

Frequency Converter EFC 3610, EFC 5610



Using valuable energy responsibly

Rising energy costs and increasing demands for environmentally-friendly production pose major challenges to the industry and, in particular, mechanical engineering. End customers demand energy-efficient machines and equipment to significantly reduce operating costs and CO₂ emissions especially in the field of drive technology.

With the new EFC 3610 and EFC 5610 frequency converters, Rexroth offers both economical and easy-to-use solutions for a variety of applications in which valuable energy has to be used responsibly. Rexroth EFC 3610 and EFC 5610 frequency converters for electronic speed and torque control contribute significantly to the energy savings desired by your customers and also required politically.

Rexroth EFC 3610 is a universal, low-cost converter for reliable speed control and demand-oriented energy supply. Rexroth EFC 5610 offers a power range of up to 90 kW (125 hp), an efficient vector control for an optimum torque curve and high starting torque.

Both series are designed with intelligent features such as expansion options through different I/O and fieldbus modules, a control panel with a parameter copy function or the standard integrated Modbus interface for networking.

For safety-relevant applications, we offer the EFC 5610 with STO (Safe Torque Off) option up to Cat. 4/PL e, SIL3 safety levels.



Highlights

- ▶ Power range
EFC 3610: 1 AC 230 V 0.4 kW (0.5 hp)
to 3 AC 400 V 22 kW (30 hp)
EFC 5610: 1 AC 230 V 0.4 kW (0.5 hp)
to 3 AC 400 V 90 kW (125 hp)
- ▶ Use in HD (heavy duty) or ND (normal duty) mode
- ▶ Operate permanent magnet motors with EFC 5610
- ▶ Built-in brake chopper (up to 22 kW/30 hp) and mains filter
- ▶ Integrated control panel for quick and easy start-up
- ▶ Expandability thanks to I/O and fieldbus modules



- ▶ Side-by-side mounting (up to 22 kW/30 hp)
- ▶ Flexible expandability, even with application-specific firmware (ASF)

The energy-efficient solution for almost all industry segments

EFC 3610, the energy-efficient solution for almost all industry segments:

- ▶ Pumps, compressors
- ▶ Ventilators, fans
- ▶ Woodworking machines
- ▶ Food and beverage manufacturing
- ▶ Paper manufacturing and processing
- ▶ Textile machines
- ▶ Environmental and processing systems
- ▶ Packaging machines

Typical applications

EFC 5610, the high-torque solution for special requirements:

- ▶ Logistics and material transport, conveyors, roller tables
- ▶ Processing systems: Mixers, agitators, centrifuges
- ▶ Building material machinery
- ▶ Building technology
- ▶ Plastic production and processing machines
- ▶ Machine tools



Perfect integration in a wide range of applications

Trouble-free assembly, simple to install and use: EFC 3610 and EFC 5610 frequency converters meet your engineering demands and the desires of your customers with respect to optimum handling as a whole and down to the smallest detail.

They impress as intelligent, economical and compact solutions in a wide variety of applications: in pumps, compressors, fans, conveyors, packaging machines and much more.



Intelligent features

- ▶ Detachable operator panel with memory function for fast parameter transfer and commissioning
- ▶ Integrated diagnostic LEDs for operating without an operating panel
- ▶ Potentiometer for command value
- ▶ Analog inputs and outputs with switchover option between current and voltage
- ▶ Digital inputs and outputs for direct PLC coupling
- ▶ Pulse-train input and output
- ▶ Simple parameter input and harmonized parameters throughout the whole series
- ▶ Clear visualization with 5-digit 7-segment LED display or optional LCD display
- ▶ Integrated sequence control (16 steps)
- ▶ Switchover option between 2 sets of parameters
- ▶ Integrated PID controller
- ▶ Pump operation with protective function in idle mode
- ▶ Bridge for short-term power failures
- ▶ Integrated energy counter
- ▶ ASF firmware for simple, functional expansion



Function extension through optional module support for I/O and communication

Electrical properties

- ▶ Power supply: 1 AC 230 V or 3 AC 400 V
- ▶ Power range:
 - 0.4 to 22 kW (0.5 to 30 hp) (EFC 3610)/
 - 90 kW (125 hp) (EFC 5610)
- ▶ High overload capacity: From 5.5 kW (7.5 hp) heavy duty (HD) mode at 150% for 60 sec or normal duty (ND) mode at 120% for 60 sec
- ▶ Optimum start torque: EFC 5610 with 200% at 0.5 Hz
- ▶ Motor temperature monitoring
- ▶ STO for EFC 5610 (up to Cat. 4/PL e, SIL 3)

