AC Servo Amplifier
HSK Series

- High Performance in a Compact Package
- Continuous Power Range from 350 W to 2,8 kW
- 5,6 kW Peak Power
- Sinusoidal Commutation with Resolver
- High Bandwidth
- Surface Mount Technology
- Internal Logic Supply
- Short Circuit Protection Phase to Phase and to Ground
- Personality Module
- Optional Encoder Simulation

Eduard Bautz GmbH + Co. KG Robert-Bosch-Str. 10 • D-64331 Weiterstadt •
Tel. +49(0)6151-8796-10 • Fax +49(0)6151-8796-123 • e-mail vertrieb@ebautz.de • Internet www.bautzgmbh.com

Description

The AC servo amplifiers of the HSK series are designed especially for multi-axis machines with motors within lower and medium power ranges.
Despite their compact size, a peak power of 5,6 kW can be supplied, which is sufficient to accelerate a 2 kW motor to the rated speed within the shortest time.
The PWM power stage features the latest IGBT technology. The logic system consist of surface mount devices. It is powered external 24 V_{DC} via a fly-back converter.
Despite the small dimensions and a bus voltage of 310 V_{DC} the drive complies with the VDE and IEC regulations and keeps minimum distances between printed conductors. Bus and logic voltage are isolated according to EN50178. Advanced testing methods guarantee high reliability.

Personality Module

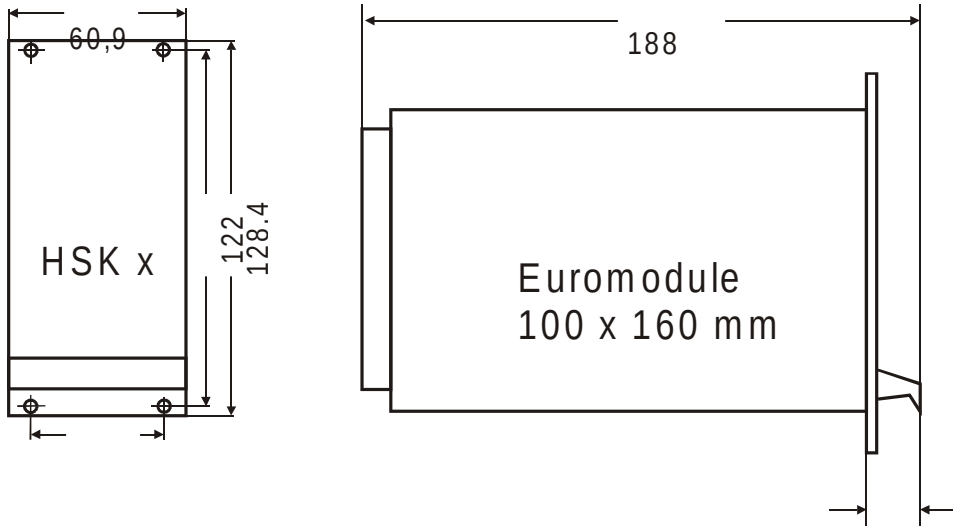
All parameter setting options are on an small PC board. This allows an optimized adaptation of the amplifier to a specific motor and the motion control application in question. The PC board can be configured into a personality module if the specific parameters are set with fixed resistors and jumpers.

Encoder Simulation ES2

Each HSK device can be provided with this option (retroactive extension possible). The outputs of the encoder are opto-isolated.

External power supply	5 V, 50 mA
Output level	5 V, according to RS-422
Output signals	A, $\overline{A}$, B, $\overline{B}$, and gated I, $\overline{I}$

Dimensions



Eduard Bautz GmbH + Co. KG Robert-Bosch-Str. 10 • D-64331 Weiterstadt •
Tel. +49(0)6151-8796-10 • Fax +49(0)6151-8796-123 • e-mail vertrieb@ebautz.de • Internet www.bautzgmbh.com

