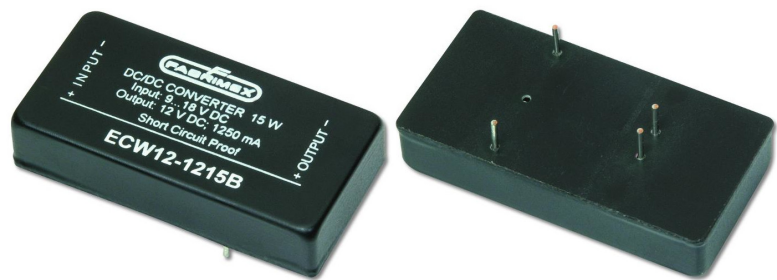


DC/DC Wide Input Converter ECW 15B Series



- * I/O isolation of 500 VDC
- * Pi-filter at input
- * Continuous short circuit proof
- * No derating up to 71°C
- * Low output ripple and noise
- * Low silhouette
- * Metal case with non conductive base plate, six sides shielded
- * UL60950-1 registered
- * Safety Meets IEC/EN/UL 62368-1



Product Range

Model	Input		I _{in} @ U _{in} nom.		U _{out}	Output I _{out} max.	power	Efficiency typ.	Max. capacity
	nominal	range	full load	no load					
Single									
ECW12-0315B	12Vdc	9...18Vdc	1.086A	20mA	3.3Vdc	3.0A	10W	76%	3'000uF
ECW12-0515B	12Vdc	9...18Vdc	1.650A	20mA	5.1Vdc	3.0A	15W	78%	3'000uF
ECW12-1215B	12Vdc	9...18Vdc	1.570A	20mA	12Vdc	1.25A	15W	82%	1'250uF
ECW12-1515B	12Vdc	9...18Vdc	1.570A	20mA	15Vdc	1.0A	15W	82%	1'000uF
ECW24-0315B	24Vdc	18...36Vdc	0.543A	20mA	3.3Vdc	3.0A	10W	76%	3'000uF
ECW24-0515B	24Vdc	18...36Vdc	0.800A	20mA	5.1Vdc	3.0A	15W	80%	3'000uF
ECW24-1215B	24Vdc	18...36Vdc	0.780A	20mA	12Vdc	1.25A	15W	82%	1'250uF
ECW24-1515B	24Vdc	18...36Vdc	0.780A	20mA	15Vdc	1.0A	15W	82%	1'000uF
ECW48-0315B	48Vdc	36...72Vdc	0.272A	15mA	3.3Vdc	3.0A	10W	76%	3'000uF
ECW48-0515B	48Vdc	36...72Vdc	0.390A	15mA	5.1Vdc	3.0A	15W	80%	3'000uF
ECW48-1215B	48Vdc	36...72Vdc	0.380A	15mA	12Vdc	1.25A	15W	83%	1'250uF
ECW48-1515B	48Vd	36...72Vdc	0.380A	15mA	15Vdc	1.0A	15W	83%	1'000uF

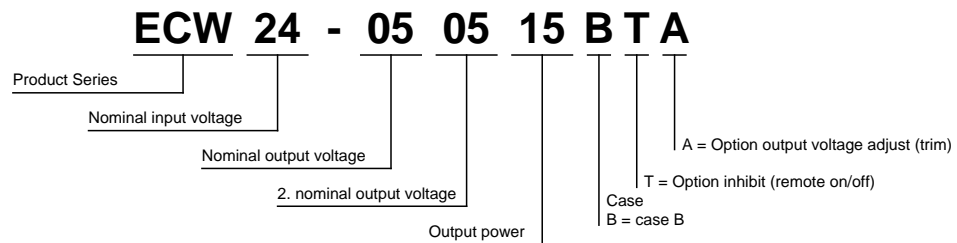
Dual

ECW12-050515B	12Vdc	9...18Vdc	1.570A	30mA	+5.1Vdc -5.1Vdc	+1.5A -1.5A	7.5W 7.5W	80%	1'500uF 1'500uF
ECW12-121215B	12Vdc	9...18Vdc	1.570A	30mA	-12Vdc -12Vdc	+0.625A -0.625A	7.5W 7.5W	83%	625uF 625uF
ECW12-151515B	12Vdc	9...18Vdc	1.570A	30mA	+15Vdc -15Vdc	+0.5A -0.5A	7.5W 7.5W	83%	500uF 500uF
ECW24-050515B	24Vdc	18...36Vdc	0.780A	25mA	+5.1Vdc -5.1Vdc	+1.5A -1.5A	7.5W 7.5W	81%	1'500uF 1'500uF
ECW24-121215B	24Vdc	18...36Vdc	0.780A	25mA	+12Vdc -12Vdc	+0.625A -0.625A	7.5W 7.5W	83%	625uF 625uF
ECW24-151515B	24Vdc	18...36Vdc	0.780A	25mA	+15Vdc -15Vdc	+0.5A -0.5A	7.5W 7.5W	83%	500uF 500uF
ECW48-050515B	48Vdc	36...72Vdc	0.380A	20mA	+5.1Vdc -5.1Vdc	+1.5A -1.5A	7.5W 7.5W	83%	1'500uF 1'500uF
ECW48-121215B	48Vdc	36...72Vdc	0.380A	20mA	+12Vdc -12Vdc	+0.625A -0.625A	7.5W 7.5W	83%	625uF 625uF
ECW48-151515B	48Vdc	36...72Vdc	0.380A	20mA	+15Vdc -15Vdc	+0.5A -0.5A	7.5W 7.5W	83%	500uF 500uF

