

DC/DC Wide Input Converter EQW 75 Watt Series



DC/DC converter module with input to output isolation of 1500 VDC • Pi-filter at input • Continuous short circuit proof • Very high efficiency • Low output ripple and noise • Low silhouette • Plastic case with aluminum base plate • External output voltage adjust • Inhibit on/off control • Quarter brick case • Sense • UL, cUL 1950 certified

DC/DC Konverter-Modul mit galvanischer Trennung Eingang / Ausgang von 1500 VDC • Pi-Filter am Eingang • Dauerkurzschlussfest • Sehr hoher Wirkungsgrad • Gute Werte von Rippel und Noise • Geringe Bauhöhe • Kunststoffgehäuse mit Grundplatte aus Aluminium • Externer Ausgangsspannungsabgleich • Inhibit • Quarter brick Gehäuse • Fühlerleitung • UL, cUL 1950 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 • Base en aluminium, boîtier en plastique • Ajustement externe de la tension de sortie • Inhibit • Quarter brick boîtier • Sense • Approbation UL et cUL 1950

Product range

Typenübersicht

Sommaire des types

Model	Input nominal	Input range	Input current max. @ full load	No Load	Output Uout	Output Iout max.	Operating temperature	Efficiency typ.
EQW24-1V875	24 VDC	18...36 VDC	2259 mA	60 mA	1.8 VDC	0.50 - 25.00 A	For all models:	83%
EQW48-2V575	24 VDC	18...36 VDC	3064 mA	60 mA	2.5 VDC	0.50 - 25.00 A	-40...+100°C	85%
EQW48-3V375	24 VDC	18...36 VDC	3125 mA	70 mA	3.3 VDC	0.50 - 20.00 A	case temperature	88%
EQW48-5V175	24 VDC	18...36 VDC	3472 mA	80 mA	5.1 VDC	0.50 - 15.00 A	see derating	90%
EQW48-1V875	48 VDC	36...72 VDC	1116 mA	50 mA	1.8 VDC	0.50 - 25.00 A	specification	84%
EQW48-2V575	48 VDC	36...72 VDC	1514 mA	50 mA	2.5 VDC	0.50 - 25.00 A		86%
EQW48-3V375	48 VDC	36...72 VDC	1563 mA	50 mA	3.3 VDC	0.50 - 20.00 A		88%
EQW48-5V175	48 VDC	36...72 VDC	1736 mA	80 mA	5.1 VDC	0.50 - 15.00 A		90%

EQW 48 - 1V8 75 x

Product Series

Nominal Input Voltage

Nominal Output Voltage
(2V5 = 2.5V)

Output Power in Watts

blank = Positive logic inhibit on/off**N** = Negative logic inhibit on/off

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% of Uout nom.
Ext. output voltage adjustment	Ext. Ausgangsspannungsabgleich	Ajustement ext. de la tension de sortie	±10%
Transient Response	Sprungcharakteristik	Réponse en transitoires	25% 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]	40mV RMS, max. 100mVpp, max.
Short circuit protection	Kurzschlussfestigkeit	Protection courts-circuits	continuous
Line regulation (Umax...Umin)	Leitungsregulierung (Umax...Umin)	Régulation ligne (Umax...Umin)	±0.2% max. @ Iout nom.
Load regulation (100...0%)	Lastregulierung (100...0%)	Régulation charge (100...0%)	±0.2% max.
Isolation voltage	Isolationsspannung	Tension d'isolement	Input/Output 1500VDC Input/Case 1500VDC Output/Case 1500VDC
Isolation resistance	Isolationswiderstand	Résistance d'isolement	> 10 MOhm
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)	>1'000'000 hrs.
EMC Conducted and radiated	EMV Leitungsgebunden und abgestrahlt	EMC Emis et conduit	EN55022/11 Class with external input capacitor
UL file number	UL Nummer	Numéro d'UL	UL / cUL File No. E195564
Temperature coefficient	Temperaturkoeffizient	Coefficient de température	typ. ±0.03%/K
Operating case temperature	Gehäusetemperatur bei Betrieb	Température du boîtier	-40...+100°C
Storage temperature	Lagertemperatur	Température de stockage	-40...+105°C
Thermal shutdown range	Thermische Abschaltung	Coupure thermique	Tcase 100°C
Current Limit	Strombegrenzung	Limitation du courant	110...140% Nominal output
Over voltage protection	Überspannungsschutz	Protection contre surtension	115...140% Vo nom.
Undervoltage lockout	Unterspannungsverhalten	Bloquage de sous-tension	24Vin: power up @ 17V power down @ 15.5V 48Vin: power up @ 34V power down @ 32.5V
Case material	Gehäusematerial	Matériaux du boîtier	Aluminium base plate with plastic casing
Soldering information	Lötinformationen	Information de soudage	275°C for 10 sec.
Weight	Gewicht	Poids	approx. 65 g

