Ready to use intelligence in Smart Lighting Control

by Dimitri De Rop

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Introduce me

- European Technical Support Manager of Inventronics Europe.
- I worked at several luminaire manufacturers (Massive, Philips and Delta Light) for almost 14 years with a heavy focus on quality & safety.
- Role At Inventronics: technical support to our authorized distributors and our key customers and partners.

LED event

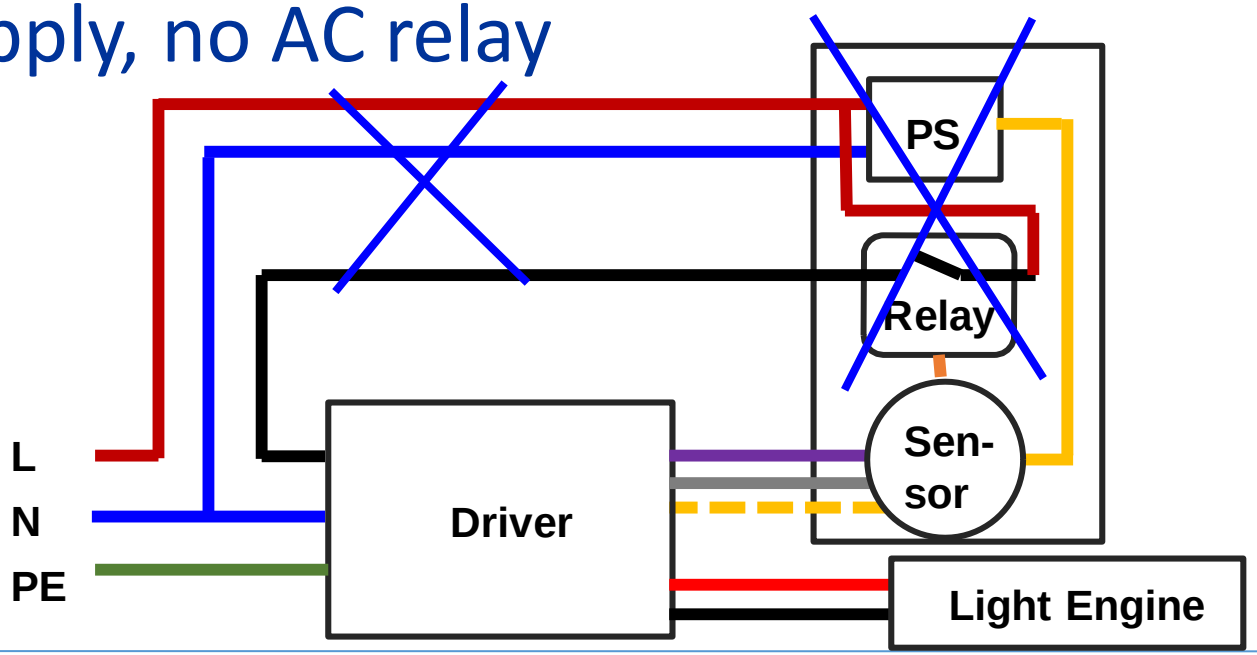
1. Intro dim-to-off and always-on 12Vdc
2. Wireless technologies
3. Wired smart alternatives

1) Dim-to-off + Always-on 12 Vdc

- Output can be switched OFF via 0-10V

LED driver stays mains connected -> standby mode

- Auxiliary power supply stays ON to power local sensors/controller.
- Eliminates sensor module components (no off-line power supply, no AC relay



