

# Power Wave® R500

## Processes

Stick, DC TIG, Pulsed DC TIG, MIG, Pulsed MIG, Flux-Cored

## Product Number

K3169-1

See back for complete specs

## Input Voltage

208/230/380-415/460/575/3/50/60

## Input Current @ Rated Output

3 Ph/40% Duty Cycle: 80/73/41/37/29 A

3 Ph/100% Duty Cycle: 60/54/30/27/21 A

## Output Range

5 - 550 Amps

## Rated Output

GMAW: 550A/41.5V/40%

GMAW: 450A/36.5V/100%

## Weight/Dimensions (H x W x D)

150 lbs. (68 Kg)

22.5 x 14 x 24.8 inches

(571 x 355 x 630 mm)

## Compact Multi-Process Robotic Power Source

The Power Wave® R500, with built-in wire feeder control, is especially designed for use in robotic welding applications. It provides an extremely fast arc response, includes over 65 standard welding waveforms for optimized performance on almost any application and efficiently converts input power to reduce operational costs – all in a compact, rugged case.

## FEATURES

- ▶ **Built-In Feeder Control** - Standard internal control for compatible wire feeders, allowing the user to modify settings at the robot pendant.
- ▶ **PowerConnect™ Technology (patent pending)** – Automatically adjusts to input power while maintaining a constant welding output throughout the entire input voltage range.
- ▶ **Tribrid™ Power Module** – Exceptional welding performance with high power factor and efficiency.
- ▶ **CheckPoint™** – A cloud-based system to view or analyze your welding data. Track equipment usage, store weld data, configure fault limits and more.
- ▶ **Auxiliary Power Surge Blocker™ Technology (patent pending)** – Welding performance is not compromised by simultaneous use of grinders and other devices requiring high starting current (60A or more peak surge current) using the standard 115V (10A) AC duplex auxiliary power receptacle.
- ▶ **Weld Data Monitoring** – Compatible with Checkpoint, this tool provides the ability to view and analyze your welding data, track equipment usage, store weld data, configure fault limits and more.

## APPLICATIONS

- ▶ Robotic Fabrication



## FEATURES, CONT'D.

- ▶ **Compact and Durable Case** - IP23 rated to withstand harsh environments.
- ▶ **Standard Ethernet** - Allows easy software upgrades through [powerwavesoftware.com](http://powerwavesoftware.com).

## INPUT



## OUTPUT



THE LINCOLN ELECTRIC GREEN INITIATIVE  
Inverter Technology  
reduces energy demand  
[www.lincolnelectric.com/green](http://www.lincolnelectric.com/green)

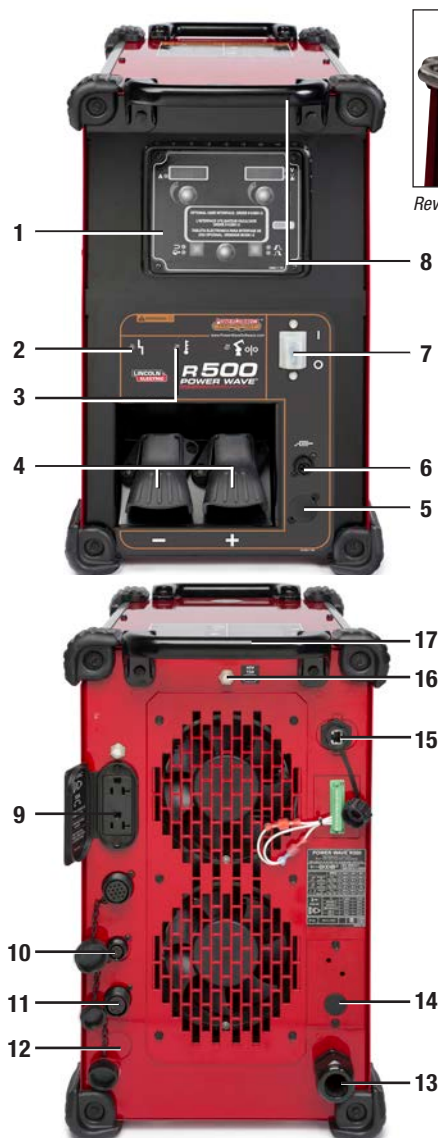


Two Year Extended  
Warranty Available in  
the U.S.A. and Canada.

## WAVEFORM CONTROL TECHNOLOGY® PROCESS CAPABILITIES

- ▶ Pulse
- ▶ Pulse-on-Pulse®
- ▶ Power Mode®
- ▶ RapidArc®
- ▶ Rapid X™
- ▶ Upgradeable for additional processes to be developed in the future.





