

# WRx Series

Water Cooled Active Resistance DC Electronic Load



- Number of Models **15**
- Power Levels **15 kW to 120 kW+**
- Max. Voltage Levels **From 200 Vdc to 1,000 Vdc**
- Max. Current Levels **From 30 Adc to 2400 Adc**
- Size **Various**

# WRx Series

Water Cooled Active Resistance DC Electronic Load

MAGNALOAD

## Key Features

### MagnaLINK™ Distributed DSP Architecture

Magna-Power's MagnaLINK™ technology provides distributed Texas Instrument DSP control across power processing stages inside the MagnaLOAD DC electronic load. This technology follows a significant internal development cycle from Magna-Power to provide a unified digital control platform across its electronic loads and power supplies, featuring fully digital control loops, adjustable control gains, programmable slew rates, function generation<sup>1</sup>, and many new advanced control technologies.

### Extensive Programming Support

All ALx Series MagnaLOADs come with a dedicated National Instruments LabVIEW™ driver, Interchangeable Virtual Instrument (IVI) driver, and support for a wide range of Standard Commands for Programmable Instrumentation (SCPI). These programming interfaces support full control, measurement, and monitoring of the MagnaLOAD. All of the MagnaLOAD's available communication interfaces are supported by these drivers and command sets, including: USB, RS485, LXI TCP/IP Ethernet, and IEEE-488 GPIB.

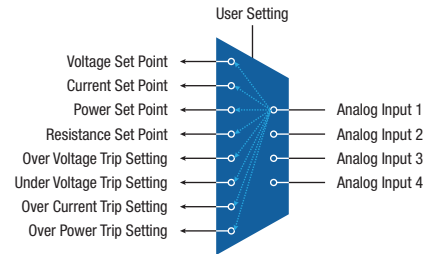
### Configurable External User I/O

Beyond the front panel and computer controls, all MagnaLOADs come standard with a 25-pin D-Sub connector designated as the External User I/O. This connector provides: 8 Digital Outputs, 4 Digital Inputs, 4 Analog Outputs, 4 Analog Inputs.

The analog-digital I/O pins are configurable, allowing the user to select which parameters they want to control and monitor. Nearly all of the MagnaLOAD's parameters are selectable. This configurable I/O scheme reduces complexity, eases PLC integration and allows control parameters from various interfaces simultaneously. 0-10V is used for analog I/O, while and 5V is used for digital I/O; both +10V and +5V reference signals are provided.

### Feature Highlights

- MagnaLINK™ Distributed DSP Architecture
- 16-bit digital programming and monitoring resolution
- Many control modes, including: voltage, current, power, resistance, rheostat
- Wide voltage-current-power operating profile
- Integrated front and rear full control (host) USB ports, RS485, and dual MagnaLINK™ ports, with LXI TCP/IP Ethernet and IEEE-488 GPIB available.
- Digital master-slaving capability<sup>1</sup>
- Integrated arbitrary waveforms with up to 100 steps per stored function<sup>1</sup>
- Configurable external analog-digital user I/O
- Designed and manufactured in the USA

