

DC/DC Converter

300 W

300 FDB 750 M24 □□□

$V_{I\text{ nom}} = 600 V_{DC}, 750 V_{DC}$ $V_{O\text{ nom}} = 24 V$ $I_{O} = 12.5 A$

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
INPUT						
V_I	Input voltage range	Continuously	420		900	V
	Input voltage range: dynamic	$V_I = 900 V \dots 950 V$ for 5 min.			950	V
$V_{I\text{ min}}$	Converter shutdown				390	V
$V_{I\text{ max}}$	Converter shutdown			1150		V
	Input transients	2 kV, transient pulses	for $t \leq 1 \text{ ms} / \geq 10^6$ pulses			
I_I	Input current	No load $V_I = 950 V, I_O = 0 A$			15	mA
		Nominal load $V_I = 750 V, I_O = 12.5 A$		0.5		A
		Nominal load $V_I = 420 V, I_O = 12.5 A$			1.0	A
	Input current integral	$V_I = 950 V, 0 A \leq I_O \leq 12.5 A$			5	A ² s
$I_{I\text{ max}}$	Max. input switch on current $V_I \geq V_{I\text{ min}}$	$I_O = 12.5 A$ $\Delta t \leq 100 \text{ ms}$	on request			
	Input fuse		2 A			
C_I	Converter input capacity		on request			
	External line inductance		on request			

OUTPUT: Power unit

$P_{O\text{ nom}}$	Output power	$420 V \leq V_I \leq 900 V$		300		W
$V_{O\text{ nom}}$	Output voltage adjustment, factory set	$420 V \leq V_I \leq 900 V$	24.00	24.00	24.20	V
ΔV_O	Regulation	$420 V \leq V_I \leq 950 V$ $0 A \leq I_O \leq 12.5 A$ $T_A = -40^\circ C \dots +70^\circ C$	$\leq 3\% V_{O\text{ nom}}$			V
$\Delta V_{O\text{ dyn.}}$	Load regulation dynamic	$420 V \leq V_I \leq 950 V$ Load: 20 - 80 - 20% x $I_{O\text{ nom}}$			500	mV
t_{dyn}	Response time	$420 V \leq V_I \leq 950 V$ Load: 20 - 80 - 20% x $I_{O\text{ nom}}$		1	2	ms
$V_{O\text{ rms}}$	Ripple	$420 V \leq V_I \leq 950 V$ Nom. load BW 300 kHz		100	250	mV
$V_{O\text{ pp}}$	Noise	$420 V \leq V_I \leq 950 V$ Nom. load BW 20 MHz			750	mV
t_{on}	Turn on time V_O	$420 V \leq V_I \leq 950 V, 0 A \leq I_O \leq 12.5 A$ Resistive load			200	ms
t_h	Hold up time	$420 V \leq V_I \leq 900 V$ $0 A \leq I_O \leq 12.5 A$	-	-	-	ms
	Overvoltage shutdown V_O	$420 V \leq V_I \leq 900 V$ $0 A \leq I_O \leq 12.5 A$	converter off: $V_O \leq 32,4 V$			V
I_O	Output current	$420 V \leq V_I \leq 950 V$		12.5		A
	Output current limitation of I_O	$420 V \leq V_I \leq 950 V$	13.7			A
	Output short circuit current	Short circuit between + V_O and - V_O $420 V \leq V_I \leq 950 V$			18	A
C_O	Output capacity			12		mF

OUTPUT: Signals

PF	Option: Power Fail	Transistor on: PF= low, $V_O < V_{O\text{ min}}$	$V_O < 0.95 \times V_{O\text{ nom}} \pm 2\%$		V
	Open Collector Transistor $V_{CE\text{ max}} \leq 70 V, I_{CE\text{ max}} \leq -20\text{mA}^*$ Reference: - V_O Option: Relais	Transistor off: PF= high, $V_O \geq V_{O\text{ min}}$	$V_O \geq 0.95 \times V_{O\text{ nom}} \pm 2\%$		V
		Signal defined for $V_O \geq 0.6 \times V_{O\text{ nom}}$			

GENERAL SPECIFICATIONS

f	Switching frequency	$V_I = 750 V, I_O = 12.5 A$		100		kHz
η	Efficiency	$P_O \geq 0.7 \times P_{O\text{ nom}}$	84	87		%
	MTBF (SN 29500)	$V_I = 750 V, I_O = 12.5 A, T_A = +40^\circ C$		450 000		h
	No load, short circuit proof		continuously			

* - sign: sink current

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
--------	-----------	-----------------	-----	-----	-----	-------

