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

DVC853

DC/DC converter

galvanically isolated

Abbildung ähnlich / device similar to figure

DVC853-derivate table

Type	Input voltage		Output voltage	Output current		Cat. No.
	Nom.	*Tol.*	*Nom.*	*Continuous*	*Boost**	
DVC853-48/80-13,8	48 - 80 VDC	24 - 110 VDC	13,8 VDC	70 A	160 A	105214/x/000

***For max. 4s with subsequent recovery time of > 16s**

*Order option:

.../x/...: Accessory variant

.../0/...without accessory
.../20/...with heatsink
More 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 range	-	see DVC853-derivate table
Undervoltage range	0 - 24 VDC	Class C*
Lower restricted operation range	24 - 34 VDC	Continuous operation, class B*
Unrestricted operation range	34 - 110 VDC	Continuous operation, class A*
Upper restricted operation range	110 - 112 VDC	≤ 5 s, class B*
Overvoltage range	112 - 120 VDC	≤ 100 ms, class C*
Max. current consumption	< 37 A < 75 A (Boost)	-
Input capacity	approx. 19 µF	Attention: No inrush current limitation in the device. Provide a pre-charging section in the application, otherwise there is a risk of a over-voltage damage to the input of the DC/DC converter!
No-load current consumption	< 100 mA	@ U_{in} = 48 VDC

* 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 U_{nom}	-	see DVC853-derivate table
Initial Accuracy	±1,0% U_{nom}	-
Max. continuous output current I_{nom}	70 A	DVC853-48/80-13,8
Max. shortterm output current I_{boost}	160 A	for $t_{boost} \leq 4$ s with subsequent recovery phase $t_{pause} \geq 16$ s
Max. continuous output power P_{nom}	≤ 966W	DVC853-48/80-13,8
Max. shortterm output power P_{boost}	≤ 2208W	for $t_{boost} \leq 4$ s with subsequent recovery phase $t_{pause} \geq 16$ s
Current limiting	< I_{max} + 10 %	Depending on the device status, I_{max} can correspond to the nominal current I_{nom} or the boost current I_{boost}. From 1.0 x I_{max} U_{out} can drop
Load regulation static (0-100% P_{nom})	± 0,85% U_{nom}	-
Recovery time	< 3ms	Duration from leaving the tolerance band until the permanently return to the tolerance band after a load step
Input regulation (min. - max U_{in})	± 0,1% U_{nom}	-
Ripple & Noise N_{RN}	< 1,8% U_{nom}	measurement bandwidth 20 MHz

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

3 Environment

Working temperature (environment)	-40°C ... +75°C	-
Max. permissible temperature of the mounting surface	< +50°C	-
Overtemperature protection	+95°C	Automatic switch-off in case of overtemperature. On request: Automatic power derating in case of overtemperature.
Storage temperature	-40°C ... +85°C	-
Humidity	< 95%	-
Dewing	allowed	-
Shock test acc. to DIN EN 60068-2-27	-	half sinusoidal (excitation) 250m/s^2 (peak acceleration) 6ms (duration) 3.000 schocks to each axis (quantity) ±X, ±Y, ±Z (axis)
Vibration test acc. to DIN EN 60068-2-6	-	sinusoidal (excitation) 30m/s^2 (acceleration) 10 - 500Hz (frequenc, floating) 2h per axis (duration), 1 Oct/min X, Y, Z (axis)
Degree of protection acc. to EN60529	IP54	Limited by connection technology, version with increased degree of protection and other connection technology on request

4 General data

Insulation strength	1 kVDC 1 kVDC	Input / Enclosure Input / Output
Max. efficiency	typ. 93%	-
Average efficiency	typ. 92% (48 VDC) typ. 90,5% (80 VDC)	Averaging of the efficiency values at 25%, 50%, 75% and 100% of the nominal output power.
Dimensions (LxWxH)	approx. 214 x 189 x 21,5 mm	without connections, see fig. 7.1
Enclosure	Aluminium	-
Weight	approx. 1,8 kg	-

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

5 Standards

EMC (Electromagnetic Compatibility)

Title	Standard	Data
Emitted interference	EN12895 EN61204-3	- according to 6.4.2, Table H.3, for residential, commercial and light industrial environments (Class B, cable length < 3 m)
Immunity	EN12895 EN61204-3	- according to 7.2.3: 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	-
Safety of industrial trucks - Electrical requirements	designed according to DIN EN 1175*	-

