

DC/DC Converter DIL-24

EC 1.5 Watt



1.5 Watt DC/DC Converter line with single or dual output models

DC/DC converter modules with input to output isolation of 500 VDC • Pi-filter at input • Short circuit protection • Linear regulation • No derating up to 70°C • Low output ripple and noise • Low silhouette • Metal case with non conductive base plate, six sides shielded

1.5 Watt DC/DC Konverter Serie mit Ein- oder Zweifachausgang

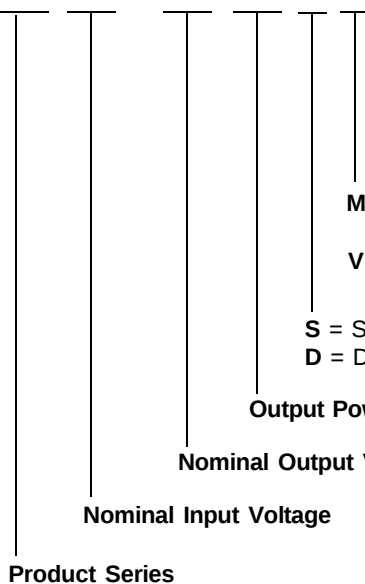
DC/DC Konverter-Modul mit galvanischer Trennung Eingang / Ausgang von 500 VDC • Pi-Filter am Eingang • Kurzschlussfest • Linear nachgeregelt • Keine Lastminderung bis zu einer Umgebungstemperatur von 70°C • Gute Werte von Ripple und Noise • Geringe Bauhöhe • Metallgehäuse mit isolierender Bodenplatte, 6seitig abgeschirmt

1.5 Watt convertisseur CC/CC avec sortie simple ou double

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

Model	Input nominal	Input range	Input current max. at U _{in}	Output U _{out}	Output I _{out}	Operating temperature	Efficiency
EC05-0502SM	5 VDC	4.5...5.5 VDC	620 mA	5.0 VDC	300 mA	For all models: -25...+70°C or max. case temperature of 90°C	For all models: typically 50%
EC05-1202SM	5 VDC	4.5...5.5 VDC	550 mA	12.0 VDC	125 mA		
EC05-1502SM	5 VDC	4.5...5.5 VDC	550 mA	15.0 VDC	100 mA		
EC12-0502SM	12 VDC	10.8...13.2 VDC	260 mA	5.0 VDC	300 mA		
EC12-1202SM	12 VDC	10.8...13.2 VDC	215 mA	12.0 VDC	125 mA		
EC12-1502SM	12 VDC	10.8...13.2 VDC	215 mA	15.0 VDC	100 mA		
EC24-0502SM	24 VDC	21.6...26.4 VDC	130 mA	5.0 VDC	300 mA		
EC24-1202SM	24 VDC	21.6...26.4 VDC	115 mA	12.0 VDC	125 mA		
EC24-1502SM	24 VDC	21.6...26.4 VDC	115 mA	15.0 VDC	100 mA		
EC48-0502SM	48 VDC	43.2...52.8 VDC	65 mA	5.0 VDC	300 mA		
EC48-1202SM	48 VDC	43.2...52.8 VDC	60 mA	12.0 VDC	125 mA		
EC48-1502SM	48 VDC	43.2...52.8 VDC	60 mA	15.0 VDC	100 mA		
EC05-1202DM	5 VDC	4.5...5.5 VDC	550 mA	±12.0 VDC	±60 mA		
EC05-1502DM	5 VDC	4.5...5.5 VDC	550 mA	±15.0 VDC	±50 mA		
EC12-1202DM	12 VDC	10.8...13.2 VDC	215 mA	±12.0 VDC	±60 mA		
EC12-1502DM	12 VDC	10.8...13.2 VDC	215 mA	±15.0 VDC	±50 mA		
EC24-1202DM	24 VDC	21.6...26.4 VDC	115 mA	±12.0 VDC	±60 mA		
EC24-1502DM	24 VDC	21.6...26.4 VDC	115 mA	±15.0 VDC	±50 mA		
EC48-1202DM	48 VDC	43.2...52.8 VDC	60 mA	±12.0 VDC	±60 mA		
EC48-1502DM	48 VDC	43.2...52.8 VDC	60 mA	±15.0 VDC	±50 mA		

