

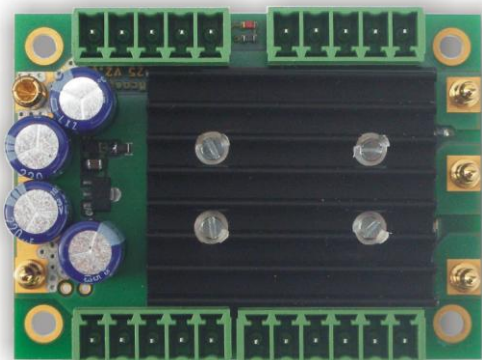
SBC xxxx V2 Controllers

These controllers are designed to control BLDC motors with sensors (version "S") or without sensors (version "SL") particularly in industrial as well as other applications. Thanks to a wide range of control possibilities, working voltages and supplied currents, as well as very small dimensions and compact layout it is suitable for a variety of industries and appliances. They feature very advanced (state-of-the-art) algorithms of motor control as well as safety of operation. Controller concept is based on a long experience with control of both sensorless and sensor BLDC motors in very heavy and demanding operating conditions.

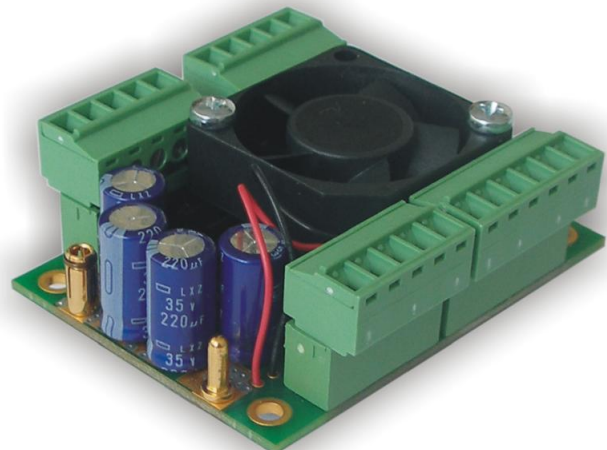
Dimensions:	▪ 62 × 46 × 20 mm (25 mm with a fan)
Power supply:	▪ 12V / 24V / 36V / 48V / 60V =
Max. current with cooling:	▪ 25A / 40A
Controller driving:	▪ See specifications for ordering on page 4.
Outputs:	▪ See specifications for ordering on page 4.
Parameters setting:	▪ using PC, connection to the USB port of PC using USBCOM3 module ▪ using communication link in application ▪ set in manufacture according to customer specifications
Suitable for motors:	▪ BLDC, sensor or sensorless, 2 – 32 poles, inrunner as well as outrunner
Motor control:	▪ PWM 8kHz, 5 – 100%, 1024 steps, unidirectional / bidirectional operation, possibility of operation with constant revolutions
Max. revolutions:	▪ max. ~160.000 rpm for 2 pole motor
Motor temperature sensor:	▪ KTY 81-210 by default ; not a part of delivery; can be modified for other types upon customer request
Efficiency:	▪ ca 98%
Temperature of the environment:	▪ -10 up to +50°C
Humidity:	▪ 0 up to 70%
Temperature fuse:	▪ ~105°C on power components
Connectors:	▪ See specifications for ordering on page 4.
Cooling:	▪ Passive cooler (default) or active cooling with a fan
Recommended power conductors:	▪ 1,5 mm ² or 2,5 mm ² , extremely flexible with silicon insulation
Tunable parameters:	<ul style="list-style-type: none"> - Acceleration speed - Deceleration speed - Brake and its intensity - Max. current - Timing

Note.: If mains power supply is used for feeding and not accumulators, it is not allowed to actively brake by motor without additional module AB25/xx or AB 40/xx, where xx corresponds to the nominal voltage of the controller.

