

## Why would you choose Prolan ProSigma?

- You do not have to extend the capacity of the existing signalling cables
- When cable installation is not possible or affordable, ProSigma is the best SIL4 certified solution
- The safety level provided by ProSigma is independent from the network media, it works with the same reliability on all kinds of IP networks



**Prolan Process Control Co.**  
 H-2011 Budakalász, Szentendrei út 1-3., Hungary  
 Phone: +36-20/954-3100  
 Fax: +36-26/540-420  
 Email: [info@prolan.hu](mailto:info@prolan.hu)  
 Web: [www.prolan.hu](http://www.prolan.hu)

# ProSigma

## SIL4 signal transceiver



## What is ProSigma?

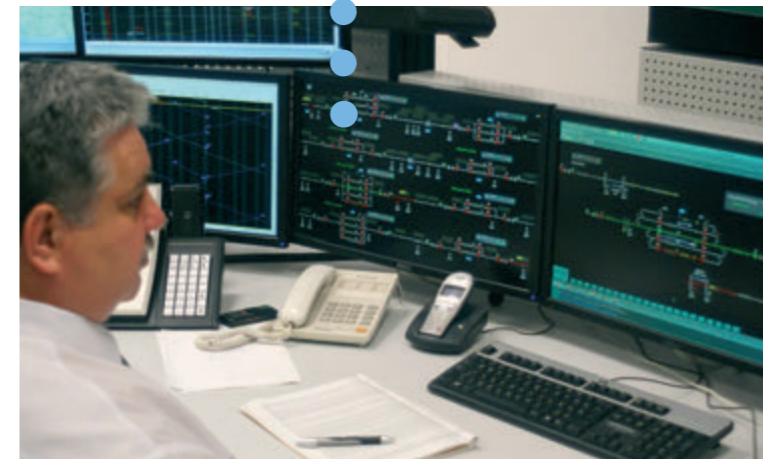
Legacy railway interlocking systems usually use copper-based long distance connections between relay rooms and remote field equipment.

When building a new system, the state-of-the-art solution is to apply digital signal transmission based on GSM or fiber-optic communication.

The main functionality of our ProSigma safety signal transceiver is to realize a fail-safe signal transmission on the 4th grade Safety Integrity Level (SIL4) via conventional IP networks, regardless the network media type.

## Features

- Safety Integrity Level 4 according to EU standards EN50126, EN50128, EN50129, EN50159
- Scalable solution, remote control of objects from a level crossing up to entire stations
- European Train Control System (ETCS) compliance (RBC connectivity)
- Prolan ELPULT compliance
- Up to four redundant IP based connection (optical, wired, wireless, GPRS or GSM-R)
- Fail-safe and fault-tolerant configuration, 2 out of 3 safety architecture
- Lifetime: 25 years



## Technical data

### Operational environment:

- Temperature: -30 °C – +70 °C
- Supply voltage: 28 – 68VDC
- Energy consumption: max. 5W / object
- Isolation voltage between channels: 4kV
- Isolation voltage between the backplane and the front panel: 4kV

### Inputs:

- Logical "0": max. 7V
- Logical "1": min. 16V
- Maximum input voltage: 330V
- Nominal input current: 10mA, independent from the applied input voltage
- Maximum input current: 10mA + U<sub>in</sub>/470

### Fail-safe outputs:

- Number of switching: 10<sup>6</sup>
- Switching voltage: 5-250V AC/DC
- Switching current: 5mA – 6A
- Switching resistance: 100mΩ

### Fault-tolerant outputs:

- Number of switching: 10<sup>6</sup>
- Switching voltage: 5-250V AC/DC
- Switching current: 5mA – 6A
- Switching resistance: 100mΩ

## How does it work?

The key concept behind the uniqueness of ProSigma is the object oriented design.

This means that only one device is required to operate a railway object, like a level crossing, since ProSigma contains all the necessary hardware and software components and parameters.

Safety is granted by the 2 out of 3 safety architecture, the tripled hardware and transmission, and the voting logic to resolve conflicts.

