H6

COMBIVERT H6

Multi Axis Drives

KEB

Modular drive technology: **KEB COMBIVERT** H6

KEB COMBIVERT H6 is the new product family for a multi-axis drive system with modular components for

- drive axes power supply
- sinusoidal input current in supply and regeneration mode
- single-axis drive modules
- double-axis drive module
- 24V DC-supply

- position sensor systems
- fieldbus adaptation
- integrated embedded control unit according to IEC 61131-3
- integrated 24V brake control
- integrated safety system

From more than 30 years of experience with electronic drive technology, sophisticated control algorith-men for all common motor versions has been developed . Now **KEB COMBIVERT H6** has integrated them all in one device.
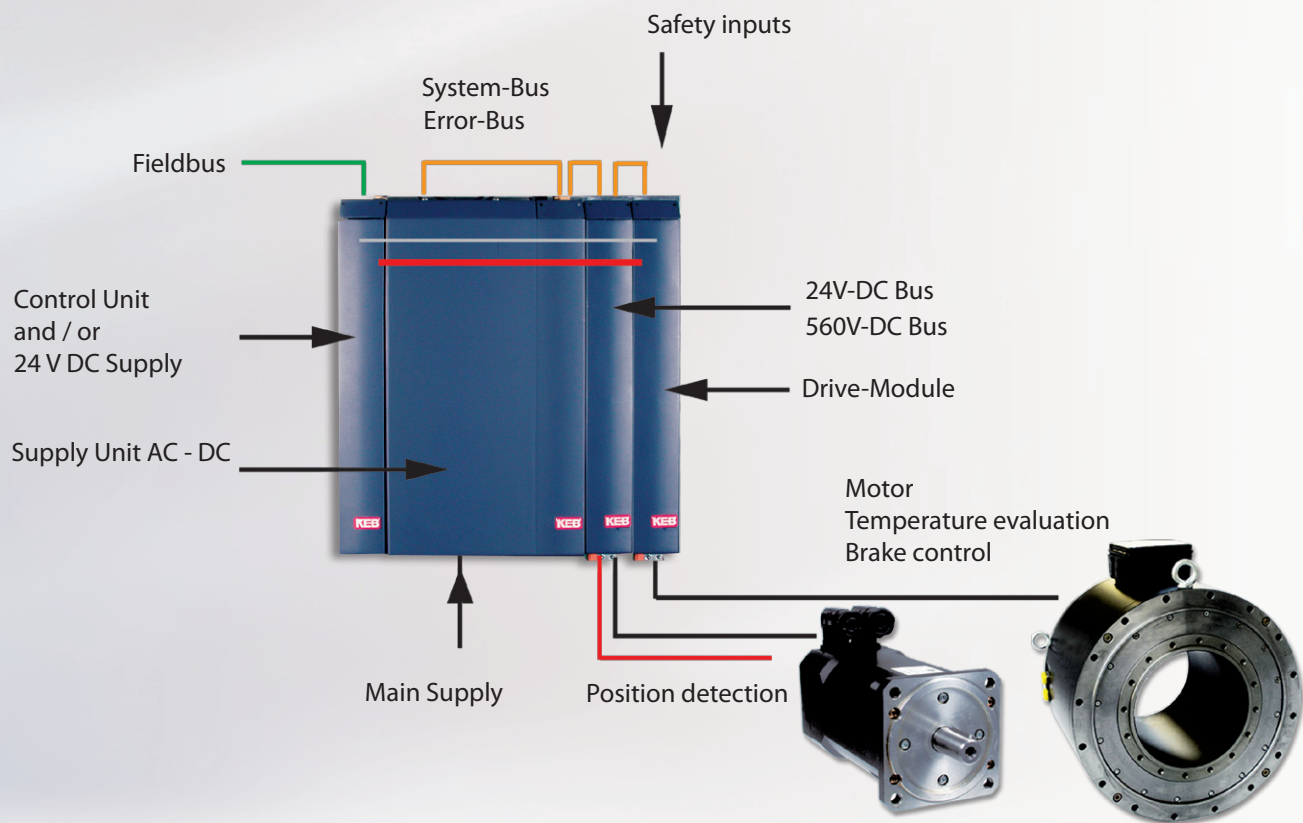The new **DYNAMIC LINE II** and **TA servo motors** are designed especially for high-dynamic control proc-esses. The digital feedback system with the electronic name plate integrates the motor directly into the system.

Table of Contents

50   100   200   300

Features and benefits on a glance:

- space-saving design of a multi-axis drive system
- load share via protected DC bus link
- significantly reduced wiring and installation
- integrated Soft-PLC-, Motion- and NC- control and 24V DC supply
- standarized connection technology simplifies the handling

- innovative cooling solutions reduce the heat dissipation in the control cabinet
- improved quality and lifetime by means of active DC-bus capacitor cooling
- dimensions optimised for application
- integrated two-level safety systems
- central operation concept for the complete system
- standarized programming tools with diagnostics

Safety inputs

System-Bus
Error-Bus

Fieldbus

Control Unit
and / or
24 V DC Supply

Supply Unit AC - DC

24V-DC Bus
560V-DC Bus

Drive-Module

Motor
Temperature evaluation
Brake control

Main Supply

Position detection

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The integrated Embedded IEC 61131-3 Control Unit for Soft PLC-, Motion-Control and NC can be used for Soft PLC, Motion Control and NC, for the coordination of linked motions in machines and systems.

