TS SERIES III

5 kW to 45 kW Programmable DC Power Supply

LXI CE

MAGNA-POWER ELECTRONICS

www.magna-power.com

TS SERIES III

Rugged Current-Fed Technology

MAGNA-POWER ELECTRONICS

Innovative and Scalable

Magna-Power Electronics TS Series combines the best of DC power processing with ***microprocessor embedded control***. Magna-Power Electronics' innovative power processing technology improves response, shrinks package size, and reduces cost. TS Series power supplies are ***current-fed*** and are more tolerant to abusive loads than conventional switching power supplies. This technology allows the power supply to operate under short-circuit conditions, open-circuit conditions, and everything inbetween.

TS Series power supplies offer both ***master/slave parallel and series*** operation. This enables two or more power supplies to be placed in parallel for increased output current or in series for increased output voltage. With master/slave operation, power supplies operate at near equal voltage and current.

TS Series power supplies can operate as a ***voltage source*** or ***current source*** depending on the control settings and load conditions. If the power supply is operating as a voltage source and the load increases to a point beyond the current command setting, the power supply automatically crosses over to current mode control and operates as a current source at that setting.

Attention to Power Quality

TS Series power supplies contain circuitry to work harmoniously with other power equipment. Step-start contactors are used to keep inrush current below full scale operating current. Filter components lower current harmonic content emanating from the power supply and increase power factor to levels beyond 90%. Every power supply is tested at 90% to 125% nominal line to insure satisfactory operation even under the worst line voltage conditions.

KEY FEATURES:

- **Highest power density in market:** Up to 45 kW in a 9U package
- **Wide voltage and current range:** 0-5 Vdc to 0-4000 Vdc and 0-1.2 Adc to 0-2700 Adc
- **Wide range of input voltages as standard:** From 208 Vac to 480 Vac at 50 Hz, 60 Hz, and 400 Hz
- **37-pin optically isolated user I/O circuitry standard:** No additional isolation circuitry necessary
- **Front panel analog potentiometers:** Stepless rotary control
- **High efficiency operation:** Up to 88% efficiency under full load
- **RS232 interface standard with SCPI Commands:** GPIB, USB, Ethernet, RS485 interfaces optional
- **Optional LXI-certified ethernet communications:** Embedded web-server
- **OVT and OCT shutdown standard:** Mechanical contactors disconnect input mains
- **Certified LabWindows/CVI, LabView, and IVI Drivers**
- **Programmable Output Modulation:** With D panel, emulates user-defined power profiles
- **Automatic Voltage/Current Crossover**
- **Front Panel Calibration**

Designed for Safety

TS Series power supplies have extensive diagnostic functions -- all of which, when activated, take command to shut down the system. Diagnostic functions include phase loss, excessive thermal conditions, over voltage trip, over current trip, fuse clearing, and program line. Program line monitors externally applied analog set point signals to insure they are within the specified range. Upon a diagnostic fault condition, main power is disconnected and the diagnostic condition is latched into memory. Pressing the clear key clears the memory. All diagnostic functions can be monitored through a rear connector.

TS SERIES III
Specifications

MAGNA-POWER ELECTRONICS

Input

Nominal Voltage **3 phase, 3 wire + ground**	208 VAC 3ϕ (operating range 187 - 229 VAC) 240 VAC 3ϕ (operating range 216 - 264 VAC) 380 VAC 3ϕ (operating range 342 - 418 VAC) 415 VAC 3ϕ (operating range 373 - 456 VAC) 440 VAC 3ϕ (operating range 396 - 484 VAC) 480 VAC 3ϕ (operating range 432 - 528 VAC)
1 phase, 2 wire + ground	208 VAC 1ϕ (operating range 187 - 229 VAC) 240 VAC 1ϕ (operating range 216 - 264 VAC)
Frequency	50 Hz through 400 Hz
Power Factor	> 92% at maximum power for 3ϕ models > 70% at maximum power for 1ϕ models

Physical

Power (kW)	Input Phases	Size (H" x W" x D")	Rack Units	Weight
5 kW	1ϕ	5.25 x 19 x 24 in (13.3 x 48.3 x 61.0 cm)	3U	75 lbs (34.02 kg)
10 kW	1ϕ	10.25 x 19 x 24 in (26.0 x 48.3 x 61.0 cm)	6U	150 lbs (68.04 kg)
15 kW	1ϕ	15.75 x 19 x 24 in (40.0 x 48.3 x 61.0 cm)	9U	225 lbs (102.1 kg)
5 kW	3ϕ	5.25 x 19 x 24 in (13.3 x 48.3 x 61.0 cm)	3U	74 lbs (33.60 kg)
10 kW	3ϕ	5.25 x 19 x 24 in (13.3 x 48.3 x 61.0 cm)	3U	94 lbs (42.64 kg)
15 kW	3ϕ	5.25 x 19 x 24 in (13.3 x 48.3 x 61.0 cm)	3U	114 lbs (51.71 kg)
20 kW	3ϕ	10.25 x 19 x 24 in (26.0 x 48.3 x 61.0 cm)	6U	197 lbs (89.36 kg)
25 kW	3ϕ	10.25 x 19 x 24 in (26.0 x 48.3 x 61.0 cm)	6U	217 lbs (98.43 kg)
30 kW	3ϕ	10.25 x 19 x 24 in (26.0 x 48.3 x 61.0 cm)	6U	237 lbs (107.50 kg)
45 kW	3ϕ	15.75 x 19 x 24 in (40.0 x 48.3 x 61.0 cm)	9U	349 lbs (158.30 kg)

