



**INTEGRATED
SERVICES**

www.isc4esaindia.com

INTEGRATED SERVICES & CONSULTANCY

Experienced, Reliable and Resourceful TMI Solution Provider



AC Sources, DC Power Supplies, DAQs, AC/DC E-Loads

Battery Meters, Multi-function Programmable DSOs

Bi-Directional Regenerative Power Supplies

Hot Air Stations, Protocol Analyzers, Electrical Safety Testers

Spectrum Analysers, Logic Analyzers, MSOs

Soldering Stations, Power Quality Analyzer

EVSE Testers, Battery Testers, Stereo Microscopes

EMC/EMI Pre-Compliance, LCR Meters

Grid Simulator, Thermal Imager, BGA Rework Station

Integrated Services and Consultancy (ISC), an ESA Group Company, is a leading provider of electronic test and measuring instruments since 1993. ISC, a premier distributor partner of Good Will Instrument, GW INSTEK, has been providing high precision electrical Test & Measuring Instruments with optimal TCO - Total Cost of Ownership. Our testing solutions help engineers expertly keep pace with disruption and succeed with innovation in fast growing sectors as in Automotive, IIoT, Semiconductor, Power and many others.

DC POWER SUPPLIES



GSM-20H10
Precision source measure unit
4 quadrant operation of
210V/±1.05A/22W



PSW-Multi Series
Dual-channel/Triple-channel
programmable switching
DC power supply



GPP-3060/6030/3650
Triple-Channel Programmable
DC Power Supply



PSU-Series
Programmable Switching
DC Power Supply

GDS - 3000A Series

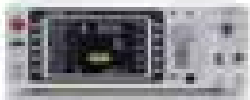
650/350MHz 2/4 Channel DSO, 16 Channel Logic Analyzer

One Oscilloscope with Time Domain, Frequency Domain and Power Measurement

Sample Rate: 5GSa/s; Memory Depth: 200Mpts/CH



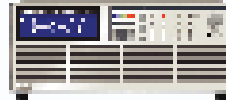
MADE TO MEASURE: GWINSTEK high performance test solutions includes over 300 products across five keylines—Oscilloscopes, Spectrum Analyzers, Signal Sources, AC / DC Power Supplies, DC Electronic Loads, Digital Multimeters, LCR Meters, Safety Testers, Other Meters, and Accessories.



GPT-15000 Series
AC/DC/IR/GB Intelligent
Safety Analyzer
Analyze Your Safety Tests



LCR-8200 Series
High-Frequency LCR Meter
The Smarter Way to
Characterize Component



AEL-5000/PEL-5000 Series
Programmable
AC/DC Electronic Load
High Current Capacity with
High Resolution



ASR-3000 Series
High Performance
Programmable AC/DC
Power source



MFG-2000 Series
Multi-Channel Function
Generator



GLC 10000
Leakage Current Tester



GDM-906X Series
Dual Measurement Multimeter
Measurement Explores—Insight
and Efficiency

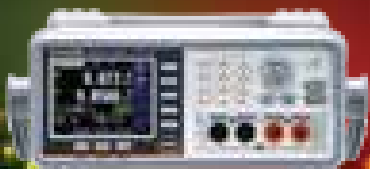


GPM-8330/8320
Digital Power Meter
Industrial Three-Phase AC Power
Measurement

LATEST PRODUCTS

GBM-3000 Series

Battery Meter



Voltage (1000/300/80V) & Internal resistance (0mΩ~3.2kΩ),
Resolution: 10μV and 0.1μΩ, Speed 60 time/s

ASR-6000 Series

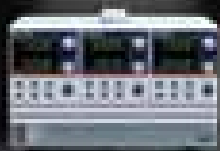
High Performance AC/DC Power Source



ASR-6000 Series AC/DC 4.5kVA/KW to 24kV/KW
Single/Three Phase, 10 Perfect Output Modes
Dual Current Convergence