The integrated Ethernet interface connects with the host control level and the EtherCAT fieldbus master carries out the complete communication between the axes, sensors and actors in realtime.
In addition peripheral IPC-based controls as BOX-PC or PANEL-PC are available with integrated touchscreen monitors in various performance classes and realtime capable LINUX or Windows XPe operation systems.

Supply Unit with B6 Rectifier

The central supply unit with controlled rectifier provides power to the drive system via the DC-bus and buffers partly about 1/3 of the total regenerative energy in the DC-bus capacitors.

The standard internal braking transistor (GTR7) gives the option to connect a braking resistor directly for dynamic breaking.
The internal two-channel error bus and the system bus fully integrate the units into the fieldbus and control system.
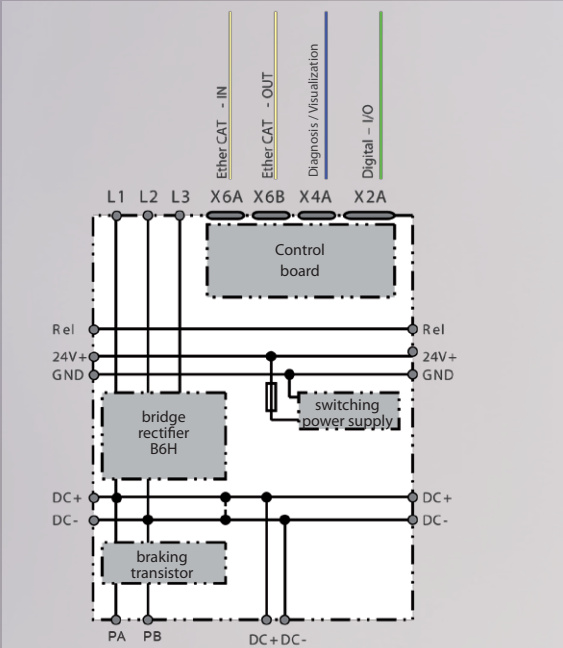

Module size		19	20	21	24	25	27	28
Supply type				B6 bridge rectifier _ _.H6.C_ _				
rated apparent output power S_n	[kVA]	31.2	39.5	51.3	103.9	131.4	169.7	242.5
rated active power P_n	[kW]	30	37	48	95	120	155	225
rated input voltage U_n	[V]				400			
rated input current I_n	[A_{AC}]	45	57	74	150	190	245	350
base load current I_H	[A_{AC}]	37	47	61	123	155	201	287
current in S6 mode $I_{S6\_40\%/10Min.}$	[A_{AC}]	59	74	96	195	246	319	455
maximum current I_{max}	[A_{AC}]	81	103	133	270	341	441	630
OC-tripping current I_{OC}	[A_{DC}]	97	123	160	324	410	529	756
rated output current I_{dcn}	[A_{DC}]	55	70	90	180	230	300	435
OH Level	[°C]	80	80	60	80	60	80	60
Module width	[mm]	100	100	100	300	300	300	300
mains choke (page 10)		19.Z1.	20.Z1.	21.Z1.	24.Z1.	25.Z1.	27.Z1.	28.Z1.
line filter (page 10))		18.E4.	21.E4.	21.E4.	26.E4.	26.E4.	28.E4.	28.E4.

Technical data for 2/4-pole norm motors; other number of poles or special motors: adapt supply module for DC. mains choke with uk = 4% preconditioned.

AFE - sinusoidal power supply and regeneration solution

The combination of a charging unit for sinusoidal regeneration and regenerative unit with LCL filter offers a technically advanced alternative to the standard rectifier power supply unit for applications requiring sinusoidal current consumption from the supplying power line or in case of tasks with high regenerative energy rate. The charging unit takes the control of the power contactor after the DC bus was fully charged.

The boost converter of this power supply unit integrated internal GTR7 maintains the DC bus voltage on an adjustable level i.e. at 650V DC, which for example makes a more optimised motor sizing with higher power possible.
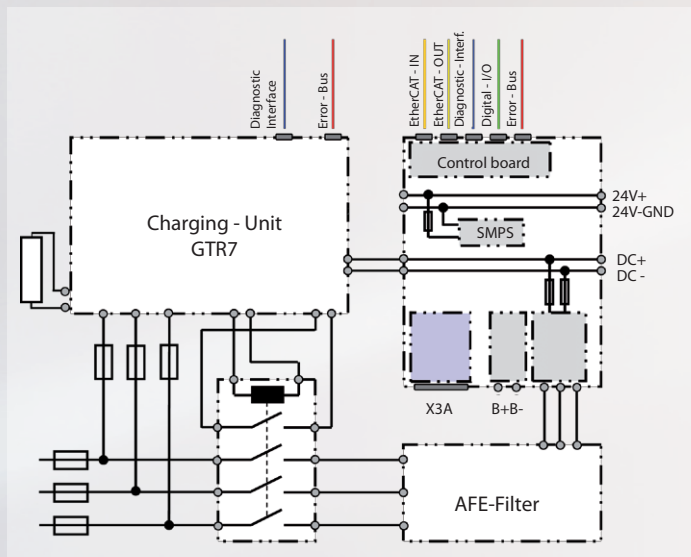

