

Monterings- och driftsinstruktion Installation and operating instruction Montage- und Betriebsanleitung

VRTE, VRDE, VRTT, VRDT



 DE WIT
ventilatoren



Before beginning installation procedures, these installation and operating instructions should be studied carefully. The installation and operation should also be in accordance with local regulations and accepted codes of good practice.



GENERAL DESCRIPTION

This transformer speed-controller is designed to be used in combination with an electric motor which is suitable for speed control by means of a transformer.

The controller can control the speed of the motor in 5 steps (level 1 - 2 - 3 - 4 - 5, both at single- and 3-phase).

Several ventilators (also with motors of different ratings) may be connected to one controller. However the total load current must not exceed the nominal output current of the controller.

Applications

- Motor(s) for connection to the controller must be suitable for transformer reduced voltage speed control.
- The total maximum current load of (all) the motor(s) connected to the controller must not exceed the nominal output current of the controller.

OPERATING CONDITIONS

The maximum admissible ambient temperature during operation is +40°C. When the controller is not

in operation, the maximum admissible ambient temperature is -20°C to +60°C.

CONTROLLER LOCATION

- The controller must be mounted vertically on to a solid surface, alternatively it may be mounted to a solid horizontal surface.
- The controller must not be mounted upside down. The cable entries should point down.
- The controller must not be mounted directly under, or on to the ceiling. To ensure adequate cooling, a minimum distance of 5 cm is required around the controller.

INSTALLATION

1. Remove the cover of the controller.
2. Mounting holes are provided on the inside back panel of the enclosure.
3. On some of the plastic enclosures, the mounting holes should be opened by knocking out the membrane covering the mounting hole.
4. For the ease of mounting, the mounting plate (inside) may be removed from the enclosure. The con-

troller enclosure should be mounted using corrosion resistant screws or bolts as required. Once secured in position, the mounting screws or bolts should be sealed to maintain the IP-rating of the enclosure, i.e. IP 54.

5. Supply cable to the control cabinet must have at least five wires (L1, L2, L3, N and PE).

ELECTRICAL CONNECTION

All electrical connections should be carried out by qualified and authorized electrician in accordance with national and local regulations.

The nominal voltage of the controller must be suitable for the electrical supply to which it will be connected.

The controller should be wired in accordance with the wiring diagram supplied with the controller and markings on the terminals.



Before connecting the controller, please ensure that the electrical supply has been suitably isolated and cannot be switched on!



The ground wire (green-yellow) of the electrical supply and of any equipment connected to the controller must be connected to the terminals marked PE.

Once all wiring to the controller has been completed, check that connections have been made to the correct terminals and that all connections are secure.

Finally replace the cover and ensure the securing screws are tight to prevent ingress of dirt and moisture.

VRDE, VRDT:

Additional connections (marked CL) for e.g. contacts of an external clock for switching between the 2 selected speeds/set points of the two speed-selection-switches.

VRDT, VRTT:

Additional connections for the thermal contacts from the motors (marked TK), and connections for e.g. two

thermostats (marked CC-CC and OC-OC). If CC-CC are not used they must be linked together.

Terminals marked (N, AL) for external failure signal.

VRTE:

Connections for valve- or servomotor:

A valve- (close-off flap) or servomotor may be connected to terminals NK and LK (marked "KLAPPE").

A 230 V (max load 40 V A) supply is available at these terminals, when the controller is switched on. If connection to external devices is not used, terminals NK and LK must not be linked together!

Note: The voltage at the terminal "LK" will be disconnected, if the control switch is in the "0"-position, or if the motor thermal switch contacts (at terminals "TK") open.

OPERATION

1. Check if the switch(es) of the controller is (are) in "0"-position.
2. Check the main supply voltage (nominal voltage tolerance +6%/-10%).
3. Switch on the main power supply first and then the controller. The green light on the outside of the enclosure will be on.
4. Check the voltage given in every switch position.
5. In case of failure check the fuse (inside of the enclosure, or external).