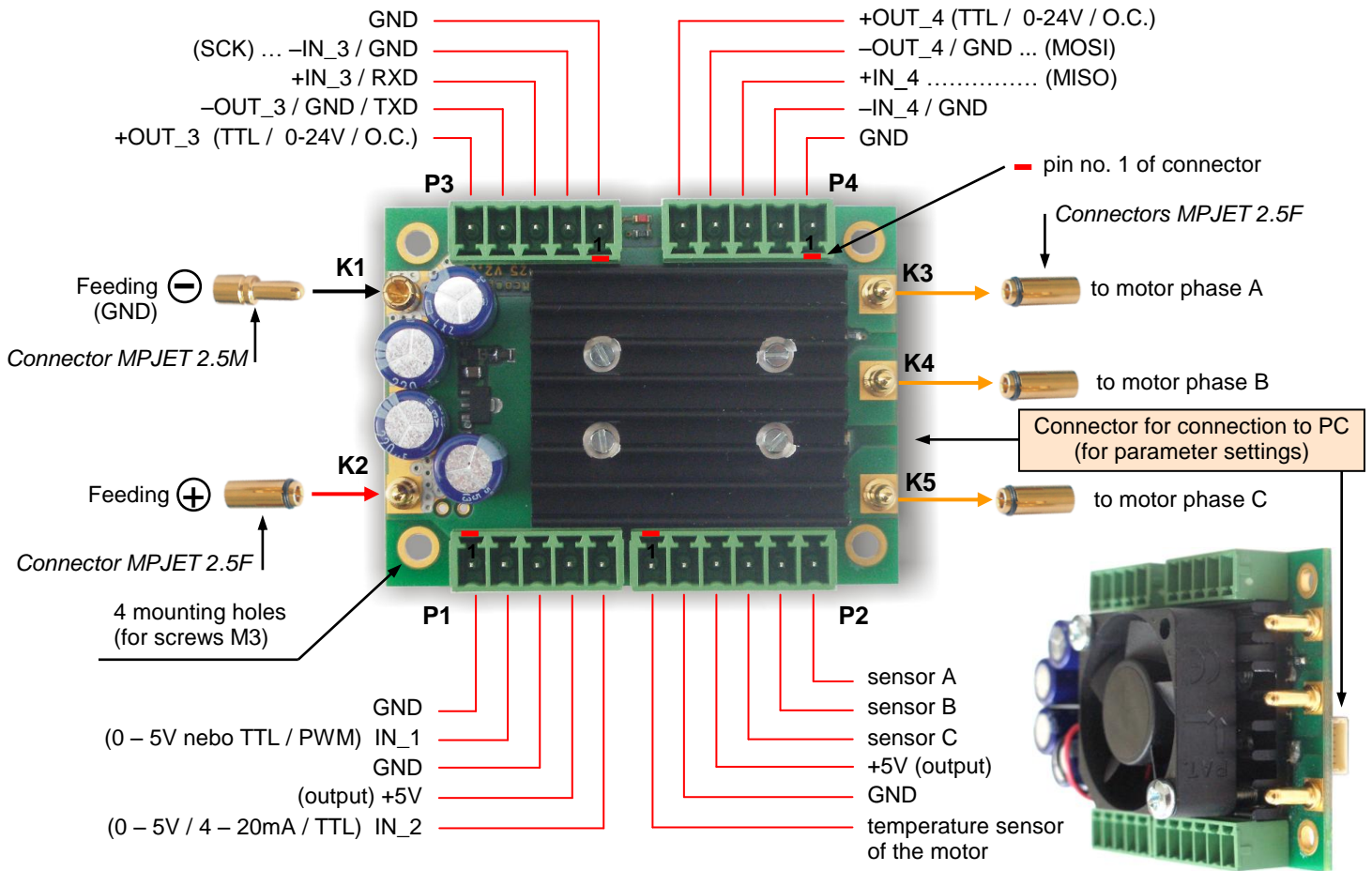
True size (1:1)



Version with a fan and connector counterparts



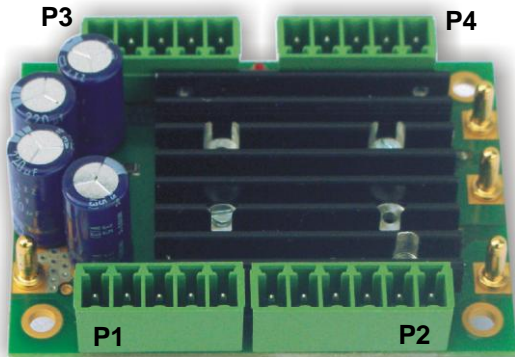
Connecting the controller: (applies to all variants and combinations)



