

50 WBB 024 M24 □ □ □

$V_{I\text{ nom}} = 24\text{ V}, 36\text{ V}$ $V_{O\text{ nom}} = 24\text{ V}$ $I_{O\text{ nom}} = 2.1\text{ A}$

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
INPUT:						
V_{IN}	Input voltage range	Continuously	16.8		45.0	V
$V_{IN\text{ Dyn}}$	Input voltage range dynamic	$V_{IN} = 43.2\text{ V} \dots 50.4\text{ V}$ for $t \leq 0.1\text{ s}$ $V_{IN} = 137.5\text{ V} \dots 154.0\text{ V}$ for $t \leq 1\text{ s}$	14.4		50.4	V
$V_{IN\text{ Min}}$	Converter shutdown				14.2	V
$V_{IN\text{ Max}}$	Converter shutdown		51		54	V
I_{IN}	Input current	no load Nominal load Nominal load	$V_{IN} = 50.4\text{ V}, I_{OUT} = 0\text{ A}$ $V_{IN} = 24.0\text{ V}, I_{OUT} = 2.1\text{ A}$ $V_{IN} = 14.4\text{ V}, I_{OUT} = 2.1\text{ A}$	2.4	25	mA
					4.1	A
					5	A ² s
$I_{IN\text{ Max}}$	Switch on current at $V_{IN} \geq V_{IN\text{ min}}$	$I_{OUT} = 2.1\text{ A}$ $\Delta t \leq 200\text{ ms}$			6	A
	Input Fuse		10 A Pico Fuse			
C_{IN}	Converter input capacitance			60	70	µF
	External Line Inductance				25	µH
	Reverse input protection	parallel diode + input fuse	1.5KE51A			

OUTPUT: Power Unit

$P_{OUT\text{ Nom}}$	Output power	$14.4\text{ V} \leq V_{IN} \leq 50.4\text{ V}$		50		W
$V_{OUT\text{ Nom}}$	Output voltage adjustment, factory set	$16.8\text{ V} \leq V_{IN} \leq 45.0\text{ V}$	+ 23.9	+ 24.0	+ 24.2	V
ΔV_{OUT}	Load regulation static	$14.4\text{ V} \leq V_{IN} \leq 50.4\text{ V}$ $0\text{ A} \leq I_{OUT} \leq 2.1\text{ A}$ $T_A = -40^\circ\text{C} \dots +70^\circ\text{C}$	± 2.5 % $V_{OUT\text{ nom}}$			V
$\Delta V_{O\text{ dyn}}$	Load regulation dynamic	$16.8\text{ V} \leq V_{IN} \leq 50.4\text{ V}$ Pulse load: 20 - 80 - 20 % x I_{OUT}			± 250	mV
t_{dyn}	Response time	$16.8\text{ V} \leq V_{IN} \leq 50.4\text{ V}$ Pulse load: 20 - 80 - 20 % x I_{OUT}		1	2	ms
$V_{O\text{ rms}}$	Ripple	$16.8\text{ V} \leq V_{IN} \leq 50.4\text{ V}$ Nominal load BW 300 kHz		100	200	mV
$V_{O\text{ pp}}$	Noise	$14.4\text{ V} \leq V_{IN} \leq 50.4\text{ V}$ Nominal load BW 20 MHz			250	mV
t_{on}	Turn on time V_o	$16.8\text{ V} \leq V_{IN} \leq 45.0\text{ V}, 0\text{ A} \leq I_{OUT} \leq 2.1\text{ A}$ resistive load	25		200	ms
t_h	Hold Up Time	$16.8\text{ V} \leq V_{IN} \leq 137.5\text{ V}$ $0\text{ A} \leq I_{OUT} \leq 2.1\text{ A}$	0			ms
	Overvoltage Protection	$14.4\text{ V} \leq V_{IN} \leq 50.4\text{ V}$ $0\text{ A} \leq I_{OUT} \leq 2.1\text{ A}$	Transil Diode 1.5KE27A			
I_{OUT}	Output current	$14.4\text{ V} \leq V_{IN} \leq 50.4\text{ V}$		2.1		A
	Output current limitation	$14.4\text{ V} \leq V_{IN} \leq 50.4\text{ V}$	2.2			A
I_{AK}	Output short circuit current	short circuit between + V_o and - V_o $14.4\text{ V} \leq V_{IN} \leq 50.4\text{ V}$			4.2	A
	Sense Lines	No				
C_o	Converter Capacitance	Output		10		mF

