Train car/wheel positioning

Wheel sensors **DKU-02 Koldun, DKT, DKL**
ESSO-ILS Axle Counting System

Area of application of our systems

Train traffic control on hauls

Track section vacancy control

Rolling stock chocking

Power supply for railway signalilng equipment

Diagnostics and Monitoring

Dispatcher control

Level and pedestrian crossing traffic control systems

Remote control and management of railway signalling equipment

Station control

ABTC-I MPB
DK-I
ESSO-M ESSO-M-2
MAPS, MAPS-M, ESSO-M
KTS AZS
BBK
MPC-I

TRAIN CAR/WHEEL POSITIONING

Train car/wheel positioning

RS-485 Serial Digital Interface

Parallel digital interface (Current loop)

Potential-free interface

- **DKU-02 Koldun Universal Wheel Sensor**
Serves as recording element in information and logistic systems
Applications:
  - Train car type and number identification,
  - Train car weighing,
  - Hot box detection,
  - Automatic coupling control,
  - Personnel warning.

- **DKL Rail Contact Wheel Sensor**
Registering element in information and logistic systems
Areas of application::
  - warning of operating personnel about incoming trains,
  - pedestrian-crossing warning systems,
  - Precise wheel positioning systems.

- **DKT Technological Wheel Sensor**
Applications:
  - Shunting operation automation systems,
  - Information and logistics systems and monitoring and measurement systems.

- **ESSO-ILS Axle Counting System**
Used in information and logistics systems to track locomotives and carriages within station

- **Application of ESSO-M and MPC-I equipment for carriage positioning and monitoring of their movement within station limits**
  - As part of information and logistics systems

R&D Company Promelectronica is an expert in the axle counting systems. Our axle counting systems ensure train traffic safety on all Railways of the JSC Russian Railways and actively used in Indonesia, Bulgaria, Brazil and other countries.

We use the axle counting technology to solve various Customer's tasks. Our equipment is used in information and logistic systems to monitor rolling stock movement, identify types and numbers of the train cars, CTC, etc.

RS-485 SERIAL DIGITAL INTERFACE

DKU-02 KOLDUN WHEEL SENSOR

Detects wheel presence in the sensor area and passing of a wheel, performs axle counting considering the movement direction, calculates wheel movement parameters, performs self-diagnostics and transmission of received data to the upper-level system.

AREAS OF APPLICATION

Automatic coupling
control systems
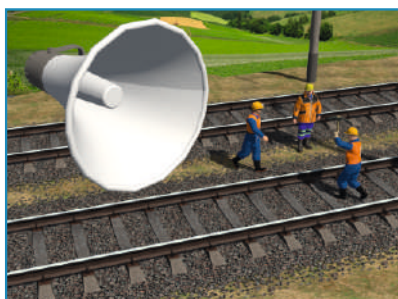
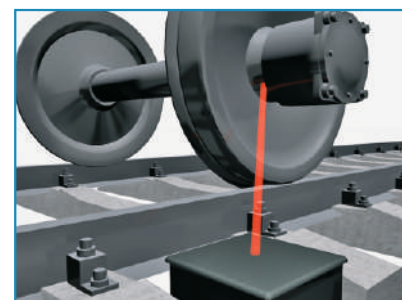Warning of operating personnel
about incoming trains

Rolling stock speed measurement

Train car weighing

Train car type identification

Positioning in hot box
detection systems

ADVANTAGES

- Software configurable to the Customer's requirements.

- Autonomous processing of received information.

- Direct connection to information and logistic systems.

- Extended operating temperature range: from -60 up to +70 °C.

- Increased reliability of operation when affected by special vehicles (snow-clearing vehicles, track carts, etc.).

DKU-02 Koldun Wheel Sensor

PARALLEL DIGITAL INTERFACE («CURRENT LOOP»)

DKT WHEEL SENSOR

Detects wheel presence within the sensing area, transmits signal on wheel presence and functionality check data to the upper-level system.

AREAS OF APPLICATION

- In automation systems of railway shunting stations.
- As a part of information and logistic systems and control and measurement systems.

ADVANTAGES

- The sensor has two wheel sensing areas.
- Data transmission speed on presence of a wheel to evaluator device: up to 8 ms.
- Extended temperature range: from -60 up to +70°C
- Easy and fast installation on all rail types.
- Does not require routine maintenance.

