

The electronic speed control, ESC, is an electronic power device which is able to regulate the speed rotation of electric fans driven by DC brush electric motors. The ESC can be combined with all fans (SPAL 12/24V VA09..., ASA 12/24V ILLEVA..., and other brands).

Technical Data

order number	description	max. current fan [A]	protection	weight [kg]	supply DC
410000	ESC Single 24V DC	40 *	IP 67 *	0,25	24V (18V – 32V)
400000	ESC Single 12V DC	40 *	IP 67 *	0,25	12V (9V – 15V)

* depends on the connector being used

Functions

Soft Start	Always activated to eliminate the current peaks
WLAN	Diagnostic tool (working hours, switch-on cycles)
Reverse mode	Each time the ESC is switched off, reverse starts for 30 seconds
Lifetime	10.000 to 40.000 hours depending on the working conditions

Protection against

Reverse polarity	Power supply line
Load dump	From the power supply

EMC protection

ECE R10	Construction machinery Agriculture and forestry machines Industrial trucks
EN IEC 61000-6	61000-6-2, 61000-6-3, 61000-6-4

Measurement input

Temperature sensor	Order number: 500000 NTC3,3k, Min Speed @ 45°C (1475Ω), Max Speed @ 55°C (987 Ω)
Temperature switch	Order number: 51000X 40°C, 50°C, 60°C, 70°C, 90°C

Motor output

24V Version	Up to 960W @ 24V DC (max 40A)
12V Version	Up to 480W @ 12V DC (max 40A)

Ambient conditions

Working temperature range	-20°C to +85°C
Storage temperature range	-40°C to +110°C

Optional functions

Temperature sensor Thermostat	Expandable to a second signal input
Diagnostic Output	Cable for a PWM output signal
Fan curve	can be personalized to customer requirements
Reverse mode	can be personalized to customer requirements

Connector configuration **

Fan	Metripack 280, 2 pole, 15300027
Sensor	AMP Superseal 1.5, 2pole, 282080-1
Power supply	Metripack 280, 2 pole, 15300002

** depends on max. current

Please note:

The maximum starting current is approximately 10% higher than the nominal current of the motor. Observe the maximum allowable supply of the fan motor. The allowed voltage range of the fan might differ from the allowed voltage range of the temperature control. In case of inverse polarity of the supply, the control unit is deactivated. After changing the polarity, the control is ready for use again. If the supply voltage exceeds 16,5V (12V Version) and 32V (24V Version) respectively, the control is switched off to protect the fan. After supply voltage is reducing below 12V or 24V, respectively, the control is activated again, automatically. The closed current is 5mA (12V Version) and 4mA (24V Version), respectively.

