FABRIMEX AG
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FABRIMEX
POWER SUPPLIES

RoHS Compliant

Certified Management-System
SQS
ISO 9001
Reg. Nr. 12666

DC/DC Ultra Wide Input Converter ECU 10 Watt SB 1x1" Series

10 Watt DC/DC Converter line with 4:1 input range and single or dual output models

DC/DC converter module with input to output isolation of 1500 VDC • Continuous short circuit proof • High efficiency • No derating up to 71°C • Low output ripple and spikes • Small size • Metal case with a non conductive base plate • Remote ON/OFF, • SMD technology

10 Watt DC/DC Konverter Serie mit 4:1 Eingangsbereich und Einfach- oder Doppelausgang

DC/DC Konverter-Modul mit galvanischer Trennung Eingang / Ausgang von 1500 VDC • Dauerkurz-schlussfest • Hoher Wirkungsgrad • Keine Lastminderung bis zu einer Umge-bungstemperatur von 71°C • Gute Werte von Rippel und Spikes • Small size • Metallgehäuse mit isolie-render Bodenplatte • Remote ON/OFF • SMD Technologie

10 Watt convertisseur CC/CC avec 4:1 d'entrée et sortie simple ou double

Module convertisseur CC/CC avec sépa-ration galvanique entrée/sortie 1500 VDC • Protection courts-circuits permanente • Rendement élevé • Pas de derating jusqu' à 71°C • Ondulation résiduelle de sortie très faible • Dimension petite • Boîtier en métal blindé • Remote ON/OFF • Technologie CMS

Product range — Typenübersicht — Sommaire des types

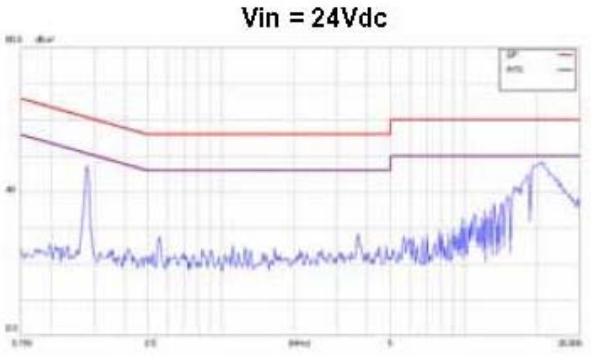
Model	Input nominal	Input range	Input current @ full load	Output Uout	Output Iout	Operating temperature	Efficiency typ.
SINGLE OUTPUT							
ECU24-3V310SB	24 VDC	9...36 VDC	453 mA	3.3 VDC	2500 mA	For all models:	82%
ECU24-0510SB	24 VDC	9...36 VDC	502 mA	5.0 VDC	2000 mA	-40...+85°C	83%
ECU24-1210SB	24 VDC	9...36 VDC	491 mA	12.0 VDC	835 mA	or maximum case	85%
ECU24-1510SB	24 VDC	9...36 VDC	491 mA	15.0 VDC	666 mA	temperature of 100°C	85%
ECU48-3V310SB	48 VDC	18...72 VDC	224 mA	3.3 VDC	2500 mA		83%
ECU48-0510SB	48 VDC	18...72 VDC	248 mA	5.1 VDC	2000 mA		84%
ECU48-1210SB	48 VDC	18...72 VDC	243 mA	12.0 VDC	835 mA		86%
ECU48-1510SB	48 VDC	18...72 VDC	243 mA	15.0 VDC	666 mA		86%
DUAL OUTPUT							
ECU24-050510SB	24 VDC	9...36 VDC	496 mA	±5.0 VDC	±1000 mA		84%
ECU24-121210SB	24 VDC	9...36 VDC	491 mA	±12.0 VDC	±416 mA		85%
ECU24-151510SB	24 VDC	9...36 VDC	491 mA	±15.0 VDC	±333 mA		85%
ECU48-050510SB	48 VDC	18...72 VDC	248 mA	±5.0 VDC	±1000 mA		84%
ECU48-121210SB	48 VDC	18...72 VDC	243 mA	±12.0 VDC	±416 mA		86%
ECU48-151510SB	48 VDC	18...72 VDC	243 mA	±15.0 VDC	±333 mA		86%

El. characteristics — El. Eigenschaften — Caractéristiques él.

