Technocomm Instruments Pvt. Ltd.

Total Solutions in
Instrumentation & Information

Elektro-Automatik

MEASUREMENT COMPUTING

pico Technology

ZES ZIMMER
Precision Power Measurement

A.H. Systems, inc.
(818) 998-0223

H&H Höcherl & Hackl
The electronic load

PACIFIC POWER SOURCE

Technocomm Instruments Pvt Ltd is a Company Pioneer in Marketing and Supporting of highly sophisticated overseas products in India. The Company is promoted by group of technocrats having more than 30 years of experience in instrumentation sales and support. Our prospective and satisfied customers are Defence Organizations, Research & Development Organizations, Space Organizations, Engineering Institutions, Universities, Private & Public Sectors and Educational Institutions.

We Choose instruments from the best companies around the world, the pioneers in the respective fields. We have served many reputed organizations in India and have been lauded by them for our quality products, in-time service and competitive price.

Elektro-Automatik

EA ELEKTRO-AUTOMATIK

Innovation & quality for more than 40 years

BI-DIRECTIONAL POWER SUPPLIES

Battery | Fuel Cell | Renewable Energy | Automotive | Railways | Avionics | Marine | ATE Systems | Manufacturing

EA Elektro-Automatik, a worldwide manufacturer of DC Power supplies and Electronics loads

The **Bidirectional DC power supply** with integrated, regenerative electronic load series EA-PSB 10000 provides 5kW, 10kW, 15kW in 3U and 30kW in 4U chassis with up to 2000 VDC. This series easily parallels supplies for almost 1.92MW of power. All EA Elektro-Automatik DC power supplies and loads feature true autoranging and thus over additional operating ranges. The lower the test voltage, the higher currents are possible. Likewise, higher voltages are available for lower currents. This means that a much wider range of test routines can be covered with a bidirectional DC power supply.

The PSB series of bidirectional DC power supply features 5″ TFT touch panel display for intuitive control, setup and programming. The intelligent interface allows you to configure and test quickly without the need for extensive manual review.

EA bidirectional dc power supplies come standard with an arbitrary waveform function generator, swappable digital interface control and built-in test routines for battery test, photovoltaic simulation and MPP tracking, to name a few.

Regenerative Energy Recovery: The PSB is bidirectional, meaning it can source (provide) or sink (absorb) current and regenerate that current to the local power grid with up to 96% efficiency. The built-in electronic load function is regenerative, making the PSB a very green solution on top of minimizing investment and test equipment space. Save electricity + costs, Efficiency approx. 96%.

Highlights

- True Autoranging – Advantages for Test
- Regenerative Energy Recovery
- Waveform Function Generator
- Color touch screen
- 3-ways onboard Interface

Technical Specifications

- **Nominal Power** 2500W to 30000W
  Systems up to 1.92MW parallel operation
- **Nominal Voltage** 60V to 2000V
- **Nominal Current** 20A to 1000A

Features

- Master-Slave-Bus for parallel connection
- 19″ Full insertion
- 2 U, 3 U and 4 U housing
- Analog and USB interface, further options retrofittable
- Microprocessor (FPGA) controlled
- Color touch panel
- Internal resistance control
- Battery test mode
- Arbitrary generator & car startup curve
- Optional: Digital, pluggable interface modules
- SCPI and ModBus protocol
- LabView VIs and control software
- Reduce power consumption with high efficiency 10000 series & enjoy greater than 96% energy recovery
- Communicate easily to PCs and Programmable Logic Controllers (PLCs)

Series	Power	Voltage	Current	Input
EA-PSB 10000 4U	0 – 30000 W	0 – 10 V up to 0 – 2000 V	0 – 40 A up to 0 – 1000 A	380-480V~3ph L-L
EA-PSB 10000 3U	0 – 5 kW / 0 – 10 kW / 0 – 15 kW	0 – 10 V up to 0 – 2000 V	0 – 20 A up to 0 – 510 A	208 V – 480 V 3ph AC
EA-PSB 10000 2U	0 – 1500 W / 0 – 3000 W	0 – 10 V up to 0 – 1500 V	0 – 6 A up to 0 – 120 A	110-240V AC