Control Limits

Remote Sense Limits	3% maximum voltage drop from output to load
Period Programming Limits	Minimum period: 10 msec Maximum Period: 9997 sec or 2.77 hours
Digital control inputs and outputs limits	Input voltage: 0 to 5 V Output voltage: 0 to 5 V, 5 mA drive capacity

Programming Levels and Accuracy of Full Scale

	Voltage Set Point	Current Set Point	OVT Set Point	OCT Set Point
Remote Analog Programming Accuracy	± 0.50%	± 0.75%	± 0.50 %	± 0.75%
Digital Programming Accuracy	± 0.50%	± 0.75%	± 0.50 %	± 0.75%
Remote Analog Programming Levels	0 - 10.0 V	0 - 10 .0 V	0 - 10.0 V	0 - 10.0 V

Monitoring Levels and Accuracy of Full Scale

	Output Voltage	Output Current
Remote Analog Monitoring Accuracy	± 0.50%	± 0.75%
Digital Monitoring Accuracy	± 0.50%	± 0.75%
Remote Analog Monitoring Levels	0 - 10.0 V	0 - 10.0 V

Output

Ripple	See Model Charts
Line Regulation	Voltage Mode: ± 0.004% of full scale Current Mode: ± 0.02% of full scale
Load Regulation	Voltage Mode: ± 0.01% of full scale Current Mode: ± 0.04% of full scale
Load Transient Response	2 ms to recover within ±1% of regulated output, with a 50% to 100% or 100% to 50% step load change
Efficiency	≥ 86% (See Model Charts)
Stability	± 0.10% for 8 hrs. after 30 min. warmup
Isolation	Maximum input voltage to ground: ±2500 VAC Maximum output voltage to ground: ±1000 VDC for models less than or equal to 1000 Vdc, ±(2000 Vdc + Vo/2) for models greater than 1000 Vdc where Vo is the power supply's max. output voltage. User inputs and outputs: referenced to earth ground.
Maximum Slew Rate	Standard Models: 100 ms for output voltage change from 0 to 63% 100 ms for output voltage change from 0 to 63% With High Slew Rate Option: 4 ms for output voltage change from 0 to 63% 8 ms for output voltage change from 0 to 63%
Bandwith	Standard Models: 3 Hz with remote analog voltage programming, 2 Hz with remote analog current programming. With High Slew Rate Option: 90 Hz with remote analog voltage programming, 60 Hz with remote analog current programming.
Analog Output Impedances	Voltage output monitoring: 100 ohm, Current output monitoring: 100 ohm, +10V Ref: 1 ohm.

Environmental

Operating Temperature	0 °C to 50 °C
Storage Temperature	-25 °C to 85 °C
Ambient Temperature	0 to 50 °C
Temperature Coefficient	0.04 % / °C of maximum output voltage, 0.06 % / °C of maximum output current.
Air Cooling	Side air inlet, rear exhaust
Water Cooling (Optional)	25°C maximum inlet temperature 1.5 GPM minimum flow rate for 15 kW units, 3.0 GPM minimum flow rate for 20 to 30 kW units 4.5 GPM minimum flow rate for 45 kW units 80 PSI maximum pressure 1/4" NPT female pipe size for 15 kW units, 1/2" NPT female pipe size for 20 kW to 45 kW.

Note: Specifications are subject to change without notice. For three-phase configurations, specifications are line-to-neutral. Unless otherwise noted, input voltages and currents are specified for three-phase configurations.

TS SERIES III

Models and Ratings

MAGNA-POWER ELECTRONICS

5 kW Models

Model	Voltage (Vdc)	Current (Adc)	Ripple (mVrms)	Eff. %	Input Current (Aac)		
					208/240 V	380/415 V	440/480 V
TSA5-900	0-5	0-900	50	86	19	10	9
TSA8-600	0-8	0-600	40	86	19	10	9
TSA10-500	0-10	0-500	40	86	19	10	9
TSA16-300	0-16	0-300	35	86	19	10	9
TSA20-250	0-20	0-250	40	86	19	10	9
TSA32-150	0-32	0-150	40	86	19	10	9
TSA40-125	0-40	0-125	40	87	19	10	9
TSA50-100	0-50	0-100	50	87	19	10	9
TSA80-62	0-80	0-62	60	87	19	10	9
TSA100-50	0-100	0-50	60	87	19	10	9
TSA125-40	0-125	0-40	100	87	19	10	9
TSA160-31	0-160	0-31	120	87	19	10	9
TSA200-25	0-200	0-25	125	87	19	10	9
TSA250-20	0-250	0-20	130	88	19	10	9
TSA375-13	0-375	0-13	170	88	19	10	9
TSA400-12	0-400	0-12	200	88	19	10	9
TSA500-10	0-500	0-10	220	88	19	10	9
TSA600-8	0-600	0-8	250	88	19	10	9
TSA800-6	0-800	0-6	300	88	19	10	9
TSA1000-5	0-1000	0-5	350	88	19	10	9
TSA1500-3.3	0-1500	0-3.3	400	88	19	10	9
TSA2000-2.5	0-2000	0-2.5	450	88	19	10	9
TSA3000-1.6	0-3000	0-1.6	500	88	19	10	9
TSA4000-1.2	0-4000	0-1.2	550	88	19	10	9

