Polytronics Engineering

BTM Pico

Cost Sensitive Solution for a Stationary Monitor on Small or Large Battery installations

The BTM Pico is an inexpensive data logging device designed primarily for battery capacity testing and performance data collection. The Main design goal is to keep the system as simple as possible and make the installation as quick as possible.

The BTM Pico features logging of voltages (2 jars or jar and its strap), AC ripple and a jar temperature at the clip-point.

Data logging function is triggered by significant voltage change. The trigger levels are user programmable. When data logging is activated, additional data records are also stored based on elapsed time. Timer period is also programmable.

BTM Pico devices can be installed in an arbitrary order. A single device installation takes usually only few seconds, involving connecting two or three alligator clips to the jar posts.

Features:

- Simple clip-on, no excessive wiring required
- Small size, light weight, installed in seconds
- Fast sampling rate, independent of the jar count in the string
- No additional hardware required
- Large data storage capacity
- Two jars or a jar and its strap measurement options
- Universal operation from 16V dc down to 0.9V dc; well suited for Ni-Cd batteries

Typical applications:

- Stationary UPS Battery capacity test or temporary performance assessment
- Lift truck battery test and/or temporary performance assessment
- Diesel Generator Battery performance assessment
- Generic DC data logger
- Data collection for periodic battery performance assessments

Application

BTM Pico has been designed in response to the specific customer request for economical battery data logging system which does not require wiring to the central control console. Each individual module is electrically isolated from one another, hence, the system is well suited for batteries operating at **very high** potential.

Typical BTM Pico applications are data collection for periodic battery performance assessments like Utility and Telco installations, and in battery powered equipment like lift trucks, delivery vehicles, golf carts, etc...

Operation

BTM Pico voltage input is auto ranging. The device operates starting from 0.9V dc up to 16Vdc. The device has a LED indicator lamp built-in, which signals presence of input voltage (steady ON), data logging function active (slow blinking) and low (critical) jar voltage detected (rapid blinking).

BTM Pico will start logging data when user programmable voltage change has been detected (trigger level). Once the logging is activated, it continues until the device is disconnected.

Data records are also logged based on elapsed time which is a user programmable parameter.

When the BTM Pico is disconnected from the battery, collected data is transferred to the application program for storage and further analysis.

Full data memory can be transferred in less than 10 seconds. The application facilitates numerical and graphical reporting and data exporting into spreadsheet applications, like MS Excel for more complex report generation.

BTM Pico Monitoring Device	
Jar voltage input	◦ 0-5.5 Vdc LV device ◦ 0-20 Vdc HV device
Auxiliary input	◦ Strap voltage drop measurement option: 0 to +- 160 mV ◦ External/Electrolyte Temperature measurement option (0-3V)
Dynamic Internal Resistance Measurement Option	Factory configurable
Voltage Measurements	
Range	Auto ranging
Accuracy	0.2%
Resolution	◦ 1 mV (0-3V) ◦ 4 mV (0-10V) ◦ 8 mV (0-20V)
Temperature	
Range	-30 to 60 C
Accuracy	0.5%
Resolution	0.1 C
Dynamic Internal Resistance (optional)	
Range	0-500 mOhms
Resolution	50 uOhms
Sampling Rate	
configurable average	1-900 milliseconds per sample
Power Supply	
LV device	◦ 0.8-5.5V Vdc ◦ 8mA @ 2Vdc (standard mode) ◦ 4mA @ 2Vdc (reduced mode) ◦ 1.5mA @ 2Vdc (power saving mode)

HV device	◦ 3.5-20 Vdc ◦ 5mA @ 12Vdc (standard mode) ◦ 3mA @ 12Vdc (reduced mode) ◦ 1.2mA @ 12Vdc (power saving mode) Device powers from the battery it monitors.