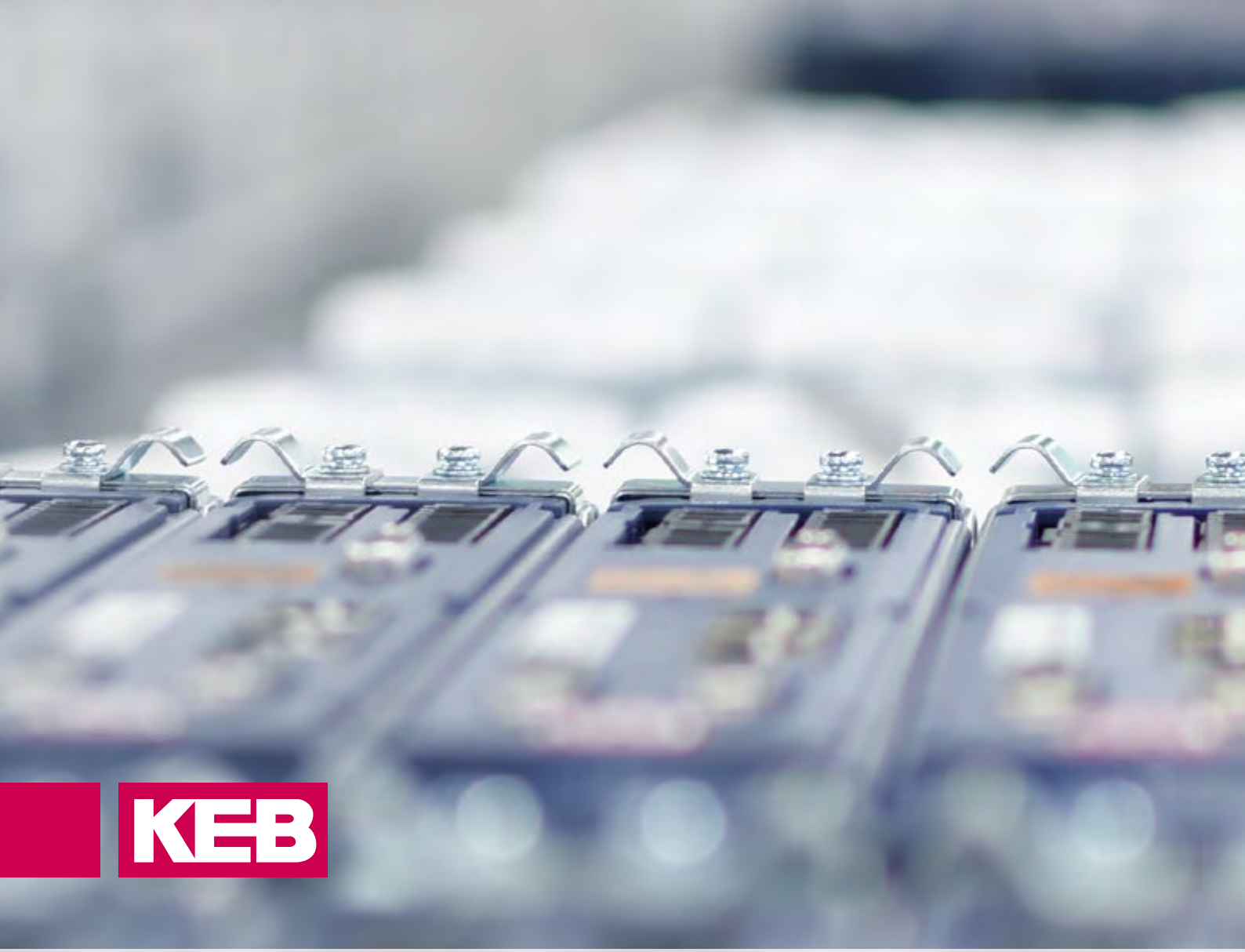
COMBIVERT **S6**

SERVO DRIVES

EN



KEB

CONTENT	PAGE

SYSTEM OVERVIEW

Automation **with Drive**
stands 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.

