

| SPECIFICATIONS FOR 4040 LI                                  | 3-cell Li-Ion  | 4-cell Li-Ion   | 5-cell Li-Ion   | 6-cell Li-Ion   | 7-cell Li-Ion  | 8-cell Li-Ion   |
|---|--|---|---|---|--|---|
| Available versions  | x  |   |   |   |  |   |
| Input voltage: / Line frequency                             | 90-264Vac 47-63Hz  |   |   |   |  |   |
| Active power factor correction:                             | Yes  |   |   |   |  |   |
| Max output power:   | 113.4W   | 117.6W  |   | 117.2W  | 117.6W   |   |
| Step 0 < 10min Yellow                                       | CC 500mA ± 50mA, when battery voltage < 9V   | CC 500mA ± 50mA, when batt voltage < 12V                | CC 500mA ± 50mA, when battery voltage <15V.               | CC 300mA ± 25mA, when batt voltage < 18V.                 | CC 300mA ± 25mA, when batt voltage < 21V.                | CC 300mA ± 25mA, when batt voltage < 24V.                 |
| Step 0 > 10min Red (4 blinks)                               | 0A / 0V  |   |   |   |  |   |
| Step 1 (Constant Current) Yellow                            | CC 9.0A ± 0.2A, when 9V < Vbat < 12.6V   | CC 7.0A ± 0.2A, when 12V< Vbat < 16.8V                  | CC 5.6A ± 0.2A, when 15V < Vbat < 21.0V                   | CC 4.65A ± 0.2A, when 18V < Vbat < 25.2V                  | CC 4.0A ± 0.2A, when 21V < Vbat < 29.4V                  | CC 3.5A ± 0.2A, when 24V < Vbat < 33.6V                   |
| Step 2 (Constant Voltage) Flashing Yellow                   | CV 12.6V ±0.1V < 6.3A until I charge < 450mA or max. 1h  | CV 16.8V ±0.1V < 4.9A until I charge < 450mA or max. 1h | CV 21.0V ± 0.1V < 3.9A until I charge < 500mA or max. 1h. | CV 25.2V ± 0.2V < 3.3A until I charge < 270mA or max. 1h. | CV 29.4V ± 0.2V < 2.8A until I charge < 270mA or max. 1h | CV 33.6V ± 0.2V < 2.5A until I charge < 270mA or max. 1h. |
| Charge timer (step2, CV)                                    | 1h   |   |   |   |  |   |
| Safety timer (all steps) Red (5 blinks)                     | 72h  |   |   |   |  |   |
| Step 3 (Charge Completed) Green                             | 0A   |   |   |   |  |   |
| Restart voltage   | 12.3V  | 16.4V   | 20.5V   | 24.6V   | 28.7V  | 32.8V   |
| Formation Charge (Step 0)                                   | Low current start-up of deeply discharged battery.   |   |   |   |  |   |
| Wake-up of deeply discharged battery.                       | Yes, will apply voltage which deactivates deep discharge protection in battery pack.   |   |   |   |  |   |
| Indication when “Battery not connected”                     | Flashing Green (1s/1s)   |   |   |   |  |   |
| NTC input, on request (std is 10kohm, B-value approx. 4000) | 0 – 45 °C: Normal charge. Battery temperature < 0 °C (too cold) or > 45°C (too hot): No charge, wait until temp. is OK.  |   |   |   |  |   |
| Ripple:   | < 100mV p-p  |   |   |   |  |   |
| Efficiency (at 230V 100% load) approx.:                     | 91%  |   |   |   |  |   |
| Switch frequency approx.:                                   | 45-75kHz   |   |   |   |  |   |
| Leakage current from battery with mains switched off:       | < 1 mA at nominal battery voltage (< 0.72 Ah/month)  |   |   |   |  |   |
| Protection:   | Protected against reversed polarity. Error Indication: Red (2 blinks) Short circuit proof. Error Indication: Red (3 blinks) Charging of wrong lower voltage battery pack will be terminated after 10min (See step 0). Indication: Red (4 blinks) Safety timer. Error Indication: Red (5 blinks) No charge (or charge terminated) if connecting wrong battery pack with higher voltage. Indication: LED is OFF. |   |   |   |  |   |
| Temperature range:  | Operating: -25 to +40oC. Transport and short time storage: -25 to +85oC  |   |   |   |  |   |
| Derating at 40oC approx.:                                   | 6.6A   | 5.5A  | 4.1A  | 3.8A  | 3.1A   | 2.5A  |
| Safety:   | Medical EN 60601-1 / Home Health care EN 60601-1-11/ Battery Charger EN 60335-2-29. A/V and Comm. tech: IEC 62368-1  |   |   |   |  |   |
| Insulation class :  | Class II. (Class I on request)   |   |   |   |  |   |
| Insulation voltage: Primary – secondary:                    | 4000VAC / 5700VDC  |   |   |   |  |   |
| EMC standards:  | EN 55014-1 and –2, Emission EN 61000-6-3, Immunity EN 61000-6-1, EN 60601-1-2  |   |   |   |  |   |
| Input terminal:   | 2-pins IEC 320 connector, C8 or mains cable (3pins IEC 320 connector, C6 on request)   |   |   |   |  |   |
| Output terminals:   | DC connector, Battery clips, Push-on terminals or open ends.   |   |   |   |  |   |
| IP-Grade:   | 41   |   |   |   |  |   |
| Rec. battery capacity:                                      | 9-360Ah  | 7-280Ah   | 5.6- 224Ah  | 4.65 -186Ah   | 4.0 -160Ah   | 3.5-140Ah   |
| Dimensions:   | 203.5 × 87 × 43.5 mm   |   |   |   |  |   |
| Weight:   | 590g   |   |   |   |  |   |