Connectivity

- ▶ Extensive connectivity through Multi-Ethernet interface option (Sercos, PROFINET, EtherCAT, EtherNet/IP and Modbus/TCP), PROFIBUS and CANopen
- ▶ Open Core Interface
- ▶ Easy installation thanks to pluggable I/O connection terminals
- ▶ Flexible use with various I/O and fieldbus option modules

Advantages at a glance

- ▶ No external components thanks to the built-in brake chopper (up to 22 kW/30 hp) and built-in mains filter (EN61800-3 C3)
- ▶ EFC 5610 with efficient vector control for optimum torque curve
- ▶ Maximized energy efficiency and minimal engine noises through the option of using permanent magnet motors and an infinitely adjustable pulse frequency
- ▶ Significant energy savings and longer engine life through freely definable V/f curve and optimal torque control
- ▶ Fast start-up with the integrated operating panel
- ▶ Save space with side-by-side mounting up to 22 kW (30 hp)

Mechanical properties

- ▶ Space-saving installation due to compact design
- ▶ Easy top-hat rail installation up to 7.5 kW (10 hp) and mounting holes for easy device mounting
- ▶ Gapless side-by-side mounting up to 22 kW (30 hp)
- ▶ Easy wiring through pluggable connection terminals for the I/O connections
- ▶ Shield plate for optimum EMC properties (option)



Detachable operator panel with memory function for fast parameter transfer



Easy installation on TS35 (EN 50022) top-hat rails for devices up to 7.5 kW (10 hp)

Perfect service

- ▶ Long-term availability of components
- ▶ Fan replacement without tools (devices up to 0.75 kW/1 hp do not have any fans at all)
- ▶ PCB varnish to protect against dirt and damage
- ▶ Easy and fast device exchange
- ▶ Fast worldwide delivery of spare parts
- ▶ Worldwide repair and on-site service

Optimal easy-to-use handling

Rexroth technology stands for easy installation and implementation. And so everything you need for the fast commissioning and easy operation is the integrated user panel. Without PC or additional programming unit, the commissioning is really “easy”. For the configuration of several frequency converters with identical or similar parameterization, the copy function of the operating panel can be used.

Simply user-friendly: All parameter values are entered using robust keys. The 5-digit LED visualizes all operating variables in a clear and obvious form. The documentation leads you through the parameterization step by step and explains the menu structure.

With easy applications, the frequency converters can be controlled using both, the user panel and the digital and analog inputs and outputs.

For straightforward, fast commissioning, the frequency converter EFC x610 can be parameterized using the user panel. It goes without saying that EFC 3610 and EFC 5610 can also be configured intuitively using the integrated mini USB interface with the ConverterWorks software or IndraWorks at the PC. Using an option module, all EFC 3610 and EFC 5610 can be quickly extended by a Multi-Ethernet interface (with Sercos, PROFINET, EtherCAT, EtherNet/IP, Modbus/TCP) or fieldbus interface (PROFIBUS, CANopen) and can be integrated in all common automation solutions.

With the Multi-Ethernet interface and the OpenCore interface (OCI for Drives), EFC 3610/EFC 5610 is perfectly prepared for modern machine concepts in the environment for industry 4.0. Using most different programming languages, the EFC can – by means of the available libraries – be easily controlled.



The user panel: Inputs, functions and displays

7-segment LED display	<ul style="list-style-type: none"> ▶ Output frequency ▶ Parameter values ▶ Error codes
Status LED	<ul style="list-style-type: none"> ▶ FWD: motor rotates forward ▶ REV: motor rotates backwards ▶ Run: operating mode
Function key	▶ One menu level higher
Run button	▶ Start the connected motor
Potentiometer	▶ Command value
Arrow keys	<ul style="list-style-type: none"> ▶ Select parameter values ▶ Change parameter values
Stop button	<ul style="list-style-type: none"> ▶ Stop the connected motor ▶ Error reset
Set button	▶ Confirm the entered values