IIoT


IIoT & Edge-Platform


Analytics


Monitoring


Management


Service

CONTROL HARDWARE

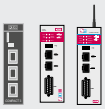
Visualisation


HMI

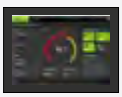
Engineering


Control Software

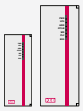
Remote Control

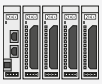

Router

CONTROL HARDWARE


Web HMI


Embedded Control


IPC


I/O


Safety PLC

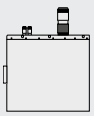
DRIVES

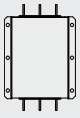

Inverter

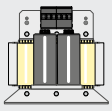

Servo Drive

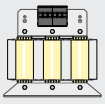

Drive Controller

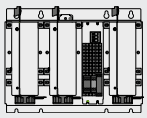

Pitch Drive


eMobility Drive


EMC & THD Filter


Sine Wave Filter

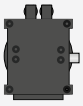

Motor Choke


Sine Wave EMC Filter

MOTORS


AC Motor


PM Motor


PM Gear Motor


AC Gear Motor

BRAKES & CLUTCHES


Permanent Magnet Brake


Spring Applied Brake


Electromagnetic Brake


Electromagnetic Clutch

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.

DRIVE BASED SAFETY

POWERFUL

- Functional consistency across the entire power range
- 2,6 A ... 16 A in two housing sizes
- Book format for space-saving cabinet configuration
- Direct mains connection for 230 V and 400 V networks, alternatively also DC input 260 V ... 375 / 750 V
- Low leakage current mains filter (<5 mA) integrated, optionally without filter
- High overload for optimum dynamics (250 % / 3 s, 200 % / 60 s)
- Integrated safety technology
- Wide range of options for motors, encoders and communication

POWERFUL AND COMPACT

DRIVE BASED SAFETY

Integrated safety functionality:
- Basic function STO in COMPACT variant
- Additional modular high level safety in APPLICATION variant
- Encoderless safety in variant PRO

ALL IN ONE – UNIVERSAL MOTOR OPERATIONS

For asynchronous, synchronous, IPM or synchronous reluctance motors
- With encoder or encoderless control: SCL and ASCL for precise speed control
- Motor temperature monitoring PTC, KTY or PT1000
- Two-channel multi-encoder interface
- Integrated brake transistor
- Integrated brake control

REAL-TIME COMMUNICATION

- Real-time Ethernet-based interfaces
- CAN

or simply serial:
- RS232 / 485 for diagnostics or display

ANALOG / DIGITAL

Supports existing machine concepts with:
- 8 digital and 2 analogue inputs
- 2 digital outputs + 1 relay
- Analog output 0 V ... 10 V

HIGHLIGHTS

- Best speed and torque performance
- Modern real-time communication
- Integrated functional safety
- Particularly compact dimensions

COMBIVERT **S6**

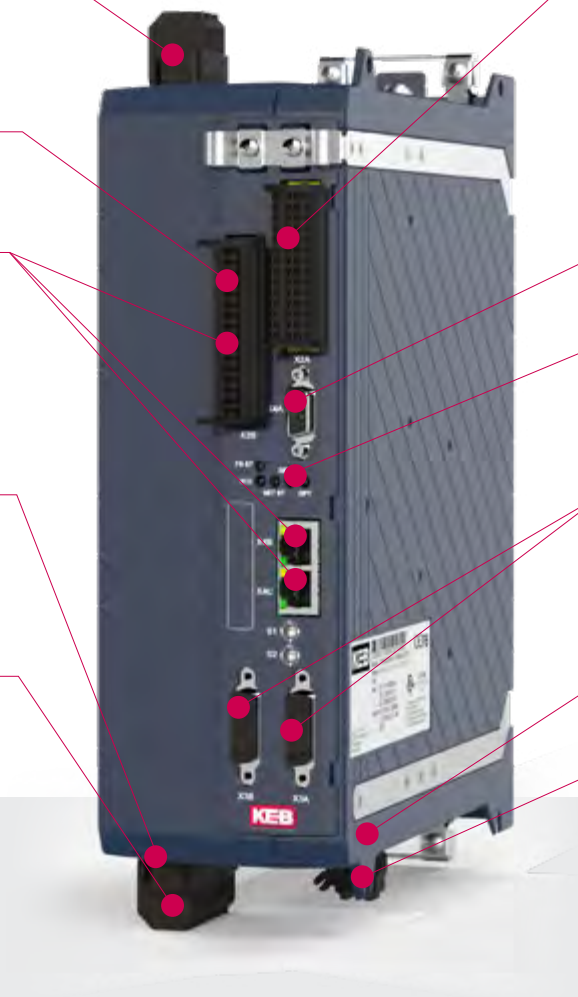
MAINS CONNECTIONS
with pluggable terminals