Note: Single phase input current: 44 Aac for 208/240 Vac input (5 kW models only)

10 kW Models

Model	Voltage (Vdc)	Current (Adc)	Ripple (mVrms)	Eff. %	Input Current (Aac)		
					208/240 V	380/415 V	440/480 V
TSA10-900	0-10	0-900	40	86	36	21	18
TSA16-600	0-16	0-600	35	86	36	21	18
TSA20-500	0-20	0-500	40	86	36	21	18
TSA32-300	0-32	0-300	40	86	36	21	18
TSA40-250	0-40	0-250	40	87	36	21	18
TSA50-200	0-50	0-200	50	87	36	21	18
TSA80-125	0-80	0-125	60	87	36	21	18
TSA100-100	0-100	0-100	60	87	35	20	17
TSA125-80	0-125	0-80	100	87	35	20	17
TSA160-62	0-160	0-62	120	87	35	20	17
TSA200-50	0-200	0-50	125	87	35	20	17
TSA250-40	0-250	0-40	130	88	35	20	17
TSA375-27	0-375	0-27	170	88	35	20	17
TSA400-24	0-400	0-24	200	88	35	20	17
TSA500-20	0-500	0-20	220	88	35	20	17
TSA600-16	0-600	0-16	250	88	35	20	17
TSA800-12	0-800	0-12	300	88	35	20	17
TSA1000-10	0-1000	0-10	350	88	35	20	17
TSA1500-6.6	0-1500	0-6.6	400	88	35	20	17
TSA2000-5.0	0-2000	0-5.0	450	88	35	20	17
TSA3000-3.2	0-3000	0-3.2	500	88	35	20	17
TSA4000-2.4	0-4000	0-2.4	550	88	35	20	17

Note: Single phase input current: 88 Aac for 208/240 Vac input (10 kW models only)

15 kW Models

Model	Voltage (Vdc)	Current (Adc)	Ripple (mVrms)	Eff. %	Input Current (Aac)		
					208/240 V	380/415 V	440/480 V
TSA16-900	0-16	0-900	35	86	54	30	27
TSA20-750	0-20	0-750	40	86	54	30	27
TSA32-450	0-32	0-450	40	86	54	30	27
TSA40-375	0-40	0-375	40	87	54	30	27
TSA50-300	0-50	0-300	50	87	54	30	27
TSA80-186	0-80	0-186	60	87	54	30	27
TSA100-150	0-100	0-150	60	87	53	29	26
TSA125-120	0-125	0-120	100	87	53	29	26
TSA160-93	0-160	0-93	120	87	53	29	26
TSA200-75	0-200	0-75	125	87	53	29	26
TSA250-60	0-250	0-60	130	88	53	29	26
TSA375-39	0-375	0-39	170	88	53	29	26
TSA400-36	0-400	0-36	200	88	53	29	26
TSA500-30	0-500	0-30	220	88	53	29	26
TSA600-24	0-600	0-24	250	88	53	29	26
TSA800-18	0-800	0-18	300	88	53	29	26
TSA1000-15	0-1000	0-15	350	88	53	29	26
TSA1500-9.9	0-1500	0-9.9	400	88	53	29	26
TSA2000-7.5	0-2000	0-7.5	450	88	53	29	26
TSA3000-4.8	0-3000	0-4.8	500	88	53	29	26
TSA4000-3.6	0-4000	0-3.6	550	88	53	29	26

Note: Single phase input current: 132 Aac for 208/240 Vac input (15 kW models only)

20 kW Models

Model	Voltage (Vdc)	Current (Adc)	Ripple (mVrms)	Eff. %	Input Current (Aac)		
					208/240 V	380/415 V	440/480 V
TSA16-1200	0-16	0-1200	35	86	72	40	36
TSA20-1000	0-20	0-1000	40	86	72	40	36
TSA32-600	0-32	0-600	40	86	72	40	36
TSA40-500	0-40	0-500	40	87	72	40	36
TSA50-400	0-50	0-400	50	87	72	40	36
TSA80-248	0-80	0-248	60	87	72	40	36
TSA100-200	0-100	0-200	60	87	71	39	35
TSA125-160	0-125	0-160	100	87	71	39	35
TSA160-124	0-160	0-124	120	87	71	39	35
TSA200-100	0-200	0-100	125	87	71	39	35
TSA250-80	0-250	0-80	130	88	71	39	35
TSA375-52	0-375	0-52	170	88	71	39	35
TSA400-48	0-400	0-48	200	88	71	39	35
TSA500-40	0-500	0-40	220	88	71	39	35
TSA600-32	0-600	0-32	250	88	71	39	35
TSA800-24	0-800	0-24	300	88	71	39	35
TSA1000-20	0-1000	0-20	350	88	71	39	35
TSA1500-13.2	0-1500	0-13.2	400	88	71	39	35
TSA2000-10.0	0-2000	0-10.0	450	88	71	39	35
TSA3000-6.4	0-3000	0-6.4	500	88	71	39	35
TSA4000-4.8	0-4000	0-4.8	550	88	71	39	35

Did you know?

