FABRIMEX AG
CH-8608 Bubikon/Switzerland

FABRIMEX
POWER SUPPLIES

RoHS Compliant

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

DC/DC Wide Input Converter
ECW 20 Watt Series

cULus
E195564

DC/DC converter module with input to output isolation of 1500 VDC • Pi-filter at input • Continuous short circuit proof • High efficiency • Low output ripple and noise • Low silhouette • Metal case with a non conductive base plate, six-sides shielded • Remote on/off control • External output voltage adjust • SMD technology • 2"x1" case
• Low profile • UL, cUL certified

DC/DC Konverter-Modul mit galvanischer Trennung Eingang / Ausgang von 1500 VDC • Pi-Filter am Eingang • Dauerkurzschlussfest • Hoher Wirkungsgrad • Gute Werte von Ripple und Spikes • Geringe Bauhöhe • Metallgehäuse mit isolierender Bodenplatte, 6seitig abgeschirmt • Externer Ausgangsspannungsabgleich • Inhibit •SMD Technologie • 2"x1" Gehäuse • Niedriger Querschnitt • UL, cUL zertifiziert

Module convertisseur CC/CC avec séparation galvanique entrée sortie 1500 VDC • Filtre en Pi à l'entrée • Protection courts-circuits permanente • Rendement élevé • Ondulation résiduelle de sortie très faible • Profile bas • Boîtier en métal blindé 6 faces avec fond isolé • Ajustement externe de la tension de sortie • Inhibit • Technologie CMS • 2"x1" boîtier • profilé bas • Approbation UL, cUL

Product range — Typenübersicht — Sommaire des types

Model	Input range	Input nominal	Output Uout	Output Iout min.	Output Iout max.	No load input current	Operating temperature	Efficiency typ.
Single Output								
ECW24-1V820	18...36 VDC	24 VDC	1.8 VDC	0 A	6.0 A	typ. 30 mA	For all models:	86%
ECW24-2V520	18...36 VDC	24 VDC	2.5 VDC	0 A	6.0 A	typ. 30 mA	-40°C...+85°C	88%
ECW24-3V320	18...36 VDC	24 VDC	3.3 VDC	0 A	5.0 A	typ. 40 mA	or maximum case	90%
ECW24-5V120	18...36 VDC	24 VDC	5.1 VDC	0 A	4.0 A	typ. 60 mA	temperature of 100°C	90%
ECW24-1220	18...36 VDC	24 VDC	12 VDC	0 A	1.67 A	typ. 20 mA	(refer to derating curve)	90%
ECW24-1520	18...36 VDC	24 VDC	15 VDC	0 A	1.33 A	typ. 20 mA		90%
ECW48-1V820	36...72 VDC	48 VDC	1.8 VDC	0 A	6.0 A	typ. 30 mA	For all models:	86%
ECW48-2V520	36...72 VDC	48 VDC	2.5 VDC	0 A	6.0 A	typ. 30 mA	-40°C...+85°C	87%
ECW48-3V320	36...72 VDC	48 VDC	3.3 VDC	0 A	5.0 A	typ. 40 mA	or maximum case	89%
ECW48-5V120	36...72 VDC	48 VDC	5.1 VDC	0 A	4.0 A	typ. 60 mA	temperature of 100°C	90%
ECW48-1220	36...72 VDC	48 VDC	12 VDC	0 A	1.67 A	typ. 20 mA	(refer to derating curve)	89%
ECW48-1520	36...72 VDC	48 VDC	15 VDC	0 A	1.33 A	typ. 20 mA		88%
Dual Output								
ECW12-121220-CP	9...18 VDC	12 VDC	±12 VDC	42 mA	±835 mA	typ. 40 mA	For all models:	90%
ECW12-151520-CP	9...18 VDC	12 VDC	±15 VDC	33 mA	±670 mA	typ. 40 mA	-40°C...+85°C	90%
ECW24-121220-CP	18...36 VDC	24 VDC	±12 VDC	42 mA	±835 mA	typ. 20 mA	or maximum case	90%
ECW24-151520-CP	18...36 VDC	24 VDC	±15 VDC	33 mA	±670 mA	typ. 20 mA	temperature of 100°C	90%
ECW48-121220-CP	36...72 VDC	48 VDC	±12 VDC	42 mA	±835 mA	typ. 10 mA	(refer to derating curve)	90%
ECW48-151520-CP	36...72 VDC	48 VDC	±15 VDC	33 mA	±670 mA	typ. 10 mA		89%