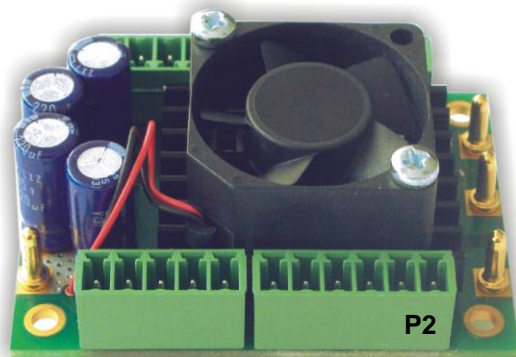
- Notice. 1:** Connectors not needed for a particular specification (from customer) are not assembled
Notice. 2: For details on possible versions of control including possibilities on input output connections see „Details of control of SBC xxxx V2 controllers“

Some of the possible combinations of connectors' design and cooling:

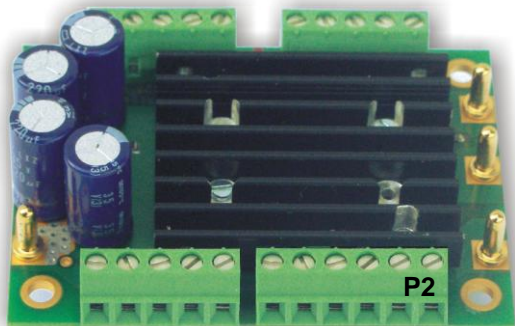
Controller with connector Phoenix Contact **MCV 1.5/X-G-3.81** (counterpart **MC 1.5/X-ST-3.81** on cable)



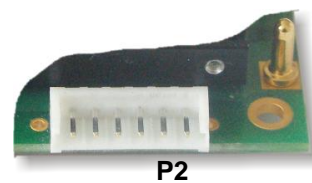
Controller with a fan and connectors Phoenix Contact **MCV 1.5/X-G-3.81** (counterpart **MC 1.5/X-ST-3.81** is on cable)



