Deutronic Elektronik GmbH
Deutronicstr. 5, 84166 Adlkofen, Germany
Tel.: +49 8707 920-0
Fax: +49 8707 1004
E-Mail: sales@deutronic.com
http://www.deutronic.com

DVC150

DC/DC Converter

Galvanically isolated

Abbildung ähnlich / device similar to figure

DVC150-derivate table

Type	**Input voltage** [VDC]		**Output voltage** [VDC]	**Output current** [A]	**Cat. No.**
	Nom.	*Tol.*	*Nom.*	*Max.*	
DVC150-48-12	48	33 - 90	12,5	12	105088*
DVC150-48-24	48	33 - 90	24	6,5	105089*
DVC150-80-12	72/80/96/110	56 - 154	12,5	12	105090*
DVC150-80-24	72/80/96/110	56 - 154	24	6,5	105091*
DVC150-48-12	48	33 - 90	12,5	12	105012**
DVC150-48-24	48	33 - 90	24	6,5	105014**
DVC150-48-12	48	33 - 90	12,5	12	105013***
DVC150-48-24	48	33 - 90	24	6,5	105015***
DVC150-80-12	72/80/96/110	56 - 154	12,5	12	105016***
DVC150-80-24	72/80/96/110	56 - 154	24	6,5	105018***

*Order option:

Connectors (see section 7)

- Mate-N-Lok 4-pol.*
- JPT 4-pol.**
- JPT 6-pol.***
- different cable/connector on request

Deutronic Elektronik GmbH
Deutronicstr. 5, 84166 Adlkofen, Germany
Tel.: +49 8707 920-0
Fax: +49 8707 1004
E-Mail: sales@deutronic.com
http://www.deutronic.com

1 Input

Input voltage (Nom.)	see DVC150-derivate table	class A*
Input voltage range (Tol.)	see DVC150-derivate table	class B*
Restricted operation mode	17 V (@IN 24VDC) 20 V (@IN 36VDC) 24 V (@IN 48VDC) 40 V (@IN 80VDC)	class C*
Transient over voltage (≤ 20ms, one-time)	≤ 50 V (@IN 24VDC) ≤ 80 V (@IN 36VDC) ≤ 100V (@IN 48VDC) ≤ 220V (@IN 80VDC)	class C*
Filtering	-	Filtered against vehicle on board disturbances
No-load power	typ. 1,5 W	-

* 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.

Deutronic Elektronik GmbH
Deutronicstr. 5, 84166 Adlkofen, Germany
Tel.: +49 8707 920-0
Fax: +49 8707 1004
E-Mail: sales@deutronic.com
http://www.deutronic.com

2 Output

Output voltage (Nom.)	U_{nom}	see DVC150-derivate table
Initial accuracy (0 - 20 Hz)	± 1% U_{nom}	-
Load regulation stat. 10 - 90 % / 0 - 100 %	± 0,5 % / ± 1 %	-
Load regulation dyn. 20 - 80 %	typ. ± 1,5 %	-
Current limiting	typ. 1,2 x I_{nom}	from 1,0 x I_{nom}, U_{out} may decrease
Regulation time	< 0,5 ms	-
Line regulation (min. - max.)	± 0,1 %	-
Temperature drift	typ. 0,5 %	< 1 % (-25°C...+70 °C) typ. 0,2 % (0 °C ... +60 °C)
Ripple & Noise N_{RN}	100 mVss	-

3 Environment

Operating temperature (envrioment)	-30°C ... +75°C	-
Maximum temperature T_{max} at the temperature reference spot	< 85 °C	-
Cooling	Contact cooling on mounting surface	An effective thermal connection between the mounting surface and the heat sink of the application is a prerequisite for safe and long-term operation.
Overtemperature protection	-	Automatic shutdown in case of overtemperature, self-reset upon cooling down
Storage temperature	-40°C ... +85°C	-
Humidity	100%	-
Dewing	allowed	-
Degree of protection according to EN 60529	IP67	without plug

Deutronic Elektronik GmbH
Deutronicstr. 5, 84166 Adlkofen, Germany
Tel.: +49 8707 920-0
Fax: +49 8707 1004
E-Mail: sales@deutronic.com
http://www.deutronic.com