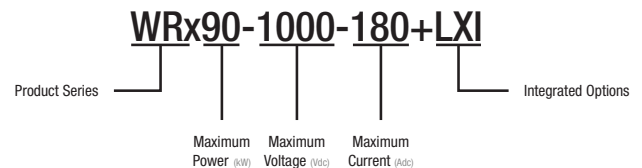


## Models

Model	Maximum Power	Maximum Voltage	Maximum Current	Package Type	Size
WRx15-200-300	15 kW	200 Vdc	150 Adc	Rack-mount	4U
WRx15-500-60	15 kW	500 Vdc	60 Adc	Rack-mount	4U
WRx15-1000-30	15 kW	1000 Vdc	30 Adc	Rack-mount	4U
WRx30-200-600	30 kW	200 Vdc	300 Adc	Floor-standing	13U
WRx30-500-120	30 kW	500 Vdc	120 Adc	Floor-standing	13U
WRx30-1000-60	30 kW	1000 Vdc	60 Adc	Floor-standing	13U
WRx60-200-1200	60 kW	200 Vdc	1200 Adc	Floor-standing	28U
WRx60-500-240	60 kW	500 Vdc	240 Adc	Floor-standing	28U
WRx60-1000-120	60 kW	1000 Vdc	120 Adc	Floor-standing	28U
WRx90-200-1800	90 kW	200 Vdc	1800 Adc	Floor-standing	28U
WRx90-500-360	90 kW	500 Vdc	360 Adc	Floor-standing	28U
WRx90-1000-180	90 kW	1000 Vdc	180 Adc	Floor-standing	28U
WRx120-200-2400	120 kW	200 Vdc	2400 Adc	Floor-standing	38U
WRx120-500-480	120 kW	500 Vdc	480 Adc	Floor-standing	38U
WRx120-1000-240	120 kW	1000 Vdc	240 Adc	Floor-standing	38U

### Model Ordering Guide

There are many possible configurations for the WRx Series product. Using the following ordering guide and models chart to define the best model for your application.



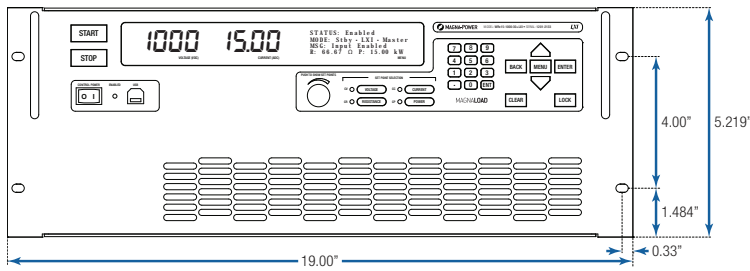
Power	Size (H x W x D)
15 kW	7" x 24" x 19" in (17.8 x 60.9 x 48.2 cm)
30 kW	30.7" x 24" x 31.5" in (78.0 x 61.0 x 80.0 cm)
60 kW	58¼" x 24" x 31.5" in (148.0 x 61.0 x 80.0 cm)
90 kW	58¼" x 24" x 31.5" in (148.0 x 61.0 x 80.0 cm)
120 kW	74" x 24" x 31.5" in (188.0 x 61.0 x 80.0 cm)

<sup>1</sup>Planned featured to be supported via future firmware update

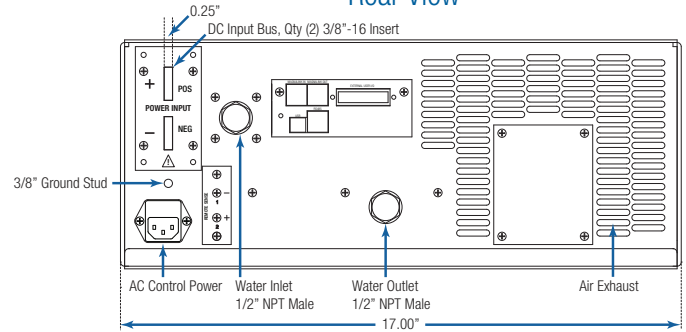
**Note:** Specifications and features are subject to change at any time without notice.