DKT Wheel Sensor
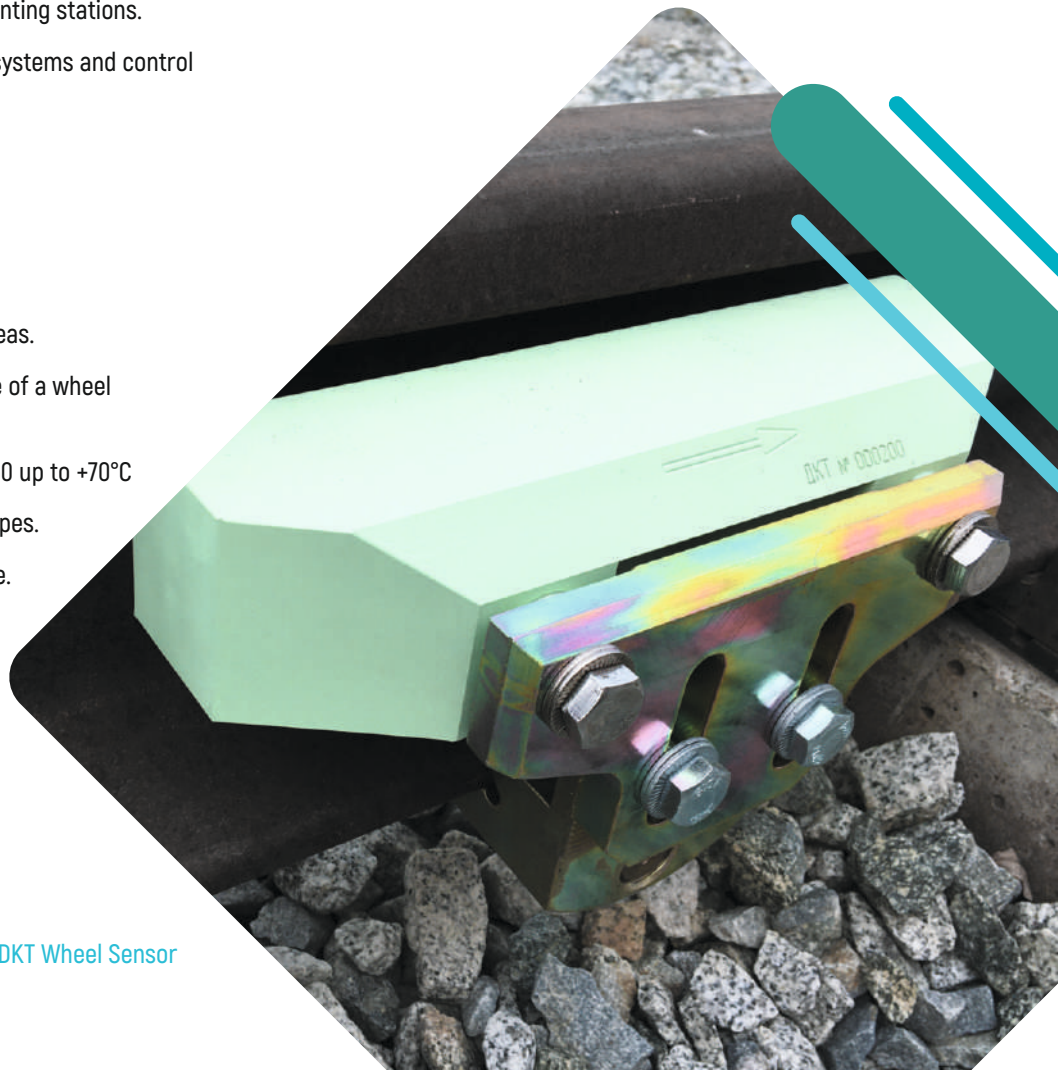
POTENTIAL-FREE INTERFACE