Reversible handles shown

## FRONT

1. Optional S-Series User Interface Kit (K3001-2) for Stick, TIG and CV MIG with voltage sensing feeder
2. Status Light
3. Thermal Fault Indicator Light
4. Output Studs
5. Output Control Receptacle Knockout Plate – 12-pin (for optional output control receptacle included with K3001-2 S-Series User Interface Kit)
6. Work Sense Lead Receptacle
7. Main Power Switch
8. Reversible Handles

## BACK

9. Standard 115V (10 Amp) AC Duplex Auxiliary Power Receptacle and Circuit Breaker
10. ArcLink® Welding System Component Communication Cable Receptacle
11. Sync Tandem/STT® Receptacle
12. Optional DeviceNet™ Kit (K2827-2)
13. Input Power Cable Connection
14. TIG Solenoid Kit Knockout Plate (for optional TIG solenoid included with K3001-2 S-Series User Interface Kit)
15. Ethernet Cable Receptacle
16. Circuit Breaker (ArcLink®)
17. Reversible Handles



**Built-In Wire Feeder Control** - Streamlined component systems approach eliminates a user interface at the power source or at the feeder. Instead, wire feeder setting changes, including wire feed speed and other parameters, are consolidated at the robot pendant.



**Modular Components** - Take advantage of the R500's modular component design and add an STT® (Surface Tension Transfer®) module for exceptional arc control on thin sheet metal or critical pipe welding applications.

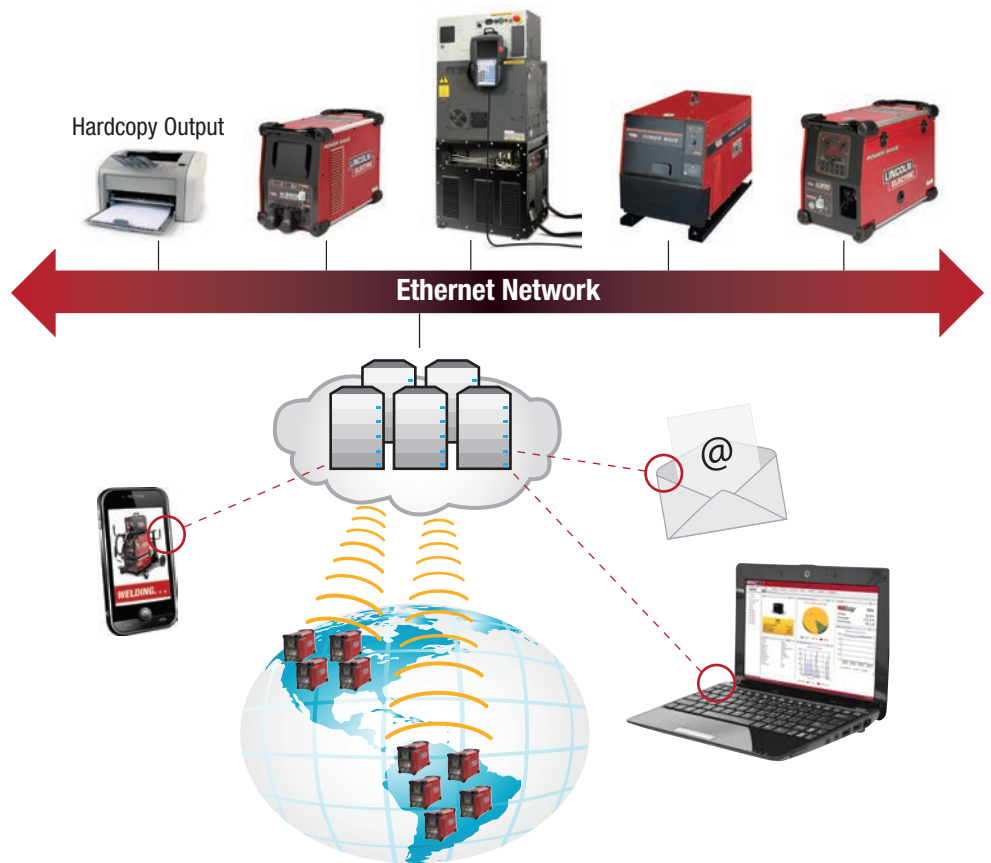


## ArcLink® XT Features

**New Standard Features** - Ethernet capability is standard on the Power Wave® R500 with no additional hardware or kit costs. CheckPoint™, a cloud based data monitoring solution, allow for welding process monitoring, analysis and reporting.

**Performance Based Design** - The fast 100Mbps, full duplex Ethernet interface offers a reliable and consistent hardware platform for industrial environments and makes software upgrades and expansion easy.

**Lower Purchase Costs** - System costs are reduced for multi-equipment (multi-arm) applications. Multiple Power Wave® R500 units for multiple robotic arm applications can be used together without the addition of an outboard network Ethernet switch. No additional cards or hardware are required.



## DETAILS



### Tribrid™ Power Module

Patent-pending Tribrid™ Power Module features Lincoln Electric's PowerConnect™ technology, Planar Transformer™ Technology and 120kHz output to provide exceptional welding performance while still maintaining a high power factor and efficiency.