Module size		14	18	19	21	24	26
Supply type		AFE-sinusoidal power supply / regeneration system _ _.H6.D_ _					
rated apparent output power S_n	[kVA]	11	33	42	62	125	173
rated active power P_n	[kW]	7.5	22	30	45	90	132
rated input voltage U_n	[V]	400					
rated input current I_n	[A_{AC}]	16.5	48	60	90	180	250
base load current I_H	[A_{AC}]	13.5	39	49	74	148	205
current in S6 mode $I_{S6\_40\%/10Min.}$	[A_{AC}]	21.5	62	78	117	234	325
maximum current I_{max}	[A_{AC}]	33	86	108	162	324	450
OC-tripping current I_{OC}	[A_{DC}]	39.6	103	130	194	389	540
rated output current I_{dcn}	[kHz]	8	8	8	8	8	4
OH-Level	[°C]	80	60	80	80	60	60
Module width	mm	100	100	200	200	300	300
AFE-Filter (page 11)		xx.H6.J4F-1000 / 2000					
charging unit (page 11)		00.H6.FAB-1100 (module width 50 mm)					

KEB COMBIVERT H6 - Motion Control

Single-Axis and Double-Axis Drive Units

■ **DC-supply**
with internal fuses in both DC conductors

■ **External 24V-DC-Supply**
i.e. for the internal switching power supply unit and the direct supply of a 24V motor brake.

■ **Internal controlled voltage sources**
independent from DC-bus voltage.
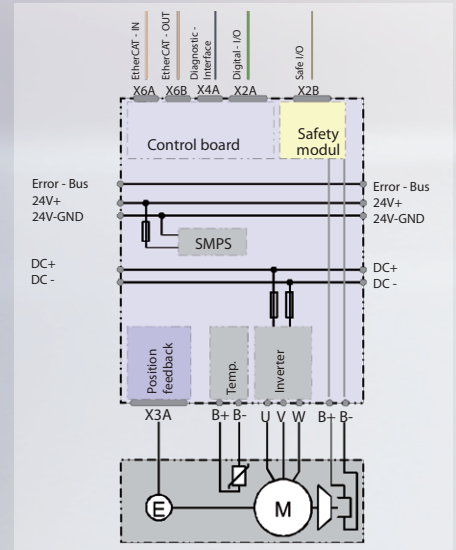
Drive Units – Control Terminals

■ **EtherCAT System bus**
realtime datatransfer of set- and actual values between IEC-controller and drives modules

■ **Error Bus** Two-channel error bus
Channel-1: charging status of the DC bus of the supply unit
Channel-2: error output of the connected DC bus members

■ **Diagnose Interface**
RS232 / RS485- Interface to connect service tools and displays

■ **Digitale E/As**
4 digital inputs (IEC 61131-1)
4 digital outputs (High Side Driver, no relays)

Module size		07	10	12	13	14	15
Version		Single-axis Module _ _ .H6.A_ _					
rated apparent output power S_n	[kVA]	1.8	4	6.2	8.3	11	17
rated active power P_n	[kW]	0.75	2.2	4	5.5	7.5	11
rated input voltage U_n	[V]						
rated input current I_n	[A]	2.6	5.8	9	12	16.5	24
base load current I_H	[A]	2.1	4.7	7.4	9.8	13.5	19.7
current in S6 mode $I_{S6\_40\%/10min.}$	[A]	3.4	7.5	11.7	15.6	21.5	31.2
maximum current I_{max}	[A9	5.2	11.6	18	24	33	43.2
OC-tripping current I_{OC}	[A]	6.2	13.9	21.6	28.8	39.6	51.8
switching frequency $fs_{nom/max}$	[kHz]						
OH Level	[°C]	80	80	80	80	80	80
Module size	[mm]	50	50	50	100	100	100

KEB

Drive Units - Software - Communication

- CiA402 - Cyclic synchronous position mode is the KEB's standard profile
- CiA402 - Cyclic synchronous velocity mode and
- CiA402 - Cyclic synchronous torque mode are supported

  Implementation in accordance with ETG Implementation Guideline for CiA402 drive profiles

Driver for 3S – Softmotion and NC for KEB COMBIVERT H6
(based on Cyclic synchronous position mode)

Motor Control - Features

Operation of synchronous and asynchronous motors

- Sensorless control of synchronous motors (**S.C.L.**)
- Sensorless control of asynchronous motors (**A.S.C.L.**)
- Rotorposition detection by HFI (high frequencs injection) at standstill
- Field weakening for synchronous motors (enhanced functionality)
- High torque and speed accuracy with and without encoder system

The **MULTI ENCODER SYSTEM** for **single-axis** or **double-axis** modules supports:

- Resolver
- Sincos
- Endat 2.1
- SSI
- Endat 2.2
- Hyperface
- TTL
- Biss

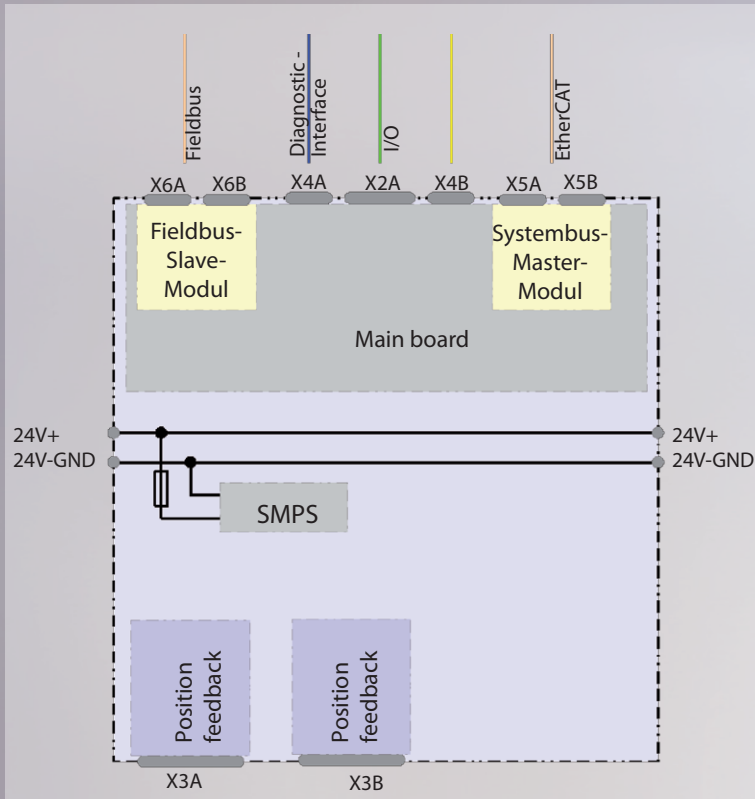and can be integrated as a **single channel** modul into

- Axis-Drive
- Control-Unit

16	18	20	21	22	23	24	25	07	10	12
								Double-Axis Module _ _ .H6.B __		
23	33	52	62	76	100	125	145	2 x 1.8	2 x 4	2 x 6.2
15	22	37	45	55	75	90	110	2 x 0.75	2 x 2.2	2 x 4
400								400		
33	48	75	90	110	145	180	210	2 x 2.6	2 x 5.8	2 x 9
27	39	61.5	74	90	120	148	172	2 x 2.1	2 x 4.7	2 x 7.4
43	62	98	117	143	190	234	273	2 x 3.4	2 x 7.5	2 x 11.7
59	86	135	162	198	261	324	378	2 x 5.2	2 x 11.6	2 x 18
71	103	162	194	238	313	389	454	2 x 6.2	2 x 13.9	2 x 21.6
4/8 (mit Derating)								4/8 (mit Derating)		
80	60	80	80	80	60	80	60	80	80	80
100	100	200	200	200	200	300	300	50	50	50

CONTROL UNIT - Control Module

Fieldbus

Diagnostic - Interface

I/O

EtherCAT

| X6A | X6B | X4A | X2A | X4B | X5A | X5B |

Fieldbus-Slave-Modul

Systembus-Master-Modul

Main board

24V+
24V-GND

24V+
24V-GND

SMPS

Position feedback

Position feedback

X3A

X3B

The Embedded Control with the high-performance CPU (32bit RISC / 200MHz / FPU), programmable in IEC 61131-3, is based on 3S-CoDeSys and includes an EtherCAT fieldbus, Master for applications with Soft PLC for motion control, NC- and CNC-functionality.

The Ethernet Interface and the local RS232/485 interface provides universal connectivity for host controls, user menu / HMI and external sensors / actors. The connection to higher fieldbus layers is carried out by means of plugable fieldbus cards. Currently the open field bus systems Profibus, CAN and Interbus are supported.

Furthermore with two optional sockets for multi encoder systems, more position feedback devices can be integrated.

EtherCAT system bus

Cyclic operation of position controlled axes in realtime, without noticeable jitter.
Up to 8 axes can be operated isochronous in a cycle time of less than 250µs.

The KEB EtherCAT system bus offers the following advantages:

- standardised and normalised
- different master controls are available
- high speed (100Mbit/s)
- unlimited number of members
- direct integration of external KEB Remote I/O's or other actors
- high market acceptance and presens

Typical controller data:

- current controller cycle: 62,5µs
- speed controller cycle: 125 µs
- standard cycle: 250 µs

SUPPLY-UNIT - 24V Supply Module

The central control voltage supply unit generates constant 24V DC for the internal power supply of the axis modules.

The double feed from the DC bus and, additionally from the 1/3-phase mains input ensures an uninterruptable operation of the control voltage and bus communication even with disconnected power units. In addition a controlled deceleration at the drive axis are ensured when the mains supply is down.

