

KEB



COMBIVERT S6

COMPACT SERVO DRIVES
EN



CONTENT

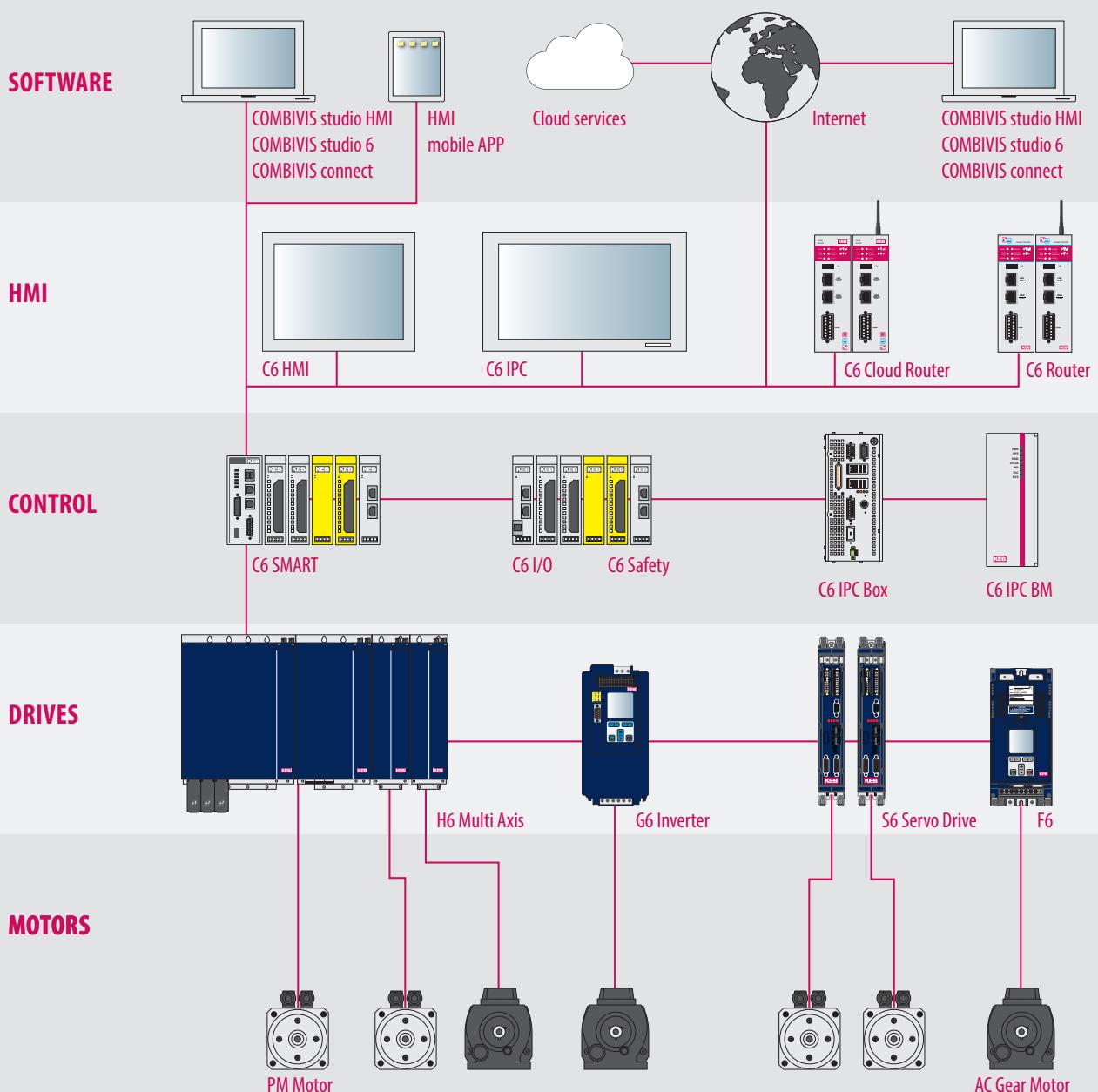
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SYSTEM OVERVIEW

Automation with Drive

stands as a synonym for optimally selected combinations of control and automation solution. With the drive level at the end it is the key to successful machine concepts.

Let the following pages inspire you with regards to the diversity and performance of the COMBIVERT S6 servo system, and help you to find a solution that reliably meets your requirements.



COMBIVERT S6 - BENEFITS AT A GLANCE

OPTIMALLY SELECTED COMPONENTS

The COMBIVERT S6 servo system adds a compact, flexible and powerful drive module to the KEB product portfolio for highly dynamic servo applications. The optimally selected KEB components are the key to this successful drive concept.

At the heart, the innovative S6 servo drive is offered in an attractive book-style format and offers real-time performance. The S6 drives can be matched with the robust DL3 servo motors which are available in five sizes. Additionally, the DL3 servo motors may be paired with planetary gearheads with low rotational backlash.

The TA series combines in direct connection the servo motor and industrial gears in the designs helical, helical bevel, helical worm and flat. You can now design the complete servo drive system that is best suited to your application.

The package is made complete with pre-fabricated motor and encoder cables, which create the ideal conditions for easy installation, quick start-up and problem-free operation. For the upper power range the new COMBIVERT F6 drive controller completes the drive line with 1:1 features up to 400 kW.



POSSIBLE SELECTION: S6 SERVODRIVE AVAILABLE WITH OR WITHOUT INTEGRATED EMC FILTER

- 2.6 ... 16.5 A in two enclosures with six electrical sizes
- Book format for space-saving control cabinet configuration
- Direct connection to the mains for 230 V and 400-480 V grids, DC-input is also available, 260 ... 375 / 750 V
- Low leakage current mains filter (<5 mA) integrated, optional without filter
- High overload for excellent dynamics (250% / 3 s, 200% / 60 s)



HIGHLIGHTS

- Uncompromising integration, highest performance
- Modern realtime communication standards
- Integrated functional safety
- Particular compact size
- Modular design, flexible cooling systems



DRIVE BASED SAFETY

- Integrated Safety functionality
- Basic function STO in Compact version
- Additional modular High level Safety in Application version
- Encoderless safety in version PRO

REAL-TIME COMMUNICATION

- Real-time Ethernet-based interfaces
- CAN
- or simply serial:
- RS232 / 485 for diagnostics or display