PSW-Multi Series

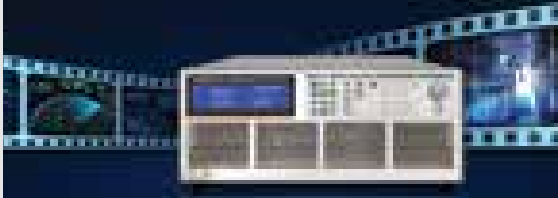
two-channel/three-channel
programmable switching DC power supply



720W Dual channel and 1080W Triple channel,
Multiple Voltage Combination (30V/40V/80V/160V)

AEL-5000/PEL-5000 Series

Programmable AC/DC Electronic Load



Built-in tests for Battery Discharge,
BMS, Short circuit, OCP, OPP test modes

PHU-Series

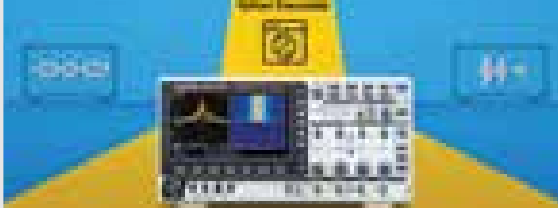
Multi-range High power SC Source



Voltage Output: 80V/200V/500V/750V/1000V/1500V
Power Output : 5kW/10kW/15kW
Maximum Current Output : 510A

MPO-2000 Series

Multi-function Programmable Oscilloscope



DSO, Spectrum analyzer, Arbitrary waveform generator
Digital multimeter, DC power supply



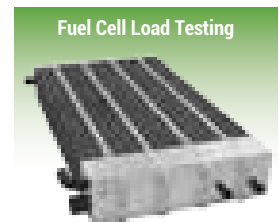
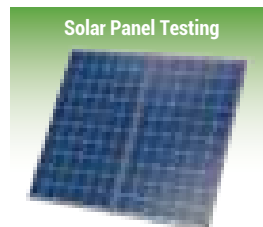
Power (kW)	12kW	25kW	37kW
Voltage (V)	Maximum Current (A)		
600	50	100	150
1500	–	50	50
2000	–	50	50

*Global pricing for base units without options, Incoterms Ex Works (EXW) San Diego, California, USA.

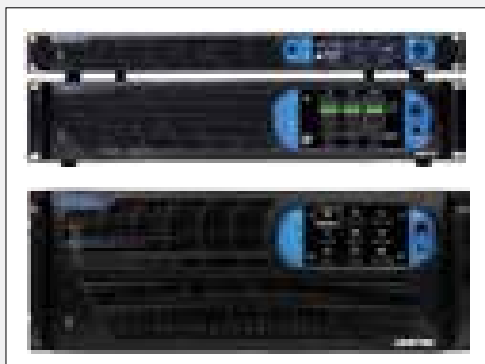
High Performance, Modular Bidirectional, Regenerative Programmable DC Power System

- Full DC source and sink capabilities with power levels from 12 kW up to 37 kW
- Fully scalable up to 1.2 MW with parallel systems
- Available voltage ranges of 600V, 1,500V and 2,000VDC in a 4U rack chassis providing full power up to +/-150A within a single system.

The Mi-BEAM Series is designed for testing today's complex, high power electronics for the automotive, energy storage, industrial, and aerospace markets in a variety of applications. This platform covers all test needs through the product life cycle from advance research and development (R&D), to design validation, and production test requirements.



