VoltageConverter2412DC-42W

DC/DC converter 24V/12V 42W

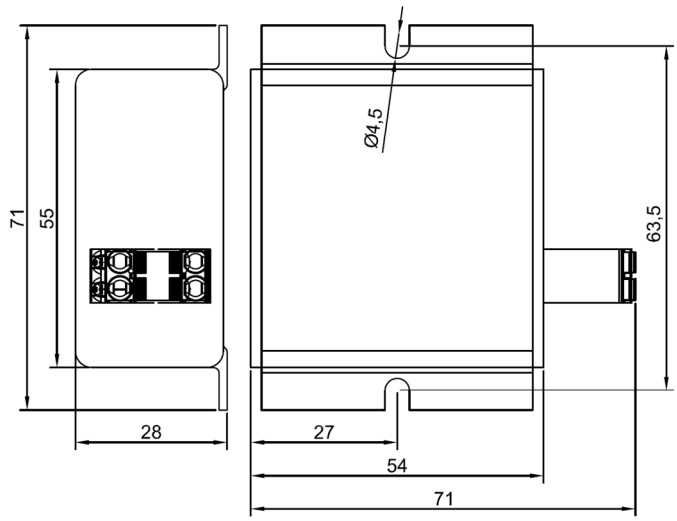
The VoltageConverter2412DC-42W is a DC/DC converter that converts 24V to 12V with a power output of up to 42W. The DC/DC converter was specifically designed for applications requiring non-industrial voltage levels with special low-voltage connectors. The DC/DC converter is available with a variety of low-voltage connectors and can be expanded upon request. The DC input of the converter is protected against short circuits and reverse polarity and efficiently reduces the applied voltage level. The DC output provides a reduced voltage, which is protected by an electronic fuse against overload and shuts down the output in the event of a short circuit.

RoHS COMPLIANT

Key commercial data

Packing unit	1 pc
Weight per piece (excluding packing), VoltageConverter2412DC-42W	100g
Weight per piece (including packing), VoltageConverter2412DC-42W	150g
Country of origin	Germany

Technical data mechanically



Ambient temperature (operation)	0°C … 35°C
Ambient temperature (storage/transport)	-20°C … 70°C
Relative humidity	90% without condensation
Mounting position	any
Tightening torque PE	1,4Nm