ANALOG & DIGITAL I/O

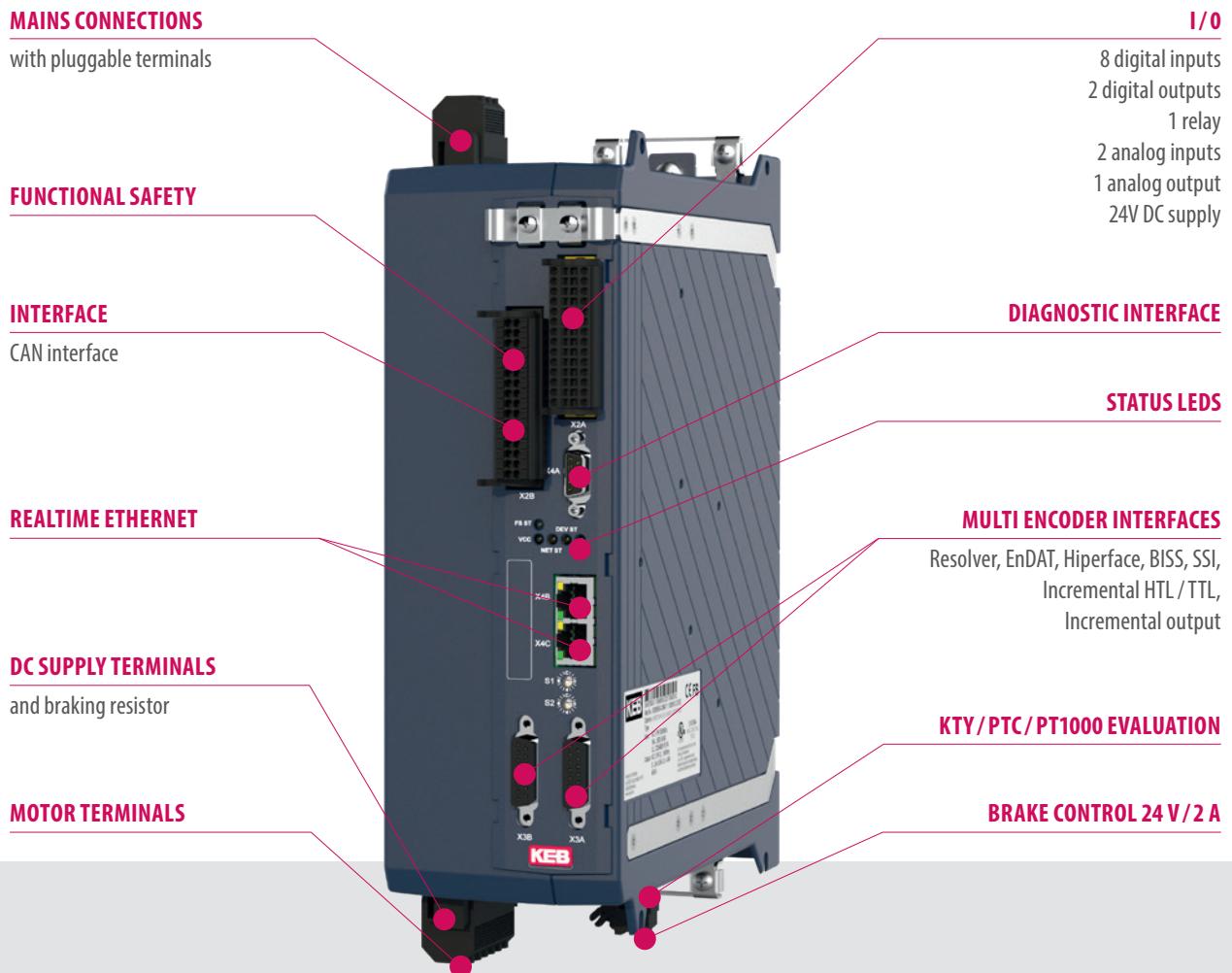
supports actual machine concepts with:

- 8 digital and 2 analog inputs
- 2 digital and 1 relay output
- 1 analog output 0 ... 10 V

ALL IN ONE - UNIVERSAL MOTOR OPERATIONS

- Control for asynchronous, synchronous, IPM or synchronous reluctance motors
- Motor operation with encoder feedback or encoderless ASCL / SCL for precise speed control
- Motor temperature monitoring with PTC, KTY or PT1000 sensors
- Two-channel multi-encoder interface
- Integrated brake transistor
- Integrated brake control and brake supply

COMBIVERT S6 - VERSIONS



EtherCAT®

Safety over EtherCAT®



CANopen®



HIGHLIGHTS

- Compact and flexible servo system
- Highest performance in torque, speed and position control
- Uncompromising integration
- User-friendly
- Scalable safety functions...

COMPACT
**HIGHLY INTEGRATED
AND ECONOMICAL**

STO

REALTIME ETHERNET

ETHERCAT OR VARAN

Communication interface

CAN

DIAGNOSTIC RS232 / 485

APPLICATION
MODULAR AND FLEXIBLE

STO, SBC and speed / position related safety functions

REALTIME ETHERNET

ETHERCAT
PROFINET
POWERLINK
ETHERNET/IP

Communication interface

CAN

DIAGNOSTIC RS232 / 485

PRO
ENCODERLESS SAFETY

STO, SBC and speed related safety functions without encoder feedback

REALTIME ETHERNET

ETHERCAT

Communication interface

CAN

DIAGNOSTIC RS232 / 485



ETHERNET ■■■■■
POWERLINK

EtherNet/IP®



HIGHLIGHTS

- Brake handling
- Power-off
- DC-brake
- PID controller
- Round table function
- Recipe management
- Multi motor handling
- Anti cogging
- Management liquide cooling
- Etc.

SAFETY FUNCTIONS IN THE DRIVE

BASIS FOR SAFETY

COMPACT

In the Compact version, the COMBIVERT F6 and S6 drive controllers are equipped with Safe-Torque-Off (STO).

