



*BASIC*

*COMPACT*

*MULTI*

**COMBIVERT**

*0.37 ... 900 kW*

**F5**

CE

UL<sup>®</sup> US  
LISTED

C<sup>®</sup> UL<sup>®</sup> US

**KEB**



*Reputable manufacturers have worked with KEB COMBIVERT for many years to produce innovative high quality machine systems.*

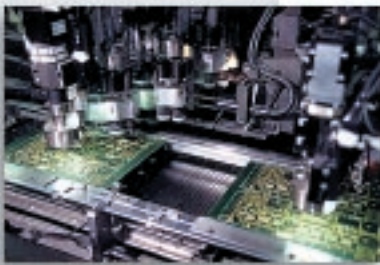
*Based on this experience, combined with the use of ultramodern electronic modules, digital power transmission has been raised on a new level.*



**KEB COMBIVERT**



*With the F5 frequency inverter three designs are combined in one product range with the aim of:*



- *optimal use of resources and materials*
- *minimum expense in design, and easy implementation of application solutions*
- *application orientated programming*

*In the past **simple handling** and **versatile features** were often contradictory. The CP-Mode ensures user-friendly handling via a programmable menu. KEB COMBIVERT F5 is the world's first drive generation to have a fully programmable user interface.*





**BASIC**  
0.37 ... 15 kW

- compact, functional and economical units



**COMPACT**  
0.37 ... 90 kW

- universal features create the ideal platform for the design of high-quality machines and systems

**MULTI**  
0.75 ... 900 kW

high end open loop performance with supply voltage of **230, 400 and 690 V** and closed loop drive technology

- one unit for asynchronous and synchronous servo motors with feedback from

- resolver, incremental encoder
- Sin / Cos - encoder, absolute encoder
- HIPERFACE® and ENDAT®



**APPLICATION**

customized equipment solutions tailored to operating conditions and requirements:

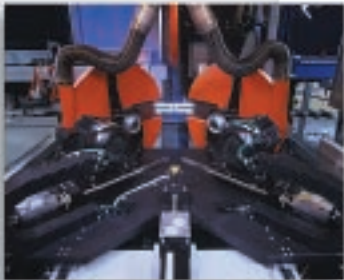
- ASCL
- SCL

for closed loop performance without an encoder or resolver.





# **BASIC** The frequency inverter for simple to sophisticated tasks throughout the engineering sector...



- connection 1/3 phase 230 V and 3 phase 400 V  
choice of AC- or DC-supply in one unit
- optimized KEB - **SMM** control protocol  
(sensorless motor management)
- 17 pluggable control terminals, PNP-logic
- analoge input 0...10 V,  $\pm 10$  V, 0/4 ... 20 mA (housing D, E)
- programmable analoge output 0...10 V
- 5 programmable digital inputs
- 2 programmable relay outputs
- 4 programmable software inputs/outputs
- 8 free-to-programmable 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 2 ms
- +/- intermediate circuit connection,  
internal braking chopper  
motor-PTC-evaluation,
- integrated filter to EN 55011/B (option: B, D, E-housing)
- potential-free operator connection with interfaces available for  
the following protocols:

CANopen

ETHERNET

KEB-HSP 5/  
DIN 66019-II

PROFI  
BUS

MODBUS



DeviceNet

SERCOS  
interface

ETHERNET  
POWERLINK

EtherCAT

1/3 ph. 230 V (180... 260 V)

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

$P_N$ [kW]	housing	$I_N$ [A]	$I_{max}$ [A]	$f_{nom/max}$ [kHz]	suppression EN 55011	part-number
0.37	A*	2.3	5	4/8	B ●	05.F5.B3A-090A
0.75		4	8.6	8	B ●	07.F5.B3A-0A0A
1.5	B	7	15.1	16	B ◆	09.F5.B1B-2B0A
2.2		10	21.6	8/16	B ◆	10.F5.B1B-2A0A
4	D**	16.5	35.6	8/16	B ◆	12.F5.B1D-1A0A
5.5	E**	24	43	8/16	B ◆	13.F5.B1E-160A
7.5		33	59	4/16	B ◆	14.F5.B1E-150A
0.37	A	1.3	2.8	4	B ●	05.F5.B3A-390A
0.75		2.6	5.6	4	B ●	07.F5.B3A-390A
1.5		4.1	8.9	4	B ●	09.F5.B3A-390A
2.2	B	5.8	12.5	8/16	B ◆	10.F5.B1B-3A0A
4		9.5	21	4	B ◆	12.F5.B1B-350A
5.5	D	12	25.9	4/16	B ◆	13.F5.B1D-390A
7.5		16.5	35.6	2	B ◆	14.F5.B1D-380A
11	E	24	43	4/16	B ◆	15.F5.B1E-350A
15		33	59	2	B ◆	16.F5.B1E-340A

● internal filters

◆ footprint filter

\* 1-phase 230 V AC

\*\* 3-phase 230 V AC

General: Product standard EN 61800-2, -5-1  
 Emitted interference EN 61800-3  
 EN61000-6 -1...4  
 Enclosure IP 20/ VBG 4  
 Storage temperature -25 ... 70 °C  
 Operation temperature -10 ... 45 °C  
 Short-circuit and earth fault monitoring



