

## 50 WBB 024 M12 W00

$V_{I\ nom} = 24\ V$        $V_{O\ nom} = 12\ V$        $I_{O\ nom} = 4.1\ A$

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>INPUT:</b>						
$V_{IN}$	Input voltage range	Continuously	16.8		30.0	$V_{DC}$
$V_{IN\ Dyn}$	Input voltage range dynamic	$V_{IN} = 14.4\ V \dots 16.8\ V$ for $t \leq 0.1\ s$ $V_{IN} = 30.0\ V \dots 33.6\ V$ for $t \leq 1\ s$	14.4		33.6	$V_{DC}$
$V_{IN\ Min}$	Converter shutdown		12.0		14.3	$V_{DC}$
$V_{IN\ Max}$	Converter shutdown		34.0		37.0	$V_{DC}$
$I_{IN}$	Input current	no load			40	mA
		Nominal load		2.4	4.9	A
		Nominal load	$V_{IN} = 33.6\ V, I_{OUT} = 0\ A$ $V_{IN} = 24.0\ V, I_{OUT} = 4.1\ A$ $V_{IN} = 14.4\ V, I_{OUT} = 4.1\ A$			A
	Input current integral	$V_{IN} = 33.6\ V$			10	$A^2s$
$I_{IN\ Max}$	Switch on current at $V_{In} \geq V_{In\ min}$	$I_{OUT} = 4.1\ A$ $\Delta t \leq 200\ ms$			5	A
	Input Fuse		10 A Pico Fuse			
$C_{IN}$	Converter input capacitance			30	35	$\mu F$
	External Line Inductance				10	$\mu H$
	Reverse input protection	parallel diode + input fuse	1.5KE36A			

### OUTPUT: Power Unit

$16.8\ V \leq V_{IN} \leq 30.0\ V$

$P_{OUT\ Nom}$	Output power			50		W
$V_{OUT\ Nom}$	Output voltage adjustment, factory set		+ 11.9	+ 12.0	+ 12.2	V
$\Delta V_{OUT}$	Load regulation static	$0\ A \leq I_{OUT} \leq 4.1\ A$ $T_A = -40^\circ C \dots +70^\circ C$	$\pm 2.5\ \% V_{out\ nom.}$			V
$\Delta V_{O\ dyn.}$	Load regulatin dynamic	Pulse load: $20 - 80 - 20\ \% \times I_{OUT}$			$\pm 200$	mV
$t_{dyn}$	Response time	Pulse load: $20 - 80 - 20\ \% \times I_{OUT}$		1	2	ms
$V_{O\ rms}$	Ripple	Nominal load BW 300 kHz		100	200	mV
$V_{O\ pp}$	Noise	Nominal load BW 20 MHz			250	mV
$t_{on}$	Turn on time $V_o$	$0\ A \leq I_{OUT} \leq 4.1\ A$ resistive load	25		200	ms
$t_h$	Hold Up Time Option class S2 10ms	$0\ A \leq I_{OUT} \leq 4.1\ A$	10			ms
	Overvoltage Protection	$0\ A \leq I_{OUT} \leq 4.1\ A$	Transil Diode 1,5KE15A			
$I_{OUT}$	Output current			4.1		A
	Output current limitation		4.2			A
$I_{AK}$	Output short circuit current	short circuit between + $V_o$ and - $V_o$			6.0	A
	Sense Lines	no				
$C_o$	Converter Capacitance	Output		8.8		mF

### Signals

Signals	Input	LED yellow
	Output	LED yellow

### GENERAL SPECIFICATIONS

f	Switching frequency	$V_{IN} = 24\ V, I_{OUT} = 4.1\ A$		100		kHz
$\eta$	Efficiency	$P_{OUT} \geq 0.7 \times P_{OUT\ Nom}$	84	87		%
	MTBF (SN 29500)	$V_{IN} = 24\ V, I_{OUT} = 4.1\ A, T_A = +40^\circ C$		500 000		h
	No load, short circuit proof		Continuously			

