⌔ WAVETECH

Productsheet BEAT® 100 /50

(see also the User Manual and the Technical Datasheet)

USE

Batteries: The Beat 100 may be used on all types of lead acid batteries / from 12 V and up to 36 V and from 5 Ah to 600 Ahbattery systems (liquid, VRLA, gel, AGM and more) .

Chargers: The BEAT50 may be used by all types of chargers, no direct charge current is passing through the unit, but as it is mounted on the battery termi-nals it takes some of the charge current to operate.

The unit is powered exclusively by charging current in order to avoid battery current drain / leakage. A minimum charge current of 0,6 A is needed in order to secure a sufficient treatment of the batteries with BEAT50.

Conditions: The BEAT50 can be used in virtually all climate condi-tions and be applied to any user are. The BEAT® 100 is specifically designed for use in ma-rine conditions, but may not be used under water.

TEMPERATURE RANGE

Functional: - 40 to + 85 °C; Storage: - 40 to + 85 °C.

The casing is filled with a temperature resistant resin.

DIMENSIONS

Height: 33 mm, With: 72 mm, Length: 130 mm

Weight: 300g; Length cables: each 190 mm

DIAGNOSE AND TREATMENT MODE

Once installed correctly, it starts to diagnose the battery, indicated by the blue lamp blinking. When the battery is charged, the BEAT®50 goes into operating treatment mode and the blue LED lamp will remain lit up on its casing. The BEAT®50 diagnoses the battery condition and switches itself into operating mode if sufficient current is supplied through the charger.

POWER CONSUMPTION
Standby mode/Diagnostic mode (blue LED flashes): 5 mA.

Treatment mode (blue LED on): The gross current consumption is 500 mA, but as it returns some as charge, the net consumption is around 300 mA.

THE FUNCTION OF THE SOFTWARE
The device consists of hardware and software. A controller is programmed to control the application of the field strength, the treatment mode and the diagnostic mode. The microprocessor in the BEAT®50 controls the necessary switching time automatically.

After the installation of the BEAT®50, the program starts to measure the voltage of the battery. When starting a charge phase, please allow 8 – 20 seconds before the BEAT® gets into active treatment mode (in the case of very bad batteries it may take a longer time). When the charge is removed, please also allow 8 – 20 seconds before the BEAT® stops the treatment phase.

In order to engage the BEAT®- ON subroutine, either the voltage must be or exceed 13.6V or pass the internal control loops analysing the battery's condition. Through this system of measurement and control loops, it is possible to achieve the most beneficial treatment.
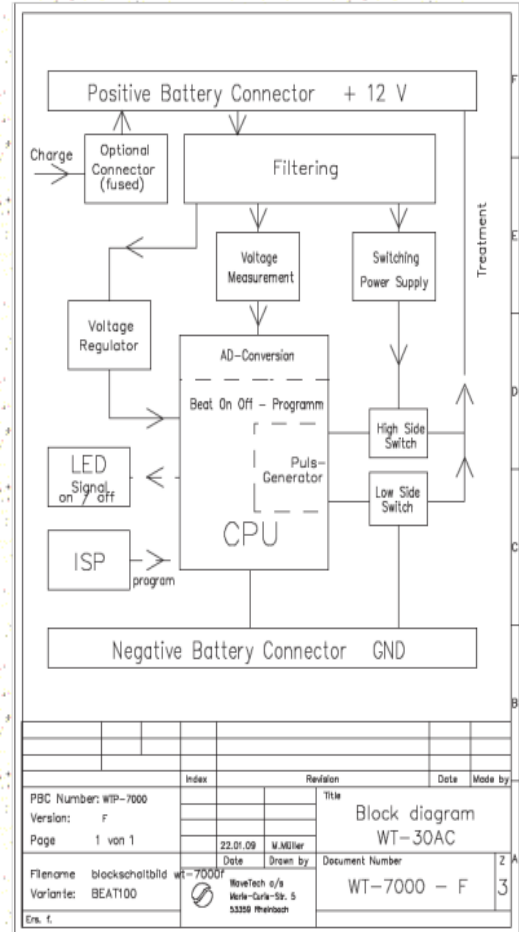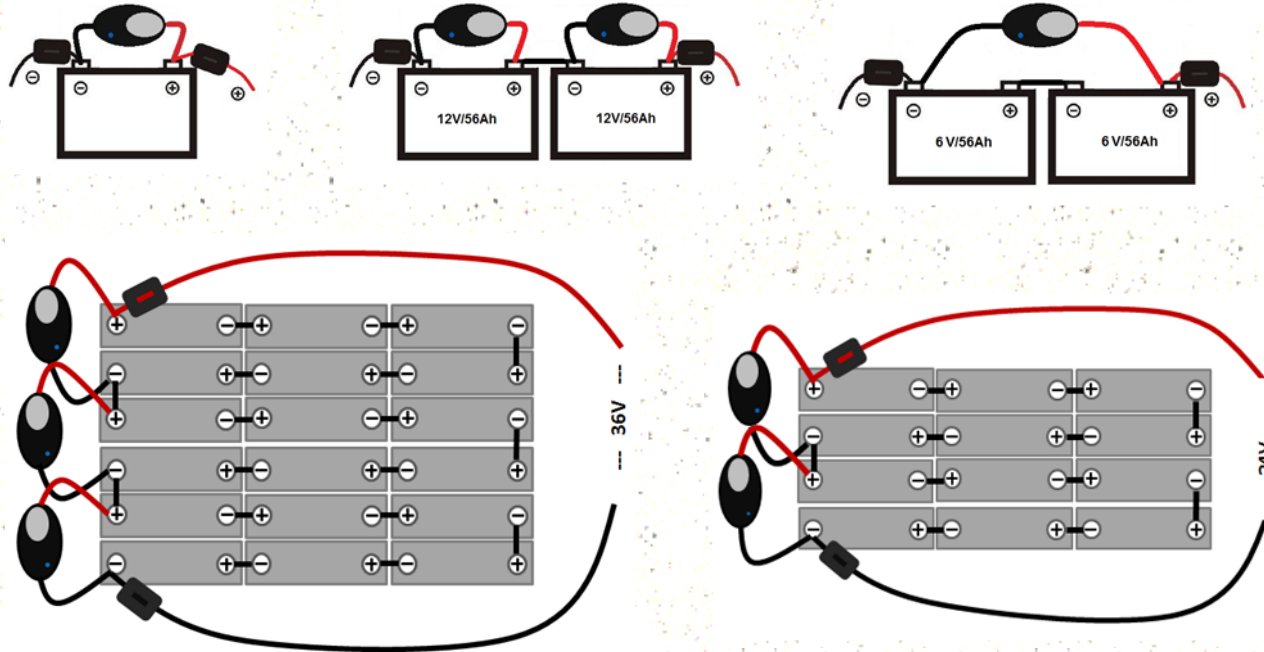

