



## Automatic Power Factor Correction system with thyristor modules

Code	TLG44T450
Rated voltage	400 ÷ 440 V
Frequency	50 Hz
Capacitors Voltage	440 V
Capacitors Voltage max	485 V
THDi max	≤ 25 %
Power @ 400 V	450 kvar
Power @ 415 V	484 kvar
Power @ 440 V	545 kvar
Rated current	650 A
Banks (400 V)	50-100-100-100-100
Steps	9 x 50 kVAr
Typology of Capacitors	MKP440G
PFC Controller	PCRJ8
Switch Disconnecter	n. 2 - 3x500 A (Icc 15 kA)
Input of cables	Bottom
Dimensions (WxHxD)	1600*1730*600 mm
Weight	380 Kg
Temperature class (PFC unit)	-25 / +65°C
Insulation voltage (PFC Unit)	690 V
Max overload (PFC unit)	1,3 In
Total losses (PFC unit)	< 2 W/kvar
Reference standards (PFC unit)	EN61921, EN61439-1

	24h	8h	30m	15m	5m	1m	Peak
Vmax	440	510	520	520	530	575	1350
I <sub>max</sub>	3In		4In	5In			10 In



### Technical Features

**Capacitors** Three-phase metallized polypropylene Capacitors with Nitrogen Gas (N<sub>2</sub>) insulation, "dry type", MKP440G Series, Rated Voltage 440 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

**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** Natural up to 300 kVAr / Forced over 300 kvar, 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)