



COMBIVERT

F5

KEB



With KEB COMBIVERT, reputable manufacturers have for years produced innovative high quality machine systems.

On the basis of this experience combined with the use of ultra-modern electronic modules, the digital power transmission is placed on a new level.



KEB COMBIVERT



Frequency inverter solutions in four technical designs are combined in one product series with the aim of:

optimal use of resources and materials,

minimum expense in design and implementation of applications,

practical structures in application



Simply handling and versatile features

were in the past often mutually contradictory. CP-Mode ensures comfortable user handling, i.e. KEB COMBIVERT F5 is the world's first drive generation to have a fully programmable user interface.



BASIC

Frequency inverter **0.37 ... 30 kW**

- the new class of compact, functional and economical units



GENERAL

Frequency inverter **0.37 ... 315 kW**

- universal features form the basis for the design of high-quality machines and systems

MULTI

Regulated drive technology **0.37 ... 315 kW**

- available for asynchronous and synchronous servo motors with feedback from
 - resolver
 - incremental encoder
 - Sin / Cos - encoder
 - absolute encoder
 - HIPERFACE® and ENDAT®



APPLICATION

Frequency inverter **0.37 ... 315 kW**

- customized equipment solutions tailored to operating conditions and requirements.





F5 BASIC

The new frequency inverter class for simple to sophisticated tasks throughout the mechanical engineering sector...



- connection 1/3 phase 230 V and 3 phase 400 V optional AC- or DC-supply in one unit
- optimized KEB - **SMM** control procedure (sensorless motor management)
- 17 pluggable control terminals, PNP-logic
- analog input 0...10 V, ± 10 V,
- programmable analog output 0...10 V
- 5 programmable digital inputs
- 2 programmable relay outputs
- 4 programmable software inputs/outputs
- 8 free-to-programm parameter sets including S-curve, ramp stop, Power-Off-function, DC-braking, PID technology regulator, electronic motor protection, brake control, internal timer, counter input,
- output frequencies up to 1600 Hz, output voltage control, adjustable switching frequencies up to 16 kHz
- controlled positioning to end position
- high-dynamic sampling of the control terminals and the serial interface in less than 2 ms
- + / - intermediate circuit connection, internal braking chopper (option starting from housing size H) motor-PTC-evaluation, hardware current control
- option: integrated filter according to EN 55011/B
- potential-free operator connection and serial interfaces for:

PROFIBUS
INTERBUS
CAN

SERCOS
DEVICE NET
KEB-HSP 5 / DIN 66019-II



P_N [kW]	Design	I_N [A]	I_{max} [A]	$f_{nom./fmax}$ [kHz]	Suppression EN55011	Part number
0.37	A*	2.3	5	4/8	B ●	05.F5.B0A-6900
0.75	A*	4	8.6	8	B ●	07.F5.B0A-6A00
1.5	B	7	15.1	16	B ◆	09.F5.B1B-2B00
2.2	B	10	21.6	8/16	B ◆	10.F5.B1B-2A00
4	D**	16.5	35.6	8/16	B ◆	12.F5.B1D-1A00
5.5	E**	24	48	8/16	B ◆	13.F5.B1E-1600
7.5	E**	33	66	4/16	B ◆	14.F5.B1E-1500
11	G**	42	66	4/8	B ◆	15.F5.B1G-1500
15	H**	66	115	16	B ◆	16.F5.B1H-1700
1/3 ph. 230 V (180... 260 V)						
0.37	B	1.3	2.8	16	B ◆	05.F5.B1B-3B00
0.75	B	2.6	5.6	16	B ◆	07.F5.B1B-3B00
1.5	B	4.1	8.9	8/16	B ◆	09.F5.B1B-3A00
2.2	B	5.8	12.5	8/16	B ◆	10.F5.B1B-3A00
4	B	9.5	17.1	4	B ◆	12.F5.B1B-3500
5.5	D	12	25.9	4/16	B ◆	13.F5.B1D-3900
7.5	D	16.5	35.6	2/4	B ◆	14.F5.B1D-3800
11	E	24	43.2	4/16	B ◆	15.F5.B1E-3500
15	E	33	49.5	2/4	B ◆	16.F5.B1E-3400
18.5	G	42	75	4/16	B ◆	17.F5.B1G-3500
22	G	50	90	2/4	B ◆	18.F5.B1G-3400
30	H	60	108	4/16	B ◆	19.F5.B0H-3500
3 ph. 400 V (305... 500 V)						

● incorporated in series ◆ footprint version
* only 1-phase 230 V AC ** only 3-phase 230 V AC

General:

Design CE EN 50178
EMC-Product EN 61800-3
Enclosure IP 20/VBG 4
Storage temperature -25 ... 70 °C
Operation temperature -10 ... 45 °C
Short-circuit and earth fault monitoring
Acceptance UL/ cUL





F5 GENERAL

- More than just a frequency inverter -
Leading technique for controlled drive systems

- ▲ wide power range for 230 V- and 400 V-connection
- ▲ optional AC- or DC-connection
- ▲ optimal performance at motor shaft in various areas of application with KEB - **SMM** (sensorless motor management)
- ▲ 29 plug-in control terminals
- ▲ 2 analog inputs 0... 10 V, ± 10 V, 0/4... 20 mA
- ▲ 2 programmable analog outputs 0... 10 V
- ▲ 8 programmable digital inputs
- ▲ programmable outputs: 2 x relay, 2 x transistor
- ▲ 4 programmable software inputs/outputs
- ▲ 8 freely programmable parameter sets including S-curves, ramp stop, Power-Off-function, DC-braking, PID technology regulator, electronic motor protection, brake control, internal timer, counter input, output frequencies up to 1600 Hz, output voltage control, switching frequencies up to 16 kHz, output phase monitoring
- ▲ sampling time of the control terminals 1 ms
- ▲ ± intermediate circuit connection, internal braking chopper (in series up to housing size G), motor-PTC-analysis, hardware current control
- ▲ controlled positioning to end position/counting pulse
- ▲ optional: protection against accidental restart by voltage-free switching in driver section
- ▲ potential-free operator connection and serial interfaces for



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3 ph. 230 V (180... 260 V)

P_N [kW]	De- sign	I_N [A]	I_{max} [A]	f_{nom}/f_{max} [kHz]	EN 55011	Part Number
0.37	B*	2.3	5	16	B ◆	05.F5.G1B-2B00
0.75		4	8,6	16	B ◆	07.F5.G1B-2B00
1.5		7	15.1	16	B ◆	09.F5.G1B-2B00
2.2		10	21.6	8/16	B ◆	10.F5.G1B-2A00
4	D	16.5	35.6	8/16	B ◆	12.F5.G1D-1A00
5.5	E	24	48	8/16	B ◆	13.F5.G1E-1600
7.5		33	66	4/16	B ◆	14.F5.G1E-1500
11	G	48	85	4/8	B ◆	15.F5.G1G-1500
15	H	66	115	16	B ◆	16.F5.G1H-1700
18.5	R	84	150	8/16	B ◆	17.F5.G0R-7600
22		100	175	8/16	B ●	18.F5.G0R-7600
30		120	210	8/16	B ●	19.F5.G0R-7600
37		150	265	8/16	B ▲	20.F5.G0R-7600
45		180	315	8/16	A/B ▲	21.F5.G0R-7600

3 ph. 400 V (305... 500 V)

P_N [kW]	De- sign	I_N [A]	I_{max} [A]	f_{nom}/f_{max} [kHz]	EN 55011	Part number
0.37	B	1.3	2.8	16	B ◆	05.F5.G1B-3B00
0.75		2.6	5.6	16	B ◆	07.F5.G1B-3B00
1.5		4.1	8.9	8/16	B ◆	09.F5.G1B-3A00
2.2		5.8	12.5	8/16	B ◆	10.F5.G1B-3A00
4		9.5	21	4	B ◆	12.F5.G1B-3500
5.5	D	12	25.9	4/16	B ◆	13.F5.G1D-3900
7.5		16.5	35.6	2/4	B ◆	14.F5.G1D-3800
11	E	24	48	4/16	B ◆	15.F5.G1E-3500
15		33	59	2/4	B ◆	16.F5.G1E-3400
18.5	G	42	75	4/16	B ◆	17.F5.G1G-3500
22		50	90	2/4	B ◆	18.F5.G1G-3400
30	H	60	108	4/16	B ◆	19.F5.G0H-3500
37	R	75	135	8/16	B ●	20.F5.G0R-9600
45		90	162	4/16	B ●	21.F5.G0R-9500
55		115	207	4/16	B ●	22.F5.G0R-9500
75x		150	227	2/12	B ●	23.F5.G0R-9400
90x		180	270	2/8	B ▲	24.F5.G0R-9400
110x	U	210	315	4/8	A/B ▲	25.F5.G0U-9100
132x		250	375	4/8	A/B ▲	26.F5.G0U-9100
160x		300	450	2/8	A/B ▲	27.F5.G0U-9000
200x	W	370	463	2/4	A ▲	28.F5.G0W-9000
250x		460	575	2	A ▲	29.F5.G0W-9000
315x		570	713	2	A ▲	30.F5.G0W-0A00