Magna-Power Electronics power supplies:

- Are all designed, manufactured, and supported in the USA
- Can all be configured for master/slave parallel and series operation
- Come standard with I/O isolation
- Have an added power-processing stage for superior performance

 • 39 Royal Road, Flemington, NJ 08822 • (908) 237-2200
www.magna-power.com

TS SERIES III

Models and Ratings (Continued)

MAGNA-POWER ELECTRONICS

25 kW Models

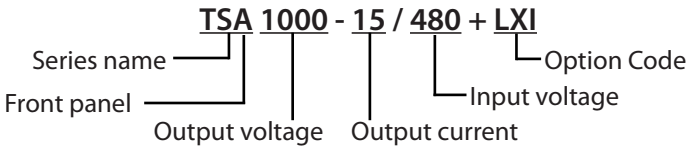
Model	Voltage (Vdc)	Current (Adc)	Ripple (mVrms)	Eff. %	Input Current (Aac)		
					208/240 V	380/415 V	440/480 V
TSA16-1500	0-16	0-1500	35	86	90	50	45
TSA20-1250	0-20	0-1250	40	86	90	50	45
TSA32-750	0-32	0-750	40	86	90	50	45
TSA40-625	0-40	0-625	40	87	90	50	45
TSA50-500	0-50	0-500	50	87	90	50	45
TSA80-310	0-80	0-310	60	87	90	50	45
TSA100-250	0-100	0-250	60	87	89	49	44
TSA125-200	0-125	0-200	100	87	89	49	44
TSA160-155	0-160	0-155	120	87	89	49	44
TSA200-125	0-200	0-125	125	87	89	49	44
TSA250-100	0-250	0-100	130	88	89	49	44
TSA375-65	0-375	0-65	170	88	89	49	44
TSA400-60	0-400	0-60	200	88	89	49	44
TSA500-50	0-500	0-50	220	88	89	49	44
TSA600-40	0-600	0-40	250	88	89	49	44
TSA800-30	0-800	0-30	300	88	89	49	44
TSA1000-25	0-1000	0-25	350	88	89	49	44
TSA1500-16.5	0-1500	0-16.5	400	88	89	49	44
TSA2000-12.5	0-2000	0-12.5	450	88	89	49	44
TSA3000-8.0	0-3000	0-8.0	500	88	89	49	44
TSA4000-6.0	0-4000	0-6.0	550	88	89	49	44

45 kW Models

Model	Voltage (Vdc)	Current (Adc)	Ripple (mVrms)	Eff. %	Input Current (Aac)		
					208/240 V	380/415 V	440/480 V
TSA16-2700	0-16	0-2700	35	86	162	90	81
TSA20-2250	0-20	0-2250	40	86	162	90	81
TSA32-1350	0-32	0-1350	40	86	162	90	81
TSA40-1125	0-40	0-1125	40	87	162	90	81
TSA50-900	0-50	0-900	50	87	162	90	81
TSA80-558	0-80	0-558	60	87	162	90	81
TSA100-450	0-100	0-450	60	87	159	87	78
TSA125-360	0-125	0-360	100	87	159	87	78
TSA160-279	0-160	0-279	120	87	159	87	78
TSA200-225	0-200	0-225	125	87	159	87	78
TSA250-180	0-250	0-180	130	88	159	87	78
TSA375-117	0-375	0-117	170	88	159	87	78
TSA400-108	0-400	0-108	200	88	159	87	78
TSA500-90	0-500	0-90	220	88	159	87	78
TSA600-72	0-600	0-72	250	88	159	87	78
TSA800-54	0-800	0-54	300	88	159	87	78
TSA1000-45	0-1000	0-45	350	88	159	87	78
TSA1500-27.7	0-1500	0-27.7	400	88	159	87	78
TSA2000-22.5	0-2000	0-22.5	450	88	159	87	78
TSA3000-14.4	0-3000	0-14.4	500	88	159	87	78
TSA4000-10.8	0-4000	0-10.8	550	88	159	87	78

30 kW Models

Model	Voltage (Vdc)	Current (Adc)	Ripple (mVrms)	Eff. %	Input Current (Aac)		
					208/240 V	380/415 V	440/480 V
TSA16-1800	0-16	0-1800	35	86	108	60	54
TSA20-1500	0-20	0-1500	40	86	108	60	54
TSA32-900	0-32	0-900	40	86	108	60	54
TSA40-750	0-40	0-750	40	87	108	60	54
TSA50-600	0-50	0-600	50	87	108	60	54
TSA80-372	0-80	0-372	60	87	108	60	54
TSA100-300	0-100	0-300	60	87	106	58	52
TSA125-240	0-125	0-240	100	87	106	58	52
TSA160-186	0-160	0-186	120	87	106	58	52
TSA200-150	0-200	0-150	125	87	106	58	52
TSA250-120	0-250	0-120	130	88	106	58	52
TSA375-78	0-375	0-78	170	88	106	58	52
TSA400-72	0-400	0-72	200	88	106	58	52
TSA500-60	0-500	0-60	220	88	106	58	52
TSA600-48	0-600	0-48	250	88	106	58	52
TSA800-36	0-800	0-36	300	88	106	58	52
TSA1000-30	0-1000	0-30	350	88	106	58	52
TSA1500-19.8	0-1500	0-19.8	400	88	106	58	52
TSA2000-15.0	0-2000	0-15.0	450	88	106	58	52
TSA3000-9.6	0-3000	0-9.6	500	88	106	58	52
TSA4000-7.2	0-4000	0-7.2	550	88	106	58	52