Notes:

Measured at nominal input voltage

Nomenclature



Specifications

All values refer to an ambient temperature of 25°C and nominal rated values where nothing else is specified.

Input Specifications

Characteristic	Conditions	min	typ	max	unit
U_{IN} Input voltage		See	product	range	Vdc
U_{UVLO} Under voltage lockout					Vdc
Max. input current at full load		See	product	range	A
No load input current		See	product	range	mA
Inrush current					A ² s
Input surge voltage					Vdc

Output Specifications

Characteristic	Conditions	min	typ	max	unit
U_{ACC} Output voltage accuracy			±1		%
Output voltage adjust			single: ±10		%
Line regulation			±0.2		%
Load regulation	25% / 100% step load change		±1		%
Cross regulation					%
Load transient recovery time	25% / 100% step load change		<500		us

	Load transient error band			±1		%
	Temperature coefficient			±0.02		%/K
	Ramp up time					ms
	Start up time			20		ms
	Ripple and noise	BW = 20MHz	75			mVpp
	Current limit					% Inom
	Over voltage protection					% Unom
	Short circuit protection					% Inom
	Short circuit characteristic		continuous			

General Specifications

Characteristic		Conditions	min	typ	max	unit
U _{ISO}	Isolation voltage		500			Vdc
R _{ISO}	Isolation resistance		> 1G			Ohm
C _{ISO}	Isolation capacity		typ. 500			pF
F _{SW}	Switching frequency		300			kHz
	Approvals					
	Safety Approvals		UL 60950			
	MTBF		>1'500'000			h
	Case material		Copper, black coated			
	Compound material		UL 94V-0			
	PCB material		UL 94V-0			
	Weight		32			gr
	Dimensions		50.8 x 25.4 x 10.2			mm
	Soldering infos		275°C for 10			s

EMC Specifications

Characteristic		Conditions				
	EMC conducted	See EMC information	EN55022/11 Class A			

Environmental Specifications

Characteristic		Conditions	min	typ	max	unit
T _{AMB}	Operation temperature		-25...+71			°C
T _{AMB}	Storage temperature		-40...+100			°C
T _{SD}	Thermal shutdown range		-			°C

EMC information

EMC emissions conducted, EN55022/11 Class A, Example:

Electro-Metrics

EMV Messung

Date : 10/18/99 Time : 09:40:14.57
Technician : U. Luessi Test Equip. : EMC-30 MKIV
Test Method : CONDUCTED EMISSION Test Number : 1
Equipment : ECW24-0515B Sensor Loc. : NA
Mode of Op. : Normal operation Sensor Pol. : positiv
Serial No. : 9920 Ext. Atten. : 0 dB

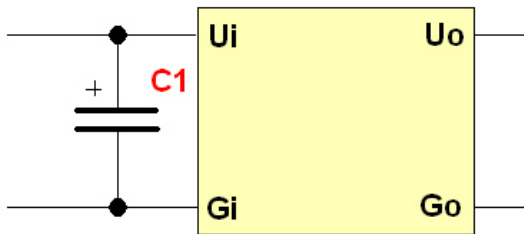
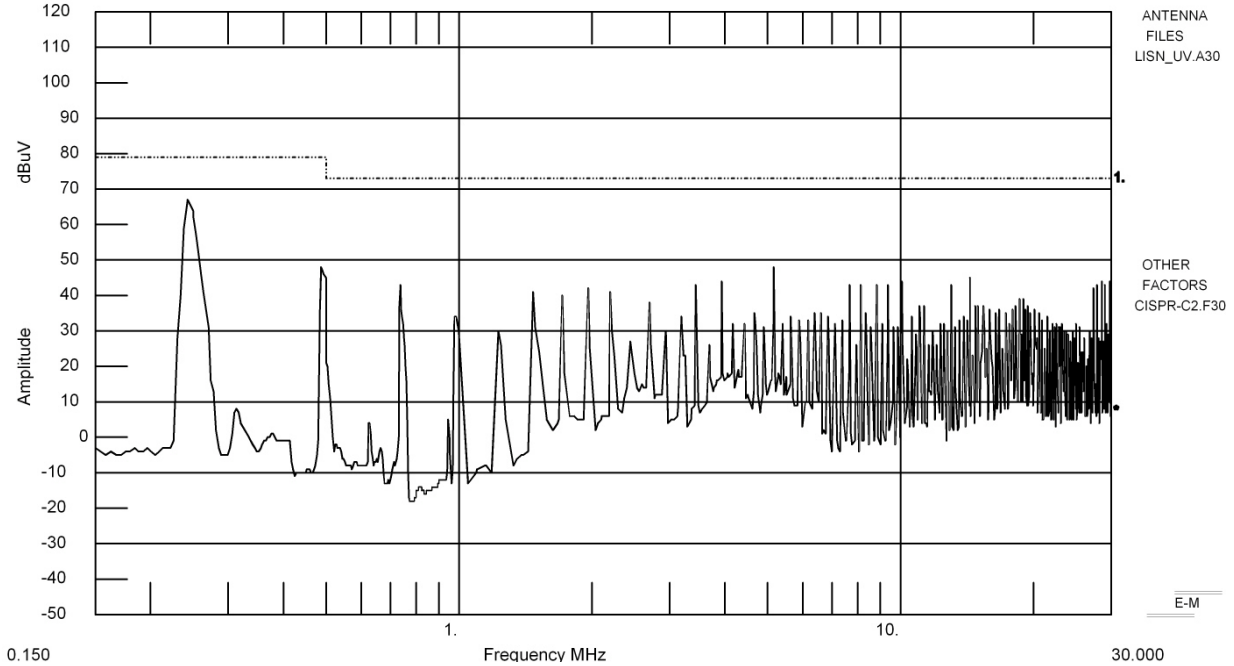
EMC-30 SETTINGS