VoltageConverter2412DC-42W

DC/DC converter 24V/12V 42W

Technical data electric

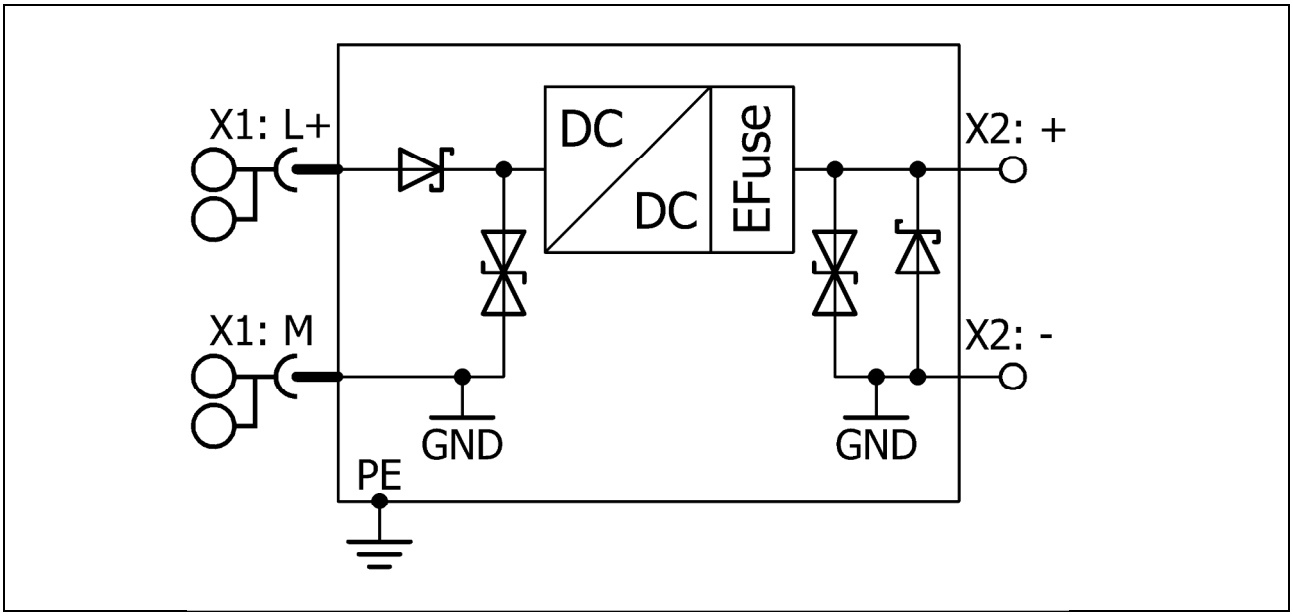
Nominal voltage U_{1N} – Input side	21V … 30V DC
Nominal current I_{1N} – Input side	max 2,5A
Nominal power P_{1N} – Input side	max 48W
Nominal voltage U_{2N} – Output side	12V DC (+ 8%)
Nominal current I_{2N} – Output side	max 3,5A
Nominal power P_{2N} – Output side	max 42W
Efficiency η	typ. > 90%
Reverse polarity protection – Input side	Yes
Short-circuit proof – Output side	Yes, resettable fuse
Protection class	IP20
Connection data connectors X1	
Connection type	Push-in spring connection
Conductor cross section solid	0,25mm^2 … 2,5mm^2
Conductor cross section flexible	0,25mm^2 … 2,5mm^2
Conductor cross section with ferrule, with/ without plastic sleeve	0,25mm^2 … 2,5mm^2
Conductor cross section with TWIN-ferrule, with plastic sleeve	0,5mm^2 … 1,5mm^2
Stripping length	10mm
Connection data connectors X2	
Connection type	Push-in spring connection
Conductor cross section solid	0,25mm^2 … 1,5mm^2
Conductor cross section flexible	0,25mm^2 … 1,5mm^2
Conductor cross section with ferrule, without plastic sleeve	0,25mm^2 … 1,5mm^2
Conductor cross section with ferrule, with plastic sleeve	0,25mm^2 … 0,75mm^2
Stripping length	8mm
Connection data PE	
Connection type	M4 pan head screw Torx 20

Standards and Regulations

Standards/regulations	EN IEC 61000-6-2: 2019
	EN 61000-6-3: 2007 +A1:2011 +AC:2012
	EN 50178: 10/97

VoltageConverter2412DC-42W
DC/DC converter 24V/12V 42W

PIN assignment



Functionality of the device

U_{1N} Input side	PWR LED blue	Status LED green/red		U_{2N} Output side	Function
≤ 20V	☀ ●	●	●	0V	Normal
≥ 21V	●	●	●	0V	Error
≥ 21V	●	☀ ●	●	> 0V	Error
≥ 21V	●	●	☀	0V	Error
≥ 21V	☀ ●	●	●	≥ 12V	Error
≥ 21V	☀	●	●	0V	Error
≥ 21V	☀	●	☀	≥ 12V	Error
≥ 21V	☀	☀	●	≤ 10,8V	Error

 Subject to change without notice

VoltageConverter2412DC-42W
DC/DC converter 24V/12V 42W

≥ 21V				≥ 12V	Normal
≥ 21V				0V	Normal

Function Normal:
The function of the device lies in its specified parameters.

Function Error:
The device is defective and should be replaced.

- LED does not light
- LED lights up blue
- LED lights up green
- LED lights up red

If the device has an error or the red LED lights up, a reset by turning off the power to the device may help.
If the device error persists after powering down, the device should be replaced.

Safety regulations and installation notes

Before startup please ensure:

- Only skilled persons may install, start up and operate the device.
- Observe the national safety and accident prevention regulations.

WARNING: Danger to life by electric shock!

- Never carry out work when voltage is present.
- Establish mains connection correctly and ensure protection against electric shock.
- The device must be switched off outside the power supply in accordance with the regulations of EN 60950-1 (e.g. by means of line protection on the primary side).
- Cover termination area after installation in order to avoid accidental contact with live parts (e.g. installation in control cabinet).
- Protect the device against foreign bodies penetrating it.

CAUTION: Hot surface!

- Direct contact with this surface may cause severe burns. Do not touch the surface.