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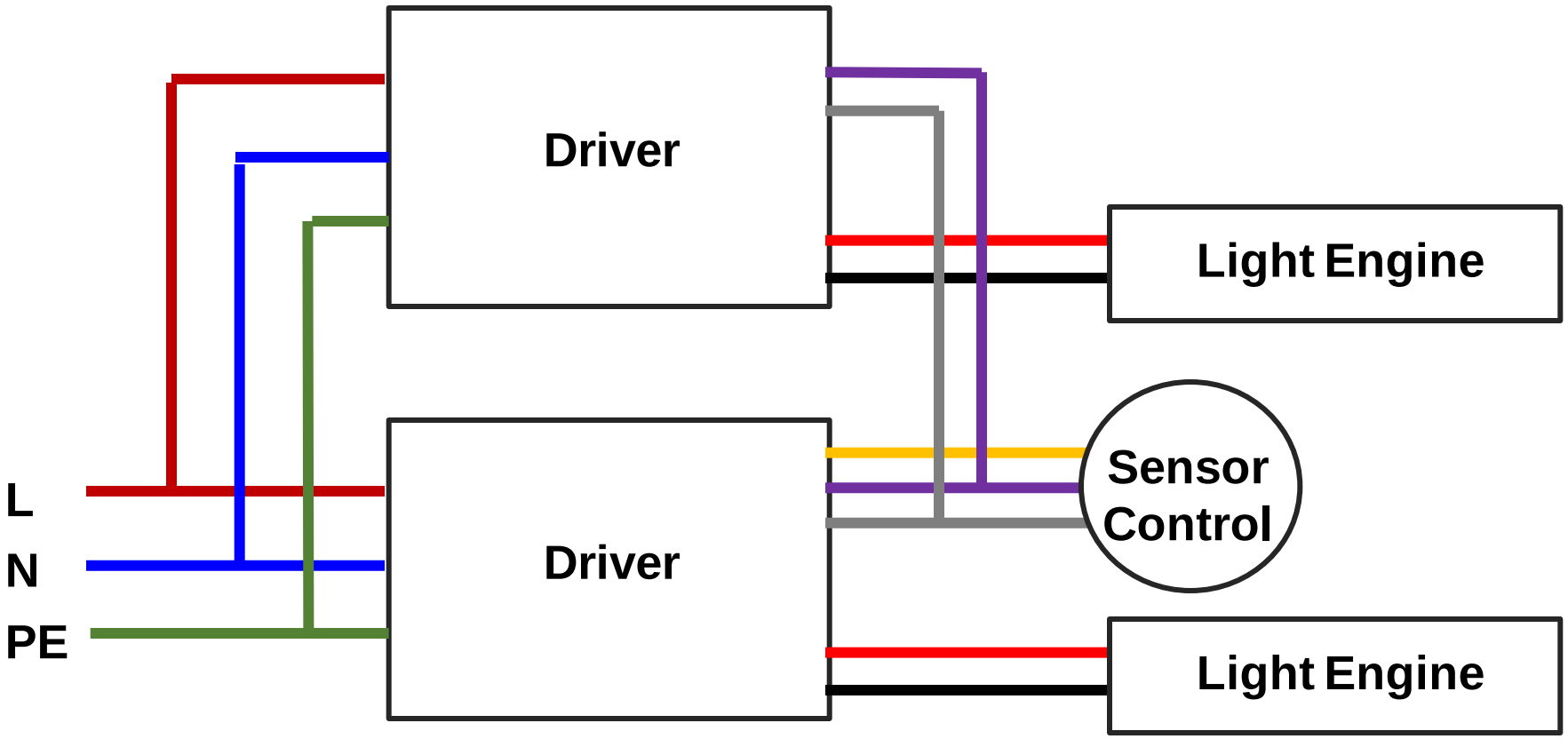
Dim-to-off + Always-on 12 Vdc



Easy sharing of Sensor/Controls between Luminaires

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2) Wireless technologies

- ZigBee
- EnOcean
- Bluetooth
- LoRa
- NFC to program
- …

Demands from market? Your input?

What to built next?

Wireless technologies

Our approach:

Integrate our products into environments that already exist

1) Start with additional building block (2 parts)

2) Later on integrated solution

EnOcean

EnOcean GmbH (Oberhaching, Germany):

inventor of patented ‘Energy Harvesting’ wireless technology for use in building automation, smart home and IoT.

Energy converters (ultra-low power) that enable wireless communications with batteryless switches, sensors, controllers, gateways.

Batteries are cheap, replacing them is not!

EnOcean

Converts energy from

- motion (e.g. press of a switch)

- light (e.g. miniature solar cells)

- temperature differences (e.g. Peltier elements)

into electrical energy.