- internal option
- ◆ footprint version * 1/3 phase 230 V
- ▲ book-style side-mount version

General: Design CE EN 50178
EMC-Product EN 61800-3

Enclosure IP20/VBG 4
Storage temperature -25... 70 °C
Operation temperature -10... 45 °C
Short-circuit and earth fault monitoring
Acceptance UL/ cUL

Units from 90 kW upwards: Operation temperature -10... 40 °C

- internal option
- ◆ footprint version
- ▲ book-style side-mount ver. ✕ Operation generally with line reactor





F5 MULTI

Regulated drive controller for synchronous and asynchronous motors

equipped with all functions and characteristics of the KEB COMBIVERT F5 - General series, especially prepared for regulated use.

- Particularly variable through plug-in feedback:
- RESOLVER
 - INCREMENTAL ENCODER, INITIATOR
 - SIN/COS- ENCODER
 - ABSOLUTE VALUE ENCODER
 - HIPERFACE®, ENDAT® or Tacho

and optional operation in the processes

- KEB-SMM** (sensorless motor management)
- Field-oriented control**
- Synchronous motor control**

Decentralized automation in the drive actuator with

- ◆ speed and torque control
- ◆ position control
- ◆ synchro-control, electronic gears
- ◆ or customized solutions like:
 - cam switches
 - electronic cams
 - single-axis positioning
 - rotary indexing positioning
 - register function

relieves load on higher control systems and creates clear, compact programs. All actuators have a

- ◆ potential-free operator connection and serial interfaces for

PROFIBUS
INTERBUS
CAN

SERCOS
DEVICE NET
KEB-HSP 5 / DIN 66019-II



3 ph. 230 V (180... 260 V)

P_N [kW]	option	I_N [A]	I_{max} [A]	f_{nom}/f_{max} [kHz]	EN 55011	Part number
1.5	D*	7	15.1	16	B ◆	09.F5.M1D-2B_0
2.2		10	21.6	16	B ◆	10.F5.M1D-2B_0
4		16.5	35.6	8/16	B ◆	12.F5.M1D-1A_0
5.5	E	24	48	8/16	B ◆	13.F5.M1E-16_0
7.5		33	66	4/16	B ◆	14.F5.M1E-15_0
11	G	48	85	4/8	B ◆	15.F5.M1G-15_0
15	H	66	115	16	B ◆	16.F5.M1H-17_0
18.5	R	84	150	8/16	B ●	17.F5.M1R-76_0
22		100	175	8/16	B ●	18.F5.M1R-76_0
30		120	210	8/16	B ●	19.F5.M1R-76_0
37		150	265	8/16	B ▲	20.F5.M1R-76_0
45		180	315	8/16	A/B ▲	21.F5.M1R-76_0

* 1.5 ... 2.2 kW = 1/3 phase 230 V

- internal option
- ◆ footprint version
- × Operation generally with line reactor
- ▲ book-style side-mount v.

General: Design CE EN 50178
EMC-Product EN 61800-3

Enclosure IP 20/ VBG 4
Storage temperature -25 ... 70 °C
Operation temperature -10 ... 45 °C
Short-circuit and earth fault monitoring
Acceptance UL/ cUL

Units from 90 kW: Operation temperature -10 ... 40 °C

3 ph. 400 V (305... 500 V)

P_N [kW]	Design	I_N [A]	I_{max} [A]	f_{nom}/f_{max} [kHz]	EN 55011	Part number
1.5	D	4.1	8.9	8/16	B ◆	09.F5.M1D-3A_0
2.2		5.8	12.5	4/16	B ◆	10.F5.M1D-39_0
4		9.5	21	8/16	B ◆	12.F5.M1D-3A_0
5.5		12	25.9	4/16	B ◆	13.F5.M1D-39_0
7.5	E	16.5	33	2/4	B ◆	14.F5.M1D-38_0
11		24	48	4/16	B ◆	15.F5.M1E-35_0
15	G	33	59	2/4	B ◆	16.F5.M1E-34_0
18.5		42	75	4/16	B ◆	17.F5.M1G-35_0
22	H	50	90	2/4	B ◆	18.F5.M1G-34_0
30		60	108	4/16	B ◆	19.F5.M1H-35_0
37	R	75	135	8/16	B ●	20.F5.M1R-96_0
45		90	162	4/16	B ●	21.F5.M1R-95_0
55		115	207	4/16	B ●	22.F5.M1R-95_0
75×		150	227	2/12	B ●	23.F5.M1R-94_0
90×		180	270	2/8	B ▲	24.F5.M1R-94_0
110×	U	210	315	4/8	A/B ▲	25.F5.M1U-91_0
132×		250	375	4/8	A/B ▲	26.F5.M1U-91_0
160×		300	450	2/8	A/B ▲	27.F5.M1U-90_0
200×	W	370	463	2/4	A ▲	28.F5.M1W-90_0
250×		460	575	2	A ▲	29.F5.M1W-90_0
315×		570	713	2	A ▲	30.F5.M1W-A0_0