INSTALLATION
The BEAT50 is installed by bridging the unit directly across and in close proximity to the battery terminals/battery cell connections. Red cable goes to the battery's positive terminal, black to the battery's negative terminal. The unit is equipped with a short circuit protection (an incorrect instalment of the BEAT will lead to the destruction of the BEAT).

12 V: One BEAT50 unit is enough to condition a 12V lead acid battery, or two 6V batteries, or 6 units of 2V battery cells.

24 V: For 24V battery systems two BEAT 50's are needed.

36 V: For 36 V battery systems three BEAT 50's are needed.

FERRITES

In many user applications the mounting of ferrites is needed. Fold the ferrite clamps as near as possible to the battery poles around the cables that go from the battery terminals towards the user/equipment (for more information see User Manual or contact dealer).

Please see our installation manual for detailed instructions.

CERTIFICATES:

CE approved.

EMC/EMI external laboratory tested by TÜV-Süd and Fachhochschule Koblenz

Environmental testing (all passed):

Dry Heat:	BSEN60945: Section 8.2-2002
Damp Heat:	BSEN60945: Section 8.3-2002
Low Temperature:	BSEN60945: Section 8.4-2002
Thermal Shock:	BSEN60945: Section 8.5-2002
Drop Handling Test:	BSEN60945: Section 8.6-2002
Vibration Testing (Conduct resonance search following by two hours at 30 Hz):	BSEN60945: Section 8.7-2002
Corrosion Test:	ASTM B117: Feb 2005

MANUFACTURER CREDENTIALS

WAVETECH

Pos	Standard	Test Summary	Tested	Result
		EMC Emissions		
9.0.1	EN 55022:2006 + A1:2007 EN55014-1:2006	RFI-Voltage 150kHz – 30 MHz	A+B	Passed Class A+B
9.0.2	EN 55014-1:2006 + A1:2009	RFI-Voltage 30 MHz - 300Mhz		Passed
9.0.3	EN 55022:2006 + A1:2007 EN 55014-1:2006 +A1:2009	RFI-Voltage 30 MHz-1000 MHz	A	Passed Class A
9.0.4	IEC 60945: C1 2008 Section 2.1 Table 5, 9.2	Conducted Emissions (DC Power Port) 10kHz-30Mhz		Passed
9.0.5	IEC 60945: C1 2008 Section 2.3 Table 5, 9.3	Radiated Emissions (Enclosure Port) 30MHz-1000MHz		Passed
		EMI Sensitivity		
9.1.0	EN 55024:1998 + A1:2001 + A2:2003 EN 55014:1997 + Corrigendum 1997 + A1:2001 + A2:2008			
9.1.1	IEC 60945: C1 2008 Section 2.6 Table 6, 10.8	Immunity to Interruptions (DC Power Port)		Passed
9.1.2	EN 61000-4-2: 2009	Electrostatic Discharge (ESD) 4/8 kV	A	Passed Class A
9.1.3	IEC 60945: C1 2008 Section 2.7 Table 6, 10.9	Immunity to Electrostatic Discharge 6/8 kV		Passed
9.1.4	EN 61000-4-3:2006+ A1:2008 + A2:2010	Electromagnetic fields 3V/m	A	Passed Class A
9.1.5	IEC 60945: C1 2008 Section 2.4 Table 6, 10.3	Immunity to Radio Frequency Common Mode (DC Power Port) 10V/m 150kHz-80MHz		Passed
9.1.6	IEC 60945: C1 2008 Section 2.5 Table 6, 10.4	Immunity to Radio Frequency Electromagnetic Field (Enclosure Port) 10V/m 80MHz-2000MHz		Passed
9.1.7	EN 61000-4-4: 2004 A1:2010	Electrical fast transient (Burst) 1kV / 0.5kV	A	Passed Class A
9.1.8	EN 61000-4-5: 2006	Surge 1kV / 2 kV	A	Passed Class A
9.1.9	EN 61000-4-6: 2009	conducted disturbances 3 V	A	Passed Class A

New certifications for additional markets are constantly being added. Please contact a member of WaveTech's staff if your particular certification requirements are not yet listed.

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