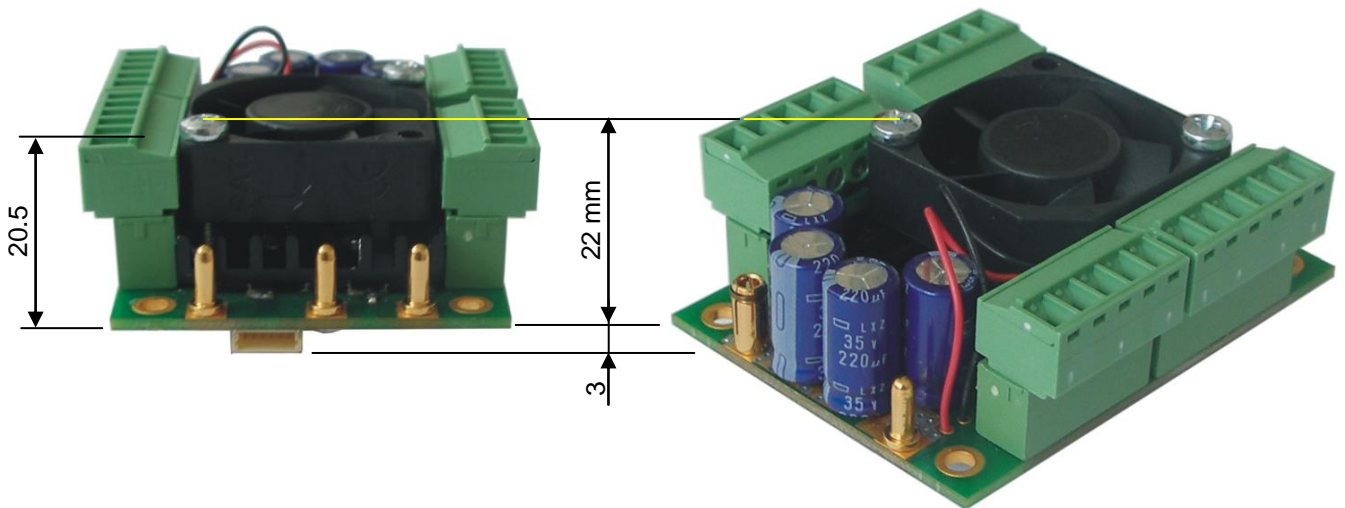
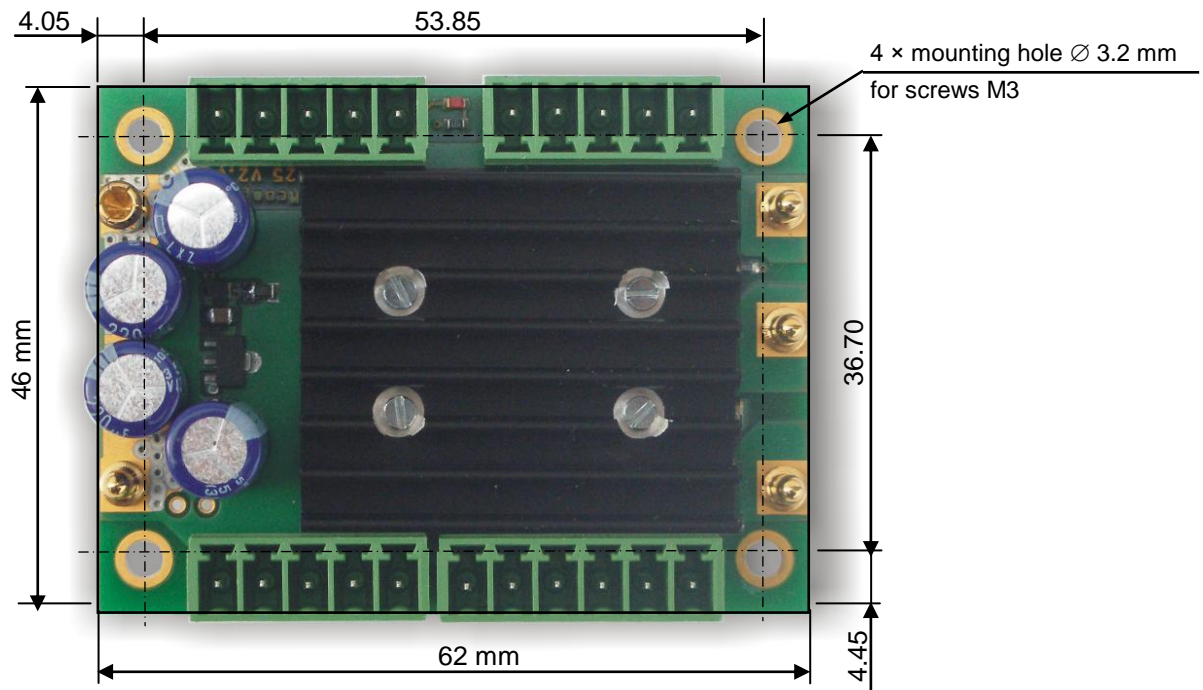
Controller with connector Phoenix Contact **MKDS 1/X-3.81** (conductors are screwed down)



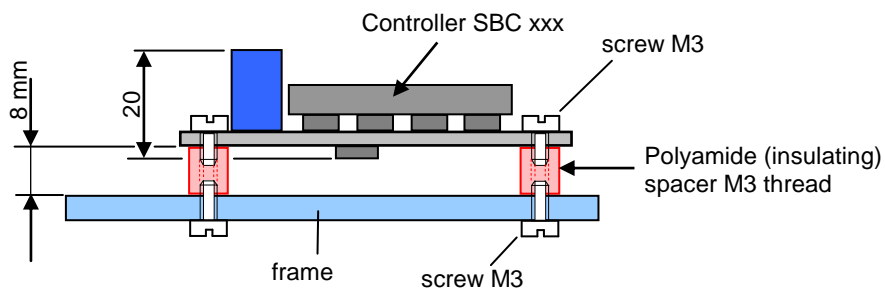
Connector **P2** in JST S6B-EH design



Dimensions: (height 20mm, resp. 25 mm with a fan)