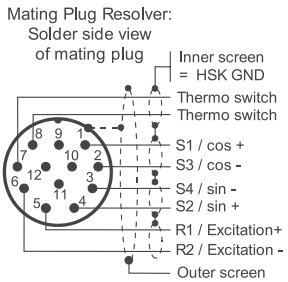
Technical Data

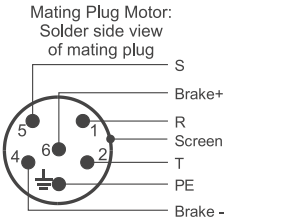
	HSK-01	HSK-02	HSK-03	HSK-04
Supply and Auxiliary Voltages:				
Bus voltages	0 - 360 V_{DCmax} (nom. 310 V_{DC})			
Logic voltages	generated internally from an external 24 V_{DC} supply-voltage by a fly-back converter (0,5 A nominal)			
Auxiliary output	± 15 V, max. 20 mA each			
Power and Currents:				
Rated continuous current (RMS)[1)]	1 A	2,1 A	4,25 A	8,5 A
Peak current (RMS)	2 A	4,25 A	8,5 A	17 A
Rated output power (up to $T_{amb} \leq 45$ °C)	350 W	700 W	1400 W	2800 W
Peak output power (max. 0,5 seconds)	700 W	1400 W	2800 W	5600 W
Ambient Conditions:				
Operating temperature	0 to +45°C			
Storage temperature	-40 to +70°C			
Humidity	10 – 90%, non condensing			
Altitude	0 – 1000 m			
Ventilation air	free of dust, soot, shavings and condensing vapors			
Max. motor cable length	50 m (filter necessary for more than 20 m)			
Monitoring:				
Bus overvoltage	$U_Z \geq 420$ V_{DC} , LED			
Overcurrent	1,5 x I_{max} (peak output current), LED			
Heatsink overtemperature	$T_{HS} \geq 90$°C (shut down power stage)			
Current limitation of Peak Current I_{max}	adjustable from 10 % to 200 % of I_{rms}			
Current limitation of Cont. Current I_{rms}	adjustable from 25 % to 100 % I_{rms}			
Current monitor	± 10 V, corresponding to twice the rated continuous current			
Velocity monitor	1 corresponding to 1000 rpm			
Velocity Command:				
Input 1	± 10 V, via ramp generator			
Slope	10-200 ms / 10 V, adjustable on dn/dt potentiometer			
Input 2	± 10 V, differential amplifier input			
Encoder Simulation ES2 (optional)				
Ext. power supply	5 V, 50 mA			
Output level	5 V , according to RS422			

1) For rated continuous output ≥ 4,25 A forced air cooling is required.

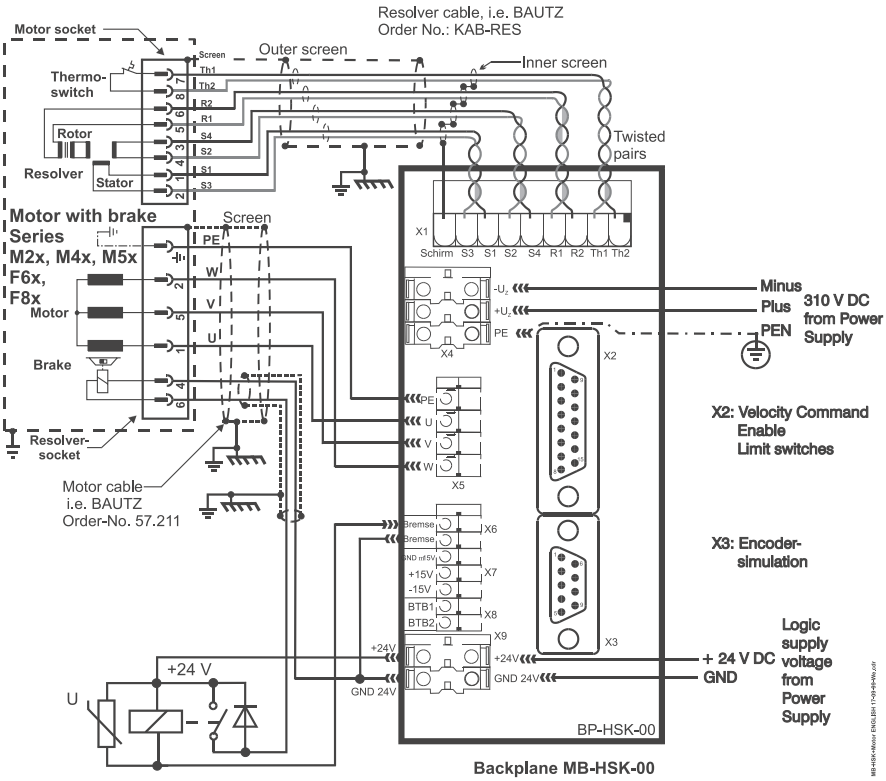
Eduard Bautz GmbH + Co. KG Robert-Bosch-Str. 10 • D-64331 Weiterstadt •
Tel. +49(0)6151-8796-10 • Fax +49(0)6151-8796-123 • e-mail vertrieb@ebautz.de • Internet www.bautzgmbh.com

Electrical Connections





Colours of the Resolver Cable		
1	S1 / cos +	Red
2	S3 / cos -	Blue
3	S4 / sin -	Green
4	S2 / sin +	Yellow
5	R1 / Excitation+	Gray
6	R2 / Excitation -	Pink
7	Thermo switch	White
8	Thermo switch	Brown



Order Code

HSK 1 – 01 – ES2 – A B

AB	= Logic Supply from external +24 V DC
A	= Standard version
B-Z	= Special versions
ES2	= With encoder simulation
000	= Without encoder simulation
01	= Standard current controller
1	= 1,0 A continuous current
2	= 2,1 A continuous current
3	= 4,25 A continuous current
4	= 8,5 A continuous current
HSK	= High Bus Voltage drive, sinusoidal commutation

subject to change without notice

Eduard Bautz GmbH + Co. KG Robert-Bosch-Str. 10 • D-64331 Weiterstadt •
Tel. +49(0)6151-8796-10 • Fax +49(0)6151-8796-123 • e-mail vertrieb@ebautz.de • Internet www.bautzgmbh.com