Selection and dimensioning of synchronous and asynchronous servo motors according to „KEB COMBIVERT-Motors“ catalogue





F5 APPLICATION

Based on the open modular framework of the COMBIVERT F5-series, in close cooperation with OEM users KEB has adapted modified drive systems for standard machines.



The engineering knowledge resulting from many years experience in the field of

packing, textiles, plastics, printing / paper industry, wood working, storage and transport technology or the lift technology

have been integrated in customized software modules or modified hardware, e.g.

- state - machine, i.e. complete functional processes in the frequency inverter
- adaption to serial protocols
- industry-specific software
- flexible cooling systems
- complete switchgears
- compact inverter-motor-modules
- or protective lacquered versions for especially rough environments



Example: Modulare cooling concept

FLAT-REAR-cooling plate

Cooling concept using the existing environment; e.g. connection with the machine frame, collective heat sink



Through-mount heat sink

reduced thermal load in switch cabinet by thermal separation of the heat sink



Liquid cooling

closed cooling circuit for compact switch cabinet cooling



Looking for new solutions ...
Talk to us ...

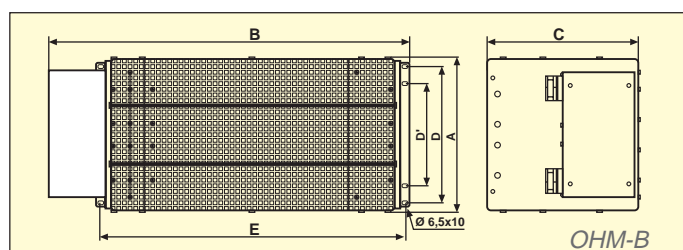
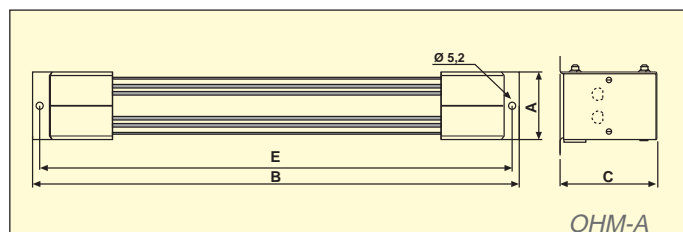
we supply the ideas !



Braking resistors



usually with thermal monitoring for the absorption of generated energy. Noiseless braking with the compact submounted modules to absorb pulse energy, or universal side-mounted units.



High regenerated energy is optimally used by the use of **KEB COMBIVERT R4** feedback units available for block or sinusoidal line currents.

Part number	R [Ω]	P _D [W]	External Braking Resistor			A	B	C [mm]	D/D'	E
			P ₆ [W]	P ₂₅ [W]	P ₄₀ [W]					
07.BR.100-1180	180	44	800	300	180	40	165	24	-	148
09.BR.100-1100	100	82	1500	500	300	40	240	24	-	222
10.BR.100-1683	68	120	2200	800	500	40	300	24	-	285
12.BR.100-1333	33	250	4400	1300	750	80	300	26	-	285
13.BR.100-1273	27	300	5400	1500	900	80	400	26	-	385
14.BR.100-1203	20	450	7300	1800	1100	80	400	26	-	385
15.BR.110-1133	13	630	10000	3200	1800	63	370	96	-	355
16.BR.110-1103	10	850	14000	3600	2200	63	470	96	-	455
17.BR.110-1073	7	1100	21000	5400	3100	90	470	96	50	455
07.BR.100-6620	620	56	900	300	180	40	165	24	-	148
09.BR.100-6390	390	90	1500	500	300	40	240	24	-	222
10.BR.100-6270	270	130	2100	800	500	40	300	24	-	285
12.BR.100-6150	150	230	3700	1300	750	80	300	26	-	285
13.BR.100-6110	110	350	5000	1500	900	80	400	26	-	385
14.BR.100-6853	85	410	6500	1800	1100	80	400	26	-	385
15.BR.110-6563	56	620	10000	3200	1800	63	370	96	-	355
16.BR.110-6423	42	820	13500	3600	2200	63	470	96	-	455
17.BR.110-6303	30	1200	18500	5400	3100	90	470	96	50	455
18.BR.226-6203	20	1700	27500	7500	4500	266	611	116	240/176	526
19.BR.226-6153	15	2300	37000	10000	6000	266	611	116	240/176	526
20.BR.226-6123	12	2900	46000	12500	7500	266	631	221	240/176	526
21.BR.226-6103	10	3000	55000	15000	9000	266	631	221	240/176	526
22.BR.226-6866	8.6	4000	64000	17500	10000	266	631	271	240/176	526
23.BR.226-6676	6.7	5200	82000	22000	12500	266	631	271	240/176	526
24.BR.226-6506	5	6900	130000	30000	18000	266	631	221	240/176	526
25.BR.226-6436	4.3	8100	128000	35000	20000	266	631	271	240/176	526
26.BR.226-6386	3.8	9200	145000	40000	22500	266	631	271	240/176	526
27.BR.226-6336	3.3	10000	170000	45000	25000	266	631	271	240/176	526
28.BR.226-6226	2.2	15000	250000	67000	37000	266	631	271	240/176	526
29.BR.226-6176	1.7	20000	325000	90000	50000	266	631	271	240/176	526
30.BR.226-6136	1.3	26000	425000	112000	62000	266	631	271	240/176	526

