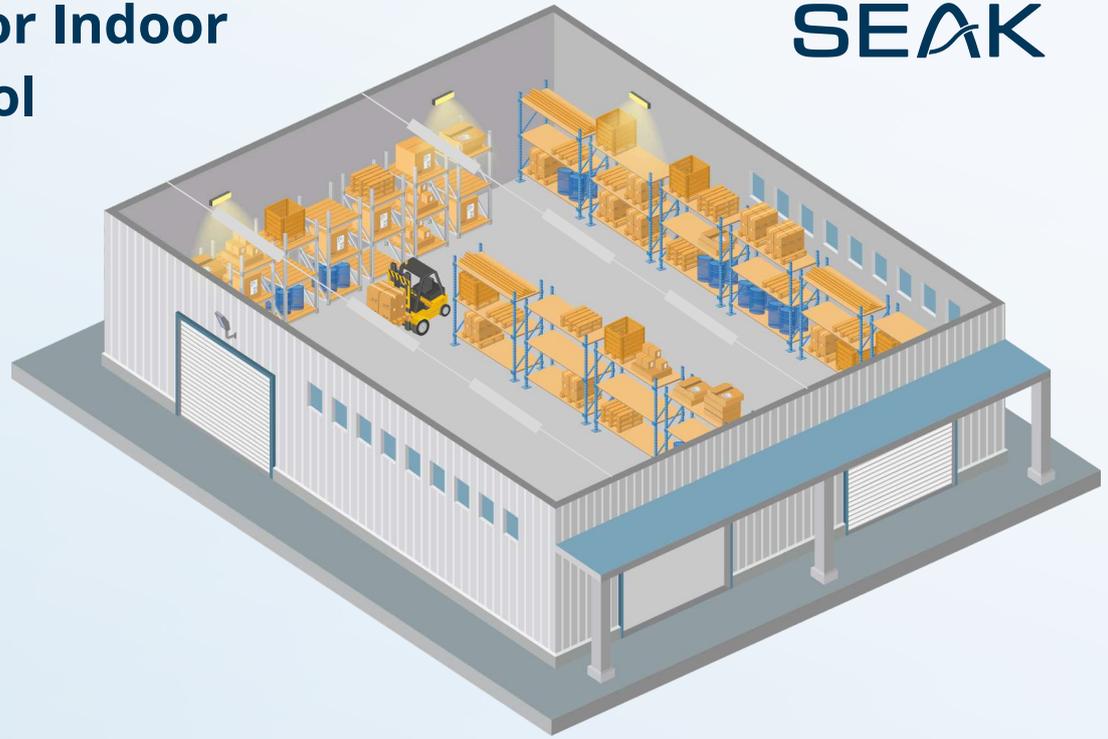


Product Line for Indoor Lighting Control

SEAK

SEAK Energetics is a provider of **unique technology for lighting control** as well as lighting in commercial and industrial buildings.



What's unique about SEAK technology?

The technology uses **230V powerlines to transmit control signals**. SEAK technology is based on harmonious half-sine wave voltage reduction at speed of 50Hz to generate coded words. That makes it an outstanding method at signal distribution on long distances and especially in questionable mains environment.

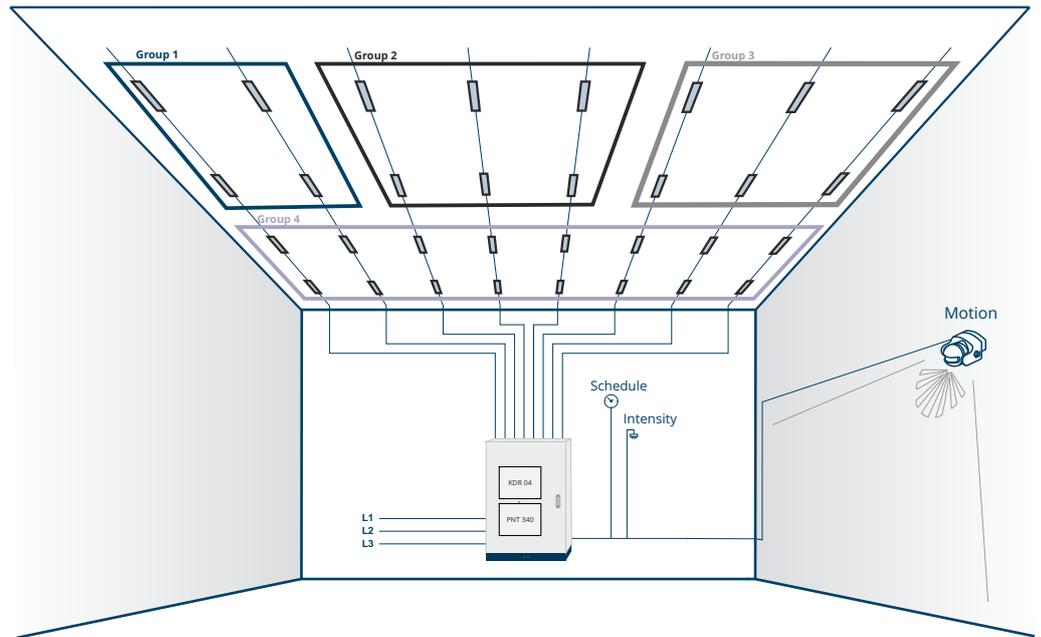
	SEAK Powerline technology
Additional wiring	No
HF suppressing filters	No
Possible distortions of el. sine wave	No
Bandwidth	50bit/s
Max. luminaires per line	Unlimited
Max. logical group per line	199 per line
Procedure to check possibility to deploy	Simple
Dimensions	Small & thin
CE certified	Yes

SEAK Product Line

In order to implement full lighting control solution in the building, we need to have signal demodulators (**receivers**) in the luminaires and signal modulators (**transmitters**) in electric cabinets.

