



**ELECTRONIC SPEED CONTROLLERS,
POTENTIOMETERS,
TRANSFORMER FAN SPEED CONTROLLERS,
CONTROLLERS FOR TWO SPEEDS FAN MOTOR**



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ELECTRONIC SPEED CONTROLLERS

Electronic speed controllers ERV..B (230V)

Electronic speed controllers ERV ..B are used to change rotation speed by changing supply voltage of motor without overheat external connection. The regulation of the motor rotation speed is stepless from the set minimum inside of controller up to the full supply voltage on the controllers output. The controller has minimum speed setpoint inside. The hard start time setpoint inside of the controller. The start from the maximum rotating speed with the time delay to set one with a potentiometer. If the setpoint is 0, the controller will start in the soft mode – minimum to maximum. Controllers ERV..B have overheat protection function.

Type	Input voltage [V]	Current [A]	Fuse 5x20 mm[A]	Dimensions AxBxCxD [mm]	Weight [kg]
ERV 0.5B	230	0,5	0,63	80x80x63x60	0,12
ERV 1.5B	230	1,5	2,50	80x80x63x60	0,14
ERV 3.0B	230	3,0	3,15	80x80x63x60	0,18

table 1

Electronic speed controllers ERV..T (230V), ERV..TMB (230V)

Triac speed controllers ERV ..T(MB) are designed to change the motor rotation speed by changing the output voltage. Controllers have a function of the triac thermo protection. The regulation of the motor rotation speed is stepless from the set minimum inside of controller up to the full supply voltage on the controllers output. Motor's rotation speed setpoint can be done with a knob which is located on the cover of the ERV..T(MB) controller. The controllers also have ON/OFF switch with green power supply indication. The fuse is installed in the controller for safety work. ERV..TMB additionally has an external control function with the signal 0-10VDC or by the interface RS485 MODBUS. Controllers ERV..TMB work mode can be changed with the external relay contacts.

Type	Input voltage [V]	Current [A]	Fuse [A]	Dimensions AxBxCxD [mm]	Weight [kg]
ERV 5.0T	230	0,1-5,0	6,0	125x175x90x75	0,5
ERV 10.0T	230	0,2-10,0	12,5	125x175x90x75	0,6
ERV 5.0TMB	230±5%	0,1-5,0	6,3	125x175x90x75	0,5
ERV 10.0TMB	230±5%	0,2-10,0	12,5	125x175x90x75	0,6

Electronic speed controllers ERV..B, ERV..T, ERV..TMB:

Minimum speed setpoint inside of the controller.

ERV..B controllers have over heat protection.

Enlightenment of the setpoint knob indicates that the controller is switched ON.

Controllers have inner potentiometer to set the time for maximum power work at the start.

TECHNICAL DATA

Electronic speed controllers ERV..B (230V)

- Frequency (Hz):50/60.
- Protection class IP20.
- Protection class IP44 if installed in the flush box.
- Overheat protection: 65°C.
- Max. ambient temperature: 35°C.
- Storage temperature: -35..+ 50°C.



Electronic speed controllers ERV..T (230V)

- The regulation of motor rotation speed is stepless from set minimum inside of controller up to full supply voltage on the controllers output.
- Minimum output voltage set point range: 60..150 VAC.
- Power supply: 230 VAC.
- Frequency: 50/60[Hz].
- Protection class IP54.
- Max. ambient temperature 35°C.
- Max. controller temperature 70°C is limited with thermal protection.



Electronic speed controllers ERV..TMB (230V)

- The regulation of motor rotation speed is stepless from set minimum inside of controller up to full supply voltage on the controllers output.
- Minimum output voltage set point range: 50..150 VAC $\pm 5\%$.
- Power supply: 230 VAC $\pm 5\%$.
- Frequency: 50/60[Hz].
- Protection class IP54.
- Max. ambient temperature 35°C+5%.
- Max. controller temperature 70°C+5% is limited with thermo protection.



