

TVSS5

Three-phase electronic fan speed controller

The TVSS5 series control the speed of three-phase 400 V voltage controllable electric motors according to a standard input control signal. They are equipped with Modbus RTU communication and thermal contacts to provide overheating protection of motors with cut-out contacts. They provide a wide range of functionalities: remote control options, adjustable off level, min. and max. output voltage settings, and kickstart or softstart motor acceleration.

Key features

- Infinitely variable control
- 1 regulated output for the motor
- Minimum and maximum output voltage setting by trimmers or via Modbus
- Off level setting by trimmer or via Modbus
- Modbus RTU (RS485) communication
- Kick start or soft start
- Remote on/off by external switch or via Modbus
- 1 low voltage supply output (+12 VDC / 1 mA) for external potentiometer
- 0–10 VDC / 0–20 mA control signal, selectable by slide switch
- LED indication for normal operation and alarm status
- DIN rail mounting

Technical specifications

Power supply, U _s	3 x 400 VAC ±10 % / 50 Hz	
Regulated output, V _{out}	80–415 VAC	
Minimum output voltage setting, V _{min}	80–250 VAC	
Maximum output voltage setting, V _{max}	260–415 VAC	
Off level, V _{off}	0 or 0,1–6,0 VDC	
Supply outputs	12V: +12 VDC / 100 mA	
	VCC: +12 VDC / 1,0 mA	
Ambient conditions	Temperature	0–40 °C
	Rel. humidity	0–80 % rH (non-condensing)

Standards

- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- WEEE Directive 2012/19/EU
- RoHS Directive 2011/65/EU



Modbus registers

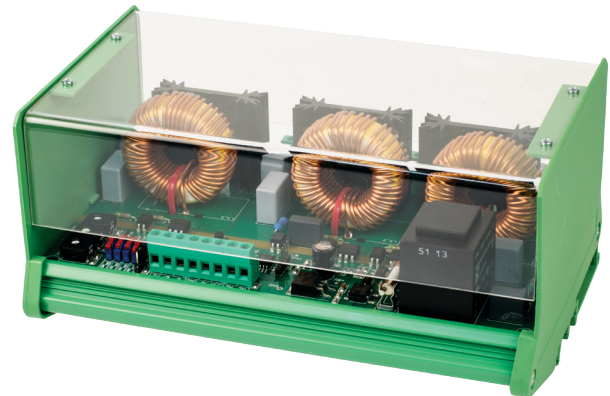


The Sensistant Modbus configurator allows you to easily monitor and/or configure Modbus parameters.

The parameters of the unit can be monitored / configured through the 3SModbus software platform. You can download it from the following link:
<https://www.sentera.eu/en/3SMCenter>



For more information about the Modbus registers, please refer to the product Modbus Register Map.



Article codes

Article code	Max. rated current [A]	Product design	Ingress protection
TVSS5-30CDT	3,0	PCB with modular interface for DIN rail mounting with finger proof cover included	IP20
TVSS5-60CDT	6,0		

Area of use

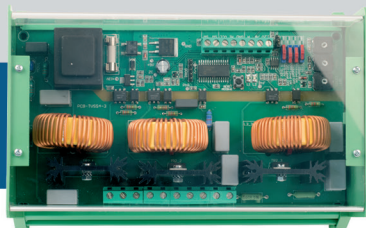
- Fan speed control in ventilation systems where flawless and accurate control is needed
- For indoor use only

Wiring and connections

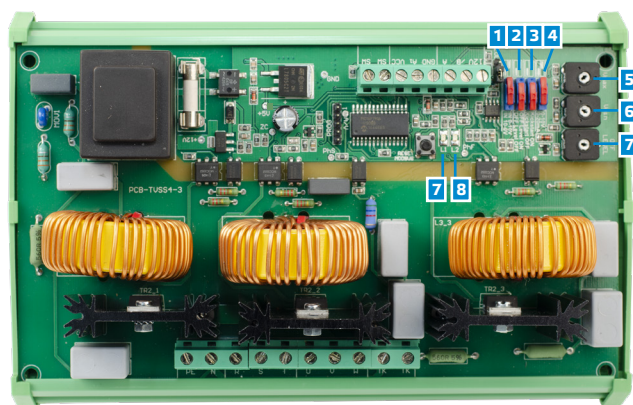
PE	Earth terminal	
N	Neutral	
R S T	Three-phase power supply (3 x 400 VAC, 50 Hz)	
U V W	Regulated output to three-phase motor	
TK	Thermal contacts of the motor	
SW	Remote start / stop	
VCC	Power supply for external potentiometer 12 VDC / 1 mA	
Ai	Analogue signal (0–10 VDC / 0–20 mA)	
GND	Analogue signal, ground	
12V	Supply output +12 VDC / 100 mA	
A	Modbus RTU (RS485) signal A	
/B	Modbus RTU (RS485) signal /B	
Connections	Cable cross section	max. 2,5 mm ²

