



# AC/DC Converter

TGC03-K/277



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# TGC03E-K/277

## Features

- 85 to 305Vac input / OVC III
- Full load output power up to 75°C
- 15.4mm low profile

## Regulated Converter

- -40°C to 85°C operating temperature
- <75mW no load power use
- EN55032 class "B" with floating output



## Description

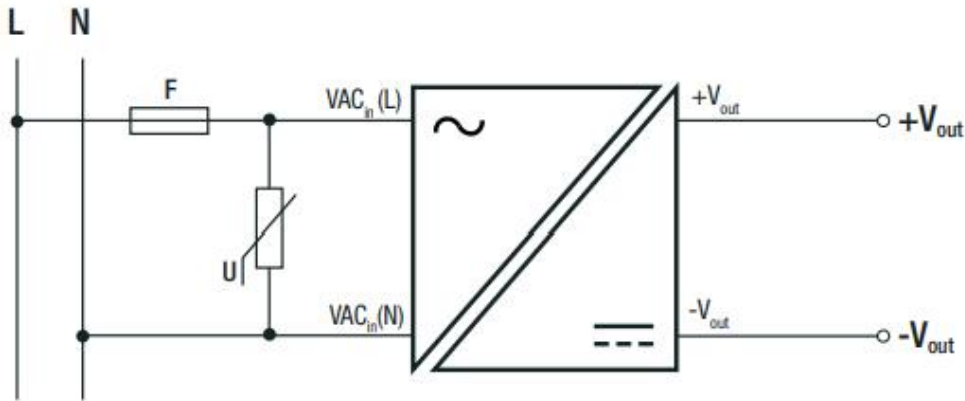
The cost-efficient TGC03E-K/277 AC/DC converter series has an input range of nominal 100VAC to an enhanced 277V, certified to OVC III overvoltage category; delivering an uncompromising 3 watts of output power with tightly regulated outputs from 3.3V to 24VDC. These low profile, encapsulated print-mountable modules in an industry-standard pinout deliver full output power from -40°C to +75°C and are certified for operation up to +85°C air ambient with output power reduced to 1.8W. This series of AC/DC modules holds international safety certifications for industrial, domestic, ITE, and household use. With 4kVAC input to output isolation, they are suitable for worldwide applications in automation control, industry 4.0, IoT and household automation. Due to their LPS (Limited Power Source) and reinforced class II installation rating for floating outputs and their significantly wide margin to class B EMC compliance without external components, these are the easiest to use, versatile power modules 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.       |
| Input Frequency Range                | AC Input                 |            | 47Hz |       | 63Hz       |
| Minimum Load                         |                          |            | 0%   |       |            |
| Power Factor                         | 115VAC                   |            | 0.55 |       |            |
|                                      | 230VAC                   |            | 0.45 |       |            |
|                                      | 277VAC                   |            | 0.40 |       |            |
| Start-up Time                        |                          |            |      | 15ms  |            |
| Rise Time                            |                          |            |      | 10ms  |            |
| Hold-up Time                         | 115VAC                   |            |      | 15ms  |            |
|                                      | 230VAC                   |            |      | 80ms  |            |
|                                      | 277VAC                   |            |      | 120ms |            |
| Internal Operating Frequency         | 100% load at nominal Vin |            |      |       | 132kHz     |
| Output Ripple and Noise <sup>④</sup> | 20MHz BW                 | 3.3, 5Vout |      |       | 120mVp-p   |
|                                      |                          | others     |      |       | 1% of Vout |

**Notes:** Note4: No proper operation with DC input voltage Note5: The products were submitted for safety files at AC-Input operation Note6: Refer to "Line Deratin"

## Protection Circuitm



| ENVIRONMENTAL               |                                  |                               |   |
|-----------------------------|----------------------------------|-------------------------------|---|
| Parameter                   | Condition                        |                               | Value   |
| Operating Temperature Range | @ natural convection 0.1m/s      | refer to "Derating Graph (7)" | -40°C to +85°C  |
| Maximum Case Temperature    |                                  |                               | +95°C   |
| Temperature Coefficient     |                                  |                               | ±0.03%/K  |
| Operating Altitude          |                                  |                               | 2000m   |
| Operating Humidity          | non-condensing                   |                               | 20% - 90% RH max.   |
| Pollution Degree            |                                  |                               | PD2   |
| Vibration                   |                                  |                               | 10-500Hz, 2G10min./1cycle, period 60min.<br>each along x,y,z axes |
| MTBF                        | according to MIL-HDBK-217F, G.B. | +25°C                         | 2260 x 10 <sup>3</sup> hours                                      |
|                             |                                  | +40°C                         | 2040 x 10 <sup>3</sup> hours                                      |
| Design Lifetime             | 230VAC/60Hz and full load +50°C  |                               | >30 x 10 <sup>3</sup> hours                                       |

## Dimension Drawing (mm)

