

# DVSS8

## Electronic fan speed controller for DIN rail

### Description

DVSS8 are electronic fan speed controllers intended for DIN-rail mounting. The fan speed controllers reduce the motor voltage by phase angle control. They are compatible with a wide range of supply voltages — 110–230 VAC  $\pm 10\%$  / 50–60 Hz.

Fan speed can be regulated remotely via Modbus RTU communication by changing the value of Holding Register 13. This can be achieved via our online HVAC portal — SenteraWeb, a Building Management System, or any other Modbus master device.

These fan speed controllers feature a digital input for remote switching on and off of the device, which guarantees full control of motor operation.


### Key Features

- RGB LED indication for monitoring the device status
- Thermal protection of the motor via a TK input
- Enhanced device protection from overheating, overvoltage and overcurrent
- Selectable output voltage adjustment via Modbus RTU communication:
  - Minimum output voltage: 20–70 % of the supply voltage
  - Maximum output voltage: 75–100 % of the supply voltage
- Unregulated output for additional applications
- Improved reliability and extended device lifespan due to extremely accurate phase angle control with zero-cross detection

### Area of Use

- Controlled ventilation in buildings, warehouses, industrial environments, etc.
- Fan speed control in HVAC applications.

### Standards

- Low Voltage Directive 2014/35/EU 
- Electromagnetic Compatibility (EMC) Directive 2014/30/EU
- Commission Delegated Directive (EU) 2015/863 (RoHS 3) of 31 March 2015 amending Annex II to Directive 2011/65/EU of the European Parliament and of the Council as regards the list of restricted substances
- WEEE Directive 2012/19/EU

### Warnings and Attention Points

- The controller is to be used only with voltage controllable fans / motors.
- If the motor has a built-in thermal contact (TK), it can be connected to the fan speed controller to monitor its temperature. In case of overheating, the controller will automatically stop the motor.
- The minimum voltage must be set so that the motor does not stop due to overload or mains voltage variations. The controller restarts after a power failure.



### Article Codes

Article code	Rated output current (A)	Fuse (A)
DVSS8-30-DM	0,2–3 A	F: 5 A-H (5x20 mm)
DVSS8-60-DM	0,2–6 A	F: 10 A-H (5x20 mm)

### Technical Specifications

Supply voltage	110–230 VAC $\pm 10\%$ / 50–60 Hz
Regulated output voltage	20–100 % of the supply voltage
Unregulated output voltage / current	Supply voltage / I <sub>max</sub> 2 A
Motor acceleration (2–20 s)	Kickstart or softstart
Thermal protection input (TK)	Normally closed input
Remote On / Off input (DI)	Normally closed input
Device status indication	Via Modbus RTU and via the RGB LED
Storage temperature	-10–50 °C
<b>Operating conditions</b>	
Temperature	-10–40 °C
Relative humidity	5–90 % rH, non-condensing
<b>Enclosure</b>	
Ingress protection	IP20
Colour	Grey (RAL 7035)

### Connect Devices to SenteraWeb

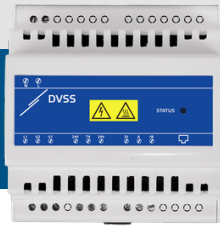


Via a Sentera Internet Gateway you can connect your installation to the SenteraWeb HVAC cloud and:

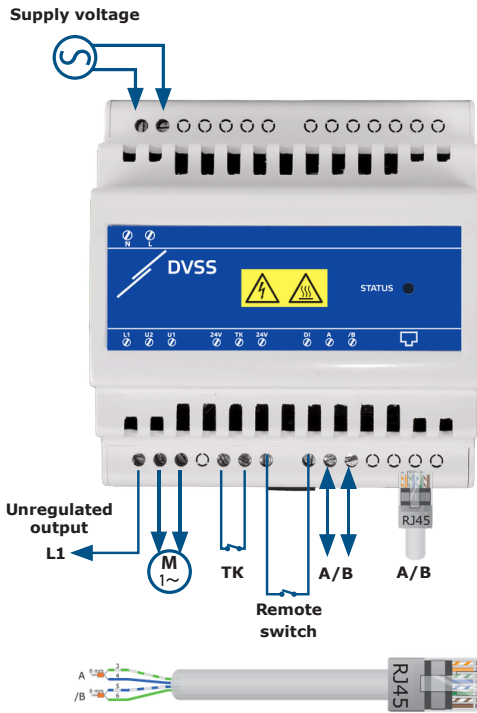
- Easily change the parameter settings of the connected devices remotely.
  - Define users and give them access to monitor the installation via a standard web browser.
  - Log data - create diagrams and export logged data.
  - Receive alerts or warnings when measured values exceed alert ranges or when errors occur.
  - Create different regimes for your ventilation system - e.g. day-night regime.
- Please refer to the Modbus Register Map of the product for more details regarding the Modbus registers.

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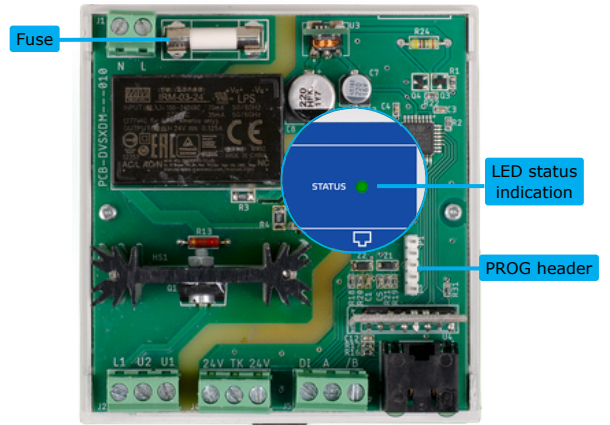


### Wiring and Connections



Screw terminal block	
<b>Supply voltage</b>	
L, N	110–230 VAC ±10 % / 50–60 Hz
<b>Unregulated output</b>	
L1	110–230 VAC ±10 % / I <sub>max</sub> 2 A
<b>Regulated output</b>	
U2 (N), U1	20–100 % of the supplied voltage Adjustable via HR13
<b>Thermal protection</b>	
24V, TK	Thermal protection input (normally closed)
<b>Remote switch</b>	
24V, DI	Remote on / off input (normally closed)
<b>Modbus RTU</b>	
A, /B	Modbus RTU (RS485)
Terminal block specifications	Cable cross section: 1,5 mm <sup>2</sup> , pitch: 5 mm, wire strip length max: 5 mm
<b>RJ45: Modbus RTU</b>	
A	Signal A RJ45, pins 3 and 4
/B	Signal /B, RJ45, pins 5 and 6

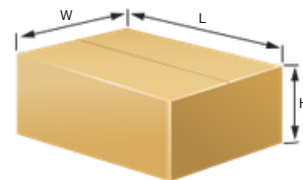
### Settings and Indications



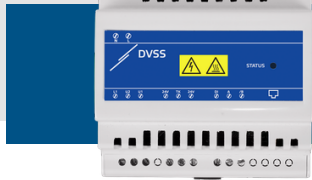
PROG header, P1	1 2 3 4 5	Put a jumper onto pins 1 and 2 and wait for at least 15 seconds to reset the Modbus communication parameters
Fuse		

LED indication		
RGB LED	Continuous red	Overheating
	Blinking red	Thermal protection activated (Once the thermal protection is triggered, it can only be reset by disconnecting the power supply.)
	Blinking yellow	Problem with the control electronics (zero cross detection failure)
	Continuous green	Device is working properly
	Blinking green	Device stopped by remote on / off