High Performance Programmable AC / DC Power Source



Asterion AC Series Advanced Features

- High power density in 1U / 2U / 4U / 14U chassis up to 18kVA
- Auto paralleling for higher power
- Voltage: 0-400VAC/0- 500VDC, Current: 0-60Arms/phase, Power: 500VA - 36000VA
- Complete avionic test suites (optional)
- Standard LXI LAN, USB and RS232, optional GPIB

Asterion AC Series Advanced Features

- Commercial and military avionics test
- AC power simulation
- Frequency & voltage conversion
- IEC standards testing

High Performance Solar Array Simulation Power Supply

- ▶ 2 independent, isolated 600W channels or 1 1200W channel in 1U
- ▶ Voltage: 40 V to 220 V
- ▶ Current: 2.72A to 20A
- ▶ 2μ second shunt switching recovery
- ▶ Peak Power Tracking
- ▶ Primary and secondary over voltage and over current
- ▶ Output electronic circuit breaker
- ▶ Built in fault data recorder
- ▶ Power On Self-Test
- ▶ Active power factor correction (PFC)
- ▶ Color touch panel monitoring
- ▶ Standard LAN interface
- ▶ Full remote control via AMETEK SAS software or SCPI commands



Example of a fully integrated Solar Array Simulator

30 channel
600W/ch
18KW total



SEQUOIA SERIES

California Instruments™

PRECISION PROGRAMMABLE REGENERATIVE GRID SIMULATORS FEATURES AND CAPABILITIES

- ▶ 0 - 333VAC, 0 - 3000A / PHASE 15KVA - 1.08MVA
- ▶ Single Solution for: AC/DC Programmable Power Source, AC/DC Grid Simulator, AC/DC Resistive or Complex Electronic Load
- ▶ Dual Voltage ranges that support over voltage testing on 480V based systems
- ▶ 500uS time resolution for Transients
- ▶ Virtual Panels control software included
- ▶ Non-Linear current waveform programming during Load mode
- ▶ Phase coordination among multiple units (LKM/LKS)
- ▶ Powerful set of analog controls for PHIL and Modulation tests
- ▶ Trigger In & Out to permit extensive coordination with external systems
- ▶ Extensive Onboard diagnostics
- ▶ Digital I/O, including RS232, USB, Ethernet (GPIB optional)
- ▶ Auto-paralleling for maximum flexibility with multi-chassis configurations



SBT300/60

Battery Tester



- Highest Measurement Accuracy:
 - Voltage: +0.01% of reading +3digits,
 - Resistance: +0.4% of reading +5digits
- High Resolution Display: Voltage up to 10V, Resistance up to 0.1 ul
- AC 4 terminal Testing Method
- Wide Resistance Range: 3m0~30000
- Voltage Measurement up to 300V (SBT300), 60V (SBT60)
- 10ms response time + 20ms sampling time
- Storage Function, Comparator Function, Comprehensive Judgement Results Output,
- Two setting methods, Manual comparison, Four Kinds of Beeping, Static Function,
- Correction Function, Analog Output Function

SPAW7000

Power Analysis Wavecorder



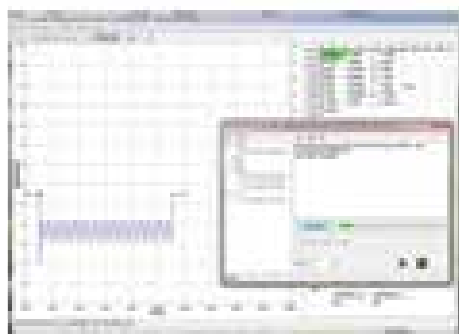
- Highest Measurement Accuracy: t(0.01% of reading + 0.02% of range)
- Bandwidth: DC, 0.1Hz-5MHz
- 7 Power Channels + 2 Motor Channels
- Various Plug-and-Play Capability Modules for Multiple Input Ranges and Accuracies
- Simultaneous and Independent Analysis of 7-harmonic channels
- Harmonic Analysis up to 500th Order
- Instantaneous Power Measurement
- X-Y Graph Display
- Data Update Rate up to 10ms
- Performing Playback and Analysis
- Mass Storage 512GB(1TB Optional)

DC and Arbitrary Power Supplies Arbitrary & Function Generators 4-Quadrant and Broadband Amplifiers Special Instruments

Comprehensive Test Bench For Automotive Testing

TOELLNER offers flexible solutions for on-board network simulation and testing of components, e.g. for the automotive and avionics industries. The Software WaveControl provides waveforms and controls the TOELLNER system components at the test station, which can be individually tailored to your requirements. Using a DAQ-Card, any signal waveform can be provided with Arbitrary Power Supplies or 4-Quadrant Amplifiers with outputs from 160 W to 5200 W. For fast interruptions, TOELLNER offers electronic switches with switching times below 500 ns.