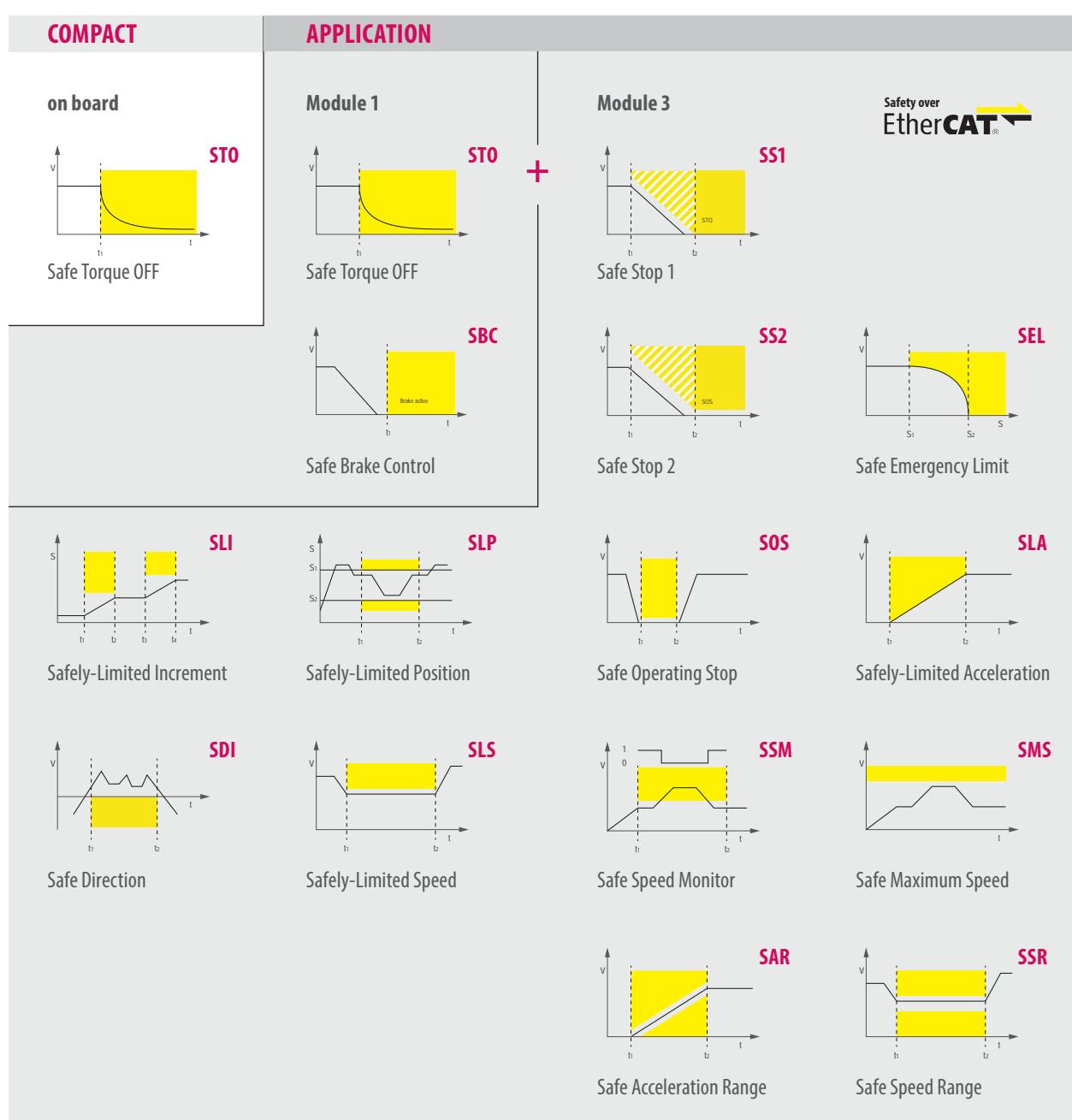
SAFETY FUNCTIONS WITH SPEED AND POSITION MONITORING

APPLICATION

The device variant Application is available in two versions. In addition to STO, Module 1 adds safe brake control (SBC) which provides a safe 24 V supply for the brakes.

Module 3 offers safe motion functionality according to IEC 61800-5-2 through speed and position detection using encoders.

The error reaction time is shortened and costs are reduced by reducing the number of separate protective devices. Module 3 also offers the option of controlling all available safety functions and limit values via Safety over EtherCAT (FSoE).



SENSORLESS SAFETY FUNCTIONS

PRO

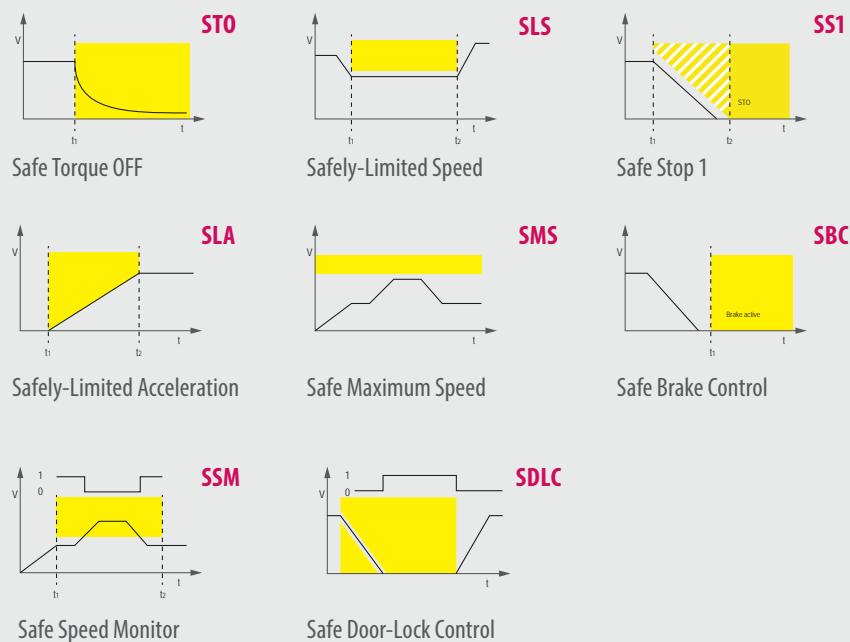
The Pro device variant of the COMBIVERT F6 and S6 drive controllers offers advanced safety functions without having to use a safety encoder. The device determines the safe velocity parameters from the pulse width modulation (PWM) of the motor supply.

In addition to STO, Module 5 is equipped with a safe brake control (SBC), which provides a safe 24 V supply for braking operation as well as a monitoring of the switching status of the brake via microswitch evaluation.

Module 5 also offers the option of controlling all available safety functions via Safety over EtherCAT (FSoE).

PRO

Module 5



Safety over
EtherCAT®



WHY USE DRIVE-BASED SAFETY (SAFE MOTION)?

- Less wiring - remove contactors and other traditional safety components
- Fast reaction - direct handling inside the drive
- Easy to operate - up to 8 different safety setups per function
- Cost savings compared to traditional safety solution