Elektro-Automatik

DC POWER SUPPLIES AND ELECTRONIC LOADS

For research, industry and education

Highlights

- True Autoranging – Advantages for Test
- Waveform Function Generator
- Color touch screen
- IF- Plug'n play interface-slot
- PV (Solar), Battery and fuel cell simulation
- Regenerative Energy Recovery (ELR Series)

Technical Specifications

- **Nominal Power** from 80W to 150kW and more
- **Nominal Voltage** 0-16V to 0-15kV DC
- **Nominal Current** 0-6A to 0-510A
  (Systeme from 3500A)

Programmable DC Power Supplies - EA-PSI / PS Series

Series	Power	Voltage	Current	Input
EA-PS / PSI 10000 4U	0 – 30000 W	0 – 60 V up to 0 – 2000 V	0 – 40 A up to 0 – 1000 A	380-480V~L-L
EA-PS / PSI 10000 3U	0 – 5 kW / 0 – 10 kW / 0 – 15 kW	0 – 60 V up to 0 – 2000 V	0 – 20 A up to 0 – 510 A	208 V – 480 V 3ph AC
EA-PS / PSI 10000 2U	0 – 1500 W / 0 – 3000 W	0 – 60 V up to 0 – 1500 V	0 – 6 A up to 0 – 120 A	110V – 240V AC
EA-PSI 9000 DT	320-1500W (Autorange)	0-40V to 0-750V	0-4A to 0-60A	100-240V~
EA-PS / PSI 9000 T	320-1500W (Autoranging)	0-40V to 0-500V	0-4A to 0-60A	100-240V~
EA-PS 9000 1U	1500–3000W	0-80V to 0-750V	0-6A to 0-100A	100-240V~
EA-PS 2000 B	100-320W (Flexirange)	0-42V to 0-84V	0-6A to 0-20A	100-240V~
EA-PS 2000 B Triple	100-320W (Flexirange)	2x 0-42V to 2x 0-84V + 3-6'	0-6A to 0-10A	100-240V~

Programmable DC Electronic Loads (Regenerative) - EA-ELR Series

Series	Power	Voltage	Current	Input
EA-ELR 10000 4U	0 – 30000 W	0 – 80 V up to 0 – 2000 V	0 – 40 A up to 0 – 1000 A	380-480V~3ph L-L
EA-ELR 10000 3U	0 – 5 kW / 0 – 10 kW / 0 – 15 kW	0 – 80 V up to 0 – 2000 V	0 – 20 A up to 0 – 510 A	208 V – 480 V 3ph AC
EA-ELR 10000 2U	0 – 1500 W / 0 – 3000 W	0 – 80 V up to 0 – 1500 V	0 – 6 A up to 0 – 120 A	110V – 240V AC

Programmable DC Electronic Loads (Conventional) - EA-EL Series

Series	Power	Voltage	Current	Input
EA-EL 9000 B 3U/6U	1200-9000W	0-80V to 0-750V	0-20A to 0-1020A	100-240V~
EA-EL 9000 B HP 2U	600-2400W	0-80V to 0-750V	0-10A to 0-170A	100-240V~
EA-EL 9000 DT	400-900W	0-80V to 0-750V	0-5A to 0-60A	100-240V~
EA-EL 9000 T	400–600W	0-80V to 0-500V	0-8A to 0-45A	100-240V~

PicoScope 2000 Series

Ultra-compact range of 8-bit oscilloscopes & mixed-signal oscilloscopes (MSO). 2000B models offer more memory & bandwidth. All models are USB-powered & have a built-in function generator and AWG.

Channels	2 or 4 (+16 digital with MSO
Bandwidth	10 to 100MHz
Max Sampling	1 GS/s
Memory	8kS to 128 MS

PicoScope 3000 Series

General-purpose 8-bit oscilloscopes and mixed-signal oscilloscopes (MSO) that combine fast sampling rates with class-leading deep buffer memories. All models have a built-in function generator and AWG.