Besides the digital outputs, the maximum current of 25 A can usually directly supply several holding brakes of the connected motors.
Certainly, the module can be integrated into the two-channel error bus

Error-Bus
24V+
24V-GND

SMPS

Rectifier
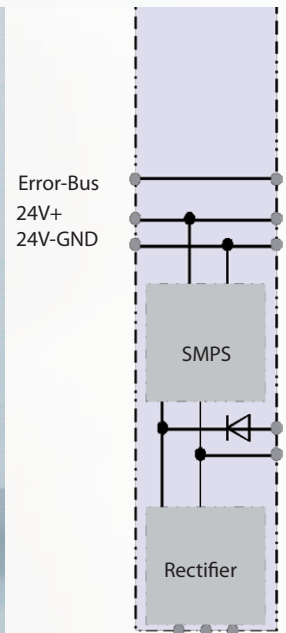
CONTROL-SUPPLY-UNIT

The 50mm **CONTROL SUPPLY UNIT** containing the 24V supply module and the Embedded Control, guarantees a further size reduction of the control cabinet

CONTROL-UNIT 00.H6.G _ _		EtherCAT Master
Systembus	[Mb]	10/100
Diagnose-Interface		RS 232/485
power supply U_n	[V_{DC}]	24
Digital IN		4
Digital OUT		4
Encoder-input		Multi-Interface: Resolver, BISS, EnDat, Hiperface, Inkremental, SinCos
SUPPLY-UNIT 00.H6.E _ _		
rated apparent output power S_n	[VA]	600
rated active power P_n	[W]	500
nominal input voltage	[V_{AC}]	180 … 480
rated output current I_n	[A_{DC}]	25
Maximum current I_{max}	[A_{DC}]	40
CONTROL-SUPPLY-UNIT 01. H6.G _ _		**Combination Control unit / 24V DC-supply unit**
Modul size B x H x T		50 x 407 x 198 mm

Drive modules with integrated safety systems

Depending on the application the design of safety related equipment demands different concepts, which are more and more supported by drive based safety functions. The axis modules of the **KEB COMBIVERT H6** series are equipped with a plug in slot for the following safety functions:

■ **Standard**
plug-in module without safety functions for controller enable, brake input and 24V output/ 100mA

■ **Safety-Typ 1**
Plug-in module with safe shutdown of the drivers power supply and operated only by hardware. The certification of the functions Safe Torque Off (STO) and Safe Brake Control (SBC) will be according to EN 13849, Performance-Level e / EN 62061, SIL3.

■ **Safety-Typ 2**
Plug-in module with safe inputs and safe shutdown operated via redundant microcontroller configuration, provided with the main functions, e.g. safety type 1 and two additional selectable functions

– safe operation stop (SOS)   – safe stop (SS1)
– safe stop (SS2)   – safe reduced speed (SLS)
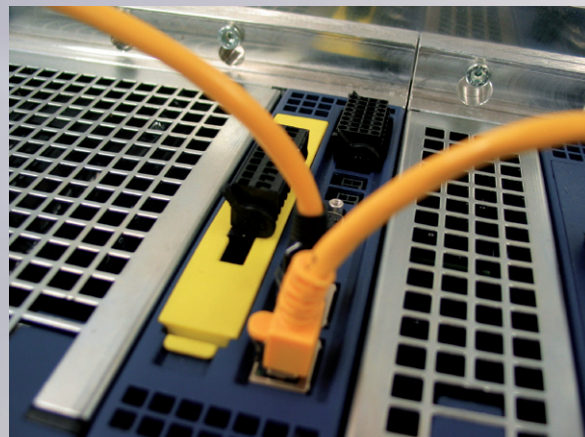
Mains Chokes

The technical layout of the supply units are based on mains choke with uk = 4 %, to be used in general.

Line filter

Compliance with the international standards for industrial and residential areas requires the use of EMC filters. In the **KEB COMBIVERT H6** modular system, they are installed centrally, upstream of the supply unit. The sizing of the modules according to 61800-3 environment C1 and C2 are based on typically 4 drive axis with a total motor cable length of 300 m.

Accessories	line filter	I_n	B	H	T	m	mains choke	I_n	B	H	T	m
SUPPLY-UNIT	part number	[A]	[mm]	[mm]	[mm]	[kg]	part number	[A]	[mm]	[mm]	[mm]	[kg]
19.H6.Cxx-xxxx	18.E4.T60-3001	70	90	458	240	8	19.Z1.B04-1000	63	219	135	220	12
20.H6.Cxx-xxxx	21.E4.T60-3001	110	120	458	240	11	20.Z1.B04-1000	79	219	150	220	12
21.H6.Cxx-xxxx	21.E4.T60-3001	110	120	458	240	11	21.Z1.B04-1000	95	267	155	207	15,6
24.H6.Cxx-xxxx	26.E4.T60-1001	300	260	385	115	40	24.Z1.B04-1000	189	316	225	235	24,8
25.H6.Cxx-xxxx	26.E4.T60-1001	300	260	385	115	40	25.Z1.B04-1000	221	316	225	235	25
27.H6.Cxx-xxxx	28.E4.T60-1001	410	260	385	115	40	27.Z1.B04-1000	315	352	230	265	34
28.H6.Cxx-xxxx	28.E4.T60-1001	410	260	385	115	40	28./1.B04-1000	390	388	245	295	41,5