WaveControl Software includes a comprehensive library of waveforms supporting these standardized automotive industry tests:



The Software WaveControl provides

- ✓ Extensive Waveform Libraries for Normative Tests, e.g.
 - LV 124, LV 148
 - VDA 320
 - VW 80000-1
 - VW 82148
 - GMW 3172
 - MBN 10615
 - ISO 16750-2
 - BMW GS 95024-2-1
 - BMW GS 95026
- ✓ Import & Export of recorded Data
- ✓ Visual Generation of individual Waveforms
- ✓ Sequence Controlling and Timing

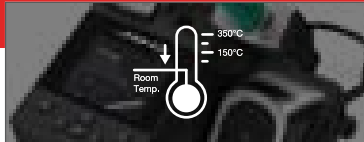


- Electronic Switch for short interruptions up to 60V / 100A; tr / tf < 500 ns
- 4-Quadrant-Power-Supply up to ± 100 V / ± 40 A; > 100 kHz, 320W / 1kW, modularly expandable up to 6,4 kW / 20 kW
- Arbitrary Power Supply up to 100 V / 320 A, AC-superimposition up to 70 kHz, 320 W / 1 kW up to 5.2 kW / 16 kW
- Software to create arbitrary waveforms, an extensive library of normative waveforms included
- All instruments can also be used individually



HEATING SYSTEM

JBC provides the Most Efficient Soldering System which leads to quality improvement & an efficiency increase.



HEAT MANAGEMENT

Thanks to both Sleep & Hibernation Modes, tip life increase exponentially.

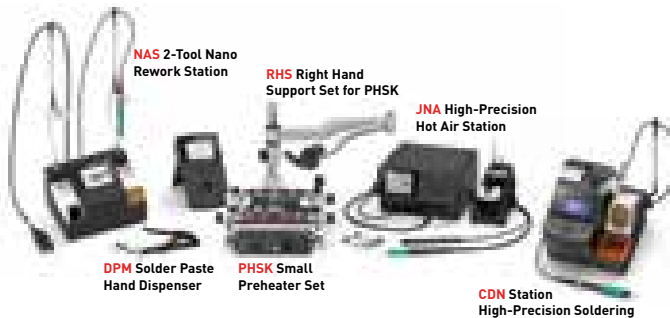


INCREASE PRODUCTIVITY

Use Quick Cartridge Extractor to change quickly & safely without switching the station off.

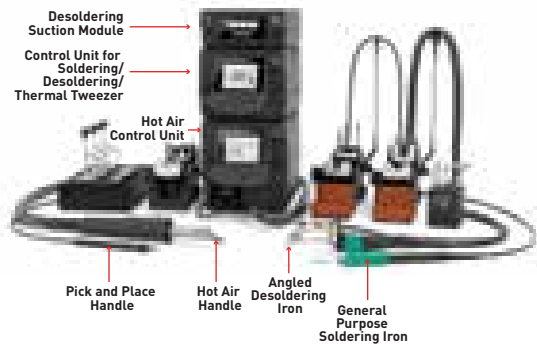
High Precision

NANO REWORK SOLUTIONS



High Power

RMSD COMPLETE REWORK STATION



SMD Rework System

The ideal solution for your entire rework tasks. Includes Hot Air Station, Preheater with PCB Support, and Rework Arm.

JBC Preheater Range

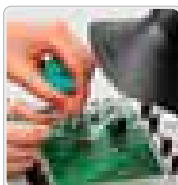
For rework on multi-layered PCBAs and/or large ground planes in order to avoid thermal shock and facilitate soldering as well as desoldering processes.

