

# DC/DC Wide Input Converter ECW 25...30 Watt



## 25...30 Watt DC/DC Converter line with wide input range and up to 3 output voltages

DC/DC converter module with input to output isolation of 500 VDC • 4:1 Input voltage range • 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, six sides shielded • SMD technology

## 25...30 Watt DC/DC Konverter Serie mit weitem Eingangsbe- reich und bis zu 3 Ausgangs- spannungen

DC/DC Konverter-Modul mit galvanischer Trennung Eingang / Ausgang von 500 VDC • 4:1 Eingangsspannungsbereich • 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, 6seitig abgeschirmt • SMD Technologie

## Convertisseur CC/CC 25...30 Watt avec large gamme d'entrée et jusqu' à 3 tensions de sortie

Module convertisseur CC/CC avec séparation galvanique entrée sortie 500 VDC • Large gamme d'entrée 4:1 • Filtre en Pi à l'entrée • Protection courts-circuits permanents • Rendement élevé • Pas de dérive 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 nominal | Input range | Input current max. at U <sub>in</sub> | Output U <sub>out</sub> | Output I <sub>out</sub> | Operating temperature                                                        | Efficiency typ. |
|--------------|---------------|-------------|---------------------------------------|-------------------------|-------------------------|------------------------------------------------------------------------------|-----------------|
| ECW24-0525   | 24 VDC        | 9...36 VDC  | 1350 mA                               | 5.0 VDC                 | 5000 mA                 | For all models:<br><br>-25...+70°C<br>or max. case<br>temperature of<br>90°C | 77%             |
| ECW24-1230   | 24 VDC        | 9...36 VDC  | 1550 mA                               | 12.0 VDC                | 2500 mA                 |                                                                              | 81%             |
| ECW24-1530   | 24 VDC        | 9...36 VDC  | 1550 mA                               | 15.0 VDC                | 2000 mA                 |                                                                              | 81%             |
| ECW48-0525   | 48 VDC        | 18...72 VDC | 670 mA                                | 5.0 VDC                 | 5000 mA                 |                                                                              | 78%             |
| ECW48-1230   | 48 VDC        | 18...72 VDC | 770 mA                                | 12.0 VDC                | 2500 mA                 |                                                                              | 81%             |
| ECW48-1530   | 48 VDC        | 18...72 VDC | 770 mA                                | 15.0 VDC                | 2000 mA                 |                                                                              | 81%             |
| ECW24-121230 | 24 VDC        | 9...36 VDC  | 1500 mA                               | ±12.0 VDC               | ±1250 mA                |                                                                              | 84%             |
| ECW24-151530 | 24 VDC        | 9...36 VDC  | 1500 mA                               | ±15.0 VDC               | ±1000 mA                |                                                                              | 84%             |
| ECW48-121230 | 48 VDC        | 18...72 VDC | 750 mA                                | ±12.0 VDC               | ±1250 mA                |                                                                              | 84%             |
| ECW48-151530 | 48 VDC        | 18...72 VDC | 750 mA                                | ±15.0 VDC               | ±1000 mA                |                                                                              | 84%             |
| ECW24-512T30 | 24 VDC        | 9...36 VDC  | 1580 mA                               | 5.0/±12.0 VDC           | 3000/±625 mA            |                                                                              | 79%             |
| ECW24-515T30 | 24 VDC        | 9...36 VDC  | 1560 mA                               | 5.0/±15.0 VDC           | 3000/±500 mA            |                                                                              | 80%             |
| ECW48-512T30 | 48 VDC        | 18...72 VDC | 790 mA                                | 5.0/±12.0 VDC           | 3000/±625 mA            |                                                                              | 79%             |
| ECW48-515T30 | 48 VDC        | 18...72 VDC | 780 mA                                | 5.0/±15.0 VDC           | 3000/±500 mA            |                                                                              | 80%             |