Projected Safety Functions in KEB COMBIVERT H6, DIN IEC 61800-5-2

Abbre.	Short description	Standard	Modul 1	Level ISO 61508	Modul 2	Level ISO 61508	Level EN 13849	Inputs*
STO	Safe Torque Off (def)	--	X	SIL 3	X	SIL 3	PL e	Canal 1
SS1	Safe Stop 1	--	--		(x)	SIL 3	PL e	Canal 2
SS2	Safe Stop 2	--	--		(x)	SIL 3	PL e	Canal 2
SOS	Safe Operation Stop	--	--		(x)	SIL 3	PL e	Canal 2
SLS	Safely Limited Speed	--	--		(x)	SIL 3	PL e	Canal 2
SLP	Safe Limited Position	--	--			SIL 3	PL e	Canal 2
SLI	Safe Limited Increment	--	--			SIL 3	PL e	Canal 2
SDI	Safe Direction	--	--			SIL 3	PL e	Canal 2
SBC	Safe Brake Control (def.)	--	X	SIL 3	X	SIL 3	PL e	Canal 2
SSM	Safe Defined Max. Speed	--	--			SIL 3	PL e	canal 2
	Safe Grid	--	--			Basis		

Description: SIL = Safety Integrity Level (ISO 61508) **Modul 2** = STO/SPC and two more programable functions with the programming tool SAFEGRID of KEB COMBIVIS studio 6

More safety functions according to DIN IEC 61800-5-2 require a two channel encoder system and are projected as follows:

- Safe Limited Position (SLP)
- Safe Defined Max. Speed (SSM)
- Safe Limited Increment (SLI)
- Safe Direction (SDI)

A safety fieldbus modul is under development.

AFE- Filter

In applications with high or continious regenerativ power supply, the energy provider require a low ratio of harmonics (THD value) at the power supply unit.

The AFE-supply / regenerative (page 5) moduls of the **KEB COMBIVERT H6** system, have to be used with proper designed AFE-filters for sinusoidal regeneration operation. Depending on the application, these filters are designed for 100% or 60 % regenerative duty cycle. The charging unit (part-No. 00.H6.FAB-1001) with the module width of 50 mm is identical for all sizes.

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| Accessories	AFE- Filter	$I_{n\,100\,\%}$	B	H	T	AFE-Filter	$I_{n\,60\,\%}$	B	H	T
SUPPLY-UNIT	Part-No.	[A]	[mm]	[mm]	[mm]	Part-No.	[A]	[mm]	[mm]	[mm]
14.H6.Dxx-xxxx	14.H6.J4F-2000	16,5	430	200	205					
18.H6.Dxx-xxxx	18.H6.J4F-2000	48	510	250	205	18.H6.J4F-1000	48	430	200	205
19.H6.Dxx-xxxx	19.H6.J4F-2000	60	510	250	205	19.H6.J4F-1000	60	430	200	205
21.H6.Dxx-xxxx	21.H6.J4F-2000	90	585	250	210	21.H6.J4F-1000	90	510	250	205
24.H6.Dxx-xxxx	24.H6.J4F-2000	180	650	300	210	24.H6.J4F-1000	180	585	250	210
26.H6.Dxx-xxxx	26.H6.J4F-2000	250	800	400	350					

Flexible Cooling Concepts

The mechanical construction is based on basic units with FLAT REAR heat plates. Its central heat sinks support the direct transfer of the main power losses inside and outside of the control cabinet.

Due to the standard mounting pattern with 50 mm hole distance, central heatsinks of different widths are prepared for direct installation of the **KEB COMBIVERT H6** modules.

For best possible heat dissipation, we recommend push through heatsinks. Technical details and accessories are available for that.

Customized versions are available on request.

