FABRIMEX POWER SUPPLIES
CH-8603 Schwerzenbach/Switzerland

FABRIMEX
POWER SUPPLIES

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

DC/DC Ultra Wide Input Converter
ECU 15 Watt

DC/DC converter module with input to output isolation of 500 VDC • Pi-filter at input • Continuous short circuit proof • High efficiency • No derating up to 70°C • Low output ripple and noise • Low silhouette • Metal case with a non conductive base plate, six-sides shielded • Shut down and output adjust functions standard • SMD technology

DC/DC Konverter-Modul mit galvanischer Trennung Eingang / Ausgang von 500 VDC • Pi-Filter am Eingang • Dauerkurzschlussfest • Hoher Wirkungsgrad • Keine Lastminderung bis zu einer Umgebungstemperatur von 70°C • Gute Werte von Ripple und Spikes • Geringe Bauhöhe • Metallgehäuse mit isolierender Bodenplatte, 6seitig abgeschirmt • SMD Technologie

Module convertisseur CC/CC avec séparation galvanique entrée sortie 500 VDC • Filtre en Pi à l'entrée • Protection courts-circuits permanente • Rendement élevé • Pas de derating jusqu' à 70°C • Ondulation résiduelle de sortie très faible • Profile bas • Boîtier en métal blindé 6 faces avec fond isolé • Technologie CMS

Product range — Typenübersicht — Sommaire des types

Model	Input range	Input nominal	Output Uout	Output Iout max.	No load input current	Operating temperature	Efficiency typ.
ECU24-0315	9...36 VDC	24 VDC	3.3 VDC	3000 mA	typ. 15 mA	For all models:	76%
ECU24-0515	9...36 VDC	24 VDC	5.1 VDC	3000 mA	typ. 15 mA	-25...+70°C	77%
ECU24-1215	9...36 VDC	24 VDC	12.0 VDC	1250 mA	typ. 15 mA	or maximum case	80%
ECU24-1515	9...36 VDC	24 VDC	15.0 VDC	1000 mA	typ. 15 mA	temperature of 95°C	80%
ECU48-0315	18...72 VDC	48 VDC	3.3 VDC	3000 mA	typ. 10 mA		76%
ECU48-0515	18...72 VDC	48 VDC	5.1 VDC	3000 mA	typ. 10 mA		77%
ECU48-1215	18...72 VDC	48 VDC	12.0 VDC	1250 mA	typ. 10 mA		80%
ECU48-1515	18...72 VDC	48 VDC	15.0 VDC	1000 mA	typ. 10 mA		80%

Model	Input range	Input nominal	Output Uout	Output Iout max.	No load input current	Operating temperature	Efficiency typ.
ECU24-050515	9...36 VDC	24 VDC	±5.1 VDC	±1500 mA	typ. 20 mA	For all models:	77%
ECU24-121215	9...36 VDC	24 VDC	±12.0 VDC	±625 mA	typ. 20 mA	-25...+70°C	80%
ECU24-151515	9...36 VDC	24 VDC	±15.0 VDC	±500 mA	typ. 20 mA	or maximum case	80%
ECU48-050515	18...72 VDC	48 VDC	±5.1 VDC	±1500 mA	typ. 15 mA	temperature of 95°C	79%
ECU48-121215	18...72 VDC	48 VDC	±12.0 VDC	±625 mA	typ. 15 mA		82%
ECU48-151515	18...72 VDC	48 VDC	±15.0 VDC	±500 mA	typ. 15 mA		82%
ECU24-512T15	9...36 VDC	24 VDC	5.1/±12.0 VDC	1500/±310 mA	typ. 20 mA		80%
ECU24-515T15	9...36 VDC	24 VDC	5.1/±15.0 VDC	1500/±250 mA	typ. 20 mA		80%
ECU48-512T15	18...72 VDC	48 VDC	5.1/±12.0 VDC	1500/±310 mA	typ. 15 mA		82%
ECU48-515T15	18...72 VDC	48 VDC	5.1/±15.0 VDC	1500/±250 mA	typ. 15 mA		82%

