

# DC/DC Wide Input Converter UCW 10 Watt Series



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 • UL, cUL certified

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 • UL, cUL zertifiziert

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 • Approbation UL, cUL

## Product range

## Typenübersicht

## Sommaire des types

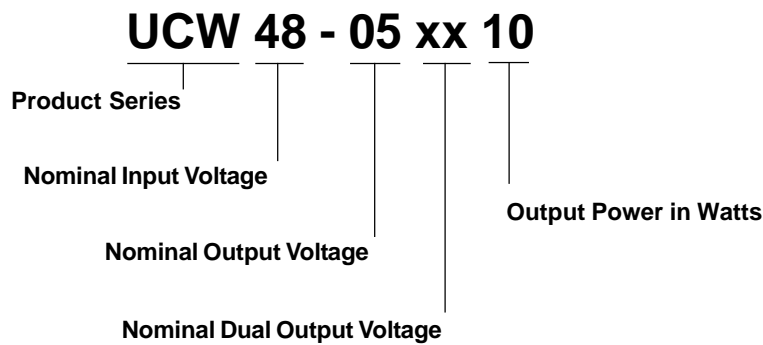
Model	Input range	Input nominal	Output Uout	Output lout min.	Output lout max.	No load input current	Operating temperature	Efficiency typ.
UCW12-0510	9...18 VDC	12 VDC	5.1 VDC	100 mA	2000 mA	typ. 30 mA	For all models: -25...+70°C or maximum case temperature of 95°C	76%
UCW12-1210	9...18 VDC	12 VDC	12.0 VDC	45 mA	830 mA	typ. 30 mA		78%
UCW12-1510	9...18 VDC	12 VDC	15.0 VDC	35 mA	666 mA	typ. 30 mA		78%
UCW24-0510	18...36 VDC	24 VDC	5.1 VDC	100 mA	2000 mA	typ. 20 mA		78%
UCW24-1210	18...36 VDC	24 VDC	12.0 VDC	45 mA	830 mA	typ. 20 mA		80%
UCW24-1510	18...36 VDC	24 VDC	15.0 VDC	35 mA	666 mA	typ. 20 mA		80%
UCW48-0510	36...72 VDC	48 VDC	5.1 VDC	100 mA	2000 mA	typ. 10 mA		80%
UCW48-1210	36...72 VDC	48 VDC	12.0 VDC	45 mA	830 mA	typ. 10 mA		82%
UCW48-1510	36...72 VDC	48 VDC	15.0 VDC	35 mA	666 mA	typ. 10 mA		82%

Model	Input range	Input nominal	Output Uout	Output Iout min.	Output Iout max.	No load input current	Operating temperature	Efficiency typ.
<b>Dual Output</b>								
UCW12-050510	9...18 VDC	12 VDC	±5.1 VDC	±50 mA	±1000 mA	typ. 40 mA	For all models: -25...+70°C or maximum case temperature of 95°C	78%
UCW12-121210	9...18 VDC	12 VDC	±12.0 VDC	±25 mA	±415 mA	typ. 40 mA		78%
UCW12-151510	9...18 VDC	12 VDC	±15.0 VDC	±20 mA	±333 mA	typ. 40 mA		78%
UCW24-050510	18...36 VDC	24 VDC	±5.1 VDC	±50 mA	±1000 mA	typ. 20 mA		80%
UCW24-121210	18...36 VDC	24 VDC	±12.0 VDC	±25 mA	±415 mA	typ. 20 mA		80%
UCW24-151510	18...36 VDC	24 VDC	±15.0 VDC	±20 mA	±333 mA	typ. 20 mA		80%
UCW48-050510	36...72 VDC	48 VDC	±5.1 VDC	±50 mA	±1000 mA	typ. 10 mA		82%
UCW48-121210	36...72 VDC	48 VDC	±12.0 VDC	±25 mA	±415 mA	typ. 10 mA		82%
UCW48-151510	36...72 VDC	48 VDC	±15.0 VDC	±20 mA	±333 mA	typ. 10 mA		82%