### Packaging



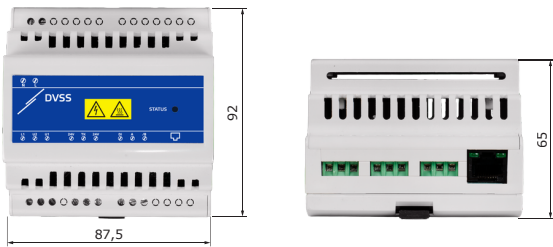
Article code	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight [kg]	Gross weight [kg]
DVSS8-30-DM	Unit (1 pc.)	110	96	81	0,40	0,44
	Box (30 pcs.)	440	310	250	12	13,84
	Half pallet (630 pcs.)	1.200	800	1.085	252	308
	Pallet (1.050 pcs.)	1.200	800	1.715	420	503,66
DVSS8-60-DM	Unit (1 pc.)	110	96	81	0,40	0,44
	Box (30 pcs.)	440	310	250	12	13,84
	Half pallet (630 pcs.)	1.200	800	1.085	252	308
	Pallet (1.050 pcs.)	1.200	800	1.715	420	503,66



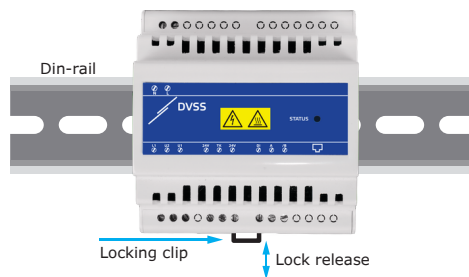
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## Electronic fan speed controller for DIN rail

### Fixing and Dimensions



### DIN-rail mounting

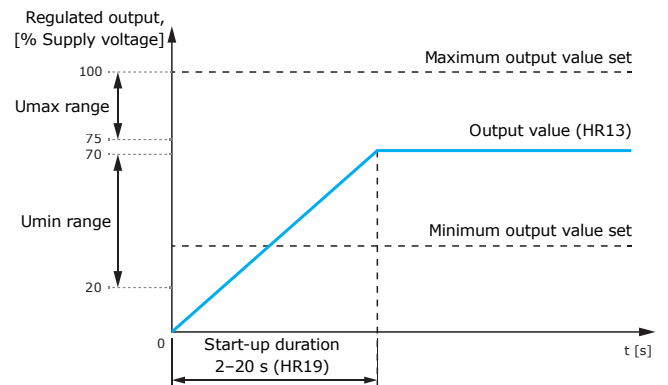


### Global Trade Item Numbers (GTIN 14)

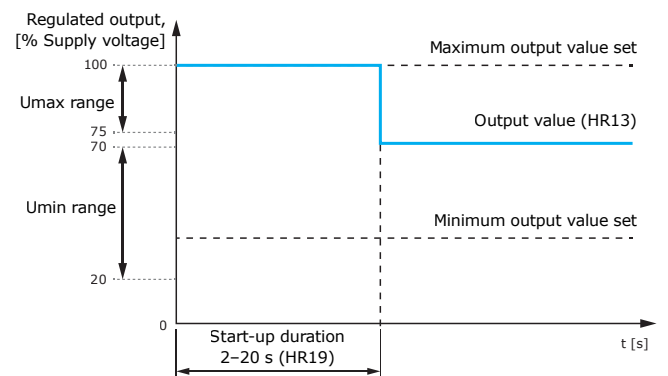
Article code	Unit	Box	Pallet
DVSS8-30-DM	5401003019092	5401003504543	5401003701539
DVSS8-60-DM	5401003019108	5401003504550	5401003701546

### Motor Start-Up Modes (HR18)

#### Softstart



#### Kickstart



Fan speed is regulated through Holding Register 13 via Modbus RTU.

### Operating Instructions

When turned on, DVSS8 is directly in Run mode (depending on the operating mode set in HR20, default = Run mode):

- Operating mode Run – The regulated output is turned on.
- Operating mode Stop – The regulated output is turned off.

In Run mode, there are two parameters to be set for controlling the output:

- Output Overwrite Value (HR13) – The regulated output is controlled by the value written in Output Overwrite Value between Umin (Minimum Output Value Limit) and Umax (Maximum Output Value Limit).
- Output Start-up Mode (HR18) – The start-up mode could be softstart or kickstart.