Channels	2 or 4 (+16 digital with MSO
Bandwidth	50 to 200MHz
Max Sampling	1 GS/s
Memory	64 MS to 512 MS

PicoScope 4000 Series

High-resolution oscilloscopes with 12 to 16-bit resolution. Low noise and distortion provide unmatched signal fidelity. All are USB-powered and most include an AWG. Series includes differential-input models.

Channels	2 , 4 or 8
Bandwidth	5 to 20MHz
Max Sampling	80 MS/s
Memory	10MS to 256 MS

PicoScope 5000 Series

Flexible Resolution Oscilloscopes. Breakthrough ADC technology allows a range of hardware resolutions from 8 to 16 bits. Combines the high sampling rate of the PicoScope 3000 Series with high resolution of the PicoScope 4000 Series.

Channels	2 or 4 (+16 digital with MSO
Bandwidth	60 to 200MHz
Max Sampling	1 GS/s
Memory	128MS to 512MS

PicoScope 6000 Series

High-performance oscilloscopes with up to 1 GHz bandwidth, 8 or 8-12 bit flexible resolution and ultra-deep capture memory that delivers 200 ms capture duration at maximum sample rate of 5 GS/s. Optional MSO pods add up to 16 digital channels.

Channels	4 or 8 (+16 digital, optional with MSO
Bandwidth	300MHz to 1 GHz
Max Sampling	5 GS/s
Memory	1 GS to 4 GS

PicoScope 9000 Series

The unique PicoScope SXRTOs and Sampling Oscilloscopes for data eye diagram, speed and jitter analysis out to 16 Gb/s. 9.5 GHz optical, clock recovery and differential TDR/TDT options.

Channels	2 or 4
Bandwidth	5GHz to 25GHz
Max Sampling	500 MS/s
Memory	250 kS

PicoVNA Vector Network Analyzers

Professional and portable 6 GHz and 8.5 GHz VNAs for both lab and field use at low cost. SOLT (short, open, load and through) calibration, Built-in Bias-Ts to provide a DC bias or test stimulus to active devices without the complexity and cost of external DC-blocks. The PicoVNA 108 delivers an exceptional dynamic range of 124 dB at 10 Hz (118 dB for the PicoVNA 106) and less than 0.006 dB RMS trace noise at its maximum operating bandwidth of 140 kHz.

- 300 kHz to 6 or 8.5 GHz operation
- High speed, up to 5500 dual-port S-parameters per second
- > 10 000 S11 + S21 per second
- Quad RX four-receiver architecture for best accuracy
- Up to 124 dB dynamic range at 10 Hz bandwidth
- 0.005 dB RMS trace noise at maximum bandwidth of 140 kHz
- Half-rack, small-footprint, lightweight package
- Dual-frequency mixer measurements with VSWR correction (PicoVNA 108)
- Reference plane offsetting and de-embedding
- Time domain and port impedance transformations
- Tabular and graphic print and save formats, including Touchstone
- Phase meter, P1dB, AM to PM, and stand-alone signal generator utilities

PicoScope Automotive Oscilloscopes & Kits

PicoScope 4425A 2channel & 4 channel kits

- Push-fit PicoBNC+ probes automatically recognized
- 2 or 4 or 8 high-performance channels
- 400 M samples/second and 20 MHz bandwidth
- 12-bit (16-bit enhanced) resolution
- 250 M sample memory for long-duration captures
- USB 3.0 data transfer speeds and power
- Active Diagnostics – faster, easier and more reliable

Types of kits available:

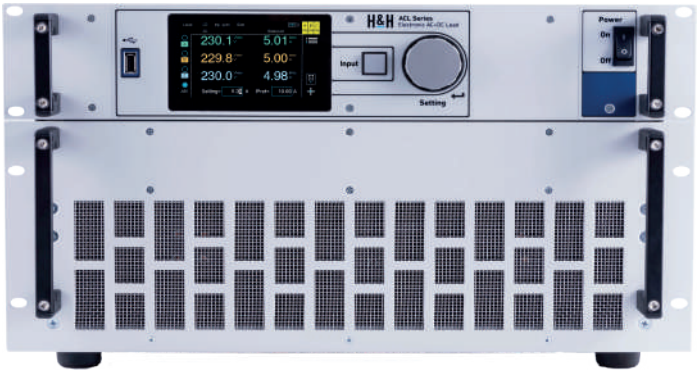
2 & 4 channel Standard kit, Electric Vehicle kit, Diesel kit, Advanced kit, Master kit, PicoScope Off-Highway kits

