

# g52filter-T

## || 275 kVAr

Automatic PFC system with detuning chokes 134 Hz ( $p=14\%$ ) and thyristor modules

|                                       |                     |             |            |           |            |            |           |           |
|---------------------------------------|---------------------|-------------|------------|-----------|------------|------------|-----------|-----------|
| <b>Code</b>                           | TLFG52T275          |             |            |           |            |            |           |           |
| <b>Rated voltage</b>                  | 400 ÷ 415 V         |             |            |           |            |            |           |           |
| <b>Frequency</b>                      | 50 Hz               | <b>Vmax</b> | <b>24h</b> | <b>8h</b> | <b>30m</b> | <b>15m</b> | <b>5m</b> | <b>1m</b> |
| <b>Capacitors Voltage</b>             | 525 V               | <b>Imax</b> | 525        | 580       | 600        | 5In        | 630       | 680       |
| <b>Capacitors Voltage max</b>         | 580 V               |             |            |           | 4In        | 5In        |           | 1600      |
| <b>THDi max</b>                       | 100 %               |             |            |           |            |            |           | 10 In     |
| <b>THDv max</b>                       | < 5 %               |             |            |           |            |            |           |           |
| <b>Power @ 400 V</b>                  | 275 kvar            |             |            |           |            |            |           |           |
| <b>Power @ 415 V</b>                  | 296 kvar            |             |            |           |            |            |           |           |
| <b>Rated current</b>                  | 397 A               |             |            |           |            |            |           |           |
| <b>Banks (400 V)</b>                  | 25-50-100-100       |             |            |           |            |            |           |           |
| <b>Steps</b>                          | 11 x 25 kVAr        |             |            |           |            |            |           |           |
| <b>Typology of Capacitors</b>         | MKP525G             |             |            |           |            |            |           |           |
| <b>PFC Controller</b>                 | PCRJ8               |             |            |           |            |            |           |           |
| <b>Switch Disconnecter</b>            | 3x630 A (Icc 20 kA) |             |            |           |            |            |           |           |
| <b>Input of cables</b>                | Bottom              |             |            |           |            |            |           |           |
| <b>Dimensions (WxHxD)</b>             | 800*1730*600 mm     |             |            |           |            |            |           |           |
| <b>Weight</b>                         | 407 Kg              |             |            |           |            |            |           |           |
| <b>Temperature class (PFC unit)</b>   | -25 / +65°C         |             |            |           |            |            |           |           |
| <b>Insulation voltage (PFC Unit)</b>  | 690 V               |             |            |           |            |            |           |           |
| <b>Max overload (PFC unit)</b>        | 1,3 In              |             |            |           |            |            |           |           |
| <b>Total losses (PFC unit)</b>        | < 2 W/kvar          |             |            |           |            |            |           |           |
| <b>Reference standards (PFC unit)</b> | EN61921, EN61439-1  |             |            |           |            |            |           |           |



### Technical Features

**Capacitors** Three-phase metallized polypropylene Capacitors with Nitrogen Gas (N2) insulation, "dry type", MKP525G Series, Rated Voltage 525 V, Insulation Voltage 690 V, equipped with discharge resistors, overpressure safety device and IP20 terminals. Dielectric losses < 0,2W/kVAr. Reference Standards IEC60831-1/2, UL N.810, CSA

**Detuning Chokes** made of copper/aluminum sheet oriented crystals, placed in series between the contactor and the capacitor bank, with the following features: linearity 1.8 Ip/In, realized in class H, over temperature range: 60°C, complete with thermal probe for switching off Capacitors Banks in case of overtemperature, limit the peak current inrush capacitors, detuning frequency 134 Hz ( $p=14\%$ ), standard for 3<sup>rd</sup> Harmonic

**The Thyristor** is the intrinsic regulation organ in a Static Module and works in principle as an electronic switch that performs a switching process at each half of the power supply. The thyristors which form part of the module are "triggered" through a gate pulse; the current flows until its value falls below the value of the holding current, which in the alternating current circuits corresponds to the zero crossing of one of the two half-wave in the network. The Module consists of two phase Thyristors (one for the positive half-wave, the other for the negative one) connected in anti-parallel. The insertion of detuning capacitors and ballasts is thus accomplished without moving parts. The thyristors are commanded at the natural passage for the zero of the capacitor current. The capacitors are thus connected to the plant without significant transients; control is also such as to significantly limit harmonic emissions below the regulatory limits.

**Automatic PFC Microprocessor Controller** PCRJ Series, completed with backlit multilingual LCD Display in 10 languages with the following features: Operation on 4 Quadrants for cogeneration systems, Automatic Recognition of the direction of the current, RMS Voltage and Current, Uniform the use of each Bank / Status of each Bank / Weekly Power Factor, Capacitors overload, Overtemperature, Network THD, AUT / MAN, Protection for overcurrent, overvoltage and overtemperature and micro-interruptions, Setting of Maintenance Program/Advise by month/year

**Sheet-steel enclosure** 15 and 20/10, painted with epoxy dust paint, colour RAL7035 (others on request). Connection through power cables FS17 (CEI EN 50575, CEI UNEL 35716, CEI EN 50525 and CPR UE305/11). Internal setting in Modular Racks connected through aluminium busbar system (**Type Tested KEMA ref. 5189-16 Icw 50 kA for 1 sec.**). Protection degree IP30 external (IP54 on request), IP00 internal (IP20 with open doors on live parts)

**Three-pole Switch Disconnecter** with door interlock, sized 1,5 time the nominal current of PFC Unit as per EN61921

**NH00 Fuses** 100 kA for the protection of each capacitor bank. Auxiliary circuits are protected through 10,3 x 38 Fuses

**Single phase transformer** for separating the power circuit from the auxiliary circuit (220 Vac, others on request).

**Ventilation** Forced with Fan + Thermostat connected with PFC Controller for alarm signal and switch off contactors in case of overtemperature (natural operation up to 35°C; forced ventilation from 35°; with a temperature of 50°, the PFC will be switched off)