Flat-Rear   Push through heatsink   Liquid cooling
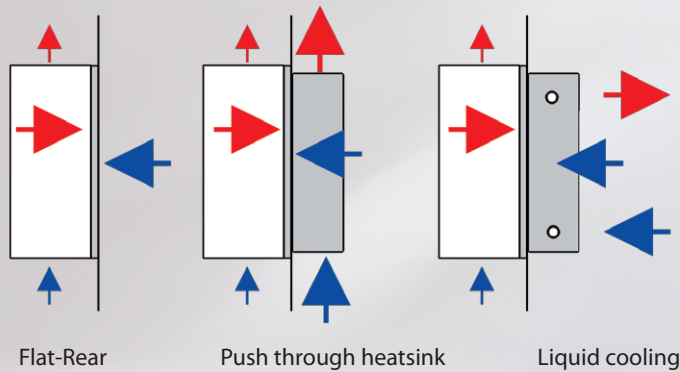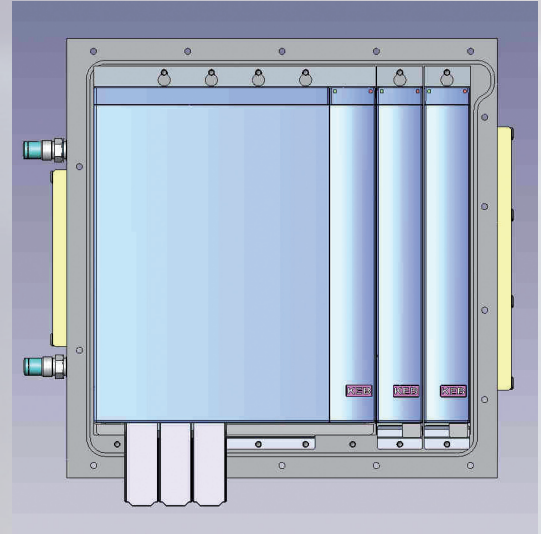
Accessories	Air cooler	B	H	T	Water cooler	B	H	T
Module width	part number	[mm]	[mm]	[mm]	part number	[mm]	[mm]	[mm
400 mm	04.H6.TFA-0400	500	500	in preparation	04.H6.TFW-0400	500	460	35
600 mm	06.H6.TFA-0600	700	500		06.H6.TFW-0600	700	460	35
800 mm	08.H6.TFA-0800	900	500		08.H6.TFW-0800	900	460	35
1,000 mm	10.H6.TFA-1000	1,100	500		10.H6.TFW-1000	1,100	460	35
1,200 mm	12.H6.TFA-1200	1,300	500		12.H6.TFW-1200	1,300	460	35

Other modul width on request.

Servo motors DYNAMIC LINE II

Combined with the single-axis or two-axis modules, the new synchronous motors **DYNAMIC LINE II** transform the electrical specifications into a powerful rotation.

The UL approved motors are characterised by low moments of inertia and high overload torque and are also available with a brake. The motors have innovative Y-Tec connectors for power supply and feedback systems, for 360° variable cable connection. The rotor position detection with the fully digital BISS encoder is available in single and multi turn versions.
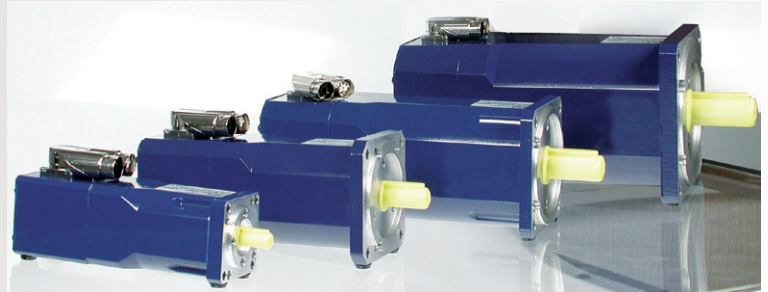
The prefabricated cables and the electronic name plate enable shortest startup times. At the same time, the complete solution reduces possible errors during the installation and ensures high availability and the best servicability.

MOTOR SIZE		A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	C4	D1	D2	D3	D4	E1	E2	E3
Rated speed n	[min^{-1}]	6,000				4,000			3,000				3,000				2,000		
stall torque M_{d0}	[Nm]	0.47	0.66	0.87	1.14	0.92	1.8	2.6	3.9	5.7	7.1	8.5	8.2	11.6	15.3	18.4	21.4	35.1	49.7
stall current I_{do}	[A]	0.94	1.24	1.43	1.55	1.2	2.0	2.7	3.1	5.0	7.0	8.5	6.0	8.9	11.2	14	11.8	19.6	27.7
peak torque M_{max}	[Nm]	2.1	2.9	3.8	5.0	2.7	5.4	7.8	12	17.5	22	26	25	36	47	57	65	106	150
peak current I_{max}	[A]	4.5	5.6	6.9	8.0	4.5	7.7	10.8	10.5	16.8	20	23.8	20.1	30.1	37.7	47.4	39.3	64.1	90.4
moment of inertia	[kgcm²]	0.13	0.18	0.23	0.34	0.33	0.56	0.79	2.7	3.7	4.7	6.0	7.9	11.2	14.4	19.5	57	79	102

Servo Motors TA Series

The necessity of torque and speed adjustment is often the reason for direct use of gear motors. Together with the servo motors series TA, they are assembled by the manufacturer in a kit for applications with shaft, hollow shaft, flange or foot mounting and axial or coaxial power flow.

High overall efficiency, lifetime lubrication, universal installation positions and robust mechanics are further performance features of the entire series.

Helical-	Shaft mounted	Worm-	Helical bevel-	Planetary-

		G - gear	F - gear	S - gear	K - gear	P - gear
gear type		Helical-	Shaft mounted-	Worm	Helical bev.-	Planetary-
max. torque at drive	M [Nm]	3 - 11.450	5 - 6.200	4 - 1.740	5 - 9.500	6 - 100

KEB COMBICONTROL C6

In addition to the integrated control solution (with the „Embedded control unit") of the **H6 series**, we provide a wide range of efficient IPC-based control technology.
Automation and visualisation combine into the PANEL PC. Three technical performance levels are available with 6, 8,12, 15 and 17 inch hight resolution touch screens.

