

DVC301

DC/DC converter



Abbildung ähnlich / device similar to figure



DVC301-derivate table

Type	Input voltage		Output voltage	Output current	Cat. No.
	Nom.	Range	Nom.	Max.	
DVC301-48-24	48 VDC	32 - 90 VDC	24 VDC	12,5 A	105600
DVC301-24-24	24 VDC	19 - 45 VDC	24 VDC	12,5 A	105601

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1 Input

Input voltage range	-	see DVC301-derivate table (valid for continuous operation)
Undervoltage range	0 - 28VDC (@IN 48VDC) 0 - 18VDC (@IN 24VDC)	Class C*
Lower restricted operation range	28VDC - 34VDC (@IN 48VDC) 18VDC - 19VDC (@IN 24VDC)	Continuous operation, class B*
Unrestricted operation range	34VDC-90VDC(@IN 48VDC) 19VDC - 45VDC (@IN 24VDC)	Continuous operation, class A*
Max. current consumption	10,85 A (@IN 48VDC) 19,8 A (@IN 24VDC)	-
Filtering	-	Filtered against vehicle on board disturbances
No-load current consumption	< 250 mA	-

* Evaluation criteria for the operation behavior

The following evaluation criteria describe the functional state of the DC/DC converter as a function of the operation input voltage.

Class A	Unrestricted operation range	The DC/DC converter operates as designed in compliance with the tolerances specified in the data sheet.
Class B	Lower and upper restricted operation range	One or more functions may go beyond the specified tolerance. After returning to the unrestricted operation range, the DC/DC converter operates again as designed.
Class C	Undervoltage and overvoltage range	One or more functions do not work as intended. After returning to the unrestricted operation range, the DC/DC converter operates again as designed.

2 Output

Output voltage U_{nom}	-	see DVC301-derivate table (valid for continuous operation)
Initial accuracy (0 - 20 Hz)	$\pm 0,8\% U_{nom}$ $\pm 1,5\% U_{nom}$	@IN 48VDC @IN 24VDC
Load regulation tolerance N_{load}	$\pm 0,2\% U_{nom}$ $+0,4\% / -0,2\% U_{nom}$	@IN 48VDC @IN 24VDC
Ripple & Noise N_{RN}	$\pm 0,5\% U_{nom}$ $\pm 0,8\% U_{nom}$	< 120 mVpp (@IN 48VDC) < 200 mVpp (@IN 24VDC)
Overall toleranz $N_{overall}$ 0 - 20 MHz	$\pm 1,5\% U_{nom}$ $+2,7\% / -2,5\% U_{nom}$	@IN 48VDC @IN 24VDC
Max. continuous output current I_{nom}	12,5 A	-
Max. continuous output power P_{nom}	300 W	-
Current limiting	$1,1 \times I_{nom}$	above $1,0 \times I_{nom}$ U_{out} may sink

3 Environment

Working temperature (environment)	-40°C ... +70°C	-
Overtemperature protection	-	Automatic shutdown in case of overtemperature, self reset after cool down
Storage temperature	-40°C ... +85°C	-
Humidity	100%	-
Dewing	allowed	-
Degree of protection acc. to EN 60529	IP67	without plug

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4 General data

Insulation strength	1,5 kVDC 500 VDC	Input voltage against output voltage and enclosure Output against enclosure
Efficiency	88%	Averaging of the efficiency values at 25%, 50%, 75% and 100% of the nominal output power.
Dimensions (LxWxH)	(153 (147)x 131 (97) x 50 (47)) mm	without connections, see fig. 7.1
Enclosure	Aluminium	-
Weight	< 1500g	-

5 Standards

EMC (Electromagnetic Compatibility)

Title	Standard	Data
Emitted interference	EN12895 EN 61204-3	- acc. to 6.4.2, table H.3, for industrial environment (class A, cable length < 3 m)
Immunity	EN12895 EN 61204-3	- acc. to 7.2.3, Noise immunity level for industrial environment (cable length < 3 m)

Electrical safety

Title	Standard	Data
Safety of industrial trucks - Electrical requirements	designed according to DIN EN 1175	-
Low-voltage switch mode power supplies - Safety requirements	DIN EN 61204-7	-
Designed according to Industrial trucks - Elec- trical requirements	ISO 20898	-

* The system integrator is responsible for compliance of all product-specific requirements in the end application.