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

SPECS

1) EN 55022 Class A QuasiPeak

Comment : 24DC input voltage with 220uF capacitor near input



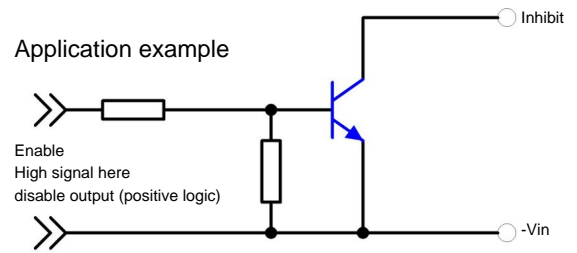
This was achieved with the following filter:
 $C1 = 220\mu\text{F}$

Inhibit

The ECW 15B Series allows the user to switch the module on and off electronically by inhibit on/off feature.

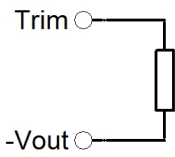
Logic table (inhibit pin)

Logic state	Positive logic
Logic low	Module off
Logic high	Module on

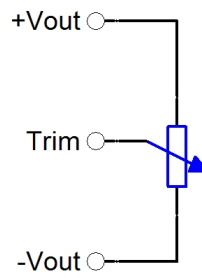
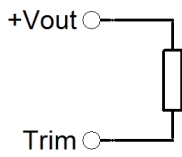


Trimming

Trim up



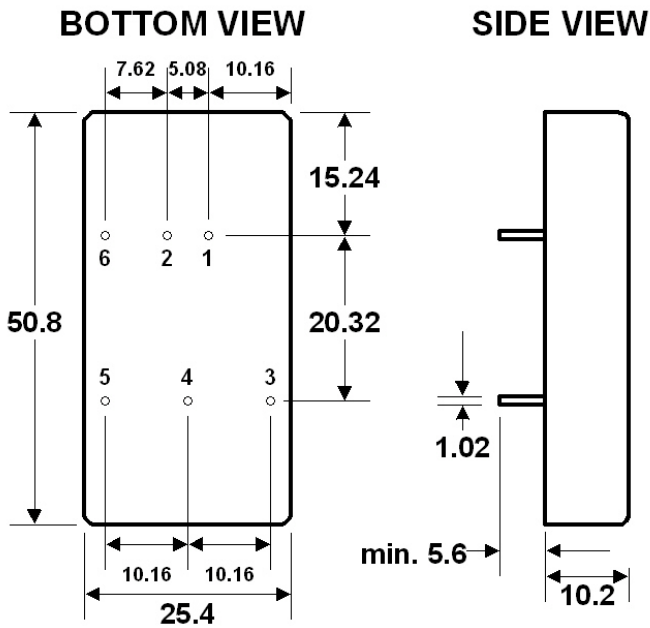
Trim down



Case

Normal tolerance 1/10 ± 0.5 mm, 1/100 ± 0.25 mm; Pin tolerance ± 0.05 mm diameter

NP = No pin, NC = Not connected, NA = Not available for electrical contact, do not connect, (opt) = optional



Pin	Single	Dual	Pin
1	+Vi	+Vi	1
2	-Vi	-Vi	2
3	+Vo	+Vo	3
4	Trim (opt)	Com	4
5	-Vo	-Vo	5
6	on/off (opt)	on/off (opt)	6

Cleaning

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.

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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The logo for EXISTA, featuring the word "EXISTA" in a bold, blue, sans-serif font. The letter "E" is stylized with a horizontal bar that extends to the right, creating a unique graphic element.