Model Ordering System

Series Name	Front Panel	Output Voltage	Output Current	Input Voltage	Option Code(s)
XR TS MS MT	A: Analog D: Digital C: Computer Blank: XR	See Tables	See Tables	208 SP 240 SP 208 240 380 415 440 480	+LXI +CAB1, +CAB2, +CAB3 +GPIB +USB +RS485 +WC +HS +UID46 +EMI SP

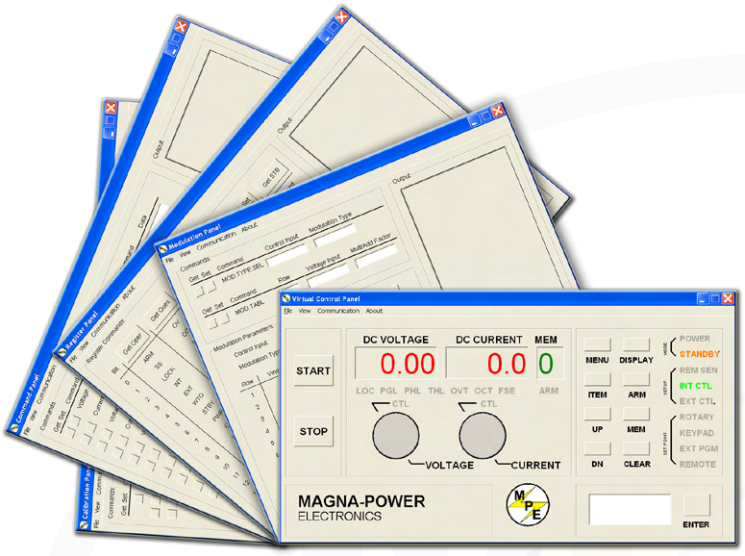
Options

Title	Option Code
LXI TCP/IP Ethernet Interface (Internal)	+LXI
Cabinet and Integration	+CAB1, +CAB2, +CAB3
IEEE 488.2 GPIB Interface (Internal)	+GPIB
USB Edgeport Interface (External)	+USB
RS-485DSS Interface (External)	+RS485
Water Cooling	+WC
High Slew Rate Output	+HS
UID46: Universal Interface Device	+UID46
EMI Filter	+EMI
208/240 Vac single-phase input (5 kW)	SP

TS SERIES III

Reliable Control Technology

MAGNA-POWER ELECTRONICS



Remote Interface Software

The Remote Interface Software ships with all TS Series power supplies. The software provides the user with an easy and intuitive method to operate a Magna-Power Electronics' power supply with computer control. The Remote Interface Software has six windows:

- Virtual Control Panel
- Command Panel
- Register Panel
- Calibration Panel
- Firmware Panel
- Modulation Panel

The Virtual Control Panel emulates the TS Series front panel, the Command panel programs and reads SCPI commands with user friendly buttons, the Register Panel programs and reads registers, the Calibration Panel enables calibration of the digital potentiometers, the Firmware Panel enables the program stored internal to the power supply to be upgraded, and the Modulation Panel eases programming of modulation parameters.

Power Source Emulation

Output modulation enables Magna-Power Electronics' power supplies to emulate a variety of user-defined power sources, such as ***Fuel Cells***, ***Photovoltaic Arrays***, ***Batteries***, etc. The power supplies follow an I-V curve programmed either through Magna-Power's Remote Interface Software (modulation panel), LabVIEW with certified NI LabVIEW drivers, or through other programming means using SCPI commands.

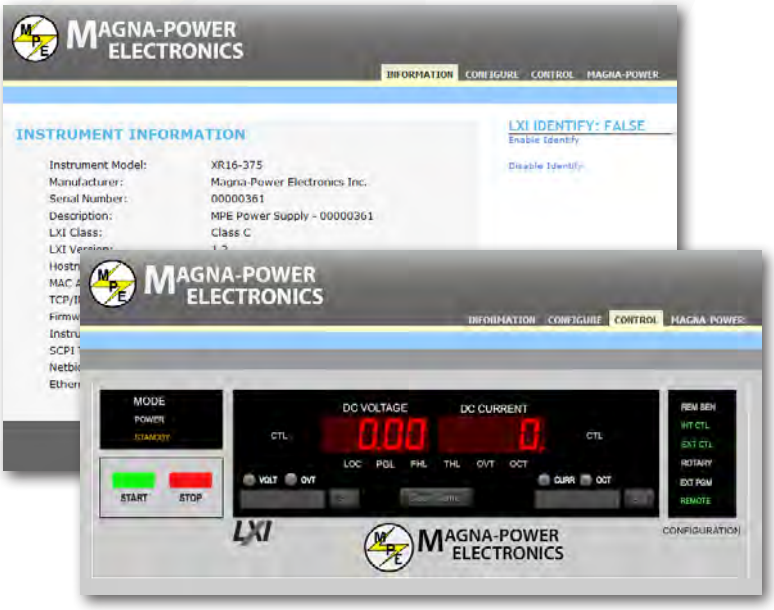
Isolated External I/O for Automation

Using the rear 37-pin I/O connector, the TS Series power supplies can be completely controlled and monitored using external signals. The voltage, current, over voltage trip, and over current trip set points are set by applying a 0-10 Vdc analog signals. Each diagnostic condition is given a designated pin, which reads 5 Vdc when high. Also, the power supply features an external interlock, which when enabled, allows the power supply to be tied in with other emergency stop equipment. All these pins are isolated to earth-ground as standard--no additional isolation circuitry necessary!

