

DC/DC Wide Input Converter ECW 7.5 Watt Series DIL-24



DC/DC converter modules with input to output isolation of 1500 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 non conductive base plate • SMD mounting available

DC/DC Konverter-Modul mit galvanischer Trennung Eingang / Ausgang von 1500 VDC • Pi-Filter am Eingang • Dauerkurzschlussfest • Hoher Wirkungsgrad • Keine Lastminderung bis zu einer Umgebungstemperatur von 70°C • Gute Werte von Ripple und Noise • Geringe Bauhöhe • Metallgehäuse mit isolierender Bodenplatte • SMD Montage verfügbar

Module convertisseur CC/CC avec séparation galvanique entrée sortie 1500 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 • Montage CMS disponible

Product range

Typenübersicht

Sommaire des types

SINGLE OUTPUT

Model	Input nominal	Input range	Input current no load	Input current full load	Output Uout	Output Iout	Operating temperature	Efficiency typ.
ECW12-0308SH(1)	12 VDC	9...18 VDC	25 mA	557 mA	3.3 VDC	1500 mA	For all models: -25...+71°C at ambient temperature or max. case temperature of 100°C	74%
ECW12-0508SH(1)	12 VDC	9...18 VDC	25 mA	801 mA	5.0 VDC	1500 mA		78%
ECW12-1208SH(1)	12 VDC	9...18 VDC	25 mA	762 mA	12.0 VDC	625 mA		82%
ECW12-1508SH(1)	12 VDC	9...18 VDC	25 mA	762 mA	15.0 VDC	500 mA		82%
ECW24-0308SH(1)	24 VDC	18...36 VDC	20 mA	271 mA	3.3 VDC	1500 mA		76%
ECW24-0508SH(1)	24 VDC	18...36 VDC	20 mA	396 mA	5.0 VDC	1500 mA		79%
ECW24-1208SH(1)	24 VDC	18...36 VDC	20 mA	381 mA	12.0 VDC	625 mA		82%
ECW24-1508SH(1)	24 VDC	18...36 VDC	20 mA	381 mA	15.0 VDC	500 mA	82%	

Model	Input nominal	Input range	Input current no load	Input current full load	Output Uout	Output Iout	Operating temperature	Efficiency typ.
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SINGLE OUTPUT - continued

ECW48-0308SH(1)	48 VDC	36...72 VDC	10 mA	136 mA	3.3 VDC	1500 mA	For all models: -25...+71°C at ambient temperature or max. case temperature of 100°C	76%
ECW48-0508SH(1)	48 VDC	36...72 VDC	10 mA	195 mA	5.0 VDC	1500 mA		80%
ECW48-1208SH(1)	48 VDC	36...72 VDC	10 mA	190 mA	12.0 VDC	625 mA		82%
ECW48-1508SH(1)	48 VDC	36...72 VDC	10 mA	190 mA	15.0 VDC	500 mA		82%

DUAL OUTPUT

ECW12-0508DH(1)	12 VDC	9...18 VDC	30 mA	791 mA	±5.0 VDC	±750 mA	79%
ECW12-1208DH(1)	12 VDC	9...18 VDC	30 mA	753 mA	±12.0 VDC	±310 mA	83%
ECW12-1508DH(1)	12 VDC	9...18 VDC	30 mA	753 mA	±15.0 VDC	±250 mA	83%
ECW24-0508DH(1)	24 VDC	18...36 VDC	25 mA	386 mA	±5.0 VDC	±750 mA	81%
ECW24-1208DH(1)	24 VDC	18...36 VDC	25 mA	377 mA	±12.0 VDC	±310 mA	83%
ECW24-1508DH(1)	24 VDC	18...36 VDC	25 mA	377 mA	±15.0 VDC	±250 mA	83%
ECW48-0508DH(1)	48 VDC	36...72 VDC	15 mA	193 mA	±5.0 VDC	±750 mA	81%
ECW48-1208DH(1)	48 VDC	36...72 VDC	15 mA	188 mA	±12.0 VDC	±310 mA	83%
ECW48-1508DH(1)	48 VDC	36...72 VDC	15 mA	188 mA	±15.0 VDC	±250 mA	83%

Option:

(1) Suffix "-S" SMD version

Refer to section "nomenclature"

Nomenclature

Nomenklatur

Nomenclature

ECW 24 - 05 08 x H (1)