230 V-class

400 V-class

OHM-A

OHM-B

P_D Continuous rating
 P₆ Pulse rating with 6 sec. ON-time and period of 120 sec.
 P₂₅ Pulse rating with 25 sec. ON-time and period of 120 sec.
 P₄₀ Pulse rating with 40 sec. ON-time and period of 120 sec.

Number of modules

Orange = 2-fold Blue = 3-fold Green = 4-fold Red = 5-fold





F5 COMBILINE

Filter technique + chokes

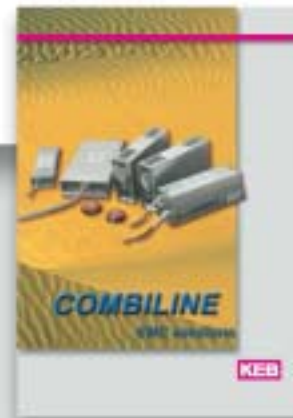
An EMC-compliant structure with efficient switch cabinet interference suppression is the basis for a fault-free operation of machines and systems. The current and voltage limiting COMBILINE modules are optimally designed for the requirements of the KEB COMBIVERT F5 series and support the application with

- line-side EMC-filters - reduce the power-related emission to the required limit values of EN 55011- A/B. Variants for very small discharge currents or special network configurations are also available.
- output choke and filters reduce the voltage and current loading on the motor winding.
- sinusoidal filter protect the motor winding from voltage peaks and saves on shielded motor lines
- line reactors reduce power consumption and line feedback
- combination filter for input/output - space-saving „all-around supply“ logically adapted and optimized to drive actuator.

EMC - Service

- means mobile assistance on site
- advice in the planning phase
- analysis of existing systems

is one way in which we can help design real system solutions.



