



# DC/DC Wide Input Converter ECW 10 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 spikes • Low silhouette • Metal case with a non conductive base plate, six-sides shielded • 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 Rippel 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 min. | Output Iout max. | No load input current | Operating temperature                  | Efficiency typ. |
|------------|-------------|---------------|-------------|------------------|------------------|-----------------------|--|-----------------|
| ECW05-0510 | 4.7...9 VDC | 5 VDC         | 5.1 VDC     | 0 mA             | 1600 mA          | typ. 15 mA            | For all models:<br>-25...+70°C         | 75%             |
| ECW05-1210 | 4.7...9 VDC | 5 VDC         | 12.0 VDC    | 0 mA             | 666 mA           | typ. 15 mA            |  | 76%             |
| ECW05-1510 | 4.7...9 VDC | 5 VDC         | 15.0 VDC    | 0 mA             | 533 mA           | typ. 15 mA            | or maximum case<br>temperature of 95°C | 76%             |
| ECW12-0510 | 9...18 VDC  | 12 VDC        | 5.1 VDC     | 100 mA           | 2000 mA          | typ. 30 mA            |  | 76%             |
| ECW12-1210 | 9...18 VDC  | 12 VDC        | 12.0 VDC    | 45 mA            | 830 mA           | typ. 30 mA            |  | 78%             |
| ECW12-1510 | 9...18 VDC  | 12 VDC        | 15.0 VDC    | 35 mA            | 666 mA           | typ. 30 mA            |  | 78%             |
| ECW24-0510 | 18...36 VDC | 24 VDC        | 5.1 VDC     | 100 mA           | 2000 mA          | typ. 20 mA            |  | 78%             |
| ECW24-1210 | 18...36 VDC | 24 VDC        | 12.0 VDC    | 45 mA            | 830 mA           | typ. 20 mA            |  | 80%             |
| ECW24-1510 | 18...36 VDC | 24 VDC        | 15.0 VDC    | 35 mA            | 666 mA           | typ. 20 mA            |  | 80%             |

| Model        | Input range | Input nominal | Output Uout | Output Iout min. | Output Iout max. | No load input current | Operating temperature  | Efficiency typ. |
|--------------|-------------|---------------|-------------|------------------|------------------|-----------------------|--|-----------------|
| ECW48-0510   | 36...72 VDC | 48 VDC        | 5.1 VDC     | 100 mA           | 2000 mA          | typ. 10 mA            | For all models:<br>-25...+70°C<br>or maximum case<br>temperature of 95°C | 80%             |
| ECW48-1210   | 36...72 VDC | 48 VDC        | 12.0 VDC    | 45 mA            | 830 mA           | typ. 10 mA            |  | 82%             |
| ECW48-1510   | 36...72 VDC | 48 VDC        | 15.0 VDC    | 35 mA            | 666 mA           | typ. 10 mA            |  | 82%             |
| ECW05-050510 | 4.7...9 VDC | 5 VDC         | ±5.1 VDC    | 0 mA             | ±800 mA          | typ. 15 mA            |  | 76%             |
| ECW05-121210 | 4.7...9 VDC | 5 VDC         | ±12.0 VDC   | 0 mA             | ±333 mA          | typ. 15 mA            |  | 76%             |
| ECW05-151510 | 4.7...9 VDC | 5 VDC         | ±15.0 VDC   | 0 mA             | ±266 mA          | typ. 15 mA            |  | 76%             |
| ECW12-050510 | 9...18 VDC  | 12 VDC        | ±5.1 VDC    | ±50 mA           | ±1000 mA         | typ. 40 mA            |  | 78%             |
| ECW12-121210 | 9...18 VDC  | 12 VDC        | ±12.0 VDC   | ±25 mA           | ±415 mA          | typ. 40 mA            |  | 78%             |
| ECW12-151510 | 9...18 VDC  | 12 VDC        | ±15.0 VDC   | ±20 mA           | ±333 mA          | typ. 40 mA            |  | 78%             |
| ECW24-050510 | 18...36 VDC | 24 VDC        | ±5.1 VDC    | ±50 mA           | ±1000 mA         | typ. 20 mA            |  | 80%             |
| ECW24-121210 | 18...36 VDC | 24 VDC        | ±12.0 VDC   | ±25 mA           | ±415 mA          | typ. 20 mA            | 80%  |                 |
| ECW24-151510 | 18...36 VDC | 24 VDC        | ±15.0 VDC   | ±20 mA           | ±333 mA          | typ. 20 mA            | 80%  |                 |
| ECW48-050510 | 36...72 VDC | 48 VDC        | ±5.1 VDC    | ±50 mA           | ±1000 mA         | typ. 10 mA            | 82%  |                 |
| ECW48-121210 | 36...72 VDC | 48 VDC        | ±12.0 VDC   | ±25 mA           | ±415 mA          | typ. 10 mA            | 82%  |                 |
| ECW48-151510 | 36...72 VDC | 48 VDC        | ±15.0 VDC   | ±20 mA           | ±333 mA          | typ. 10 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                      | Ausgangsspannungsgenauigkeit                       | Précision de la tension de sortie                    | ±1% of Uout nom.               |
| Output voltage balance                       | Abgleich zwischen den Ausgängen                    | Balance des sorties                                  | ±1%; on dual models            |
| Residual output ripple and noise [BW 20 MHz] | Ausgangsspannungsrippel und HF Spitzen [BW 20 MHz] | Ondulation résiduelle et bruit de sortie [BW 20 MHz] | 100 mVpp max.                  |
| Short circuit protection                     | Kurzschlussfestigkeit                              | Protection courts-circuits                           | continuous                     |
| Line regulation (Umax...Umin)                | Leitungsregulierung (Umax...Umin)                  | Régulation ligne (Umax...Umin)                       | ±0.2% at Iout nom.             |
| Load regulation (100...25%)                  | Lastregulierung (100...25%)                        | Régulation charge (100...25%)                        | 1%                             |
| Isolation voltage                            | Isolationsspannung                                 | Tension d'isolement                                  | 500 VDC                        |
| Isolation resistance                         | Isolationswiderstand                               | Résistance d'isolement                               | > 1 GOhm                       |
| Switching frequency                          | Schaltfrequenz                                     | Fréquence de découpage                               | min. 200 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             |
| 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           |
| Soldering information                        | Lötinformationen                                   | Information de soudage                               | 275°C for 10 sec.              |
| Compound material                            | Vergussmaterial                                    | Resine d'enrobage                                    | Two component resin<br>UL94-V0 |
| Weight                                       | Gewicht  | Poids  | approx. 32 g                   |

