

USER MANUAL

ENERGY RECOVERY UNIT

VENTS Frigate TRV 150 DS



CONTENT

Introduction	3
Use	3
Included in the Box	3
Designation Key Example	3
Technical Data	3
Safety Requirements	4
Design and Operation	5
Mounting and Installation Guidelines	6
Connection to Power Supply	7
Unit Control System	8
Maintenance	9
Troubleshooting	10
Storage and Transportation	11
Warranty	11



INTRODUCTION

This manual will provide you with installation, operation, service instructions as well as technical data of the energy recovery unit VENTS Frigate TRV 150 DS, hereinafter the unit.

USE

The unit is for ceiling mounting. The unit is rated for non-stop operation.

INCLUDED IN THE BOX

- One VENTS Frigate TRV 150 DS
- One User manual
- One Packing Box

DESIGNATION KEY EXAMPLE

Frigate TRV 150 DS			
			Design explanation D - two energy exchange cores S - suspended mounting
		Air capacity [CFM]	
	Unit type TRV - total energy recovery unit		

TECHNICAL DATA

The energy recovery unit is designed for indoor installation and operation at the ambient air temperature ranging from +34 °F (+1 °C) up to +122 °F (50 °C) and RH max. 80%.

Ingress Protection rating:

- IP44 for the unit motors;
- IP 22 for the assembled unit connected to air ducts.

The unit net weight is 66 lbs (30 kg).

The name designations, overall and connecting dimensions, outer view and technical data in shown in fig. 1 and in table 1, 2.

The product design is periodically updated. Your unit may slightly differ from the model described here.

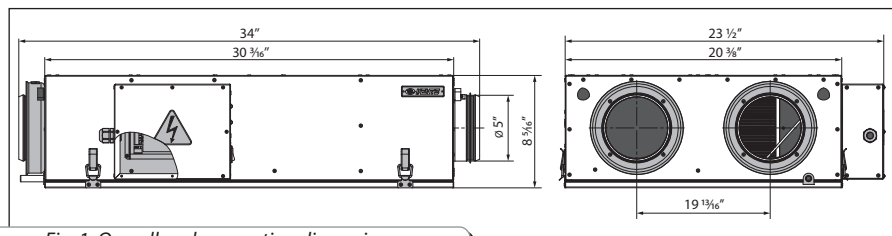


Fig. 1. Overall and connecting dimensions.

Table 1

ELECTRICAL REQUIREMENTS		EXHAUST AIR TRANSFER		EXT. STATIC PRESSURE		NET SUPPLY AIR FLOW		GROSS AIR FLOW SUPPLY		GROSS AIRFLOW EXHAUST	
Volts	Amps	EAT @ 100Pa (%)	EAT @ 50Pa (%)	(Pa)	(in. wg)	(L/s)	(cfm)	(L/s)	(cfm)	(L/s)	(cfm)
120	1,4	3,4	2,9	25	0,1	74	158	77	163	77	164
120	1,4	3,4	2,9	50	0,2	71	150	73	155	73	155
120	1,4	3,4	2,9	75	0,3	67	143	70	148	69	146
120	1,4	3,4	2,9	100	0,4	64	136	66	141	65	138
120	1,4	3,4	2,9	125	0,5	61	129	63	134	62	131
120	1,4	3,4	2,9	150	0,6	58	123	60	127	58	123
120	1,4	3,4	2,9	175	0,7	55	115	56	120	55	116
120	1,4	3,4	2,9	200	0,8	51	108	53	112	51	108
120	1,4	3,4	2,9	225	0,9	47	99	48	103	47	100
120	1,4	3,4	2,9	250	1,0	42	89	44	92	43	91

MODE	TEMPERATURE		NET AIR FLOW		POWER CON-SUMED	SENSIBLE RECOVERY EFFICIENCY	APPARENT SENSIBLE EFFECTIVENESS	LATENT RECOV-ERY / MOISTURE TRANSFER
	°C	°F	(L/s)	(cfm)				
HEATING	0	32	30	64	44	76	86	-0,01
HEATING	0	32	44	92	82	69	80	-0,01
HEATING	0	32	55	116	128	66	76	-0,01

SAFETY REQUIREMENTS

During installation and operation, observe all codes and safety standards for your locale.