Product Series

Nominal Input Voltage

Nominal Output Voltage

Output Power in Watts

-S = SMD version (Refer to datasheet "SMD case")

H = 1'500VDC Isolation Voltage

S = Single Output

D = Dual Output

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 de la tension de sortie	±2% 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)	3.3V / 5V 75 mVpp max. 12V / 15V 100 mVpp max.
Short circuit protection	Kurzschlussfestigkeit	Protection courts-circuits	Continuous
Line regulation (max...min)	Leistungsregulierung (max...min)	Régulation ligne (max...min)	±0.2%; single,dual
Loadregulation	Lastregulierung	Régulationcharge	±0.5%; single (100%...10%) ±1.0%; dual (100%...25%)
Isolation voltage	Isolationsspannung	Tension d'isolement	1500 VDC
Isolation resistance	Isolationswiderstand	Résistance d'isolement	1GOhm
Switching frequency	Schaltfrequenz	Fréquence de découpage	typ. 300 kHz
MTBF (MIL-HB 217E at 25°C)	MTBF (MIL-HB 217E bei 25°C)	MTBF (MIL-HB 217E à 25°C)	>1'000'000hrs.
EMC Conducted	EMV Leitungsgelunden	EMC Emis	EN55022/11 Class A
Casetemperature	Gehäusetemperatur	Température du boîtier	max. 100°C
Temperature coefficient	Temperaturkoeffizient	Coefficient de température	typ. ±0.05%/K
Storage temperature	Lagertemperatur	Température de stockage	-40...+100°C
Soldering information	Lötinformationen	Information de soudage	275°C for 10 sec.
Weight	Gewicht	Poids	approx. 16 g
Case material	Gehäusematerial	Matériaux du boîtier	Copper, with non-conductive base

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.

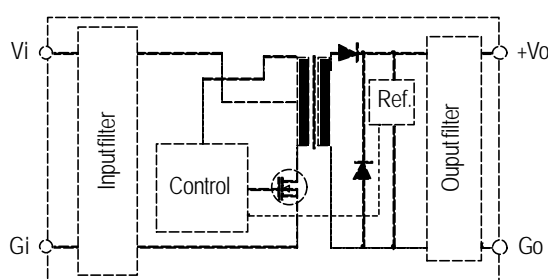
Les modules sont lavables avec les solvants couramment utilisés dans l'industrie électronique.

Dû aux différents 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.

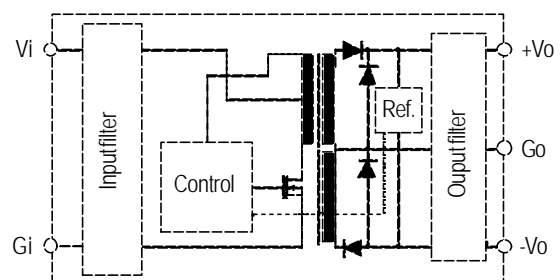
Functional block diagram

Blockschema

Synoptique

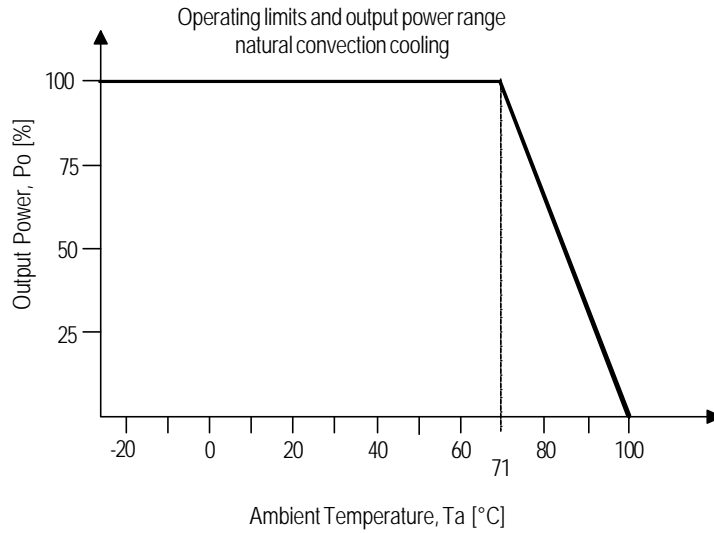


Single output converter block diagram



Dual output converter block diagram

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:

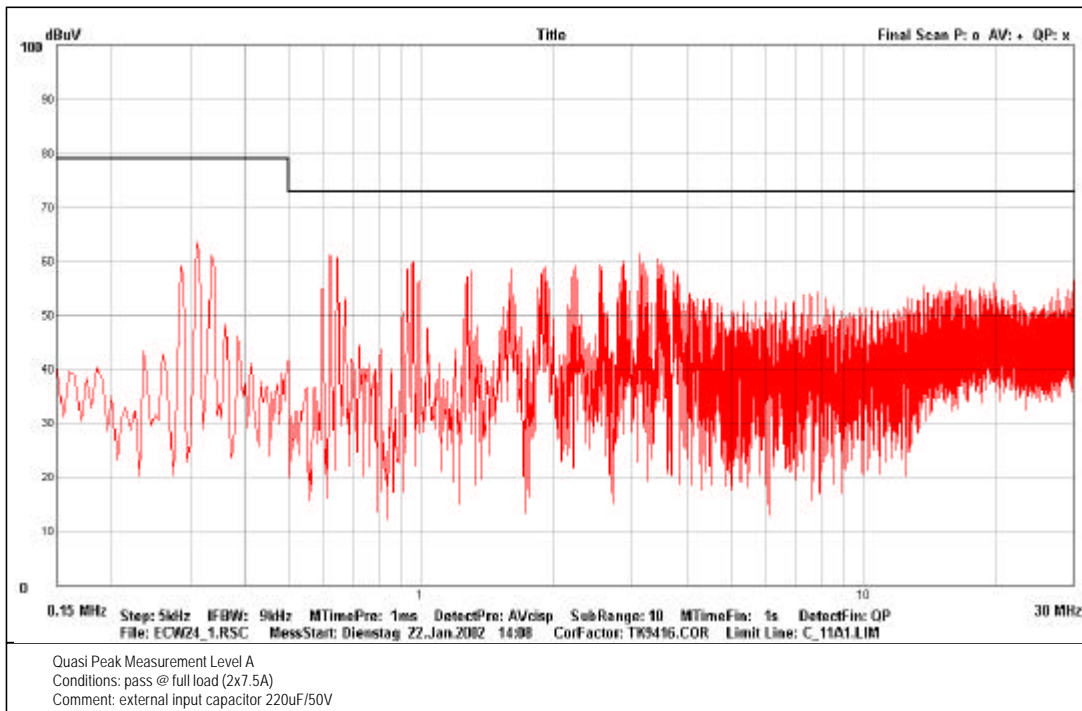
$$Po [\%] = 100\% - ((Ta - 71^\circ\text{C}) \times 3.5\%)$$

EMC Information

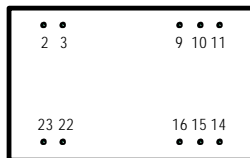
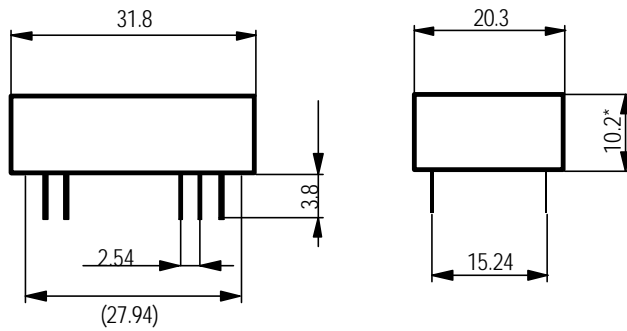
EMV Informationen

Information CEM

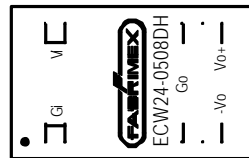
EMC information ECW24-0508SH EN55022/11 Class A



Normal tolerance ± 0.2 mm; Pin distance tolerance ± 0.05 mm, Pin diameter 0.5 mm



View from bottom



View from top

Pinning Type

Mechanical data for converters with 1500 VDC isolation voltage

Pin	Single	Dual	Pin
2	Gi	Gi	2
3	Gi	Gi	3
9	NC	Go	9
10	NC	NC	10
11	NC	-Vo	11
14	+Vo	+Vo	14
15	NC	NC	15
16	Go	Go	16
22	Vi	Vi	22
23	Vi	Vi	23

NC = No connection internally to pin

Notice: All statements, technical information, and recommendations related to FABRIMEX's products are based on information believed to be reliable, but the accuracy or completeness thereof is not guaranteed. Before utilizing the product, the user should determine the suitability of the product for its intended use.

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