FUNCTIONAL SAFETY

INTERFACE
CAN interface
Realtime Ethernet
Modbus

DC SUPPLY TERMINALS
and braking resistor

MOTOR TERMINALS
with pluggable terminals



I / O
8 digital inputs
2 digital outputs
1 relay
2 analog inputs
1 analog output
24V DC supply

DIAGNOSTIC INTERFACE

STATUS LEDS
configurable for APPLICATION
and PRO device variants

MULTI ENCODER INTERFACES
Resolver, EnDAT, Hiperface, BISS, SSI,
Incremental HTL / TTL,
Incremental output

MOTOR TEMPERATURE DETECTION
KTY / PTC / PT1000

BRAKE CONTROL 24 V / 2 A

EtherCAT® Safety over EtherCAT® VARAN CANopen®

HIGHLIGHTS

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

VARIANTS

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
MODBUS TCP

Communication interface

CAN
CAN CROSS-COMMUNICATION
DIAGNOSTIC RS232 / 485

PRO
ENCODERLESS SAFETY

STO, SBC and speed related safety functions without encoder feedback

REALTIME ETHERNET

ETHERCAT
PROFINET
MODBUS TCP

Communication interface

CAN
CAN CROSS-COMMUNICATION
DIAGNOSTIC RS232 / 485
ETHERNET
MODBUS RTU/ASCII

PROFIsafe · Modbus · PROFINET · ETHERNET POWERLINK · EtherNet/IP

HIGHLIGHTS

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

SAFETY FUNCTIONS IN THE DRIVE

BASIS FOR SAFETY

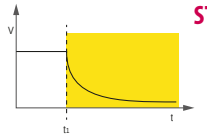
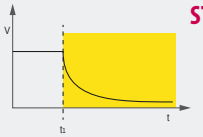
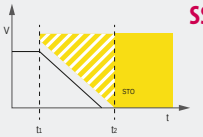
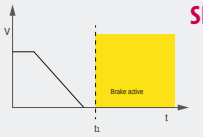
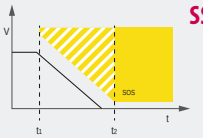
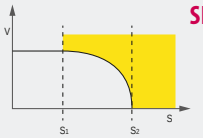
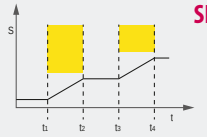
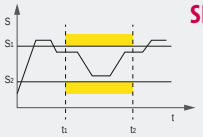
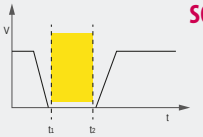
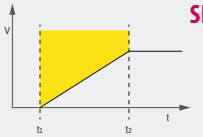
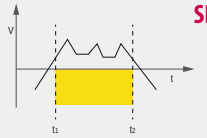
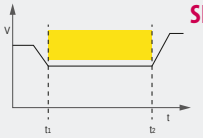
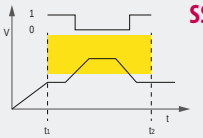
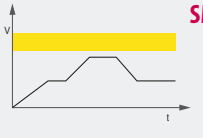
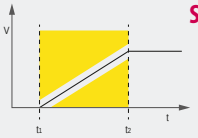
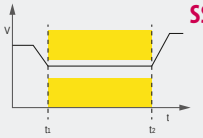
COMPACT

In the COMPACT variant, 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 lowered 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) or PROFIsafe.

COMPACT	APPLICATION		
on board	Module 1	Module 3	Safety over EtherCAT / PROFIsafe
STO  Safe Torque OFF	STO  Safe Torque OFF	SS1  Safe Stop 1	
	SBC  Safe Brake Control	SS2  Safe Stop 2	SEL  Safe Emergency Limit
SLI  Safely-Limited Increment	SLP  Safely-Limited Position	SOS  Safe Operating Stop	SLA  Safely-Limited Acceleration
SDI  Safe Direction	SLS  Safely-Limited Speed	SSM  Safe Speed Monitor	SMS  Safe Maximum Speed
		SAR  Safe Acceleration Range	SSR  Safe Speed Range

ENCODERLESS 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.

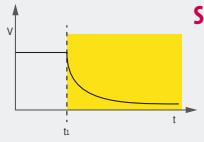
In addition to STO, Module 5 is equipped with a safe brake control (SBC), which provides a safe 24 V supply for braking operation as well as a monitoring of the switching status of the brake via microswitch evaluation.