Safe grounding must be provided!

Check the unit for possible damages prior to connecting it to power supply. Make sure the unit does not contain any foreign objects inside the case.

Electrical connections should only be done by a qualified electrician.



Warning!
Whenever the unit is installed, serviced, moved, or repaired it must be disconnected from the main power source.



Do not!

- Under no circumstances should the unit be operated in an environment with temperatures exceeding the technical data indicated on the motor name plate.
- Do not connect a clothes dryer or other irrelevant equipment to the unit.

DESIGN AND OPERATION

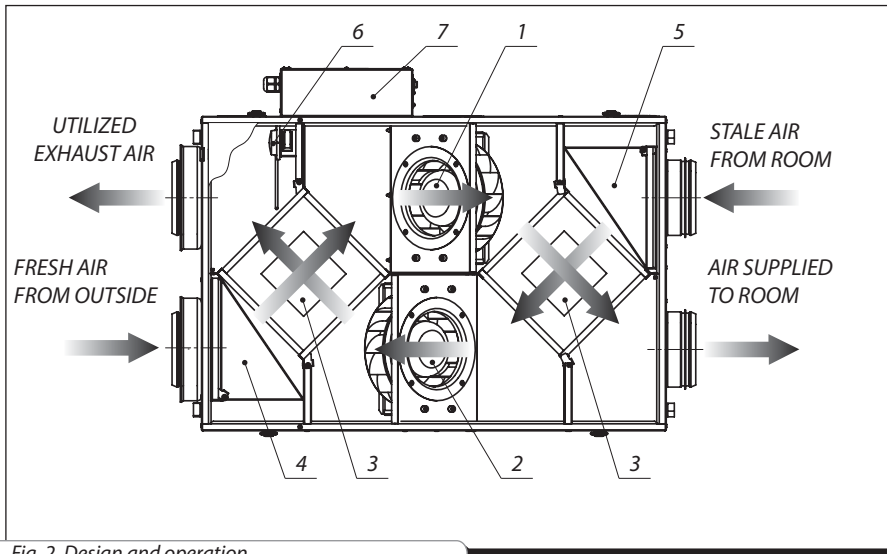


Fig. 2. Design and operation

1. Supply fan.
2. Extract fan.
3. Plate air-to-air energy recovery core of cross flow type.
4. G4 supply air filter.
5. G4 extract air filter.
6. Defrost thermostat.
7. Control unit.

MOUNTING AND INSTALLATION GUIDELINES

Be sure to provide sufficient service access while installing the unit. Fix the unit to the ceiling by means of the belts, rigidly fixed to a horizontal plane, fig. 3 or by means of the threaded rods that must be fixed inside of the expansion anchors in the ceiling.

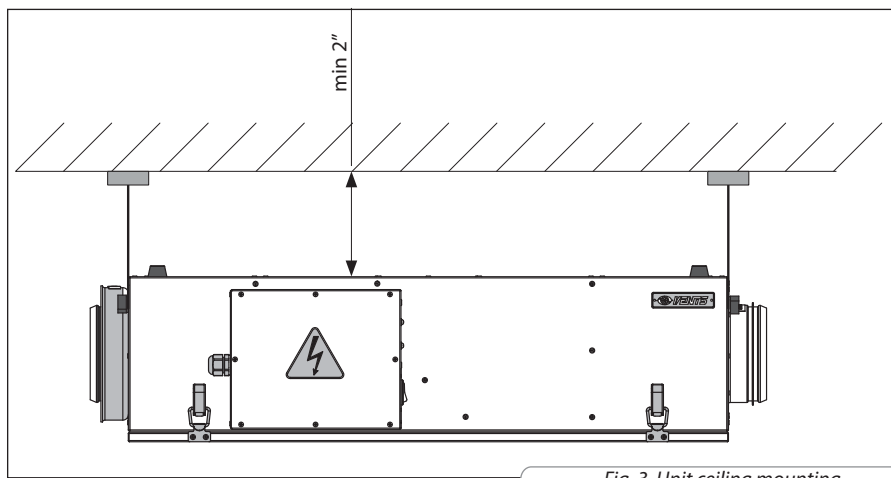


Fig. 3. Unit ceiling mounting



CONNECTION TO POWER SUPPLY



Disconnect the unit from power supply before connection and installation operations. Electrical wiring should only be performed by a qualified electrician. The nominal electric parameters are shown on the name plate. Warranty will not cover equipment damage or failure that is caused by improper installation.