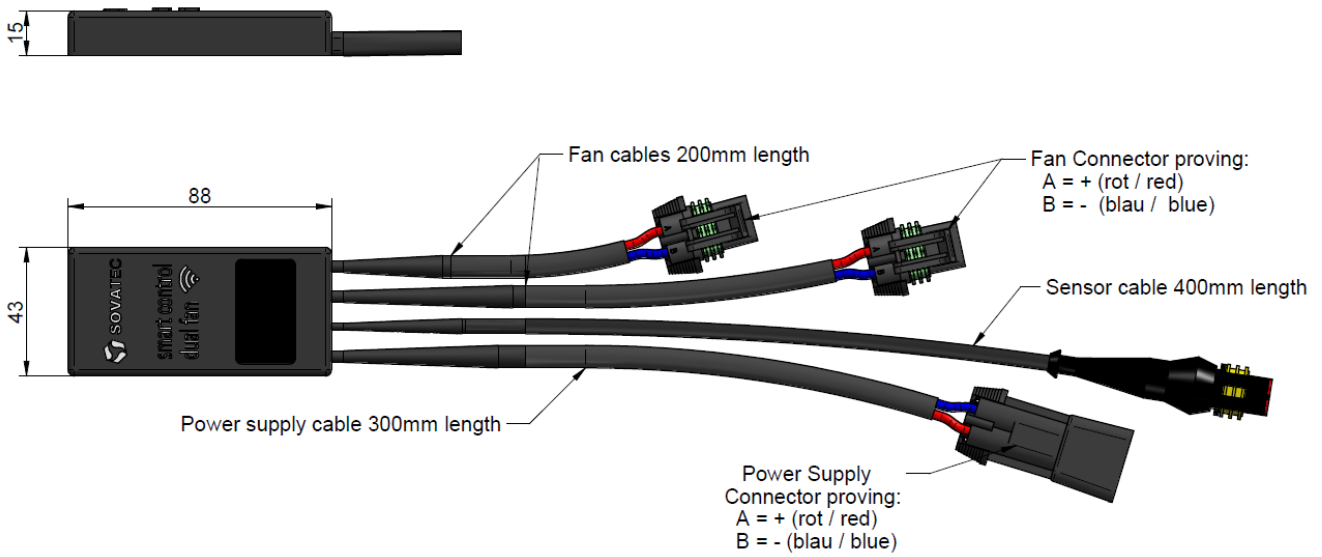
This data sheet and the corresponding scale drawings are to be used as a general guideline and technical overview of our products. Please contact us if more exact information is needed. As we are constantly improving our products, their characteristics, dimensions and weights may also change, although we do our best to incorporate these changes continually. Sovatec assumes no liability for any information therein, any errors, omissions, misprints, nor any direct or indirect damages, losses or costs resulting therefrom. Any general technical values indicated on this datasheet are measured at a test bench according to Sovatec testing procedures or calculated, based on such tests. They represent a basis for your product selection. Due to different conditions in testing and application environments the performance may also vary by +/- 15%. All sound values are determined in accordance with ISO 9614-2, DIN EN ISO 11203 accuracy class 3 or Machinery Directive 2006/42/EG and are A-rated. At some of the performance data, possible differences to competition data are possible. The reason to that are no existing standardized testing procedures on individual subjects. Therefore, we recommend all products to be checked under the system operating conditions. This is also true of vibrations and mechanical stress as well as for thermal stress and any other relevant factors. General tolerances according to DIN ISO 2768-VL, if it is not specified on the actual scale drawing or data sheet. Any form of liability is excluded for the information included in this datasheet. All details and calculation values are checked to the best of our ability, but these do not ensure any intrinsic product properties: due to the wide-ranging possible applications, it is advised that all technical data herewith included be confirmed through testing carried out by the end-user. Sovatec Produktion GmbH reserves the right to modify the product without any separate notification. This refers to both technical data and the product itself. Furthermore, it is herewith specified that the datasheet does not substitute the corresponding scale drawings, assembly and installation guidelines, nor the operating instructions.



- energy saving
- reduced noise level
- ECE R10 certification
- EMC compatibility
- IP 69K protection to sensor/switch



Dimensions





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Technical Data

order number	description	max. current fan [A]	protection	weight [kg]	supply DC
411000	ESC Dual 24V DC	2 x 20 *	IP 67 *	0,25	24V (18V – 32V)
401000	ESC Dual 12V DC	2 x 20 *	IP 67 *	0,25	12V (9V – 15V)

* depends on the connector being used

Functions

Soft Start	Always activated to eliminate the current peaks
WLAN	Diagnostic tool (working hours, switch-on cycles)
Reverse mode	Each time the ESC is switched off, reverse starts for 30 seconds
Lifetime	10.000 to 40.000 hours depending on the working conditions

Protection against

Reverse polarity	Power supply line
Load dump	From the power supply

EMC protection

ECE R10	Construction machinery Agriculture and forestry machines Industrial trucks
EN IEC 61000-6	61000-6-2, 61000-6-3, 61000-6-4

Measurement input

Temperature sensor	Order number: 500000 NTC3,3k, Min Speed @ 45°C (1475Ω), Max Speed @ 55°C (987 Ω)
Temperature switch	Order number: 51000X 40°C, 50°C, 60°C, 70°C, 90°C

Motor output

24V Version	Up to 480W @ 24V DC each channel (max 20A)
12V Version	Up to 240W @ 12V DC each channel (max 20A)

Ambient conditions

Working temperature range	-20°C to +85°C
Storage temperature range	-40°C to +110°C

Optional functions

Temperature sensor Thermostat	Expandable to a second signal input
Diagnostic Output	Cable for a PWM output signal
Fan curve	can be personalized to customer requirements
Reverse mode	can be personalized to customer requirements

Connector configuration **

Fan	Metripack 280, 2 pole, 15300027
Sensor	AMP Superseal 1.5, 2pole, 282080-1
Power supply	Metripack 280, 2 pole, 15300002

** depends on max. current

Please note:

The maximum starting current is approximately 10% higher than the nominal current of the motor. Observe the maximum allowable supply of the fan motor. The allowed voltage range of the fan might differ from the allowed voltage range of the temperature control. In case of inverse polarity of the supply, the control unit is deactivated. After changing the polarity, the control is ready for use again. If the supply voltage exceeds 16,5V (12V Version) and 32V (24V Version) respectively, the control is switched off to protect the fan. After supply voltage is reducing below 12V or 24V, respectively, the control is activated again, automatically. The closed current is 5mA (12V Version) and 4mA (24V Version), respectively.