EnOcean

Our solution: wireless 0-10V Dimming Controller for EnOcean Networks

- 868 MHz for Europe (→ CTL-ENOC-EU)
- 902 MHz for North America (→ CTL-ENOC-NA)

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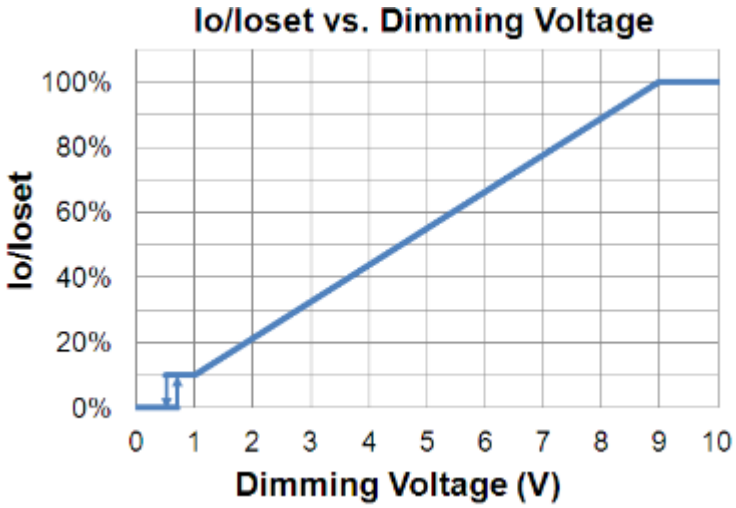
EnOcean

- Powered by AUX of LED driver
- One CTL-ENOC can control several LED drivers
- Use LED drivers with dim-to-off feature to eliminate switch or relay (standby power ≤ 0.5 W)
- Visit us at booth 23 for more technical info

EnOcean

- LED drivers with ‘dim-to-off’ feature:

LUD / EUD / EBS series



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EnOcean

Summarized:

our **LUD / EUD / EBS** series LED drivers are compatible with our EnOcean controller

CTL-ENOC-xx

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EnOcean

- Can be downloaded at www.Navigan.com
- Designed by Enocean
- Used for deploying Enocean networks using a wireless commissioning tool, such as the NWC-300
- License is included with purchase of a NWC-300 or NWC-300U

Note: NWC-300U is for US frequencies, NWC-300 is for European use

ZigBee

What is ZigBee?

- Based on IEEE 802.15.4 (merely 2.4 GHz), for low data rate applications that require long battery life and secure networking
- Short-range (up to 100 m) low-rate (250 kb/s) wireless data transfer.
- ZigBee devices can transmit data over long distances by passing data through a mesh network

ZigBee

Compatible with **Daintree Networks**, Inc.

(Los Altos, CA, USA) see www.daintree.net

ControlScope® = an Energy Management System

their open networked solutions for lighting and building control (e.g. HVAC), monitoring and optimization, to reduce energy and operating costs

£ € $

[April 21, 2016] Current, Powered By GE, acquired Daintree Networks

ZigBee

DaintreeNetworks

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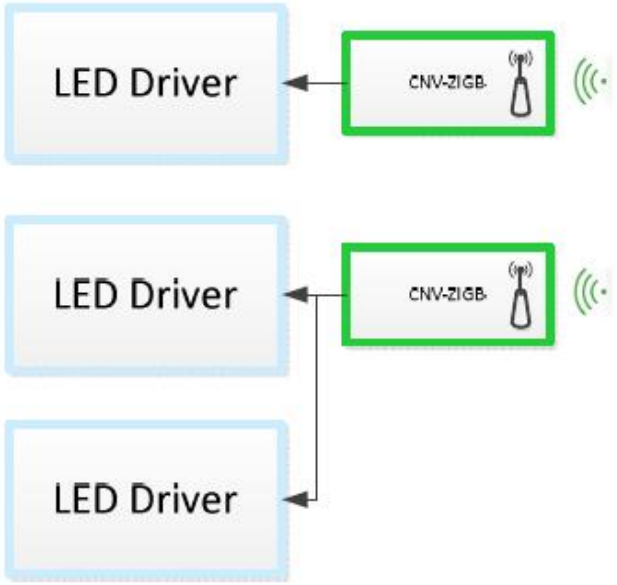
ZigBee

Our ZigBee solution: CNV-ZIGB



Visit us at booth 23 for more technical info

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ZigBee

Summarized:

our **LUD / EUD / EBS** series LED drivers are compatible with our ZigBee controller CNV-ZGB

