

Telecom**Utility****Mobile****Internet Data Center**

PORTABLE BATTERY TESTER

IBEX 1000, PRO, Ultra

IBEX (Intelligent Battery EXaminationer)

IBEX is the battery diagnostic tester that can measure an internal resistance of a battery, and which is compatible with IEEE Std.1188-1996 and 2005 "Recommended Practice for Maintenance, Testing, and Replacement for Stationary Applications.

IBEX Advantages

- Can measure and record intercell and terminal post connection resistances as well as Cell/unit internal ohmic values.
- meets all IEEE Stds. for all stationary battery systems – CE compliant .
- is the world's first compact (fits in the palm of your hand) for easy measurements.
- automatically measures and stores data through contact probes on the battery posts.
- can manage the measuring data of the batteries in 15 different types of bank strings.
- offers the most comprehensive diagnosis and reporting software (Exmons Pro 2005).
- features a multiple built-in automatic measuring algorithm settings.
- uses a Li-ion battery for maximum usage time (over 4 hours).
- is user friendly displaying most memory items in icon form.



Comparison of Battery Maintenances & Diagnostics

Types	Voltage Measurement	Discharge Test	Internal Ohmic Measurement
Method	to measure cell/jar voltage	to make the batteries discharge	to measure cell/jar's internal resistance
Merit	• simple	• can discriminate a bad cell/jar	• can measure on floating charging condition • the most accuracy recommended by IEEE
Disadvantage	• can not discriminate a bad cell/jar	• needed for many hours and • additional hours for re-charging	• need a special instrument like as IBEX

IBEX can measure and discriminate good and bad features on all types of cell or jar like as 1.2V Ni-Cad, 2V/6V/12V VGS and Flooded batteries.

IBEX Types and Characteristics

- IBEX 1000 includes basic items : 1 probe, SerialComm software for download measured data to a excel format.
- IBEX PRO includes full items : 2 probes, printer, carrying case, SerialComm and Exmons Pro 2005 diagnostic software for graphic analysis.
- IBEX Ultra adds a DC clamp arm for measuring ripple current to IBEX PRO and max storage data is 4,800 cells.

Exmons Pro 2005 Diagnostic Software

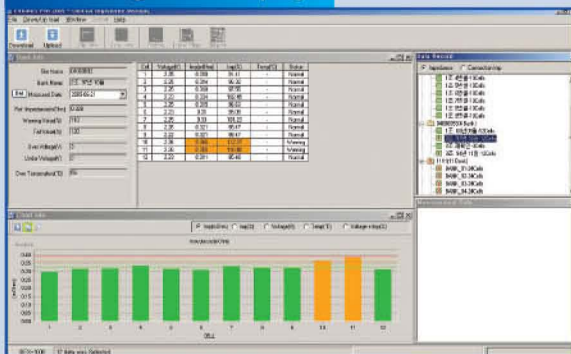
- is a comprehensive diagnostic software program developed to ensure the integrity of your backup batteries and power backup systems.
- provides easy information such as cell/jar deterioration graphs as well as various screen menu for user-friendly of battery aging status.
- features a bank specific report printout function, freeing you from manual documentation for easy use of an analysis outcome.

Technical Specifications

- Measuring Items
 - Voltage : 0.1V ~ 16V DC (1000, PRO)
 - 0.1V ~ 60V DC (Ultra)
 - Internal Resistance
 - Inter-cell Resistance
 - Terminal Temperature
- Capacity : 5Ah ~ max. 6000Ah
- Accuracy
 - Cell/Jar Voltage : ± 0.5 class
 - Internal Resistance : ± 1.0 % rdg. ± 8 dgt. (in 3 milliohm full-scale) across test range
 - Temperature : ± 2.0 class ($-20^{\circ}\text{C} \sim +80^{\circ}\text{C}$)
- Resolution
 - DC Voltage : 10mV
 - Resistance : 0.001m Ω
 - Temperature : 0.5 $^{\circ}\text{C}$
- Automatic Measuring Speed: within 4 sec per cell/unit
- Output Display : Excel Data, 3D graph of value and trend
- Software : SerialComm for excel, Exmons Pro 2005 for graph
- Supporting Functions
 - Auto Scaling, Zero-value Adjustment
 - USB Interface
 - Max Storage Data : 600 (1000, PRO), 4800 (Ultra)
- User Setting
 - High/Low Voltage Alarm Setting
 - High/Low Resistance Alarm Setting
 - High/Low Temp. Alarm Setting & User Friendly Menu Display
- Protocol : Binary or Standard ASCII Text
- Data Format : Excel 2000/2002, Win98/2000/XP/Vista compatible
- Built-in Battery : Li-ion Battery (1950mAh, 11.1V)

Exmons PRO 2005 Diagnostic Software

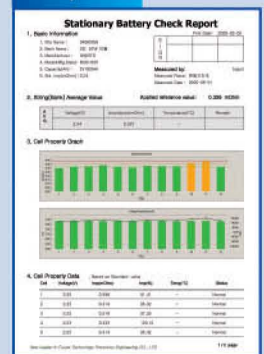
Main diagnostic display



3D Trend Graph



Report



Summary of IEEE Std.1188-2005

Type	IEEE 1188-2005 Valve-Regulated Lead-Acid Batteries	IEEE 484-2002 Flooded Lead-Acid Batteries
Regular Maintenance	[Quarterly Inspection] <ul style="list-style-type: none"> • Cell/unit ohmic values • Temperature of the negative terminal of each cell/unit • Voltage of each cell/unit 	[Internal Ohmic Measurement] <ul style="list-style-type: none"> • Based on the initial value within 6 month after installation, a change of 100% is considered significant
Replacement	[Internal Resistance] <ul style="list-style-type: none"> • a change of 30% to 50% from a baseline is considered significant 	[Connection Resistance] <ul style="list-style-type: none"> • 20% increase from baseline value may serve as a criterion

※ The Internal Resistance measurement of Ni-Cd Batteries is useful.
 If 50% discharged, the internal resistance of the cell is about 20% higher.



Distributor:



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