Höcherl & Hackl
The electronic load

ELECTRONIC DC LOADS & AC LOADS

DC Loads - From 200 to 28,800 W we offer different series for almost every DC test object the suitable electronic load, air-cooled or regenerative.

AC Loads - From 400 to 3 x 8,400 W our AC loads cover a frequency range up to 1,000 Hz. DC operation is also possible.
ACL series provides single-phase (ACLS) and 3-phase loads (ACLT) in one housing. By master-slave operation in system connection 3 single-phase loads may be operated as a 3-phase system and are operated then like a 3-phase load.



	PLI SERIES		SCL SERIES		TRL SERIES	
DC LOADS	Voltage	Up to 1,200 V	Voltage	12 V or upto 40 V	Voltage	Up to 1,200 V
	Current	Up to 2,700 A	Current	Upto 1,200 A	Current	Up to 60 A
	Power	600W - 28,800W	Power	600 W - 1,800W	Power	1,000 W
	Standard Interface	Ethernet + USB + RS-232 + CAN	Standard Interface	RS-232,USB,LAN CAN, I/O port	Standard Interface	RS-232, USB LAN, CAN
	Operating Modes	CC+CV, CV+CC, CR+CC+CV, CC, CV, CR, CP	Operating Modes	CC+CV, CR+CC+ CV, CP+CC+CV, CV+CC, CR, CP	Operating Modes	CC+CV, CV+CC, CR+CC+CV, CC, CV, CR, CP

	ACL SERIES	
AC LOADS	Voltage	Up to 3 x 500 V
	Current	Up to 3 x 60 A
	Power	3 x 1,400 W to 3 x 8,400 W
	Frequency	Up to 1,000 Hz
	Standard Interface	RS-232, USB LAN, CAN (GPIB Optional)

MEASUREMENT COMPUTING™

DATA ACQUISITION SYSTEMS

Data acquisition solutions from Measurement Computing provide for a wide range of applications and interfaces. Whether you are measuring current, voltage, temperature, strain or digital signals, MCC offers high-quality hardware with accompanying software and drivers for a quick and customizable data acquisition solution for your unique application.

DATA ACQUISITION

USB, Ethernet and PCI(PCIe) acquisition systems for wide range of applications.
Measure Current, Voltage, Temparature, strain and Digital signals
Board-only / OEM solutions with easy to integrate connectors

TEMPERATURE MEASUREMENT

MCC offers a wide selection of temperature measurement DAQ products for use with thermocouples, thermistors and RTDs.
USB Ethernet, Wireless and
Data logger solutions.

DATA LOGGERS

Stand alone data loggers provides solutions for recording temperature, voltage, current, humidity and more. Available with various configarations and comes with easy to use software to log, view and process data.

ZES ZIMMER
Precision Power Measurement

Precision Power Analyzers

Models Overview

- **LMG 671** - 1 to 7 Channel Power Analyzer
- **LMG 641** - 1 to 4 Channel Power Analyzer
- **LMG 611** - Single Channel Precision Power Analyzer as Compact Desktop Device

Features

- 1 to 7 channels precision power analyzers
- Outstanding accuracy of 0.015% of measured value + 0.01% of range
- Full dynamic range of 500 µA to 32 A / 3 mV to 1000 V per channel available in single instrument
- Range extension with sensors upto 2000A
- Simultaneous measurement of narrow- and broadband values through innovative DualPath architecture
- Simultaneous capturing of fundamental frequency & broadband RMS values for instantaneous detection of losses, resp. high-frequency components
- Harmonics and interharmonics up to 2000. order, as required by EN61000-4-7
- With optional I/O card speed/torque inputs freely configurable for all signal types (analogue, frequency as RS422,TTL or HTL) via menu
- Flexible scripting tool for custom applications
- Simultaneous measurement of V, I, P values and harmonics, presentation in tabular or graphical form
- Signal filters freely configurable by frequency, type and characteristics
- Synchronization to up to 7 different frequencies simultaneously
- Flicker measurement, interactions between grid and appliance according to EN61000-4-15
- Process signal interface (PSI), Star-to-delta conversion
- Bi-directional CAN interface – remote control via CAN bus