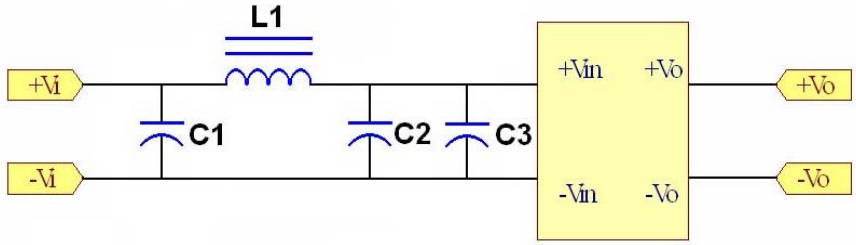
All values refer to an ambient temperature of 25°C and nominal rated values where nothing else is specified

Output voltage accuracy	Ausgangsspannungsgenauigkeit	Précision tension de sortie	±1% of Uout nom.
Output voltage balance	Abgleich zwischen den Ausgängen	Balance des sorties	±1%; Dual
Residual output ripple (BW 20 MHz)	Ausgangsspannungsrippel (BW 20 MHz)	Ondulation résiduelle de sortie (BW 20 MHz)	75 mVpp max. (3.3V, 5V,±5V) 100 mVpp max. (12V, 15V,±12/15V)
Short circuit protection	Kurzschlussfestigkeit	Protection courts-circuits	Continuous
No load input current	Leerlaufeingangsstrom	Courant d'entrée à vide	10/5 mA (Single 24/48 VDC) 10/5 mA (Dual 24/48 VDC)
Line regulation (max...min)	Leitungsregulierung (max...min)	Régulation ligne (max...min)	±0.5% ;single, dual
Load regulation	Lastregulierung	Régulation charge	±0.5%; single (100...25%) ±1.0%; dual (100...25%)
Isolation voltage	Isolationsspannung	Tension d'isolement	1500 VDC
Isolation resistance	Isolationswiderstand	Résistance d'isolement	1 GOhm
Switching frequency	Schaltfrequenz	Fréquence de découpage	typ. 280 kHz
MTBF (MIL-HB 217E at 25°C)	MTBF (MIL-HB 217E bei 25°C)	MTBF (MIL-HB 217E à 25°C)	TBD
EMC Conducted	EMV Leitungsgebunden	EMC Parasite guidé	EN55022/11 Class B with external input capacitor
Temperature coefficient	Temperaturkoeffizient	Coefficient de température	typ. ±0.03% per °C
Storage temperature	Lagertemperatur	Température de stockage	-40...+100°C
Soldering information	Lötinformationen	Information de soudage	260°C for 10 sec.
Weight	Gewicht	Poids	approx. 18 g; Copper Case