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

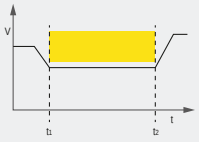
PRO

Module 5

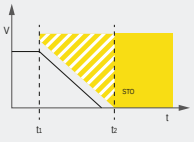
Safety over EtherCAT



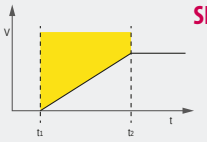
Safe Torque OFF



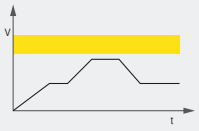
Safely-Limited Speed



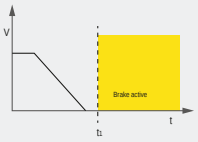
Safe Stop 1



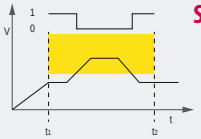
Safely-Limited Acceleration



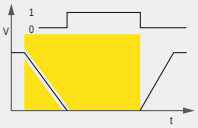
Safe Maximum Speed



Safe Brake Control



Safe Speed Monitor



Safe Door-Lock Control

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 eight different safety setups per function
- Cost savings compared to traditional safety solution

ELECTRICAL PROPERTIES

HOUSING			2					4		
Device size			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
Nominal voltage (AC)	**U_N**	**[V]**	**230**		**400**					
Max. current 0 Hz / cutoff frequency at $f_s = 4$ 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 $f_s = 8$ 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 $f_s = 16$ 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_{Dnop}	[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 ... 2,000							

* At nominal voltage 230 V / 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

OPERATING TYPES, STANDARDS

OPERATING MODES

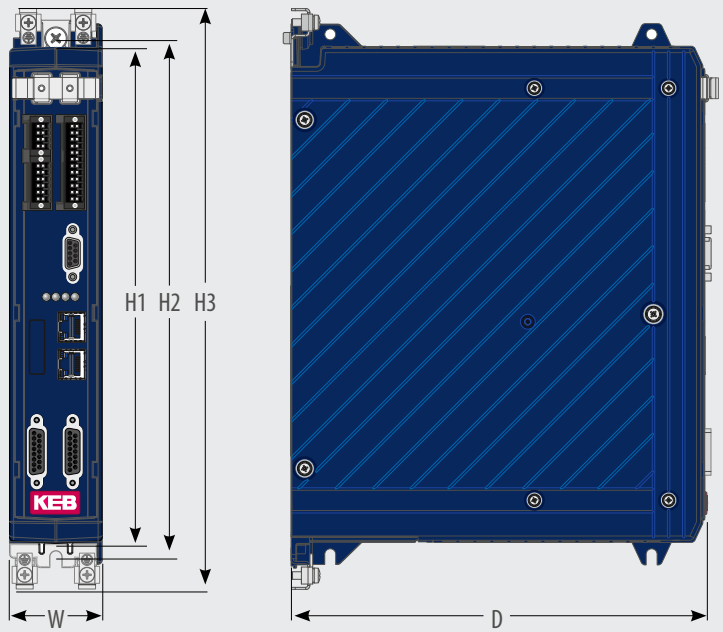
Motor control mode	**PMSM**: field-oriented with encoder, SCL encoderless **IPMSM**: field-oriented with encoder, SCL encoderless **SyncRM**: field-oriented with encoder, SCL encoderless **ASM**: V / F, field-oriented with encoder, ASCL encoderless
Application profile	CiA 402
Control mode	Velocity Mode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

GENERAL

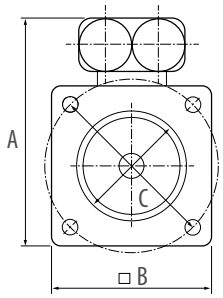
Product standard	EN 61800-2, -5-1
EMC transient emissions	
Grid-bound disturbance	EN 61800-3, C2 - 1-ph: 30 m - 3-ph: 50 m motor cable length (shielded), low-capacitance
Emitted disturbances	EN 61000-6 -1...4, C2
Protection class	IP 20 / VBG 4
Environment	EN 60721-3-3 Operating temperature -10 ... 45 °C Storage temperature -25 ... 55 °C Humidity 3K3 - 5 ... 85 % (no condensation)
Site altitude	max. 2,000 m above sea level, from 1,000 m: power reduction of 1 % per 100 m

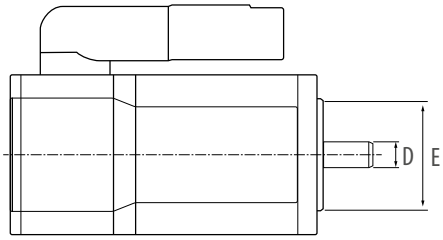
HOUSING	2	4
H1	265	265
H2	275	275
H3	310	310
D	220	220
W	50	90