Potentiometers

Potentiometer EC 10

The controller is designed for direct control or nominal value present of EC-fans with potentiometer input or any application where a DC control signal required. For the manual control of speed and air flow of electrical fans with 0-10V output. Additionally equipped with an enabling switch. The jet proof IP54 enclosure is achieved with the included surface mounting case. Flush-mounting a splash-proof IP44 enclosure also suitable for high demand environments as bathrooms etc.

Type	Switch rating [V AC]	Supply voltage [V DC]	Output voltage [V DC]	Ambient temperature	Dimensions AxBxCxD [mm]
EC 10	4A/250	10	0..10	0+45°C	82x82x60x56

table 3

Setpoint potentiometer with relay output ECS10

Setpoint potentiometer with relay output ECS10 is designed to change EC (electronically commutated) motor rotating speed by changing control signal 0..10 VDC. The ECS10 can be also used to change control input DC signals for a frequency inverters or other devices that can be controlled by input DC signal. The ECS10 has an enclosure for the surface installation. For the output signal regulation, the voltage 3..15 VDC must be supplied to the ECS10. For enabling the controlled device the ECS10 has relay output. The minimum and maximum level of the potentiometer output signal can be adjusted with inside installed trimmers. Potentiometer output signal can be adjusted with inside installed trimmers.

Type	Input voltage [V DC]	Dimensions AxBxCxD [mm]
ECS 10	3..15	80x80x26x32

Controller ECS10-PWM

The controller ECS10-PWM is designed to change EC (electronically commutated) motor rotating speed or to control other devices by changing control signals 0..10 VDC, 2..20 mA or PWM 10..100 %. The selection of signal type can be done with the switch inside the controller. The ECS10-PWM has an enclosure for the surface installation. The power supply 230 VAC must be supplied to the controller ECS10-PWM. For enabling the controlled device the ECS10-PWM has the relay output. The minimum and maximum level of the potentiometer output signal can be adjusted with inside installed trimmers.

Type	Input voltage [V AC]	Dimensions AxBxCxD [mm]
ECS 10-PWM	230	80x80x26x32

table 5

TECHNICAL DATA

Potentiometer EC 10

- Protection class: IP44/54.
- Max. ambient temperature 0 to 40°C.
- Control range: 0...10 Kohm.
- Output voltage: 0...10 VDC.
- Storage temperature: -35, + 50°C.
- Switch rating: 4A/250 VAC. 10A/12 VDC.
- Weight: 165 gr.



Setpoint potentiometer with relay output ECS10

- The supply voltage: 3..15 VDC.
- The adjustable output signal limited with minimum and maximum.
- The relay output voltage free for enabling controlled device.
- The minimum setpoint range: 10..70% of the supply voltage.
- The maximum setpoint range: 30..100% of the supply voltage.
- The protection class: IP44.
- The max. ambient temperature: 40°C.
- The max. ambient humidity 90% without the condensation.
- Weight: 66 gr.



Controller ECS10-PWM

- The supply voltage: 230 VAC.
- The adjustable output signal limited with minimum and maximum.
- The relay output voltage free for enabling controlled device.
- The minimum setpoint range: 1..7 VDC, 2..10 mA, PWM 1..70 %.
- The maximum setpoint range: 3..10 VDC, 6..20 mA, PWM 30..100 %.
- The protection class: IP44.
- The max. ambient temperature: 40°C.
- The max. ambient humidity 90% without the condensation.
- Weight: 84 gr.



TRANSFORMER FAN SPEED CONTROLLERS

Transformer fan speed controllers RV..B, RV..

Transformer controllers are designed to change motor rotation speed by changing voltage. Controllers are with transformers overheating protection function. The steps have fixed voltages and are switchable with rotary switch. With a single-speed, the controller can control multiple motors, if the total of all motors power consumption does not exceed the maximum controller current.