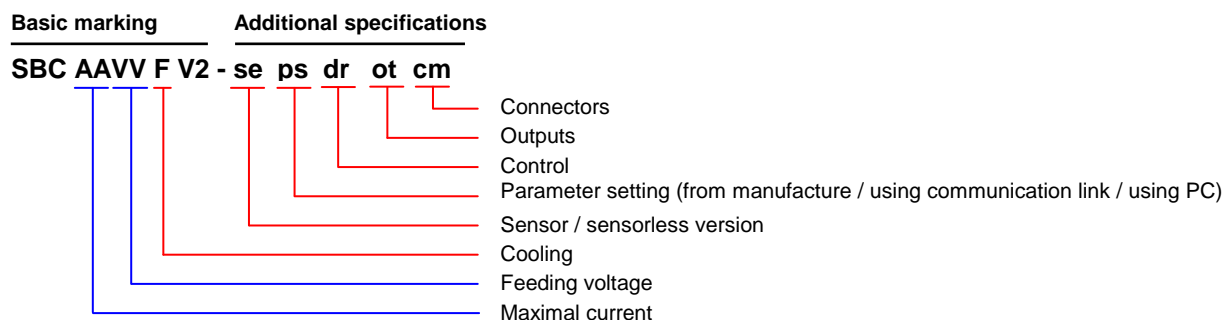


Fastening the controller, one of the possibilities:



The best position for mounting is vertical, motor connectors facing down (good cooling by flowing air) For version with a fan, any mounting position is suitable.

Marking of SBC xxxx V2 Controllers - specification of possibilities for ordering:



Meaning of the specifications:

Current:	AA = 25:	max. current 25A
	AA = 40:	max. current 40A
Voltage:	VV = 12:	nominal feeding voltage 12V=
	VV = 24:	nominal feeding voltage 24V=
	VV = 36:	nominal feeding voltage 36V=
	VV = 48:	nominal feeding voltage 48V=
	VV = 60:	nominal feeding voltage 60V=
Cooling:	F	active cooling with a fan
	-	cooling with a default mounted fan

Type of motor:	se = S:	BLDC with sensors (hall probe)		
	se = SL:	BLDC without sensors		
Parameters:	ps = 01:	default from manufacture		
	ps = 02:	set from manufacture according to the specifications of the customer		
	ps = 03:	using communication link in application (even during operation)		
	ps = 04:	using PC (customer sets parameters and changes according to need)		
Control:	dr = 01:	by current 4 – 20mA		
	dr = 02:	by voltage 0 – 5V		
	dr = 03:	by difference of two voltages 0 – 5V (only if the motor temperature is not measured)		
	dr = 04:	by width of the input pulse (1 – 2 ms / period 4 ms - 25 ms)		
	dr = 05:	by potentiometer 1kΩ		
	dr = 10:	RS 232 in TTL levels (0 – 5V) + 2 inputs TTL		
	dr = 20:	RS 232 optically isolated + 2 inputs TTL		
	dr = 30:	by 4 inputs TTL (0 – 5V)		
	dr = 40:	by 2 inputs TTL + 2 optically isolated inputs		
Outputs:	ot = 00:	not specified		
	ot = 01:	2 TTL (0 – 5V)		
	ot = 02:	2 optically isolated TTL		
	ot = 03:	2 optically isolated 0 – 24V / 5mA		
	ot = 04:	2 optically isolated O.C. / (48V / 5mA)		
Connectors:	c = 0:	connector marking P1, P3, P4	connector in the controller MCV 1.5/5-G-3.81	connector on the cabel MC 1.5/5-ST-3.81
	c = 1:	P1, P3, P4	MKDS 1/5-3.81	conductors directly to the connector
	m = 0:	P2	MCV 1.5/6-G-3.81	MC 1.5/6-ST-3.81
	m = 1:	P2	MKDS 1/6-3.81	conductors directly to the connector
	m = 2:	P2	JST S6B-EH	JST EHR-6

Note:

In case the parameter is defined by customer, marking of this parameter is replaced by symbol „xx“.

Accessories:

Connector MPJET 2.5F



Connector MPJET 2.5M



Connector MC 1.5/3-ST-3.81



Connector MC 1.5/5-ST-3.81



Connector MC 1.5/6-ST-3.81



Communication link
Connectors + cable (length according to requirements)



connecting the motor,
(sensors + temperature sensor)
connector + 30cm RADOX



Conductor RADOX in footage



extra flexible conductors
with silicon insulation
1,5 mm² in footage
(yellow, red, black)



extra flexible conductors
with silicon insulation
2,5 mm² in footage
(yellow, red, black)



Galvanic isolated communication adapter USBCOM3 for parameter setting of the controller using USB link.
The control program "SBC Controller" is available to download for free on our website www.mgm-compro.com

