



Functional lighting

Optimize energy consumption by installing LED lighting &

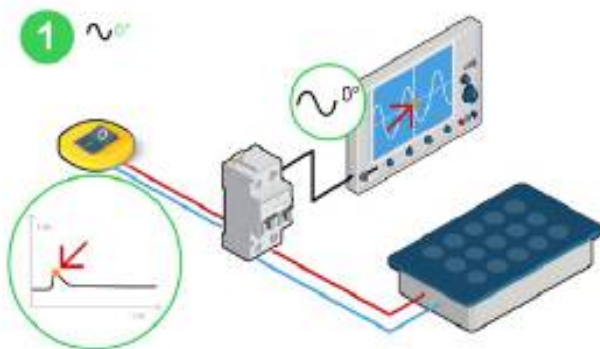
Zero Voltage Contactors.

PROBLEM:

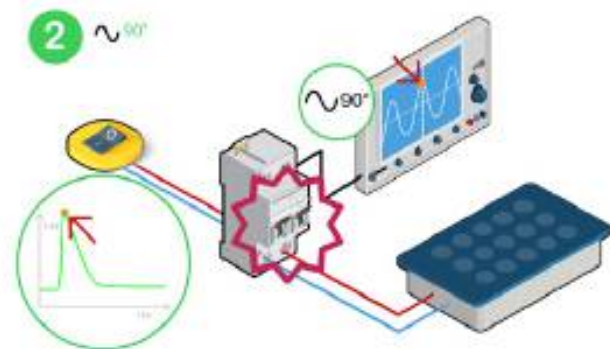
At switch on, the inrush of the LED driver/power supply can reach up to 250 times it's rated current for an extremely short duration.

Because of this phenomenon, the circuit protection device can experience intermittent tripping and in addition the switch itself or lighting contactor will experience arcing of the contacts, eventually resulting in failure.

An LED driver controlling a single 40 watt LED fixture has a nominal operating current of around 0.8 Amps, so potentially each driver could demand an inrush of up to 200 Amps. If we control the exact moment that the circuit is switched on, to the moment where the supply voltage crosses zero volts, the inrush to the drivers in the circuit is minimised, meaning that number of drivers in a circuit can be increased, the circuit protection will not suffer from intermittent tripping, in fact the curve of the circuit breaker can be improved to protect electronic equipment, such as the LED drivers in the circuit themselves.



LOW INRUSH CURRENT WHEN SWITCHING ON AND THE VOLTAGE ANGLE IS 0°



HIGH INRUSH CURRENT WHEN SWITCHING ON AND THE VOLTAGE ANGLE IS 90°

SOLUTION:

the use of a zero crossing contactor to switch the LED drivers on, removes the massive inrush current to a manageable level and also enables the use of much more suitable circuit protection devices, for example, the curve used on a circuit breaker could be improved from a "C" curve to a "B" curve, to protect the drivers that were causing the potential problems to occur.

