EPCOS Product Brief 2012

Power Factor Correction

Thyristor Module TSM-LC-I for dynamic PFC

The new thyristor TSM-LC-I module is a fast electronically controlled switch for single-phase dynamic PFC-systems. Depending on the voltage, it offers outputs of 10 (230 V) to 22 kvar (525 V) for the single steps. The device offers all features of the well-proven TSM-LC-series.

Features

- Ultra fast switching times of only 5 ms
- Switching without delay
- No system perturbations by switching operations
- Monitoring of temperature, voltage and capacitor drop
- Maintenance free, long service life
- No switching noise
- Compact design, ready for use

In addition, the TSM-LC-I offers the following characteristics:

- For direct 2-phase switching of capacitive loads (L-N) or (L-L)
- For detuned and conventional applications (without reactors)
- Real current monitoring
- For grid voltages from 230 … 525 V (110 V on request)
- Cascading for switching of capacitors in 3-phase grids possible
- No neutral conductor necessary

PQS

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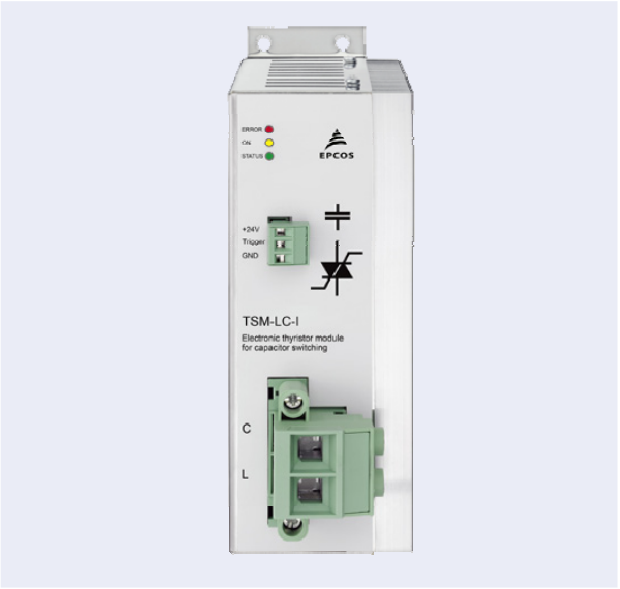
Power Factor Correction
Thyristor Module TSM-LC-I

The TSM-LC-I is very well suited for panel mounting where space is crucial, dimensions 70 x 200 x 150 mm (B x W x D) and low weight of 1.5 kg. It is compatible with the dynamic PF controller series BR6000-T, the hybrid PF controller BR6000T6/R6 and a broad variety of other key components for dynamic compensation.



Technical data	
Operating voltage	230 … 525 V (110 V upon request)
Maximum step output possible at grid voltage - 230 V - 400 V - 440 V - 480 V - 525 V	 10 kvar 16 kvar 18 kvar 20 kvar 22 kvar
Frequency	50/60 Hz
Auxiliary supply	24 V DC
Triggering	10 ... 24 V DC (ca. 20 mA) via connection clamp; galvanically internal coupling
Switching time	ca. 5 ms
Re-switching time	Depending on de-tuning factor and discharge resistor used
Display and monitoring	LED-display: operation/disturbance/triggering signal Permanent monitoring of grid voltage, capacitor current, operating status and temperature
Ambient operating temperature at nominal load	- 10 … + 55 °C
Ordering code	B44066T1022E520