Transformer fan speed controllers RV..B (1x230V)

Type	Input voltage [VAC]	Controlled current with triacs [A] (max.)	Dimensions AxBxCxD [mm]	Weight [kg]
RV 0.6B	230	0,6	100x120x85x70	1,0
RV 1.2B	230	1,2	100x120x85x70	1,4
RV 1.5B	230	1,5	100x120x85x70	1,6
RV 2.2B	230	2,2	125x175x75x90	2,2
RV 3.0B	230	3,0	125x175x75x90	3,0
RV 4.0B	230	4,0	125x175x115x100	3,2
RV 5.0B	230	5,0	125x175x115x100	3,6
RV 7.0B	230	7,0	240x190x140x125	6,5
RV 11.0B	230	11,0	240x190x140x125	7,6
RV 14.0B	230	14,0	240x190x140x125	11,2



NOTE: without motor thermo protection connection.

table 6

Transformer fan speed controllers RV.. (1x230V)

Type	Input voltage [VAC]	Controlled current with triacs [A] (max.)	Dimensions AxBxCxD [mm]	Weight [kg]
RV 1.2	230	1,2	125x175x90x75	1,6
RV 1.5	230	1,5	125x175x90x75	1,8
RV 2.2	230	2,2	125x175x90x75	2,2
RV 3.0	230	3,0	125x175x90x75	3,0
RV 4.0	230	4,0	125x175x120x100	3,7
RV 5.0	230	5,0	125x175x120x100	4,1
RV 7.0	230	7,0	240x190x145x125	7,0
RV 11.0	230	11,0	240x190x145x125	8,1
RV 14.0	230	14,0	240x190x145x125	11,2



NOTE: with motor thermo protection connection.

table 7

TRANSFORMER FAN SPEED CONTROLLERS

Transformer fan speed controllers RT., RT..EX

Transformer controllers are designed to change motor rotation speed by changing voltage. Controllers are with transformers overheating protection function. The steps have fixed voltages and are switchable with rotary switch. With a single speed controller can control multiple motors, if the total of all motors power consumption does not exceed the maximum controller current. Controllers RT..EX are intended to be used for motors with PTC thermoprotection.

Transformer fan speed controllers RT.. (3x400V)

Type	Input voltage [VAC]	Controlled current with triacs [A] (max.)	Dimensions Ax:BxCxD [mm]	Weight [kg]
RT 1.0	400	1,0	240x190x110x90	5,7
RT 2.0	400	2,0	240x190x110x90	8,3
RT 3.0	400	3,0	300x220x140x120	10,3
RT 4.0	400	4,0	300x220x140x120	14,4
RT 5.0	400	5,0	300x220x140x120	16,3
RT 7.0	400	7,0	360x300x165x145	23,3
RT 11.0	400	11,0	380x340x220x200	36,7
RT 14.0	400	14,0	380x340x220x200	38,1

table 8



Transformer fan speed controllers RT..EX (3x400V)

Type	Input voltage [VAC]	Controlled current with triacs [A] (max.)	Dimensions Ax:BxCxD [mm]	Weight [kg]
RT 1.0EX	400	1,0	240x190x110x90	5,9
RT 2.0EX	400	2,0	300x220x140x120	8,5
RT 3.0EX	400	3,0	300x220x140x120	10,5
RT 4.0EX	400	4,0	300x220x140x120	14,6
RT 5.0EX	400	5,0	300x220x140x120	16,5
RT 7.0EX	400	7,0	360x300x165x145	23,5
RT 11.0EX	400	11,0	380x340x220x200	36,9
RT 14.0EX	400	14,0	380x340x220x200	38,3

NOTE: for explosion proof fans.

table 9



TRANSFORMER FAN SPEED CONTROLLERS

Transformer fan speed controllers RV..B-2, RV..-2, RT..-2

Transformer controllers are designed to change motor rotation speed by changing voltage. All controllers have overheating protection function. The steps have fixed voltages and are switchable with rotary switch. Controllers are equipped with 2 rotary switches. Rotary switch selection can be made with external signal. In this case can be selected one of set speeds.