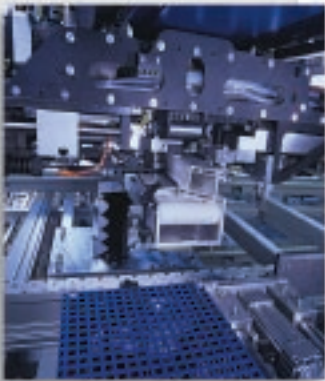




# COMPACT

**- More than just a frequency inverter -  
The F5 uses the latest technology for drive system control**

- ▲ wide power range for 230 V- and 400 V-connection
- ▲ choice of AC- or DC-connection
- ▲ optimal performance at motor shaft in numerous applications with KEB - **SMM** (sensorless motor management)
- ▲ 29 plug-in control terminals
- ▲ 2 analogue inputs 0 ... 10 V, ± 10 V, 0/4 ... 20 mA
- ▲ 2 programmable analogue 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 regulator technology, 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 2 ms
- ▲ +/- intermediate circuit connection, internal braking chopper (standard up to housing size G), motor-PTC-analysis, hardware current control
- ▲ controlled positioning to end position/counting pulse
- ▲ optional: protection against accidental restart using voltage-free switching in driver section
- ▲ potential-free operator connection with interfaces available to the following protocols



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

$P_N$ [kW]	housing
0.37	B*
0.75	
1.5	
2.2	
4	D
5.5	E
7.5	
11	G
15	H
18.5	
22	R
30	
37	
45	

$I_N$ [A]	$I_{max}$ [A]	$f_{nom}/f_{max}$ [kHz]	EN 55011	part number
2.3	5	16	B ◆	05.F5.C1B-2B0A
4	8.6	16	B ◆	07.F5.C1B-2B0A
7	15.1	16	B ◆	09.F5.C1B-2B0A
10	21.6	8/16	B ◆	10.F5.C1B-2A0A
16.5	35.6	8/16	B ◆	12.F5.C1D-1A0A
24	48	8/16	B ◆	13.F5.C1E-160A
33	66	4/16	B ◆	14.F5.C1E-150A
48	85	4/8	B ◆	15.F5.C1G-150F
66	115	16	B ◆	16.F5.C0H-170F
84	150	8/16	B ◆	17.F5.C0H-160F
100	175	8/16	B ●	18.F5.C0R-760A
120	210	8/16	B ●	19.F5.C0R-760A
150	265	8/16	B ▲	20.F5.C0R-760A
180	315	8/16	A/B ▲	21.F5.C0R-760A

\* 1/3 phase 230 V

● internal option

◆ footprint option

▲ book-style option

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

$P_N$ [kW]	housing	$I_N$ [A]	$I_{max}$ [A]	$f_{nom}/f_{max}$ [kHz]	EN 55011	part number
0.37		1.3	2.8	16	B ◆	05.F5.C1B-3B0A
0.75		2.6	5.6	16	B ◆	07.F5.C1B-3B0A
1.5	B	4.1	8.9	8/16	B ◆	09.F5.C1B-3A0A
2.2		5.8	12.5	8/16	B ◆	10.F5.C1B-3A0A
4		9.5	21	4	B ◆	12.F5.C1B-350A
5.5	D	12	25.9	4/16	B ◆	13.F5.C1D-390A
7.5		16.5	35.6	2/16	B ◆	14.F5.C1D-380A
11	E	24	48	4/16	B ◆	15.F5.C1E-350A
15		33	59	2/16	B ◆	16.F5.C1E-340A
18.5	G	42	75	4/16	B ◆	17.F5.C1G-350F
22		50	90	2/16	B ◆	18.F5.C1G-340F
30	H	60	108	4/16	B ◆	19.F5.C0H-350F
37		75	135	2/4	B ◆	20.F5.C0H-340F
45	R	90	162	4/16	B ●	21.F5.C0R-950A
55		115	207	4/16	B ●	22.F5.C0R-950A
75★		150	227	2/12	B ●	23.F5.C0R-940A
90★		180	270	2/8	B ▲	24.F5.C0R-940A

● internal option

◆ footprint option

▲ book-style option

★ Line reactor generally required

General: Product standard EN 61800-2, -5-1  
 Emitted interference EN 61800-3  
 EN 61000-6-1...4  
 Enclosure IP 20/VBG 4  
 Storage temperature -25... 70 °C  
 Operation temperature -10... 45 °C  
 upto 90 kW -10... 40 °C  
 Short-circuit and earth fault monitoring





# MULTI

**The universal open and closed loop drive controller for synchronous and asynchronous motors**

equipped with all functions and characteristics of the KEB COMBIVERT F5 - Compact series, adapted for regulated use.



