

InteliCharger 500

24V 20A Intelligent Automatic Battery Charger

September 2012



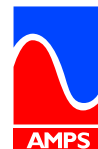
Reference Guide

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1 Document information

INTELIChARGER 500 - REFERENCE GUIDE

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DOCUMENT HISTORY

REVISION NUMBER	RELATED SW. VERSION	DATE
r1	-	1.9.2012

2 EQUIPMENT RATING

Input Voltage	Switchable 90-132 Vac or 180-264Vac 1 Ph. 47-63 Hz.
Inrush Current	45A worst case.
Maximum Input Current	8A @ 115Vac 3.2A @ 230Vac.
Output Voltage	24Vdc Nominal Works preset to 27.5V float / 28.8V boost. <i>Output voltage can be adjusted but a re-calibration MUST be performed (see section 9 of this specification).</i>
Output Current	20A works preset.
Recommended Battery Types	Flooded Lead Acid. Sealed AGM (Sealed Lead Acid). Gel. Ni-Cad. Please contact us for other battery types.
Fault Contact	1A 30V DC

3 ENVIRONMENT

Working Temp. Range	-20 to +50 C.
Storage Temp. Range	-40 to +85 C.
Working Humidity	20-90% non-condensing RH.

4 PROTECTION

AC Input	Internal fast blow fuse. Upstream input fuse should be fitted.
DC Output	ATO blade type fuse 25A 32Vdc.
Short Circuit / Overload	Constant current limiting with automatic recovery. Over Temperature Unit will shut-down if internal temperatures are exceeded. Automatically switches back on once the unit has cooled.
Over Voltage	Output voltage shut-down. Recycle AC input power to reset.
Reverse Battery	Internal diode (will blow DC output fuse).

5 INSTRUMENTATION

Charger Fail	Alarm LED indicator on front panel, Green = healthy / Red = failed.
Fault Alarm	LED indicator on front panel, Green = healthy / Red = failed. Volt free form C contact set, de-energising on fault. The charger failed alarm must be active for 60 seconds to de-energise the fault signal.

6 CHARGING PROFILE

3 stage bulk / absorb / float modes. The charger will automatically switch to bulk (auto-boost) mode on a low battery condition. Once the bulk voltage level is reached the charger will switch to absorb (boost run-on) mode. The absorb time period is variable and dependent on the length of the bulk charging period. On expiration the charger switches back to float mode.

7 COOLING

Convection cooled, bottom to top air-flow is required.

8 TERMINATION

AC Input	Maximum cable size = 4.0 Sq.mm. Terminal designations: LIN Line NIN Neutral EIN Earth
DC Output (Battery)	Maximum cable size = 4.0 Sq.mm. Terminal designations: B+OUT Battery +Ve B-OUT Battery -Ve
Manual Boost	Maximum cable size = 2.5 Sq.mm. Terminal designations: 21 Link to enable 22
Remote Fault Signal (Volt free form C)	Maximum cable size = 2.5 Sq.mm. Terminal designations: 18 Normally Closed 19 Common 20 Normally Open

9 CONNECTION

NOTE:

Please refer to drawing on page 8

- Do not expose the unit to rain or any form of moisture. Avoid operation in direct sunlight and dust contaminated environments.
- **Ensure the units AC input supply is isolated.**
- **Remove the terminal cover ensuring the cables are fed through the corresponding apertures when making connections.**
- Ensure the AC input selector switch is in the correct position and connect the 110V or 230V AC input supply.
- Make necessary remote fault alarm and/or manual boost connections.
- Connect the battery to the B-OUT (battery negative) and B+OUT (battery positive) terminals. Always ensure the battery is of the correct type and number of cells. Note the alarm circuits power-up when the battery is connected.
- Switch on the AC input. After a short delay charge current will flow to the battery. As the batteries charge the output current will reduce; High output current = discharged battery, low output current = charged battery.
- When the battery has fully charged its voltage can be checked with a DVM across the battery terminals.

NOTE:

If the float voltage is adjusted from factory default then the alarm system MUST be re-calibrated, following the instructions below.

10 APPENDIX A - Automatic Calibration Routine

NOTE:

The battery MUST be disconnected from the charger before proceeding.

- Connect a DVM to the B+ / B- Out terminals of the charger. Set the float voltage to the desired level by turning the 'Vfloat' multi-turn potentiometer.
- Press and hold the 'PROG' push-button, all LED's turn Red. Continue to hold for 10 seconds until all LED's turn Green then release the push-button.
- Set the boost voltage to desired level by turning the 'Vboost' multi-turn potentiometer.
- Operate and release the push-button again, the controller switches to float mode and all LED's are Red. Automatic calibration now commences.
- After approximately 30 seconds the auto-calibration is complete and all LED's should be green to indicate normal mode.

APPENDIX B - Manual Calibration Routine

When the automatic calibration levels are not suitable a manual calibration can be performed.

NOTE:

The battery **MUST** be disconnected from the charger before proceeding.

- Power down the unit, hold the 'PROG' push-button down and power up the charger. Release the 'PROG' push-button and the LED's will flash Red/Green in quick succession to indicate manual calibration mode.
- The following sequence must be followed by adjusting the float voltage potentiometer to the desired voltage level at each stage:

Charger Fail LED	Fault LED	Setting Procedure
Red	Red	Set Boost on Voltage, operate PROG push button.
Green	Green	Set Boost off Voltage (high level), operate PROG push button.
Red	Green	Set Boost off Reset Voltage (low level), operate PROG push button.
Red	Red	Set Charger Fail Low Voltage Alarm, operate PROG push button.
Green	Red	Set Charger Fail Low Voltage Reset, operate PROG push button.
Red	Red	Set Charger Fail High Voltage Alarm, operate PROG push button.
Green	Red	Set Charger Fail High Voltage Reset, operate PROG push button.

11 APPENDIX C - DEFAULT FACTORY

All units leave the factory calibrated to the following levels:

AC Input	230 Vac
DC Output Float Voltage	27.50 V
DC Output Boost Voltage	28.80 V
DC Output Current	20.00 A
Charger Fail Low Volts Alarm	25.50 V
Charger Fail Low Volts Reset	26.00 V
Charger Fail High Volts Alarm	29.05 V
Charger Fail High Volts Reset	28.50 V
Boost On Voltage Level	25.75V
Boost Off Voltage Level	28.6V
Fault Alarm Timer	60 Seconds
Absorb Timer (Boost run on) Variable	2-60 minutes.