230 V-class

400 V-class

P_N [kW]	Design	RFI filter	Mains choke	Motor choke	Sinusoidal filter
0.37 0.75	A	- -	05.DR.F08-4951* 07.DR.F08-2951*	05.DR.A08-4251 07.DR.A08-2851	
1.5 2.2	B	10.U5.B0B-1000*	09.DR.F08-1851* 10.DR.F08-1551*	09.DR.A08-2151 10.DR.A08-1551	
4	D	12.U5.B0D-2000	12.DR.F08-1151	12.DR.A08-8541	
5.5 7.5	E	13.U5.B0E-2000 14.U5.B0E-2000	13.DR.A08-5641 14.DR.A08-4241	13.DR.A08-5641 14.DR.A08-4241	
11	G	15.U5.B0G-2000	15.DR.A08-2841	15.DR.A08-2841	
15	H	16.U5.B0H-2000	16.DR.A08-2241	16.DR.A08-2241	
0.37 0.75	B	10.U5.B0B-3000	03.DR.B08-1461	03.DR.B08-1461	07.AF.300-3520
1.5		10.U5.B0B-3000	07.DR.B08-4951	07.DR.B08-4951	07.AF.300-3520
2.2		10.U5.B0B-3000	07.DR.B08-4951	07.DR.B08-4951	09.AF.300-3520
4		10.U5.B0B-3000	10.DR.B08-3751	10.DR.B08-3751	10.AF.300-3520
5.5 7.5	D	12.U5.B0B-3000	12.DR.B08-2851	13.DR.B08-1851	12.AF.300-3520
5.5		13.U5.B0D-3000	13.DR.B08-1851	13.DR.B08-1851	13.AF.300-3520
7.5	14.U5.B0D-3000	14.DR.B08-1451	14.DR.B08-1451	14.AF.300-3520	
11 15	E	15.U5.B0E-3000	15.DR.B08-9841	15.DR.B08-9841	15.AF.300-3520
15		16.U5.B0E-3000	16.DR.B08-7341	16.DR.B08-7341	16.AF.300-3520
18.5 22	G	17.U5.B0G-3000	17.DR.B08-5941	17.DR.B08-5941	17.AF.300-3520
22		18.U5.B0G-3000	18.DR.B08-4941	18.DR.B18-4941	18.AF.300-3520
30	H	19.U5.B0H-3000	19.DR.B18-3941	19.DR.B18-3941	19.AF.300-3520
37 45 55 75x	R	20.U5.B0R-3000	20.DR.B18-3341	20.DR.B18-3341	20.AF.300-3520
45		23.U5.B0R-3000	21.DR.B18-2841	21.DR.B18-2841	21.AF.300-3520
55		23.U5.B0R-3000	22.DR.B18-2241	22.DR.B18-2241	22.AF.300-3520
75x		23.U5.B0R-3000	23.DR.B18-1741	23.DR.B18-1741	23.AF.300-3520
90x 110x 132x 160x	U	25.U5.B0U-3000	24.DR.B18-1541	24.DR.B18-1541	24.AF.300-3520
110x		25.U5.B0U-3000	25.DR.B18-1341	25.DR.B18-1341	25.AF.300-3520
132x		27.U5.B0U-3000	26.DR.B28-1141	26.DR.B28-1141	26.AF.300-3520
160x		27.U5.B0U-3000	27.DR.B28-1041	27.DR.B28-1041	27.AF.300-3520
200x 250x 315x	W	28.U5.A0W-3000	28.DR.B28-8031	28.DR.B28-8031	28.AF.300-3520
250x		30.U5.A0W-3000	29.DR.B28-5331	29.DR.B28-5331	
315x		30.U5.A0W-3000	2x27.DR.B28-1041	30.DR.B22-4430	

* single-phase 230 V AC; three-phase filters and chokes on request

x operation generally with line reactor



F5 COMBIVIS 5 PC - Software

The universal effective tool for the use of KEB COMBIVERT F5 drive actuator

- ▲ complete management of equipment settings
- ▲ display and setting of all parameters in up to 8 sets
- ▲ display of physical parameters and monitoring of operating data
- ▲ configuration of customized presets in CP - level
- ▲ analysis of drive and control communication