EMC information EN55022/11 Class

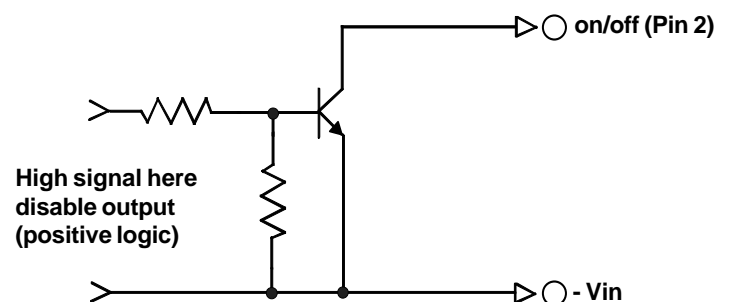
Inhibit on/off control

The EQW 75 allows the user to switch the module on and off electronically by inhibit on/off feature. The converters are available in "positive logic" or "negative logic" (option) versions for inhibit on/off.

Logic table

Logic state (Pin 2)	Negative logic*	Positive logic
Logic low	Module on	Module off
Logic high	Module off	Module on

Application example negative logic:

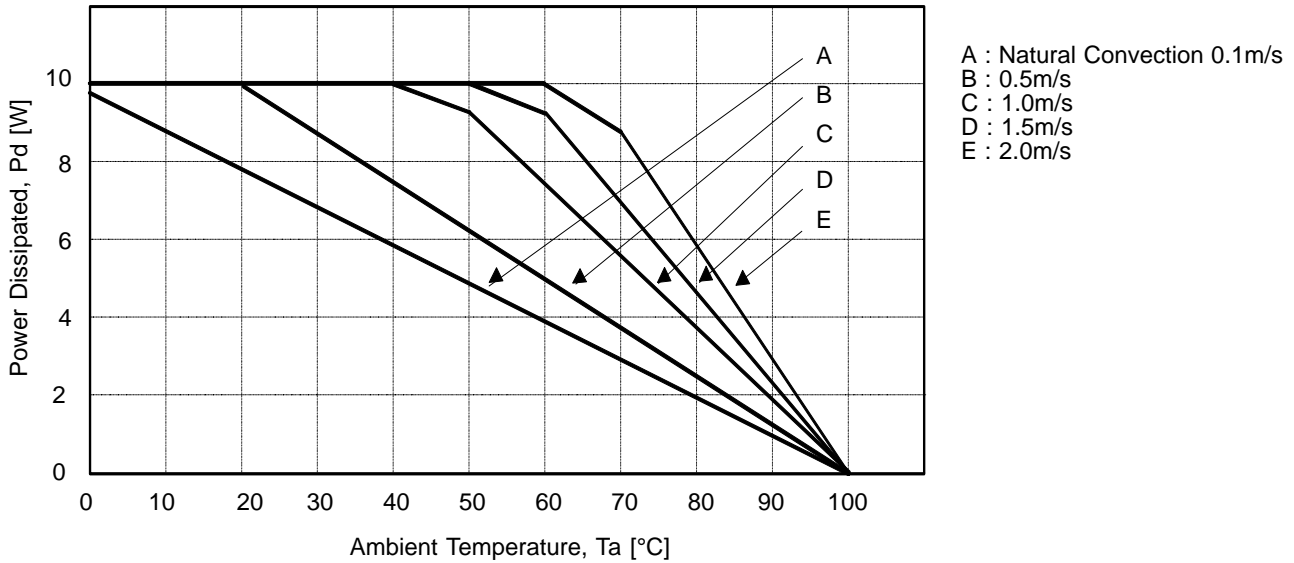


* Suffix "N" to the model number with active low inhibit on /off

Derating EQW 75 Watt Series

The operating case temperature range of EQW 75 series is -40°C to +100°C. When operating the EQW 75 series, proper derating or cooling is needed. The following curves are the derating curves of EQW 75 without heat sink.