Signals

	Signals	Input Output	LED yellow LED yellow	
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GENERAL SPECIFICATIONS

f	Switching frequency	$V_{IN} = 24\text{ V}, I_{OUT} = 2.1\text{ A}$		80		kHz
η	Efficiency	$P_{OUT} \geq 0.7 \times P_{OUT\text{ Nom}}$	87	91		%
	MTBF (SN 29500)	$V_{IN} = 24\text{ V}, I_{OUT} = 2.1\text{ A}, T_A = +40^\circ\text{C}$		750 000		h
	No load, short circuit proof		Continuously			

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
SAFETY / DIMENSIONS						
	Creepage, Clearance PCB FR4, V0, PD2	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			2100 2100 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 wall or Din rail mounting TS35	110 x 170 x 52			mm
	Assembling	Wall mounting with screws	4 x M4			
	Weight			750		g

ENVIRONMENTAL CONDITIONS						
T _A	Operating Range	Continuously EN 50155 class Tx for 10 Min.	- 40 - 40		+ 70 + 85	°C °C
T _{Sto}	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 ² , 30 ms			

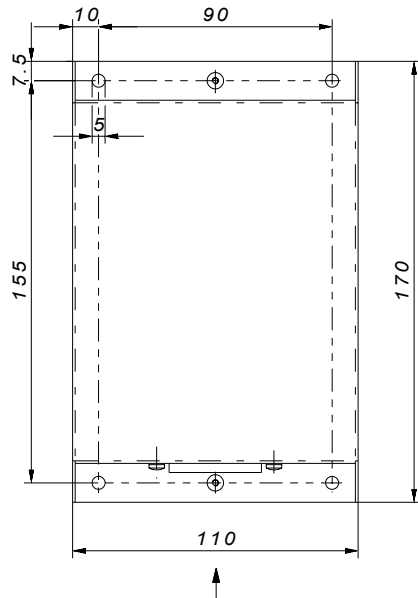
EMV			
	Emission	Line conducted and radiated	EN 50121 - 3 - 2: 2006
	Immunity	ESD EN 61000 - 4 - 2	6 kV / 8 kV performance criteria - B -
		High Frequency Field EN 61000 - 4 - 3	20 V / m 80 MHz ... 1 GHz performance criteria - A -)
		Burst EN 61000 - 4 - 4	Level 3 asym., sym. performance criteria - A -
		Surge EN 61000 - 4 - 5	2 kV asym. / 1 kV sym. R _i = 42 Ω, perf. criteria - A -
		HF – Current Injection EN 61000 - 4 - 6	10 V _{eff} , R _i = 150 Ω performance criteria - A -

STANDARDS						
Applied Standards:	EN 50155: 2006	BN 411 002	EN 50124 - 1: 2006	EN 50121 - 3 - 2: 2007	IEC 60571	
	SN 29 500	prEN 50 121 - 1	prEN 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_A ≤ + 70° C, 16.8 V ≤ V_{IN} ≤ 45.0 V, unless otherwise noted.

*) 1400 MHz – 2100MHz 10V/m 2100MHz – 2500MHz 5V/m

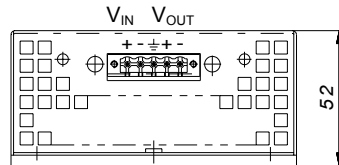
Dimensions (in mm) and pin assignment



Order Code:

50 WBB 024 M24 **select:**

- 00** = standard
- 10** = with femal counter plug
- W** = Wall mounting
- H** = Din rail mounting TS35



View in direction of the arrow

Din rail mounting TS35
also turned by 90 degree possible
w x h x d : 170 x 110 x 52 mm