# Diagrams

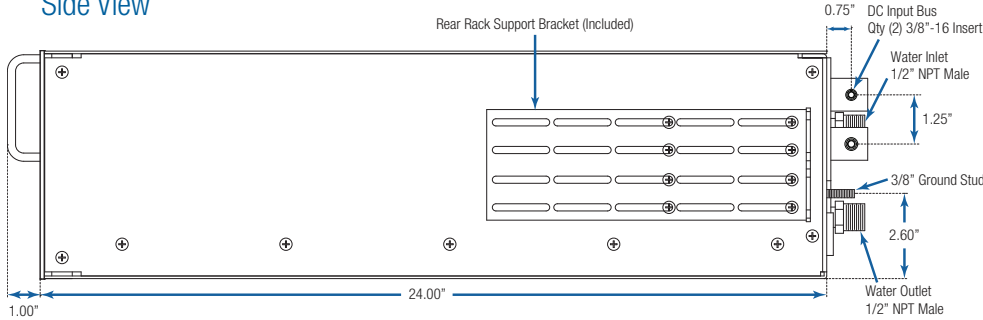
## WRx Series, Rack-mount Front View



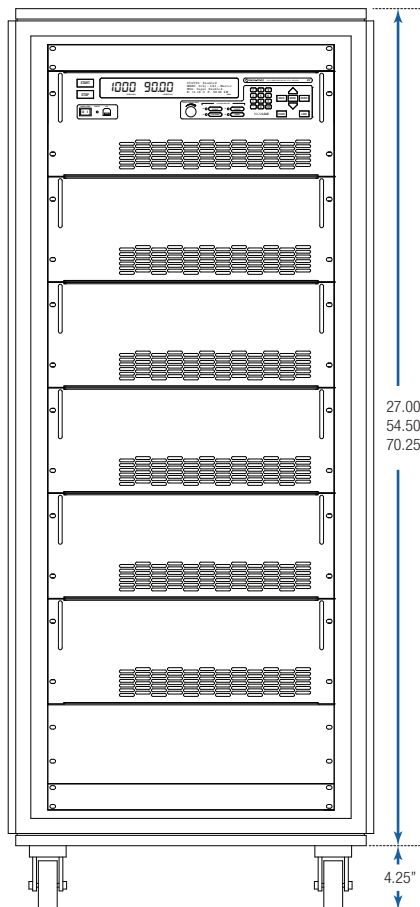
## WRx Series, Rack-mount Rear View



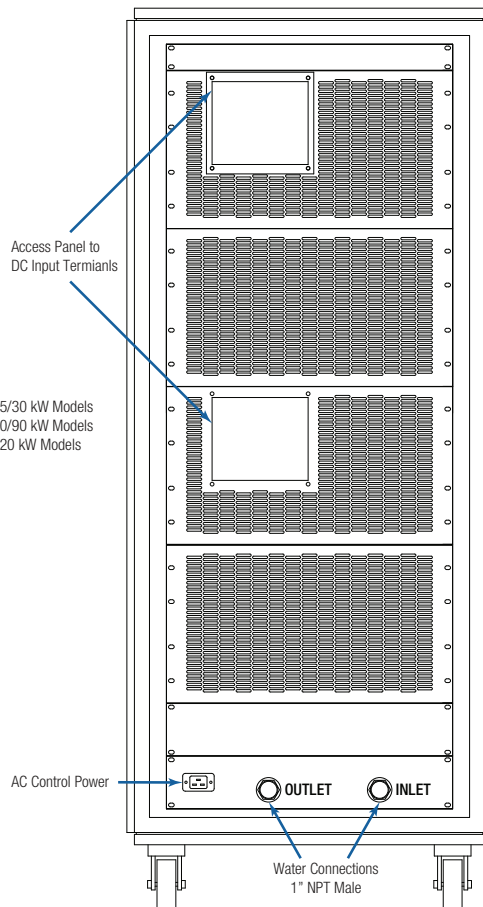
## WRx Series, Rack-mount Side View



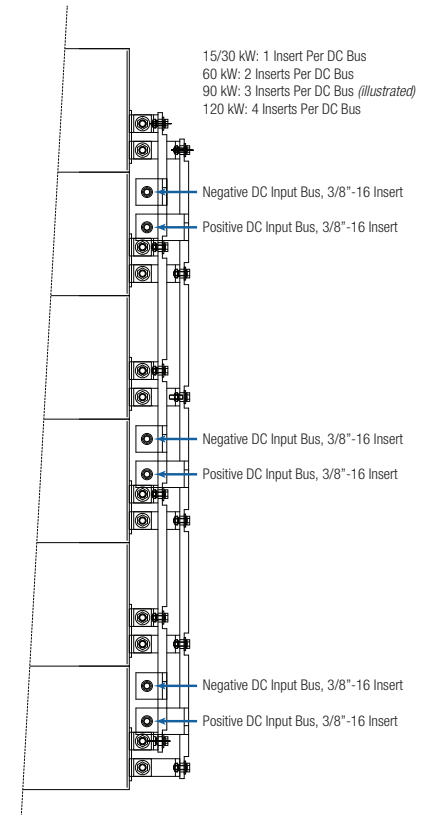
## WRx Series, Floor-standing Front View