Technical data

Performance data

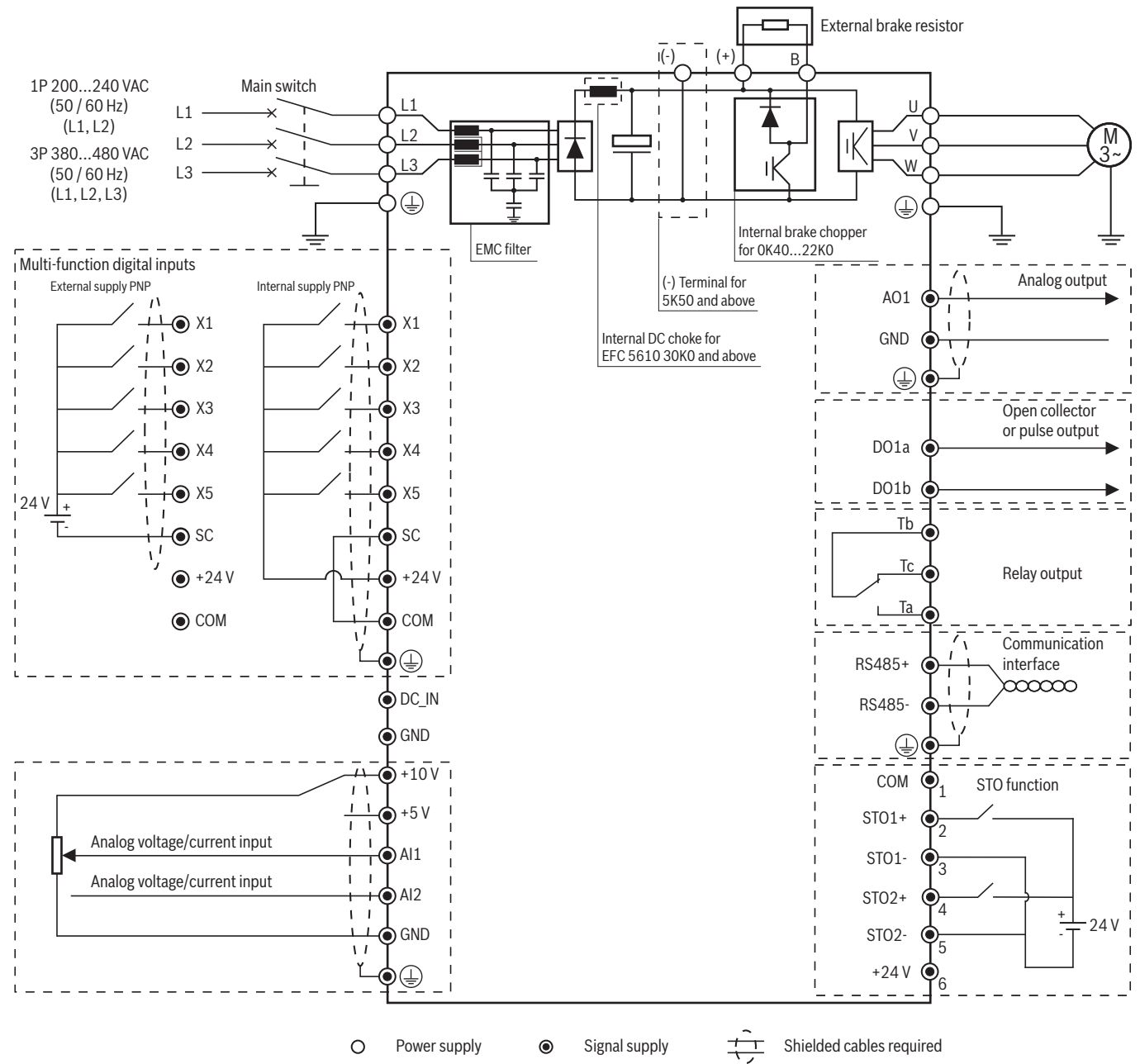
Type (1P 200 ... 240 V AC ±10%)	Heavy duty		Normal duty	
	Rated continuous output current A 200 V/240 V	Motor rating kW (hp)	Rated continuous output current A 200 V/240 V	Motor rating kW (hp)
EFC3610-0K40-1P2-/EFC5610-0K40-1P2-	2.4 / 2.0	0.4 (0.5)	-	-
EFC3610-0K75-1P2-/EFC5610-0K75-1P2-	4.1 / 3.4	0.75 (1.0)	-	-
EFC3610-1K50-1P2-/EFC5610-1K50-1P2-	7.3 / 6.1	1.5 (2.0)	-	-
EFC3610-2K20-1P2-/EFC5610-2K20-1P2-	10.1 / 8.4	2.2 (3.0)	-	-