### EMC-TESTCENTER ACCR. EN45001

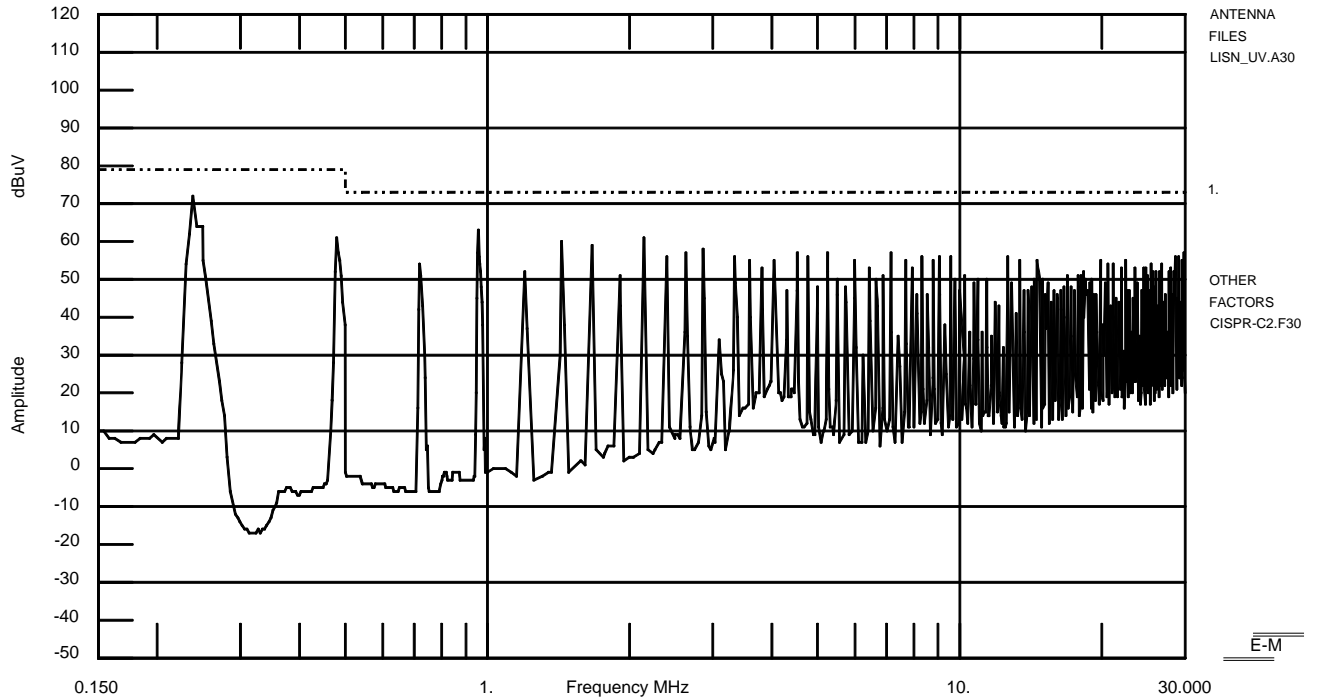
FABRIMEX AG

Date : 02/19/99 Time : 13:04:36.14  
 Technician : Urs Luessi Test Equip. : EMC-30 MKIV  
 Test Method : Conducted Emission Test Number : 1  
 Equipment : ECW48-0510 Sensor Loc. : Positive  
 Mode of Op. : Nominal Operation Sensor Pol. :  
 Serial No. : 9816 Ext. Atten. : 0 dB