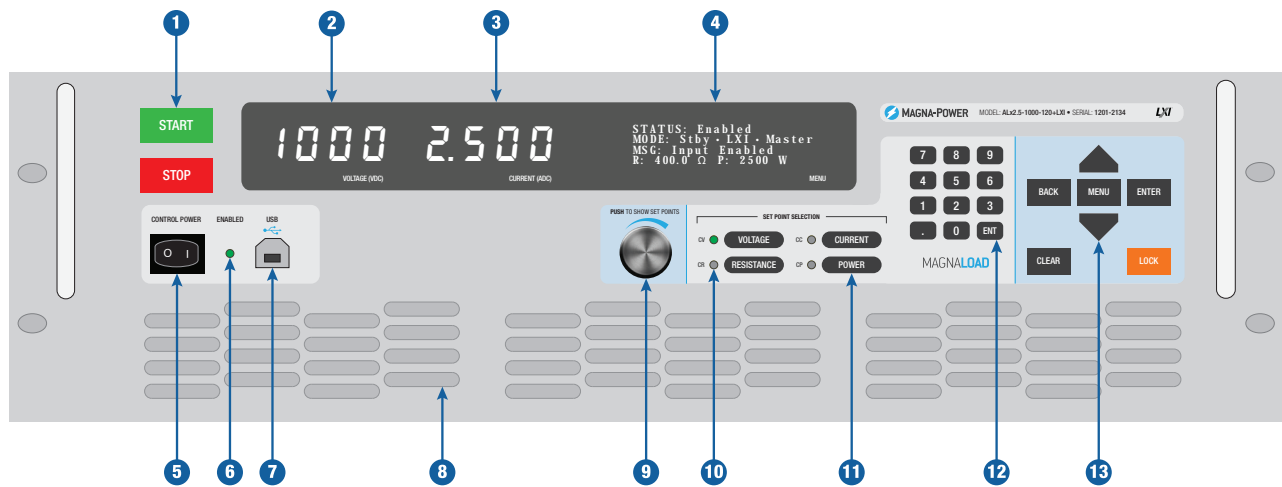
## WRx Series, Floor-standing Rear View



## WRx Series, Floor-standing Internal Bus Bar Configuration



# MagnaLOAD Front Panel



- 1** Start Button: Enables the DC input bus  
Stop Button: Disable the DC input bus
- 2** Voltage measurement display
- 3** Current measurement display
- 4** 4-line character display featuring a menu system, operating status and modes, product messages with diagnostic codes, resistance measurement display, and power measurement display
- 5** Control power switch, energizes the control circuits without engaging DC bus
- 6** LED indicator that the DC input is enabled
- 7** Full control (host) front panel USB port
- 8** Clean air intake, with integrated fans
- 9** Aluminium digital encoder knob for programming set-points
- 10** LED indicator of the MagnaLOAD's present regulation state, which can include: constant voltage (CV), constant current (CC), constant power (CP), or constant resistance (CR)
- 11** Selector buttons to choose which set-point the digital encoder knob and digital keypad buttons will modify.
- 12** Menu Button: Enters the menu system on the 4-line display  
Back Button: Moves back one level in the menu  
Enter Button: Selects the highlighted menu item  
Clear Button: Removes the product from a faulted state  
Lock Button: Locks the front panel, with password protection

## Operating Profile

With its combination of resistor and linear elements, the WRx Series MagnaLOAD has a unique operating profile as indicated in the figure below. This operating profile figure applies to all WRx Series models, normalized about the model's maximum voltage, current, and power ratings.