ADJUSTABLE TWEEZERS RANGE

Provide the highest precision when soldering or reworking SMD components.



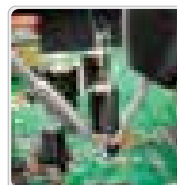
Preheaters



Fume Extractors



Tip Cleaners



Auto Feeder



Wire Stripper



Automation

PDR- PIONEERS OF FOCUSED IR TECHNOLOGY

BGA/SMD Rework Station

PDR designs, manufactures, and distributes IR Rework Stations, Industrial X-Ray Inspections Systems, and IR Thermal Test equipment for the electronics component and PCB assembly industry.

At the forefront of SMD rework technologies, PDR are working with many of the world's top names in:

- Electronic Manufacturing
- Defence
- Medical
- Automotive
- Research & Development



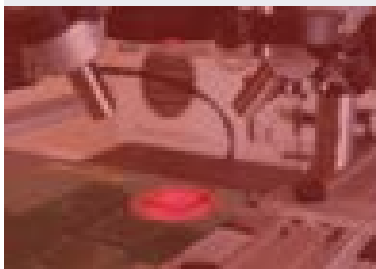
PDR IR-Q3

SEMI-AUTOMATIC ASSISTED REWORK

- Advanced Focused IR component heating
- Automatic Component Removal and Placement
- Quartz IR PCB preheating with 3 zones
- 2" Split Beam prism system for simultaneous PCB/component viewing
- Precision Components Pick and Placement up to 5um
- Precision PCB handling
- Component Nest/Flux Application Facility
- Closed Loop Non-Contact Temperature Sensing
- Advanced Automatic Thermal Process Control
- Reflow Process Observation Camera
- PCB Forced Air Cooling

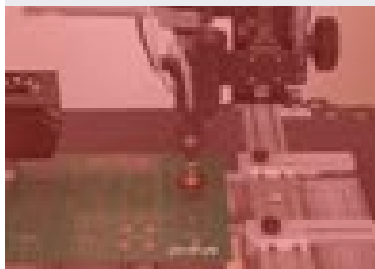
FOCUSED INFRARED

What you see you heat.
No collateral damage.
Instantaneous control.



PLACEMENT TECHNOLOGY

Our placement technology
allows every operator to achieve
the same standard of quality.



INTELLIGENT SOFTWARE

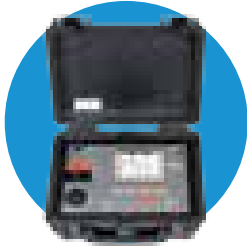
One profile to rework nearly all
applications.





EVSE Testing Solutions

BIS Standards Compliance

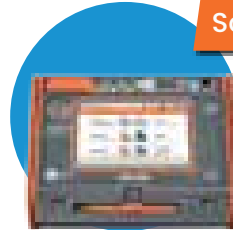


Sonel BT-120

Battery tester

► Application

Diagnostics of battery packs or battery cells the life of electric cars.



Sonel MPI-540

The MPI series comprises multifunctional electrical parameter meters designed for checking domestic and industrial system



Sonel EVSE-100

Multifunctional Analyser for AC Vehicle Charging Stations

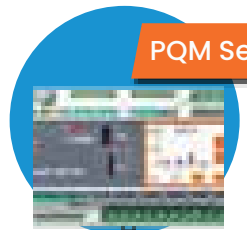
► BIS Standards Compliance

- Simulation of Charging Modes, Communication, PP Cable Parameters and CP Circuit Faults
- BIS and IEC standards, including IS 17017-1, IS 17017-2-2, IEC 61851-1, and IEC 62196



EVSE-01 Adapter

The adapter for the MPI series meters allows measurements of AC charging stations with a type 2 connector, with a socket and a fixed charging cable. Tests are available for 1-and 3-phase stations-both with and without ventilation