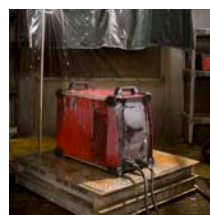
### iARC™ High Speed Digital Controls

iARC™ (Intelligent Architecture for Regulation and Control) digital welding controls are more than 10 times faster than the previous generation, with 128 times more RAM, and 8 times more flash memory. It also features 100Mbps Full Duplex Ethernet to support CheckPoint™ and run with advanced diagnostics.



### CheckPoint™

CheckPoint, cloud server-based and mobile delivery solutions, is the welding industry's most advanced weld data collection and monitoring tool, allowing fabricators to analyze their welding operations and processes. These tools can provide necessary data for customer ISO, Six Sigma, statistical process control (SPC), quality cost delivery (QCD), overall equipment effectiveness (OEE) and lean manufacturing efforts. CheckPoint is offered at no charge with every Power Wave purchase.



### Rugged Reliability

Like all Lincoln Electric welding equipment, the Power Wave® R500 was tested under severe conditions to ensure proper operation in the harshest environments:

- Extreme Temperature Ranges
- Extreme Humidity
- Rain
- Dirt and Dust
- IP23 Rated Performance



## REQUIRED ACCESSORIES

WIRE DRIVE CONTROL CABLE (14-PIN TO 14-PIN)		
Description	Cable Length ft. (m)	Order Number
For use with FANUC® arms having integrated cable	16 (4.8) heavy duty	K1785-16
	25 (7.6) heavy duty	K1785-25
	50 (15.2)	K1785-50
	100 (30.4)	K1785-100
For external dress of FANUC® arm or hard automation	25 (7.6)	K2709-25
	50 (15.2)	K2709-50
	100 (30.4)	K2709-100



## RECOMMENDED ACCESSORIES

### GENERAL OPTIONS

#### DeviceNet™ Kit

The kit allows DeviceNet™ connectivity to control the power source. Includes internal harness and 5-pin DeviceNet™ receptacle for mounting on power source back panel.

Order K2827-2



#### S-Series User Interface Kit

This kit allows local control of stick, TIG and wire processes from the power source control panel. Includes TIG Solenoid and Remote Control Connector.

Order K3001-2



#### Sense Lead Kit

Recommended for extended cable length. Application allows machine to sense voltage directly at the work piece for improved arc performance.

Order K940-25 for 25 ft. (7.6 m)

Order K940-75 for 75 ft. (23 m)



### Welding Fume Extractors

Lincoln Electric offers a wide variety of welding fume extraction environmental system solutions, ranging from portable systems easily wheeled around the shop to shopwide central systems servicing many dedicated welding stations.

Request Publication MC08-70.



### AutoDrive® 4R100

The AutoDrive® 4R100 is a compact wire drive featuring the MAXTRAC® Wire Drive System. Designed for robotic and hard automation applications, the AutoDrive® 4R100 is optimized for the FANUC® ARC Mate® 100iC arm. The 4R100's small, light weight package maximizes arm speed and working envelope. Learn more in publication E10.12.

Order K3002-2



### AutoDrive® 4R220

The AutoDrive® 4R220 is a powerful yet compact 4-roll wire drive for robotic and hard automation applications. It features the MAXTRAC® Wire Drive System and is best for feeding larger diameter wires, pulling wire through long conduits and in applications requiring extra ruggedness. Learn more in publication E10.12.

Order K2685-3



### Power Wave® STT® Module

Add STT® (Surface Tension Transfer®) process capability to any compatible Power Wave® power source to gain outstanding puddle control for critical sheet metal or pipe root pass welding.

Order K2902-1 for US/International



## PRODUCT SPECIFICATIONS

Product Name	Product Number	Input Voltage	Input Current @ Rated Output	Rated Output Current/Voltage/Duty Cycle	Output Range	H x W x D inches (mm)	Net Weight lbs. (kg)
Power Wave® R500	K3169-1	208/230/380-415/ 460/575/3/50/60	3 Ph/40% Duty Cycle: 80/73/41/37/29 A 3 Ph/100% Duty Cycle: 60/54/30/27/21 A	GMAW: 550A/41.5V/40% GMAW: 450A/36.5V/100% SMAW: 550A/42V/40% <sup>(2)</sup> SMAW: 450A/38V/100% GTAW-DC: 550A/32V/40% GTAW-DC: 450A/28V/100%	5-550A	22.5 x 14 x 24.8 (571 x 355 x 630)	150 (68)

For best welding results with Lincoln Electric equipment,  
always use Lincoln Electric consumables. Visit [www.lincolnelectric.com](http://www.lincolnelectric.com) for more details.

## CUSTOMER ASSISTANCE POLICY

The business of The Lincoln Electric Company is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customers and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or advice about their use of our products. Our employees respond to inquiries to the best of their ability based on information provided to them by the customers and the knowledge they may have concerning the application. Our employees, however, are not in a position to verify the information provided or to evaluate the engineering requirements for the particular weldment. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or advice. Moreover, the provision of such information or advice does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or advice, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose is specifically disclaimed.

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**LINCOLN®**  
**ELECTRIC**  
THE WELDING EXPERTS®