Measurement Channels

L60-CH-S

High-Precision Wideband Channel, DC-optim. up to **1500V** with DualPath functionality, bandwidth **DC-10 MHz**, best power **accuracy 0.015% + 0.01%** 18 bit channel resolution.
Measuring inputs:
1. Voltage directly: 300 mV - 1000 Vtrms/1500VDC in 10 ranges: 3200 Vpk
2. Voltage sensor input: 3 mV - 4 Vtrms in 8 ranges: 12.5 Vpk
3. Current directly 500 µA-32 Atrms in 10 ranges: 120 Apk
4. Current sensor input: 3 mV - 4 Vtrms in 8 ranges: 12.5 Vp

L60-CH-A

Channel for high-precision wideband measurements with DualPath functionality, bandwidth **DC-10 MHz** , best power **accuracy 0.015% + 0.01%** 18 bit channel resolution.
Measuring inputs:
1. Voltage directly: 300 mV - 1000 Vtrms in 10 ranges, 3200 Upk
2. Voltage sensor input: 3 mV - 4 Vtrms in 8 ranges, 12.5 Upk
3. Current directly 500 µA-32 Atrms in 10 ranges, 120 Ipk
4. Current sensor input: 3 mV - 4 Vtrms in 8 ranges, 12.5 Upk

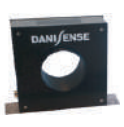
L60-CH-B

Channel for general purpose measurements with DualPath functionality, bandwidth **DC - 500 kHz**, best power **accuracy 0.05% + 0.02%.**
Measuring inputs:
1. Voltage directly: 300 mV - 1000 Vtrms in 10 ranges, 3200 Upk
2. Current directly 500 µA-32 Atrms in 10 ranges, 120 Ipk
3. Current sensor input: 3 mV - 4 Vtrms in 8 ranges, 12.5 Upk

L60-CH-C

Channel for high-precision measurements up to **10kHz** bandwidth DC-10 kHz best power **accuracy 0.03% + 0.01%**.
Measuring inputs:
1. Voltage directly: 300 mV - 1000 Vtrms in 10 ranges, 3200 Upk
2. Current directly 500 µA-32 Atrms in 10 ranges, 120 Ipk
3. Current sensor input: 3 mV - 4 Vtrms in 8 ranges, 12.5 Upk