Nomenclature

Nomenklatur

Nomenclature



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
Safety certification	Sicherheitsprüfung	Approbation de sécurité	UL / cUL file no. E195564

## El. characteristics

## El. Eigenschaften

## Caractéristiques él.

Temperature coefficient	Temperaturkoeffizient	Coefficient de température	typ. $\pm 0.02\%$ per $^{\circ}\text{C}$
Storage temperature	Lagertemperatur	Température de stockage	-40...+100 $^{\circ}\text{C}$
Case material	Gehäusematerial	Matière du boîtier	Copper, black coated
Soldering information	Lötinformationen	Information de soudage	275 $^{\circ}\text{C}$ for 10 sec.
Compound material	Vergussmaterial	Resine d'enrobage	Two component resin UL94-V0
Weight	Gewicht	Poids	approx. 32 g

## EMC information

## EMV Informationen

## Information CEM

### EMC-TESTCENTER ACCR. EN45001

FABRIMEX AG

Date : 02/19/99  
 Technician : Urs Luessi  
 Test Method : Conducted Emission  
 Equipment : ECW48-0510  
 Mode of Op. : Nominal Operation  
 Serial No. : 9816

Time : 13:04:36.14  
 Test Equip. : EMC-30 MKIV  
 Test Number : 1  
 Sensor Loc. : Positive  
 Sensor Pol. :  
 Ext. Atten. : 0 dB

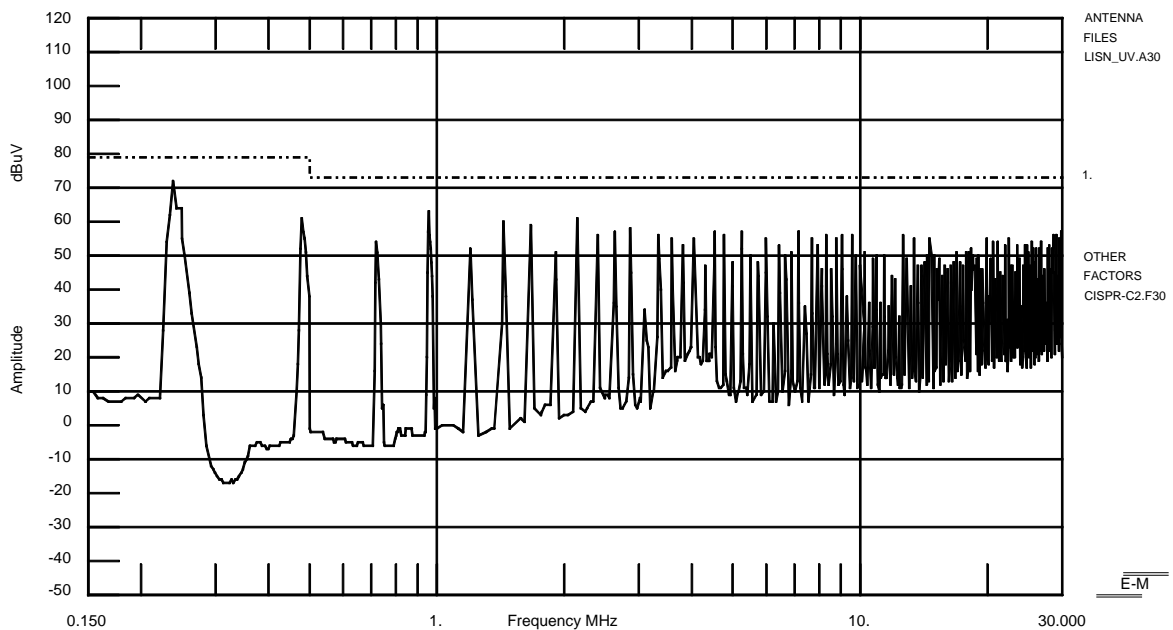
EMC-30 SETTINGS

Detector QuasiPeak  
 Bandwidth CISPR  
 Dwell N/A  
 RF Atten. 0 dB  
 IF Atten. 0 dB

