

**BATTERY CHARGER**

| Type         | V <sub>i</sub> | V <sub>o</sub> | I <sub>o</sub> |
|--------------|----------------|----------------|----------------|
| GSCC-8.507BC | 10.8 to 16 V   | 8.5 V          | 700 mA         |

**FEATURES**

- Charge of NiCd or NiMH batteries
- Switch mode constant current generation
- Three level charging current (fast, trickle, zero charging current)
- Overcharge detection by -  $\Delta V$  and  $\Delta T/\Delta t$  under internal microprocessor control
- No discharge of the battery when charger is turned off
- Initial trickle charge for deeply discharged batteries
- Maximum battery voltage protection
- Maximum battery temperature protection
- Timer back up protection
- Output short circuit protection
- Detection of fault battery
- Charge status displayed by LED



**DESCRIPTION**

The GSCC-8.507BC is a high efficiency battery charger for IN CAR application to be used with 5 cell NiCd or NiMH batteries.

Two versions of the INPUT PLUG ADAPTOR are available:

**WASHER TIP VERSION:**                      **GSCC-8.507BC-E** (Ordering Number)

**SPRING-LOADED TIP VERSION:**      **GSCC-8.507BC-A** (Ordering Number)

(See pag. 3 for mechanical data)

**ELECTRICAL CHARACTERISTICS** ( $T_{amb} = 25^{\circ}\text{C}$  unless otherwise specified)

| Symbol     | Parameter                           | Test Conditions                                                                                                                                   | Min  | Typ  | Max  | Unit               |
|------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|--------------------|
| $V_i$      | Input Voltage                       | $I_{ch} = 0$ to $0.7\text{A}$                                                                                                                     | 10.8 | 14.4 | 16   | V                  |
| $I_{chf}$  | Fast Charge Current                 | $V_i = 10.8$ to $16\text{V}$<br>$V_{battery} = 5$ to $8.2\text{V}$                                                                                | 0.65 | 0.70 | 0.75 | A                  |
| $I_{cht}$  | Trickle Charge Current              | $V_i = 10.8$ to $16\text{V}$<br>$V_{battery} = 1$ to $5\text{V}$ or<br>$0^{\circ}\text{C} < T_{batt} < 10^{\circ}\text{C}$<br>or charge completed | 20   | 30   | 40   | mA                 |
| C          | Returned Charge                     | $V_i = 10.8$ to $15\text{V}$                                                                                                                      |      | 95   |      | %                  |
| $V_{batt}$ | Maximum Battery Voltage Protection  | $V_i = 10.8$ to $16\text{V}$<br>$I_{ch} = 0.7\text{A}$                                                                                            | 8.2  | 8.5  | 8.7  | V                  |
| $T_{co}$   | Battery Temperature Cut Off         | $V_i = 10.8$ to $16\text{V}$<br>$I_{ch} = 0.0\text{A}$                                                                                            |      | 50   |      | $^{\circ}\text{C}$ |
| $t_{out}$  | Time Out Protection Duration        | $V_i = 10.8$ to $16\text{V}$<br>$I_{ch} = 0.7\text{A}$                                                                                            |      | 2    |      | hours              |
| $f_s$      | Switching Frequency                 | $V_i = 10.8$ to $16\text{V}$<br>$I_{ch} = 0.03$ to $0.7\text{A}$                                                                                  |      | 100  |      | kHz                |
| $T_{op}$   | Operating Ambient Temperature Range |                                                                                                                                                   | - 20 |      | +60  | $^{\circ}\text{C}$ |
| $T_{stg}$  | Storage Temperature Range           |                                                                                                                                                   | - 25 |      | +85  | $^{\circ}\text{C}$ |

| Status         | Condition                                                                                                                                                                                                             |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Red ON         | - Fast charge<br>( $I_{ch} = 0.7\text{A}$ )                                                                                                                                                                           |
| Green ON       | - Charge Completed<br>( $I_{ch} = 0.03\text{A}$ )<br>- Timer elapsed                                                                                                                                                  |
| Red Flashing   | Anomalous battery conditions<br>( $I_{ch} = 0.0\text{A}$ )<br>- Initial $T_{battery} < 0^{\circ}\text{C}$<br>- Initial $T_{battery} > 40^{\circ}\text{C}$<br>- $T_{battery} > 50^{\circ}\text{C}$<br>- Faulty battery |
| Green Flashing | ( $I_{ch} = 0.03\text{A}$ )<br>- Initial charge of deeply discharged batteries<br>- $0^{\circ}\text{C} < T_{batt} < 10^{\circ}\text{C}$                                                                               |
| OFF            | Battery not connected                                                                                                                                                                                                 |