COMBIVERT S6

ELECTRICAL PROPERTIES

HOUSING			2					4		
Device size	I _N	[A]	07	09	07	09	10	12	13	14
Mains phases			1		3					
Output rated current	I _N	[A]	4	7	2.6	4.1	5.8	9.5	12.0	16.5
Short maximum current (3 s / 60 s) ¹⁾	J _{SMC}	[%]	200 / 150		250 / 200				180 / 150	
Output rated power *	S _A	[kVA]	1.8	2.8	1.8	2.8	4	6.6	8.3	11.4
Typical rated motor power	P _{mot}	[kW]	0.75	1.5	0.75	1.5	2.2	4.0	5.5	7.5
			230 V					400 V		
Max. current 0 Hz / cutoff frequency at fs = 4 kHz ¹⁾	I ₀	[%]	175 / 240	157 / 240	215 / 300	193 / 300	155 / 284	273 / 300	283 / 300	133 / 216
Max. current 0 Hz / cutoff frequency at fs = 8 kHz ¹⁾	I ₀	[%]	150 / 240	114 / 228	162 / 292	132 / 234	103 / 206	189 / 294	183 / 293	109 / 212
Max. current 0 Hz / cutoff frequency at fs = 16 kHz ¹⁾	I ₀	[%]	100 / 200	85 / 200	92 / 200	73 / 146	50 / 120	105 / 189	116 / 175	60 / 127
Cutoff frequency point	f _d	[Hz]	6							
Input rated current	I _{IN}	[A]	8	14	3.6	6	8	13	17	21
Max. permissible mains fuses	Typ gG	[A]	15	20	6	10	10	15	20	25
Rated switching frequency	f _{SN}	[kHz]	8					4		
Max. switching frequency	f _{Smax}	[kHz]	16							
Rated losses	P _D	[W]	60	95	50	57	80	155	185	250
Standby losses	P _{Dnorp}	[W]	8							
Min. brake resistance	R _{Bmin}	[Ω]	56	33	160	110	82	33	25	25
Max. braking current	I _{Bmax}	[A]	7.5	12.7	5.5	8	11	28	34	34
Input rated voltage (AC)	U _N	[V]	1-phase 230		3-phase 400 (UL: 480)					
Input voltage range (AC) ²⁾	U _{in}	[V]	184 ... 265		184 ... 550 ±0					
Input voltage range (DC)	U _{indc}	[V]	260 ... 375		260 ... 750 ±0					
Mains frequency	f _N	[Hz]	50 / 60		50 / 60 ±2					
Output voltage	U _A	[V]	3 x 0 ... U _{IN}							
Output frequency	f _A	[Hz]	0 ... 599 optional 0 ... 2000							

* At rated voltage 400 V AC

¹⁾ The figures relate to the output rated current I_N on a percentage basis

²⁾ In the case of rated voltage ≥ 460 V, multiply rated current with a factor of 0.86

MECHANICAL DATA, OPERATING TYPES, STANDARDS

OPERATING MODES

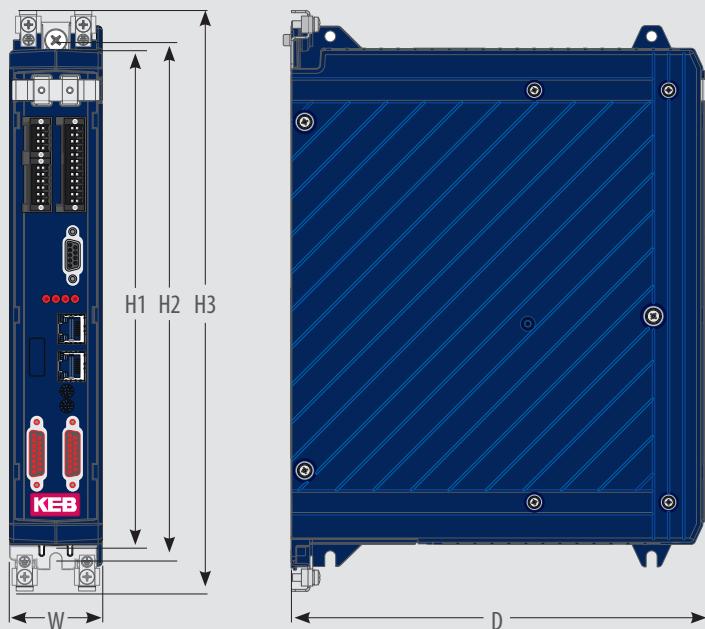
Motor control mode	PMSM: field-oriented with encoder, S.C.L. encoderless IPMSM: field-oriented with encoder, S.C.L. encoderless SyncRM: field-oriented with encoder, S.C.L. encoderless ASM: V / F, field-oriented with encoder, A.S.C.L. encoderless
Application profile	CiA 402
Control mode	Velocity Mode Cyclic Synchronous Velocity Mode Cyclic Synchronous Torque Mode Cyclic Synchronous Position Velocity Mode Profile Position Mode Homing Mode Jog Mode

GENERAL

Product standard	EN 61800-2, -5-1
Power part with integrated EMC filter - EMC transient emissions	
Grid-bound disturbance	EN 61800-3, C1 - 30 m / C2 - 50 m motor cable
Emitted disturbances	EN 61000-6-1...4, C2
Protection class	IP 20 / VBG 4
Environment	EN 60721-3-3 Operating temperature -10 ... 45 °C Storage temperature -25 ... 55 °C Humidity 3K3 - 5 ... 85% (no condensation)
Site altitude	Rated to 1000 m (1% derate per 100m above 1000m). max. 2000m above sea level.

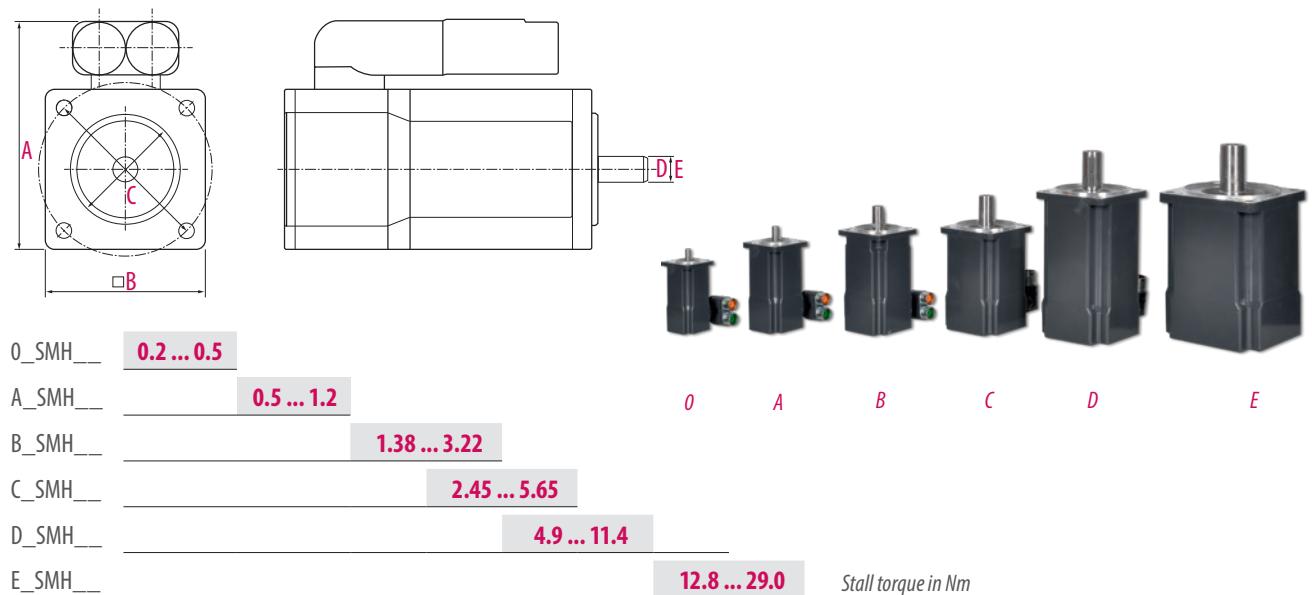
HOUSING	2	4
H1	265	265
H2	275	275
H3	310	310
D	220	220
W	50	90