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 Single Output Dual Outputs Triple Outputs	Ausgangsspannungsgenauigkeit Einfachausgang Zweifachausgang Dreifachausgang	Précision de la tension de sortie Sortie simple Sortie double Sortie triple	at Uout nominal ±1% max. ±1% (+Out); ±3% (-Out) max. ±2% (5V); ±3% (12/15V) max.
Output voltage balance	Abgleich zwischen den Ausgängen	Balance des sorties	±1%; on dual outputs
Residual output ripple and noise [BW 20 MHz]	Ausgangsspannungsrippel und HF Spitzen [BW 20 MHz]	Ondulation résiduelle et bruit de sortie [BW 20 MHz]	75 mVpp max.
Short circuit protection	Kurzschlussfestigkeit	Protection courts-circuits	continuous
Line regulation (Umax...Umin)	Leitungsregulierung (Umax...Umin)	Régulation ligne (Umax...Umin)	±0.2% (Single & dual types) ±1% (Triple types)
Load regulation (100...25%)	Lastregulierung (100...25%)	Régulation charge (100...25%)	±1% (Single & dual types) ±5% (Triple types)
Isolation voltage	Isolationsspannung	Tension d'isolement	500 VDC
Isolation resistance	Isolationswiderstand	Résistance d'isolement	>1 GOhm
Switching frequency	Schaltfrequenz	Fréquence de découpage	min. 300 kHz
MTBF (MIL-HB 217E at 25°C)	MTBF (MIL-HB 217E bei 25°C)	MTBF (MIL-HB 217E à 25°C)	>1'000'000 hrs.
EMC Conducted and radiated	EMV Leitungsgebunden und abgestrahlt	EMC Emis et conduit	EN 55022/11 Class A with external input capacitor
Temperature coefficient	Temperaturkoeffizient	Coefficient de température	typ. ±0.02% per °C
Storage temperature	Lagertemperatur	Température de stockage	-40...+100°C
Case material	Gehäusematerial	Matière du boîtier	Copper, black coated; Grounded to -Vout resp. Common
Soldering information	Lötinformationen	Information de soudage	275°C for 10 sec.
Compound material	Vergussmaterial	Resine d'enrobage	Two component resin UL94-V0
Weight	Gewicht	Poids	approx. 57 g

TRIPLE OUTPUT LOADING TABLE FOR ECU 15 WATT

Pin No.	Uout	Iout min.*	Iout nom.
7	+5 V	0.25 A	1.5 A
8 & 5	+12 & -12 V	0.10 A	0.31 A
8 & 5	+15 & -15 V	0.10 A	0.25 A

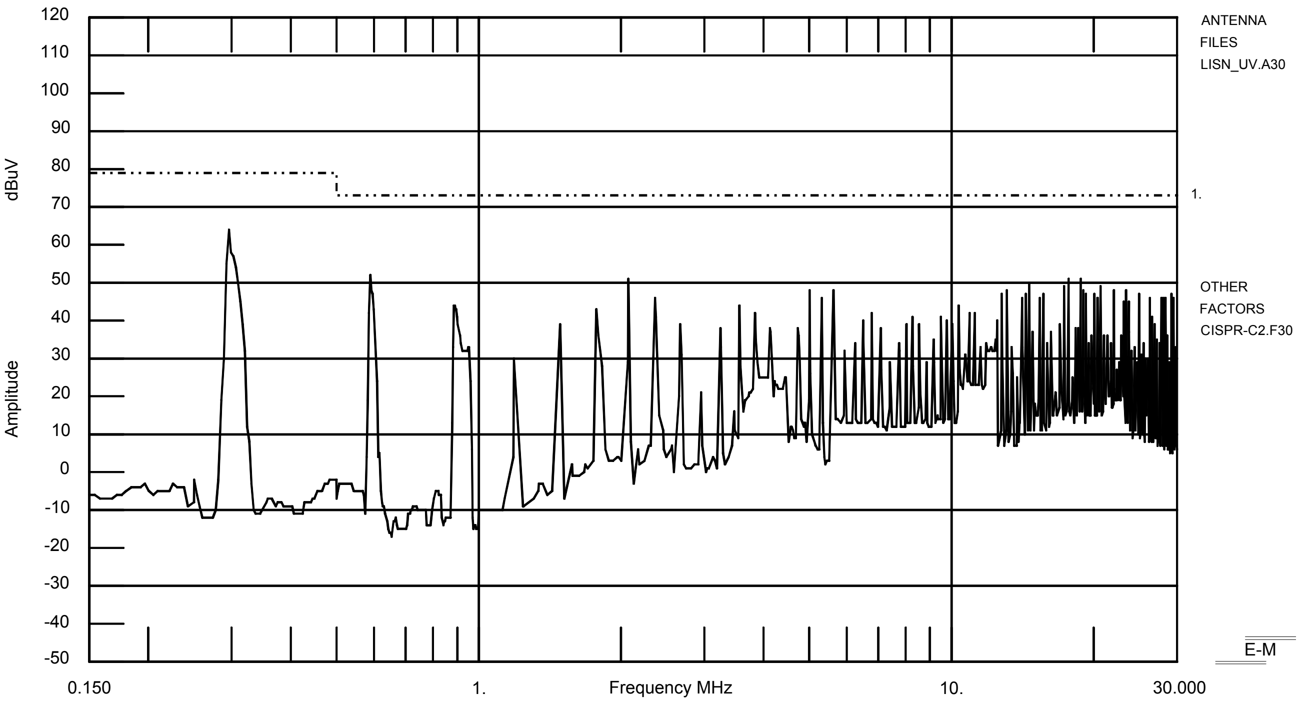
* Min. current on each output is required to maintain specified regulation.

