iNODE 420

iNODE 420 controls LED driver in the luminaire and connects wirelessly to the intelligent iLUMNET network. iNODE has MESH capable SRD radio operating at 863-870 MHz frequency. Radio is connected to the external antenna. iNODE module is designed to be integrated inside the luminaire chassis.

iNODE 420 supports DALI and 1-10V interfaces to control LED driver in the luminaire. iNODE has also capability to control separate relay to turn luminaire off by switching supply voltage. This is needed when LED driver can't be turned off with 1-10V interface.

iNODE 420 has an optional energy consumption measurement feature. Incoming voltage and energy consumption can be measured when luminaire supply voltage is routed through the device. Measured information is used for energy consumption reporting.

Key features

- SRD Radio communication in iLUMNET network
- Luminaire LED driver control with DALI and 1-10V interface
- Control of additional relay
- Compensation of LED depreciation
- Detection of surge protection device malfunction
- iLUMNET sensor bus and interface to measure external NTC resistor
- Option for energy measurement

Technical specifications

Connections	**Mains** (Phoenix Contact CCDN 2.5/ 2-G1-5.08) Supply voltage for the intelligent node Supply voltage feed through to luminaire LED driver, when energy consumption measurement is used. Detection of surge protection device malfunction **Antenna connector** (U.FL/IPEX) RF connection for antenna **DALI / 1-10V** (Phoenix Contact PTDA 1.5/3-3.5) DALI: D+ ja D- control signal are used 1-10V: 1-10V ja D- control signal are used. Relay: D+ ja D- control signals are used to drive relay. Control mode is selected by programming the unit. **Sensor bus** ILumNet sensor bus to connect sensor module. **Energy consumption module** Connections to add optional energy measurement module **Temperature sensor (NTC)** Connection to external 10kΩ NTC resistor (for example Murata NCP18XH103J03RB)

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Supply voltage	180 – 240 VAC / 50 Hz
Power consumption	Stand-by: 100 mW Stand-by: 350 mW - DALI interface and energy measurement are in active state). Max: 6W - Relay control, RF transmission and supply to sensor with high consumption.
Surge protection	External surge protection device is required depending on the application, parallel connection is preferred. Detection of surge device malfunction is available when surge protection device can be connected also in serial mode and its output is connected to the detection input.
Electrical insulation	Radio ja control electronics has reinforced isolation from the primary side circuits. DALI and 1-10V interface has supplementary isolation to the radio and control electronics.
Operating temperature	-40 ... +60 °C (ambient of module)
Enclosure	No enclosure, PWB card is assembled inside the luminaire. Chassis is expected to provide protection according to targeted IP rating.
Dimensions (w x l x h mm)	115 x 44 x 28,5
Mounting	Fastened with screws into the internal structures of luminaire, locations of the screw holes are in the mechanical drawing. PWB card is to be supported in the middle (for example RICHCO PST-4-01). Minimum distance is 2,5 mm from card outline and component soldering points to metallic/conductive parts of the luminaire
Radio	SRD 863 – 870 MHz, std. ETSI EN300 220-1 32 channels MESH 6LoWPAN network capable TX output power 14 dBm EIRP (max). Max gain of used antenna is 2,1dBi. Sensitivity -110 dBm. Transceiver category 2
DALI interface	16 VDC signal level 100 mA current limiting Controls according to DALI standards.
1-10V interface	0-10 V DC output voltage 20 mA (max) current drive capability
Relay control	16 V DC control voltage 1W max loading of relay control
Energy consumption measurement (option)	10 A max measured supply voltage
Applied standards	EN 61347-2-11:2001 EN 61347-1:2008 +A1:2011 +A2:2013 IEC 61347-2-11:2011 (Ed 1) IEC 61347-1:2007 (Ed 2) +A1:2010 +A2:2012 EN 300 220-1, -2 v2.4.1