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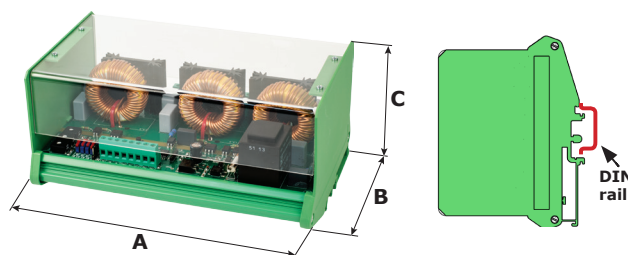


Settings



1 - Sw1		Input signal selection switch
2 - Sw2		Off level selection switch
3 - Sw3		Kick start selection switch
4 - Sw4		0–10 / 10–0 VDC selection switch
5 - Max. speed trimmer, Vmax		Adjusts the maximum output voltage
6 - Min. speed trimmer, Vmin		Adjusts the minimum output voltage
7 - Off level trimmer		Adjusts the off level value
7 - Alarm indication, L1	Cont. or blinking red (as defined)	Phase failure or motor overheating indication
8 - Operating LED indication, L2	Blinking green	TVSS is switched off by remote switch

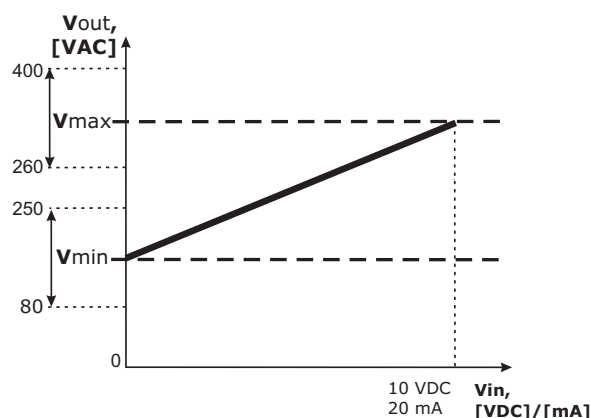
Fixing and dimensions



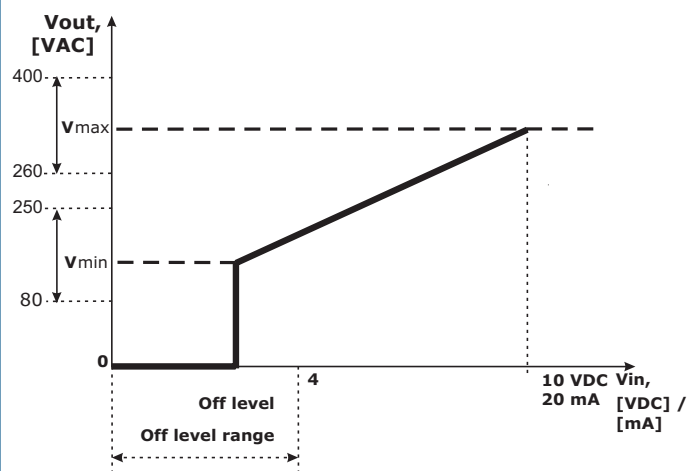
Article	A	B	C
TVSS5-30CDT	195	125	100
TVSS5-60CDT			

Operational diagrams

Off level disabled

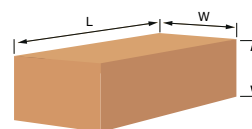


Off level enabled



Note: The operational diagrams for 10–0 VDC / 20–0 mA mode are mirror images of the diagrams above.

Packaging



Article	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight	Gross weight
TVSS5-30CDT	Unit (1 pc.)	210	128	108	0,97 kg	0,99 kg
TVSS5-60CDT	Unit (1 pc.)	210	128	108	0,91 kg	0,94 kg