DKL RAIL CONTACT SENSOR

Detects train movement. Suitable for mobile solutions, lightweight and compact sensor.
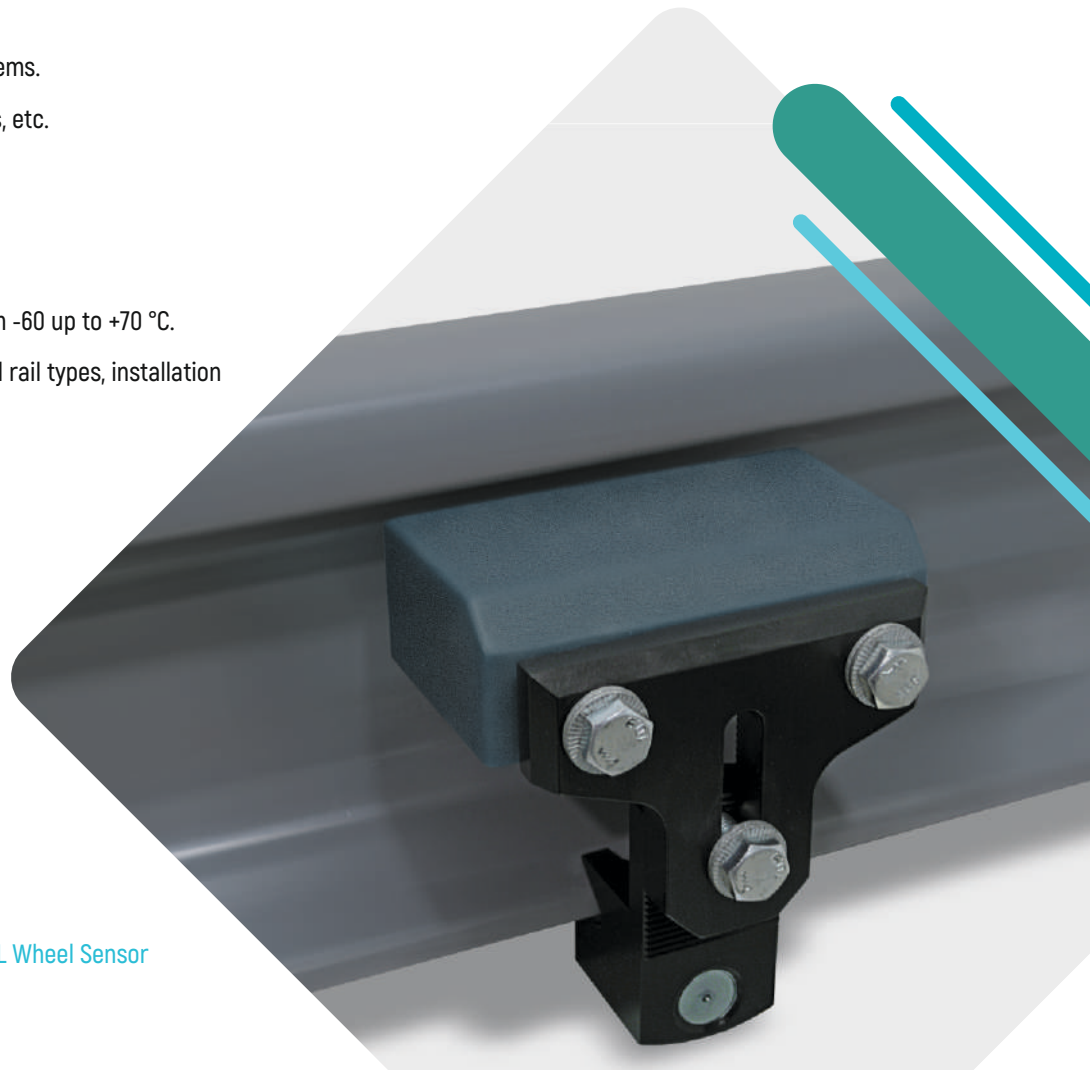
AREAS OF APPLICATION

- Warning of track maintenance personnel about incoming trains.
- Pedestrian-crossing warning systems.
- Precise wheel positioning systems, etc.

ADVANTAGES

- Extended temperature range: from -60 up to +70 °C.
- Simple and quick installation on all rail types, installation time – less than 5 minutes.
- Does not require maintenance.

DKL Wheel Sensor

ESSO-ILS AXLE COUNTING SYSTEM

The system is used as a part of information and logistic systems to track locomotive and train car movement on the station.

ADVANTAGES

- High reliability of the system, counting error probability does not exceed $1,0 \cdot 10^{-6}$.

- The system uses safe DKU-M wheel sensors without additional electronic equipment on the track. The sensors are connected by a pair-wire to a distance up to 5 km.

- Data is fed to the upper-level system via standard ModBus TCP protocol.

- The system provides power supply for the sensors, gathering of data and protection against lightning and surge overvoltages.

- Independent of trackside equipment, the indoor part of the system can be upgraded to ESSO-M or ESSO-M-2 system and connected to an interlocking system.

- The system does not require routine maintenance.

ESSO-ILS Indoor equipment