Control options through plug-in feedback cards:

- Resolver
- TTL or HTL incremental encoder, initiator
- SIN/COS- encoder
- absolute value encoder
- HIPERFACE®, ENDAT® or Tacho

control via

**KEB-SMM** (sensorless motor management) as  
**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

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

$P_N$ [kW]	housing
0.75	D*
1.5	
2.2	
4	
5.5	E
7.5	
11	G
15	H
18.5	
22	
30	R
37	
45	





$I_N$ [A]	$I_{max}$ [A]	$f_{nom}/f_{max}$ [kHz]	EN 55011	part number
4	7.2	16	B ◆	07.F5.A1D-2B_A
7	12.6	16	B ◆	09.F5.A1D-2B_A
10	18	16	B ◆	10.F5.A1D-2B_A
16.5	29.7	8/16	B ◆	12.F5.A1D-1A_A
24	36	8/16	B ◆	13.F5.A1E-16_A
33	49.5	4/16	B ◆	14.F5.A1E-15_A
48	72	8/16	B ◆	15.F5.A1G-16_F
66	99	16	B ◆	16.F5.A1H-17_F
84	126	8/16	B ◆	17.F5.A1H-17_F
100	150	8/16	B ●	18.F5.A1R-76_A
120	172	8/16	B ●	19.F5.A1R-76_A
150	217	8/16	B ▲	20.F5.A1R-76_A
180	270	8/16	A/B ▲	21.F5.A1R-76_A

- \* 1,5 ... 2,2 kW = 1/3 phase 230 V
- internal option
- ◆ footprint option
- ▲ book-style option
- ★ Line reactor generally required

Product standard EN 61800-2, -5-1  
 Emitted interference EN 61800-3  
 EN 61000-6-1...4  
 Enclosure IP 20/VBG 4  
 Storage temperature -25... 70 °C  
 Operation temperature -10... 45 °C  
 up to 90 kW -10... 40 °C  
 Short-circuit and earth fault monitoring



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

$P_N$ [kW]	housing	$I_N$ [A]	$I_{max}$ [A]	$f_{nom}/f_{max}$ [kHz]	EN 55011	part number
0.75	D	2.6	5.6	8/16	B ◆	07.F5.A1D-3A_A
1.5		4.1	7.4	8/16	B ◆	09.F5.A1D-3A_A
2.2		5.8	10.4	4/16	B ◆	10.F5.A1D-3A_A
4		9.5	17	8/16	B ◆	12.F5.A1D-3A_A
5.5		12	21.6	4/16	B ◆	13.F5.A1D-39_A
7.5		16.5	29.7	2/16	B ◆	14.F5.A1D-38_A
11		E	24	36	4/16	B ◆
15	33		49.5	2/16	B ◆	16.F5.A1E-34_A
18.5	G	42	63	4/16	B ◆	17.F5.A1G-35_F
22		50	75	2/16	B ◆	18.F5.A1G-34_F
30	H	60	90	4/16	B ◆	19.F5.A1H-35_F
37		75	112	2/4	B ●	20.F5.A1H-34_F
45	R	90	135	4/16	B ●	21.F5.A1R-95_A
55		115	172	4/16	B ●	22.F5.A1R-95_A
75★		150	225	2/12	B ●	23.F5.A1R-94_A
90★		180	270	2/8	B ▲	24.F5.A1R-94_A
110★	U	210	263	4/8	A/B ▲	25.F5.A1U-91_A
132★		250	313	4/8	A/B ▲	26.F5.A1U-91_A
160★		300	375	2/8	A/B ▲	27.F5.A1U-90_A
200★	P	370	463	2/4	A ▲	28.F5.A1P-90_A
250★		460	575	2/4	A ▲	29.F5.A1P-90_D
315★	W	570	713	2/4	A ▲	30.F5.A1W-D0_A
355★		630	787	2/4	A ▲	31.F5.A1W-90_D
400★		710	887	2/4	A ▲	32.F5.A1W-90_D
450★	2xP	800	1000	2/4	A ▲	33.F5.A1P-90_D
500★		890	1112	2/4	A ▲	34.F5.A1P-90_D
560★	3xP	1000	1250	2/4	A ▲	35.F5.A1P-90_A
630★		1150	1435	2/4	A ▲	36.F5.A1P-90_D
710★		1330	1660	2	A ▲	37.F5.A1P-90_D
800★		1450	1810	2	A ▲	38.F5.A1P-90_H

Selection and dimensioning of synchronous and asynchronous servo motors should be made according to rated current, current at standstill and peak current.



# F5 - voltage class 690 V

Proven properties for the application in the upper power range

3 ph. 660/690 V (600... 760 V)

$P_N$ [kW]	housing	$I_N$ [A]	$I_{max}$ [A]	$f_{nom}/f_{max}$ [kHz]	inverter part number	filter ▲ part number	mains input choke part number	output choke part number
160★	1xP	185	231	2/4	27.F5.A1P-B0_A	1 x 30.E5.T60-8001	1x 28.Z1.B06-1000	1 x 29.Z1.A04-1001
200★		225	281	2/4	28.F5.A1P-B0_A		1x 28.Z1.B06-1000	
250★		280	350	2/4	29.F5.A1P-B0_D		1x 29.Z1.B06-1000	
315★		350	438	2/4	30.F5.A1P-B0_D		1x 30.Z1.B06-1000	
400★	2xP	430	538	2/4	32.F5.A1P-B0_A	2 x 30.E5.T60-8001	2x 28.Z1.B06-1000	2 x 29.Z1.A04-1001
450★		490	613	2/4	33.F5.A1P-B0_D		2x 29.Z1.B06-1000	
500★		550	688	2/4	34.F5.A1P-B0_D		2x 30.Z1.B06-1000	
560★		610	763	2/4	35.F5.A1P-B0_D		2x 30.Z1.B06-1000	
630★	3xP	700	875	2/4	36.F5.A1P-B0_A	3 x 30.E5.T60-8001	3x 29.Z1.B06-1000	3 x 29.Z1.A04-1001
710★		810	1013	2/4	37.F5.A1P-B0_D		3x 30.Z1.B06-1000	
800★		880	1100	2/4	38.F5.A1P-B0_D		3x 30.Z1.B06-1000	
900★		1000	1250	2/4	39.F5.A1P-B0_H		3x 30.Z1.B06-1000	

★ Line reactor generally required ▲ book-style option

All units correspond to the 400 V type with regard to the technical functions and are universally suitable for the open-loop and closed-loop operation of asynchronous and synchronous motors. Upon request the units are available for the rated voltages of 3ph 500 VAC and 3ph 600 VAC.

