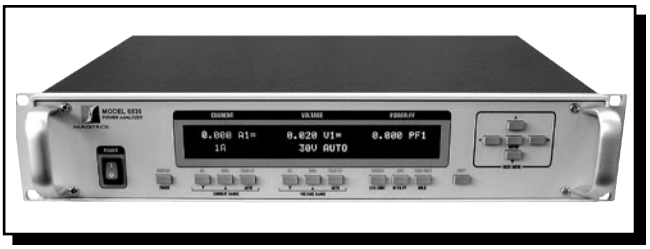
Models 6510*e* and 6530 Power Analyzers

FEATURES

- **Single/Three-Phase Capabilities:** For single (6510*e*) or three-phase (6530) power measurements
- **Ranges:** Up to 600 V_{rms} @ 20 A continuous duty
- **Interfaces:** RS-232 & IEEE-488
- **Data Transfer Rates:** Up to 100 per second
- **Accuracy:** Up to 0.1%
- **Vacuum Fluorescent Display:** High-quality, easy-to-read, customizable readout displays volts, amps, power and power factor
- **Measurement:** Continuous or cycle-by-cycle
- **Bandwidth:** DC up to 100 kHz
- **Input Power:** Accepts 120/240 V_{rms}, 60/50 Hz power at 20 VA max
- **Auto Ranging:** Automatically scales instrument for most accurate range
- **Isolation:** 1000 V_{rms} to earth, 750 V_{rms} line-to-line
- **Average:** Displays running average of amps, volts and watts
- **Peak Hold:** Stores the highest value read. Values can include amps, watts and volts in any combination
- **Analog Outputs:** Plug-in module provides 12 channels of analog output corresponding to volts, amps and watts
- **External Shunt Input**
- **Calibration Certificate:** NIST Traceable
- **Rack Mounting:** 19" (482.6 mm) with handles



DESCRIPTION

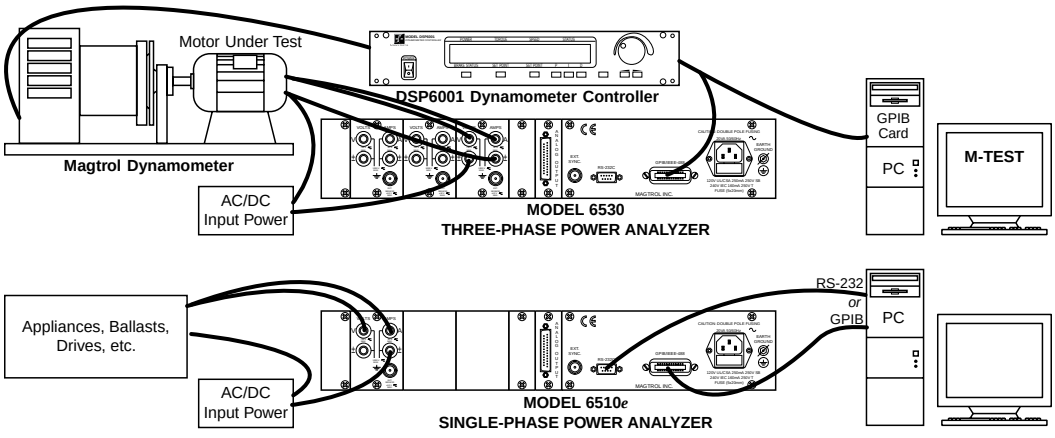
The Magtrol 6510e and 6530 Power Analyzers are easy-to-use instruments ideal for numerous power measurement applications. From DC to 100 kHz AC, the 6510*e*/6530 measures volts, amps, watts, volt-amps, frequency, crest factor, Vpeak, Apeak and power factor in one convenient display. They may be used either as stand-alone instruments or in conjunction with any Magtrol Hysteresis, Eddy-Current or Powder Brake Dynamometer; any Magtrol Dynamometer Controller and M-TEST Software for more demanding motor test applications.

APPLICATIONS

- Motors and Drives
- Lighting Fixtures/Ballasts
- Office Equipment
- Household Appliances
- Power Tools
- HVAC Equipment
- Calibration of Test and Measuring Instruments
- Switching Power Supplies
- Power Inverters
- Transformers

The 6510e's/6530's data transfer rate makes it ideal for both static and dynamic tests.