SAFETY / DIMENSIONS

	Creepage / clearance distances Base isolation acc. to EN 50124-1 / 0V 3	Input – output Input – baseplate Output – baseplate	8.0 6.0 2.0			mm mm mm
	Dielectric strength test every unit for one min.	Input – output Input – baseplat Output – baseplate			6 2100 750	kV _{DC} V _{DC} V _{DC}
	Connectors	Input: + V _I and – V _I Output: + V _O and – V _O Option: Power fail Option: Relais	IP00: each one Faston 6.3 x 0.8 mm IP20: screw terminal 3 x Faston 6.3 x 0.8 mm			
	Protection class, protection system	Depends on model	I, IP 00 or IP 20			
	Dimensions w x h x d <i>see drawing</i>	Din rail mounting Wall mounting	266 x 210 x 70 236 x 163 x 70			mm mm
	Assembling	Wall mounting with screws	4 x M5			
	Weight	Depends on model	1.1		2.5	kg

ENVIROMENTAL CONDITIONS

T _A	Operating temperature range	Continuously for 10 min. EN 50155 Class Tx	- 40 - 70		+ 70 + 85	°C °C
T _{Storage}	Storage Temperature		- 40		+ 85	°C
	Cooling		free air convection			
	Humidity	EN 50155, IEC 60571	75% averaged year, 95% 30 days			
	Vibration / shock	IEC 61373, IEC 68-2-27, BN 411002 Cat. I 3 shocks per axis	50 m / s ² , 30 ms			

EMC

	Emission	Line conducted and radiated	EN 50121 - 3 - 2: 2001			
	Transient withstand	V _I = 950 V ... 1269 V 2 kV 3 kV	for t ≤ 20 ms for t ≤ 1 ms / ≥ 10 ⁶ pulses for t ≤ 0,2 ms			

STANDARDS

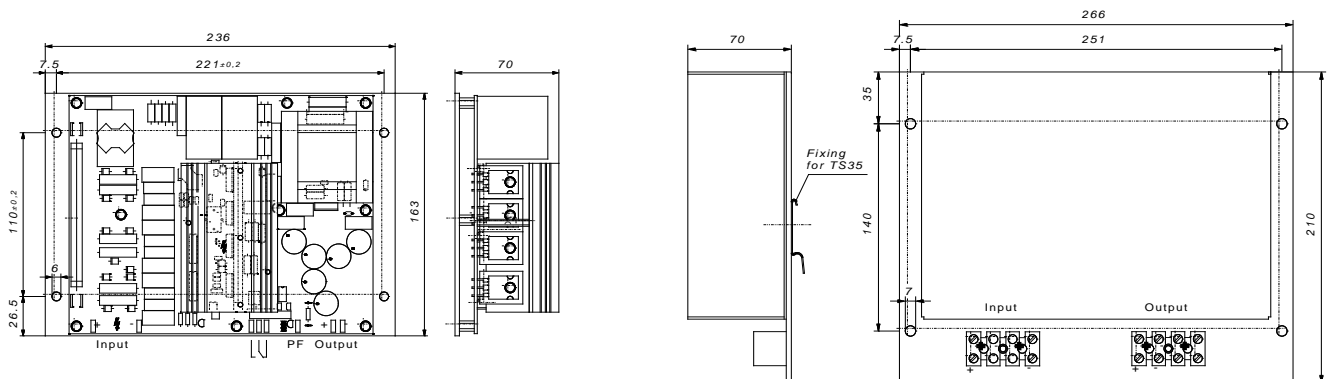
	Applied standards:	EN 50155: 2000	BN 411 002	EN 50124 - 1: 1996	EN 50121 - 3 - 2: 2001	IEC 60571
		SN 29500	prEN 50121 - 1	prEN 50125 - 1	EN 60068 - 2 - 6, 2...27	EN 61000 - 4 - 2...6
		IEC 571	IEC 61373: 1999	EN 60721 - 3 - 5	EN 61373 : 1999	EN 60529
		EN 50163				

Technical specifications valid for: - 40° C ≤ T_A ≤ + 70° C, 420 V ≤ V_I ≤ 900 V, unless otherwise noted.

Dimensions (in mm) and Pin assignment

Wall mounting, open frame: e.g.: 300 FDB 750 M24 W00

Din rail mounting, metall housing: e.g.: 300 FDB 750 M24 H11



Open frame model, IP00: ATTENTION: Heatsink is not grounded – risk of electrical shock!

Order code: 300 FDB 750 M24 □ □ □ **select**

- 1 = Input transient filter
- 2 = Input transient filter, Relais
- 3 = Input transient filter, Power fail open collector
- 0 = Open frame
- 1 = Metall housing
- W = Wall mounting
- H = Din rail mounting TS35