* Alternate pin configuration add suffix -CP
* Dual Output only CP-version

Nomenclature Nomenklatur Nomenclature

ECW 48 - 3V3 20 - CP

Product Series

Nominal Input Voltage

Nominal Output Voltage (3V3 = 3.3V)

Output Power in Watts

blank = Standart pin configuration
CP = Alternate pin configuration

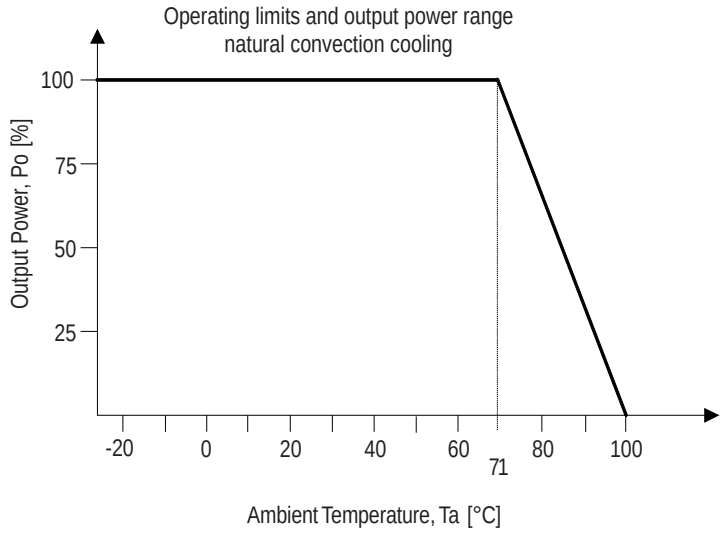
Specifications Spezifikationen Spécifications

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

Output voltage accuracy	Ausgangsspannungsgenauigkeit	Précision de la tension de sortie	±1.5% max. of Uout nominal
Voltage Balance (Dual)	Spannungsabgleich (Dual)	Alignement de Tension	±2.0% max. of Uout nominal
Ext. outout voltage adjustment	Ext. Ausgangsspannungsabgleich	Adjustement ext. de la tension de sortie	±10% single output only
Transient Response	Sprungcharakteristic	Rèsponse en transitoires	75%-100% Step load change < 500u sec.
Residual output ripple and noise [BW 20 MHz]	Ausgangsspannungsrippel und noise [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)	Single ±0.2% @ Iout nom. Dual ±0.5% @ Iout nom.
Load regulation (100...25%)	Lastregulierung (100...25%)	Régulation charge (100...25%)	Single/Dual ±1% max.
Isolation voltage	Isolationsspannung	Tension d'isolement	I/O 1500 VDC max.
Isolation resistance	Isolationswiderstand	Résistance d'isolement	>100 MOhm
Switching frequency	Schaltfrequenz	Fréquence de découpage	typ. 350 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	EN55022/11 Class A with external capacitor
Temperature coefficient	Temperaturkoeffizient	Coefficient de température	typ. ±0.03% per °C
Storage temperature	Lagertemperatur	Température de stockage	-55...+125°C
Current Limit	Strombegrenzung	Limitation du courant	110-140%
Case material	Gehäusematerial	Matière du boîtier	Copper, black coated with non-conductive base; Grounded
Soldering information	Lötinformationen	Information de soudage	275°C for 10 sec.
Weight	Gewicht	Poids	approx. 35 g