The unit is rated for connection to 120 V / 60 Hz power supply source.

The unit is supplied with a pre-wired power cable and an adapter. It is suitable for connection to any standard grounded outlet.

The cutout fuse is used for overload protection in case of an overload or a short circuit. To replace the cutout fuse disconnect the unit from power supply source, troubleshoot an overload or a short circuit and then replace the cutout fuse. Check the unit for operation.

Refer to Figure 4 for electrical connections.

In case of freezing danger the integrated frost protection thermostat TS1, fig. 4, stops the supply fan to let warm extract air stream warm up the energy recovery core.

The thermostat temperature set point is adjusted by positioning the control thermostat dial not below the minimum thermostat response temperature.

The thermostat settings are individually adjustable and are determined by the unit application.

The recommended thermostat set point is 37 °F (+3 °C) and it is set by default.

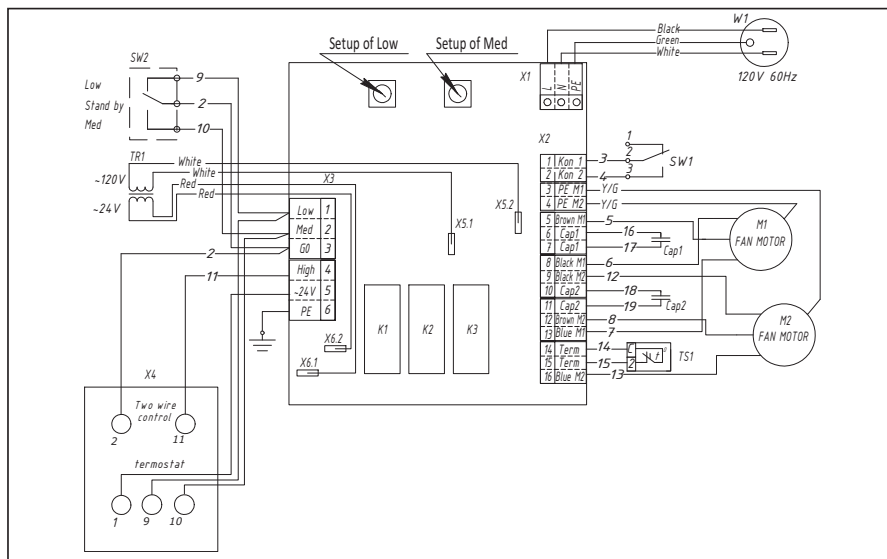


Fig. 4 Wiring the unit

UNIT CONTROL

The unit is controlled using a three-position switch, fig. 6. It enables the unit operation in Low Speed Mode, Medium Speed Mode or Standby Mode this providing total air quality control.