| SPECIFICATIONS FOR 4040 LI                                  | 9-cell Li-Ion  | 10-cell Li-Ion   | 11-cell Li-Ion  | 12-cell Li-Ion  | 13-cell Li-Ion  | 14-cell Li-Ion  |
|---|--|--|---|---|---|---|
| Available versions  | x  |  |   |   |   |   |
| Input voltage: / Line frequency                             | 90-264Vac 47-63Hz  |  |   |   |   |   |
| Active power factor correction:                             | Yes  |  |   |   |   |   |
| Max output power:   | 117.2W   | 117.4W   |   | 117.5W  | 117.4W  |   |
| Step 0 < 10min Yellow                                       | CC 200mA ± 25mA, when batt voltage < 27V.  | CC 200mA ± 25mA, when batt voltage < 30V.                | CC 200mA ± 25mA, when batt voltage < 33V.                 | CC 200mA ± 25mA, when batt voltage < 36V.                 | CC 200mA ± 25mA, when batt voltage < 39V.                 | CC 200mA ± 25mA, when batt voltage < 42V.                 |
| Step 0 > 10min Red (4 blinks)                               | 0A / 0V  |  |   |   |   |   |
| Step 1 (Constant Current) Yellow                            | CC 3.1A ± 0.2A, when 27V < Vbat < 37.8V  | CC 2.8A ± 0.2A, when 30V < Vbat < 42V                    | CC 2.54A ± 0.2A, when 33V < Vbat < 46.2V                  | CC 2.33A ± 0.2A, when 36V < Vbat < 50.4V                  | CC 2.15A ± 0.2A, when 39V < Vbat < 54.6V                  | CC 2.0A ± 0.2A, when 42V < Vbat < 58.8V                   |
| Step 2 (Constant Voltage) Flashing Yellow                   | CV 37.8V ± 0.2V < 2.2A until I charge < 200mA or max. 1h   | CV 42.0V ± 0.2V < 1.7A until I charge < 200mA or max. 1h | CV 46.2V ± 0.3V < 1.6A until I charge < 200mA or max. 1h. | CV 50.4V ± 0.3V < 1.6A until I charge < 200mA or max. 1h. | CV 54.6V ± 0.3V < 1.5A until I charge < 200mA or max. 1h. | CV 58.8V ± 0.3V < 1.3A until I charge < 200mA or max. 1h. |
| Charge timer (step2, CV)                                    | 1h   |  |   |   |   |   |
| Safety timer (all steps) Red (5 blinks)                     | 72h  |  |   |   |   |   |
| Step 3 (Charge Completed) Green                             | 0A   |  |   |   |   |   |
| Restart voltage   | 36.9V  | 41V  | 45.1V   | 49.2V   | 53.3V   | 57.4V   |
| Formation Charge (Step 0)                                   | Low current start-up of deeply discharged battery.   |  |   |   |   |   |
| Wake-up of deeply discharged battery.                       | Yes, will apply voltage which deactivates deep discharge protection in battery pack.   |  |   |   |   |   |
| Indication when "Battery not connected"                     | Flashing Green (1s/1s)   |  |   |   |   |   |
| NTC input, on request (std is 10kohm, B-value approx. 4000) | 0 – 45 °C: Normal charge. Battery temperature < 0 °C (too cold) or > 45°C (too hot): No charge, wait until temp. is OK.  |  |   |   |   |   |
| Ripple:   | < 100mV p-p  |  |   |   |   |   |
| Efficiency (at 230V 100% load) approx.:                     | 91%  |  |   |   |   |   |
| Switch frequency approx.:                                   | 45-75kHz   |  |   |   |   |   |
| Leakage current from battery with mains switched off:       | < 1 mA at nominal battery voltage (< 0.72 Ah/month)  |  |   |   |   |   |
| Protection:   | Protected against reversed polarity. Error Indication: Red (2 blinks) Short circuit proof. Error Indication: Red (3 blinks) Charging of wrong lower voltage battery pack will be terminated after 10min (See step 0). Indication: Red (4 blinks) Safety timer. Error Indication: Red (5 blinks) No charge (or charge terminated) if connecting wrong battery pack with higher voltage. Indication: LED is OFF. |  |   |   |   |   |
| Temperature range:  | Operating: -25 to +40oC. Transport and short time storage: -25 to +85oC  |  |   |   |   |   |
| Derating at 40oC approx.:                                   | 2.5A   | 1.8A   | 1.5A  | 1.7A  | 1.4A  | 1.3A  |
| Safety:   | Medical EN 60601-1 / Home Health care EN 60601-1-11/ Battery Charger EN 60335-2-29. A/V and Comm. tech: IEC 62368-1  |  |   |   |   |   |
| Insulation class :  | Class II. (Class I on request)   |  |   |   |   |   |
| Insulation voltage: Primary – secondary:                    | 4000VAC / 5700VDC  |  |   |   |   |   |
| EMC standards:  | EN 55014-1 and –2, Emission EN 61000-6-3, Immunity EN 61000-6-1, EN 60601-1-2  |  |   |   |   |   |
| Input terminal:   | 2-pins IEC 320 connector, C8 or mains cable (3pins IEC 320 connector, C6 on request)   |  |   |   |   |   |
| Output terminals:   | DC connector, Battery clips, Push-on terminals or open ends.   |  |   |   |   |   |
| IP-Grade:   | 41   |  |   |   |   |   |
| Rec. battery capacity:                                      | 3.1 - 124Ah  | 2.8 -112Ah   | 2.54 -101Ah   | 2.33 – 93Ah   | 2.15 - 86Ah   | 2 - 80Ah  |
| Dimensions:   | 203.5 × 87 × 43.5 mm   |  |   |   |   |   |
| Weight:   | 590g   |  |   |   |   |   |