



Version with CAN interface module and extra logging memory

## Vigilance Control System (vcs)

### FUNCTIONS

The Trainnet® Vigilance Control System (VCS) can also be referred to as Dead Man's Switch or Driver Safety Device (DSD). The Trainnet® Vigilance Control System (VCS) increases train safety by checking the train driver vigilance at all times. When the driver experiences a loss of consciousness, death or any physical issues preventing him to react, the train is automatically stopped.

### KEY FEATURES

In practice, the train driver notifies his vigilance by pressing onto a pedal or a dedicated momentary push button, thus sending a signal to the Trainnet® Vigilance Control System (VCS). The VCS can also monitor other actions, based on your needs.

In case the VCS stops receiving signals, alarms are activated according to a predefined schedule. The first alarm is a blinking light (T1). Should the driver fail to respond within the allowed time frame, a bell ring will be heard (T2). Finally, if still no action is detected from the driver, the Trainnet® VCS will automatically send command for train emergency braking to ensure passengers' safety (T3). Automatic

braking is also triggered if the Trainnet® VCS is powered off.

The Trainnet® Vigilance Control System can be easily customized, should you need different alarms or a modified setup. For instance, the times T1, T2 and T3 can be configured based on your requirements. It is also possible to set a minimum speed under which the system is not activate (e.g. 10 km/hour). The system can be used standalone or used as part of a more comprehensive Trainnet® system.

*Schematic view of the Trainnet® Vigilance Control System (VCS). Please note direct cabling to sub-systems like brakes are just for illustration purposes.*



The modularity of the system allows you to add as many input and output channels as you wish, by simply adding new modules and/or choosing a larger rack. The VCS can also store the status of vigilance, events and signals, acting as an event recorder. Messages can also be sent to the wayside if the train is equipped with the appropriate system.

### SIL CERTIFICATION

The Trainnet® VCS can be certified up to SIL-2.

**SIL-2**

EN 50126

EN 50128

EN 50129

EN 50155

EN 45545

### TECHNICAL SPECIFICATIONS

#### Dimensions (W x H x D)

107 x 229 x 215 mm

#### Weight:

2.3 Kg

#### Input Voltage

24, 36, 48, 52, 72 or 110 V DC

#### Temperature Range (operational)

-40 °C... +70 °C

#### MTBF (40 °C ambient temperature)

290 316 h

#### Ingress Protection (IP) rating:

20 (up to IP 67 as an option)

#### Input/Output Module:

See Trainnet® DIO module datasheet

#### Central Processing Unit (CPU):

See Trainnet® CPS module datasheet

#### Power Supply:

See Trainnet® PSV and Trainnet® PIU module datasheets

#### Logging memory:

512 MB (4 GB as an option)

*EKE can provide suitable push-buttons, pedals, buzzers and alarm lights on request.*