LXI-Compliant Embedded Ethernet

LXI is an instrumentation platform based on industry standard Ethernet technology designed to provide modularity, flexibility and performance to small- and medium-sized systems. LXI's advantages are exemplified in its compact, flexible package providing high-speed I/O and reliable measurements. These features meet the needs of R&D and manufacturing engineers delivering electronics for the aerospace/defense, automotive, industrial, and medical markets.

Certified to the LXI Standard (Class C), the TS Series Ethernet option includes an embedded web-server, allowing web browser power supply control and monitoring from virtually anywhere.

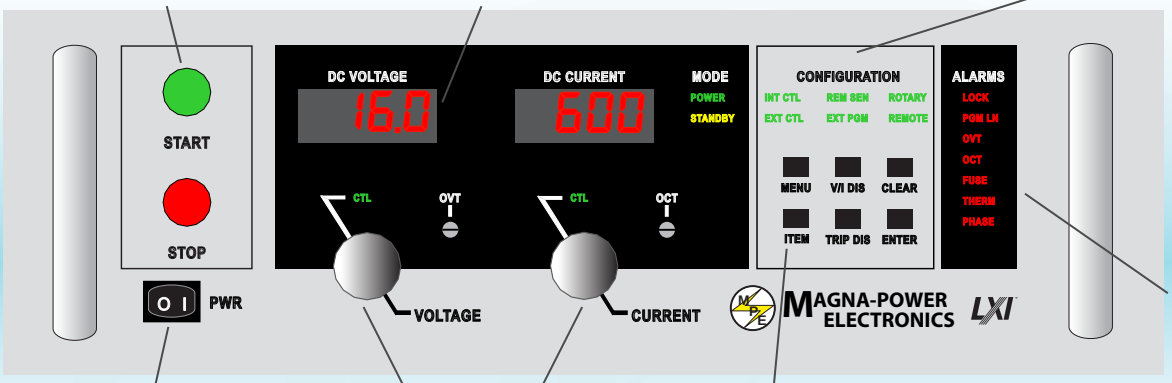


TS SERIES III

Enhanced Front Panel Control

MAGNA-POWER ELECTRONICS

A Version Front Panel



Switches main power on and off

Meters display voltage, current, over voltage protection, over current protection

MODE AND CONFIGURATION
POWER: Indicates power output
STANDBY: Indicates control power only
INT CTL: Front panel controls enabled
EXT CTL: External controls enabled
REM SEN: Indicates remote sense
EXT PGM: External voltage/current control
ROTARY: Potentiometer voltage/current control
REMOTE: RS232 control enabled

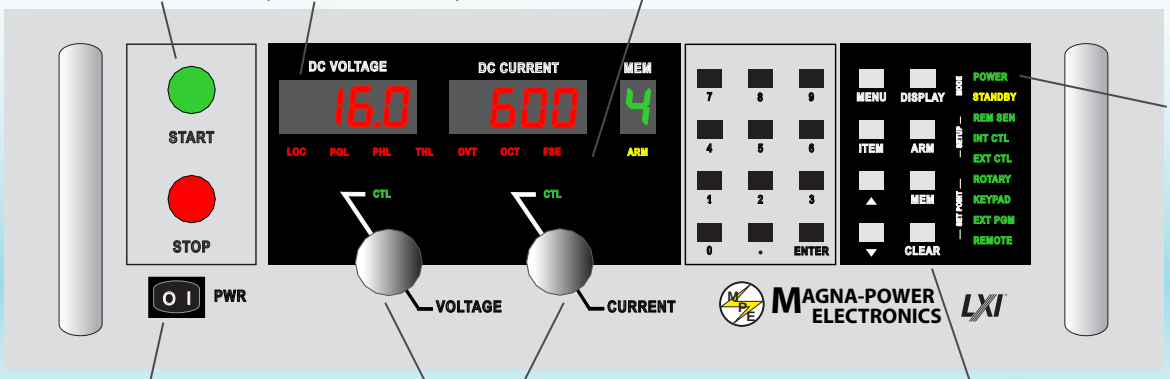
ALARMS
LOCK: Interlock
PGM LINE: External input beyond limits
OVT: Shows over voltage protection has tripped
OCT: Show over current protection has tripped
FUSE: Warns that a fuse has cleared
THERM: Indicates overheating
PHASE: Indicates a problem with the input voltage

