

LPC POWER CAPACITORS INSTALLATION INSTRUCTIONS



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1- Safety warnings



The capacitor is an electrical component which function is to storing electrical Energy / charge.

When handling a capacitor, there is a need of taking into account a series of security precautions. When a capacitor is disconnected off the voltage, it remains charged with the supply voltage. For this reason the capacitors are provided with a resistor for discharging each unit in 60 seconds to 50 V or less, to avoid its discharge on having been handled by an operator.

Never manipulate charged capacitors. Before touching a capacitor, even when discharge resistors have been fitted, the capacitor terminals should be short-circuited and grounded.

2- Operation and storage conditions

The capacitor's application, installation and maintenance must be always in conformity with the product specifications and the standards applicable.

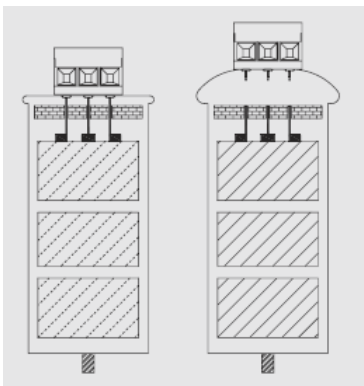
- Must not be stored or used out of the limits of temperature specified.
- It is not permitted water condensation on the capacitors. The annual average relative humidity allowed is 75 %, being his maximum value 95 %.
- Must not be stored or used in corrosive environments, specially where there is hydrochloric gas, sulfhydric, acids, organic solvents or similar substances.
- Must not be used in environments with high presence of dirt or pollution. If this cannot avoid then the capacitor must be submitted to a periodic maintenance that includes cleanliness to guarantee the electrical isolation between its phases or between phases and can.
- The limit values of temperature, voltage, current, harmonic distortion (THD), active power, reactive power, frequency, time of discharge and number of operations, must be always in conformity with the product specifications and the applicable standards of manufacture.
- It must be allowed in the installation the sufficient means for the heat dissipation or gas release, in case of badly functioning of the product. The distances between the capacitor and the sources of heat generation must be sufficient in order that the maximum capacitor's working temperature never exceed.
- A correct electrical connection must be realized always between the cable conductor and the capacitor's terminal to avoid the generation of temperature by false contact and to guarantee the correct functioning of the product.

- If the capacitors suffer any type of electrical, mechanical damage and / or loss of substances they must be disconnected immediately from the electrical network.
- Is forbidden to weld between the conductor and the capacitor's terminals, since this procedure can damage the capacitor's terminal insulation.



ATTENTION! The expectation life of capacitor shall be effected by the working conditions: as overvoltage, high temperatures, harmonic distortion, excess of humidity, vibrations, pollution and other factors. When the specified limits exceed, the internal protection device can be activated.

3- Overpressure disconnection system



Due to extreme and inadmissible operating conditions of overvoltage, overcurrent, high harmonics or high temperature, LPC capacitors have been designed all three phases to be disconnected by an internal overpressure disconnection system, thus the terminals connection with the capacitive element is interrupted.

4- Assembly positions

The capacitors can be mounted in horizontal or vertical position, nevertheless the recommended position is the vertical one, since it is more favorable for the thermal dissipation.

5- Harmonic distortion

Harmonic voltage or current is defined as “a sinusoidal sign, where the frequency is an integer multiple of the system's supply voltage fundamental frequency”. Among many others, the main causes of the harmonic distortion are the following: electromagnetic and electronic lighting ballasts, electric welding equipment, single-phase network connected electronic equipment, electromagnetic reactance for discharge lamps, electronic starter, variable speed drives...



ATTENTION! Before installing capacitors verify that the parameters of the net are according as the characteristics of the product.

6- Temperature

The maximum ambient temperature set in IEC 60831-1/2 should be respected. The capacitors must be shielded from external heat sources, never be mounted above or close heat sources and be careful about the sufficient heat dissipation.

7- Installation

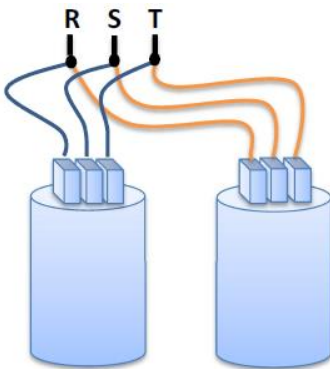
a. Connection

The installation cable as well as the accessories must have a minimum safety capacity of 1,5 times of nominal current of the capacitor, to avoid any overheating. The cable conductor must be flexible in order to guarantee the proper expansion of the lid and to avoid efforts in the product's terminals. The wires never be welded to the terminals.

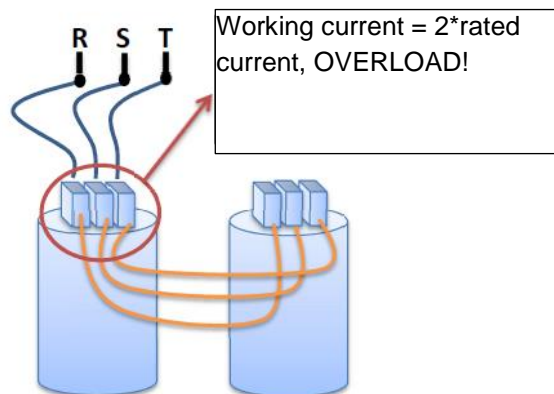


ATTENTION! Two or more capacitors units never interconnect direct parallel between its terminals. In that case the current on the terminals increase provoking an increment of temperature and finally the failure. Please ref. below right connection:

✓ Proper connection



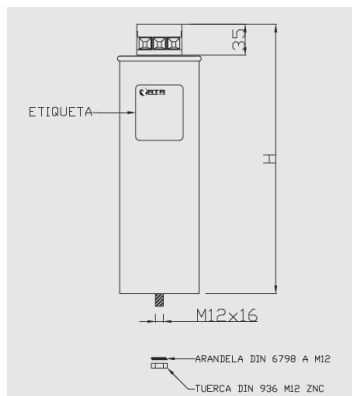
✗ Wrong connection



b. Tighten/ mounting

The fixing of the capacitors is by the M12X16 stud at the bottom of the aluminum can. Do not use electrical tool.

The tightening torque to apply on the stud: 12Nm



The tightening torque to apply on the terminals for cable installation:

TERMINAL SCREWS M5: 2-3Nm

TERMINAL SCREWS M6: 4-5Nm

8- Maintenance

To guarantee correct functioning of the capacitors, every 6 month a maintenance must be done checking:

- Verify that the parameters of the network are inside the nominal conditions of voltage and admissible of harmonics.
- Verify the tighten of the connections
- Verify the ambient temperature, highest mean over any period of 1 year maximum 35°C
- Verify the consumption (A)
- Cleanliness and blown (in case of dirt)