



AC/DC Converter

TGC05-K/277



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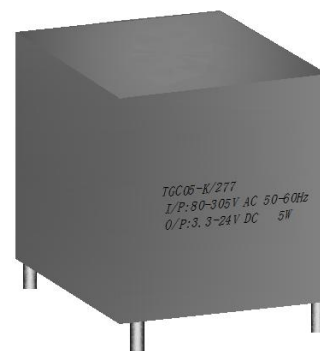
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TGC05-K/277

Features

Regulated Converter

- **Wide input range 85-305VAC**
- **Standby mode optimized (eco design Lot 6)**
- **Overvoltage category OVC III (2000m)**
- **Operating temperature range: -40°C to +90°C**
- **Overvoltage and overcurrent protected**
- **EMC compliant without external components**
- **Encapsulated module with pins or wired**



Description

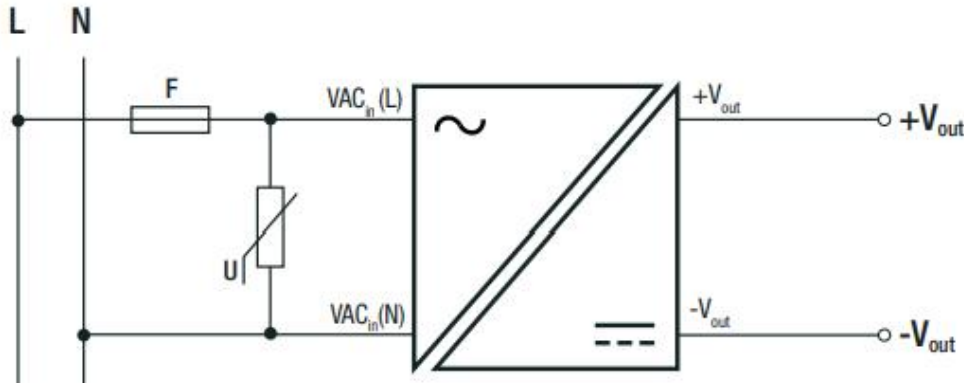
The TGC05-K/277 series are multipurpose 5 watt AC/DC power supplies for enhanced mains input conditions rated to overvoltage category OVC III from 90VAC up to 305VAC with an extra wide operating temperature range from -40°C to +90°C. These modules are designed to supply worldwide applications in automation, Industry 4.0, IoT, household and smart buildings. For worldwide use they come with international safety certifications for industrial, domestic and ITE as well as household standards. With both PCB-mount and wired packages, fully protected outputs, and EMC class B emissions compliance without any external components, these are the easiest to use modular power solutions in the industry.

Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

BASIC CHARACTERISTICS					
Parameter	Condition		Min.	Typ.	Max.
Internal Input Filter					PI type
Input Voltage Range ^(4,5)	nom. Vin = 277VAC		85VAC 120VDC	277VAC	305VAC 430VDC
Input Current	115VAC 230VAC 277VAC				150mA 100mA 75mA
Inrush Current	cold start at +25°C	115VAC 230VAC 277VAC			15A 30A 35A
No Load Power Consumption					100mW
Input Frequency Range			47Hz		63Hz
ErP Lot 6 Standby Mode Conformity (Output Load Capability)	Input Power = 0.5W 1.0W				0.34W 0.70W
Minimum Load					0%
Power Factor	115VAC 230VAC 277VAC		0.60 0.45 0.40		
Start-up Time				20ms	
Rise Time				10ms	
Hold-up Time	115VAC 230VAC 277VAC			20ms 60ms 80ms	
Internal Operating Frequency	100% load at nominal Vin			130kHz	
Output Ripple and Noise ⁽⁶⁾	20MHz BW	3.3, 5Vout others		60mVp-p 1% of Vout	

Notes: Note4: No proper operation with DC input voltage Note5: The products were submitted for safety files at AC-Input

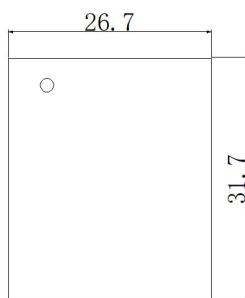
Protection Circuitm



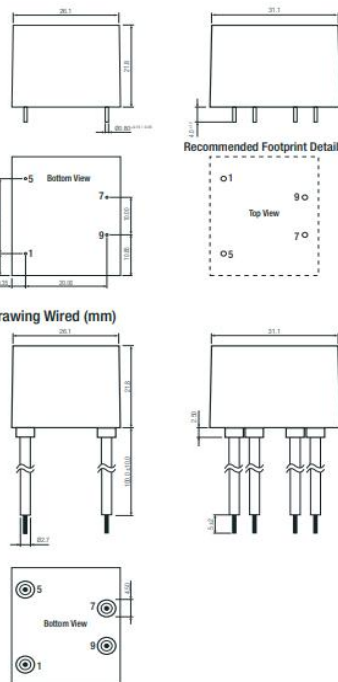
Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

ENVIRONMENTAL				
Parameter	Condition		Value	
Operating Temperature Range	@ natural convection 0.1m/s	full load	3.3Vout	-40°C to +70°C
			5, 12Vout	-40°C to +75°C
		refer to „Derating Graph“	15, 24Vout	-40°C to +80°C
			3.3Vout	-40°C to +85°C
			all others	-40°C to +90°C
Maximum Case Temperature			+95°C	
Temperature Coefficient			0.05%/K	
Operating Altitude ⁽¹⁾			5000m (OVCII) 2000m (OVCIII)	
Operating Humidity	non-condensing		5% - 95% RH max.	
Pollution Degree			PD2	
Vibration	according to MIL-STD-202G		10-500Hz, 2G 10min./1cycle, period 60min. each along x,y,z axis	
MTBF	according to MIL-HDBK-217F, G.B.	+25°C	>2252 x 10 ³ hours	
		+40°C	>1806 x 10 ³ hours	

Dimension Drawing (mm)



Dimension Drawing Wired (mm)



Pin Connections

Pin #	Single
1	VAC in (N)
5	VAC in (L)
7	+Vout
9	-Vout

Tolerance: xx.x= ±0.8mm
xxx.xx= ±0.25mm

Recommended Footprint Details



Wired information

#	Function	Wire color	Type	AWG
1	VAC in (N)	blue	UL-1015	18
5	VAC in (L)	brown	UL-1015	18
7	+Vout	red	UL-1015	18
9	-Vout	black	UL-1015	18

Tolerance: xx.x= ±0.8mm
xx.xx= ±0.25mm