Energizes control circuits without turning the main power on

Sets voltage and current in rotary mode

FUNCTION KEYS
MENU: Select function
V/I DIS: Displays V/I set points
CLEAR: Clear setting or reset fault
ITEM: Select item within function
TRIP DIS: Displays OVT and OCT setting
ENTER: Enter Setting

D Version Front Panel



Switches main power on and off

Meters display voltage, current, over voltage protection, over current protection

ALARMS
LOCK: Interlock
PGM LINE: External input beyond limits
OVT: Shows over voltage protection has tripped
OCT: Show over current protection has tripped
FUSE: Warns that a fuse has cleared
THERM: Indicates overheating
PHASE: Indicates a problem with the input voltage

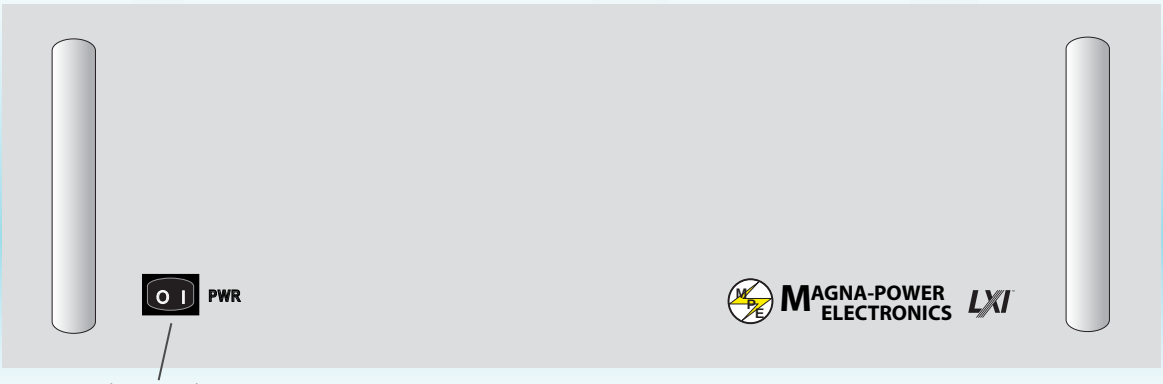
MODE AND CONFIGURATION
POWER: Indicates power output
STANDBY: Indicates control power only
INT CTL: Front panel controls enabled
EXT CTL: External controls enabled
REM SEN: Indicates remote sense
EXT PGM: External voltage/current control
ROTARY: Potentiometer voltage/current control
REMOTE: RS232 control enabled

Energizes control circuits without turning the main power on

Sets voltage and current in rotary mode

FUNCTION KEYS
MENU: Select function
DISPLAY: Displays V/I set points
ITEM: Select item within function
ARM: arms power supply for auto sequencing through states stored in memory
ENTER: Enter Setting
CLEAR: Clear setting or reset fault
MEM: Sets memory
▲ : Up
▼ : Down

C Version Front Panel



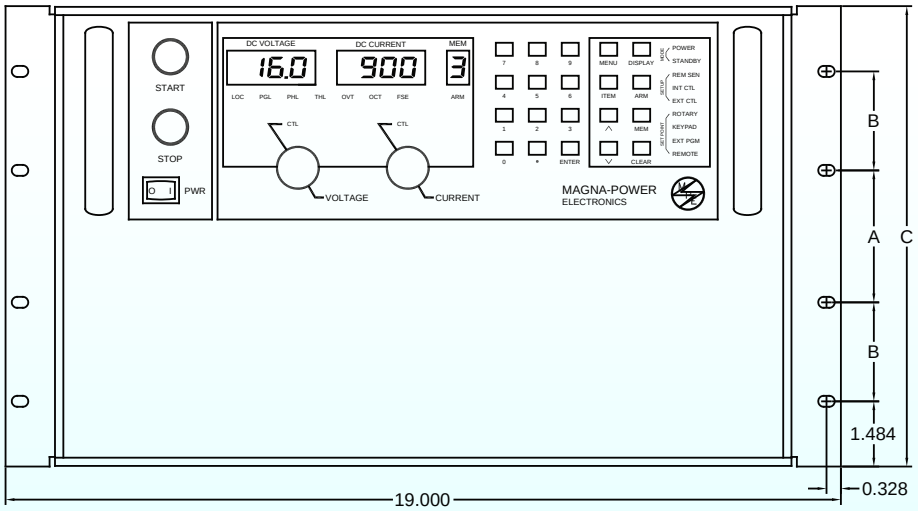
Energizes control circuits without turning the main power on