General: Product standard EN 61800-2, -5-1  
 Emitted interference EN 61800-3  
 EN 61000-6-1...4  
 Enclosure IP 20/VBG 4  
 Storage temperature -25... 70 °C  
 Operation temperature -10... 45 °C  
 up to 90 kW -10... 40 °C  
 Short-circuit and earth fault monitoring



# COMBIVIS 5

**The universal tool for the  
KEB COMBIVERT F5 drive range**

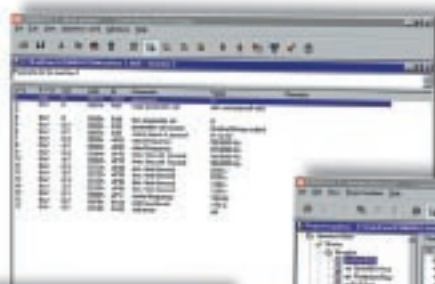
- ▲ complete management of equipment settings
- ▲ display and setting of all parameters in up to 8 sets
- ▲ configuration of customized CP menu
- ▲ analysis of drive and control communication
- ▲ display of physical parameters and monitoring of operating data
- ▲ virtual oscilloscope function for real time monitoring and storage of drive parameters



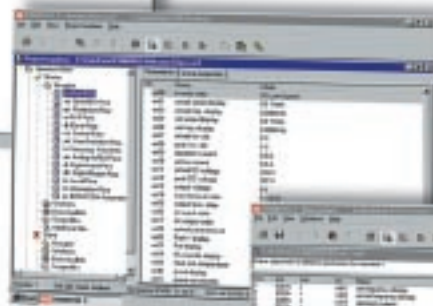
Available as COMBIVIS 5-/DOKU-CD  
part number: **CD.SW.010-0100**

or download from <http://www.keb.de>

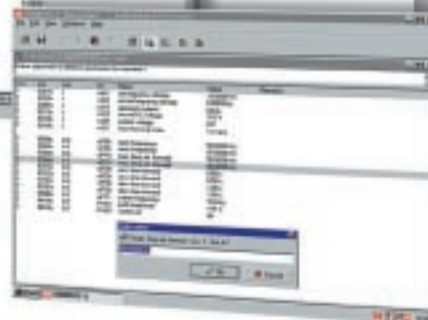
## Parameterization



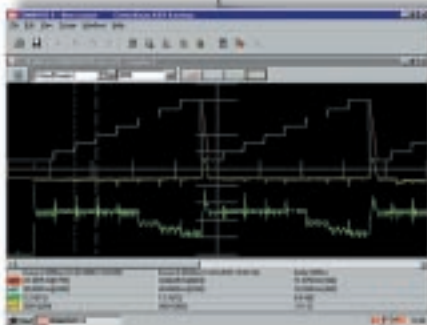
## Display



## Project explorer



## Analysis



### Accessory:

KEB - Interface cable RS 232 / Part number 00.58.025-001D  
(together with Interface Operator 00.F5.060-2000)

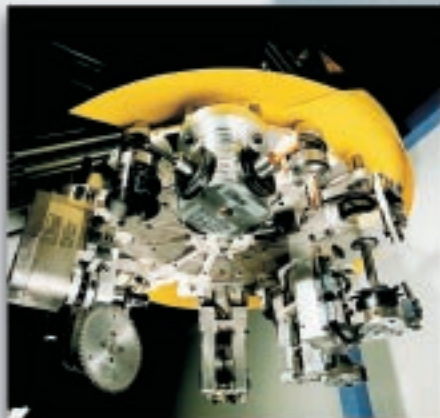
KEB - Service cable HSP5 / Part number 00.F5.0C0-0010 (1.8 m)





## ***The Unified Drive Platform...***

*Based on the open modular framework of the COMBIVERT F5-series, in close cooperation with OEM's. KEB has created modified drive systems for specific solutions.*



*We call it*

# **APPLICATION**

*The engineering knowledge resulting from many years experience in:*

***packing, textiles, plastics, printing / paper industry, wood working, compressor, HVAC, pump, storage and transport technology and lift industry***

*has been integrated in customized software modules and modified hardware, for*

- *complete machine control in the frequency inverter*
- *adaption to serial protocols*
- *industry-specific software*
- *flexible cooling systems for air and water*
- *complete control cabinets*
- *compact inverter-motor-modules*



## Single drive applications... KEB Open operator

The cost effective programmable hardware for software extension in single drive applications, (C- / assembler programming, free memory: 64k-flash, RS 232/485 connection).

For applications such as...  
**crane - slewing, hoist or travel drives,**

lift - specific data input and I/O handling.



## Multi axis drive solution COMBICONTROL C5

Multi axis drive tasks require particular attention to the interface between control and drive.