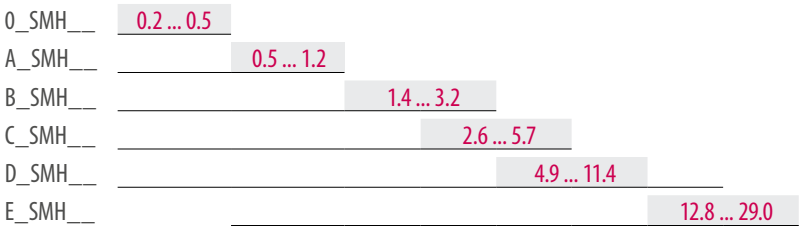
All dimensions in mm



SERVOMOTORS DYNAMIC LINE 3







Stall torque in Nm

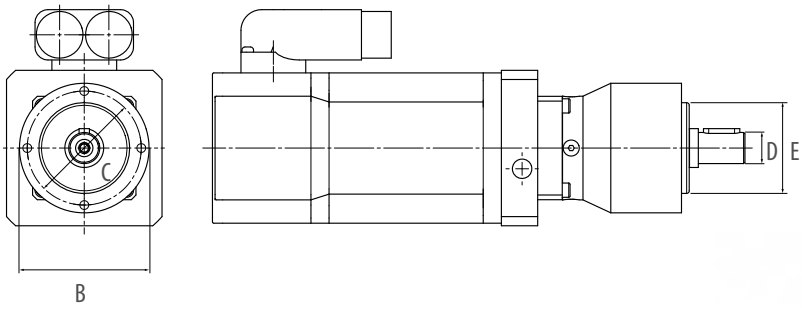
0 *A* *B* *C* *D* *E*

MOTOR	T_0 [Nm]	T_N [Nm]	U_N [V]	I_{D0} / I_N [A]	N_N [min^{-1}]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	OPTION BRAKE T_n [Nm]	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	8,000	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	8,000	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	6,000	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	6,000							1.08 / 1.74
C2SMHF_	4.1	3.7	400	4.10 / 3.80	5,000	128.5	87	100	19	80	9	1.98 / 2.63
C3	5.7	4.9		5.40 / 4.75	5,000							2.87 / 3.52
D1	4.9	4.4		4.75 / 4.20	5,000						9	2.23 / 2.89
D2SMHF_	8.2	6.9		6.30 / 5.20	4,000	145.5	104	115	24	95	9	4.06 / 4.72
D3	11.4	8.4		8.80 / 6.30	4,000						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	3,000	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 Nm ... 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 Ø [mm]	C Ø [mm]	D Ø [mm]	E Ø [mm]	DL3-MOTOR recommended
1	5 ... 11	8 ... 17.5	5,000	5 ... 40	15	50	44	12	35	A
2	15 ... 28	24 ... 45	4,500		10	70	62	16	52	A B C
3	38 ... 85	61 ... 136	4,000		7	90	80	22	68	A B C D
5	95 ... 115	152 ... 136	3,000		7	120	108	32	90	B C D E
7	210 ... 460	336 ... 736	2,800		8	155	140	40	120	C D E

HIGHLIGHTS

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

INTEGRATED SERVO DESIGN

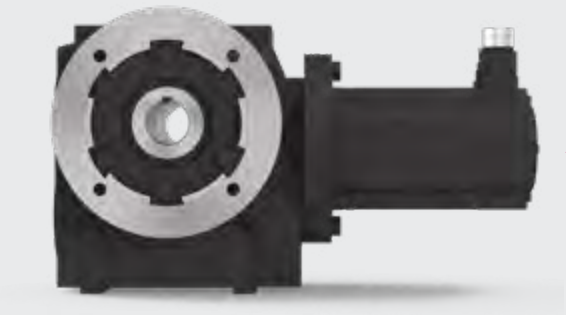
Based on the industrial standard with AC motors the portfolio of COMBIGEAR series offers a full basket of servo gear solutions. The dynamic and efficient TA servo motors are direct connected in the first gear stage – best choice for minimum lenghts, nearly zero wear and small inertia of the gear motor 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 ... 4,880	3.37 ... 250.97	■	■	■	■	■
F	2 ... 7	Shaft mounted helical gear	245 ... 4,880	3.20 ... 274.23		■	■	■	■
K	0 ... 7	Helical bevel gear	58 ... 4,880	3.38 ... 183.21	■	■	■	■	■
S	0 ... 4	Helical worm gear	55 ... 1,160	5.09 ... 247.58	■	■	■	■	■