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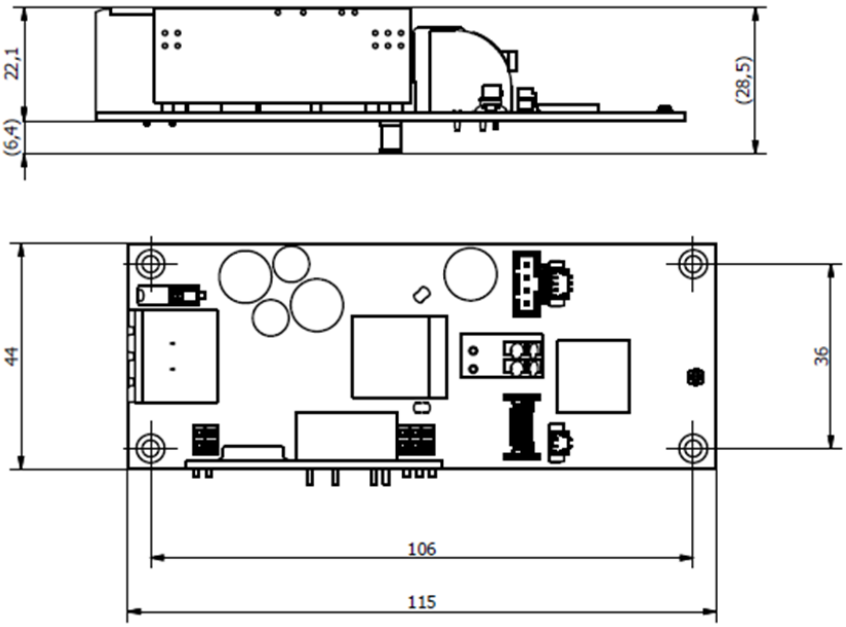
	EN 301 489-1 v1.9.2 EN 301 489-3 v1.6.1 EN 55015:2013 EN 61547:2009 EN 61000-3-2:2014 EN 61000-3-3:2013
Compliances and approvals	ENEC, CE, RoHS

Mechanical dimensions



NOTES:

Minimum distance of 2,5 mm from any part of the module to metallic/consuctive surface.

Mating parts of the connectors are not included into the above measures.

Above droving is for outer mechanical dimensions, board level details are accurate. Energy measurement card is included in the picture.

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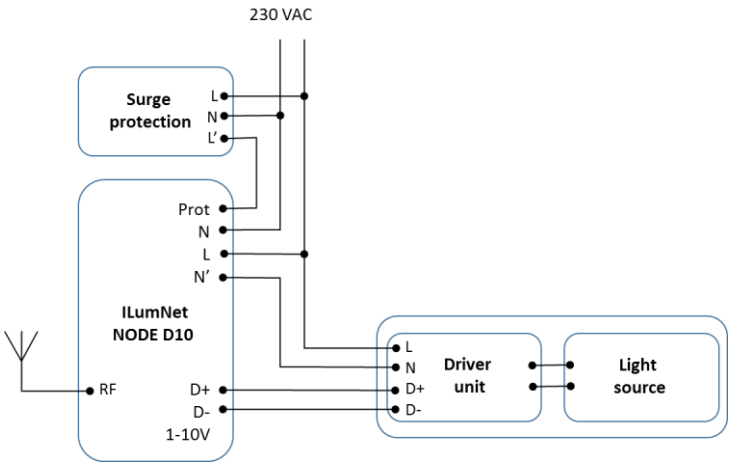
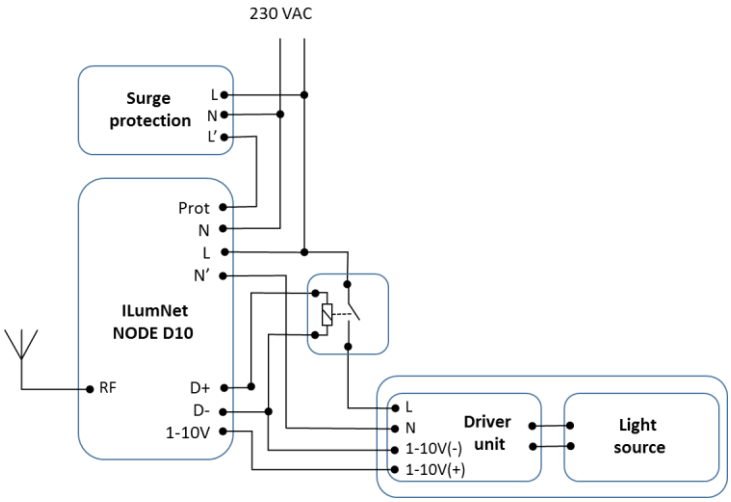
Application examples

Luminaire with DALI control



Supply voltage to LED driver does not need to be routed via iNODE when energy measurement is not used. Output voltage (L´) of surge protection device is used to detect malfunction of the protection device.

Luminaire with 1-10V control



Relay to control supply voltage is not necessary if LED driver can be turned off with other means.

Supply voltage to LED driver does not need to be routed via iNODE when energy measurement is not used. Output voltage (L´) of surge protection device is used to detect malfunction of the protection device.

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