Until now two options were available:

- **High end, high cost control methods**
- **Transfer of functions into the drive**  
However this means...  
Special functions in the drive require special software variants!

With the **COMBICONTROL C5** a new option is available that is designed to act as the interface between the main control, PLC, IPC etc and the motor drives. In certain circumstances it can even replace the main control completely.

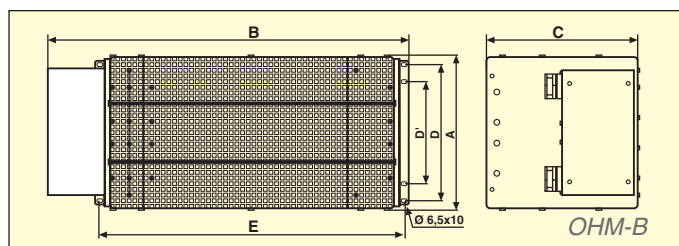
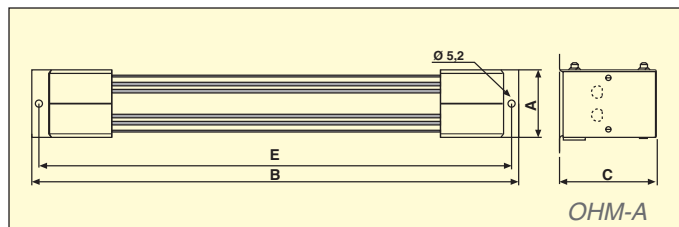
Used in conjunction with the **COMBIVERT F5** range the **COMBICONTROL C5** offers an effective alternative to current methods. The unit comes free programmable to IEC 61131-3.





## Braking resistors

supplied with thermal monitoring as standard for the absorption of generated energy. Quiet braking available in compact submounted modules to absorb pulse energy, or universal side-mounted units.



For high regenerated energy use **KEB COMBIVERT R6** feedback units, available for block or sinusoidal line currents.

230 V-class

part number	R [Ω]
07.BR.100-1180	180
09.BR.100-1100	100
10.BR.100-1683	68
12.BR.100-1233	33
13.BR.100-1273	27
14.BR.100-1203	20
15.BR.110-1133	13
16.BR.110-1103	10
17.BR.110-1073	7

400 V-class

07.BR.100-6620	620
09.BR.100-6390	390
10.BR.100-6270	270
12.BR.100-6150	150
13.BR.100-6110	110
14.BR.100-6853	85
15.BR.110-6563	56
16.BR.110-6423	42
17.BR.110-6303	30
18.BR.226-6203	20
19.BR.226-6153	15
20.BR.226-6123	12
21.BR.226-6103	10
22.BR.226-6866	8.6
23.BR.226-6676	6.7
24.BR.226-6506	5
25.BR.226-6436	4.3
26.BR.226-6386	3.8
27.BR.226-6336	3.3
28.BR.226-6226	2.2
29.BR.226-6176	1.7
30.BR.226-6136	1.3





<i>external braking resistor</i>								
$P_D$ [W]	$P_6$ [W]	$P_{25}$ [W]	$P_{40}$ [W]	A	B	C [mm]	D/D'	E
44	800	300	180	40	165	26	-	145
82	1500	500	300	40	240	26	-	225
120	2200	800	500	40	300	26	-	285
250	4200	1300	750	80	300	28	-	285
300	5100	1500	900	80	400	28	-	385
410	6900	1800	1100	80	400	28	-	385
630	10000	3200	1800	63	370	96	-	355
780	14000	3600	2200	63	470	96	-	455
1200	22000	5400	3100	90	470	96	50	455
<hr/>								
56	900	300	180	40	165	26	-	145
90	1500	500	300	40	240	26	-	225
130	2100	800	500	40	300	26	-	285
230	3850	1300	750	80	300	28	-	285
350	5000	1500	900	80	400	28	-	385
410	6900	1800	1100	80	400	28	-	385
620	10000	3200	1800	63	370	96	-	355
820	14000	3600	2200	63	470	96	-	455
1200	19000	5400	3100	90	470	96	50	455
1700	29000	7500	4500	270	625	116	240/176	526
2300	38000	10000	6000	270	625	116	240/176	526
2900	48000	12500	7500	270	625	223	240/176	526
3000	53000	15000	9000	270	625	223	240/176	526
4000	68000	17500	10000	270	625	273	240/176	526
5200	86000	22000	12500	270	625	273	240/176	526
<hr/>								
6900	115000	30000	18000	270	625	223	240/176	526
8100	135000	35000	20000	270	625	273	240/176	526
9200	154000	40000	22500	270	625	273	240/176	526
10000	173000	45000	25000	270	625	273	240/176	526
15000	260000	67000	37000	270	625	273	240/176	526
20000	340000	90000	50000	270	625	273	240/176	526
26000	440000	112000	62000	270	625	273	240/176	526

OHM-A



required modules

OHM-B



- $P_D$  Continuous rating
- $P_6$  Pulse rating with 6 sec. ON-time and period of 120 sec.
- $P_{25}$  Pulse rating with 25 sec. ON-time and period of 120 sec.
- $P_{40}$  Pulse rating with 40 sec. ON-time and period of 120 sec.