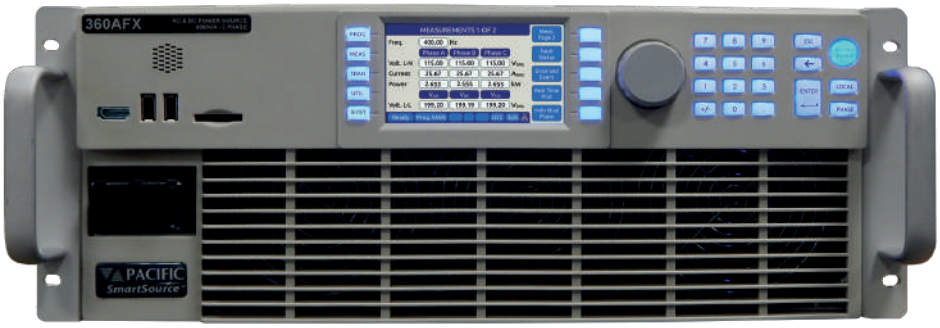
CURRENT SENSORS

Type	Ring-type transducers					Current clamps		Shunt
								
Name	PCT	Hallxxx-L6	DS	WCT	LMG-Z5XX	L60-Z406, L60-Z60/66	L60-Z68	LMG-SH (-P)
Signal type	AC+DC			AC		AC	AC+DC	AC+DC
Current ranges	200... 2000 A_{rms}	100... 2000 A_{rms}	50... 7 000 A_{rms}	100 ... 1000 A_{rms}	750 A_{rms}... 10 kA $_{rms}$	40... 3 kA_{rms}	1 kA_{rms}	22mA_{rms}... 1 A_{rms}
Best accuracy	0.01 %	0.5 %	0.01 %	0.25 %	0.02 %	0.2 %	2.0 %	0.15 %
Max. bandwidth	DC... 1 MHz	DC... 100 kHz	DC... 1 MHz	30 Hz... 1 MHz	15 Hz... 5 kHz	5 Hz... 50 kHz	DC... 2 kHz	DC... 100 kHz
Power supply by LMG600	PCT200/600	Yes	No	Not required		Yes		Not required
Plug 'n' Measure	PCT200/600	Yes	No	No		Yes		No

AC AND/OR DC POWER SOURCE

PACIFIC POWER SOURCE

Integrated AC and/or DC Power Source Solutions



Reliable, Efficient AC & DC Power Sources

We provide technically advanced, reliable, and cost effective AC and DC power solutions that feature fast transient response, tight regulation, high peak current capability, no switching noise (linear) and very low switching noise (PWM switching) models and low impedance.

- Both linear and switched mode (PWM) AC Power Sources.
- Power from 500VA to 200kVA+
- Voltage from 0 to 760 Vac
- Frequency up to 5000Hz
- Input 1, 2 and 3 phase output dedicated or selectable
- High Power, digital control, solid-state AC Power Sources.
- Programmable for both basic frequency conversion and power line disturbance test applications.

LSX SERIES		LMX SERIES		ADF SERIES		AFX SERIES		AZX SERIES	
Power	1500VA to 6kVA	**Power**	500VA to 30kVA	**Power**	15kVA to 90kVA	**Power**	6kVA to 150kVA+	**Power**	30kVA to 200kVA+
Voltage	0 up to 600VAC	**Voltage**	0 up to 600VAC	**Voltage**	0 up to 300V L-N / 520V L-L	**Voltage**	0 upto 333Vac L-N/ 576VacL-L / 425Vdc	**Voltage**	0 to 440Vac L-N/ 760Vac L-L
Frequency	15 to 1,200Hz	**Frequency**	15 to 5,000Hz	**Frequency**	45-500Hz	**Frequency**	DC, 1-3000Hz	**Frequency**	DC, 1-15Hz, 15-1000Hz
Form	1, 2 & 3 phase selectable	**Form**	1, 2 & 3 phase selectable	**Form**	1, 2 & 3 phase output modes	**Form**	1, 2 & 3 phase output modes	**Form**	1, 2 & 3 phase output modes

EMI AND EMC TEST ANTENNAS

A.H. Systems, inc.
(818) 998-0223

EMI & EMC Test Antennas for Compliance Testing

Reliable, Cost effective EMI / EMC Antennas

A.H. Systems has been established since 1974 and manufactures a complete line of affordable, reliable, EMI test equipment. Our individually calibrated EMI Test Antennas, Preamplifiers, Current Probes and Low-Loss Cables satisfy many test standards including CISPR, MIL-STD, FCC, EN, VDE, IEC and SAE.
Manufacturing high quality products at competitive prices with immediate shipment plus prompt technical support are our goals to improve the quality of your testing requirements.

