

INSTRUCTION MANUAL

PROGRAMMABLE CONSTANT CURRENT CONTROL GEAR FOR LED MODULES

STREET LIGHTING APPLICATIONS

Type: iLC built-in

Constant current control gear for LED modules uses sensitive components. Like all electronic equipment, its components must be treated and handled with care. They must be installed following the manufacturer's recommendations in order to ensure the correct level of durability and operation of both the control gear and the LED module it supplies.

SAFETY



Installation, maintenance and replacement of all equipment must be carried out by qualified personnel, strictly following the instructions given on the product and in line with current regulations.

To ensure protection against electric shock during any operation on the equipment, always disconnect the power supply beforehand.

EARTH CONDUCTOR



Only functional earthing terminals are allowed in electronic equipment to be built into systems with double or reinforced insulation.

This electronic equipment may be installed in Class I and Class II luminaires.

Do not leave the lighting enclosure and other internal metal parts (mounting plates, brackets, heat sinks ...) electrically live or uninsulated. Make a reliable electrical connection between them using toothed washers and well-tightened bolts. Keep the connection cables as short as possible to minimise inductance and maximise efficiency.



Class I luminaires: A protective earthing conductor is MANDATORY. Connect the earthing wire to the enclosure and internal metal parts (mounting plates, brackets, heat sinks ...).

Class II luminaires: We recommend installing an isopotential connection or a star point functional earth conductor between the enclosure and all non-accessible conductive parts of the luminaire. This will prevent issues with electromagnetic compatibility, reduce residual flicker in standby LED modules and provide protection against power surges.

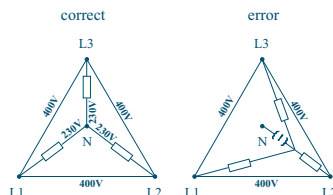
MAINS SUPPLY



The supply voltage and frequency must be within normal operating range. Comply with the polarity markings indicated (phase and neutral).

DC operation is only allowed in equipment specifically designed for that purpose.

In 3-phase 400V installations, ensure that the neutral is always connected. If interrupted, 400V could reach the control gear and cause it to fail. During installation, the load distribution between phases must be balanced as much as possible.



INSULATION TEST



If the insulation test is carried out on the installation, on the feed circuits to the electronic equipment, testing should be undertaken by applying the test voltage between the phases and neutrals, all connected together, and the earth conductor.

Never apply test voltage between the phases and neutral or between phases.

TEMPERATURE



Do not exceed the t_c temperature shown on the equipment enclosure. Non-stop operation at high temperatures reduces the life expectancy of the equipment.

The iLC devices have a built-in temperature protection. If the operating temperature is too high, the equipment will reduce the power supplied to the load and may even disconnect it in extreme cases.

TERMINAL BLOCK AND WIRE PREPARATION



The section of cable and stripped length for a proper connection is specified on the product marking.

The connection cables between the LED module and the device must be properly insulated for the operating voltage. They must also be as short as possible and never exceed 2 metres in length.

To avoid damaging the connectors, press the clip on the connector down gently when inserting or removing a cable.



INSTALLATION

"Built-in" electronic equipment must be installed inside luminaires or other enclosures that guarantee protection from ambient conditions (humidity, temperature, dust and vibration) and against electric shock. Insofar as it is possible, they must be installed away from heat sources and be fitted in such a way as to enhance heat dissipation.

The LED module connected to the equipment must be within the specified load range. For correct operation, observe the limits indicated on the product markings.

Always comply with the (+) and (-) polarity markings indicated on the output terminals of the device that supplies the LED modules.

The installation of a switch on the output side of the device is not allowed as this could damage the LED modules as well as the control gear itself.



The mains power supply must always be disconnected prior to carrying out any operation on the connection to the LED module.

PROTECTIVE SWITCHES

Each set of power supplies for LED modules must be protected by a circuit breaker and, in Class I installations, by a single-circuit trip switch.

Power supply units for LED modules are resistant to the transient power surges specified in the regulations and must be installed in separate circuits away from other inductive loads (ballasts, motors, fans, etc.).

Differential circuit breaker



The purpose of interference filters for electronic equipment is to divert interferences in the form of a leakage current to earth.

In single-phase systems: the leakage current of the device and of the other components that make up the lighting system (luminaire, wiring, LED module ...) must be taken into account to calculate the maximum number of components that can be connected to each trip switch.

In three-phase systems: distribute the luminaires equally between the three phases. Leakage currents offset each other.

Automatic circuit breaker



LED modules with electronic equipment switch on immediately. The moment the connection is made, the capacitors in the equipment create a high current pulse which lasts only a very short time. This is called In-rush current. Recommendations exist as to the maximum number of units to be fitted according to the type and characteristics of the circuit breaker. See table below.

Model	Inrush Current Peak I. (A)	Width at 50% I. peak (us)	Max. n° of units for each circuit breaker- Type B	
			10 A	16 A
iLC PRO 25... - XR	23	220	13	21
iLC PRO 40... - XR	25	195	13	21
iLC PRO 75... - XR	29	185	12	20
iLC PRO 110... - XT	55	205	6	10
iLC PRO 150... - XT	55	205	6	10

Note: measured values according to a 277V AC reference power grid as defined under NEMA 410 standard with a line impedance of 450 mΩ and 100uH. The inrush current values of the control gear will reduce, thereby increasing the number of drivers to be connected to each circuit breaker, the lower the voltage and the greater the impedance of the power grid (and vice versa). Therefore we recommend to check it for each installation.

GEAR RESPONSE AND SAFETY SYSTEM

Issue	Response	Automatically re-settable
Open circuit on output	Safety mode	Sporadic events: Yes
Overload >20%	Safety mode	Consecutive events: No
Overload <20% continuous	Safety mode	No
Short-circuit on output	Safety mode	Yes
Low load	Flickers	
380V in the circuit	Normal operating (withstands up to 2 hours)	
t_c max +5 °C	Power reduced to 75%	Yes (t_c max -6 °C)
t_c max +7 °C	Safety mode	

Safety mode: The electronic equipment is off when in safety mode.

If the control gear is not in automatic reset safety mode, disconnect the power supply for a few seconds to reset the device.

All iLC LED drivers are equipped with eSMART technology, offering a wide range of characteristics and regulation methods. Also available is a range of iLC drivers compatible with the STELARIA remote wireless street lighting management system.

Full details on programmable features and control methods are available via our website: http://www.elt.es/productos/esmart_es.html