NOTE: Danger if used improperly!

- The device is a built-in device.
- The IP20 degree of protection (IEC 60529/EN 60529) of the device is intended for use in a clean and dry environment. Do not subject the device to any load that exceeds the described limits.
- Observe mechanical and thermal limits.
- Ensure that the primary-side wiring and secondary-side wiring are the correct size and have sufficient fuse protection.

VoltageConverter2412DC-42W
DC/DC converter 24V/12V 42W

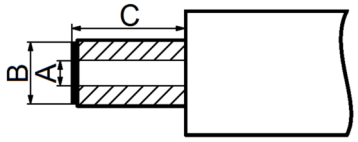
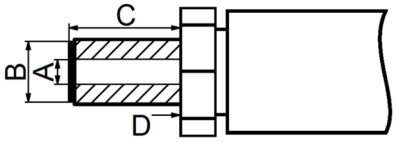
- It is not permissible to open or modify the device. Do not repair the device yourself but replace it with an equivalent device. Repairs may only be carried out by the manufacturer. The manufacturer is not liable for damage resulting from violation.
- The device may only be used for its intended use.

Pictures

VoltageConverter2412DC-42W

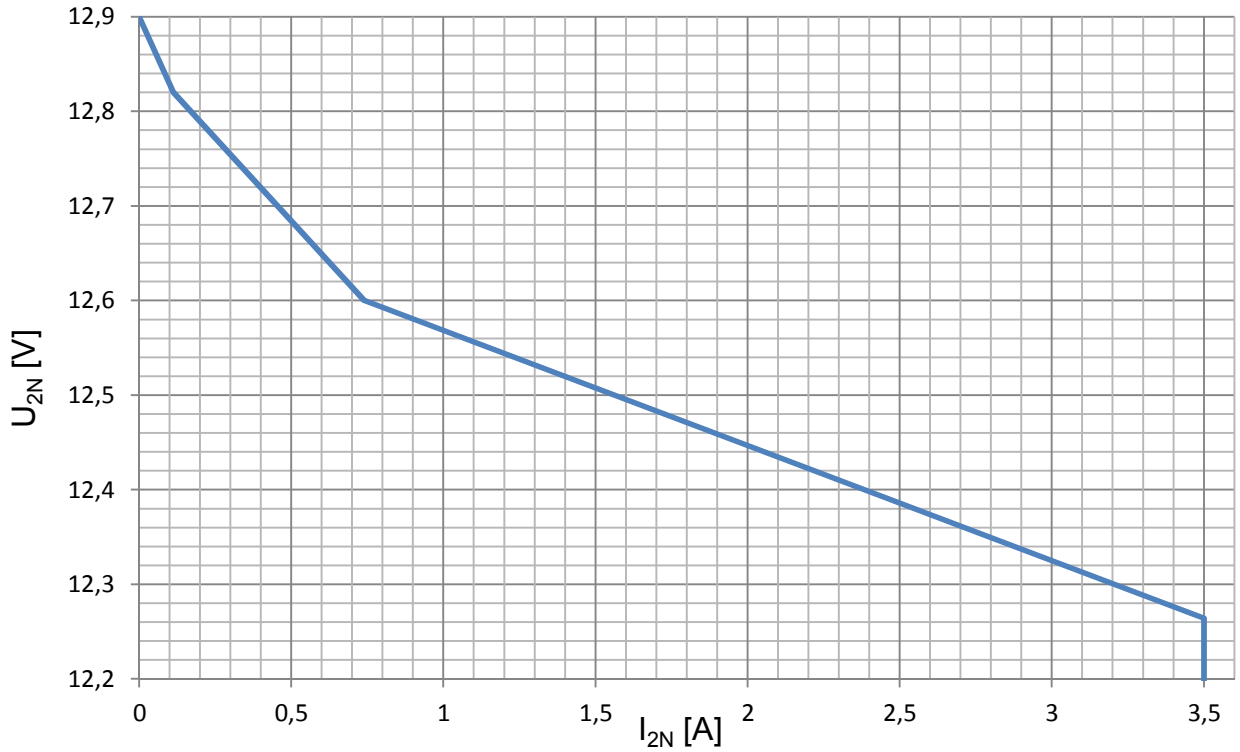
DC/DC converter 24V/12V 42W

Order code

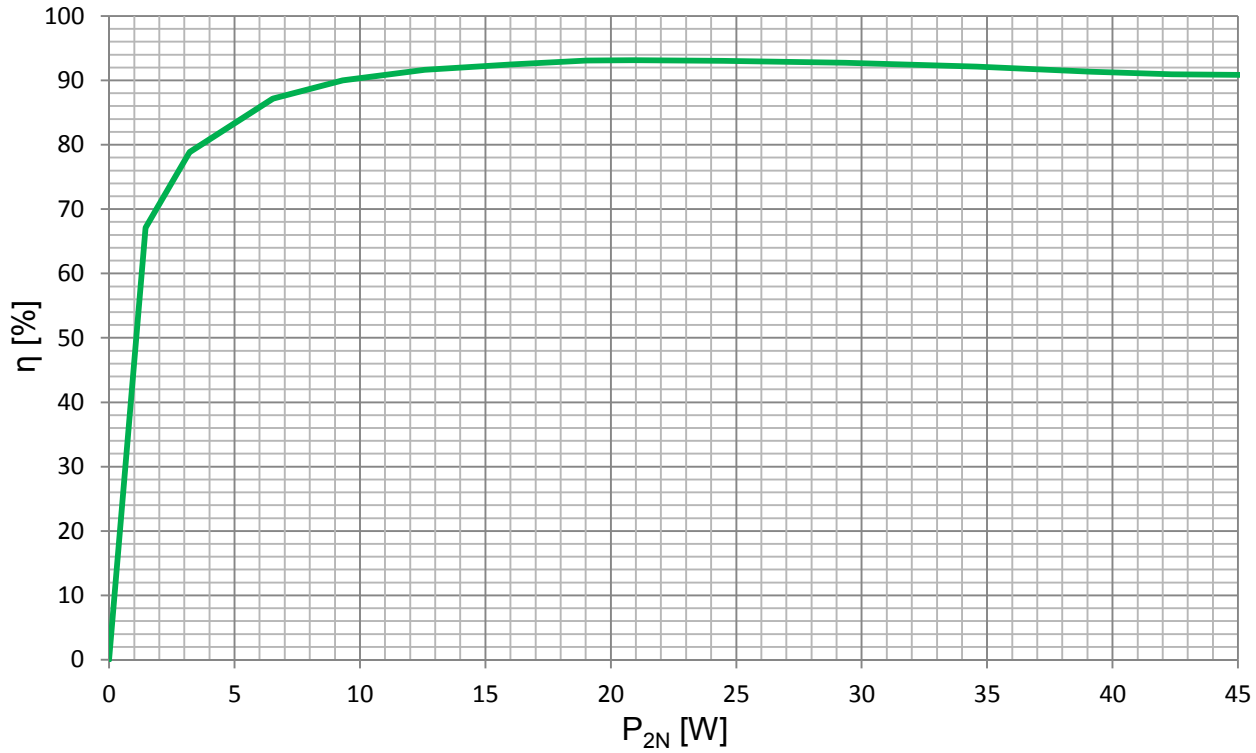
Order number	Execution of the article
VoltageConverter2412DC-42W	Output side without DC cable (see pictures)
VoltageConverter2412DC-42W-NA05	with 0,5m DC cable, power plug Ø2.1/5.5 – 9,5mm (ØA/B – C)
VoltageConverter2412DC-42W-NA10	with 1m DC cable, power plug Ø2.1/5.5 – 9,5mm (ØA/B – C)
VoltageConverter2412DC-42W-NA20	with 2m DC cable, power plug Ø2.1/5.5 – 9,5mm (ØA/B – C)
Pin +: BN 0,5mm^2 Pin -: BU 0,5mm^2 	
VoltageConverter2412DC-42W-NX20	with 2m DC cable, power plug Ø2.5/5.5 – 9,5mm (ØA/B – C) D 5/16" union nut
Pin +: RD 0,5mm^2 Pin -: BK 0,5mm^2 	

VoltageConverter2412DC-42W
DC/DC converter 24V/12V 42W

Diagram



From the load diagram, the output voltage U_{2N} can be derived depending on the output current I_{2N}.



The efficiency η can be derived from the diagram depending on the output power P_{2N}.