# COMBILINE

## Filter technology + 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 limits of EN 55011- A/B. Variants for very small discharge currents. IT mains or special network configurations are also available.*
- *Output chokes and filters reduce the voltage and current loading on motor windings.*
- *Sinusoidal filters protect the motor windings 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“ adapted and optimized to drive actuator.*
- *Harmonic filters create reduced system perturbations of low-frequency interferences of B6-fed consumers. They are the latest innovative solution designed by our team of highly skilled engineers to combat such problems. It can be designed to simply replace the traditional line reactor. Thus making it possible to comply with relevant international standards.*

## EMC - Service

*Using our fully equipped mobile EMC test facilities and expert technicians we offer:*

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

*giving you compliance to legislation, and improved reliability.*



**230 V-class**

$P_N$ [kW]	housing	RFI filter	mains choke	harmonic filter $THD \leq 8\%$	motor- choke	sinusoidal filter
<b>0.37</b> <b>0.75</b>	A	- -	05.DR.F08-4951* 07.DR.F08-2951*	<i>upon request</i>	05.DR.A08-4251 07.DR.A08-2851	<i>upon request</i>
<b>1.5</b> <b>2.2</b>	B	10.U5.B0B-1000*	09.DR.F08-1851* 10.DR.F08-1551*		09.DR.A08-2151 10.DR.A08-1551	
<b>4</b>	D	12.U5.B0D-2000	12.DR.A08-8541		12.DR.A08-8541	
<b>5.5</b> <b>7.5</b>	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	
<b>11</b>	G	15.U5.B0G-2000	15.DR.A08-2841		15.DR.A08-2841	
<b>15</b>	H	16.U5.B0H-2000	16.DR.A08-2241		16.DR.A08-2241	

**400 V-class**

<b>0.37</b> <b>0.75</b>	B	10.U5.B0B-3000	03.DR.B08-1461	12.Z1.C04-1000	03.DR.B08-1461	07.Z1.G04-1000		
<b>1.5</b> <b>2.2</b>		10.U5.B0B-3000	07.DR.B08-4951		07.DR.B08-4951	09.Z1.G04-1000		
<b>4</b>		10.U5.B0B-3000	10.DR.B08-3751		10.DR.B08-3751	10.Z1.G04-1000		
<b>5.5</b> <b>7.5</b>		D	13.U5.B0D-3000 14.U5.B0D-3000		13.DR.B08-1851 14.DR.B08-1451	13.Z1.C04-1000 14.Z1.C04-1000	13.DR.B08-1851 14.DR.B08-1451	13.Z1.G04-1000 14.Z1.G04-1000
<b>11</b> <b>15</b>		E	15.U5.B0E-3000 16.U5.B0E-3000		15.DR.B08-9841 16.DR.B08-7341	15.Z1.C04-1000 16.Z1.C04-1000	15.DR.B08-9841 16.DR.B08-7341	15.Z1.G04-1000 16.Z1.G04-1000
<b>18.5</b> <b>22</b>	G	17.U5.B0G-3000 18.U5.B0G-3000	17.DR.B08-5941 18.DR.B18-4941	17.Z1.C04-1000 18.Z1.C04-1000	17.DR.B08-5941 18.DR.B18-4941	17.Z1.G04-1000 18.Z1.G04-1000		
<b>30</b> <b>37</b>	H	19.U5.B0H-3000 20.U5.B0H-3000	19.DR.B18-3941 20.DR.B18-3341	19.Z1.C04-1000 20.Z1.C04-1000	19.DR.B18-3941 20.DR.B18-3341	19.Z1.G04-1000 20.Z1.G04-1000		
<b>45</b> <b>55</b> <b>75★</b>	R	23.U5.B0R-3000 23.U5.B0R-3000 23.U5.B0R-3000	21.DR.B18-2841 22.DR.B18-2241 23.DR.B18-1741	21.Z1.C04-1000 22.Z1.C04-1000 23.Z1.C04-1000	21.DR.B18-2841 22.DR.B18-2241 23.DR.B18-1741	21.Z1.G04-1000 22.Z1.G04-1000 23.Z1.G04-1000		
<b>90★</b> <b>110★</b> <b>132★</b> <b>160★</b>	U	25.U5.B0U-3000 25.U5.B0U-3000 27.U5.B0U-3000 27.U5.B0U-3000	24.DR.B18-1541 25.DR.B18-1341 26.DR.B28-1141 27.DR.B28-1041	24.Z1.C04-1000 25.Z1.C04-1000 26.Z1.C04-1000 27.Z1.C04-1000	24.DR.B18-1541 25.DR.B18-1341 26.DR.B28-1141 27.DR.B28-1041	24.Z1.G04-1000 25.Z1.G04-1000 26.Z1.G04-1000 27.Z1.G04-1000		
<b>200★</b> <b>250★</b>	P	28.U5.A0W-3000 30.U5.A0W-3000	28.DR.B28-8031 29.DR.B28-5331	28.Z1.C04-1000 29.Z1.C04-1000	28.DR.B28-8031 29.DR.B28-5331	28.Z1.G04-1000 29.Z1.G04-1000		
<b>315★</b> <b>355★</b> <b>400★</b>	W	30.U5.A0W-3000 32.U5.A0W-3000 32.U5.A0W-3000	2 x 27.DR.B28-1041 2 x 28.DR.B28-1041 2 x 28.DR.B28-8031	2 x 27.Z1.C04-1000 2 x 27.Z1.C04-1000 2 x 28.Z1.C04-1000	30.DR.B22-4430	30.Z1.G04-1000		
<b>450★</b> <b>500★</b>	2xP	2 x 28.U5.A0W-3000 2 x 30.U5.A0W-3000	2 x 28.DR.B28-8031 2 x 29.DR.B28-5331	2 x 28.Z1.C04-1000 2 x 29.Z1.C04-1000	<i>upon request</i>			
<b>560★</b> <b>630★</b> <b>710★</b> <b>800★</b>	3xP	3 x 28.U5.A0W-3000 3 x 30.U5.A0W-3000 3 x 30.U5.A0W-3000 3 x 30.U5.A0W-3000	3 x 28.DR.B28-8031 3 x 28.DR.B28-8031 3 x 29.DR.B28-5331 3 x 29.DR.B28-5331	3 x 28.Z1.C04-1000 3 x 28.Z1.C04-1000 3 x 29.Z1.C04-1000 3 x 29.Z1.C04-1000				

