

DC/DC Converter

25 Watt

25 GRB 036 M24 □ □ □

$V_{I\text{ nom}} = 24\text{ V}, 36\text{ V}$

$V_{O\text{ nom}} = 24\text{ V}$ $I_{O\text{ nom}} = 1\text{ A}$

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
INPUT						
V_{IN}	Input voltage range	Continuously	16.8		45	V
$V_{IN\text{ Dyn}}$	Input voltage range dynamic	$V_{IN} = 14.4\text{ V} \dots 16.8\text{ V}$ for $t \leq 0.1\text{ s}$ $V_{IN} = 45\text{ V} \dots 50.4\text{ V}$ for $t \leq 1\text{ s}$	14.4		50.4	V
$V_{IN\text{ min}}$	Converter shutdown				14.0	V
$V_{IN\text{ max}}$	Converter shutdown		51			V
I_E	Input current no load	$V_{IN} = 50.4\text{ V}, I_{OUT} = 0\text{ A}$		0.8	30	mA
	Nominal load	$V_{IN} = 36.0\text{ V}, I_{OUT} = 1\text{ A}$			2.1	A
	Nominal load	$V_{IN} = 14.4\text{ V}, I_{OUT} = 1\text{ A}$			10	A ² s
	Input current integral	$V_{IN} = 50.4\text{ V}$				
$I_{IN\text{ max}}$	Switch on current at $V_{IN} \geq V_{IN\text{ min}}$	$I_{OUT} = 1\text{ A}$ $\Delta t \leq 100\text{ ms}$			4	A
	Input Fuse		10 A Picofuse			
C_{IN}	Converter input capacitance				10	μF
	External Line Inductance				10	μH
	Reverse input protection	parallel diode + input fuse	1.5KE62A			

OUTPUT: Power Unit

$P_{OUT\text{ Nom}}$	Output power	$14.4\text{ V} \leq V_{IN} \leq 50.4\text{ V}$		25		W
$V_{OUT\text{ Nom}}$	Output voltage adjustment, factory set	$16.8\text{ V} \leq V_{IN} \leq 45\text{ V}$	23.9	24.0	24.1	V
ΔV_{OUT}	Load regulation static	$14.4\text{ V} \leq V_{IN} \leq 50.4\text{ V}$ $0\text{ A} \leq I_{OUT} \leq 1\text{ A}$ $T_A = -40^\circ\text{C} \dots +70^\circ\text{C}$	$\leq 2.5\% V_{OUT\text{ nom}}$			V
$\Delta V_{O\text{ dyn}}$	Load regulation dynamic	$14.4\text{ V} \leq V_{IN} \leq 50.4\text{ V}$ Pulse load: 20 - 80 - 20 % x I_{OUT}			200	mV
t_{dyn}	Response time	$14.4\text{ V} \leq V_{IN} \leq 50.4\text{ V}$ Pulse load: 20 - 80 - 20 % x I_{OUT}		1	2	ms
$V_{O\text{ rms}}$	Ripple	$14.4\text{ V} \leq V_{IN} \leq 50.4\text{ V}$ Nominal load BW 300 kHz		150	250	mV
$V_{O\text{ pp}}$	Noise	$14.4\text{ V} \leq V_{IN} \leq 50.4\text{ V}$ Nominal load BW 20 MHz			200	mV
t_{on}	Turn on time V_o	$50.4\text{ V} \leq V_{IN} \leq 45\text{ V}, 0\text{ A} \leq I_{OUT} \leq 1\text{ A}$ resistive load			100	ms
t_h	Hold Up Time	$50.4\text{ V} \leq V_{IN} \leq 45\text{ V}$ $0\text{ A} \leq I_{OUT} \leq 1\text{ A}$	-	-	-	ms
	Overvoltage Protection	$14.4\text{ V} \leq V_{IN} \leq 50.4\text{ V}$ $0\text{ A} \leq I_{OUT} \leq 1\text{ A}$	Transil Diode 1.5KE27A			V
I_{OUT}	Output current	$14.4\text{ V} \leq V_{IN} \leq 50.4\text{ V}$		1.0		A
	Output current limitation	$14.4\text{ V} \leq V_{IN} \leq 50.4\text{ V}$	1.1			A
I_{AK}	Output short circuit current	short circuit between + V_o and - V_o $14.4\text{ V} \leq V_{IN} \leq 50.4\text{ V}$			2	A
C_o	Converter Capacitance			1		mF

