

# DC/DC Dead Battery Starter NSB

300 Watt

400 NSB 750 M110 W00

$V_{In\ Nom} = 600\ V_{DC}, 750\ V_{DC}$

$V_{out\ Nom} = 110\ V\ I_A = 2,75\ A\ (5,5A\ for\ t \leq 2s)$

SYMBOL	PARAMETER	TEST CONDITION	MIN	TYP	MAX	UNIT
<b>INPUT</b>						
$V_{In}$	Operating Input Voltage Range	continuous $t \leq 5\ Min.$ EN 50163	450 900		900 950	$V_{DC}$ $V_{DC}$
	Input Voltage Range dynamic	$V_{In}$ for $t \leq 20\ ms$			1269	$V_{DC}$
	Surge	$V_{In}$ for $t \leq 1\ ms$	3			$kV_{DC}$
$V_{In\ min}$	Turn OFF Voltage Range		370		395	$V_{DC}$
$V_{In\ max}$	Turn OFF Voltage Range		1270	1300	1350	$V_{DC}$
	Input Current Time Integral				1	$A^2s$
$I_{in\ max}$	Input Current	$400V \leq V_{In} \leq 950V, T_A, I_{out} = 5.5\ A$			2.5	A
	Input Fuse	4kV 10mm x 85mm	4 A			
	Reverse Polarity Protection	On request	-			

<b>OUTPUT</b>						
$P_{Out\ Nom}$	Output Power continuous	$450\ V \leq V_{In} \leq 900\ V$		300		W
$P_{Out}$	Output Power	$400\ V \leq V_{In} \leq 450\ V$	100		150	W
$P_{Out}$	Repetition Rate ON: 2 s   OFF 12 Min	$450\ V \leq V_{In} \leq 900V$		600		W
$V_{Out\ Nom}$	$V_{Out}$ Factory Adjust	$V_{In} = 750\ V\ I_{out} = 2.75\ A$	105	110	115	V
$\Delta V_{Out}$	Regulation Accuracy static	$0\ A \leq I_{out} \leq 5.5\ A$ $T_A = -40^\circ C + 70^\circ C$ Temp. class T3	20 % $V_{Out\ Nom}$			V
$V_{Out\ rms}$	Output Voltage Noise	BW 300 kHz			3	$V_{ss}$
$V_{Aout\ ss}$	Spikes	Nominal Load and BW 20 MHz			2,5	V
$t_{on}$	Start Time $V_{Out}$ see Diagramm page 2	$400\ V \leq V_{In} \leq 900\ V$ $0\ A \leq I_{out} \leq 2.75\ A$ Push Button Pin11 connected to Pin12		2	3	s
$I_{out}$	Output Current $I_{out}$		2.75		5.5	A
	Current Limitation $I_{out}$ static dynamic	Threshold value	3.9 5.8			A
$I_{OC}$	Max. Output Short Circuit Current	Continuous Short Circuit + $V_O$ and - $V_O$			3.2	A
$C_{Out}$	Ext. output capacity converter	Max. allowed ext. connected capacity			470	$\mu F$
K1	$V_{Out}$ ON see Timing Diagram	Push Button closed	Bridge between Pin 11 and 12			

## COMMON DATAS

f	Switching Frequency			15		kHz
$\eta$	Efficiency	$V_{In} = 750\ V_{DC}, P_{Out} = 300\ W$		80		%
	Usage Time		20			Years
	MTBF @ SN 29500 $T_A = +40^\circ C$	$V_{In} = 750\ V_{DC}, P_{Out} = 300\ W$		400'000		h
	No Load and Short Circuit Condition			continuous		

## SAFETY / DIMENSIONS

	Overtemperature TURN - OFF	Transformer Temperature Monitor	105°C - 5 K,+ 10 K			
	Transformer Partial Discharge Test Type Test, see diagram		2650 V, 10 pC			
	PCB FR4, $V_0\ TG = 140^\circ C$ CTI 250					
	Creepage / Clearance (PD2) acc. EN 50124 - 1 0V 3	Primary - Secondary Primary - Case Secondary - Case	36   36 18   18 2   2			mm mm mm
	Isolation Test Voltage Piece Unit Test rampe funct. 5s - 10s - 5s ) Creepage Type test	Primary - Secondary Primary - Case Secondary - Case		5.2 3.0 0.5		$kV_{AC}$ $kV_{AC}$ $kV_{DC}$
	Connector	Input: + $V_{In}$ and - $V_{In}$ Output: + $V_{Out}$ and - $V_{Out}$ Protection:	Ettinger 13.44.656 WAGO 721 - 442/001-000 on Mounting AL plate			
	Protection class, - degree		I, IP 00			
	Dimension incl. Mounting Plate	B x H x T	430 x 300 x 75			mm
	Mounting Direction: recommend vertical	Chassis Mounting with Screws	6 x M6			
	Weight		6.3			kg
	Temperature Measurement Reference	10 cm below DB Starter Unit				