Transformer fan speed controllers RV..B-2 (1x230V)

Type	Input voltage [VAC]	Controlled current with triacs [A] (max.)	Dimensions AxBxCxD [mm]	Weight [kg]
RV 1.2B-2	230	1,2	125x175x90x75	1,6
RV 1.5B-2	230	1,5	125x175x90x75	1,8
RV 2.2B-2	230	2,2	125x175x90x75	2,2
RV 3.0B-2	230	3,0	125x175x115x100	3,0
RV 4.0B-2	230	4,0	125x175x115x100	3,7
RV 5.0B-2	230	5,0	125x175x120x100	4,1
RV 7.0B-2	230	7,0	240x190x145x125	7,1
RV 11.0B-2	230	11,0	240x190x140x125	8,2



NOTE: without motor thermo protection connection.

table 10

Transformer fan speed controllers RV..-2 (1x230V)

Type	Input voltage [VAC]	Controlled current with triacs [A] (max.)	Dimensions AxBxCxD [mm]	Weight [kg]
RV 1.2-2	230	1,2	125x175x90x75	1,7
RV 1.5-2	230	1,5	125x175x90x75	1,9
RV 2.2-2	230	2,2	125x175x90x75	2,3
RV 3.0-2	230	3,0	125x175x115x100	3,1
RV 4.0-2	230	4,0	240x190x145x125	3,8
RV 5.0-2	230	5,0	240x190x145x125	4,2
RV 7.0-2	230	7,0	240x190x145x125	7,1
RV 11.0-2	230	11,0	240x190x140x125	8,2



NOTE: with motor thermo protection connection.

table 11

Transformer fan speed controllers RT..-2 (3x400V)

Type	Input voltage [VAC]	Controlled current with triacs [A] (max.)	Dimensions AxBxCxD [mm]	Weight [kg]
RT 1.0-2	400	1,0	240x190x105x90	7,0
RT 2.0-2	400	2,0	300x220x135x120	9,0
RT 3.0-2	400	3,0	300x220x135x120	11,0
RT 4.0-2	400	4,0	300x220x135x120	15,1
RT 5.0-2	400	5,0	300x220x135x120	17,1
RT 7.0-2	400	7,0	380x300x185x170	24,0
RT 11.0-2	400	11,0	380x300x185x170	37,4
RT 14.0-2	400	14,0	380x300x185x170	38,8



table 12

TRANSFORMER FAN SPEED CONTROLLERS

Transformer fan speed controllers RV..YS and RT..YS with external relay input (door switch)

Transformer controllers are designed to change motor rotation speed by changing voltage. Controllers are with transformers and motor overheating function. The steps have fixed voltages and are switchable with rotary switch. Controllers have external relay signal input S-S for switching ON/OFF controllers. With a single-speed, the controller can control multiple motors, if the total of all motors power consumption does not exceed the maximum controller current.

Transformer fan speed controllers RV.. YS (1x230V) with external relay input (door switch)

Type	Input voltage [VAC]	Controlled current with triacs [A] (max.)	Dimensions AxBxCxD [mm]	Weight [kg]
RV 1.2YS	230	1,2	125x175x90x75	1,6
RV 1.5YS	230	1,5	125x175x90x75	1,8
RV 2.2YS	230	2,2	125x175x90x75	2,2
RV 3.0YS	230	3,0	125x175x90x75	3,0
RV 4.0YS	230	4,0	125x175x120x100	3,7
RV 5.0YS	230	5,0	125x175x120x100	4,1
RV 7.0YS	230	7,0	240x190x145x125	7,0
RV 11.0YS	230	11,0	240x190x145x125	8,1
RV 14.0YS	230	14,0	240x190x145x125	11,2



NOTE: with motor thermo protection connection.

table 13

Transformer fan speed controllers RT.. YS (3x400V) with external relay input (door switch)