EC 24 - 05 02 x x



M = 500 VDC Isolation Voltage
 Black coated copper case with non conductive base plate
V = 3'000 VDC Isolation Voltage
 Plastic case with non conductive base plate
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 tension de sortie	±4% of Uout nom.
Output voltage balance	Abgleich zwischen den Ausgängen	Balance des sorties	±4%; dual
Residual output ripple (BW 20 MHz)	Ausgangsspannungsrippel (BW 20 MHz)	Ondulation résiduelle de sortie (BW 20 MHz)	50 mVpp (5 VDC) 70 mVpp (12/15 VDC)
Short circuit protection	Kurzschlussfestigkeit	Protection courts-circuits	Momentary
No load input current	Leerlaufeingangsstrom	Courant d'entrée à vide	110 mA, 40 mA (5, 12 VDC) 20 mA, 15 mA (24, 48 VDC)
Line regulation (max...min)	Leistungsregulierung (max...min)	Régulation ligne (max...min)	±0.3% at lout nom.
Load regulation	Lastregulierung	Régulation charge	0.5%; single (100...10%) 0.5%; dual (100...10%)
Isolation voltage	Isolationsspannung	Tension d'isolement	500VDC for M / 3000VDC for V
Isolation resistance	Isolationswiderstand	Résistance d'isolement	1 GOhm
Switching frequency	Schaltfrequenz	Fréquence de découpage	typ. 20 kHz
MTBF (MIL-HB 217E at 25°C)	MTBF (MIL-HB 217E bei 25°C)	MTBF (MIL-HB 217E à 25°C)	>250'000 hrs.
Temperature coefficient	Temperaturkoeffizient	Coefficient de température	typ. ±0.02% per °C
Storage temperature	Lagertemperatur	Température de stockage	-40...+100°C
Soldering information	Lötinformationen	Information de soudage	275°C for 10 sec.
Weight	Gewicht	Poids	approx. 15 g; Copper Case

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 kommende Mittel, raten wir dringend beim Ersteinsatz der Konverter eine Verträglichkeitsprüfung vorzunehmen.

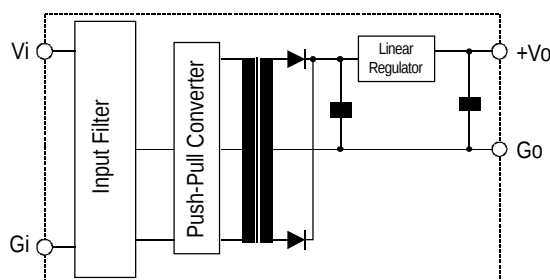
Les modules sont lavables avec les solvants couramment utilisés dans l'industrie électronique.

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.

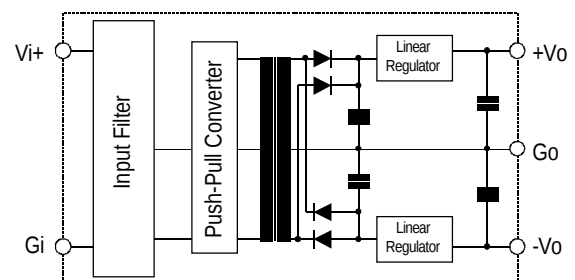
Functional block diagram

Blockschema

Synoptique



Single output converter block diagram



Dual output converter block diagram

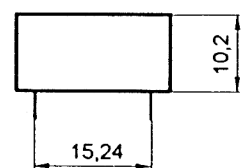
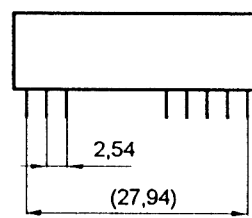
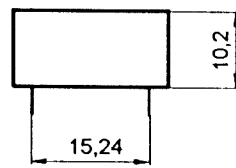
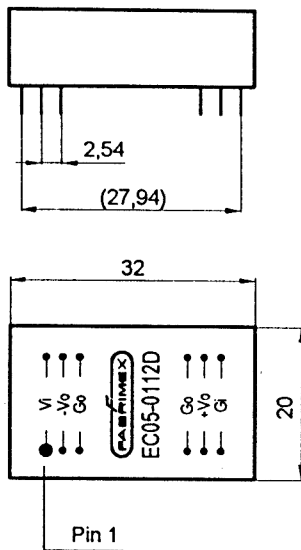
Case

Gehäuse

Boîtier

Mechanical design of Standard EC-Series

Mechanical design of High Isolation EC-Series



All dimensions in mm; Pinout DIL-24 compatible
Pin Diameter: 0.50 mm

All dimensions in mm; Pinout DIL-24 compatible
Pin Diameter: 0.50 mm

Case Material

Non-conductive black plastic for standard models
or on request black coated copper with a non-conductive base plate.

