

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

<u>G</u>UINSTEK

Total Test & Measurement Solutions

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



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

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

GDS - 3000A Series

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

One Oscilloscope with Time Domain, Frequency Domain and Power Measurement



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.







Total Test & Measurement Solutions

LATEST PRODUCTS











Sorensen

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.



Asterion



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

SEQUOIA SERIES

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



Example of a fully integrated Solar Array Simulator

30 channel 600W/ch 18KW total









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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)



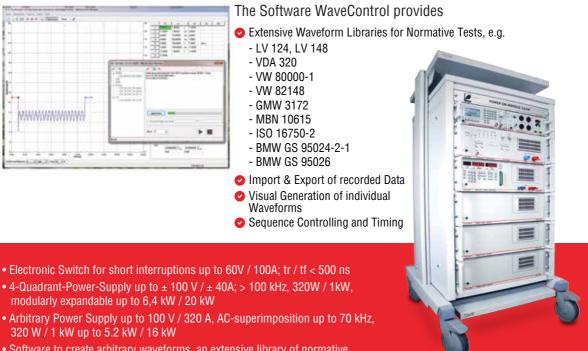


DC and Arbitrary Power Supplies Arbitrary & Function Generators 4-Quadrant and Broadband Amplifiers Special Instruments

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:



- 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

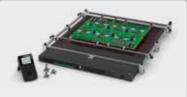


High Power RMSD COMPLETE REWORK STATION





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.







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-A3 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.



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

B 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

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)



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



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–Blectrical wiring regulations, including insulation resistance requirements
- IS 9000 (Part 3, Section 5) Covers insulation resistance tests for electrical components





Measurement Instruments

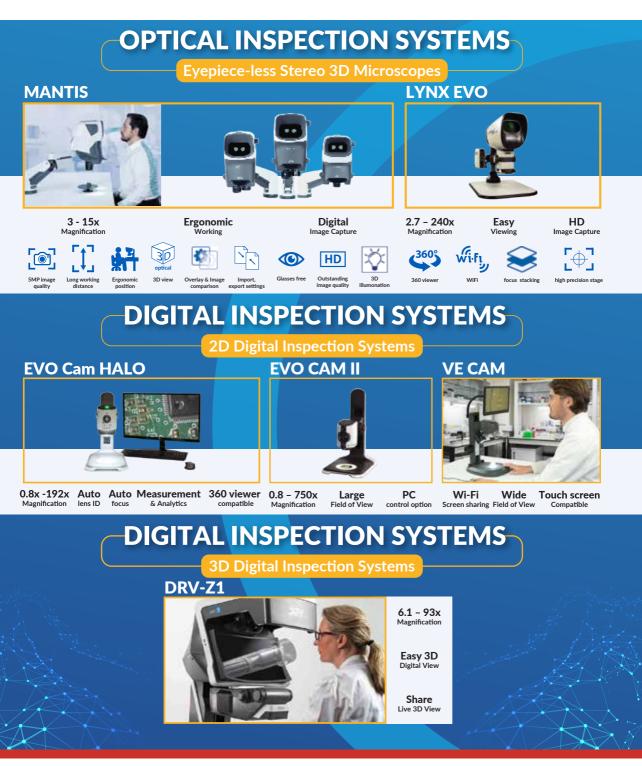
Electrical Diagnostics and Safety Testing

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.













MSO3124V Mixed Signal Oscilloscope MSO3000 Mixed Signal Oscillosc

- 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
- *TravelBus, TravelLogic

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

BF7264 Pro Protocol Analyzer

BusFinder Protocol Analyzer

- 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 12C

DP Aux HID over I2C

CAN2.0B/CAN FD 125 MDIO MIPI I3C 1.1 Modbus

LIN2.2 MII **MIPI RFFE 3** PMBus PWM RMII RS-482

Profibus RGMII **RS-232**

SMBus SPI SVID UART (RS232) USB PD 3 USB1.1

ETHERNET

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





- · Real-time data display, post-capture waveform







G<u></u>UINSTEK

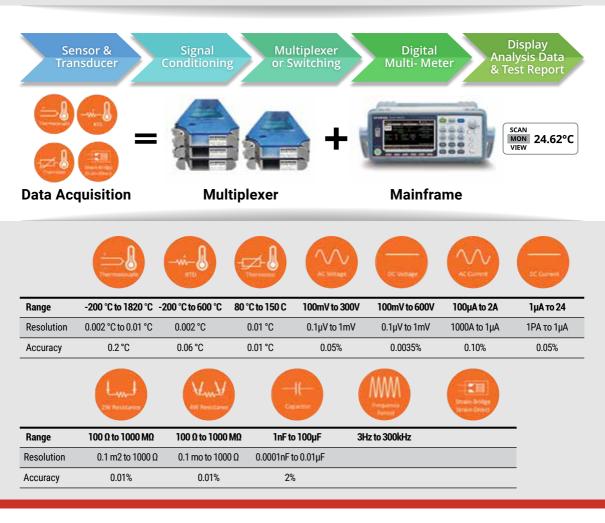
Total Test & Measurement Solutions

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







www.isc4esaindia.com

Soldering & BGA Rework Solutions, Dielectric Withstand Testing Battery/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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