MAINTENANCE

The controller needs no specific maintenance.

The housing may be cleaned using a moist cloth it must not be hosed down.

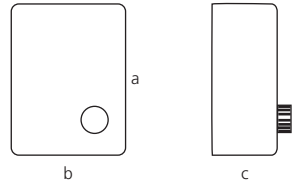
DISPOSAL

Disposal of this product or parts of it must be carried out according to the following guidelines:

1. Use the local public or private waste collection service.
2. In case such waste collection service does not exist or cannot handle the materials used in the product please deliver the product or any hazardous materials from it to your nearest Östberg company or service workshop.

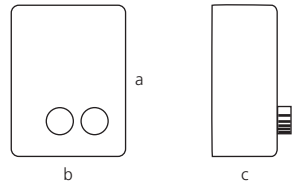
UTGÅENDE SPÄNNING/OUTPUT VOLTAGE/ AUSGANGSSPANNUNG

VRTE C: 80 V, 110 V, 140 V, 170 V, 230 V
VRTE: 80 V, 110 V, 140 V, 170 V, 230 V
VRTT: 95 V, 145 V, 185 V, 240 V, 400 V



Typ Type Typ	Märkström Current Strom	Spänning Voltage Spannung	Skyddsklass Encl. class Dämmklasse	a			b			c		
				a	x	b	x	c	a	x	b	x
VRTE C	1,0 A	230 V	IP 44	160	x	84	x	88				
VRTE 1	1,5 A	230 V	IP 54	205	x	115	x	100				
VRTE 3	3,5 A	230 V	IP 54	255	x	170	x	140				
VRTE 5	5,0 A	230 V	IP 54	255	x	170	x	140				
VRTE 7	7,5 A	230 V	IP 54	305	x	200	x	140				
VRTE 13	13,0 A	230 V	IP 54	325	x	300	x	185				
VRTT 1	1,5 A	400 V	IP 54	325	x	300	x	175				
VRTT 2	2,5 A	400 V	IP 54	325	x	300	x	175				
VRTT 4	4,0 A	400 V	IP 54	425	x	300	x	175				
VRTT 7	8,0 A	400 V	IP 54	425	x	300	x	235				
VRTT 11	11,0 A	400 V	IP 54	430	x	400	x	235				

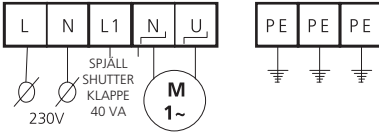
VRDE: 80V, 100V, 120V, 150V, 170V, 190V, 230V
VRDT: 95 V, 145 V, 185 V, 240 V, 400 V



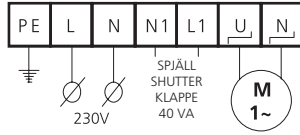
Typ Type Typ	Märkström Current Strom	Spänning Voltage Spannung	Skyddsklass Encl. class Dämmklasse	a			b			c		
				a	x	b	x	c	a	x	b	x
VRDE 1,5	1,5 A	230 V	IP 54	305	x	200	x	155				
VRDE 3	3,5 A	230 V	IP 54	305	x	200	x	140				
VRDE 7	7,5 A	230 V	IP 54	325	x	300	x	170				
VRDE 13	13,0 A	230 V	IP 54	425	x	300	x	225				
VRDT 2	2,5 A	400 V	IP 54	325	x	300	x	175				
VRDT 4	4,0 A	400 V	IP 54	425	x	300	x	225				
VRDT 7	8,0 A	400 V	IP 54	425	x	400	x	225				
VRDT 11	11,0 A	400 V	IP 54	430	x	400	x	235				