## 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

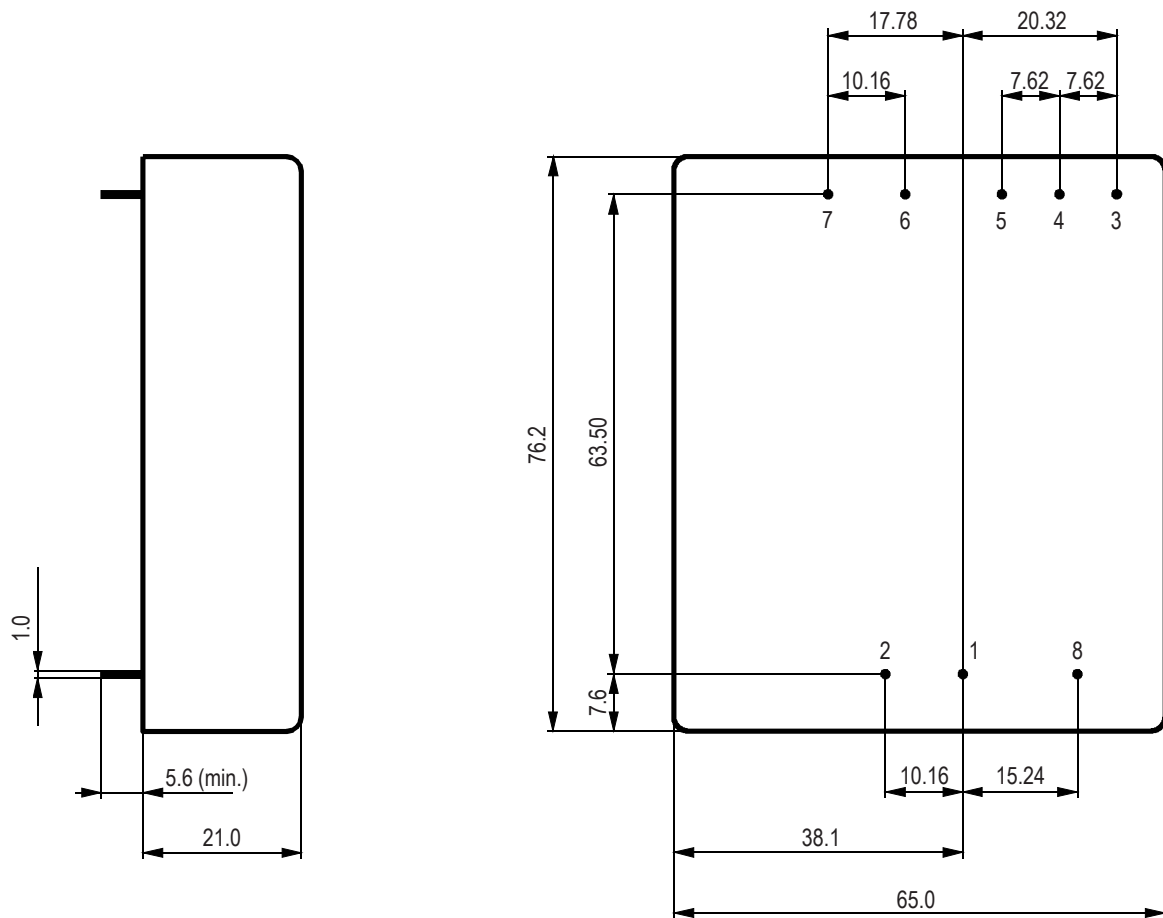
|                                       |                                        |                                                |                                                                                                       |
|---------------------------------------|----------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Output voltage accuracy               | Ausgangsspannungsgenauigkeit           | Précision tension de sortie                    | ±1% (single)<br>±1% +V <sub>out</sub> , ±3% -V <sub>out</sub> (dual)<br>±1% 5 V, ±5% 12/15 V (triple) |
| Output voltage balance                | Abgleich zwischen den Ausgängen        | Balance des sorties                            | ±1%; dual                                                                                             |
| Residual output ripple<br>(BW 20 MHz) | Ausgangsspannungsrippel<br>(BW 20 MHz) | Ondulation résiduelle de sortie<br>(BW 20 MHz) | 75 mVpp                                                                                               |
| Short circuit protection              | Kurzschlussfestigkeit                  | Protection courts-circuits                     | Continuous                                                                                            |
| No load input current                 | Leerlaufeingangsstrom                  | Courant d'entrée à vide                        | 15...25 mA                                                                                            |
| Line regulation (max...min)           | Leistungsregulierung (max...min)       | Régulation ligne (max...min)                   | ±0.2% (single and dual)<br>±1.0% (triple)                                                             |
| Load regulation (100...25%)           | Lastregulierung (100...25%)            | Régulation charge (100...25%)                  | 1.0% (single and dual)<br>5.0% (triple)                                                               |
| External trimming range               | Externer Spannungsabgleich             | Ajustement d'extérieur                         | ±10% of U <sub>out</sub> nom. (single)                                                                |
| Isolation voltage                     | Isolationsspannung                     | Tension d'isolement                            | 500 VDC                                                                                               |
| Isolation resistance                  | Isolationswiderstand                   | Résistance d'isolement                         | > 1 GOhm                                                                                              |
| Switching frequency                   | Schaltfrequenz                         | Fréquence de découpage                         | typ. 200 kHz                                                                                          |
| MTBF (MIL-HB 217E at 25°C)            | MTBF (MIL-HB 217E bei 25°C)            | MTBF (MIL-HB 217E à 25°C)                      | >600'000 hrs.                                                                                         |
| Temperature coefficient               | Temperaturkoeffizient                  | Coefficient de température                     | typ. ±0.02% per °C                                                                                    |
| EMI / RFI                             | EMI / RFI                              | EMI / RFI                                      | Metal case with non conductive<br>base plate, six sides shielded<br>EN55022 Class A                   |
| Storage temperature                   | Lagertemperatur                        | Température de stockage                        | -55...+105°C                                                                                          |
| Soldering information                 | Lötinformationen                       | Information de soudage                         | 275°C for 10 sec.                                                                                     |
| Weight                                | Gewicht                                | Poids                                          | approx. 190 g                                                                                         |

## TRIPLE OUTPUT LOADING TABLE FOR ECW 25..30 WATT

| Pin No. | Uout        | Iout min.* | Iout nom. |
|---------|-------------|------------|-----------|
| 6       | +5 V        | 0.5 A      | 3.0 A     |
| 3 & 5   | +12 & -12 V | 0.1 A      | 0.625 A   |
| 3 & 5   | +15 & -15 V | 0.1 A      | 0.500 A   |

\* Min. current on each output is required to maintain specified regulation.