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

★ operation generally with line reactor





## Handling and Display Options

### **LCD-Operator, 00.F5.060-K000**

*with a clear clear text display in 6 languages and menu-led keyboard operation as pluggable module for all F5 units.*

*The memory function allows saving and loading of complete parameter lists by retrieving the adjustments from the internal FLASH or a plugged-in SD memory card.*



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

### **Profibus Operator, 00.F5.060-3000 / -3100**

*Slave connection up to 12.5 MBaud,  
IN-/OUT-connection submin-D-9,  
Service interface via HSP5-adapter*



### **InterBus Operator, 00.F5.060-4000**

*InterBus remote IN-/OUT-connection submin-D-9,  
Service interface via HSP5-adapter*



### **CAN Operator, 00.F5.060-5010 / -5110**

*CANopen profile DS 301 (DS402)  
IN-/OUT-connection submin-D-9,  
Service interface via HSP5-adapter*



### **Operator 00.F5.060-6000**

*SERCOS IN-/OUT- FSMA connector,  
Service interface via HSP5-adapter*

### **DeviceNet**

#### **Operator 00.F5.060-7000**

*Device Net IN-/OUT-connection Open Entry,  
Service interface via HSP5-adapter*



Accessory for HSP5-service interface  
HSP5 adapter 00.F5.0C0-0002  
for service connection on all operator options



# Field bus interfacing

Interface Operator, **00.F5.060-2000 / -2100**  
 universal open KEB protocol for PC and PLC-connection  
 RS 232 / 485-connection submin-D-9

## MODBUS

Operator **00.F5.060-A000**  
 MODBUS SUBD9  
 (female) connection,  
 Service interface  
 via HSP5-adapter

## KEB-HSP 5 / DIN 66019-II

Accessory  
 Driver software for WIN 95/98/NT/2000/XP  
 KEBCOM FD.SW.020-0100  
 supports the PC-connection for the  
 protocols KEB DIN 66019-II,  
 KEB-HSP5, InterBus and TCP/ IP

## Ethernet TCP/IP

Operator **00.F5.060-8000**  
 ETHERNET RJ45 connection IEEE 802.3  
 10Base-T (10 Mbaud),  
 Service interface via HSP5-adapter

## EtherCAT

Operator **00.F5.060-F000**  
 RJ45 connection  
 Service interface via HSP5-adapter

## ETHERNET POWERLINK

Operator **00.F5.060-H000**  
 RJ45 connection  
 Service interface via HSP5-adapter

## PROFI NET

## EtherNet/IP™

coming soon...





## Layout options

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

- ▲ *Standard unit IP 20 - for compact fitting in your control cabinet*
- ▲ *Supplied with factory-fitted radio interference suppression filter submounted for space saving*
- ▲ *Factory-fitted braking resistor option to absorb energy with no extra space required - also available in combination with interference suppression filter*
- ▲ *FLAT- REAR - (FR) custom version for direct thermal connection to your coolers option*
- ▲ *LIQUID COOLED - (LC) - for efficient heat management, particularly in difficult environments*
- ▲ *EXTERNAL HEAT - (EH) push - through heat sinks to eliminate the need for cabinet fans and improved contamination control*

*For customer applications KEB also supplies complete control cabinet solutions to IP 54.*

*Fastening points aligned on a matrix allows the use of prepared back plates.*

**compact redefined...**



**A B D E G H**

... 1,5 kW

... 4,0 kW

... 7,5 kW

... 15 kW

... 22 kW

... 37 kW



housing	Standard unit IP20			versions available		
	Inverter B x H x T [mm]	with HF-filter B x H x T [mm]	with resistor B x H x T [mm]	FR	LC	EH
<b>A</b>	76 x 191 x 144	75 x 191 x 144		-	-	-
<b>B</b>	90 x 220 x 160	90 x 249 x 200	90 x 220 x 190	●	-	●
<b>D</b>	90 x 250 x 181	90 x 285 x 221	90 x 250 x 211	●	-	●
<b>E</b>	130 x 290 x 208	132 x 352 x 258	130 x 290 x 238	●	●	●
<b>G</b>	170 x 340 x 255	181 x 415 x 311	170 x 340 x 280	●	●	●
<b>H</b>	297 x 340 x 255	300 x 445 x 321 342 x 520 x 360*		●	●	●
<b>R</b>	340 x 520 x 355	110 x 478 x 115		●	●	●
<b>U</b>	340 x 800 x 355	110 x 598 x 240		-	●	-
<b>P</b>	340 x 960 x 454	260 x 386 x 115		-	●	-
<b>W</b>	670 x 940 x 368	260 x 386 x 115 260 x 386 x 135		-	●	-