Power Dissipated vs Ambient Temperature and Air Flow



Where:

The Power Dissipation (Pd):

$$Pd = Pi - Po = Po * (1 - \eta) / \eta$$

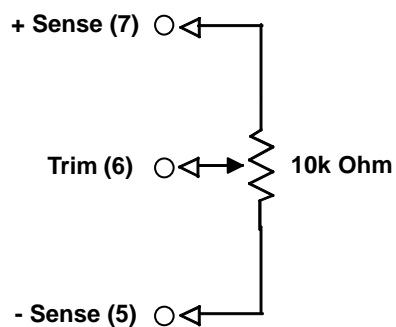
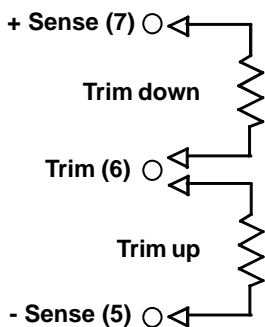
The thermal resistances are listed below:

air flow rate	typical Rca
natural convection	10.1°C/W
0.5m/s	8.0°C/W
1.0m/s	5.4°C/W
1.5m/s	4.4°C/W
2.0m/s	3.4°C/W

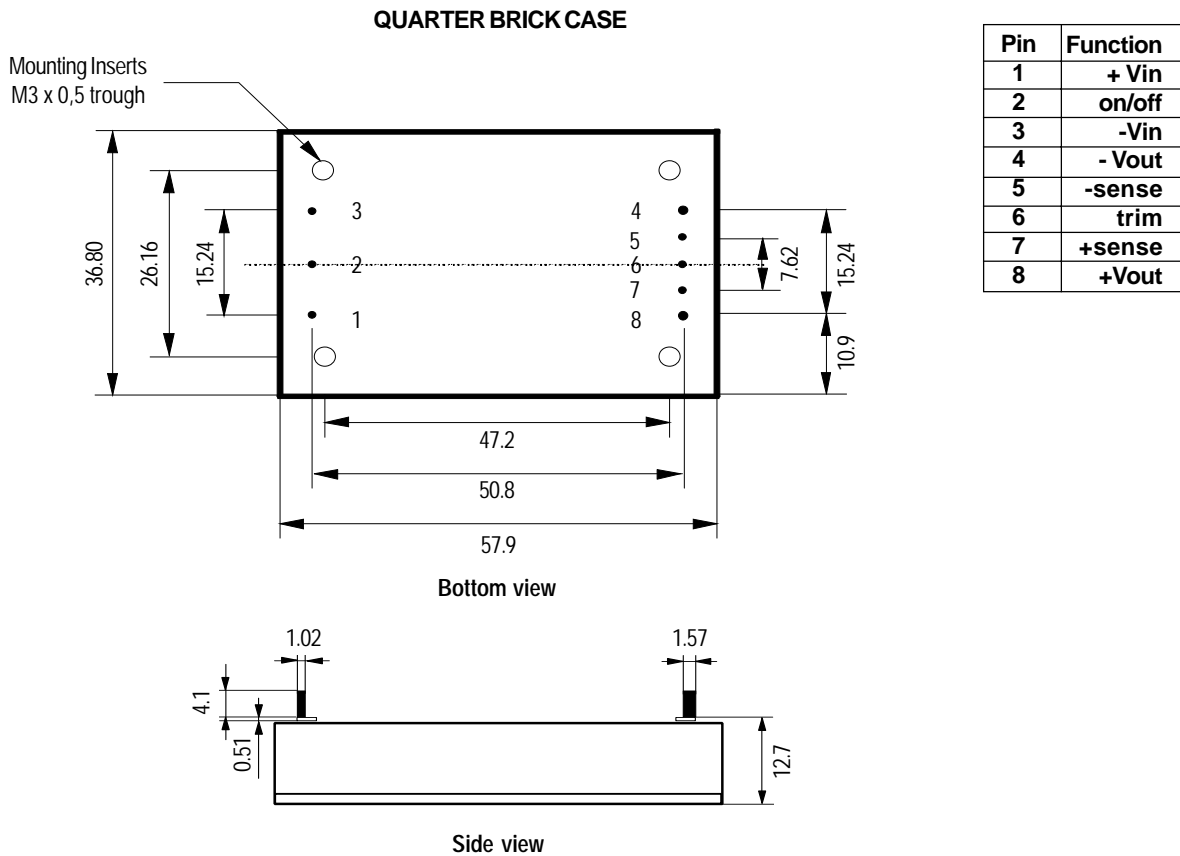
The temperature rise (delta T):

$$\Delta T = Pd * Rca$$

External output trim



View from bottom; Normal tolerance $1/10 \pm 0.5$ mm, $1/100 \pm 0.25$ mm; Pin tolerance ± 0.5 mm diameter



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.

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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