Type (3P 380 ... 480 V AC -15%/+10%)	Heavy duty		Normal duty	
	Rated continuous output current A 380 V/480 V	Motor rating kW (hp)	Rated continuous output current A 380 V/480 V	Motor rating kW (hp)
EFC3610-0K40-3P4-/EFC5610-0K40-3P4-	1.3 / 1.1	0.4 (0.5)	-	-
EFC3610-0K75-3P4-/EFC5610-0K75-3P4-	2.3 / 1.8	0.75 (1.0)	-	-
EFC3610-1K50-3P4-/EFC5610-1K50-3P4-	4.0 / 3.2	1.5 (2.0)	-	-
EFC3610-2K20-3P4-/EFC5610-2K20-3P4-	5.6 / 4.4	2.2 (3.0)	-	-
EFC3610-3K00-3P4-/EFC5610-3K00-3P4-	7.4 / 5.9	3.0 (4.0)	-	-
EFC3610-4K00-3P4-/EFC5610-4K00-3P4-	9.7 / 7.7	4.0 (5.0)	-	-
EFC3610-5K50-3P4-/EFC5610-5K50-3P4-	12.7 / 10.0	5.5 (7.5)	16.8 / 13.3	7.5 (10)
EFC3610-7K50-3P4-/EFC5610-7K50-3P4-	16.8 / 13.3	7.5 (10)	24.3 / 19.2	11.0 (15)
EFC3610-11K0-3P4-/EFC5610-11K0-3P4-	24.3 / 19.2	11.0 (15)	32.4 / 25.6	15.0 (20)
EFC3610-15K0-3P4-/EFC5610-15K0-3P4-	32.4 / 25.6	15.0 (20)	39.2 / 31.0	18.5 (25)
EFC3610-18K5-3P4-/EFC5610-18K5-3P4-	39.2 / 31.0	18.5 (25)	45.0 / 36.0	22.0 (30)
EFC3610-22K0-3P4-/EFC5610-22K0-3P4-	45.0 / 36.0	22.0 (30)	60.8 / 48.1	30.0 (40)
EFC5610-30K0-3P4-	60.8 / 48.1	30.0 (40)	73.7 / 58.3	37.0 (50)
EFC5610-37K0-3P4-	73.7 / 58.3	37.0 (50)	89.1 / 71.0	45.0 (60)
EFC5610-45K0-3P4-	89.0 / 71.0	45.0 (60)	108.0 / 86.0	55.0 (75)
EFC5610-55K0-3P4-	108.0 / 86.0	55.0 (75)	147.0 / 116.0	75.0 (100)
EFC5610-75K0-3P4-	147.0 / 116.0	75.0 (100)	176.0 / 139.0	90.0 (125)
EFC5610-90K0-3P4-	176.0 / 139.0	90.0 (125)	212.0 / 168.0	110.0 (150)