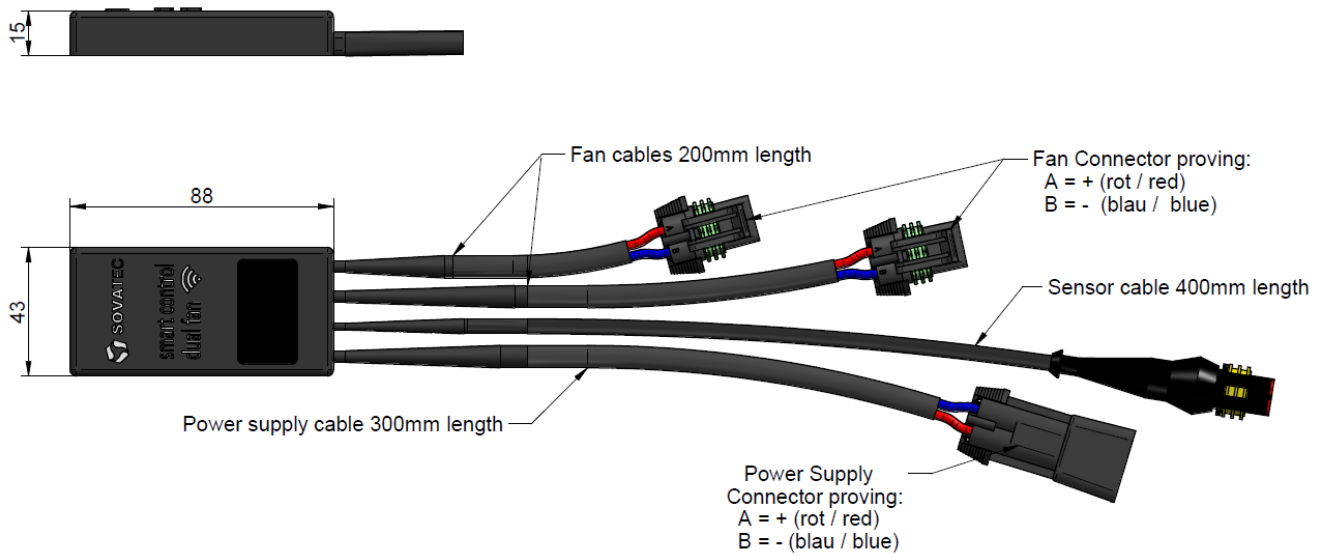
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Dimensions



The brushless motor must support reversing operation. The brushless fan must match the specifications of the controller. The speed is controlled via the temperature sensor.

Technical Data

order number	description	max. current fan [A]	protection	weight [kg]	supply DC
419000	ESC BLDC Controller 24V DC	35 *	IP 67 *	0,25	24V (18V – 32V)
409000	ESC BLDC Controller 12V DC	35 *	IP 67 *	0,25	12V (9V – 15V)

* depends on the connector being used

Functions

Enable signal	Motor only starts when the control unit receives an enable signal from the customer. The motor/fan is only activated when the enable signal is HIGH. $\leq 3V$ means LOW and $> 3V$ means HIGH.
Reverse mode	When the enable signal goes to LOW the reverse mode will be activated for 75 seconds. The reverse mode only can only be started if the fan has been switched on for longer than 15 seconds.
Lifetime	From 10.000 to 40.000 hours depending on the working conditions

Protection against

Reverse polarity	Power supply line
Load dump	From the power supply

EMC protection

ECE R10	Construction machinery Agriculture and forestry machines Industrial trucks
EN IEC 61000-6	61000-6-2, 61000-6-3, 61000-6-4

Measurement input

Temperature sensor	Order number: 500000 NTC3,3k, Min Speed @ 20°C (4121Ω), Max Speed @ 50°C (1190 Ω)
Temperature switch	Order number: 51000X 40°C, 50°C, 60°C, 70°C, 90°C

Motor output

24V Version	Up to 840W @ 24V DC (max 35A)
12V Version	Up to 420W @ 12V DC (max 35A)

Ambient conditions

Working temperature range	-20°C to +85°C
Storage temperature range	-40°C to +110°C

Optional functions

Fan curve	can be personalized to customer requirements
Reverse mode	can be personalized to customer requirements

Connector configuration **

Fan	can be personalized to customer requirements
Sensor	AMP Superseal 1.5, 2, pole, 282080-1
Power supply	can be personalized to customer requirements

** depends on max. current

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