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6 Installation and safety instructions

In addition to the general installation and safety instructions for DC/DC converters, the following values and supplements apply:

Mounting points	4x Mounting holes (Ø5,5 mm) see fig. 7.1 4x Mounting holes (Ø4,5 mm)
Installation orientation	- any
Connection input / output	ca. 10cm cable with 6-pole - AMP connector MATE-N-LOK (different cable/connector possible on customers request) Variant with 12VDC input voltage: 0,5m cable (open ends – no connector plug)
Input fuse	- No integrated input fuse. A fuse must be provided externally by the customer application.
Reverse polarity protection	- On reverse polarity external input fuse (upstream) is blown

The general installation and safety instructions for DC/DC converters can be found at: www.deutronic.com

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7 Dimensions

All dimensions are given in millimeters and have a general tolerance according to DIN ISO 2768 - m.

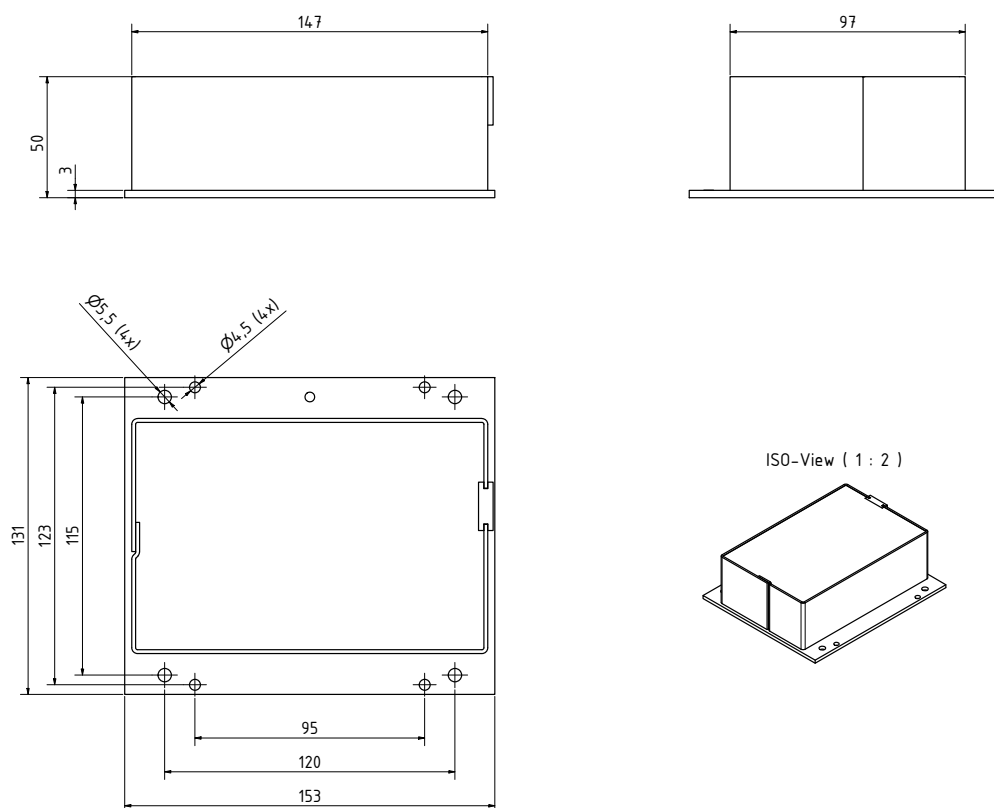


Figure 7.1: Dimensions

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