Summary

Modular Design and Modules

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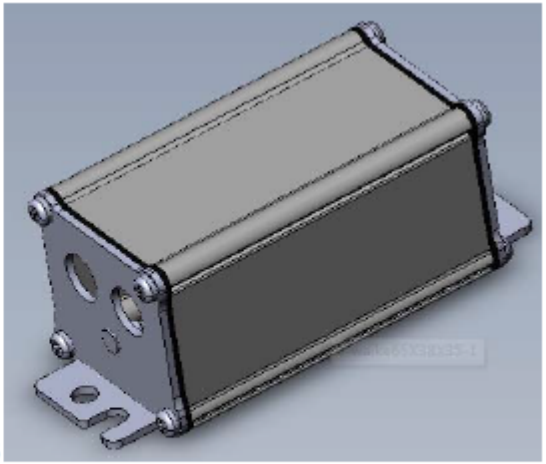
3) Smart Wired Solutions

DMX + RDM: our new CNV-DMXR (released Q2 2017)

Features

- Convert DMX signal to 0-10V dimming signal
- Comply with RDM over DMX512 Networks
- Waterproof (IP67) and UL Dry/Damp Location
- Use driver Dim-to-off capability to eliminate AC switch
- Powered by 12Vdc with simple 3-wire connection to driver
- Low standby power < 0.5W
- At power ON the 0-10V output remains at 0V until DMX signal applies
- In case of DMX signal loss, the 0-10V output remains No Change
- Suitable for Built-in installation



CE

Wired Solutions

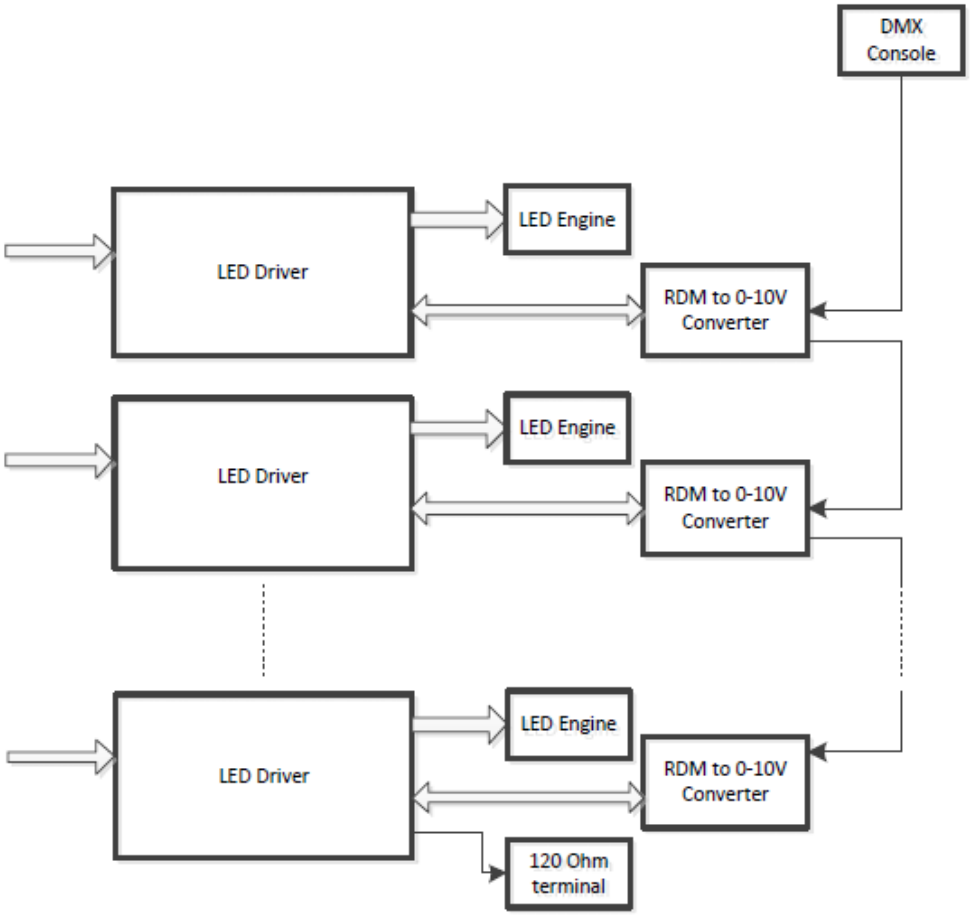
RDM = Remote Device Management:

a protocol enhancement to DMX512.

- Allows bi-directional communication, facilitates configuration and allows monitoring

Wired Solutions

Up to 32 devices



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Any questions?

Get the full version of this pptx in exchange for your businesscard.

You're welcome at booth 23