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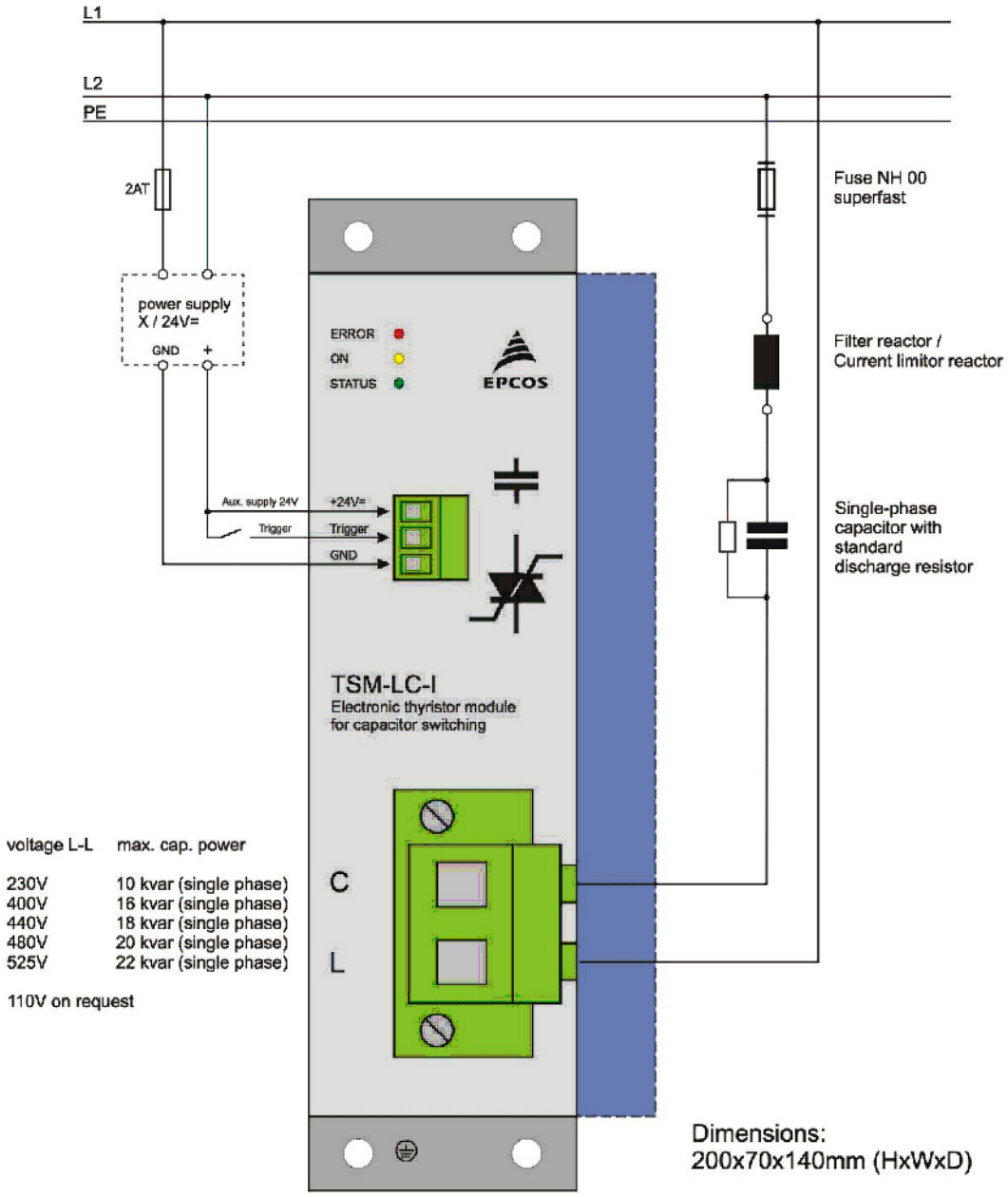
Thyristor Module TSM-LC-I

Application: single-phase switching with new TSM-LC-I (standard connection)
Load: Line to Line