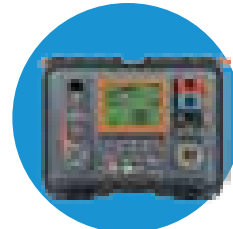


PQM Series-PQM 750

Advanced meters for monitoring voltage stability, harmonics, and power disturbances in electrical grids and EV charging stations

► BIS Standards Compliance

- IS 17017-21:2019-Defines power quality requirements for EV charging stations
- IS 13234-1992 - Covers power quality and harmonic limits in electrical networks
- IEC 61000-4-30-Used for power quality measurements (Class A & Class S devices)



MIC-15K1

Insulation Quality Analyzer Insulation resistance measurement ensuring safety in EV chargers, transformers, and switchgear

► BIS Standards Compliance

- IS 2993:1998-Covers insulation resistance testers' specifications
- IS 7322019-Electrical wiring regulations, including insulation resistance requirements
- IS 9000 (Part 3, Section 5) Covers insulation resistance tests for electrical components

Measurement Instruments

Electrical Diagnostics and Safety Testing

Sonel Instruments specializes in providing measuring instruments and equipment primarily for electrical testing, including insulation testers, multimeters, earth resistance testers, and power quality analyzers. These instruments are essential for evaluating the electrical systems in vehicles, ensuring they are functioning correctly and safely.