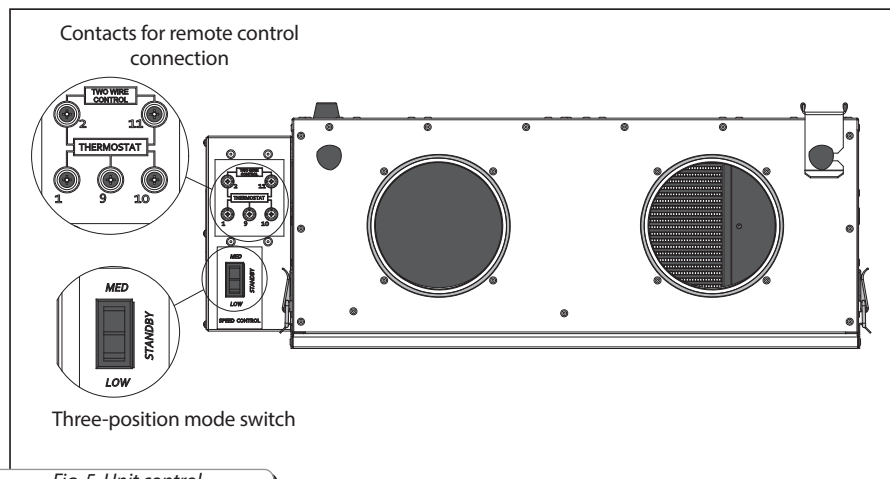


Fig. 5. Unit control

Connection of external controls.

Up to five external controls may be connected to the terminals 2 and 11, fig. 5. If the connected control is activated, the unit changes into High Speed Mode.

Refer to Fig. 6 for electrical connections of the external controls.

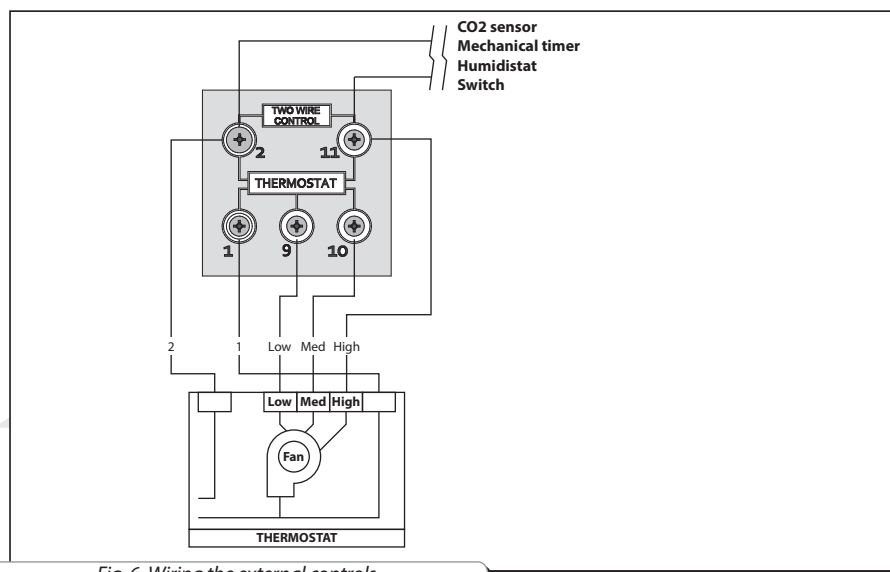


Fig. 6. Wiring the external controls

1. Remote control (Thermostat).



Set the three-position switch into the Stand by position to activate the remote control.

Remote control (thermostat) functions:

- Unit turning on/off
- Setting air flow
- Displaying indoor air temperature

2. CO2 sensor.

Recommended for use in office buildings and public premises. When carbon dioxide concentration exceeds the set point, the unit changes into the High Speed Mode.

3. Humidistat.

The humidistat is used for indoor humidity control. When indoor humidity level rises above the set point, the unit changes into the High Speed Mode and runs with the high speed until the humidity level falls down below the set point. The humidity set point is adjustable.

4. Remote mechanical timer.

In case of the timer activation the unit changes into the High Speed Mode.

5. Switch.

In case of the switch contact closing the unit changes into High Speed Mode and reverts to permanent Low Speed Mode when the switch contacts are opened.

MAINTENANCE

Regular maintenance should be performed every 3 months as follows:

1. Filter inspection.

Dirty filters increase air resistance and reduce supplied air volume to the room.

Clean the filters as often as required, but at least 3-4 times per year. Clean the filter with a vacuum cleaner or flush it with water.

Replace the filter after the second cleaning. For new filters, contact your Seller.

2. Energy recovery core inspection (once per year).

The regular filter maintenance may not completely prevent dust ingress into the energy recovery core. The energy recovery core must be regularly cleaned to maintain high energy recovery efficiency.