SPECS

1) EN 55022 Class A QuasiPeak

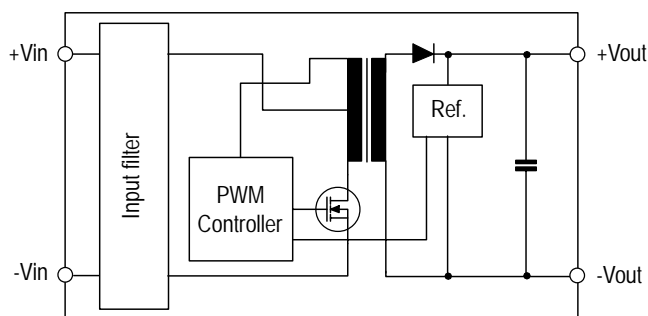
Comment :



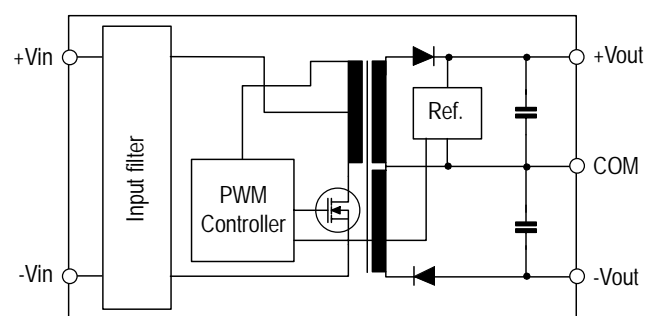
## Functional block diagram

## Blockschema

## Synoptique

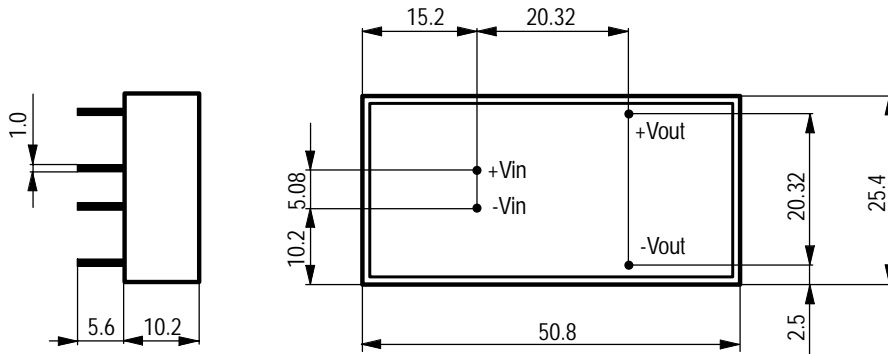


Single output converter block diagram

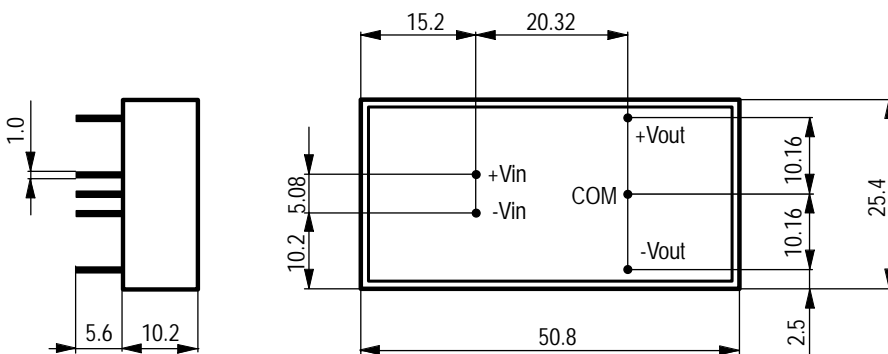


Dual output converter block diagram

View from bottom; Normal tolerance  $\pm 0.2$  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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