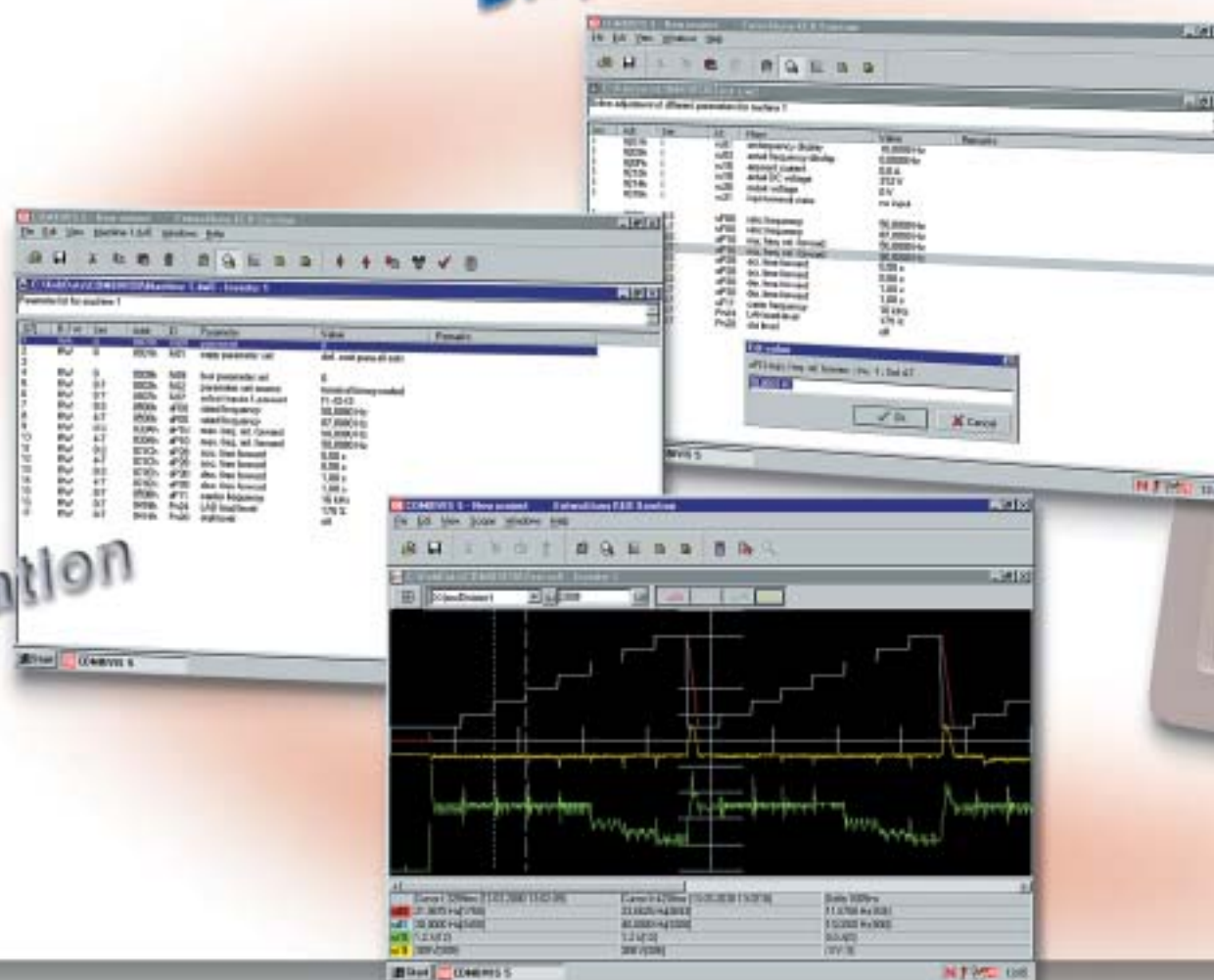
Available as COMBIVIS 5-/DOKU-CD part number: **CD.SW.010-0100**

or as current file in the **INTERNET** under

[http://www.\(keb\).de](http://www.(keb).de)



Display



Parameterization

Accessory:

KEB - Interface cable RS 232
Part number 00.58.025-001D

KEB - Service cable HSP5
Part number 00.F5.0C0-0001

Analysis

Project explorer



F5 COMBICOM Field bus interfacing

**KEB-HSP 5 /
DIN 66019-II**

Interface Operator, **00.F5.060-2000**
universal disclosed KEB protocol for
PC and PLC-connection
RS 232 / 485-connection submin-D-9



Digital-Operator, **00.F5.060-1000**
display and keyboard operation,
pluggable into the unit

In combination with the prefabricated HSP5
extensions

- 00.F5.0C0-1030 (3 m)
- 00.F5.0C0-1100 (10 m)

all F5-operators are prepared for the
external use as Remote-Operator



Profibus-DP

Accessory
Driver software for WIN 95/98/NT
KEBCOM FD.SW.020-0100
supports the PC-connection for the
protocols KEB DIN 66019-II,
KEB-HSP5, InterBus and TCP/ IP

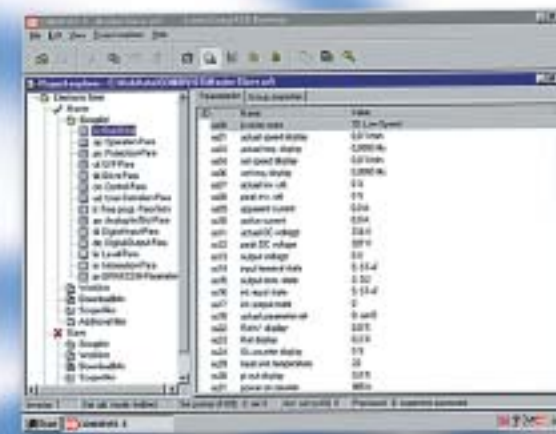
Profibus Operator, **00.F5.060-3000**
Slave connection up to 12.5 MBaud,
IN-/OUT-connection submin-D-9
service interface for HSP5-adapter



InterBus

Accessory
Driver software for S7
02.B0.0SW-S710

InterBus Operator, **00.F5.060-4000**
InterBus remote IN-/OUT-connection
submin-D-9, service interface for HSP5-adapter



CAN

CAN Operator, **00.F5.060-5000**
CANopen profile DS 301,
IN-/OUT-connection submin-D-9
service interface for HSP5-adapter



Accessory
HSP5 adapter
00.F5.0C0-0002

SERCOS

Operator
00.F5.060-6000
SERCOS IN-/OUT-
FSMA connector
service interface
for HSP5-adapter