**MULTI-FUNCTION
METER**



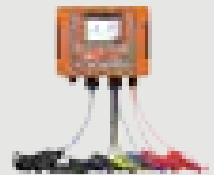
**INSULATION
RESISTANCE METER**



**EARTH RESISTANCE &
RESISTIVITY METERS**



**POWER QUALITY
ANALYZER**



**FAULT LOOP
IMPEDANCE METER**



RCD METER



PAT - TESTER



MICRO OHM METER



**THERMAL IMAGER
CAMARA**



CORONA CAMERA



CABLE LOCATORS



PHOTOVOLTAIC METERS



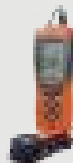
**VOLTAGE & PHASE
ROTATION TESTER**



**MULTIMETER &
CLAMP METER**



LUX-METER



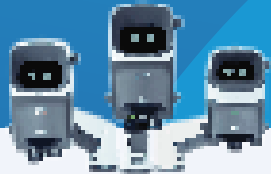
HIPOT / VLF



OPTICAL INSPECTION SYSTEMS

Eyepiece-less Stereo 3D Microscopes

MANTIS



3 - 15x
Magnification

Ergonomic
Working

Digital
Image Capture



5MP image quality



Long working distance



Ergonomic position



3D view



Overlay & Image comparison



Import, export settings



Glasses free

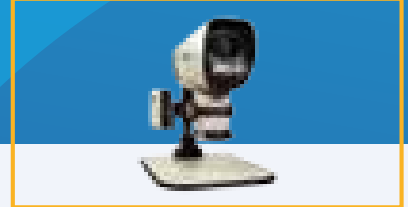


Outstanding image quality



3D illumination

LYNX EVO



2.7 - 240x
Magnification

Easy
Viewing

HD
Image Capture



360° viewer



WiFi



focus stacking



high precision stage

DIGITAL INSPECTION SYSTEMS

2D Digital Inspection Systems

EVO Cam HALO



0.8x - 192x
Magnification

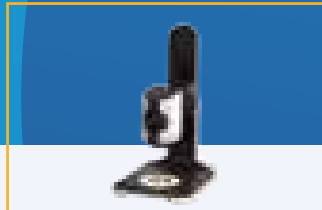
Auto
lens ID

Auto
focus

Measurement
& Analytics

360 viewer
compatible

EVO CAM II



0.8 - 750x
Magnification

Large
Field of View

PC
control option

VE CAM



Wi-Fi
Screen sharing

Wide
Field of View

Touch screen
Compatible

DIGITAL INSPECTION SYSTEMS

3D Digital Inspection Systems

DRV-Z1



6.1 - 93x
Magnification

Easy 3D
Digital View

Share
Live 3D View



MSO3124V Mixed Signal Oscilloscope

MSO3000 Mixed Signal Oscilloscope

- DSO: 4 Channels, 1 GS/s S/R, 200 MHz bandwidth
 - Logic / Protocol Analyzer: 16 Channels, 2 GS/s Timing Analysis, 250 MHz State Analysis
 - Data Logger (HDD / SSD Storage)
 - Total Memory: 4 Gb
 - Digital Voltmeter: 3 digits
 - Frequency Counter: 5 digits
- 6-in-1 Instruments: DAQ, DSO, DVM, Frequency Counter, Logic Analyzer, Protocol Analyzer



LA4136B Logic Analyzer

LA4000 Logic Analyzer

- 136 channels
- 4GHz Timing Analysis / 400MHz State Analysis
- 32Gb Memory
- Logic, State and Protocol triggers
- Stackable with a DSO to form an MSO

Ideal for applications requiring high-speed timing analysis or dealing with complex state analysis



BF7264 Pro Protocol Analyzer

BusFinder Protocol Analyzer

- Real-time data display, post-capture waveform
- Trigger for commands or data
- 64 channels Logic Analyzer
- 32Gb total memory Protocol Analyzer
- Protocol Option: eDP1.4a, eMMC 5.1, MIPI D-PHY 1.2, NAND Flash, SD 3.0(SDIO 3.0), SD 4.1 (UHS-II), SGMII, UFS2.1



TS3124V DSO

TravelScope DSO

- Record length: 128Mpts/ch
- Channel: 4
- Sample rate: 1 GS/s
- Bandwidth: 200 MHz
- Data Logger (HDD / SSD Storage)
- Digital Voltmeter: 3 digits
- Frequency Counter: 5 digits

PROTOCOL ANALYZER

BiSS-C
DALI
eSPI
I2C

CAN2.0B/CAN FD
DP_Aux
HID over I2C

I2S
MDIO
MIPI I3C 1.1
Modbus

LIN2.2
MII
MIPI RFFE 3

PMBus
PWM
RMII
RS-482

Profibus
RGMII
RS-232

SMBus
SVID
USB PD 3

SPI
UART (RS232)
USB1.1

ETHERNET

10BASE-T1S, MII/RMII/RGMII/GMII/SGMII



- Runs battery pack endurance tests
- Includes 18 independent and isolated charge / discharge channels
- Extendable number of channels
- Each channel can run the CV, CC, CR and CP charging and discharging tests
 - Adjustable voltage output from 0V to 7V with a resolution of 1mV
 - Current sourcing capability of 1A
 - Controlled electrical load adjustable from 4 Ω to 7k Ω per channel
 - Includes high precision voltage and current measurement loggers

BATTERY CYCLER



- Battery Cell Simulator Rack scales to 256 Channels/Isolated Cells
- 180 Cells Rack Mount with a 10*18 Cell Modules for BMS Testing
- Adjustable output V per cell - 0 V to 7 V with 1.0 mV precision
- NTC and Fault simulation tests also with short circuit, open circuit and reverse voltage fault tests
- V/I Measurements for each cell
 - V with a precision of 0.4 mV
 - High I with a precision of 1 mA
 - Low I with a precision of 5 μ A
- Controllable by CAN ISO 11898-2, Ethernet TCP and USB-C

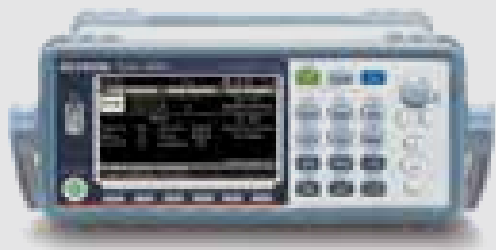
Battery Cell Simulation Rack



- Supports the complete BMS Validation Process - DV, PV, LTT and EOL FCT
- Automotive Load Box designed for BMS Testing without complex wiring setup
- Offers CAN, LIN, Analog inputs, Digital I/O channels, Counters, PWM for BMS/CSC Signals
- Simulates the specific signals for BMS with fault simulation
- Monitors and measures specific BMS signals