All dimensions in mm



SERVO MOTORS

SERVOMOTORS DYNAMIC LINE 3

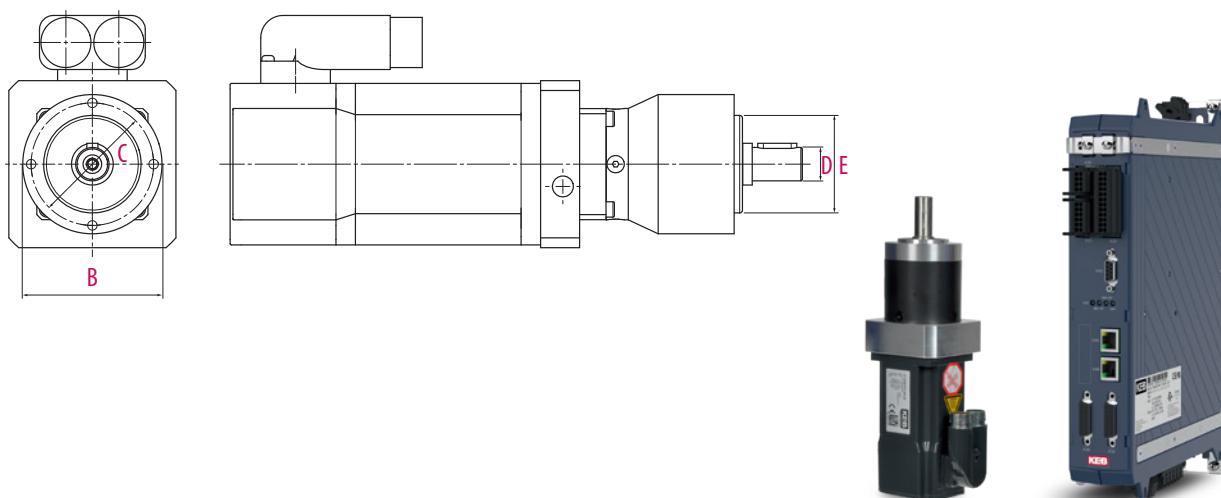


MOTOR	T_o [Nm]	T_n [Nm]	U_n [V]	I_{do}/I_n [A]	N_n [min ⁻¹]	A [mm]	B [mm]	C [mm]	D [mm]	E	OPTION BRAKE	INERTIA JM/J_{MwBr} [kgcm ²]
01	0.2	0.18		0.76 / 0.73								0.0294 / 0.0521
02SMHF_	0.38	0.33	230	1.3 / 1.2	8000	65.4	40	46	8	30	0.6	0.0482 / 0.0709
03	0.52	0.45		1.65 / 1.3								0.0670 / 0.0897
A1	0.5	0.5		0.85								0.134 / 0.205
A2SMHF_	0.8	0.7		1.50 / 1.30	8000	82.4	58	63	9	40	0.8	0.253 / 0.324
A3	1.2	1.0		2.20 / 1.85								0.373 / 0.444
B1	1.4	1.3		1.95 / 1.90								0.462 / 0.541
B2SMHF_	2.4	2.2		2.95 / 2.75	6000	96.4	72	75	14	60	2	0.842 / 0.921
B3	3.2	2.7		4.10 / 3.60							3.5	1.22 / 1.46
C1	2.5	2.3		3.00 / 2.90	6000							1.08 / 1.74
C2SMHF_	4.1	3.7	400	4.10 / 3.80	5000	128.5	87	100	19	80	9	1.98 / 2.63
C3	5.7	4.9		5.40 / 4.75	5000							2.87 / 3.52
D1	4.9	4.4		4.75 / 4.20	5000						9	2.23 / 2.89
D2SMHF_	8.2	6.9		6.30 / 5.20	4000	145.5	104	115	24	95	9	4.06 / 4.72
D3	11.4	8.4		8.80 / 6.30	4000						13	5.88 / 7
E1	12.8	11.0		7.80 / 6.80							20	11.1 / 1.34
E2SMHF_	21.1	15.2		12.4 / 9.40	3000	183.5	142	165	32	130	20	20 / 22.3
E3	29.0	13.2		17.2 / 8.10							30	29 / 34.9



HIGHLIGHTS

- 0.2 ... 29 Nm in six frame sizes
- Low inertia–high impulse torque
- Resolver or absolute rotary encoder, HIPERFACE single or multi-turn
- High degree of total efficiency
- Lifetime lubricated
- Universal installation positions
- Robust mechanics (optional: COMBIPERM holding brake, keyway with key, IP65 shaft sealing)

PLANETARY GEAR SG PAIRED WITH DYNAMIC LINE 3:

GEAR SIZE	T _{2N} [Nm]	T _{2MAX} [Nm]	N _{MAX} [rpm]	I	BACKLASH arc _{min}	B	C	D	E	DL3-MOTOR recommended			
						Ø [mm]	Ø [mm]	Ø [mm]	Ø [mm]	A	B	C	D
1	5 ... 11	8 ... 17.5	5000	5 ... 40	15	50	44	12	35	A			
2	15 ... 28	24 ... 45	4500		10	70	62	16	52	A	B	C	
3	38 ... 85	61 ... 136	4000		7	90	80	22	68	A	B	C	D
5	95 ... 115	152 ... 136	3000		7	120	108	32	90		B	C	D
7	210 ... 460	336 ... 736	2800		8	155	140	40	120		C	D	E

SIMPLE SELECTION AND ORDERING BY SYSTEM CONFIGURATION IN COMBIVIS 6

- Output torque and speed
- Gear ratio
- Motor size

**HIGHLIGHTS**

- Low backlash
- High output torque
- High efficiency (97 %)
- Gear ratios i = 5 to 40
- Low audible noise
- Lifetime lubricated

SERVO GEAR MOTORS

INTEGRAL SERVO DESIGN

Based on the industrial standard with AC motors the portfolio of COMBIGEAR series offers a full basket of servo gear solutions. The dynamic and efficient TA servo motors are direct connected in the first gear stage—best choice for minimum lengths, nearly zero wear and small inertia of the gear motor system.

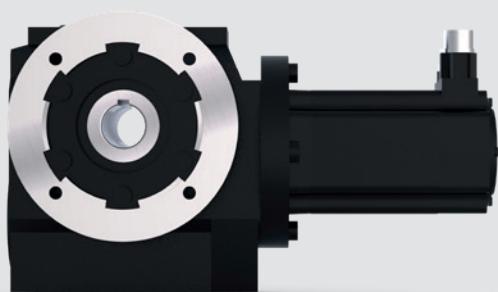
Flexible designs for flange-, foot-, or combined flange / foot— mounting and a wide range of options secure individual needs in the machine. Ultra-fine speed ratio range, adjustable down to speed 0, enables optimum adaptation of torque and speed on output. Life-time lubrication, high overload and low torsional backlash ensure a long service life.