EMC information EMV Informationen Information CEM

EMC-TESTCENTER ACCR. EN45001

FABRIMEX AG				EMC-30 SETTINGS		SPECS
Date :	02/18/99	Time :	11:32:45.47	Detector	QuasiPeak	1) EN 55022/11 Class A QuasiPeak
Technician :	Urs Luessi	Test Equip. :	EMC-30 MKIV	Bandwidth	CISPR	
Test Method :	Conducted Emission	Test Number :	1	Dwell	N/A	
Equipment :	ECU24-1215	Sensor Loc. :	Positive	RF Atten.	0 dB	
Mode of Op. :	Nominal Operation	Sensor Pol. :		IF Atten.	0 dB	
Serial No. :	9815	Ext. Atten. :	0 dB			

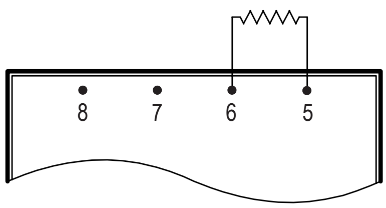
Comment : input capacitor 220uF/63V



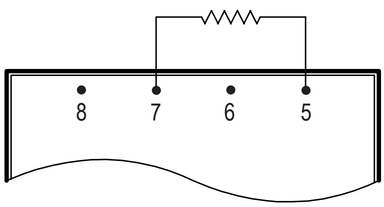
Additional Functions Zusatzfunktionen Fonctions compl.

External Output Trimming

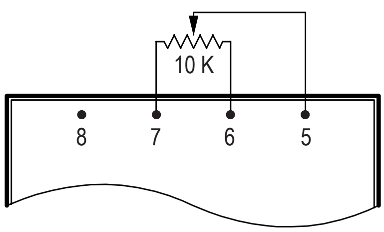
Output may be externally trimmed (±10%) with a fixed resistor or an external trimpot as shown:



Trim up
(nom. output voltage to +10%)



Trim down
(nom. output voltage to -10%)



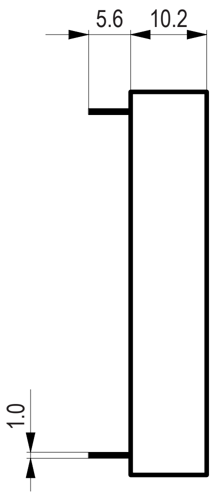
Trim up or down
(nom. output voltage ±10%)

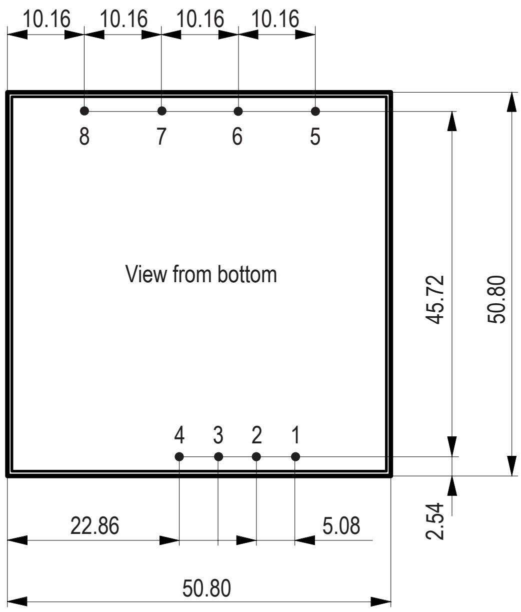
Remote On/Off Control

Logic Compatibility..........................CMOS or Open Collector TTL
Output-ON.....................................> +5.5 VDC or Open Collector
Output-OFF...< 1.8 VDC
Shutdown Idle Current.. 10 mA
Input Resistance.................................100 kohms (Ein 0...9 VDC)
Control Common.................................Referenced to Input Minus

Case	Gehäuse	Boîtier

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





Pin Connection Single Output Models	Pin Connection Dual Output Models	Pin Connection Triple Output Models
1............. Remote ON/OFF Control	1............. Remote ON/OFF Control	1............. Remote ON/OFF Control
2.. No Pin	2.. No Pin	2.. No Pin
3...-Vin	3...-Vin	3...-Vin
4...+Vin	4...+Vin	4...+Vin
5...Trim	5...Trim	5................................-Aux. Output
6..-Vout	6..-Vout	6......................................Common
7..+Vout	7......................................Common	7............................+5 VDC Output
8.. No Pin	8..+Vout	8...............................+Aux. Output

Cleaning	Waschen	Lavage

The modules are cleanable with the to-day'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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