPERATING MODES

Constant Current:	0 to 5A
Prog. Accuracy:	±0.25%
Regulation:	5mA
Constant Resistance:	Amps/Volt or Ohms
High A/V Mode:	0 - 5 A/V
Low Res. Mode:	Infinite - 0.2Ω
Low A/V Mode:	0 - .5 A/V
High Res. Mode:	Infinite - 2.0Ω
Prog. Accuracy:	±3% of Full Scale
Regulation:	±3% of Full Scale
Constant Voltage:	0 - 100V
Prog. Accuracy:	±0.5%
Regulation:	±0.15V
Constant Power:	0 to 175 Watts
Prog. Accuracy:	±5 Watts
Regulation:	±5 Watts
Short Circuit:	0.06Ω Max.

INPUT CHARACTERISTICS: