

Multifunctional DC-DC converters

Essential building blocks

In most electrical systems both 24 VDC and 12 VDC equipment is used.

WhisperPower Switched Mode DC -DC converters take a particular voltage, for example 24 VDC, and convert it in to another DC voltage, for example 12 V DC.

The Switched Mode technology ensures minimal energy loss and high output.

Our range is based on three different topologies:



MC-Series

- DC-DC converters with common negative
- Step down from 24 VDC to 12 VDC
- Electronic process, high efficiency, low heat output
- Power rating up to 30 A
- Cannot be used in parallel

MCC-Series

- DC-DC converter with current limitation
- Designed to convert 24 VDC to 12 VDC and to charge 12 V batteries
- Multi step charge characteristics, programmable
- Delivered with temperature sensor as standard
- Can be used as dimming device for DC lighting

MG-Series

- DC-DC converters with galvanic isolation
- Step down from 24 VDC or 48 VDC to 12 VDC
- Step up from 12 VDC to 24 VDC is also possible
- Electronic process, high efficiency, low heat output
- Power rating up to 30 A
- Can be run in parallel for high-demand appliance



▲ Converter MCC24/12-20
20 Amps with three step
charge

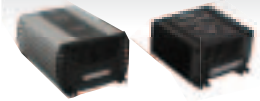
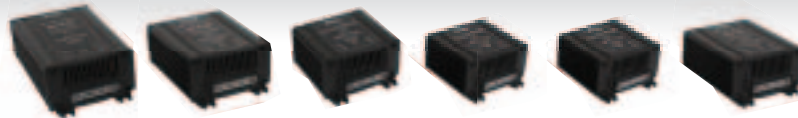
Features and Benefits

- Minimal energy loss thanks to Switched Mode technology (>90% efficiency)
- High quality industrial design for high reliability and longer life cycle
- Silent - no humming, only temperature controlled fans for cooling
- No interference with radios, VHF or other sensitive equipment
- Compact, fast and easy to install
- Excellent price - performance ratio

DC/DC converters

MC SERIES

MCC SERIES



| | MC 24/12-30 | MC 24/12-20 | MC 24/12-12 | MC 24/12-08 | MC 24/12-05 | MC 12/24-10 | MCC 24/12-20 | MCC 24/12-05 |
|---------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|
| Article Nr. | 60110012 | 60110011 | 60110016 | 60110010 | 60110005 | 60110017 | 60110015 | 60201023 |
| TECHNICAL SPECIFICATIONS | | | | | | | | |

Article Nr.

Converter type

voltage step down and stabilization

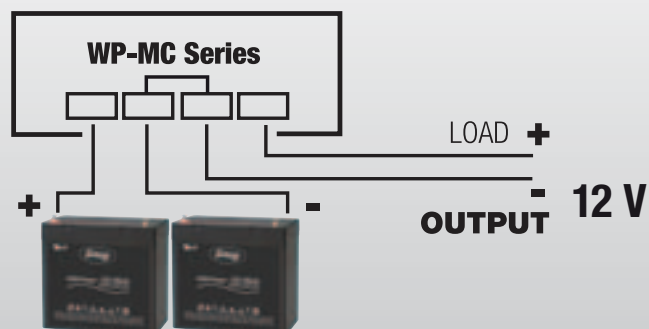
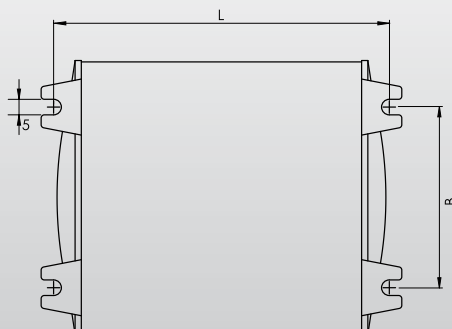
voltage step down and stabilization 3-step 12V battery charger, light dimmer function

voltage step down and stabilization

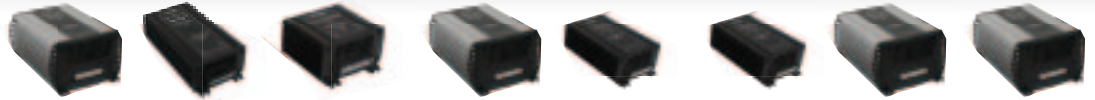
| INPUT | | | | | | | | | |
|--------------------------------------|----------------------------------|--------------------|-------------------|-------------------|-------------------|--------------------|---------------------------------|--------------------|-------------------------|
| Nominal input voltage | 24 VDC | 24 VDC | 24 VDC | 24 VDC | 24 VDC | 12 VDC | 24 VDC | 24 VDC | |
| Input range, specifications met | 18 .. 35 VDC | 18 .. 35 VDC | 18 .. 35 VDC | 18 .. 35 VDC | 18 .. 35 VDC | 9 .. 18 VDC | 24 .. 32 VDC | 24 .. 32 VDC | |
| Input range, no defects | 0 .. 35 VDC | 0 .. 35 VDC | 0 .. 35 VDC | 0 .. 35 VDC | 0 .. 35 VDC | 0 .. 18 VDC | 0 .. 35 VDC | 0 .. 35 VDC | |
| OUTPUT | | | | | | | | | |
| Nominal output voltage | 13.8 VDC | 13.8 VDC | 13.8 VDC | 13.8 VDC | 13.8 VDC | 25.0 VDC | 13,6 VDC | 13.8 VDC | |
| Voltage adjustable | no | no | no | no | no | no | 12..15VDC | 12 .. 15 VDC | |
| Output accuracy | 1% | 1% | 3% | 3% | 3% | 3% | 2% | 2% | |
| Ripple, peak output voltage | 1% | 1% | 1% | 1% | 1% | 3% | 1% | 1% | |
| maximum power output | 490 W | 350 W | 170 W | 110 W | 70 W | 300 W | 300 W | 70 W | |
| continuous output power | 420 W | 280 W | 170 W | 110 W | 70 W | 250 W | 270 W | 70 W | |
| Maximum output current | 35 A | 25 A | 12 A | 8A | 5A | 12 A | 20 A | 5A | |
| Continuous output current at 40 °C | up to 30 A | up to 20 A | up to 12 A | up to 8A | up to 5A | up to 10 A | up to 20 A | up to 5A | |
| GENERAL | | | | | | | | | |
| efficiency | >92% | >92% | >92% | >92% | >92% | >93% | >90% | >92% | |
| consumption no load | <25 mA | <25 mA | <5 mA | <5 mA | <5 mA | <5 mA | <30 mA | <5 mA | |
| Ambient operating temperature | -10°C .. +40°C | -10°C .. +40°C | -10°C .. +40°C | -10°C .. +40°C | -10°C .. +40°C | -10°C .. +40°C | -10°C .. +40°C | -10°C .. +40°C | |
| Storage temperature | -25°C .. +85°C | -25°C .. +85°C | -25°C .. +85°C | -25°C .. +85°C | -25°C .. +85°C | -25°C .. +85°C | -25°C .. +85°C | -25°C .. +85°C | |
| Relative humidity in use | up to 95%, non-condensing | | | | | | | | |
| Galvanic isolation | Common negative | | | | | | Yes, 500 Vac | | |
| Cooling | Mechanical | Convectional | Convectional | Convectional | Convectional | Convectional | Mechanical | Convectional | |
| PROTECTIONS | | | | | | | | | |
| Current / short circuit | Restricted by current rating | | Yes / fuse | Yes / fuse | Yes / fuse | Yes / fuse | Restricted by current rating | | |
| Overheating, shut down | Power restricted by temperature | | No | No | No | No | Power restricted by temperature | | |
| MECHANICAL SPECIFICATIONS | | | | | | | | | |
| Faston in/ off, max thread thickness | 6mm ² | 6mm ² | 6mm ² | 6mm ² | 6mm ² | 6mm ² | 6mm ² | 6mm ² | |
| Dimensions (h × w × d) | 50×151×88mm | 50×126×88mm | 50×98×88mm | 50×98×88mm | 50×98×88mm | 50×126×88mm | 66×191×123mm | 50×98×88mm | |
| Mounting holes | dia 4mm, rh 58×143 | dia 4mm, rh 58×118 | dia 4mm, rh 58×90 | dia 4mm, rh 58×90 | dia 4mm, rh 58×90 | dia 4mm, rh 58×118 | dia 4mm, rh 91×177mm | dia 4mm, rh 58×90 | |
| Weight | 500g | 440g | 290g | 270g | 270g | 360g | 955g | 270g | |
| International Protection rating | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | |
| Housing | frame 6 | frame 5 | frame 4 | frame 4 | frame 4 | frame 5 | frame 8 | frame 4 | |
| Housing material | Anodized aluminium, ABS end caps | | Alu / ABS | Alu / ABS | Alu / ABS | Alu / ABS | Alu / ABS | Alu / ABS | |
| Housing colour | RAL 9011 graphite black | | | | | | | RAL 9006 blank alu | RAL 9011 graphite black |

Meets the following Standards

EN61000-6-3 (EN55022), EN61000-6-2 (EN61000-2/3/4, EN61000-4-3), LVD 2006/95/EC (EN60335-1), Automotive EMC 2004/104/EC, RoHS 2011/65/EU Note: The above specifications are subject to change without prior notice.



MG SERIES



| | MG 24/12-30-I | MG 24/12-16-I | MG 24/12-3I | MG 48/12-30-I | MG 48/12-08-I | MG 12/12-08-I | MG 24/24-15-I | MG 12/12-30I |
|--------------------------------------|-------------------------------------|-------------------------|-------------------------|--------------------------|-------------------------|-------------------------|----------------------|----------------------|
| Article Nr. | 60110021 | 60110020 | 60110030 | 60110023 | 60110024 | 60110019 | 60110025 | 60110026 |
| TECHNICAL SPECIFICATIONS | | | | | | | | |
| Converter type | voltage step down and stabilization | | | | | voltage stabilization | | |
| INPUT | | | | | | | | |
| Nominal input voltage | 24 VDC | 24 VDC | 24 VDC | 48 VDC | 48 VDC | 12 VDC | 24 VDC | 12 VDC |
| Input range, specifications met | 20 .. 35 VDC | 20 .. 35 VDC | 20 .. 35 VDC | 30 .. 60 VDC | 30 .. 60 VDC | 9 .. 18 VDC | 20 .. 35 VDC | 9 .. 18 VDC |
| Input range, no defects | 0 .. 35 VDC | 0 .. 35 VDC | 0 .. 35 VDC | 0 .. 70 VDC | 0 .. 70 VDC | 0 .. 18 VDC | 0 .. 35 VDC | 0 .. 18 VDC |
| OUTPUT | | | | | | | | |
| Nominal output voltage | 12.5 VDC | 12.5 VDC | 12.5 VDC | 12.5 VDC | 12.5 VDC | 12.5 VDC | 24.5 VDC | 12.5 VDC |
| Voltage adjustable | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Output accuracy | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Ripple, peak output voltage | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% |
| maximum power output | 400 W | 200 W | 38 W | 400 W | 200 W | 110 W | 400 W | 490 W |
| continuous output power | 360 W | 200 W | 36 W | 360 W | 100 W | 110 W | 360 W | 420 W |
| Maximum output current | 32 A | 16A | 3A | 32 A | 16A | 8A | 16A | 30A |
| Continuous output current at 40 °C | up to 30 A | up to 16A | up to 3A | up to 30 A | up to 8A | up to 8A | up to 15 A | up to 30A |
| GENERAL | | | | | | | | |
| efficiency | >87% | >87% | >87% | >87% | >87% | >87% | >87% | >87% |
| consumption no load | <25 mA | <25 mA | <25 mA | <25 mA | <25 mA | <25 mA | <25 mA | <25 mA |
| Ambient operating temperature | -10°C .. +40°C | -10°C .. +40°C | -10°C .. +40°C | -10°C .. +40°C | -10°C .. +40°C | -10°C .. +40°C | -10°C .. +40°C | -10°C .. +40°C |
| Storage temperature | -25°C .. +85°C | -25°C .. +85°C | -25°C .. +85°C | -25°C .. +85°C | -25°C .. +85°C | -25°C .. +85°C | -25°C .. +85°C | -25°C .. +85°C |
| Relative humidity in use | up to 95%, non-condensing | | | | | | | |
| Galvanic isolation | Yes, 500 VAC | Yes, 500 VAC | Yes, 500 Vac | Yes, 500 VAC | Yes, 500 VAC | Yes, 500 VAC | Yes, 500 VAC | Yes, 500 VAC |
| Cooling | Mechanical | Mechanical | Mechanical | Mechanical | Mechanical | Mechanical | Mechanical | Mechanical |
| PROTECTIONS | | | | | | | | |
| Current / short circuit | Restricted by current rating | | | | | | | |
| Overheating, shut down | Power restricted by temperature | | | | | | | |
| MECHANICAL SPECIFICATIONS | | | | | | | | |
| Faston in/ off, max thread thickness | 6mm ² | 6mm ² | 6mm ² | 6mm ² | 6mm ² | 6mm ² | 6mm ² | 6mm ² |
| Dimensions (h × w × d) | 83×186×133mm | 50×176×88mm | 50×85×88mm | 83×186×133mm | 50×151×88mm | 50×151×88mm | 83×186×133mm | 83×186×133mm |
| Mounting holes | dia 4mm, rh 91×177mm | dia 4mm, rh 58×168mm | dia 4mm, rh 58×168mm | dia 4mm, rh 91×177mm | dia 4mm, rh 58×143mm | dia 4mm, rh 58×143mm | dia 4mm, rh 91×177mm | dia 4mm, rh 91×177mm |
| Weight | 1.4kg | 630g | 250g | 1.4kg | 630g | 630g | 1.4kg | 1.4kg |
| International Protection rating | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 |
| Housing | frame 8 | frame 7 | frame 7 | frame 8 | frame 6 | frame 6 | frame 8 | frame 8 |
| Housing material | Anodized aluminium, ABS end caps | | | | | | | |
| Housing colour | RAL 9006 white aluminium | RAL 9011 graphite black | RAL 9011 graphite black | RAL 9006 white aluminium | RAL 9011 graphite black | RAL 9011 graphite black | RAL 9006 blank alu | RAL 9006 blank alu |

Meets the following Standards

EN61000-6-3 (EN55022), EN61000-6-2 (EN61000-2/3/4, EN61000-4-3), LVD 2006/95/EC (EN60335-1),
Automotive EMC 2004/104/EC, RoHS 2011/65/EU Note: The above specifications are subject to change without prior notice

