



**Input**

Input voltage

Unom. 230VAC, voltage range: 185 – 264 VAC  
 max. permissible stress without destruction or loss of lifetime:  
 130% (299VAC) for <0,8sec.  
 125% (288VAC) for 0,8-2sec.  
 120% (276VAC) for 2- 30sec.

Galvanic isolation

primary side to earth 750 VAC and 1000 VDC permanently  
 ext. 6AT (slow blow) / ext. 6A K- or D- characteristic

Fuse / MCB

Frequency AC-input

47-63Hz

Power factor AC-input

0,65-0,75 capacitive

Crest factor (AC)-input

2,0-2,5

Turn on voltage

down to 90% Umin (167 VAC)

Switch-on time

typ. 2s

Hold-up time

Output voltage typical 15ms. Hold up of CPU >2.0s

Drop out recovery time

Max. 2s

**Primary Inhibit**

Inhibit input

Digital input, Unom. 230VAC

Galvanic isolation

Connected with AC - Input

Connector

1-wire

On / Off levels

Signal "0": pin floating; Signal "1": shorted with L (phase)

Function description

Signal "0": Charging voltage is normal.

Signal "1": Charging voltage 0VDC

Response time

Stop: 150ms Start: 150ms

**Control Input**

Inhibit input

Digital input, Unom. 24VDC

Galvanic isolation

750 VAC and 1000 VDC permanently

Connector

2-wire

On / Off levels

Signal "0": 0-5VDC; Signal "1": 15-30VDC

Input impedance

9100Ω, input current max 25mA

Function description

Signal "0": Charging voltage is normal.

Signal "1": Charging voltage 0VDC

Response time

Stop: 25ms Start: 25ms

**PT-100**

PT-100 input

Range: -40°C to + 80°C. Accuracy: +/- 1°C. Current < 3mA.

Galvanic isolation

750 VAC and 1000 VDC permanently

Connector

3-wire

Temperature error

If temperature of battery or capacitors not in the range -20°C to +50°C.

For alarm purposes, the temperature measurement is averaged over 1 sec and with a hysteresis of 5°C.

If wire broken or shorted.

Temperature sensor error

**Output**

Max charging voltage

330VDC (corresponding to -34°C).

Voltage ripple

<0.5% (2.25V @ 450V output).

Max charging current

1A ± 2%,

Voltage / Current

Constant current/constant voltage charge system

IU- characteristic

Galvanic isolation

Secondary side to primary side and secondary side to earth: 750 VAC and 1000 VDC permanently

Over voltage protection

electronically 340VDC. No effect on external over voltage

Feed – back protection

internal series diode at +output.

Polarity protection

in combination with an external main circuit breaker or a fuse, full polarity protection for the battery connection is possible

signalizations and indications according to table "alarm output functionality"

LED Signal

Alarm output

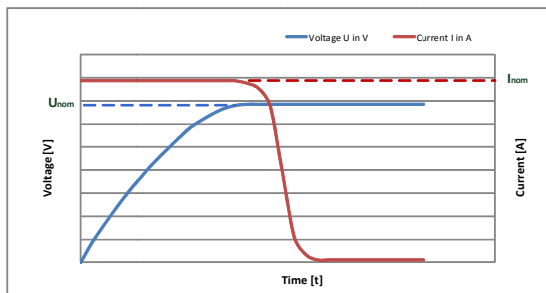
Relay contacts (1noc / 1ncc), contact load 30V / 2A

Galvanic isolation

750 VAC and 1000 VDC permanently

Alarm hold time

min. 1 sec – except after power up.



IU Characteristic

### Alarm Function

Error	Alarm Contact	Green LED	Red LED	Charging continue	Alarm Off condition
No error present	No	On	Off	Yes	N/A
Input power off	Yes	n/a	n/a	n/a	Power On
Battery or capacitor voltage < 400V	Yes	On	On	Yes	Voltage > 264V
Temperature error	Yes	On	On	Yes	-20°C < t < +50°C
Temperature sensor error	Yes	On	On	Yes	-20°C < t < +50°C
Charger temperature too high (>100°C)	Yes	Off	On	No	Temperature lower (<70°C)
Battery or capacitor current < 100mA during test	Yes	On	On	Yes	Battery current > 150mA for 0.5s <sup>(6)</sup>

### General

Temperature coefficient	Output voltage and current typ. 0,02%/°C
Operating temperature	with free natural convection in all mounting angles: -40°C to +50°C ambient temperature
Current derating	+50°C to +70°C ambient temperature current derating down to 50% of output power with -2,5%/°C
Storage temperature	-40°C to +70°C
Humidity	95% without condensation
Efficiency at full load	>90%
Coating	PCB is coated to protect against small metal chips and debris as well as against corrosions at high humidity

### Expected lifetime

20 years at +40°C continuous ambient temperature

### EMC General

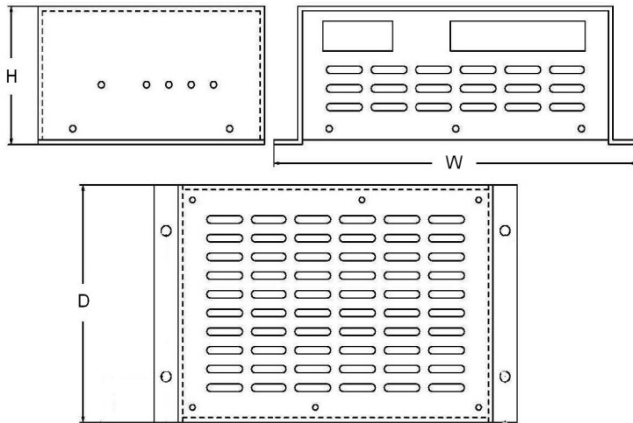
Marking	This product is CE marked.
Specific requirements	AC power input test levels: Surge acc. EN 61000-4-5, Level 3 EN 61000-4-4, Level 3

### Immunity tests

Test		Port type	
Burst	DS/EN 61000-4-4	All ports	4kV
ESD	DS/EN 61000-4-2	All ports	4kV contact
Surge	DS/EN 61000-4-5	AC power port DM AC power port CM DC power port DM DC power port CM Signal ports CM Shield to earth CM	2 Ω/18 μF 2.0 kV 12 Ω/9 μF 4.0 kV 2 Ω/18 μF 1.0 kV 12 Ω/9 μF 1.0 kV 42 Ω/0.5 μF 4.0 kV 2 Ω 2.0 kV
RF conducted	DS/EN 61000-4-6	All ports	0.15-80 MHz: 10Vrms
RF airborne	DS/EN 61000-4-3		27-1000 MHz: 10 V/m

### Construction

Creepage distances	in/ground: 6,4mm
Air distances	in/ground: 5mm
EMC / CE	EN 61000-6-4, EN 61000-6-2
Connection	Connectors with mechanical lock
Mechanical stability	All large components, particular electrolytic capacitors are glued.
Connector labeling	Screen printing on cabinet



Dimensions approx. mm:

H = 74

W = 204

D = 127