Mehr Information im Katalog Servomotoren TA catalogue

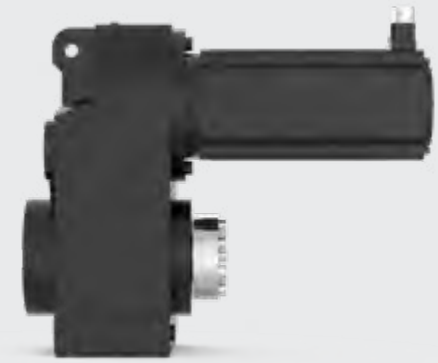
HELICAL GEAR



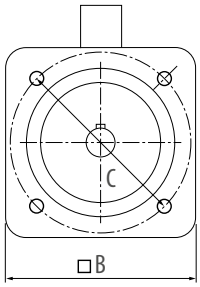
HELICAL WORM GEAR

HELICAL BEVEL GEAR

SHAFT MOUNTED HELICAL GEAR

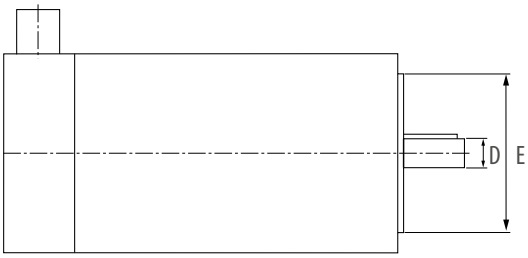


TA SERIES



TA 1	0.5 ... 0.9				
TA 2		1.3 ... 3.3			
TA 3			2.9 ... 6.8		
TA 4				6.9 ... 11,7	
TA 5					11.5 ... 20.0

Stall torque in Nm



MOTOR	T_0 [Nm]	U_N [V]	I_{D0} [A]	N_N [min^{-1}]	B [mm]	C [mm]	D [mm]	E [mm]	OPTION BRAKE T_n [Nm]	INERTIA J_M / J_{MwBr} [kgcm^2]
TA1S	0.5	400	0.95 / 0.72	6,000 / 4,500	58	63	9	40	2	0.14 / 0.2
TA1M	0.9		1.11 / 0.84							0.2 / 0.27
TA2S	1.4		1.6 / 1.1	6,000 / 4,500	75	75	11	60	2	0.39 / 0.46
TA2M	2.4		2.75 / 2							0.66 / 0.73
TA2L	3.3		3.9 / 2.8							0.93 / 0.99
TA3S	2.9		3.4 / 2.5 / 1.82	6,000 / 4,500 / 3,000	90	100	14	80	4,5	1.13 / 1.32
TA3M	4.9		6.2 / 4.1 / 2.55							1.95 / 2.13
TA3L	6.8		7.3 / 5.6 / 3.8							2.76 / 2.94
TA41	6.9		6.5 / 4.45 / 3.15	4,500 / 3,000 / 2000	116	115	19	95	9	5.65 / 5.83
TA42	9.2		8.5 / 5.9 / 4							8.15 / 8.69
TA43	11.7		11.2 / 7.3 / 5							10.65 / 11.19
TA51	11.5		11 / 7.4 / 5	4,500 / 3,000 / 2,000	145	165	24	130	18	14.97 / 16.63
TA52	16.1		15.8 / 10.3 / 6.9							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 Nm ... 90 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

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 1 m 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 1 m steps
	35 ... 50 m	in 5 m steps

MOTOR CONNECTION CABLES

- motor side connector - series 615 motor sizes 01 ... 03 and A. . .B
- drive side open end with 0.3 m open shielding

00H6L10-00__

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

- motor side conncetor - M23 speedtec motor size C - E

00S4519-00__

cable length	1 ... 30 m	in 1 m 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

Prepaired for the direct connection:

RESOLVER FEEDBACK CABLES

- motor side connector - 12 pin M23 - Speedtec
- drive side connector D-sub 26 pin

00S6L50-10___

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

BISS FEEDBACK CABLES

for multi turn encoders

- motor side connector - 17 pin M23 - Speedtec
- drive side connector D-sub 26 pin

00S6L51-20___

cable length	1 ... 30 m	in 1 m 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

00S6L55-10___

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

MOTOR CONNECTION CABLES

- motor side conncetor - 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 1 m steps
	35 ... 50 m	in 5 m steps

ENCODER CABLE FOR MASTER/SLAVE OPERATION

- Angle and speed-synchronised master/slave operation of two drives via encoder interface
- Available for the APPICATION and PRO device variants

00S6L57-0001

Cable length	1 m

ACCESSORIES

MAINS CHOKE

Mains chokes 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 utilisation.