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

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	-	10x Mounting holes (Ø6,5 mm) see fig. 7.1
Installation orientation	-	any
Connection input	$+U_{in}$ (M8) / $-U_{in}$ (M8)	Tightening torque: 9 Nm Thread depth: 8 mm Recommended cable cross section: 16 mm²
Connection output	$+U_{out}$ (M8) / $-U_{out}$ (M8)	Tightening torque: 9 Nm Thread depth: 8 mm Recommended cable cross section: 25 mm²
Input fuse	-	No integrated input fuse. A fuse must be provided externally by the customer application.
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.
Precharge section	-	Attention: No inrush current limitation in the device. Provide precharge section in the application.

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 Dimensions

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

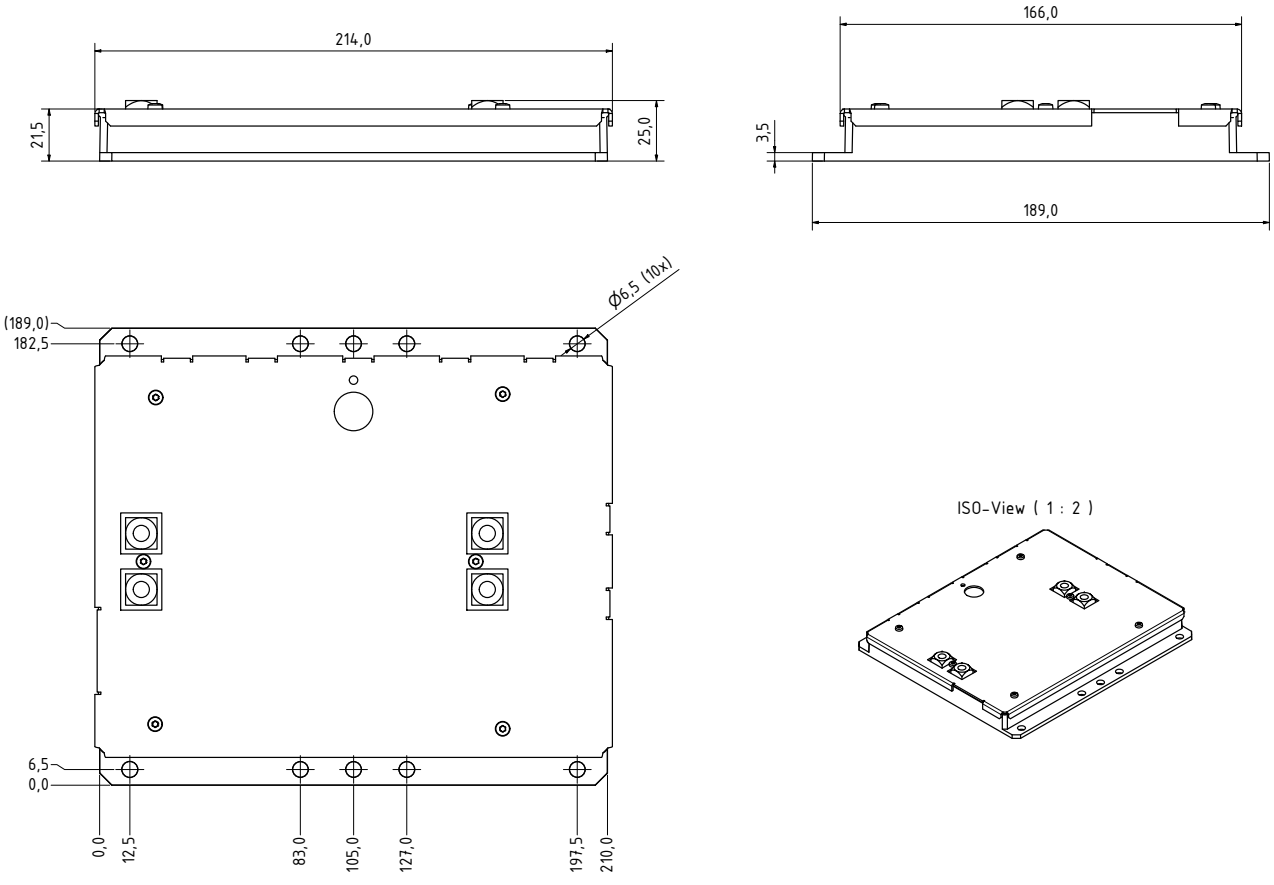

Figure 7.1: Dimensions