EMC information ECU24-3V310SB EN55022/11 Class B

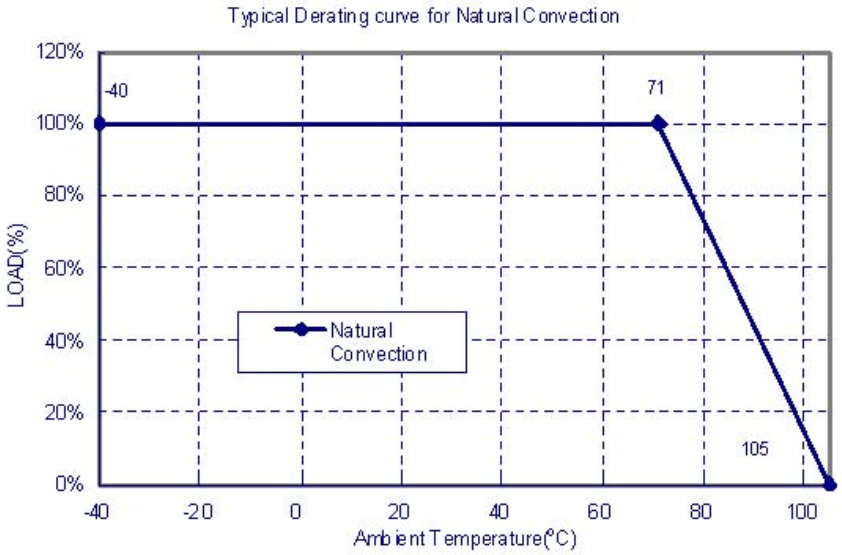


EMC measure schematic / Filter

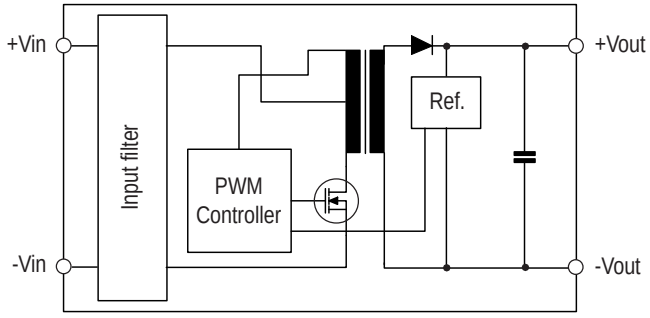


Uin 24V: C1 10uF/50V; C2 NC; C3 10uF/50V; L1 3.3uH;
Uin 48V: C1 4.7uF/100V; C2 NC; C3 4.7uF/100V; L1 3.3uH;

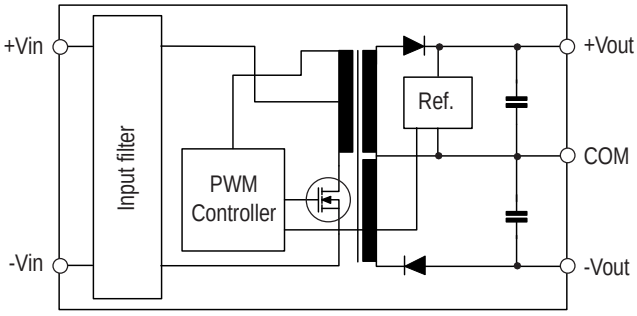
Derating



Functional block diagram Blockschema Synoptique

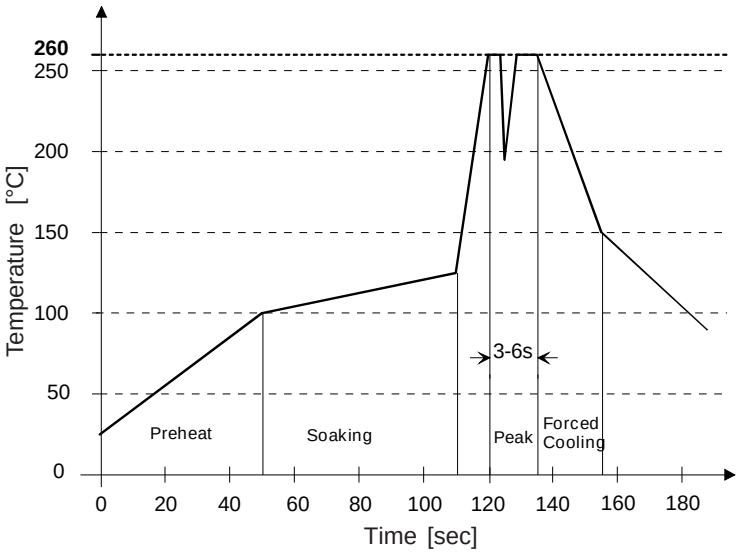


Single output converter block diagram



Dual output converter block diagram

Soldering Information



Limits:

Preheat: Ramp up rate during preheating is 1.4°C /sec; from 50°C to 100°C.

Soaking: Ramp up rate during soaking is 0.5°C / sec; from 100°C ro 130°C (60 ± 20sec).

Peak: Peak temperature is 260°C and maximum 3-6 sec above 250°C is allowed.

Cooling: Ramp down rate during forced cooling is -10°C / sec from 260°C to 150°C.