TYPE	SIZE	DESIGN	T _N [Nm]	I	TA1	TA2	TA3	TA4	TA5
G	0 ... 7	Helical gear	60 ... 4880	3.37 ... 250.97	■	■	■	■	■
F	2 ... 7	Shaft mounted helical gear	245 ... 4880	3.20 ... 274.23	■	■	■	■	■
K	0 ... 7	Helical bevel gear	58 ... 4880	3.38 ... 183.21	■	■	■	■	■
S	0 ... 4	Helical worm gear	55 ... 1160	5.09 ... 247.58	■	■	■	■	■

HELICAL GEAR



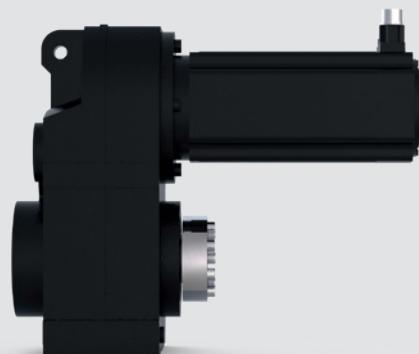
HELICAL WORM GEAR



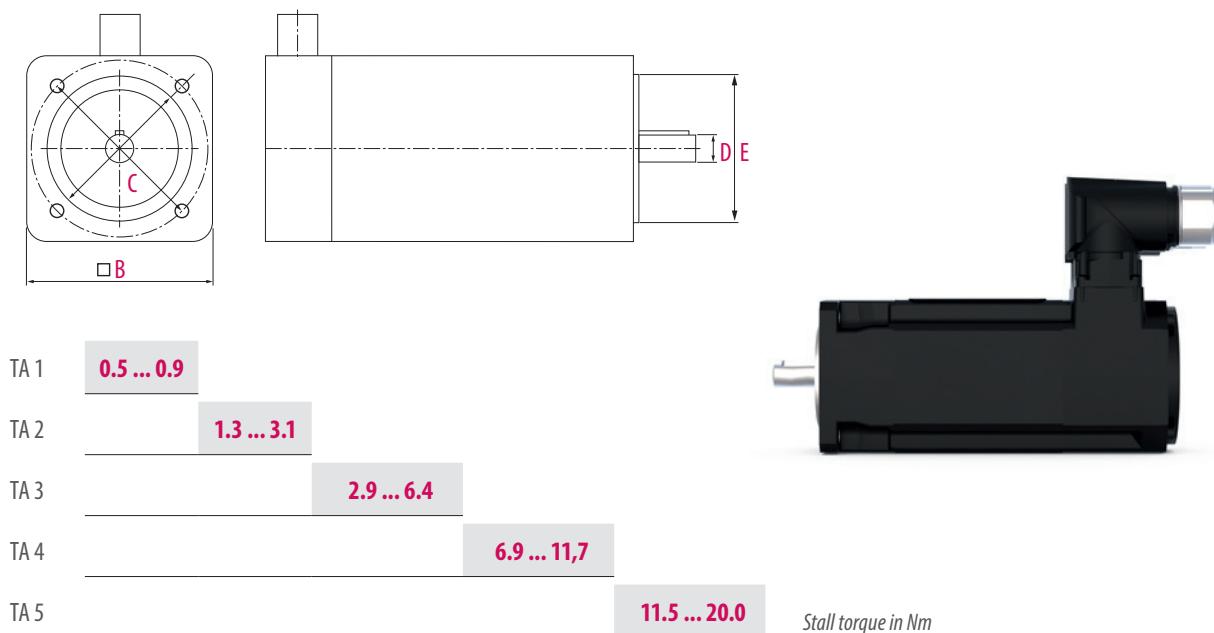
HELICAL BEVEL GEAR



SHAFT MOUNTED HELICAL GEAR



TA SERIES



MOTOR	T ₀ [Nm]	U _N [V]	I _{do} [A]	N _N [min ⁻¹]	B [mm]	C [mm]	D [mm]	E [mm]	OPTION BRAKE	INERTIA
TA1S	0.5		0.95 / 0.72							0.14 / 0.2
TA1M	0.9		1.11 / 0.84							0.2 / 0.27
TA2S	1.3		1.6 / 1.1							0.39 / 0.46
TA2M	2.4		2.75 / 2	6000 / 4500	58	63	9	40	2	0.66 / 0.73
TA2L	3.1		3.9 / 2.8							0.93 / 0.99
TA3S	2.9		3.4 / 2.5 / 1.82							1.13 / 1.32
TA3M	4.8	400	6.2 / 4.1 / 2.55	6000 / 4500 / 3000	75	75	11	60	2	1.95 / 2.13
TA3L	6.4		7.3 / 5.6 / 3.8							2.76 / 2.94
TA41	6.9		6.5 / 4.45 / 3.15							5.65 / 5.83
TA42	9.2		8.5 / 5.9 / 4	4500 / 3000 / 2000	116	100	14	80	4,5	8.15 / 8.69
TA43	11.7		11.2 / 7.3 / 5							10.65 / 11.19
TA51	11.5		11 / 7.4 / 5							14.97 / 16.63
TA52	16.1		15.8 / 10.3 / 6.9	4500 / 3000 / 2000	145	165	24	130	18	21.53 / 23.19
TA53	20		19.2 / 12.8 / 8.7							28.15 / 29.81

further technical data and motor sizes see KEB-Drive product configuration



HIGHLIGHTS

- 0.5 ... 20 Nm in five frame sizes
- Low inertia—high impulse torque
- Easy plug connection, straight or angled (360° rotatable)
- Compact size - directly integrated in the gear modules
- High total efficiency, lifetime lubricated, universal installation positions and robust mechanics
- Resolver or absolute rotary encoder, BiSS single and multi-turn
- Optionally with COMBIPERM holding brake

SERVO MOTORS

DL3 CABLES FEEDBACK AND POWER CABLES

Pre-fabricated motor and encoder cables ensure the easy commision and simplify the final installation General performance is the high-quality and flexible design for all cables, made for drag chains Quick and tool-less installation with Speedtec plug connectors guarantees a optimally connection and EMC shielding.