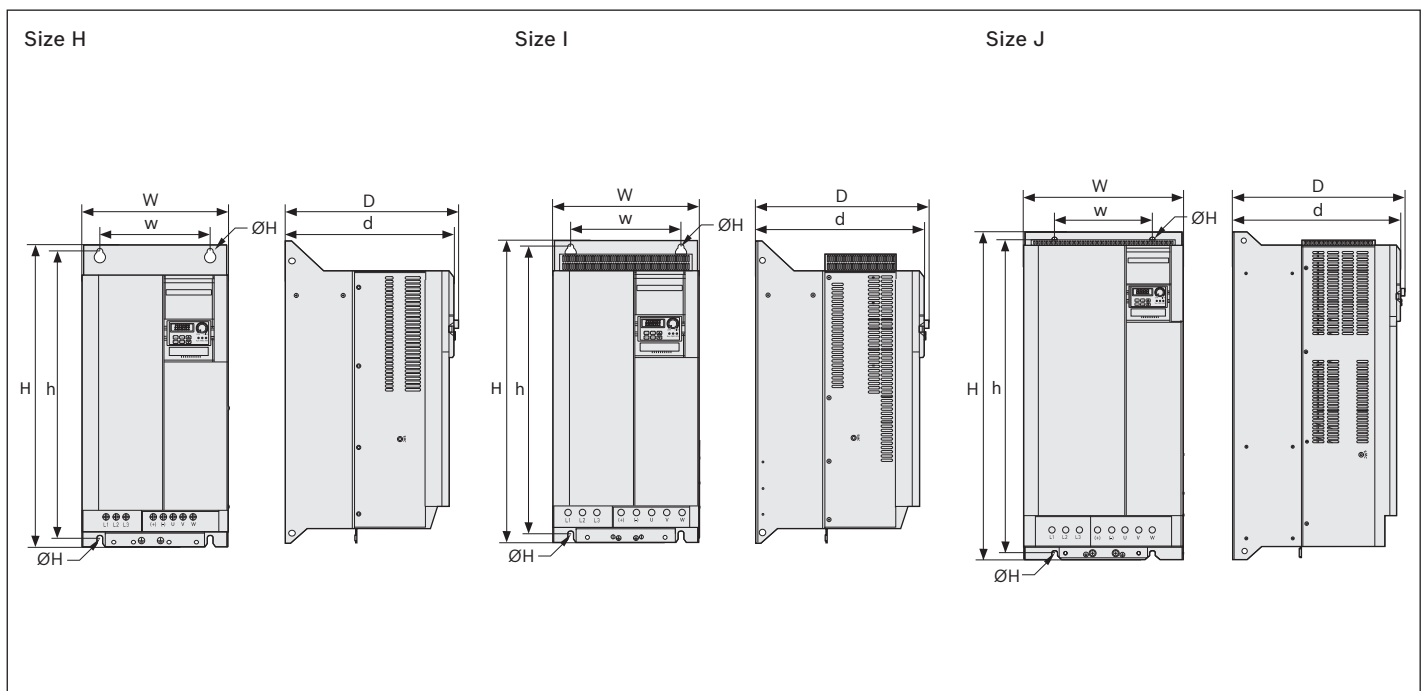
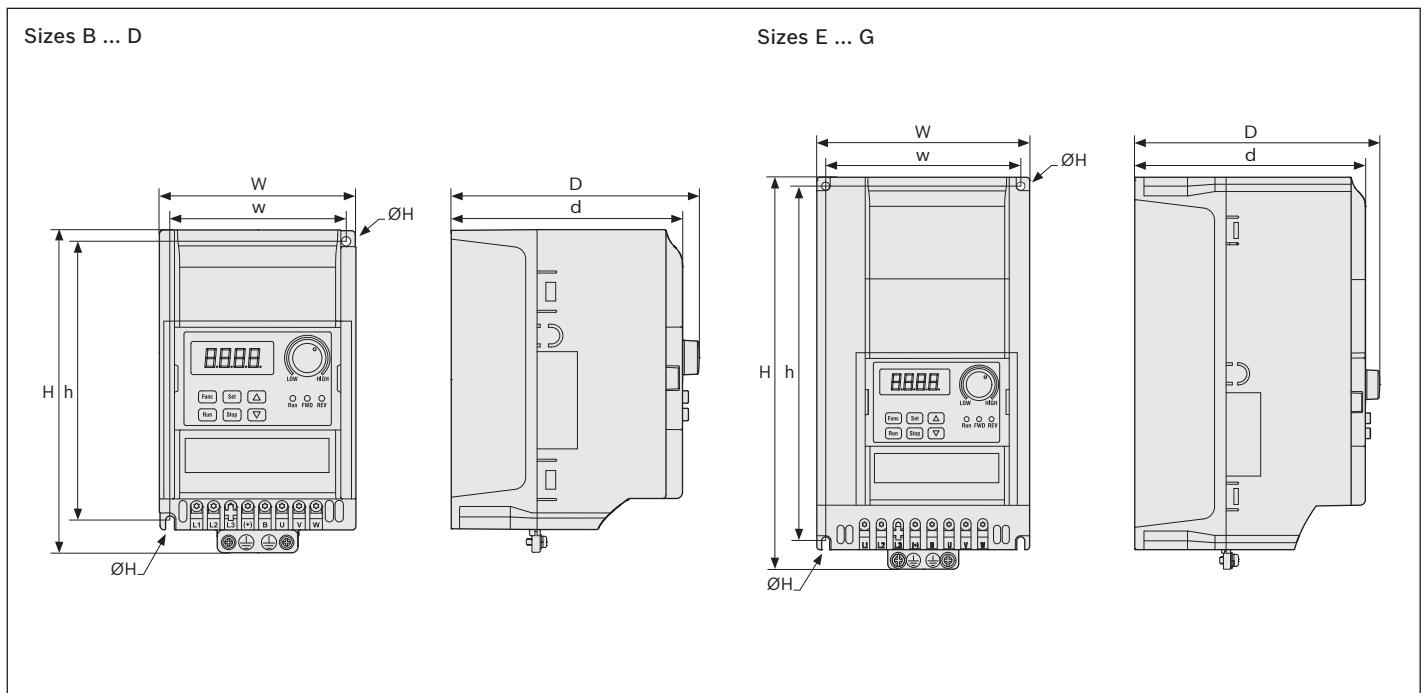
Type	EFC 3610/EFC 5610	
Mains voltage	V	1 AC 200 ... 240 V (-10%/+10%)/3 AC 380 ... 480 (-15%/+10%)
Mains frequency	Hz	50 ... 60 (± 5%)
Rated motor voltage	V	3-phase, 0 ... mains voltage
Output voltage	V	0 ... mains voltage
Output frequency	Hz	0 ... 400
Overload capacity	HD mode: 150% for 60 sec, 200% for 1 sec; ND mode: 120% for 60 sec	