\* up to size 23.F5.

external unit

customer version on request



**R**

**U**

**P**

**W**

... 90 kW

... 200 kW

... 315 kW  
(modular 900 kW)

... 400 kW



## ***Motor Technology***

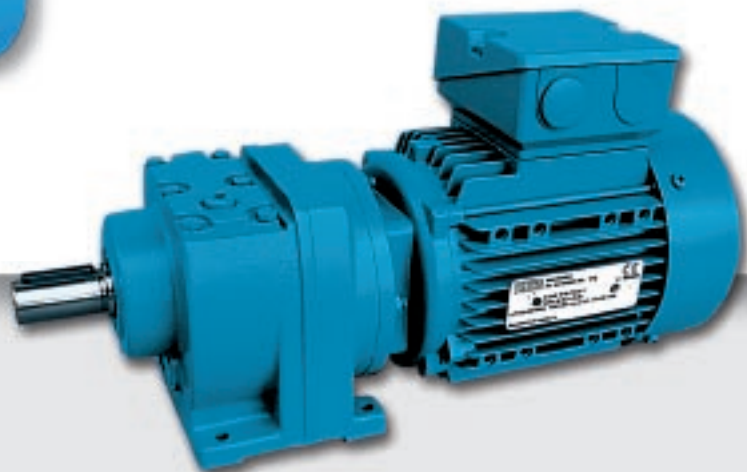
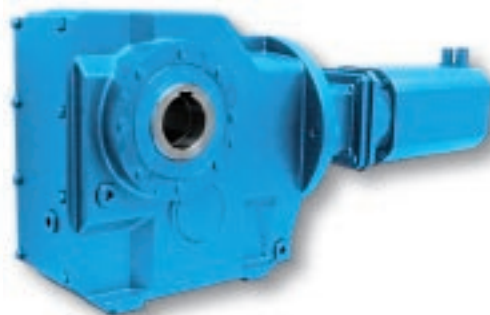
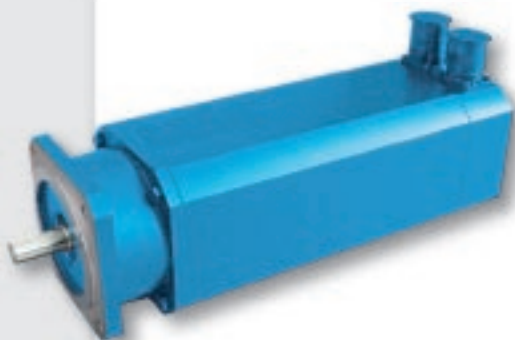
***Synchronous motors with nominal torque up to 70 Nm***

***Asynchronous motors with nominal power up to 160 kW***

*For complete drive solutions chose KEB synchronous and asynchronous motors in combination with COMBIVERT F5 drives.*

*Chose from our extensive range of motors available with our own brake options, and feedback solutions matched to our drives. Drives can be pre-programmed for ease of use.*

*Detailed information on features, performance and technical data available in the KEB COMBIVERT-Motors catalogue or visit [www.keb.de](http://www.keb.de).*



## Gearbox Technology

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

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

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

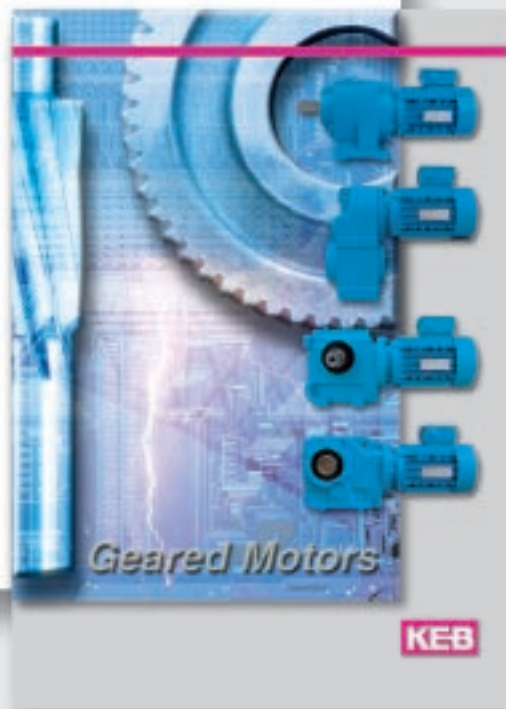
Tuned to the KEB COMBIVERT F5 inverter, these units are ideal for complete system solutions **up to 55 kW**.

High dynamics combined with minimal backlash are the main requirement for servo applications. KEB synchronous motors in combination with powerful **planet gears** or the gearboxes from the KEB COMBIGEAR range fulfil these requirements to give a cost effective solution.

With KEB DRIVE, an efficient product configurator is available for the selection of the optimal variant for your applications.

By using KEB Drive the best solution can be selected from our range with full technical details, and options available.

Download now on [www.keb.de](http://www.keb.de).





# people in motion



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