RESOLVER FEEDBACK CABLES

- motor side connector - series 615
- drive side connector D-sub 26 pin

00S6L50-00

cable length	1...30 m	in 1m steps
	35...50 m	in 5 m steps

HIPERFACE FEEDBACK CABLES

for single and multi turn encoders

- motor side connector - series 615
- drive side connector D-sub 26 pin

00S6L55-00

cable length	1...30 m	in 1m steps
	35...50 m	in 5 m steps

POWER CABLES

- motor side connector - series 615 motor size A...B
- drive side open end with 0.3m open shielding
- motor side connector - M23 speedtec motor size C - E

00H6L10-00

cable length	1...30 m	in 1m steps
	35...50 m	in 5 m steps

00S4519-00

cable length	1...30 m	in 1m steps
	35...50 m	in 5 m steps

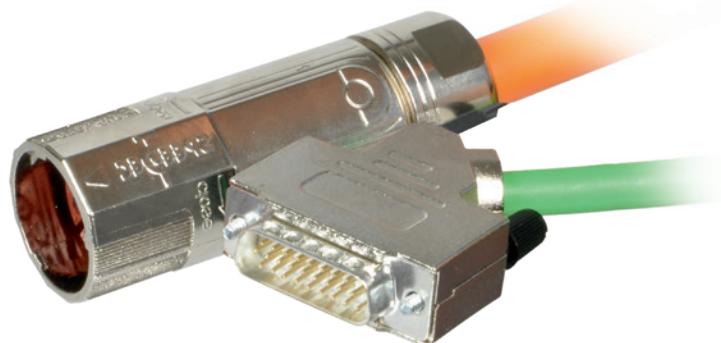


HIGHLIGHTS

- Pre-fabricated motor and encoder cables for easy installation
- High-quality and flexible design for cable drag chains
- Quick and tool-less installation with Speedtec plug connectors
- Optimally integrated shield connection
- Available in lengths up to 50 metres

TA CABLES FEEDBACK AND POWER CABLES

Prepared for the direct connection:



RESOLVER FEEDBACK CABLES

- motor side connector - 16 pin M23 - Speedtec
- drive side connector D-sub 26 pin

00S6L50-10__

cable length	1...30 m	in 1m steps
	35 .. 50 m	in 5 m steps

BISS FEEDBACK CABLES

for multi turn encoders

- motor side connector - 16 pin M23 - Speedtec
- drive side connector D-sub 26 pin

00S6L51-20__

cable length	1...30 m	in 1m steps
	35 .. 50 m	in 5 m steps

HIPERFACE GEBERKABEL

for single and multi turn encoders

- motor side connector - series 615
- drive side connector D-sub 26 pin

00S6L55-10__

cable length	1...30 m	in 1m steps
	35...50 m	in 5 m steps

POWER CABLES

- motor side connector - M23 - speedtec for motor size TA2...TA5
- drive side open end with 0.3 m open shielding

00S4519-00__

cable length	1...30 m	in 1m steps
	35...50 m	in 5 m steps

ACCESSORIES

MAINS CHOKE

Reduce the input peak current draw and the mains distortion. By smoothing the input current draw, the lifetime of the drive is enhanced, in particular at constantly high utilization.

Mains choke 3-phases 400 V AC ($U_{max} = 550$ V), 50 / 60 Hz

Part-No.	I_N [A]	P_V [W]	f_{Main} [Hz]	B [mm]	H [mm]	T [mm]	Weight m [kg]
07Z1B04-1000	2.7	19	45-65	100	55	121	0.9
09Z1B04-1000	4.3	23	45-65	100	55	121	1.1
10Z1B04-1000	6.1	24	45-65	100	64	121	1.5
12Z1B04-1000	10	37	45-65	148	68	145	2.1
13Z1B04-1000	12.6	48	45-65	148	78	145	2.6



BRAKING RESISTOR

Braking resistors can be connected to the series terminals of the brake transistor, and ensure that energy peaks are absorbed and discharged. The compact design require only small space and they are intrinsically safe; without additional temperature sensors.

To protect against overheating and fire hazards, the brake resistors feature thermal monitoring which can be integrated into the external circuit.

BRAKING RESISTORS - „INTRINSICALLY SAFE“

10G6A90-4300	wire 0.2 m	200 W; 160 Ohm; IP40
13G6B90-4300	wire 0.2 m	250 W; 110 Ohm; IP40
15G6C90-4300	wire 0.2 m	300 W; 56 Ohm; IP40



In addition to the defined base versions compact and application the COMBIVERT S6 unit offers specific application adjustments and customization.

HIGH SPEED SPINDLE DRIVES

- Maximum output frequency 2000 Hz



SPECIFIC FIRMWARE

- Fixed software versions according tested application specification

Software version

SW S6-K EtherCAT Version 2.2.0.0

S6K_MAIN_ETC_0202000F_20170705_1751

S6K_FPGA_ETC_02020034_20170509

OSS6K30_02000001_70_2014_09_03

DWS6KD0000_2014_10_09

APPLICATION READY TO START

- Customer specific parameter lists stored on the drives internal file server ex works

#	Gef.	Gest.	Adresse...	Setz...	R/W	ID...	Nam...	Offline-Wert	Online-Wert	Bemerkung
0								0		Geräte-Param...
1										
2	0	Node_...	0x30E1	0	-	WA	wb1	password	0	application
3	0	Node_...	0x30E2	0	-	RD	rw1	exception state	0x no exception	0x no exception
4	0	Node_...	0x30E2	0	-	RD	rw2	warning state	0x no warning	0x no warning
5	0	Node_...	0x30E3	0	-	RD	rw3	warning limit	0x no exception	0x no exception
6	0	Node_...	0x30E4	0	-	RD	rw4	warning limit state	4.0000	4.0000
7	0	Node_...	0x30E5	0	-	RD	rw5	servo unit status	4.0000	4.0000
8	0	Node_...	0x30E5	0	-	KO	rw6	servo unit display	0.00000 1.0mm	0.00000 1.0mm
9	0	Node_...	0x30E6	0	-	RD	rw7	ram pump display	0.00000 1.0mm	0.00000 1.0mm
10	0	Node_...	0x30E7	0	-	RD	rw8	act. frequency	0.00000000	0.00000000
11	0	Node_...	0x30E8	0	-	RD	rw9	act. torque	0.00000 1.0Nm	0.00000 1.0Nm
12	0	Node_...	0x30E9	0	-	RD	rw10	act. encoder speed	0.00000 1.0Nm	0.00000 1.0Nm
13	0	Node_...	0x30EA	0	-	RD	rw11	act. separated current	0.00 A	0.00 A
14	0	Node_...	0x30EB	0	-	RD	rw12	act. active current	0.00 A	0.00 A
15	0	Node_...	0x30EC	0	-	RD	rw13	act. reaction current	0.00 A	0.00 A
16	0	Node_...	0x30ED	0	-	RD	rw14	act. reaction current	0.00 A	0.00 A
17	0	Node_...	0x30E9	0	-	RD	rw15	act. UV voltage	313.6 V	320.7 V
18	0	Node_...	0x30E9F	0	-	RD	rw16	peak UV voltage	323.4 V	323.4 V
19	0	Node_...	0x30E0	0	-	RD	rw17	act. output voltage	0.00 V	0.0 V
20	0	Node_...	0x30E10	0	-	RD	rw18	act. output current	0.0 A	0.0 A
21	0	Node_...	0x30E12	0	-	RD	rw19	dig. input state	0x no input	0x no input
22	0	Node_...	0x30E13	0	-	RD	rw20	internal output state	0x no output	0x no output
23	0	Node_...	0x30E14	0	-	RD	rw20	dig. output state	0x no output	0x no output
24	0	Node_...	0x30E15	0	-	RD	rw21	dig. output flags	0x no flags	0x no flags
25	0	Node_...	0x30E17	0	-	RD	rw22	reference torque	0.0 %	0.2 %
26	0	Node_...	0x30E18	0	-	RD	rw24	actual torque	0.0 %	0.3 %
27	0	Node_...	0x30E20	0	-	RD	rw25	heatable temperature	26.6 °C	26.1 °C
28	0	Node_...	0x30E2A	0	-	RD	rw26	actual temperature	26.6 °C	40.0 °C
29	0	Node_...	0x30E2B	0	-	RD	rw27	motor temperature	0.0 %	0.5 %
30	0	Node_...	0x30E3C	0	-	RD	rw28	motor temperature	PTC open	PTC open
31	0	Node_...	0x30E3D	0	-	RD	rw29	OL counter	0.0 %	0.2 %
32	0	Node_...	0x30E3E	0	-	RD	rw30	SA counter	3640 enc. interf. comm...	3640 enc. interf. comm...
33	0	Node_...	0x30E3F	0	-	RD	rw31	servo ID index	16664 PT 0/0 + 370-1...	16664 PT 0/0 + 370-1...
34	0	Node_...	0x30E20	0	-	KO	rw32	motor prot. counter	0.0 %	0.2 %
35	0	Node_...	0x30E21	0	-	RD	rw33	position actual value	0	0