Type	EFC 3610	EFC 5610	
Functions			
Control technology	V/f	V/f, FOC or SVC (sensorless vector control)	
Pulse width modulation (PWM) for converters with 0.4 ... 18.5 kW (0.5 ... 30 hp)	1 ... 15 kHz, adjustable in 1 kHz increments		
Speed control range	1:50	1:200	
Start-up torque	V/f	100% at 1.5 Hz; 150% at 3 Hz	
	SVC	Not available	
Frequency resolution	1/1000 of output frequency		
	Analog	0.01 Hz	
Frequency setting tolerance	Analog	0.4%	
	Digital	0.04%	
V/f curve	Linear, quadratic, can be set as desired		
Ramps for acceleration and braking	Linear, S curve		
DC disc brake	Start frequency	0 ... 50 Hz	
	Braking time	0 ... 10 sec	
Automatic PWM frequency adjustment	Load-dependent PWM frequency adjustment		
Integrated control	Integrated sequential circuit		
Controller	PID		
Bus systems	On-board: Modbus		
	Ext. options: PROFIBUS, CANopen, Multi-Ethernet		
No. 24 V DC digital inputs	5 (one 50 kHz pulse train)		
No. 24 V DC/50 mA digital outputs	1 (32 kHz pulse train)		
No. 230 V AC/30 V DC/3 A relay outputs	1		
No. 0 ... 10 V or 0 ... 20 mA analog inputs	2		
No. 0 ... 10 V or 0 ... 20 mA analog outputs	1		
STO	Not available	SIL3 Cat. 4/PL e (0.4 ... 22 kW option)	
Display	Dust cover with 5 diagnostic LEDs; 5-digit LED (optional); LCD (optional)		
Status LED	Rotational direction and operating state		
Brake			
Brake chopper	Internal up to 22 kW (30 hp)		
Brake resistor	External		
Motor cable length			
Internal C3 filter	0.4 ... 4 kW (0.5 ... 5 hp)	m	15
	5.5 ... 22 kW (7.5 ... 30 hp)	m	30
	30 ... 90 kW (40 ... 125 hp)	m	50
External C3 filter	0.4 ... 4 kW (0.5 ... 5 hp)	m	30
	5.5 ... 22 kW (7.5 ... 30 hp)	m	50
	30 ... 90 kW (40 ... 125 hp)	m	100
Ambient conditions			
Ambient temperature (in operation)	-10 °C ... 45 °C (1.5% output power derating per 1° from 45 °C ... 55 °C)		
Max. operating elevation	Derating at 1,000 m or higher (1% of output power per 100 m)		
Relative humidity	< 90% (no condensation)		
IP rating	IP20		
Certifications	CE, UL, cUL, EAC, C-Tick (RCM) , RoHS, TÜV (with STO devices)		

Block diagram



Device dimensions



Size	Type (1P 200 ... 240 V AC ±10 %)	Dimensions [mm]							Mass [kg]
		W	w	H	h	D	d	ØH	
B	EFC3610-0K40-1P2- / EFC5610-0K40-1P2-	95	66	166	156	167	159	4.5	1.5
B	EFC3610-0K75-1P2- / EFC5610-0K75-1P2-	95	66	166	156	167	159	4.5	1.5
C	EFC3610-1K50-1P2- / EFC5610-1K50-1P2-	95	66	206	196	170	162	4.5	1.9
D	EFC3610-2K20-1P2- / EFC5610-2K20-1P2-	120	80	231	221	175	167	4.5	2.6
	(3P 380 ... 480 V AC -15 %/+10 %)	W	w	H	h	D	d	ØH	
B	EFC3610-0K40-3P4- / EFC5610-0K40-3P4-	95	66	166	156	167	159	4.5	1.5
B	EFC3610-0K75-3P4- / EFC5610-0K75-3P4-	95	66	166	156	167	159	4.5	1.5
C	EFC3610-1K50-3P4- / EFC5610-1K50-3P4-	95	66	206	196	170	162	4.5	1.9
C	EFC3610-2K20-3P4- / EFC5610-2K20-3P4-	95	66	206	196	170	162	4.5	1.9
D	EFC3610-3K00-3P4- / EFC5610-3K00-3P4-	120	80	231	221	175	167	4.5	2.6
D	EFC3610-4K00-3P4- / EFC5610-4K00-3P4-	120	80	231	221	175	167	4.5	2.6
E	EFC3610-5K50-3P4- / EFC5610-5K50-3P4-	130	106	243	228	233	225	6.5	3.9
E	EFC3610-7K50-3P4- / EFC5610-7K50-3P4-	130	106	243	228	233	225	6.5	4.3
F	EFC3610-11K0-3P4- / EFC5610-11K0-3P4-	150	125	283	265	233	225	6.5	5.7
F	EFC3610-15K0-3P4- / EFC5610-15K0-3P4-	150	125	283	265	233	225	6.5	6.4
G	EFC3610-18K5-3P4- / EFC5610-18K5-3P4-	165	140	315	300	241	233	6.5	8
G	EFC3610-22K0-3P4- / EFC5610-22K0-3P4-	165	140	315	300	241	233	6.5	8.5
H	EFC5610-30K0-3P4-	250	200	510	492	272	264	7	27.5
H	EFC5610-37K0-3P4-	250	200	510	492	272	264	7	29.5
I	EFC5610-45K0-3P4-	265	200	585	555	325	317	11	39.0
I	EFC5610-55K0-3P4-	265	200	585	555	325	317	11	42.0
J	EFC5610-75K0-3P4-	325	200	760	727	342	334	11	54.0
J	EFC5610-90K0-3P4-	325	200	760	727	342	334	11	61.0