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



Pin Connection

| Pin | Single      | Dual    | Triple     |
|-----|-------------|---------|------------|
| 1   | +Input      | +Input  | +Input     |
| 2   | -Input      | -Input  | -Input     |
| 3   | +Sense      | +Output | +Output    |
| 4   | Output Trim | Common  | Common     |
| 5   | -Sense      | -Output | -Output    |
| 6   | +Output     | No Pin  | +5V Output |
| 7   | -Output     | No Pin  | No Pin     |
| 8   | Inhibit     | Inhibit | Inhibit    |

Inhibit (Remote On/Off Control)

|                            |                            |
|----------------------------|----------------------------|
| Logic Compatibility.....   | CMOC or Open Collector TTL |
| Output-ON.....             | >+4.5 VDC or Open Circuit  |
| Output-OFF.....            | <1.8 VDC                   |
| Shutdown Idle Current..... | 10 mA                      |
| Input Resistance.....      | 100 KOhms (0...9 VDC)      |
| Control Common.....        | Referred to Input Minus    |

The modules are cleanable with the today's known and in the electronics industry usually used products.

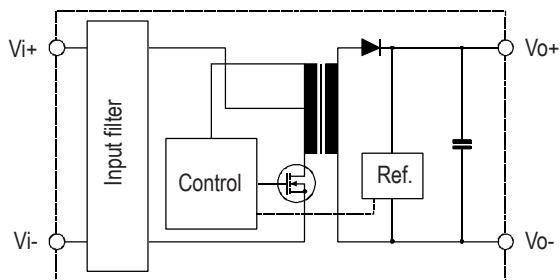
Due to the different cleaning processes and new available products, we highly recommend to do a compatibility test when using the converters the first time.

Die Module sind waschbar mit den heute bekannten und in der Elektronikindustrie üblichen Reinigungsmitteln.

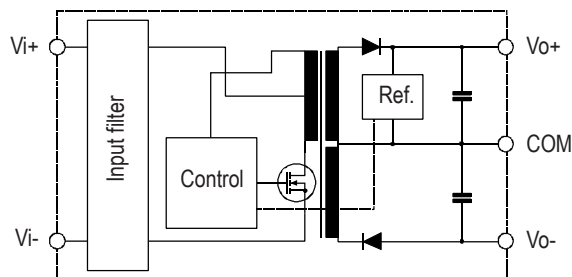
Bedingt durch die verschiedenen Reinigungsprozesse und neu auf den Markt kommende Mittel, raten wir dringend beim Ersteinsatz der Konverter eine Verträglichkeitsprüfung vorzunehmen.

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

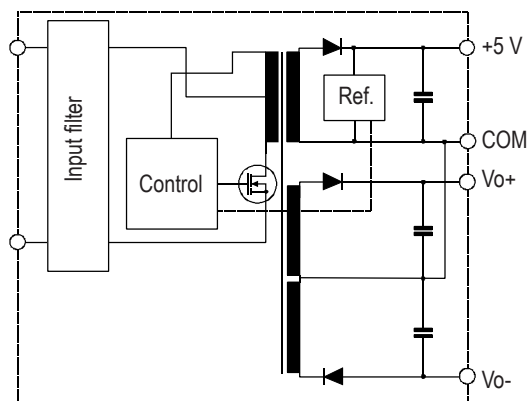
Dû aux différents processus de lavage et aux nouveaux détergents disponibles sur le marché, il est strictement recommandé de faire un test de compatibilité avant la première utilisation.



Single output converter block diagram



Dual output converter block diagram



Triple output converter block diagram

## Application notes

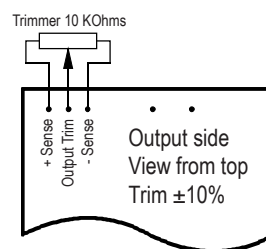
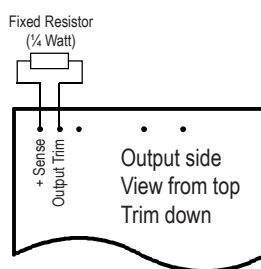
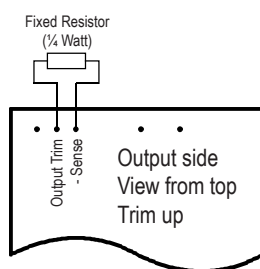
## Anwendungshinweise

## Note d'application

The output voltage of a single type converter may be externally adjusted within  $\pm 10\%$  of nominal output voltage by one of the following methods:

Die Ausgangsspannung eines Konverters mit einem Ausgang kann bei Bedarf extern  $\pm 10\%$  der nominalen Spannung abgeglichen werden, mit einer der folgenden Möglichkeiten:

Les modèles à sortie simple vous permettent d'ajuster la tension de sortie de  $\pm 10\%$  par une des méthodes suivantes:



**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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