## 729-24-SD

450 Watt, isolated, single output buck-boost converter with internal decoupling diode All parameters defined on Ta=25°C, IoNom = 18,5 ADC and UiNom = 14VDC

# **ABSOLUTE MAXIMUM RATINGS**

parameter	unit	typ
Input peak voltage	VDC	18.00

# **THERMAL CHARACTERISTICS**

parameter	min to max	typ	
Ambient temperature range	-40°C / +85°C		
Max. case temperature for thermal shut down [°C]	+90°C		
Storage temperature (device not in operation)	-10°C/+65°C		
Relative maximum humidity under storage		75% RH	
Storage under worst conditions [in days]		25	

# **COMMUNICATION INTERFACE**

parameter	unit	fulfilled	conditions	min to max
Option shut down (left open for operation)		$\checkmark$		
Shutdown voltage for transformer	VDC		loNom	-0,2 to 2,8

## **SPECIALS**

parameter	unit	fulfilled	conditions	typ
Switching frequency	kHz			125
Efficiency at light loads	%		0.25loNom	93.00
Efficiency at medium loads	%		0.5loNom	94.00
Efficiency at full loads	%		loNom	91.00
For active loads or parallel connection		$\checkmark$		
Drives high capacitive loads		$\checkmark$		
CC/CV battery load characteristic		$\checkmark$		
Coupling capacitance input to output	nF			transformer winding only
Insulation strength primary to secondary	VDC			2100
Insulation strength primary to case	VDC			2100

### COMPLIANCE

parameter	fulfilled	notes
61000-6-2 (EMC-Immunity standard for industrial environment)	$\checkmark$	
61000-4-2 (immunity against ESD-electrostatic discharge)	$\checkmark$	
61000-4-3 (immunity High frequency electromagnetic fields)	$\checkmark$	
61000-4-4 (immunity against burst – electrical fast transients)	$\checkmark$	
61000-4-5 (immunity against surge - high energy surges)	$\checkmark$	
61000-4-6 (immunity against induced, conducted disturbances)	$\checkmark$	
61000-6-4 (EMC – Emission standard for industrial environment)	$\checkmark$	
55022 <a< td=""><td><math>\checkmark</math></td><td></td></a<>	$\checkmark$	

All technical and general information is provided in all conscience. However, completeness and accuracy cannot be guaranteed. Demke recommends to fully test the product in its determined application. Due to permanent improvements to our products, we reserve the right to change specifications at any time and without prior notification and without obligation to update products already supplied. This is a component for professional equipment manufacturers. Read the safety and installation instruction for proper use. Safety aspect and EMC-aspect must be considered in the end application.



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#### 450 Watt, isolated, single output buck-boost converter with internal decoupling diode

INPUT					
parameter	unit	conditions	min	typ	max
Input voltage range	VDC	loNom	12	14	16
No load input current	mA	UiNom		190	
Max. input current	А	UiNom		41	
Input start up voltage	VDC	UiNom		11.5	
Undervoltage lockout	VDC	UiNom		10.5	
Input quiescent current in shutdown mode	mA	UiNom		3.00	
Input current overshoot during soft start ramp up	%	loNom		20	
Input capacitor load peak current at initial switch on	А	UiNom		10	
Generated AC-ripple on the supply (BW=20MHz)	mVp-p	UiNom/IoNom		40	
Generated HF-noise on the supply (BW=20MHz)	mVp-p	UiNom/IoNom		20	

## **OUTPUT**

parameter	unit	conditions	min typ max
Output voltage	VDC	loNom	24.0
No Load output voltage increase	%	UiNom	6
Minimum required load to obtain the specified output voltage	%	UiNom	6
Generated AC-ripple on the output (BW=20MHz)	mVp-p	UiNom/IoNom	25
Generated HF-noise on the output (BW=20MHz)	mVp-p	UiNom/IoNom	10
Output voltage accuracy	%	loNom	+/-2,00%
Output voltage overshoot at initial switch-on	%	loNom	overdamped
Rated output power	W		450

## CONTROL

parameter	unit	conditions n	nin typ	max
Static line regulation	%	loNom/UiMinUiMax	0.13	
Static load regulation	%	loMinloMax/UiNom	5.0	
Dynamic load change adjusting time	ms	LoadChange 1090%	2 000.00	
Dynamic load change deviation to nominal output voltage	V	LoadChange 1090%	0.50	
Maximum admissible capacitive load	uF	loNom	infinite	
Initial switch on time	ms	loNom	280	
Softstart ramp up time	ms	loNom	40	

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# **TECHNICAL DATASHEET**

# 729-24-SD

#### 450 Watt, isolated, single output buck-boost converter with internal decoupling diode

## **MECHANICAL**

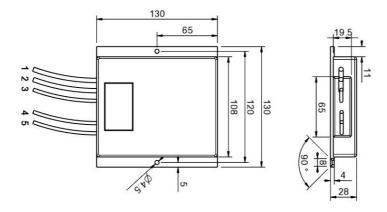
parameter	unit	
Overall dimensions	mm	130x130x28
Weight	g	900

Pin No.	Function	<b>Electrical Determination</b>	Colour	<b>Cross-Section</b>	Cable length	
1	Vi+	Input voltage positive	red	6 mm²	300 mm	
2	Vi-	Input voltage negative	brown	6 mm²	300 mm	
3	SD	Shut down	blue	2.5 mm <sup>2</sup>	300 mm	
4	Vo-	Output voltage negative	black	6 mm²	300 mm	
5	Vo+	Output voltage positive	red	6 mm <sup>2</sup>	300 mm	

**Mechanical dimensions and Pin configuration** 

All dimensions in mm Connector type: cable

Case: FMC 130x130x28



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