TS SERIES III

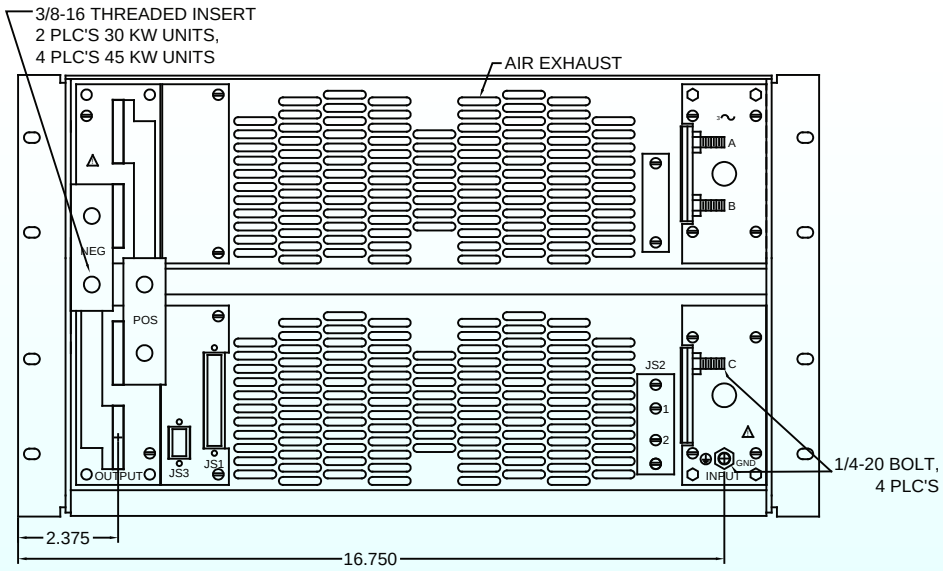
Size Diagrams - Air-cooled Models

MAGNA-POWER ELECTRONICS

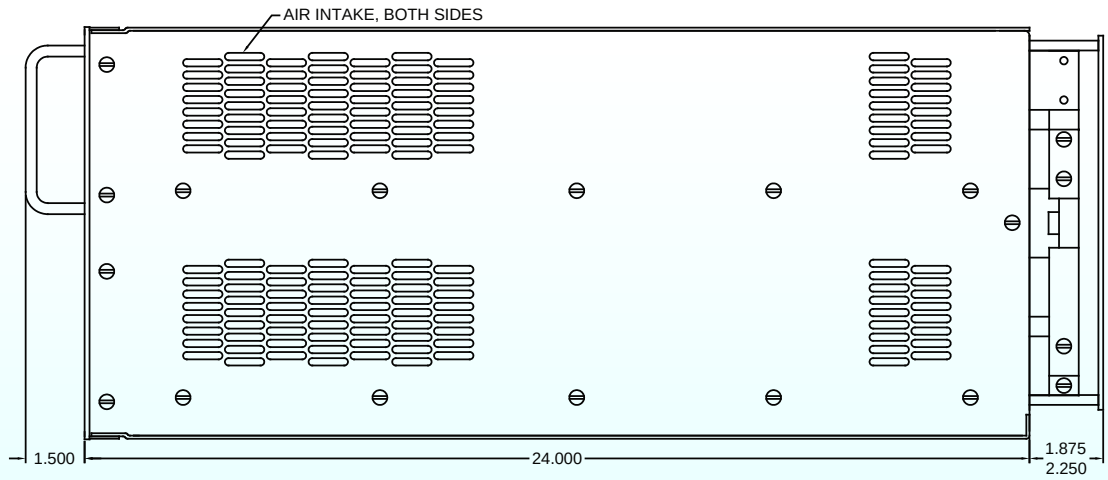
Front Panel



Rear Panel

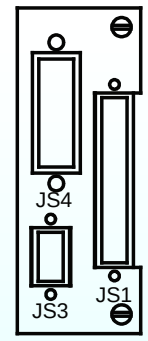


Side Panel

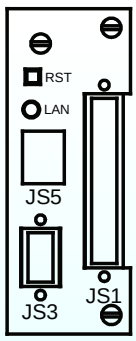


Dimensions (Inches) 3ϕ Units			
POWER	A	B	C
5 kW	2.250 (5.715 cm)	N/A	5.219 (13.26 cm)
10 kW	2.250 (5.715 cm)	N/A	5.219 (13.26 cm)
15 kW	2.250 (5.715 cm)	N/A	5.219 (13.26 cm)
20 kW	3.000 (7.620 cm)	2.250 (5.715 cm)	10.469 (26.591 cm)
25 kW	3.000 (7.620 cm)	2.250 (5.715 cm)	10.469 (26.591 cm)
30 kW	3.000 (7.620 cm)	2.250 (5.715 cm)	10.469 (26.591 cm)
45 kW	4.750 (12.065 cm)	4.000 (10.160 cm)	15.719 (39.926 cm)

Interfaces



OPTIONAL IEEE-488 INTERFACE



OPTIONAL ETHERNET INTERFACE

Connector JS1			
TERM	PARAMETER	TERM	PARAMETER
1	REF GND	20	REF GND
2	REF GND	21	+10V REF
3	VREF EXT	22	IREF EXT
4	TVREF EXT	23	TIREF EXT
5	VO2	24	IO2
6	+2.5V REF CAL	25	VMOD
7	GND	26	+5V
8	POWER	27	PGM LINE
9	THERMAL	28	STANDBY
10	INTERLOCK	29	PHASE LOSS
11	CUR CTL	30	VOLT CTL
12	STANDBY/ALM	31	RESERVE
13	ALM	32	OCT
14	EXT CTL	33	INT CTL
15	FUSE	34	OVT
16	RESERVE	35	RESERVE
17	START	36	ARM
18	CLEAR	37	INTERLOCK SET
19	STOP		

Connector JS2	
TERM	PARAMETER
1	VO1REM-
2	VO1REM+

Connector JS3	
TERM	PARAMETER
1	NC
2	RX
3	TX
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	NC

Doc Rev C, 10/19/2010