Type	Input voltage [VAC]	Controlled current with triacs [A] (max.)	Dimensions AxBxCxD [mm]	Weight [kg]
RT 1.0YS	400	1,0	240x190x105x90	5,9
RT 2.0YS	400	2,0	300x220x135x120	8,5
RT 3.0YS	400	3,0	300x220x135x120	10,5
RT 4.0YS	400	4,0	300x220x135x120	14,6
RT 5.0YS	400	5,0	300x220x135x120	16,5
RT 7.0YS	400	7,0	380x300x185x170	23,5
RT 11.0YS	400	11,0	380x300x185x170	37,0
RT 14.0YS	400	14,0	380x300x185x170	38,3



table 14

TECHNICAL DATA

Transformer fan speed controllers RV..B (1x230V), RV.. (1x230V), RV..B-2 (1x230V), RV..-2 (1x230V)

- 5 steps the motor rotation speed controller.
- Power supply: 230 VAC.
- Frequency (Hz):50/60.
- Protection class IP54.
- Max. ambient temperature: 40°C.
- Max. controller temperature 70°C is limited with thermo protection.

Transformer fan speed controllers RT.. (3x400V), RT..-2 (3x400V)

- 5 steps the motor rotation speed controller.
- Power supply: 400 VAC.
- Frequency (Hz):50/60.
- Protection class:
 - IP54 (RT 1.0...RT 5.0) - plastic boxes,
 - IP44 (RT 7.0...RT 14.0) - metal boxes.
- Max. ambient temperature: 40°C.
- Max. controller temperature 70°C is limited with thermo protection.

Transformer fan speed controllers RT..EX (3x400V)

- 5 steps the motor rotation speed controller.
- Power supply: 400 VAC.
- Frequency (Hz):50/60.
- Protection class:
 - IP54 (RT 1.0...RT 5.0) - plastic boxes,
 - IP44 (RT 7.0...RT 14.0) - metal boxes.
- Max. ambient temperature: 40°C.
- Max. controller temperature 70°C is limited with thermo protection.
- Motor thermo protection - PTC.



TECHNICAL DATA

Transformer fan speed controllers RV..YS with external relay input (door switch)

- 5 steps the motor rotation speed controller.
- Power supply: 230 VAC.
- Frequency (Hz):50/60.
- Protection class IP54.
- Max. ambient temperature: 40°C.
- Max. controller temperature 70°C is limited with thermo protection.

Transformer fan speed controllers RT..YS with external relay input (door switch)

- 5 steps the motor rotation speed controller.
- Power supply: 400 VAC.
- Frequency (Hz):50/60.
- Protection class:
IP54 (RT 1.0YS...RT 5.0YS) - plastic boxes,
IP44 (RT 7.0YS...RT 14.0YS) - metal boxes.
- Max. ambient temperature: 40°C.
- Max. controller temperature 70°C is limited with thermo protection.



CONTROLLERS FOR TWO SPEED FAN MOTOR

Controllers for two speeds fan motor RD.., RD..EX

Controllers are used for two speeds of fan motor control with star/delta electrical connection. Controllers have a motor overheating protection function. If the motor overheat protection gives a signal that motor winding temperature is too high the controller cuts off power supply to the motor.

Controllers for two speeds fan motor RD..

Type	Input voltage [V AC]	Controlled current with triacs [A] (max.)	Dimensions AxBxCxD [mm]	Weight [kg]
RD 4.0	400	9,0	175x125x146x101	1,1

table 15



Controllers for two speeds fan motor RD..EX

Type	Input voltage [V AC]	Controlled current with triacs [A] (max.)	Dimensions AxBxCxD [mm]	Weight [kg]
RD 4.0EX	400	9,0	175x125x146x101	1,2

NOTE: for explosion proof fans.

table 16



TECHNICAL DATA

Controllers for two speeds fan motor RD..

- Power supply: 400 VAC.
- Frequency (Hz):50/60.
- Motor power and current: max 4,0 kW, 9,0 kW.
- Protection class IP54.
- Max. ambient temperature: 40°C.

Controllers for two speeds fan motor RD..EX

- Power supply: 400 VAC.
- Frequency (Hz):50/60.
- Motor power and current: max 4,0 kW, 9,0 kW.
- Protection class IP54.
- Max. ambient temperature: 40°C.
- Motor thermo protection - PTC.

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