



COMBIVERT F5-A-Servo



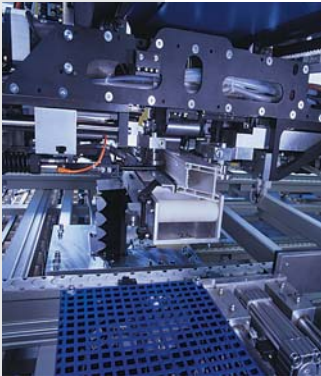
**closed loop und
sensorless closed loop**



KEB COMBIVERT F5-A-Servo

The COMBIVERT F5-A Servo is a compact drive controller with high dynamic and positioning accuracy for the universal operation of

**Servo-
Asynchronous- and
Special motors.**



The systems are available for supply voltages

1/3-phase 200 ... 240 V AC 50/60 Hz

3-phase 380 ... 460 V AC 50/60 Hz

and alternatively also prepared for DC connection.

The unit hardware has as standard:

- integrated braking transistor
- input for motor temperature
- pluggable terminal technology for
 - control circuit, - mains input,
 - motor output
- voltage differential input +/- 10 V
- external 24 V supply
- encoder interface pluggable RJ 45
 - resolver (up to 16 bit)
 - incremental encoder, switchable IN / OUT

and is designed in conformity with international standards.



Connection to the control level is done modular via plug-in operator module, actual available for:



The following developments are supported:



EMC requirements in different applications and environments are fulfilled with modular filter modules.

Closed loop servo drive with resolver technology

Version **F5.A_A**

- compact drives
- dynamic clock drives
- speed- or angular-synchronous slave drive
- integrated single-axis positioning
- internal PID-controller for variable process execution

Software version S.C.L. - sensorless closed loop

Version **F5.E_A**

designed for the operation of synchronous motors without feedback.

Applications with high requirements to accurate speeds and torques without encoder system and their wiring are solved with this version.



The versions F5.A_A and F5.E_A support additionally the following operating modes

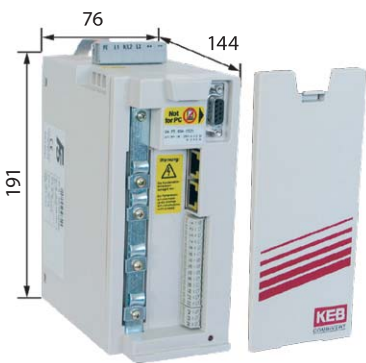
- * closed loop asynchronous operation with incremental encoder
- * open loop three-phase drive with KEB-SMM.

Technical data:

- * Current sampling grid 125 μ s, speed 250 μ s
- * Setpoint resolution analog 10 bit plus sign
- * Scan time: analog and digital inputs/outputs 1 ms
- * fast analog setpoint setting 250 μ s
- * serial interface upto 250 kbaud
- * 8 parameter sets, 32 positions, 8 positioning profiles
- * programmable user surface in the CP-menue with upto 36 parameters



Technical data servo controller

	Voltage	P [kW]	Size	I _N [A]	I _{max} [A]
	230 V	0.37	05.F5. A_A E_A	2.3	4.6
		0.75	07.F5. A_A E_A	4	8
	400 V	0.75	07.F5. A_A E_A	2.6	5.2
		1.5	09.F5. A_A E_A	4.1	8.2

Dynamic Line II

Servo motors of the new series **SM.5** and **TA** convert the settings for speed, torque and position into dynamic rotation.

Speeds and torques are adapted in combination with low-backlash planetary gears, as well as industrial helical gears, worm gears, flat and helical bevel gearbox.

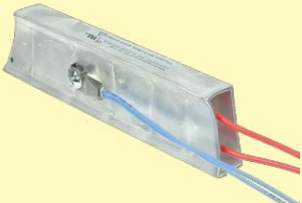
Functional drive packages are received with the pre-selected assignment of motor and controller. Further possible combinations and power ranges can be configured with the online tool "servo systembuilder" at www.keb.de.



Servo motor data SM.5						
Size	T _{dN} [Nm]	T _{d0} [Nm]	T _{max} [Nm]	n _N [rpm]	n _{max} [rpm]	J _L [kgcm ²]
A1	0.43	0.47	2.1	6,000	9,000	0.13
A2	0.62	0.66	2.9	6,000	9,000	0.18
A3	0.80	0.87	3.8	6,000	9,000	0.23
A4	1.05	1.14	5.0	6,000	9,000	0.34
B1	0.9 0.87	0.92	2.7	3,000 4,000	9,000	0.33
B2	1.83 1.75	1.8	5.4	3,000 4,000	9,000	0.56
B3	2.6 2.5	2.6	7.8	3,000 4,000	9,000	0.79
C1	3.8 3.5	3.9	12	3,000 4,000	6,000	2.7
C2	5.5 4.8	5.7	17.5	2,000 3,000	6,000	3.7
D1	8.0	8.2	25	1,500	4,500	7.9



