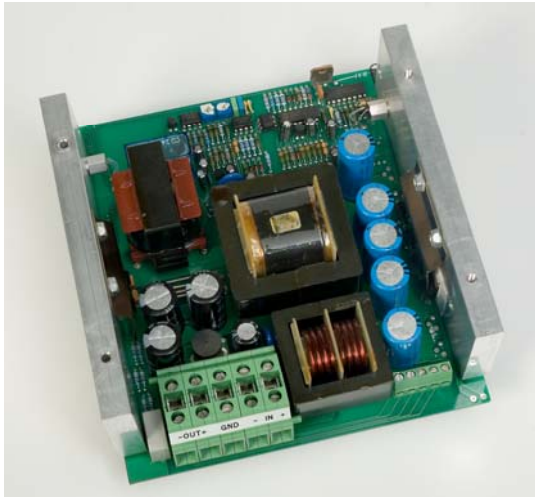


# ENERGY-MASTER®

## Isolated DC-DC converter modules, high efficiency



### Features

- DC - DC module
- 12, 24 or 48 VDC input and/or output (other models on special request)
- High Frequency, High Efficiency
- Galvanic Isolation
- Can be used as battery charger
- Short circuit and overload protection

### General Specifications:

#### Input

Voltage 12, 24 or 48 VDC depending on the model.

Protection the unit will shutdown when the input voltage is either too low or too high. It will restart once the input voltage is within the normal operating range.

#### Output

Voltage stabilised 12, 24 or 48 VDC, depending on the model. Other voltages are possible on special request.

Charger the unit can be used as a battery charger by manually adjusting the output voltage.

Sense the output has a separate sense connector that can be used to compensate for the voltage drop on the output cable. The compensation can be up to 1V (12 VDC output) or 2 Volt (24 VDC output)  
24 models

Current 10 or 20 A, depending on the model, with current limiting

Ripple 100 mV tt

Safety the module has a galvanic isolation between the input and output that can withstand 500 VDC at least.

Protection the output is fully protected against short circuits or overload

#### Inverter

High Frequency (25 kHz) switching converter with an efficiency >90% (most models typical 93%)

#### Alarm

The unit has a relay alarm output (with both NO and NC contacts) that will generate an alarm when the unit shuts down because the:

- input voltage is too low or too high
- output voltage is too low (due to overload or a short circuit)
- temperature of the cooling blocks rises above +70°C.

#### Environmental

Module operating temperature: -20°C – +70°C with linear derating from +50°C – +70°C but this is depending on the chassis or extra cooling blocks used. The unit will shutdown when the temperature of the cooling blocks rises above +70°C. It will restart after cooling down to normal operating temperatures.

#### Dimensions

Open frame module: 174 x 157 x 58 mm

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Standard Models KWP Model number	Input			Output					
	Voltage VDC	Range (1) VDC	Current Max A	Voltage (2) VDC	Range VDC	Sense range	Stabilised	Current continuous	Max (3) Power Watt
<b>12 VDC Input</b>									
DC-DC/12-12A10-mod	12 V	10 – 16 V	15 A	12 V	10 - 14,5 V	1 V max	Yes	10 A	150 W
DC-DC/12-12A20-mod	12 V	10 – 16 V	30 A	12 V	10 - 14,5 V	1 V max	Yes	20 A	300 W
DC-DC/12-24A10-mod	12 V	10 – 16 V	30 A	24 V	19 - 29 V	2 V max	Yes	10 A	300 W
<b>24 VDC Input</b>									
DC-DC/24-12A10-mod	24 V	19 – 31 V	7.5 A	12 V	10 - 14,5 V	1 V max	Yes	10 A	150 W
DC-DC/24-12A20-mod	24 V	19 – 31 V	15 A	12 V	10 - 14,5 V	1 V max	Yes	20 A	300 W
DC-DC/24-24A10-mod	24 V	19 – 31 V	15 A	24 V	19 - 29 V	2 V max	Yes	10 A	300 W
DC-DC/24-24A10WI-mod	24 V	(4) 12 – 31 V	15 A	24 V	19 - 29 V	2 V max	Yes	10 A	300 W
DC-DC/24-24A20-mod	24 V	19 – 31 V	30 A	24 V	19 - 29 V	2 V max	Yes	20 A	580 W
DC-DC/24-48A5-mod	24 V	19 – 31 V	15 A	48 V	38 - 58 V	4 V max	Yes	5 A	300 W
DC-DC/24-48A10-mod	24 V	19 – 31 V	30 A	48 V	38 - 58 V	4 V max	Yes	10 A	580 W
<b>48 VDC Input</b>									
DC-DC/48-12A10-mod	48 V	41 – 62 V	4 A	12 V	10 - 14,5 V	1 V max	Yes	10 A	150 W
DC-DC/48-12A20-mod	48 V	41 – 62 V	7.5 A	12 V	10 - 14,5 V	1 V max	Yes	20 A	300 W
DC-DC/48-24A10-mod	48 V	41 – 62 V	7.5 A	24 V	19 - 29 V	2 V max	Yes	10 A	300 W
DC-DC/48-24A20-mod	48 V	41 – 62 V	15 A	24 V	19 - 29 V	2 V max	Yes	20 A	580 W

- (1) Input voltage range uses different voltages for switching off and on again to avoid continuous on-off switching
- (2) The output voltage is normally fixed at the specified output voltage (12, 24 or 48 VDC) but can be adjusted manually with an internal potentiometer so the unit can be used as a battery charger
- (3) Continuous output power at the maximum output voltage with sufficient cooling
- (4) Special version with a **Wide Input** range for applications where the input voltage can drop from 24VDC nominal to 12VDC. A typical application is sensitive equipment powered by a starter battery in a car/truck or on a yacht/ship

Note On special request other combinations of input and output voltages (between 5 VDC and 110 VDC) are available, also for small quantities.  
Models with lower or higher maximum output current are also possible but availability depends on the combination of input and output voltage and the total power range.

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**Kleijn Wanner Productions B. V.**  
Beneluxweg 47  
NL-4904 SJ Oosterhout  
The Netherlands  
www.k-w-p.nl

Tel.: +31(0)162 - 42 03 66  
Fax: +31(0)162 - 42 03 85  
email: info@k-w-p.nl  
admin@k-w-p.nl

KvK / Trade register: 20114994  
BTW/VAT/MwSt/TVA: NL-812691799.B01  
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