MAINS CHOKE 1- AND 3-PHASE 230/400 VAC, 50 Hz / 60 Hz

Part-No.	Supply voltage	U_{max} [V]	I_N [A]	P_V [W]	f_{mains} [Hz]	B [mm]	H [mm]	T [mm]	weight m [kg]
07Z1B02-1000	1-ph 230 V	264	10	9	45-65	85	59.5	89	1.4
09Z1B02-1000	1-ph 230 V	264	16	15	45-65	85	60	89	1.5
07Z1B03-1000	3-ph 230 V	264	4.2	20	45-65	100	54	120	0.9
09Z1B03-1000	3-ph 230 V	264	7.4	26	45-65	100	54	122	1.1
10Z1B03-1000	3-ph 230 V	264	10.5	28	45-65	100	63	122	1.5
12Z1B03-1000	3-ph 230 V	264	17.3	52	45-65	148	67	145	2
13Z1B03-1000	3-ph 230 V	264	25.2	55	45-65	148	77	145	3.7
07Z1B04-1000	3-ph 400 V	550	2.7	19	45-65	100	55	121	0.9
09Z1B04-1000	3-ph 400 V	550	4.3	23	45-65	100	55	121	1.1
10Z1B04-1000	3-ph 400 V	550	6.1	24	45-65	100	64	121	1.5
12Z1B04-1000	3-ph 400 V	550	10	37	45-65	148	68	145	2.1
13Z1B04-1000	3-ph 400 V	550	12.6	48	45-65	148	78	145	2.6
14Z1B04-1000	3-ph 400 V	550	17.3	69	45-65	148	77	145	2.8

Further accessories in the EMV COMBILINE catalogue

Weitere Zubehör im Katalog EMV COMBILINE

BRAKING RESISTOR

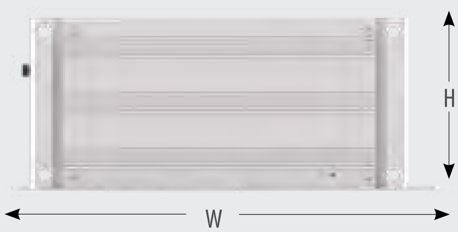
Braking resistors can be connected to the series terminals of the brake transistor, and ensure that energy peaks are absorbed and discharged. The compact design require only small space and they are intrinsically safe; without additional temperature sensors.

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

BRAKING RESISTOR

Part Number	P_D [W]	R [Ω]	B [mm]	H [mm]	D [mm]	Wire [m]	Protection class
10G6A90-4300	200	160	220	90	31	0.2	IP40
13G6B90-4300	250	110	285	90	31	0.2	IP40
15G6C90-4300	300	56	295	120	31	0.2	IP40
07BR6B1-5390	35	390	90	10	220	0.25	IP20
09BR6B1-5270	35	270	90	10	220	0.25	IP20
12BR6B1-5150	35	150	90	10	220	0.25	IP20
12BR6D1-5150	50	150	90	10	250	0.25	IP20
14BR6D1-5853	50	85	90	10	250	0.25	IP20
14BR6E1-5853	100	85	130	10	290	0.25	IP20
16BR6E1-5423	100	42	130	10	290	0.25	IP20

Braking resistors for higher power ratings (BR100, BR110 & BR226 series) are also available in the "non-intrinsically safe" version.



In addition to the defined base variants COMPACT and APPLICATION the COMBIVERT S6 unit offers specific application adjustments and customisations.

HIGH SPEED SPINDLE DRIVES

- For the operation of synchronous and asynchronous motors up to the maximum output frequency of 2,000 Hz