OUTPUT: Signals

Signal		LED yellow	
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GENERAL SPECIFICATIONS

f	Switching frequency	$V_{IN} = 36\text{ V}, I_{OUT} = 1\text{ A}$		75		kHz
η	Efficiency	$P_{OUT} \geq 0.7 \times P_{OUT\text{ Nom}}$		88		%
	MTBF (SN 29500)	$V_{IN} = 36\text{ V}, I_{OUT} = 1\text{ A}, T_A = +40^\circ\text{C}$		500 000		h
	No load, short circuit proof		Continuously			

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SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
SAFETY / DIMENSIONS						
	Creepage, Clearance PCB, FR4, V0	Input – Output Input – Case Output – Case	2.0 1.0 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 1500 500	V V V
	Connector	Input: + V _{IN} und – V _{IN} Output: + V _{OUT} und – V _{OUT} PE			terminal 6 pol. 1 mm ² 1,5 mm ²	
	Protection Class, Protection degree				I, IP 40	
	Dimensions <i>see drawing</i>	w x h x d Wall mounting w x h x d Din rail mounting TS35			98 x 104.6 x 38 70 x 98 x 39	mm mm
	Assembling	Wall mounting Din rail mounting			4 x M4 with Clip for TS 35	
	Weight			210		g

ENVIRONMENTAL CONDITIONS						
T _A	Operating Range	Continuously EN 50155 class T3	- 40		+ 70	°C
T _{Sto}	Storage Range		- 40		+ 70	°C
	Cooling				convection	
	Humidity	EN 50155, IEC 60571			75% averaged year, 95% 30 days	
	Vibration / Shock Valid only for wall mounting	IEC 61373, IEC 68-2-27, BN 411002 Cat. I 3 shocks each Axis			50 m / s ² , 30 ms	

EMC			
	Emission	Line conducted and radiated	EN 50121 - 3 - 2: 2001
	Immunity	ESD EN 61000 - 4 - 2	6 kV / 8 kV performance criteria - B -
		High Frequency Field EN 61000 - 4 - 3	10 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 -

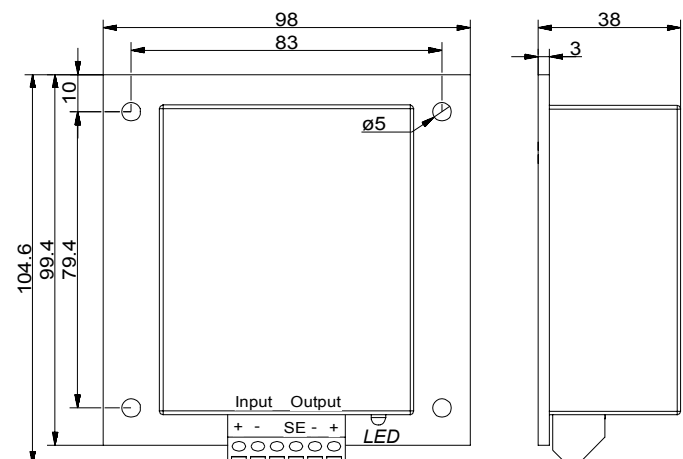
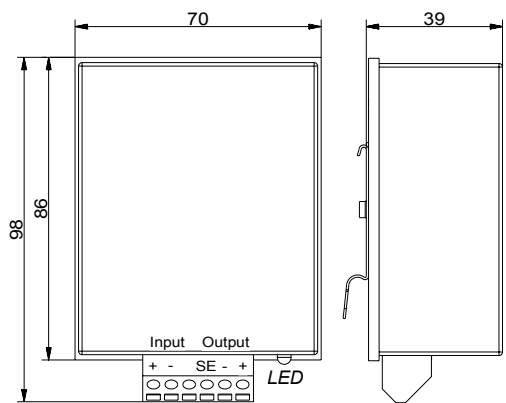
STANDARDS						
Applied Standards:	EN 50155: 2000	BN 411 002	EN 50124 - 1: 1996	EN 50121 - 3 - 2: 2001	IEC 60571	
	SN 29500	prEN 50121 - 1	prEN 50125 - 1	EN 60068 - 2 - 6, 2...27	EN 61000 - 4 - 2...6	
	IEC 571	IEC 61373: 1999	EN 60721 - 3 - 5	EN 61373 : 1999	EN 60529	

Technical specifications valid for: - 40° C ≤ T_A ≤ + 70° C, 50.4 V ≤ V_{IN} ≤ 45 V, unless otherwise noted.

Dimensions (in mm) and pin assignment:

Din rail mounting: 25 GRB 036 M24 H20

Wall mounting: 25 GRB 036 M24 W21



Order code:

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- H 2 0 = Din rail mounting TS35
- W 2 1 = Wall mounting