KOPPLINGSSCHEMAN / WIRING DIAGRAMS / SCHALTPLÄNE

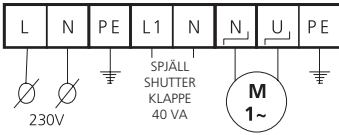
VRTE 3>13



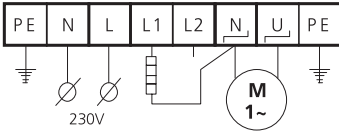
VRTE 1



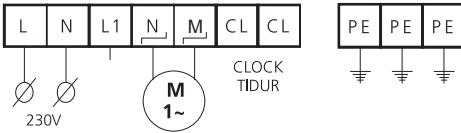
VRTEC



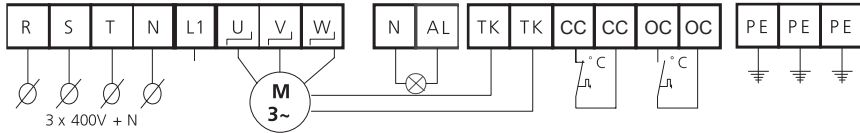
VRTEF



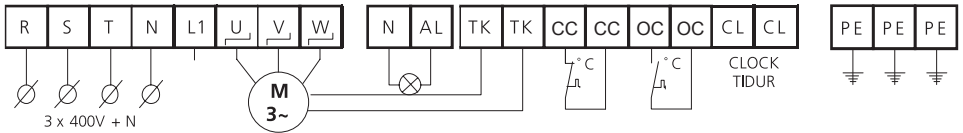
VRDE



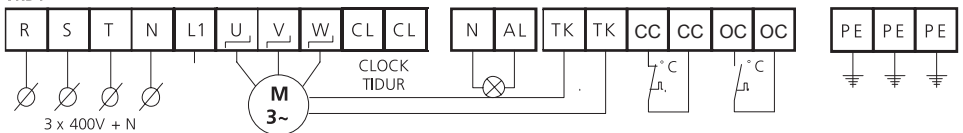
VRTT



VRDT 2



VRDT 4-11





EU DECLARATION OF CONFORMITY

We hereby confirm that our products comply with the requirements in the following EU-directives and harmonised standards and regulations.

Authorised representative:

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SENERA EUROPA NV declares that the transformer speed controllers for voltage controllable 1-phase electric motors of the types VRDE, VRDT, VRTE C and VRTT, if installed in accordance with the installation standards, manufacturer's instructions and professional rules, duly maintained and used for the applications as intended does comply with:

Low Voltage Directive (LVD) 2014/35/EU

Harmonised standards:

- ☒ EN 60335-1:2012 Household and similar electrical appliances - Part 1: General requirements. Amendment A11:2014 and AC 2014 to EN 50335-1:2012
- ☒ EN 61558-1:2005 Safety of power transformers, power supplies, reactors and similar products – Part 1: General requirements and tests. Amendment AC: 2006 and A1:2009 to EN 61558-1:2005

Directive for Electromagnetic Compatibility (EMC) 2014/30/EU

Harmonised standards:

- ☒ EN 61000-6-2:2005 Electromagnetic compatibility (EMC) - Generic standards - Immunity for industrial environments. Amendment AC: 2005 to EN 61000-6-2:2005
- ☒ EN 61000-6-3:2007 Electromagnetic compatibility (EMC) - Generic standards - Emission standard for residential, commercial and light-industrial environments. Amendment A1:2011 and AC:2012 to EN 61000-6-3:2007
- ☒ EN 60730-1:2011 Automatic controls for household and similar use – Part 1: General requirements


WEEE Directive 2012/19/EU – Waste of electrical and electronic equipment

RoHS Directive 2011/65/EU – restriction of use of certain hazardous substances in electrical and electronic equipment

The products are to be installed and maintained by skilled personnel only, according to the local regulations. This declaration is only valid when the devices are operated and installed according to the product's mounting instructions. The products, assembly or sub-assembly covered by this Declaration of Conformity must not be put into service until the machinery into it is to be incorporated has been declared in conformity with the provisions of the applicable Directive(s). This statement is only necessary where the product is to be incorporated into a machine or system (e.g. safety component).

The CE mark is affixed.
Made in Temse, November 2nd, 2016, on behalf of H. ÖSTBERG AB.

Avesta 2017-08-18



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H. Östberg AB