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>SAFETY / DIMENSIONS</b>						
	Creepage, Clearance for PD2 and OV 2 PCB: FR4, V0, TG = +140°C	Input – Output Input – Case Output – Case	2.0 2.0 1.0			mm mm mm
	Converter Dielectric Strength Test each unit ramp function 2 s – 3 s – 2 s	Input – Output Input – Case Output – Case			2'100 2'100 750	VDC VDC VDC
	Connector	Input, Output, SE: Combicon 5-pins Required femal plug:	DFK-MSTBA 2.5/5-GF-5.08 MSTB 2.5 HC/5-STF-5.08			
	Pin Assignment		see drawing			
	Protection Class, Protection degree		I, IP 20			
	Dimensions see drawing	w x h x d	110 x 170 x 52			mm
	Assembling	Wall mounting with screws	4 x M4			
	Weight			600		g

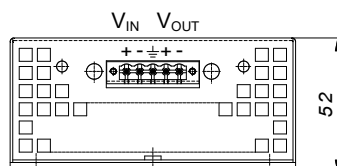
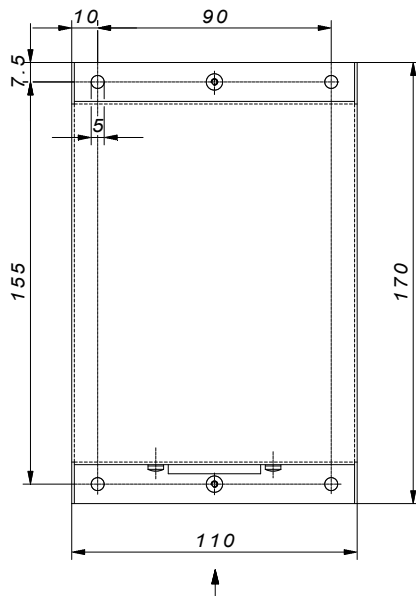
<b>ENVIRONMENTAL CONDITIONS</b>						
T <sub>A</sub>	Operating Range	Continuously EN 50155 class Tx for 10 Min.	- 40 - 40		+ 70 + 85	°C °C
T <sub>Sto</sub>	Storage Range		- 40		+ 85	°C
	Cooling		convection			
	Humidity	EN 50155, IEC 60571	75% averaged year, 95% 30 days			
	Vibration / Shock	IEC 61373, IEC 68-2-27, EN 50155 Cat. I 3 shocks each Axis	50 m / s <sup>2</sup> , 30 ms			

<b>EMV</b>			
	Emission	Line conducted and radiated	EN 50121 - 3 - 2: 2007
	Immunity	ESD EN 61000 - 4 - 2	6 kV / 8 kV performance criteria - B -
		High Frequency Field EN 61000 - 4 - 3	20 V / m 80 MHz ... 1 GHz performance criteria - A -
		Burst EN 61000 - 4 - 4	Level 3 asym., sym. performance criteria - A -
		Surge EN 61000 - 4 - 5	2 kV asym. / 1 kV sym. R <sub>i</sub> = 42 Ω performance criteria - B -
		HF – Current Injection EN 61000 - 4 - 6	10 V <sub>eff</sub> , R <sub>i</sub> = 150 Ω performance criteria - A -

<b>STANDARDS</b>						
Applied Standards:	EN 50155: 2008	BN 411 002	EN 50124 - 1: 2006	EN 50121 - 3 - 2: 2007	IEC 60571	
	SN 29 500	EN 50 121 - 1	EN 50125 - 1	EN 60068 - 2 - 6, 2...27	EN 61000 - 4 - 2...6	
	IEC 571	IEC 61373	EN 60721 - 3 - 5	EN 61373	EN 60529	

Technical specifications valid for: - 40° C ≤ T<sub>A</sub> ≤ + 70° C, 16.8 V ≤ V<sub>IN</sub> ≤ 30.0 V, unless otherwise noted.

### Dimensions (in mm) and pin assignment



View in direction of the arrow

### Order Key

W00	class S1 0ms
W01	class S2 10ms
W10	with mating connector, class S1
W11	with mating connector, classe S2