External output voltage trim

For the ECU 10W SB series, the trim function allows the user to adjust the output voltage between ±10% by connecting an external resistor either between the trim pin and the common pin (trim-up) or the trim pin and the +Uout pin (trim-down).

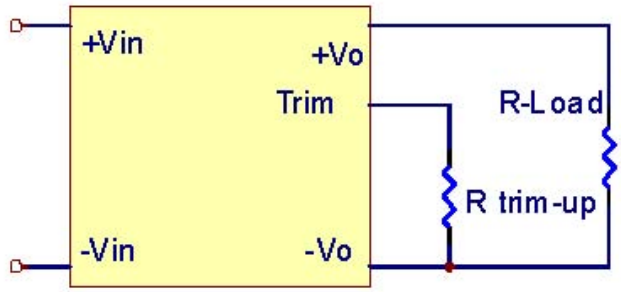


Figure 1. Trim-up Voltage Setup

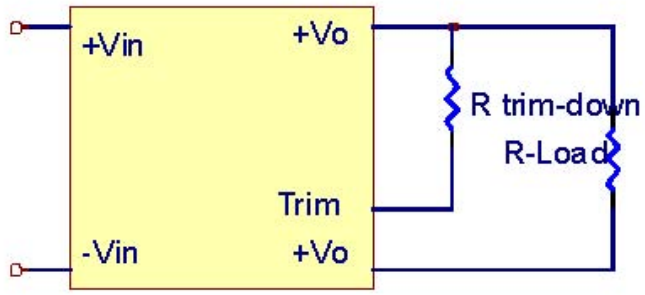
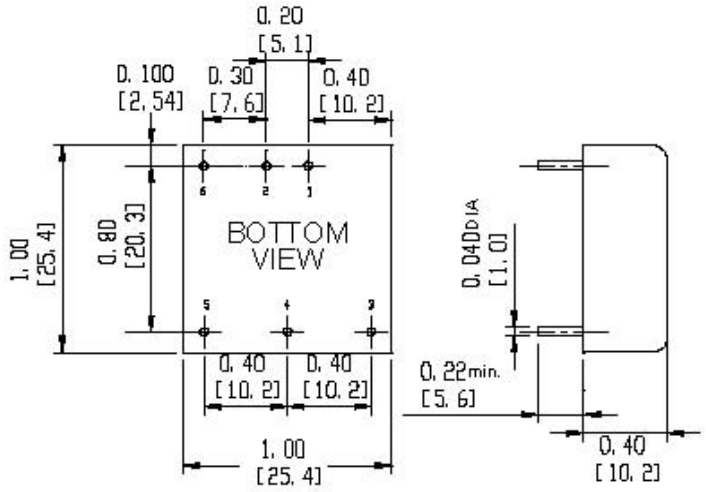


Figure 2. Trim-down Voltage Setup

Case | Gehäuse | Boîtier

View from bottom; Normal tolerance ±1.0 mm; Pin distance tolerance ±0.05 mm; Round pins 1.0 mm diameter



PIN CONNECTION		
Pin	DIP Function	
	Single	Dual
1	+Input	+Input
2	-Input	-Input
3	+V Output	+V Output
4	Trim	Common
5	-V Output	-V Output
6	Remote ON/OFF	Remote ON/OFF

Cleaning | Waschen | Lavage

The modules are cleanable with the today's known and in the electronics industry usually used products.
Due to the different cleaning processes and new available products, we highly recommend to do a compatibility test when using the converters the first time.

Die Module sind waschbar mit den heute bekannten und in der Elektronikindustrie üblichen Reinigungsmitteln.
Bedingt durch die verschiedenen Reinigungsprozesse und neu auf den Markt kommenden Mittel, raten wir dringend, beim Ersteinsatz der Konverter eine Verträglichkeitsprüfung vorzunehmen.

Les modules sont lavables avec les solvants couramment utilisés dans l'industrie électronique.
Dû aux differents processus de lavage et aux nouveaux détergents disponibles sur le marché, il est strictement recommandé de faire un test de compatibilité avant la première utilisation.

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