SYSTEM CONFIGURATIONS

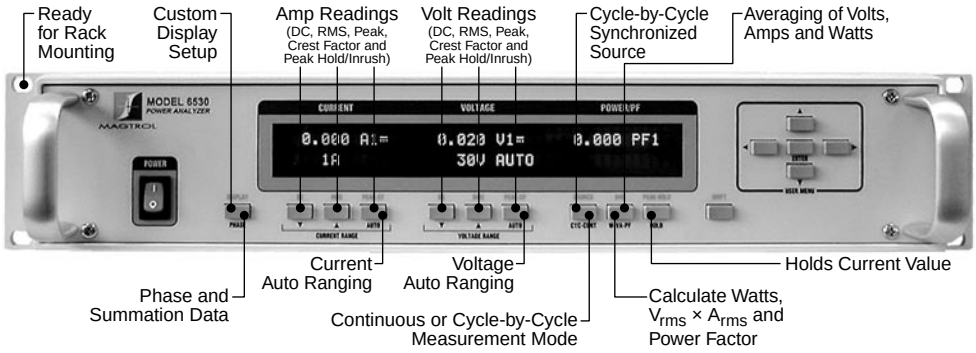


	VOLTAGE INPUT	CURRENT INPUT	EXTERNAL SENSOR INPUT	POWER
Ranges	30 V, 150 V, 300 V, 600 V	1 A, 5 A, 10 A, 20 A	50 mV, 250 mV, 500 mV, 1 V	---
Maximum Voltage	750 V AC/DC terminal (V) to terminal (±) and 1000 V AC/DC terminal to earth ground	1000 V AC/DC terminal to ground	±1 V AC/DC	---
Crest Factor	1.7 @ full scale input	2.7 @ full scale input	2.4 @ full scale input	---
Impedance	2 MΩ	12 MΩ	17 MΩ	---
Display Range	5 digits with 1 mV resolution	5 digits with 1 mA resolution	5 digits with 1 µV resolution	5 digits with 1 mW resolution
ACCURACY				
DC	±(0.1% Reading + 0.2% Range)			0.4% of VA range
5 Hz – 500 Hz	±(0.1% Reading + 0.1% Range)			0.2% of VA range
500 Hz – 10 kHz	±((0.015 × F(kHz)% Reading) + 0.3% Range)			0.6% of VA range
10 kHz – 100 kHz	±((0.015 × F(kHz)% Reading) + 0.3% Range)			0.6% + (0.03% × F(kHz)% of VA range)
> 100 kHz	N/A (measurement band limited to DC–100 kHz)			

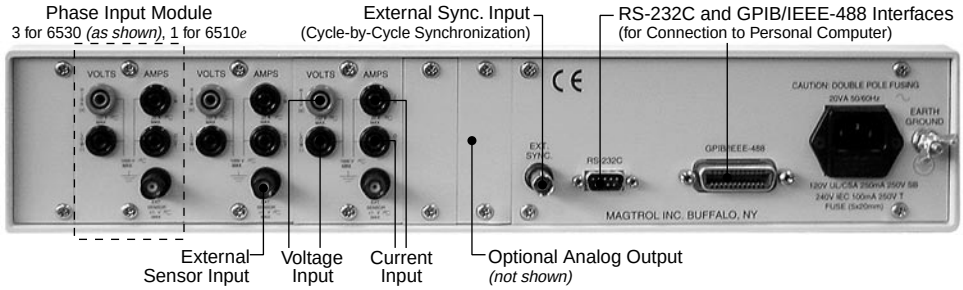
FREQUENCY	
Source	V_1, A_1, V_2, A_2, V_3, A3, LINE or EXT (For Vx and Ax, source input must be >10% of range setting)
Accuracy	20 Hz to 500 Hz; 0.05%
EXT. Input	BNC non-isolated, earth ground referenced
Input Impedance	100 kΩ
Voltage Level	TTL / CMOS
Maximum Voltage	50 V

DIMENSIONS		
Width	19.0 in	483 mm
Height	3.5 in	89 mm
Depth	12.4 in	315 mm
with handles	13.8 in	351 mm
Weight	12.97 lb	5.88 kg

FRONT PANEL



REAR PANEL



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ANALOG OUTPUT OPTION

The Analog Output is a plug-in module designed specifically for use with the 6510*e* Single-Phase Power Analyzer and 6530 Three-Phase Power Analyzer. It provides up to 12 channels (3 for the 6510*e*, 12 for the 6530) of analog output corresponding to volts, amps and watts. Each output is capable of, and calibrated to, ± 10 volts. With the analog output option, the user may apply a scale factor to all outputs. Amps scaling is applied to all amp channels, volts scaling is applied to all volt channels and watts scaling is applied to all watt channels.