**NOTES**

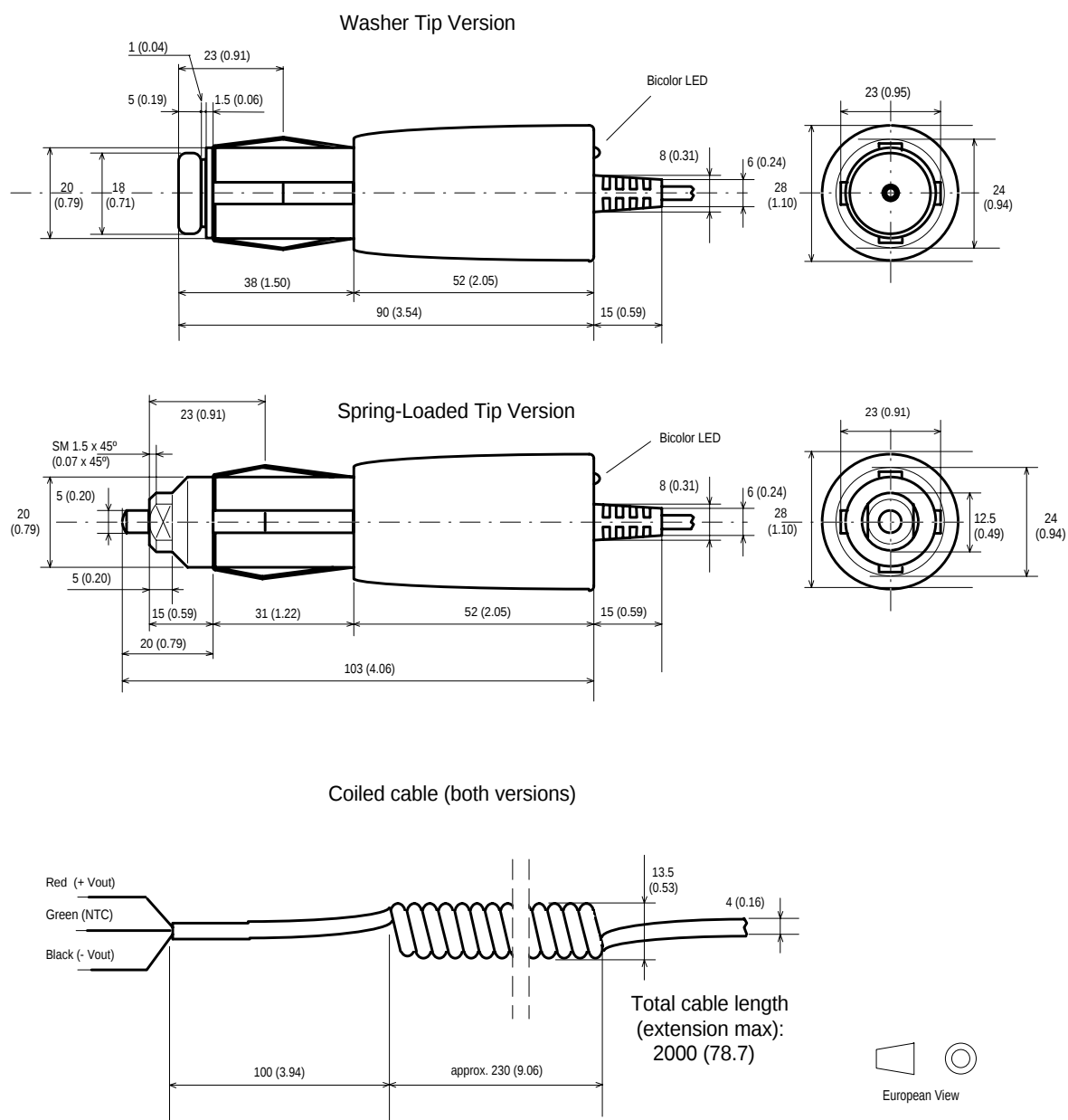
1 - The battery temperature detection is a function of the characteristics of the NTC resistor used inside the battery pack. Please consult factory.

2 - Different fast charge and trickle charge currents,

and different time out are available on request (Maximum charge current cannot exceed 1A).

3 - For connector to the battery pack please consult factory.

## CONNECTION DIAGRAM AND MECHANICAL DATA



Output connector to be defined according to customer specifications  
 Dimensions in mm (inches).

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