DEVICE NET

Operator **00.F5.060-7000**
Device Net IN-/OUT-connection
Open Entry
service interface for
HSP5-adapter





F5

Mechanical dimensions

KEB COMBIVERT F5 units are designed in a flexible modular system and are available in the following designs:

- ▲ Internal unit class IP 20 - universal fitting in switch cabinet
- ▲ Internal unit with factory-fitted radio interference suppression filter for internal radio interference suppression
- ▲ Internal unit with factory-fitted braking resistor to absorb energy with no extra space required - also available in combination with interference suppression filter
- ▲ Customer version FLAT- REAR - (FR) direct thermal connection to coolers
- ▲ Customer version LIQUID COOLED - (LC) - liquid cooling
- ▲ Customer version EXTERNAL HEAT - (EH) push - through cooler for thermal decoupling

For customer standard applications KEB also supplies complete control cabinet solutions in protection class IP 54.

Fastening points aligned on a matrix allows the use of prepared assembly boards.

compact redefined...



A ... 0.75 kW **B** ... 4.0 kW **D** ... 7.5 kW **E** ... 15 kW **G** ... 22 kW **H** ... 30 kW **R** ... 90 kW **U** ... 160 kW **W** ... 315 kW

design	version IP20 W x H x D (mm)			available customer versions		
	unit	with HF-filter	with resistor	FR	LC	EH
A	76x191x144	75x185x145		-	-	-
B	90x220x160	90x250x200	90x220x210	●	-	●
D	90x250x181	90x285x221	90x250x240	●	-	●
E	130x290x208	132x352x258	130x290x275	●	●	●
G	170x340x255	181x415x311	170x340x329	●	●	●
H	297x340x255	300x445x321		●	●	●
R	340x520x355	342x520x360* 110x478x115		●	●	●
U	340x800x355	110x598x240		-	●	-
W	670x940x368	260x386x115 260x386x135		-	●	-

* up to size 23.F5. □ external unit ● customer version on request



F5

Motor technique

Optimally tuned
synchronous motors with nominal torque **up to 70 Nm**
 and
asynchronous motors with nominal power **up to 160 kW**

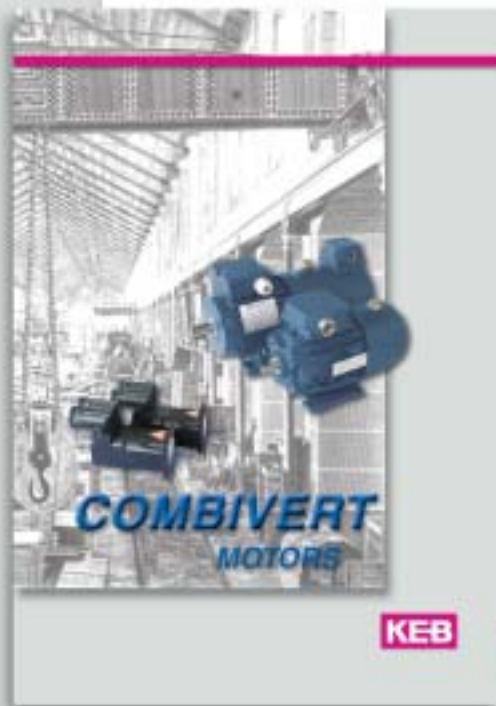
convert current and voltage KEB COMBIVERT F5 drive actuator into rotatory motion.

Depending on the physical requirements of the application, the mechanical construction, motor/machine inertia conditions and/or the overload characteristic.

KEB provides a powerful range of motors for inverter operation.

Preset complete systems with inverter/servo actuator and motor, ready for installation, are available on request.

Detailed information on features, performance and technical data are given in the KEB COMBIVERT-Motor catalogue.



Gearbox technique

Industrial gear motors ensure the adjustment of speed and torque. With the **KEB COMBIGEAR** range, a fully modular system is available in conventional designs:

- helical inline
- helical shaft mounted
- helical bevel
- helical worm

Key features of the range are the finely graduated ratios, compact construction and robust grey cast iron housings.

Tuned to the KEB COMBIVERT F5 inverter, these forms the basis for complete systems in the complete power range **up to 55 kW**.

Aluminium **helical worm gear motors**, proven in many standard applications, complete the asynchronous range.

High dynamic demands combined with minimal backlash transmission are the main focus in servo applications.

KEB synchronous motors in combination with the solutions from the KEB COMBIGEAR range or powerful **planet gears** fulfil these requirements in an economic manner.



people in motion

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