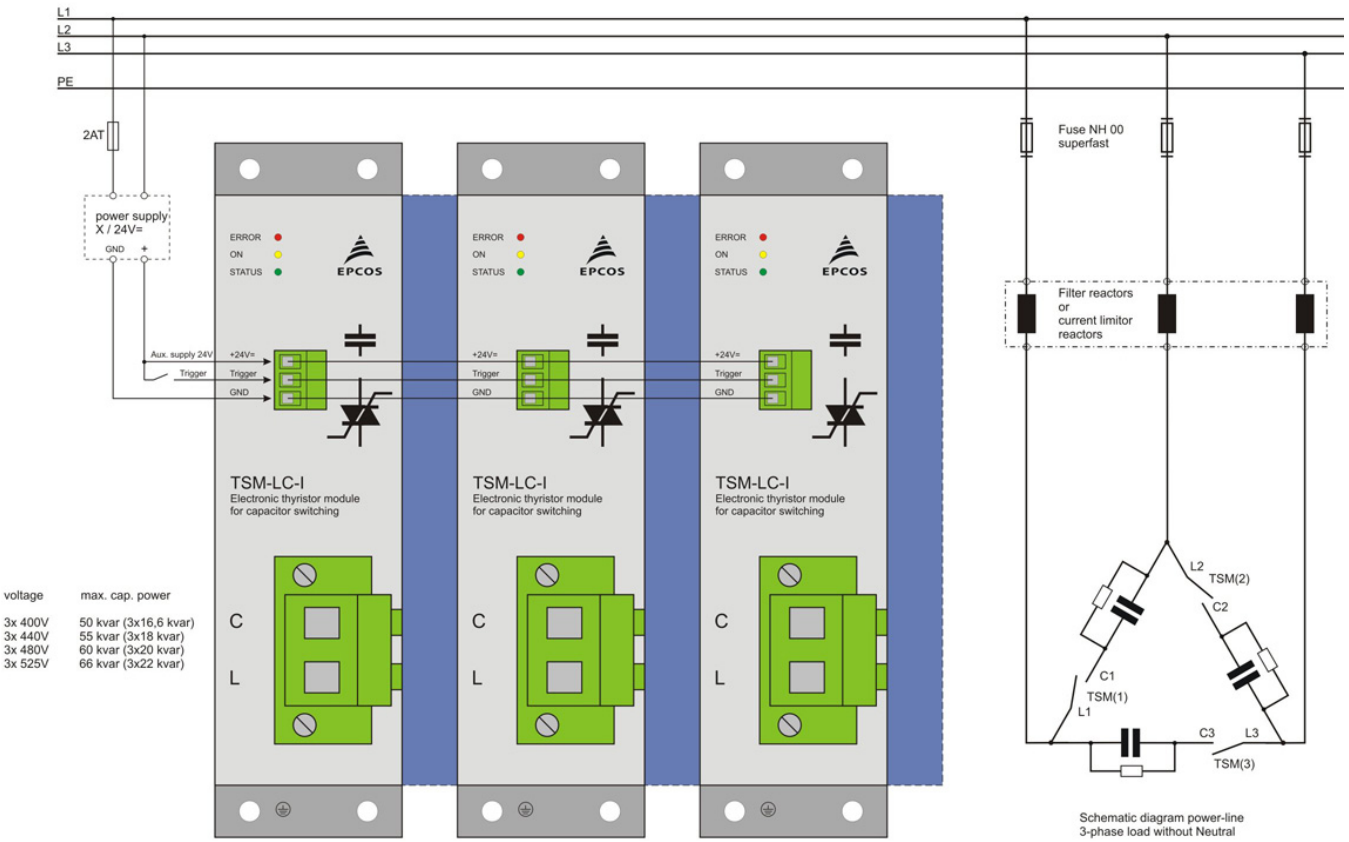


voltage L-L	max. cap. power
230V	10 kvar (single phase)
400V	16 kvar (single phase)
440V	18 kvar (single phase)
480V	20 kvar (single phase)
525V	22 kvar (single phase)

110V on request

Power Factor Correction
Thyristor Module TSM-LC-I

Application: three-phase switching with new TSM-LC-I (3 pcs. required)
Load: three-phase without neutral



voltage	max. cap. power
3x 400V	50 kvar (3x16,6 kvar)
3x 440V	55 kvar (3x18 kvar)
3x 480V	60 kvar (3x20 kvar)
3x 525V	66 kvar (3x22 kvar)

Schematic diagram power-line
3-phase load without Neutral