High isolation models with black plastic only.

NP = No pin

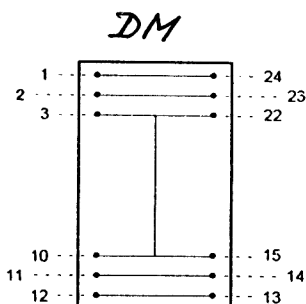
NC = No internal connection to existing pin

TP = Test point

Pin No.	500 VDC Isolation		3000 VDC Isolation	
	Single Output	Dual Output	Single Output	Dual Output
1	+Vin	+Vin	+Vin	+Vin
2	NC	Vout neg.	+Vin	+Vin
3	NC	COM out	+Vin	+Vin
10	-Vout	COM out	NP	COM out
11	+Vout	Vout pos.	NP	COM out
12	-Vin	-Vin	-Vout	-TP
13	-Vin	-Vin	+Vout	-Vout
14	+Vout	Vout pos.	NP	NP
15	-Vout	COM out	NP	+Vout
16	NP	NP	NP	+TP
17	NP	NP	+TP	NP
22	NC	COM out	-Vin	-Vin
23	NC	Vout neg.	-Vin	-Vin
24	+Vin	+Vin	-Vin	-Vin

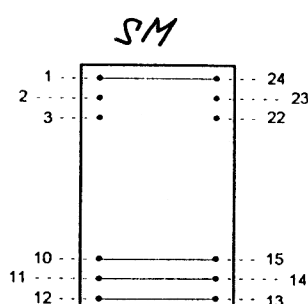
EC-Series
Dual output
500 VDC isolation voltage

view from top



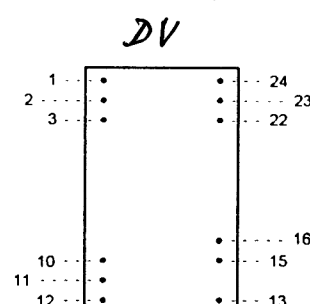
EC-Series
Single output
500 VDC isolation voltage

view from top



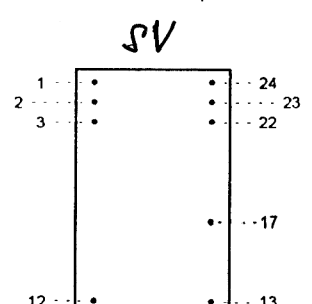
EC-Series
Dual output
3000 VDC isolation voltage

view from top

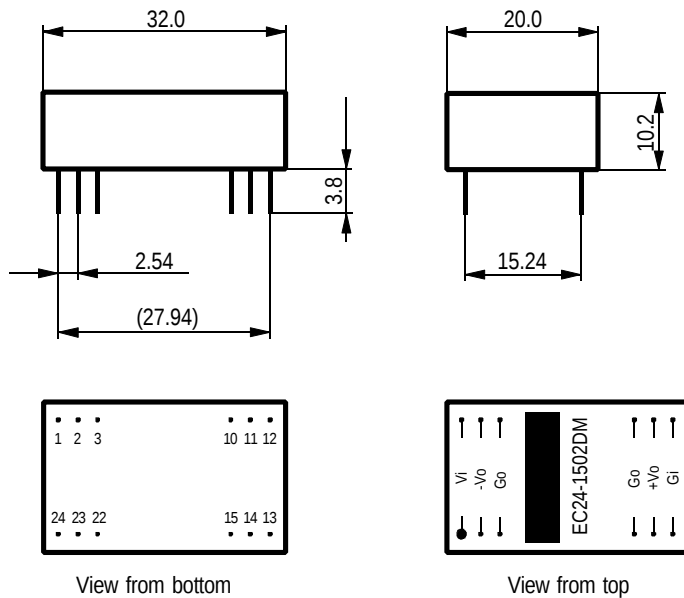


EC-Series
Single output
3000 VDC isolation voltage

view from top



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



Mechanical data for converters with
500 VDC isolation voltage

Pin	Single	Dual	Pin
1	V_i	V_i	1
2	NC	$-V_o$	2
3	NC	G_o	3
10	G_o	G_o	10
11	$+V_o$	$+V_o$	11
12	G_i	G_i	12
13	G_i	G_i	13
14	$+V_o$	$+V_o$	14
15	G_o	G_o	15
22	NC	G_o	22
23	NC	$-V_o$	23
24	V_i	V_i	24

NC = No connection internal 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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