4 General data

Insulation strength	1,5 kVDC 0,5 kVDC	Input voltage against output voltage and enclosure Output against enclosure
Efficiency	typ. 90 %	Averaging of the efficiency values at 25%, 50%, 75% and 100% of the nominal output power.
Dimensions (LxWxH)	140 x 85 x 40 mm	without connections, see fig. 8.1
Enclosure	Aluminium	-
Weight	ca. 1000 g	-

5 Standards

EMC (Electromagnetic Compatibility)

Title	Standard	Data
Emitted interference	EN 61204-3	according to 6.4.2, Table H.3, for residential, commercial and light industrial environments. (class B, cable length < 3 m. Internal frequencies < 108 MHz.)
	FCC 47 CFR Part 15B ICES-003:2023	Declaration of conformity for the following derivatives: DVC150-48-12, DVC150-48-24
Immunity	EN 61204-3	acc. to 7.2.3, Noise immunity level for industrial environment (cable length < 3 m)

Electrical safety

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

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

Deutronic Elektronik GmbH
Deutronicstr. 5, 84166 Adlkofen, Germany
Tel.: +49 8707 920-0
Fax: +49 8707 1004
E-Mail: sales@deutronic.com
http://www.deutronic.com

6 Installation and safety instructions

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

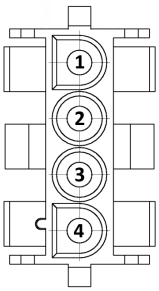
Mounting points	Ø5 mm Ø4 mm	4 mounting holes each see fig. 8.1
Mounting position	-	any
Cooling	-	A sufficient cooling must be ensured externally in the customer application via the mounting surface.
Connection input / output	10 cm cable 10 cm cable 20 cm cable	AMP Universal Mate-N-Lok, 4-polig Junior Power Timer 4-polig Junior Power Timer 6-polig see Chapter 7 different cable/connector on request
Input fuse	T10A/250V (@IN 80/48 VDC) T15A/32V (@IN 24VDC)	No integrated input fuse. A fuse must be provided externally by the customer application.
Inrush current limitation	-	Attention: No inrush current limitation in the device. Provide a precharging section in the application, otherwise there is a risk of a overvoltage damage to the input of the DC/DC converter
Reverse polarity protection	-	No reverse polarity protection at the input or output of the device. If the polarity at the input is reversed, the upstream input fuse trips.
Parallel operation	Power increase	Can be switched in parallel, no compensating cable required
Series operation	Voltage increase	allowed
Important safety information	Recommended security value: 1,1 .. 1,2 x I_{nom}	If an external energy source (e.g. battery) is connected to the output of the converter, the supply line (+ pole) must be fused close by the source.

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

Deutronic Elektronik GmbH
Deutronicstr. 5, 84166 Adlkofen, Germany
Tel.: +49 8707 920-0
Fax: +49 8707 1004
E-Mail: sales@deutronic.com
http://www.deutronic.com

7 Connections

7.1 Input / Output

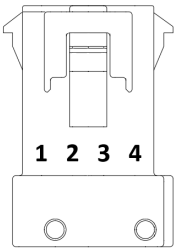


AMP Universal Mate-N-Lok, 4-pole 350780-1:

PIN ”1”:	$U_{OUT, +}$	(blue)
PIN ”2”:	$U_{OUT, -}$	(brown)
PIN ”3”:	$U_{IN, -}$	(black)
PIN ”4”:	$U_{IN, +}$	(red)

Figure 7.1: Pin - assignment

7.2 Input / Output

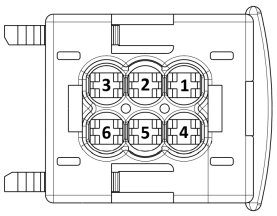


AMP, JPT, 4-pole, 1-962340-1:

PIN ”1”:	$U_{OUT, +}$	(blue)
PIN ”2”:	$U_{OUT, -}$	(brown)
PIN ”3”:	$U_{IN, -}$	(black)
PIN ”4”:	$U_{IN, +}$	(red)

Figure 7.2: Pin - assignment

7.3 Input / Output



AMP, JPT, 6-pole, 1-963212-1:

PIN ”1”:	N.C.	
PIN ”2”:	N.C.	
PIN ”3”:	$U_{OUT, +}$	(blue)
PIN ”4”:	$U_{OUT, -}$	(brown)
PIN ”5”:	$U_{IN, -}$	(red)
PIN ”6”:	$U_{IN, +}$	(black)

Figure 7.3: Pin - assignment

Deutronic Elektronik GmbH
Deutronicstr. 5, 84166 Adlkofen, Germany
Tel.: +49 8707 920-0
Fax: +49 8707 1004
E-Mail: sales@deutronic.com
http://www.deutronic.com

8 Dimensions

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

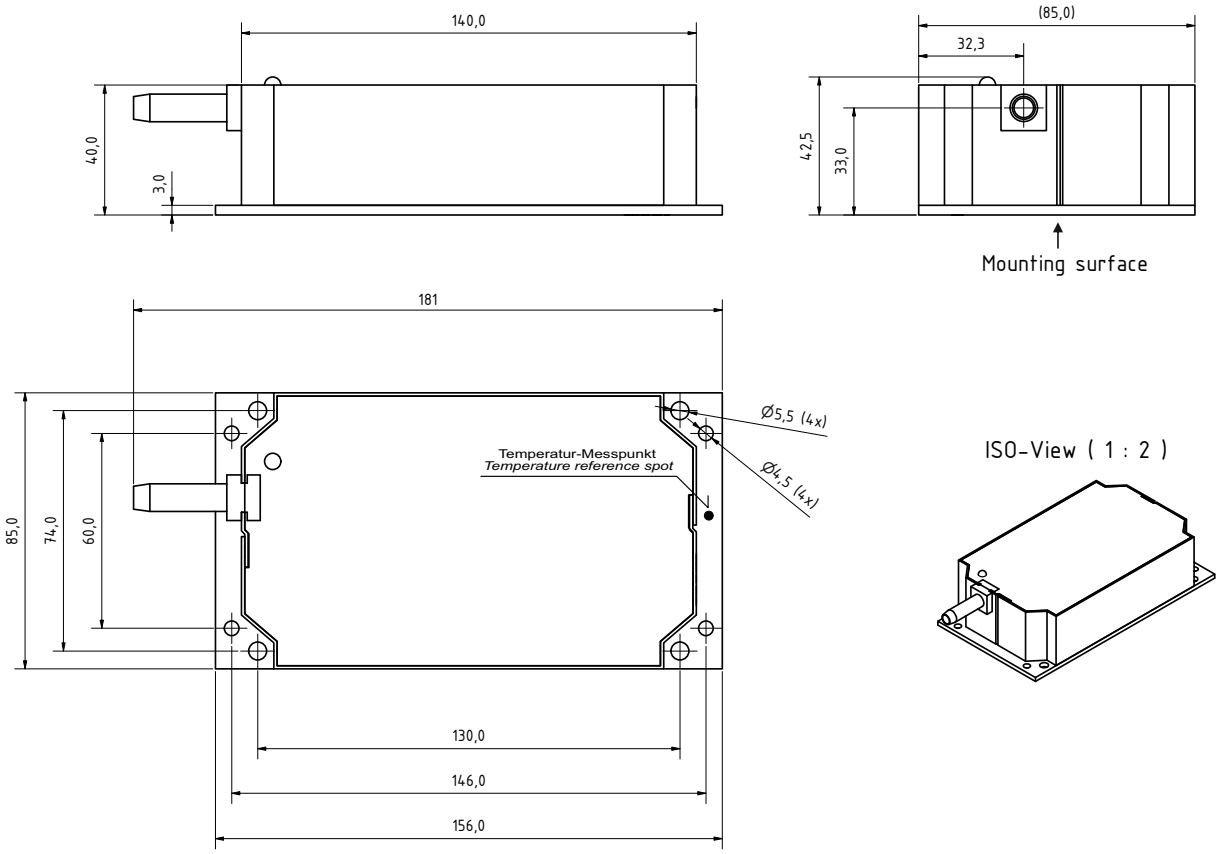


Figure 8.1: Dimensions