EMC-30 SETTINGS  
 Detector QuasiPeak  
 Bandwidth CISPR  
 Dwell N/A  
 RF Atten. 0 dB  
 IF Atten. 0 dB

SPECS  
 1) EN 55022 Class A QuasiPeak

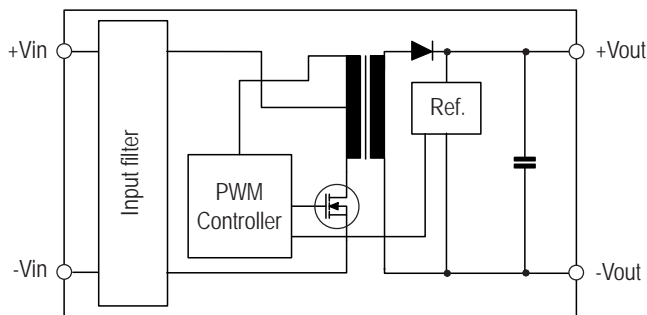
Comment :



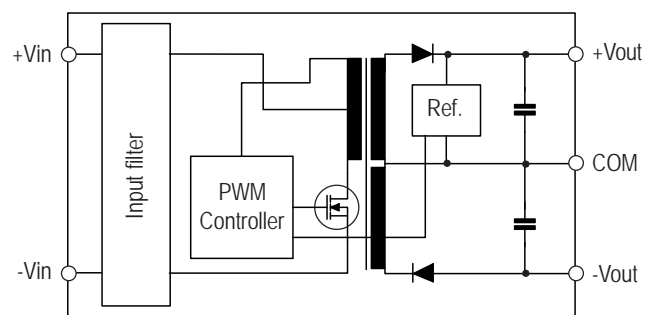
Functional block diagram

Blockschema

Synoptique

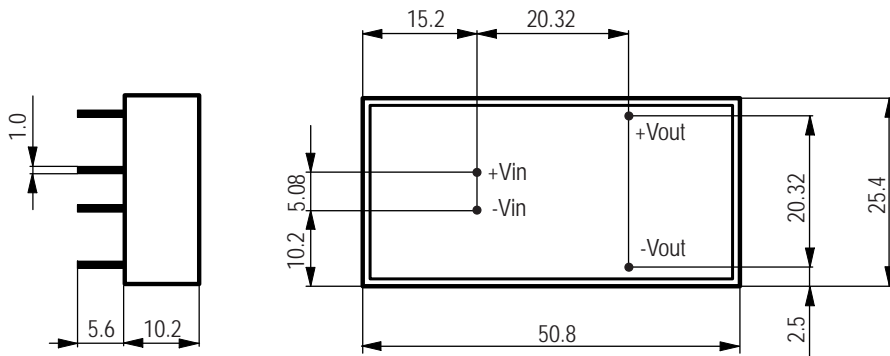


Single output converter block diagram

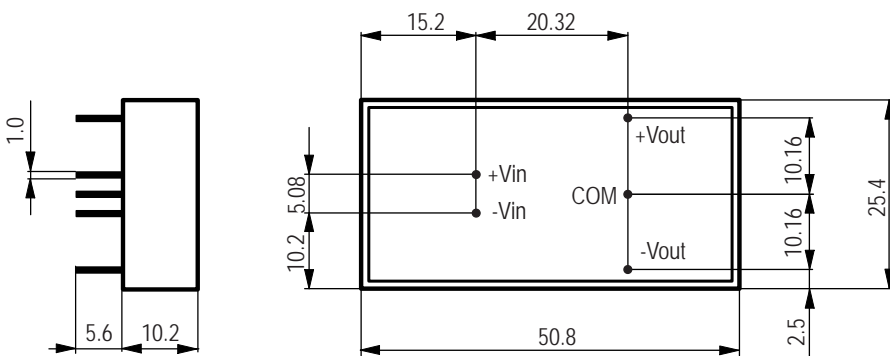


Dual output converter block diagram

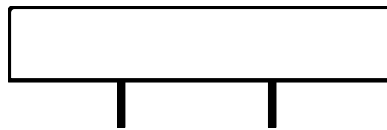
View from bottom; Normal tolerance  $\pm 1.0$  mm; Pin distance tolerance  $\pm 0.05$  mm; Round pins 1.0 mm diameter



ECW 10 Watt Series  
Single Output Models  
View from bottom



ECW 10 Watt Series  
Dual Output Models  
View from bottom



## 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.

**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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