Derating ECW 20 Watt Series

Derating curve



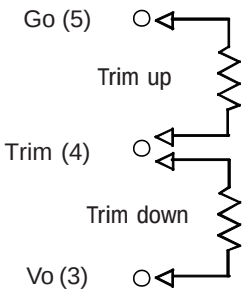
Derating -3.5%/°C at ambient operating temperature range 71°C to 100°C. If ambient temperature (Ta) > 71°C then max. allowed output power (Po) can be calculated:

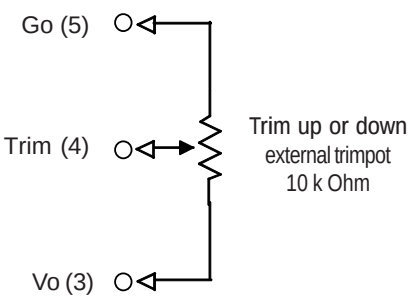
Po [%] = 100% - ((Ta - 71°C) x 3.5%)

Additional Functions Zusatzfunktionen Fonctions compl.

External Output Trimming

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





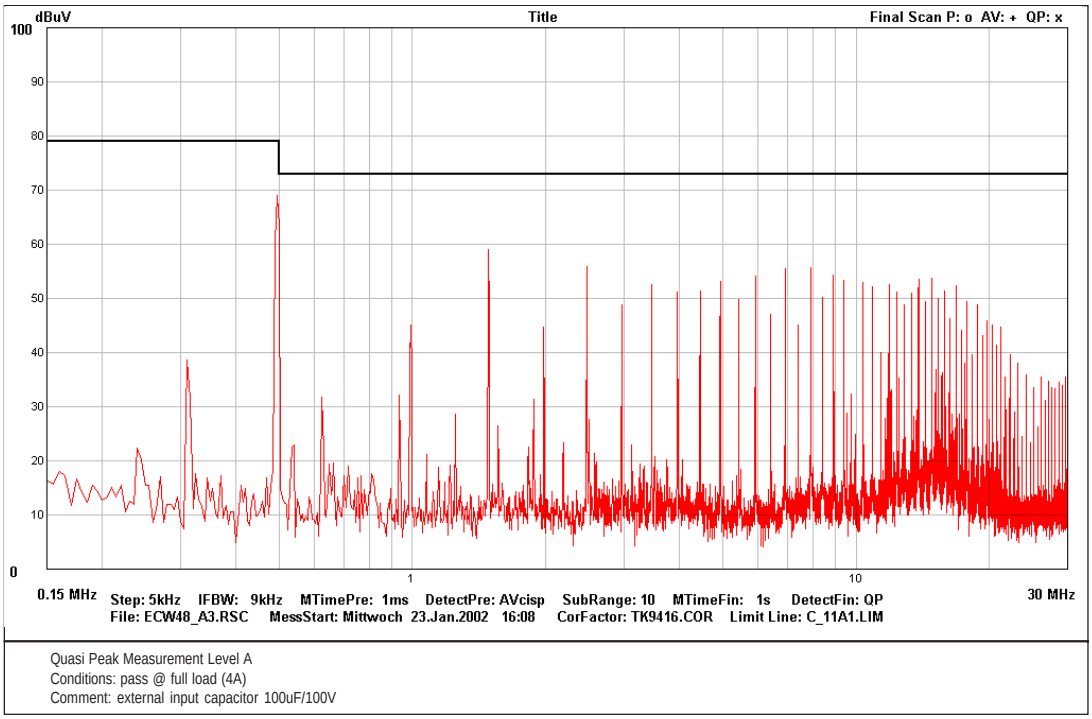
Remote On/Off Control

Logic Compatibility.....CMOS or Open Collector TTL
Output-ON.....> +5.5 VDC or Open Circuit
Output-OFF.....< 1.2 VDC
Control Common.....Referenced to Input Minus

Suffix "N" to Model Number.....Negativ Logic Remote ON/OFF
Output-On.....< 1.2 VDC
Outputt-OFF.....> +5.5 VDC or Open Cricuit

EMC Information | EMV Informationen | Information CEM

EMC information ECW48-5V120 EN55022/11 Class A



Quasi Peak Measurement Level A
Conditions: pass @ full load (4A)
Comment: external input capacitor 100uF/100V

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.