HIGHSPEED

SPECIFIC FIRMWARE

- Fixed software versions according tested application specification

APPLICATION READY TO START

- Customised factory setting with presetting of drives

CUSTOMER LABELLING

- Customised nameplate for OEM series production with first-line service concept

YOUR LOGO

EXTENDED WARRANTY

- 24 months warranty
- 36 months warranty

COMBIVIS 6 – THE TOOL FOR ALL TASKS

COMBIVIS 6

Commissioning software for parameterisation, diagnostics and project management

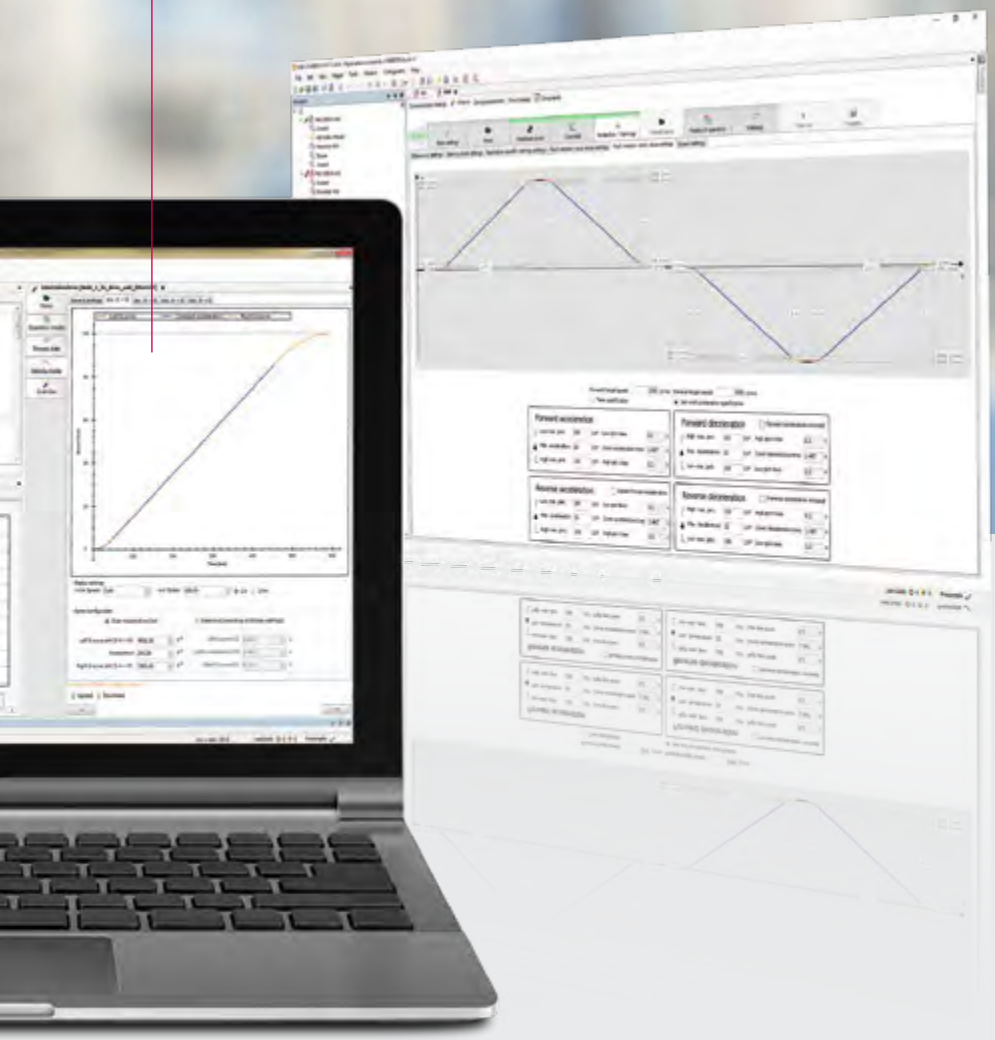
- Free and easy-to-use software for commissioning, management and analysis
- Direct access to device documentation
- 16-channel oscilloscope for comprehensive analyses, 4 channels of which can be displayed in the drive's control grid
- Online and offline parameter list comparison/Quick Compare Mode
- Parameterisation of safety parameters 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, freely expandable
- Anti cogging
- Fieldbus diagnostic and optimisation
- Sine filter wizard
- Servo pump wizard



HIGHLIGHTS

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

KEB SERVICE

PERFORMANCE AND COMPETENCE

CUSTOMER SUPPORT IN THE AFTER-SALES AREA
- Commissioning
- Troubleshooting
- EMC service
- Network analysis
- Insulation, heat or vibration measurements
- Online service portal
- 'As Good As New' option
- Retrofit solutions

MAINTENANCE AND REPAIRS
- Express or standard service

STOCKPILING OF COMPONENTS
- Spare and used parts warehouse

PREVENTIVE MAINTENANCE
- Forming and cleaning
- Inspection
- Functional analysis

CUSTOMISED SERVICE
- Customised service support
- System optimisation

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KEB'S GLOBAL PARTNER NETWORK

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