ANTENNA KITS	HORN ANTENNAS	LOOP ANTENNAS	MONOPOLE ANTENNAS
Frequency: 20 Hz - 40 GHz	Frequency: 170 MHz - 40 GHz	Frequency: 20 Hz - 30 MHz	Frequency: 100 Hz - 60 MHz
BICONICAL ANTENNAS	**BILOGICAL ANTENNAS**	**LOG PERIODIC ANTENNAS**	**H-FIELD ROD ANTENNAS**
Frequency: 20 MHz - 18 GHz	Frequency: 20 MHz - 1 GHz	Frequency: 80 MHz - 7 GHz	Frequency: 100 Hz - 30 MHz
DIPOLE ANTENNAS	**PREAMPLIFIERS**	**CURRENT PROBES**	**RF CABLES & ADAPTERS**
Frequency: 25 MHz - 3 GHz	Frequency: 5 KHz - 40 GHz	Frequency: 20 Hz - 500 MHz	Frequency: Upto 40 GHz

TRIPODS AND MOUNTING ADAPTERS

Wood Tripod, Plastic Tripod, Vertical Rod, Tripod Extension, Carrying Case, Azimuth and Elevation head, Log periodic mount

Elektro-Automatik

PURE & POWERFUL

EA-10000 Industrial Series
60 kW in 6U.
30 kW in 4U.
Up to 300 kW
in a single rack.

EA-10000 Industrial Series with 6U Power

Power Unit	EA-PU 10000 6U 60kW
Power Unit Bidirectional	EA-PUB 10000 6U 60kW
Power Unit Load	EA-PUL 10000 6U 60kW

EA-10000 Industrial Series with 4U Power

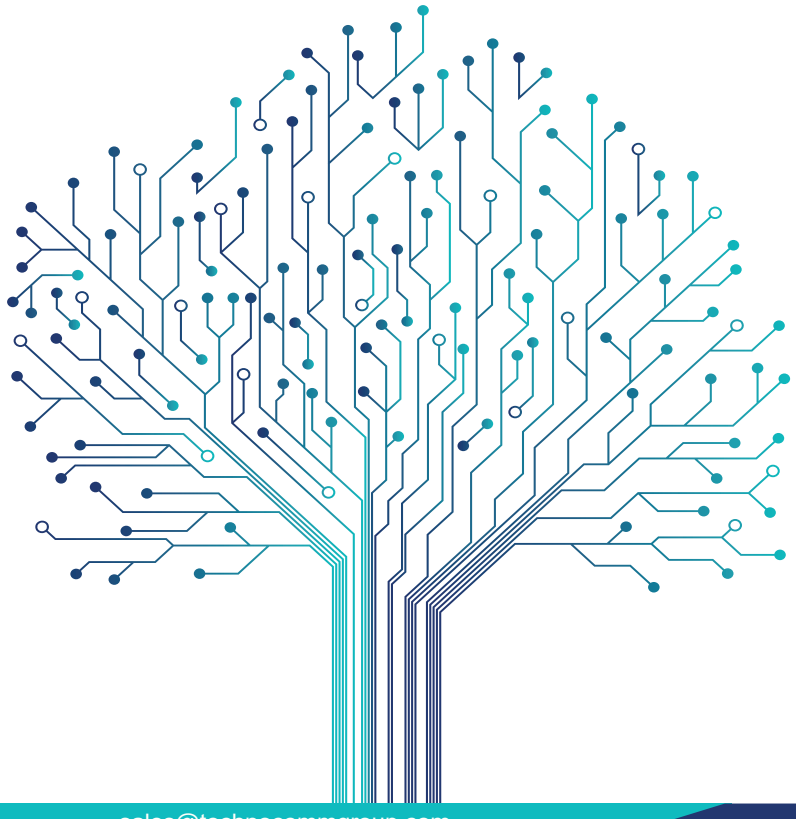
Power Unit	EA-PU 10000 4U 30kW
Power Unit Bidirectional	EA-PUB 10000 4U 30kW
Power Unit Load	EA-PUL 10000 4U 30kW

Highlights

- 19” rack with 42U for a system with 300 kW
- Up to 13 racks with 64 devices of 60 kW each in parallel
- For high power applications up to 3.84 MW
- Less devices for a high performance system
- Less operating costs

Powerful Industrial Test Solution in 3U & 6U

- Power supplies and electronic loads: programmable, bidirectional, regenerative up to over 96 %
- For ATE systems and automated process control systems
- With Master-Slave-Bus/Share-Bus interface, autoranging, integrated function generator and much more



Technocomm Instruments Private Limited

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- A.H Systems Inc-USA
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