Ordering information

EFC3610-0K40-1P2-MDA-7P-NNNN-L1NN	
Motor control EFC 3610 = V/f control EFC 5610 = SVC vector control	Version NN = without L1 = STO (Safe Torque Off)
Continuous power E.g., 0K40 = 0.4 kW	Display NN = without (dust cover) 7P = 7-segment LED display
Power connection 1P2 = 1 x AC 200 ... 240 V 3P4 = 3 x AC 380 ... 480 V	IP rating A = IP20
Fieldbus interface M = RTU Modbus	EMC rating D = class C3 – industrial

Type code
Frequency converter
EFC 3610/EFC 5610

EFC 3610 ordering information

Description	Type code	Material number
EFC 3610 0.4 kW, 1 AC 200 ... 240 V, 50/60 Hz, 2.4 A, LED display	EFC3610-0K40-1P2-MDA-7P-NNNNN-NNNN	R912005713
EFC 3610 0.75 kW, 1 AC 200 ... 240 V, 50/60 Hz, 4.1 A, LED display	EFC3610-0K75-1P2-MDA-7P-NNNNN-NNNN	R912005714
EFC 3610 1.5 kW, 1 AC 200 ... 240 V, 50/60 Hz, 7.3 A, LED display	EFC3610-1K50-1P2-MDA-7P-NNNNN-NNNN	R912005715
EFC 3610 2.2 kW, 1 AC 200 ... 240 V, 50/60 Hz, 10.1 A, LED display	EFC3610-2K20-1P2-MDA-7P-NNNNN-NNNN	R912005716
EFC 3610 0.4 kW, 3 AC 380 ... 480 V, 50/60 Hz, 1.3 A, LED display	EFC3610-0K40-3P4-MDA-7P-NNNNN-NNNN	R912005717
EFC 3610 0.75 kW, 3 AC 380 ... 480 V, 50/60 Hz, 2.3 A, LED display	EFC3610-0K75-3P4-MDA-7P-NNNNN-NNNN	R912005718
EFC 3610 1.5 kW, 3 AC 380 ... 480 V, 50/60 Hz, 4.0 A, LED display	EFC3610-1K50-3P4-MDA-7P-NNNNN-NNNN	R912005719
EFC 3610 2.2 kW, 3 AC 380 ... 480 V, 50/60 Hz, 5.6 A, LED display	EFC3610-2K20-3P4-MDA-7P-NNNNN-NNNN	R912005720
EFC 3610 3.0 kW, 3 AC 380 ... 480 V, 50/60 Hz, 7.4 A, LED display	EFC3610-3K00-3P4-MDA-7P-NNNNN-NNNN	R912005721
EFC 3610 4.0 kW, 3 AC 380 ... 480 V, 50/60 Hz, 9.7 A, LED display	EFC3610-4K00-3P4-MDA-7P-NNNNN-NNNN	R912005722
EFC 3610 5.5 kW, 3 AC 380 ... 480 V, 50/60 Hz, 12.7 A, LED display	EFC3610-5K50-3P4-MDA-7P-NNNNN-NNNN	R912005091
EFC 3610 7.5 kW, 3 AC 380 ... 480 V, 50/60 Hz, 16.8 A, LED display	EFC3610-7K50-3P4-MDA-7P-NNNNN-NNNN	R912005092
EFC 3610 11 kW, 3 AC 380 ... 480 V, 50/60 Hz, 24.3 A, LED display	EFC3610-11K0-3P4-MDA-7P-NNNNN-NNNN	R912005093
EFC 3610 15 kW, 3 AC 380 ... 480 V, 50/60 Hz, 32.4 A, LED display	EFC3610-15K0-3P4-MDA-7P-NNNNN-NNNN	R912005094
EFC 3610 18.5 kW, 3 AC 380 ... 480 V, 50/60 Hz, 39.2 A, LED display	EFC3610-18K5-3P4-MDA-7P-NNNNN-NNNN	R912005723
EFC 3610 22.0 kW, 3 AC 380 ... 480 V, 50/60 Hz, 45.2 A, LED display	EFC3610-22K0-3P4-MDA-7P-NNNNN-NNNN	R912006279
EFC 3610 0.4 kW, 1 AC 200 ... 240 V, 50/60 Hz, 2.4 A, dust cover	EFC3610-0K40-1P2-MDA-NN-NNNNN-NNNN	R912005698
EFC 3610 0.75 kW, 1 AC 200 ... 240 V, 50/60 Hz, 4.1 A, dust cover	EFC3610-0K75-1P2-MDA-NN-NNNNN-NNNN	R912005699
EFC 3610 1.5 kW, 1 AC 200 ... 240 V, 50/60 Hz, 7.3 A, dust cover	EFC3610-1K50-1P2-MDA-NN-NNNNN-NNNN	R912005700
EFC 3610 2.2 kW, 1 AC 200 ... 240 V, 50/60 Hz, 10.1 A, dust cover	EFC3610-2K20-1P2-MDA-NN-NNNNN-NNNN	R912005701
EFC 3610 0.4 kW, 3 AC 380 ... 480 V, 50/60 Hz, 1.3 A, dust cover	EFC3610-0K40-3P4-MDA-NN-NNNNN-NNNN	R912005702
EFC 3610 0.75 kW, 3 AC 380 ... 480 V, 50/60 Hz, 2.3 A, dust cover	EFC3610-0K75-3P4-MDA-NN-NNNNN-NNNN	R912005703
EFC 3610 1.5 kW, 3 AC 380 ... 480 V, 50/60 Hz, 4.0 A, dust cover	EFC3610-1K50-3P4-MDA-NN-NNNNN-NNNN	R912005704
EFC 3610 2.2 kW, 3 AC 380 ... 480 V, 50/60 Hz, 5.6 A, dust cover	EFC3610-2K20-3P4-MDA-NN-NNNNN-NNNN	R912005705
EFC 3610 3.0 kW, 3 AC 380 ... 480 V, 50/60 Hz, 7.4 A, dust cover	EFC3610-3K00-3P4-MDA-NN-NNNNN-NNNN	R912005706
EFC 3610 4.0 kW, 3 AC 380 ... 480 V, 50/60 Hz, 9.7 A, dust cover	EFC3610-4K00-3P4-MDA-NN-NNNNN-NNNN	R912005707
EFC 3610 5.5 kW, 3 AC 380 ... 480 V, 50/60 Hz, 12.7 A, dust cover	EFC3610-5K50-3P4-MDA-NN-NNNNN-NNNN	R912005708
EFC 3610 7.5 kW, 3 AC 380 ... 480 V, 50/60 Hz, 16.8 A, dust cover	EFC3610-7K50-3P4-MDA-NN-NNNNN-NNNN	R912005709
EFC 3610 11 kW, 3 AC 380 ... 480 V, 50/60 Hz, 24.3 A, dust cover	EFC3610-11K0-3P4-MDA-NN-NNNNN-NNNN	R912005710
EFC 3610 15 kW, 3 AC 380 ... 480 V, 50/60 Hz, 32.4 A, dust cover	EFC3610-15K0-3P4-MDA-NN-NNNNN-NNNN	R912005711
EFC 3610 18.5 kW, 3 AC 380 ... 480 V, 50/60 Hz, 39.2 A, dust cover	EFC3610-18K5-3P4-MDA-NN-NNNNN-NNNN	R912005712
EFC 3610 22.0 kW, 3 AC 380 ... 480 V, 50/60 Hz, 45.2 A, dust cover	EFC3610-22K0-3P4-MDA-NN-NNNNN-NNNN	R912006278