Electric cabinet

In order to provide remote management functions, there needs to be a controller and at least one modulator in each electric cabinet.



Controllers

The **SEAK controllers** provide selective lighting control for indoor and outdoor use.

	KDR 04
Features	<ul style="list-style-type: none"> ✓ various modes of lighting control ✓ automatic control of light intensity to the required lux level ✓ lighting control according to schedule ✓ lighting control based on motion sensors and various analog and digital inputs ✓ communication interface is ethernet for local and ✓ remote management of the system using graphical application ✓ external control – analog and digital inputs, twilight ✓ switch, devices on RS-485 bus

Modulators

Every powerline that serves luminaires needs to be connected through one of **SEAK modulators**. There are several models available to fit different current levels. Different modulators may be combined in one cabinet based on actual needs.

	PANTER PNT 340	PANTER PNT 360
Number of phases	3	3
Max. current	25A	60A
Dimensions (in mm)	196x305x119	196x274x138

Luminaire

SEAK can control both LED luminaires and discharge lamps. In order to read the commands from the powerline, the luminaire needs to contain one of **SEAK demodulators**. You can choose one depending on functions needed and the type of driver used in the luminaire.

- Alternatively, you may use
- ✓ LED Drivers with built-in SEAK PLC demodulator
- ✓ VNS HID Ballasts (45 W – 400 W) with built-in SEAK PLC demodulator
- ✓ Luminaire from selected manufacturers, that come with SEAK PLC demodulator out of the box

	LUMiBAR SDM-110	LUMiBAR SDM-DIG
LED Driver Required	0-10V	DALI
Programmable dimming sequences	✓	✓
Reprogrammable over SEAK PLC	✓	✓
CLO function	✓	✓
Standby function	✓	✓
Dimensions (mm)	75x35x12	75x35x12

SMART Indoor App User-friendly Lighting Control

- Gives the authorised person the power to control the lighting. Easy-to-use SMART application allows
- ✓ manage the lighting according to schedule
 - ✓ manage the automatic control of lighting intensity to the required level for the whole area, for luminaire groups
 - ✓ monitoring current lighting status and consumption



Configuration Example

An area with 100 DALI luminaires, two electric cabinets, 3 phases each max 25A.

SMART Indoor application



LUMiBAR SDM-DIG - 100pcs



Full-featured Online Control

Full remote control and management of dimming area.

PANTER PNT 340 - 2 pcs



KDR 04 - 1pc

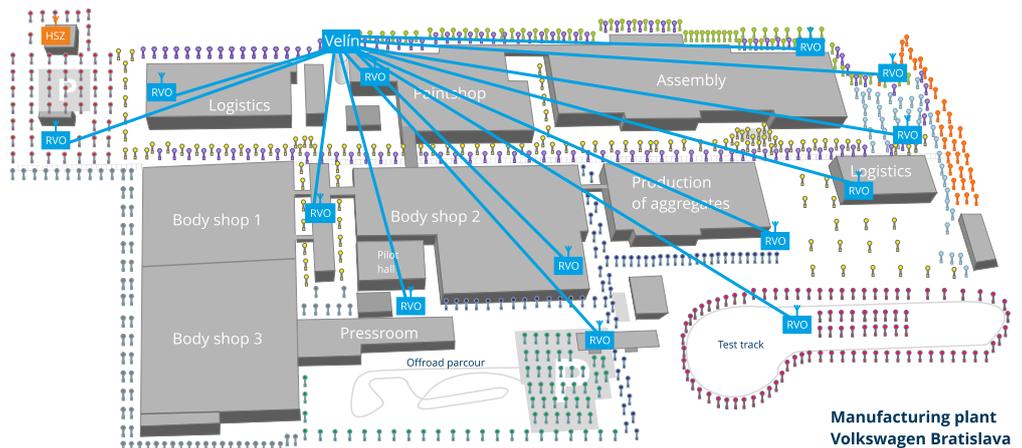


References

TESCO STORES

„We approached the Seak company in 2009 to propose an energy saving system for our stores. In their case, the presented solution and ROIs matched our vision of effective **energy savings for Tesco indoor and outdoor lighting.**“

(Vítězslav Mizera, MBA, Energy Conservation Manager for Tesco Stores CZ and SK)



VOLKSWAGEN BRATISLAVA

„One of our goals is to reduce energy consumption. The SEAK company has shown us potential by increasing efficiency with the help of public lighting management in a wide range of options as well as individual settings for standalone lighting circuits with regard to our needs. Using this system, its variability at a **minimum cost of maintenance** has proved to be the right decision.“ (Štefan Hanečák Dipl. Ing., Gebäudemanagement / Fabrikplanung)