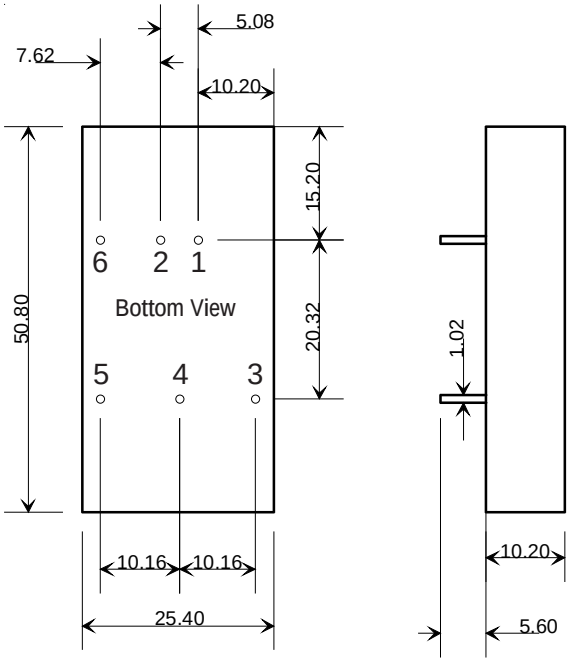
Die Module sind waschbar mit den heute bekannten und in der Elektronikindustrie üblichen Reinigungsmitteln.
Bedingt durch die verschiedenen Reinigungsprozesse und neu auf den Markt kommenden Mittel, raten wir dringend, beim Ersteinsatz der Konverter eine Verträglichkeitsprüfung vorzunehmen.

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.

Own Notes:

Normal tolerance ±1.0 mm; Pin distance tolerance ±0.05 mm

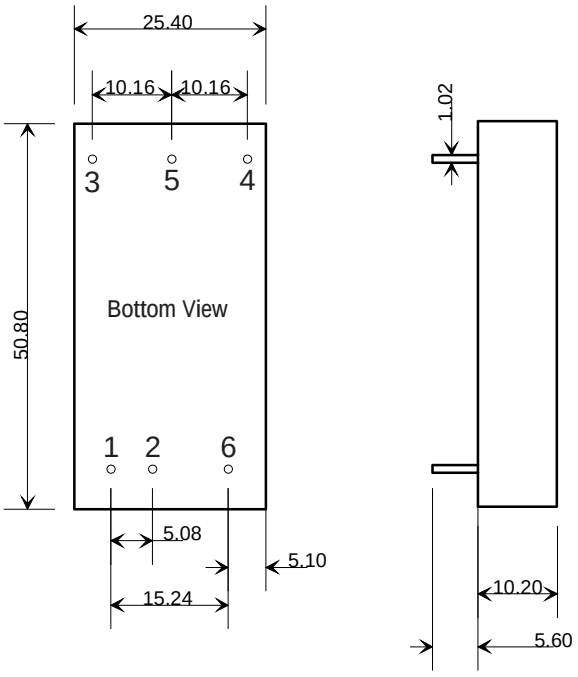
Alternate pin configuration



Pinning Type single output

Pin	Function
1	+ Vin
2	- Vin
3	+ Vout
4	Trim
5	- Vout
6	On/Off

Standard pin configuration



Pinning Type dual output

Pin	Function
1	+ Vin
2	- Vin
3	+ Vout
4	Common
5	- Vout
6	On/Off

FABRIMEX
POWER SUPPLIES

Switzerland:
FABRIMEX AG • Techcenterstrasse 2
CH-8608 Bubikon
Tel: +41-55-253 31 90 • Fax: +41-55-253 31 91
Internet: www.fabrimex.com

Germany:
CAC FABRIMEX GmbH • D-89543 Gerstetten
Tel: 07323/ 950-0 • Fax: 07323/ 95050