

DC/DC Converter

150 W

150 IFDB 750 M24 □ □ □

$V_{In\ nom} = 600\ V_{DC}$, $750\ V_{DC}$ $V_{O\ nom} = 24\ V$ $I_O = 6.2\ A$

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
INPUT						
V_{In}	Input voltage range	Continuously	400		900	V_{DC}
V_{In}	Input voltage range: dynamic acc. EN 50163	$V_{In} = 900\ V \dots 950\ V$ for 5 min. $V_{In} = 950\ V \dots 1269\ V$ for 20 msec			950 1269	V_{DC}
$V_{In\ min}$	Converter shutdown				390	V_{DC}
$V_{In\ max}$	Converter shutdown			1150		V_{DC}
	Input transients	2 kV / transient pulses	for $t \leq 1\ ms / \geq 10^6$ pulses			
I_I	Input current	No load Nominal load Nomonal load	$V_I = 950\ V, I_O = 0\ A$ $V_I = 750\ V, I_O = 6.2\ A$ $V_I = 400\ V, I_O = 6.2\ A$	0.25	15 0.5	mA A A
	Input current integral	$V_I = 950\ V, 0\ A \leq I_O \leq 6.2\ A$			5	A^2s
$I_{I\ max}$	Max. input switch on current $V_I \geq V_{I\ min}$	$I_O = 6.2\ A$ $\Delta t \leq 100\ ms$	on request			
	Input fuse		2 A			
C_I	Converter input capacity		on request			
	External line inductance		on request			

OUTPUT: Power unit

$400\ V \leq V_{In} \leq 900\ V$

$P_{O\ nom}$	Output power			150		W
$V_{O\ nom}$	Output voltage adjustment, factory set	@ $I_{out} = 3.1\ A$	24.0	24.0	24.2	V_{DC}
ΔV_O	Regulation	$0\ A \leq I_O \leq 6.2\ A$ $T_A = -40^\circ C \dots +70^\circ C$	$\leq 3\ \% V_{O\ nom}$			V
$\Delta V_{O\ dyn}$	Load regulation dynamic	Load: 20 - 80 - 20 % x $I_{O\ nom}$			500	mV
t_{dyn}	Response time	Load: 20 - 80 - 20 % x $I_{O\ nom}$		1	2	ms
$V_{O\ rms}$	Ripple	Nom. load BW 300 kHz		100	250	mV
$V_{O\ pp}$	Noise	Nom. load BW 20 MHz			750	mV
t_{on}	Turn on time V_O	$0\ A \leq I_O \leq 6.2\ A$ Resistive load			200	ms
t_h	Hold up time	$0\ A \leq I_O \leq 6.2\ A$	-	-	-	ms
	Overvoltage shutdown V_O	$0\ A \leq I_O \leq 6.2\ A$	converter off: $V_O \leq 32.4\ V$			V
I_O	Output current			6.2		A
	Output current limitation of I_O		6.3			A
	Output short circuit current	Short circuit between + V_O and - V_O $400\ V \leq V_I \leq 950\ V$			8	A
C_O	Output capacity			12		mF

OUTPUT: Signals

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

f	Switching frequency	$V_{In} = 750\ V, I_O = 6.2\ A$		100		kHz
η	Efficiency	$P_O \geq 0.7 \times P_{O\ nom}$	84	87		%
	MTBF (SN 29500)	$V_{In} = 750\ V, I_O = 6.2\ A, T_A = +40^\circ C$		450 000		h
	No load, short circuit proof		continuously			

* - sign: sink current

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SAFETY / DIMENSIONS

	Creepage / clearance distances	Input – output	8.0			mm
	Base isolation	Input – baseplate	6.0			mm
	acc. to EN 50124-1 / 0V 3 PCB FR4 V0	Output – baseplate	2.0			mm
	Dielectric strength test Unit test ramp function: 2s – 3s – 2s Type test 1minute	Input – output			4300	V _{eff}
		Input – baseplate			1500	V _{eff}
		Output – baseplate			500	V _{eff}
	Connectors	Input: + V _I and – V _I Output: + V _O and – V _O Option: Power fail	IP00: Fastons 6.3 x 0.8 mm IP20: screw terminal			
		Option: Relais				
	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 240 x 73			mm
		IP 00	236 x 163 x 60.5			mm
	Assembling	Wall mounting with screws	4 x M5			
	Weight	Depends on model	1.1		2.2	kg

ENVIRONMENTAL CONDITIONS

T _A	Operating temperature range	Continuously for 10 min. EN 50155 Class Tx	- 40		+ 70	°C
			- 40		+ 85	°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

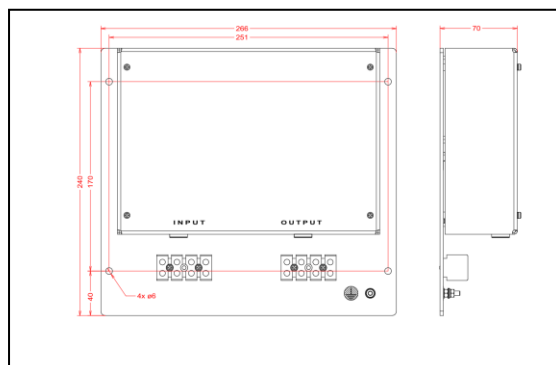
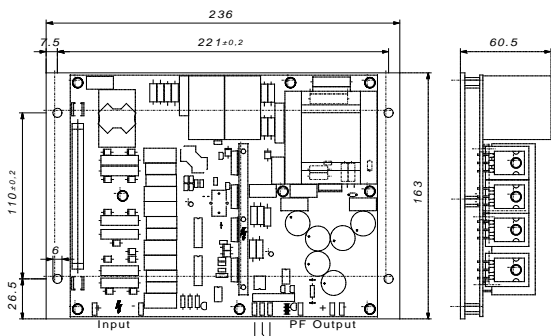
	Applied standards:	EN 50155: 2000	BN 411 002	EN 50124 - 1: 1996	EN 50121 - 3 - 2: 2001	IEC 60571
		SN 29500	prEN 50121 - 1	prEN 50125 - 1	EN 60068 - 2 - 6, 2...27	EN 61000 - 4 - 2...6
		IEC 571	IEC 61373: 1999	EN 60721 - 3 - 5	EN 61373 : 1999	EN 60529
		EN 50163				

Technical specifications valid for: - 40° C ≤ T_A ≤ + 70° C, 400 V ≤ V_I ≤ 900 V, unless otherwise noted.

Dimensions (in mm) and Pin assignment, PCB varnished

Wall mounting, open frame: e.g.: 150 IFDB 750 M24 W00

Din rail mounting, metall housing: e.g.: 150 IFDB 750 M24 H11



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

Order code: 150 IFDB 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