Energy recovery core is made of polymerised cellulose. Remove it from the unit and clean it with a vacuum cleaner. Do not use water, abrasive detergents, aggressive solvents and sharp objects. Re-install the energy recovery core back into the unit after cleaning.

3. Fan inspection (once per year).

Regular filter and energy recovery core maintenance may not completely prevent dust ingress into the unit fans. Clogged filter reduce supplied air volume to the room.

Clean the fans with a soft cloth or a brush. No water and abrasive detergent, sharp objects or solvents are allowed for cleaning to prevent the impeller damage.

4. Intake inspection (twice per year).

The intake grille may get clogged with leaves and other outdoor pollutants. Check the intake grille twice per year and clean as required.

5. Air ductwork maintenance (once in 5 years).

If degraded performance is still noticeable after following all maintenance guidelines it is recommended that the ductwork be checked and cleaned if necessary.

TROUBLESHOOTING**Troubles and troubleshooting**

Trouble	Probable reason	Remedy
The fan is not started	Not power supply	Have a qualified electrician check for connections and troubleshoot an connection error if required.
	Fuse blowing	Have a qualified electrician check to troubleshoot overload and replace the fuse.
Low supply air temperature	Extract filter clogging	Clean or replace the extract filter.
	Energy recovery core freezing	Check the energy recovery core for icing. In case of the energy recovery core icing turn off the unit from power supply and troubleshoot freezing. Check and adjust the thermostat settings if required.
Low air flow	Low set fan speed	Check the speed switch positioning.
	Dirty filters, impellers, energy recovery core	Clean or replace the filters, fans or the energy recovery core.
	Dirty or damaged ventilation system	Make sure the diffusers and the louver shutters are opened. Check functioning of the extract hood and the supply grille and clean if required. Make sure the air ducts are intact and clean.
Noise, vibration	Dirty impeller	Clean the impeller.
	Loose screw	Tighten the screws.



STORAGE AND TRANSPORTATION

Risk of injury when lifting and installing the unit. Get a helper and wear eye protection. Keep the unit a dry, weather protected premise in the manufacturer's original packing box in a clean environment.

Protect the unit against possible harmful environmental impact until it is finally mounted. We do not recommend storing of the unit longer than one year.

Keep the duly temperature and humidity conditions in the stock environment.

Connection of the unit to power mains is allowed only in 2 hours since its keeping in an premise with the room temperature.

WARRANTY

Production meets standard operating requirements in the USA and Canada.

VENTS US warrants to the original purchaser of the TRV 150 DS unit that it will be free from defects in materials or workmanship for a period of 60 months from the date of original purchase. The VENTS US warrants to the original purchaser of the TRV 150 DS unit that the integrated control unit will be free from defects in materials and workmanship for a period of 24 months from the date of original purchase.

VENTS US warrants to the original purchaser of the TRV 150 DS unit that it will be free from defects in materials or workmanship for a period of 60 months from the date of original purchase. THERE ARE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. During the stated warranty period, VENTS US will, at its option, repair or replace, without charge, any product or part which is found to be defective under normal use and service. This warranty does not cover (a) normal maintenance and normal service or (b) any products or parts which have been subject to misuse, negligence, accident, improper maintenance or repair (other than by VENTS US), faulty installation or negligence, accident, improper maintenance or repair (other than by VENTS US), faulty installation or installation contrary to recommended installation instructions. Labor to remove and replace products is not covered. The duration of any implied warranty is limited to the time period specified for the express warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

VENTS US OBLIGATION TO REPAIR OR REPLACE, AT VENTS US OPTION, SHALL BE THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY. VENTS US SHALL NOT BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH PRODUCT USE OR PERFORMANCE. Some states do not allow the exclusion or limitations of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. This warranty supersedes all prior warranties.

If proof of sales date is absent, warranty period is calculated from the production date.

The unit can be exchanged at the following address:

Bodor Vents, LLC DBA: Vents-US

11013 Kenwood Road Cincinnati, Ohio 45242

Phone: (513)348-3853

e-mail: sales@ventsus.com

Please follow guidelines in this manual for product problem-free operation.

