DriveSWing CRV&AVV

Automatic train operation (ATO)

- **Automatic system for railway vehicle operation meeting GoA2 specifications**
- **Suitable for passenger trains (intercity, suburban and regional)**
- **Suitable for freight trains**
- **Increased safety and traffic flow**
- **Modular structure for different automation degrees up to GoA4**
- **Compatibility with ERTMS/ETCS**
- **Decreased demand on train driver – less stress, less faults**
- **Diagnostics of train set facilities**
- **Proven solution**

GENERAL DESCRIPTION

Automatic train operation DriveSWing CRV&AVV (further CRV&AVV) is the system designed for automation of railway vehicle operation.

CRV&AVV has been proven by commercial operation for more than 25 years on main lines and in more than 300 railway vehicles.

The basic part of CRV&AVV is central vehicle regulator CRV providing automatic regulation of speed, traction control, brake control, interaction of dynamic brake with the automatic brake and multiple control of train vehicles.

AVV is used for automatic target braking and energy optimisation.

CRV&AVV provides automatic train operation (ATO).

DPV is designed for diagnostic of respective vehicle and other vehicles/carriages of train set.

BASIC TECHNICAL DESCRIPTION

CRV:
- aperiodic achieving of required speed in the earliest possible time
- very precise keeping of required speed (± 1 kmph)
- priority use of dynamic brake, automatic air brake control
- delayed selection of higher speed by set length of train set (train leaving restrictive speed section)
- keyboard for speed selection

AVV:
- respecting of line, scheduled and signalised speed
- automatic braking to restricted speed sections and to stopping points

- automatic stopping with high accuracy at platforms of relevant stations and stops
- high level of time keeping and energetically optimum driving to target
- traction energy saving
- compatibility with ETCS according to TSI specifications (2022) for „ATO over ETCS"

DPV:
- collection, evaluation and display of data from CRV&AVV and other systems (drive, auxiliary drives, door computers, heating, WC, fire alarm, etc.)
- transmission of signals to/from other train set carriages/vehicles
- vehicle/carriage facility control (interior lighting, information system, doors, etc.)

- detection and display of train set, calculation of length, weight and train set braking percentage
- black box for storage of failure messages and selected operating data
- retroactive data record
- interface for service PC
- multilingual design of HMI

ZÁKLADNÍ TECHNICKÉ PARAMETRY

Speed maintaining accuracy	± 1 kmph
Stopping accuracy at station	typically ± 0,5 m
Arrival time accuracy	typically ± 5 s
Traction energy saving	typically 10 to 30 %
Number of controlled vehicles/carriages in train set	unlimited

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