

Control electronics.

VTD-60.13-K5SB



- Compact four-quadrant controller for BLDC motors
- CANopen interface (Protocol DS301, Device profile DS402)
- Integrated digital inputs
- Integrated digital outputs
- Integrated analog inputs
- Overvoltage, undervoltage and overtemperature monitoring
- Device status notification by 3 LEDs (Power, Status, Error)
- Hex switch for setting the device node ID
- Freely programmable due to built in MPU (Motion Process Unit)

Nominal data

Type		VTD-60.13-K5SB	
Nominal voltage (Power supply U_N)	V DC	24	48
Permissible supply voltage range (U)	V DC	9 ... 60	
Maximum output current*	A	50	
Permissible continuous output current*	A	12.5 (at 24 V)	12.5 (at 24 V)
Nominal voltage (Logic supply U_L)	V DC	9 ... 30	
Logic current draw** (at 24 V DC)	mA	60	
Maximum commutation frequency	kHz	2	
Switching frequency	kHz	32	
Minimum connection inductance	mH	0.20	
Digital inputs	Number	8	
Digital outputs	Number	2	
Analog inputs	Number	2	
Parameterization interface		CANopen	
Efficiency (in optimum working range)	%	95	
Permissible ambient temperature range (T_U)	°C	0 ... +70	
Permissible ambient humidity***	%	5 ... 85	
Protection class		IP 20	
Weight	kg	0.31	
Order number (IP 20)		994 6013 000	

Subject to alterations

Commutation: block commutation (by means of 3 digital Hall sensors)

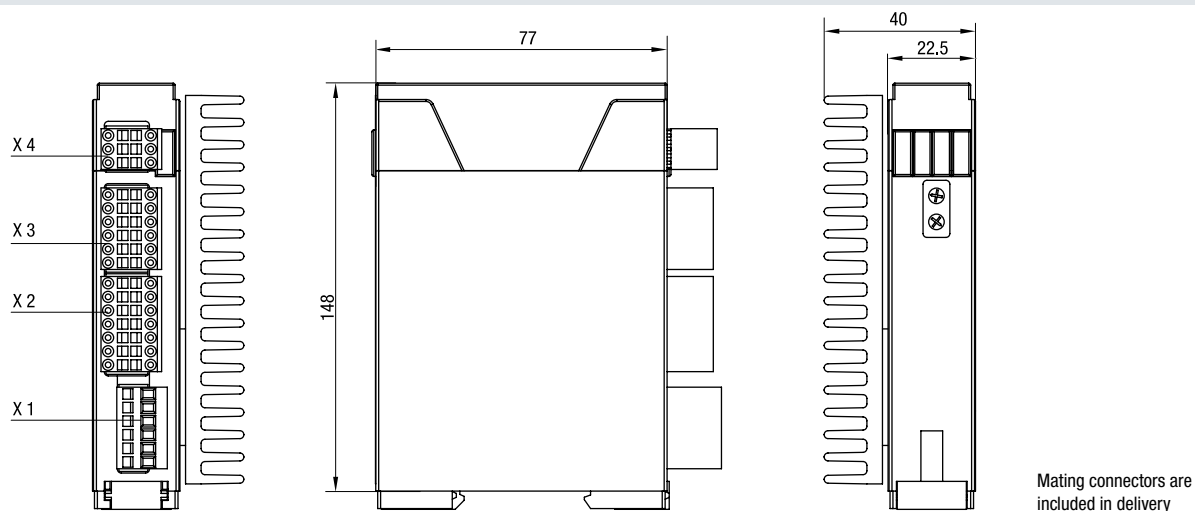
* Applicable at rated temperature $T_U = 25^\circ\text{C}$, Derating at deviating (higher) temperatures

** Current draw without current requirement of digital outputs

*** Condensation not permitted

Technical drawing

All dimensions in mm



Electrical connection

Pin	X1	Motor	X2	Hall sensors and encoder	X3	I/O's and CAN	X4	I/O's
1	FE	Functional earth	H1	Hall sensor signal 1	U_{Logic}	Power supply Electronics	A-IN-1	Analog input 1
2	+Up	Power supply Power	H2	Hall sensor signal 2	A-IN-0 +	Analog input 0, plus	D-IN-4	Digital input 4
3	GND	Ground for power supply voltage	H3	Hall sensor signal 3	D-IN-0	Digital input 0	D-IN-5	Digital input 5
4	Ma	Motor phase A	A	Incremental encoder – A channel	D-IN-1	Digital input 1	D-IN-6	Digital input 6
5	Mb	Motor phase B	B	Incremental encoder – B channel	D-IN-2	Digital input 2	D-OUT-1	Digital output 1
6	Mc	Motor phase C	Inx	Incremental encoder – index channel	D-IN-3	Digital input 3	D-IN-7	Digital input 7
7			+U _{5V}	5V auxiliary voltage (Hall and encoder)	GND	Ground for electronic supply voltage		
8			/H1	Hall sensor signal 1 inverted	A-IN-0 -	Analog input 0, minus		
9			/H2	Hall sensor signal 2 inverted	D-OUT-0	Digital output 0		
10			/H3	Hall sensor signal 3 inverted	CAN Hi	CAN High		
11			/A	Incremental encoder – A channel inverted	CAN Lo	CAN Low		
12			/B	Incremental encoder – B channel inverted	CAN GND	CAN Ground		
13			/Inx	Incremental encoder – index channel inverted				
14			GND	Ground for auxiliary voltage				

Accessories

Commissioning tool

“EP-Tools” (page 75)