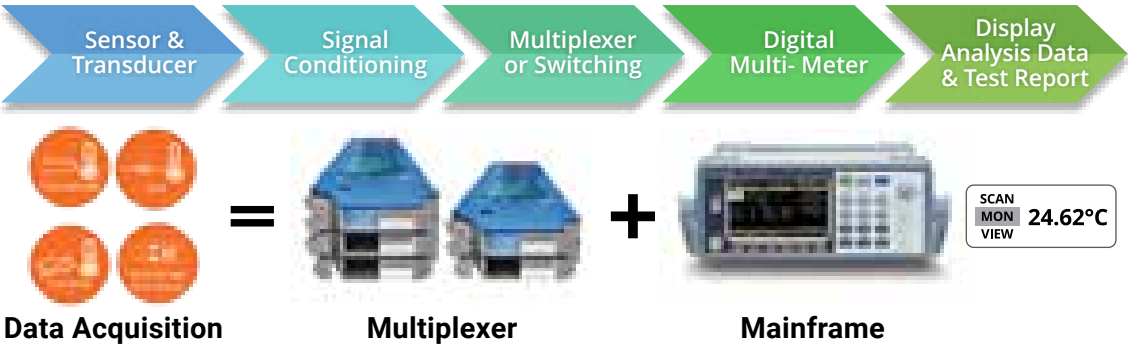
BMS Load Box








GWInstek Data Acquisition Systems








FEATURES

- Large 4.3" TFT color display
- 3-slot mainframes with built-in 6 ½ digit DMM
- Basic 0.0035% DCV accuracy
- 5 selectable switch modules
- Up to DC 600V / AC 400V voltage measurement (DAQ-909 module)
- Up to 450 channel/s scan rate
- Up to 100 kilo points internal memory
- Measures and converts 14 different input signals:
 - Temperature with thermocouple, RTDs and thermistor; dc/ac volts; 2- and 4-wire resistance; frequency and period; dc/ac current and capacitance; direct strain and bridge strain
- USB storage support to copy/log data in standalone operation
- Interface: Digit I/O, LAN, USB host/device and mini GPIB(optional)



							
Range	-200 °C to 1820 °C	-200 °C to 600 °C	80 °C to 150 °C	100mV to 300V	100mV to 600V	100µA to 2A	1µA to 24
Resolution	0.002 °C to 0.01 °C	0.002 °C	0.01 °C	0.1µV to 1mV	0.1µV to 1mV	1000A to 1µA	1PA to 1µA
Accuracy	0.2 °C	0.06 °C	0.01 °C	0.05%	0.0035%	0.10%	0.05%

					
Range	100 Ω to 1000 MΩ	100 Ω to 1000 MΩ	1nF to 100µF	3Hz to 300kHz	
Resolution	0.1 m2 to 1000 Ω	0.1 mo to 1000 Ω	0.0001nF to 0.01µF		
Accuracy	0.01%	0.01%	2%		



**INTEGRATED
SERVICES**

www.isc4esaindia.com

Soldering & BGA Rework Solutions, Dielectric Withstand Testing

Battery/Cell Simulation, Battery Testing (Charge/Discharge)

Battery Internal Resistance & Battery Health Monitoring, BMS Testing

Electric Power Train Testing, LV 123 , LV 124/LV 148, ISO 16750-2

EMC EMI Pre Compliance Testing

Solar Power Simulation & Invertor Testing, Fuel Cell Testing

AC Grid Simulation, AC/DC Charging Station & OBC Testing

Power Quality Testing, Electrical Safety Testing, Thermal Imaging

CAN/CAN FD, 10 Base T1-S, I2C, RS-232/485, Modbus, Profibus, SMBus

Data Logging & Analysis, Optical & Digital Inspection

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