EXTENDED WARRANTY

- 24 months warranty
- 36 months warranty

CONNECTOR SHIELDING SET

- Drive controller with connector and shielding set



COMBIVIS 6 - THE TOOL FOR ALL TASKS

COMBIVIS 6

- Free and easy-to-use software for startup, administration and analysis
- Integrated start-up assistants (Wizards) for quick and easy configuration
- Direct access to device documentation
- 16 channel oscilloscope for extensive analysis
- Online parameter list comparison
- Parameterisation of key safety indicators and functions



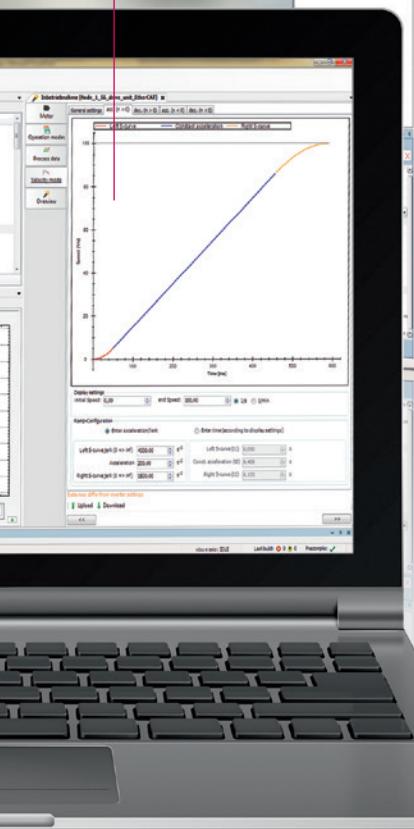
COMBIVIS studio 6

The intelligent automation suite from KEB combines an assistant-guided component selection, fieldbus configuration, drive parameterisation, IEC 61131-3 project generation and motion control. Throughout the planning and layout phase, implementation of control sequences and multi-axis movement profiles, to start-up and fine tuning, the user is supported by a tool developed by experienced application engineers.

With a foundation built on libraries, devices and template databases, rapid and simple solutions can be generated for a wide range of applications.

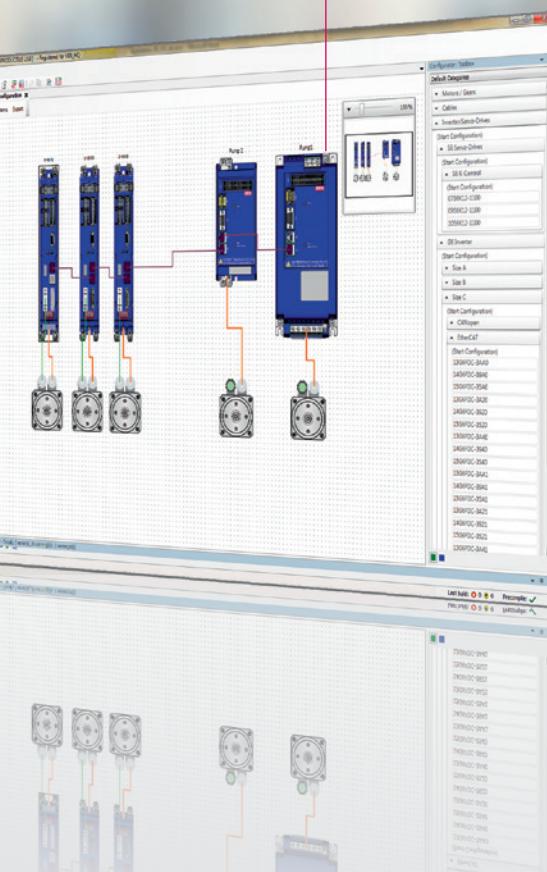
COMMISSIONING ASSISTANT

- Complete user guidance through the commissioning process
- KEB Motor database, free for extensions
- Anti cogging
- Fieldbus diagnostic and optimisation



SYSTEM CONFIGURATION AS A NEW COMPONENT OF COMBIVIS

- Access to complete KEB product database
- Intuitive gear component selection and system configuration using drag and drop
- Selection assistant with display of compatible components
- Display of all interfaces and connection components
- Material number generator
- Extensive export function for quote list, Combivis Project, Excel ...



HIGHLIGHTS



- IEC 61131-3 Applications development
- Device and library database
- Product configuration
- Start-up and diagnosis assistant
- COMBIVIS studio HMI integration
- Document database

KEB SERVICE

PERFORMANCE AND COMPETENCE

AFTER-SALES CUSTOMER SUPPORT

- Start-up support
- EMC service
- Mains analysis
- Insulation, heat or vibration measurements
- Conversion of old product series

MAINTENANCE AND REPAIRS

- Rush or standard service



COMPONENT AND SPACE PART SUPPLY

- Used and new parts for the exchange

PREVENTIVE MAINTENANCE

- Forming and cleaning, inspection, functional analysis



CUSTOMER SPECIFIC SERVICE

- Individual service support
- System optimisation



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