Other features include:

- Simple Installation: Plug-in module automatically configures power analyzer for operation
- Frequent Output Updates: Updates every 5 milliseconds
- Output Short Protected
- Factory Calibrated: Calibration data/values stored on board (EEPROM)
- Industry Standard 25-Pin Connection

The Analog Output can be used along with a 6510*e* or 6530 Power Analyzer to output information to a strip recorder or interface with a data acquisition system. The Analog Output is also used as a safety feature to help trigger alarm events.

SPECIFICATIONS	
Resolution	14 bits
Temperature Coefficient	4 ppm FSR/°C (typical), 20 ppm FSR/°C (maximum)
Output Range	± 10 V maximum
Number of Channels	3 (6510*e*) 12 (6530)
Basic Accuracy	3 least significant bits
Output Update Rate (all channels)	200 samples/second (5 ms)

ORDERING INFORMATION

6510*e*	Single-Phase Power Analyzer
6510*e*-01	Single-Phase Power Analyzer with Analog Output Option
6530	Three-Phase Power Analyzer
6530-01	Three-Phase Power Analyzer with Analog Output Option

EXTERNAL SHUNTS/SENSORS

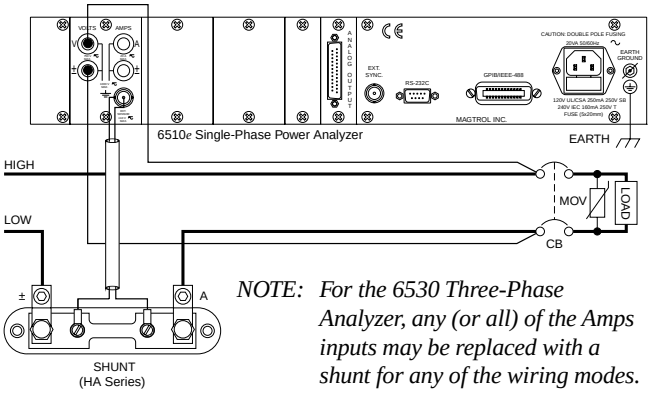
If currents continuously reach above 20 amps, an external sensor must be used. Magtrol offers three different types of external shunts for use with Magtrol models 6510*e* or 6530 High-Speed Power Analyzers.

Available Models		
Series	**P/N**	**Amps**
HA	004640	50
HA	004641	100
HA	004642	150
HA	004643	200
HA	004644	250
HA	004645	300
HA	004646	400
HA	004647	500
LAB	004648	750
LAB	004649	1000
FL	005214	2000
FL	005286	3000

The HA Series shunt, designed for power cable hook-up utilizing 3/8-16 screws, has an insulating base and can be mounted on conductive surfaces. The LAB Series shunt also comes with an insulating base, along with thumb screws for the power leads and knurled nuts on the sensing terminals. The FL Series is a relatively small bus, bar-mounted shunt with large end blocks. The comparatively large end blocks and short spacing aid in cooling and allow the shunt to operate in more extreme environments. All shunts are calibrated on equipment with current certifications traceable to N.I.S.T.

SPECIFICATIONS			
	HA Series	**LAB Series**	**FL Series**
Rated Current	50 to 500 A	750 to 1000 A	2000 to 3000 A
Output	50 mV		
Bandwidth	DC to 60 Hz		
Accuracy	± 0.25% *(± 0.1% accuracy with calibration certificate is available for an additional cost)*		
Operating Temperature	For optimum accuracy, temperature of shunt should be 30 °C to 70 °C		

Sensor Substitution Wiring Connection



NOTE: For the 6530 Three-Phase Analyzer, any (or all) of the Amps inputs may be replaced with a shunt for any of the wiring modes.

Due to the continual development of our products, we reserve the right to modify specifications without forewarning.