Optionally equipped with the **LINUX** and **Windows XP(e)** operating systems, the **KEB IPC-based control technology** contains an integrated EtherCAT master for the realtime connection with the drive axes and peripheral KEB Remote I/0's .

BOX-PC

PANEL-PC

Peripheral I/O system

Description KEB I/O	Part-No.
Bus coupler	
EtherCAT Bus coupler	00.C6.CA1-0100
Digital I/O's	
EtherCAT DI 16 (1ms)	00.C6.CB1-0100
EtherCAT DI 32 (1ms)	00.C6.CB1-0200
EtherCAT DO 16 (500mA)	00.C6.CB1-0500
EtherCAT DI 16 / DO 16	00.C6.CB1-0600
Analog I/O's	
EtherCAT AI 4 (0-20/4-20mA/12bit)	00.C6.CC1-0100
EtherCAT AI 8 (0-20/4-20mA/12bit)	00.C6.CC1-0200
EtherCAT AI 4/8 (0-10/+-10V/13bit)	00.C6.CC1-0300
EtherCAT AI 8/16(0-10/+-10V/13bit)	00.C6.CC1-0400
EtherCAT AO 4 (0-20mA/0-10V/16bit)	00.C6.CC1-0600
EtherCAT AI 4 (PT/NI-100/16bit)	00.C6.CC1-0700
EtherCAT AI 8 (PT/NI-100/16bit)	00.C6.CC1-0800
EtherCAT AI 4 (PT/NI-1000/16bit)	00.C6.CC1-0900
EtherCAT AI 8 (PT/NI-1000/16bit)	00.C6.CC1-1000
EtherCAT AI 4 (Thermo/16bit)	00.C6.CC1-1100
EtherCAT AI 8 (Thermo/16bit)	00.C6.CC1-1200
shield connection	
earth connection 2x8mm	00.C6.CD1-0400
earth connection 14mm	00.C6.CD1-0500

The stackable input and output modules of the KEB Remote I/O system transfer the external process signals via the EtherCAT network to the control system integrated into the
KEB COMBIVERT H6 or a host control system. The IP 20 highly integrated analog and digital moduls are equipped with plugable terminal stripes. The rugged housings are reinforced with aluminium frames.

COMBIVIS 6

KEB drives the central tool for operation, display, programming and diagnosics. It's a new system with a .-net bases architecturs ready for future extensions.

Drive settings, application orientated parameter selection in work lists, analysis of the load and motion profiles or signal analysation- with the 16 channel oscilloscope - all in one tool.

Free download unter **www.keb.de** or for a service fee on a DVD under Part-No. CD.SW.030-0100.

COMBIVIS studio 6

offers a combination of parameterisation and programming of the drive and control technology designed by KEB.
Based on the CoDeSys V3, the **COMBIVIS studio 6** incorporates an innovative and future oriented engineering platform, performing standard PLC tasks as well as operating highly dynamic Motion and CNC applications.

Furthermore, the program supports the bus configuration (EtherCAT, Profibus,CAN, etc.) and contains useful add-ons, e.g. the motor configurator for pre-setting of servo motors.
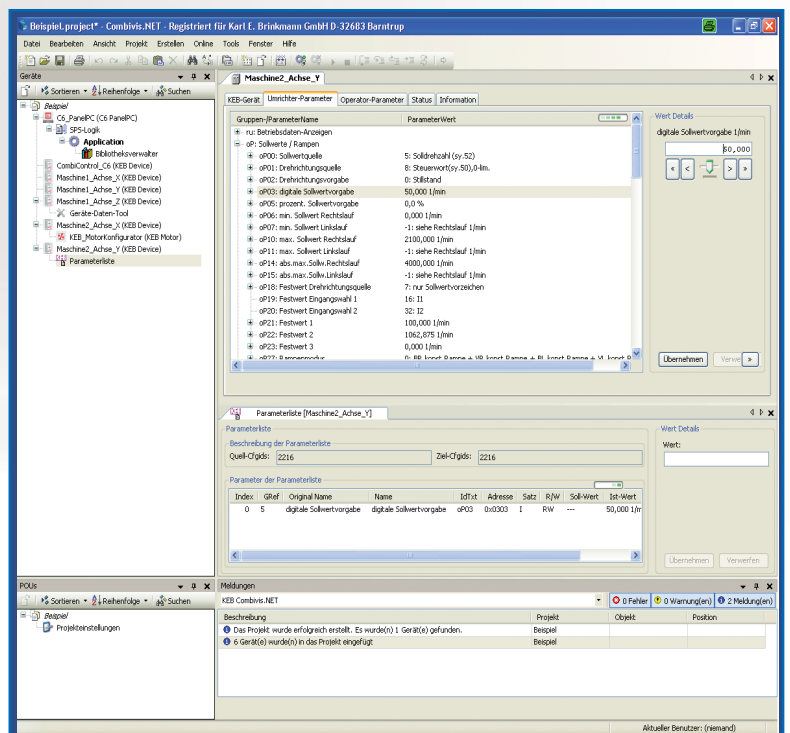
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