Options

		Size	230 V	400 V
  	Filter (75 x 191 x 40 mm)	05 - 09	07.U5.B0A-1000	09.U5.B0A-3000
	Braking resistor with thermal contact	05	07.BR.100-1180 / 180 Ohm	—
		07	07.BR.100-1180 / 180 Ohm	07.BR.100-6620 / 620 Ohm
		09	—	09.BR.100-6390 / 390 Ohm
	Line reactor	05	(1ph.) 05.DR.F08-4951 (3ph.) 05.DR.A08-4251	—
		07	(1ph.) 07.DR.F08-2951 (3ph.) 07.DR.A08-2851	(3ph.) 05.DR.B08-7351
		09	—	(3ph.) 07.DR.B08-4951

Controller system data 230 V						Controller system data 400 V					Gear	
1 phase 230 V (180... 260 V)	Size	P [kW]	I _N [A]	I _{max} [A]	T _{max} [Nm]	3 phases 400 V (305... 500 V)	Size	P [kW]	I _N [A]	I _{max} [A]	T _{max} [Nm]	size classification
	05	0.37	2.3	4.6	1.15		07	0.75	2.6	5.2	2.35	1
	05	0.37	2.3	4.6	1.45		07	0.75	2.6	5.2	2.70	
	07	0.75	4	8	2.45		07	0.75	2.6	5.2	2.80	
	07	0.75	4	8	2.50		07	0.75	2.6	5.2	3.25	
	05	0.37	2.3	4.6	2.35		07	0.75	2.6	5.2	4.55	1 2
	07	0.75	4	8	4.50		07	0.75	2.6	5.2	5.45	
	07	0.75	4	8	4.80		09	1.5	4.1	8.2	8.00	
							09	1.5	4.1	8.2	10.00	2 3
							09	1.5	4.1	8.2	9.15	
							09	1.5	4.1	8.2	19.35	3 4



Accessories

Systems ready for connection

Encoder cables

- shielded
- twisted
- trailing capability
- Motor plug 12-pole
- RJ45-plug-controller

Resolver

- Length 2 m: 00.F5.0C1-0002
- Length 3 m: 00.F5.0C1-0003
- Length 5 m: 00.F5.0C1-0005
- Length 10 m: 00.F5.0C1-0010

Incremental

- Length 2 m: 00.F5.0C1-3002
- Length 3 m: 00.F5.0C1-3003
- Length 5 m: 00.F5.0C1-3005
- Length 10 m: 00.F5.0C1-3010

Motor cables

- 1,5 mm²
- shielded
- twisted
- trailing capability
- incl. cables for brake and thermal contact

- Length 2 m: 00.S4.019-0002
- Length 3 m: 00.S4.019-0003
- Length 5 m: 00.S4.019-0005
- Length 10 m: 00.S4.019-0010

Master-slave-cable

- Incremental
- RJ45 - RJ45, Length 0,5 m
- Order-No. 00.F5.0C1-20P5

Service & Diagnostics

COMBIVIS CD

- PC-Tool for all KEB COMBIVERT units
- Order-No. CD.SW.010-0100

KEB service cable HSP5

- Length: 1,8 m from the PC directly to the unit
- Order-No. 00.F5.0C0-0010

Interface Operator

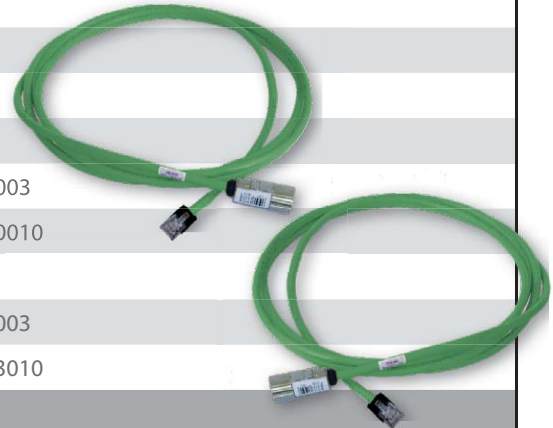
- RS232/485 interface, display, keyboard
- Order-No. 00.F5.060-2000

KEB interface line RS232

- Order-No. 00.58.025-001D

Diagnosis adapter

- Length 0,2 m: 00.F5.060-0020



LCD Operator 00.F5.060-K000

Plug-in operator control unit with plain text display and menu guidance in 6 languages, graphic display with 160 x 160 characters, data memory for parameter setting at internal flash or external to SD card.



Serial communication

For standards in the control engineering the KEB COMBIVERT F5-S serves the following pluggable interfaces

Operators	Order-No.		
CAN	00.F5.060-5010		CANopen
Profibus	00.F5.060-3000		PROFIBUS
InterBus	00.F5.060-4000		INTERBUS
Sercos	00.F5.060-6001		SERCOS interface
DeviceNet	00.F5.060-7000		DeviceNet
MODBUS	00.F5.060-A000		MODBUS
Ethernet TCP/IP	00.F5.060-8000		Ethernet TCP/IP
EtherCAT	00.F5.060-F000		EtherCAT
Ethernet POWERLINK	00.F5.060-H000		ETHERNET POWERLINK
EtherNET/IP	00.F5.060-M000		EtherNet/IP™
PROFINET	00.F5.060-L000		PROFINET

Fieldbus connection in **PLUG** and **GO**

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