EFC 5610 with STO 0.4 ... 90 kW (0.5 ... 125 hp) ordering information

Description	Type code	Material number
EFC 5610 0.4 kW, 1 AC 200 ... 240 V, 50/60 Hz, 2.4 A, LED display, STO	EFC5610-0K40-1P2-MDA-7P-NNNNN-L1NN	R912007268
EFC 5610 0.75 kW, 1 AC 200 ... 240 V, 50/60 Hz, 4.1 A, LED display, STO	EFC5610-0K75-1P2-MDA-7P-NNNNN-L1NN	R912007269
EFC 5610 1.5 kW, 1 AC 200 ... 240 V, 50/60 Hz, 7.3 A, LED display, STO	EFC5610-1K50-1P2-MDA-7P-NNNNN-L1NN	R912007270
EFC 5610 2.2 kW, 1 AC 200 ... 240 V, 50/60 Hz, 10.1 A, LED display, STO	EFC5610-2K20-1P2-MDA-7P-NNNNN-L1NN	R912007271
EFC 5610 0.4 kW, 3 AC 380 ... 480 V, 50/60 Hz, 1.3 A, LED display, STO	EFC5610-0K40-3P4-MDA-7P-NNNNN-L1NN	R912007272
EFC 5610 0.75 kW, 3 AC 380 ... 480 V, 50/60 Hz, 2.3 A, LED display, STO	EFC5610-0K75-3P4-MDA-7P-NNNNN-L1NN	R912007273
EFC 5610 1.5 kW, 3 AC 380 ... 480 V, 50/60 Hz, 4.0 A, LED display, STO	EFC5610-1K50-3P4-MDA-7P-NNNNN-L1NN	R912007274
EFC 5610 2.2 kW, 3 AC 380 ... 480 V, 50/60 Hz, 5.6 A, LED display, STO	EFC5610-2K20-3P4-MDA-7P-NNNNN-L1NN	R912007275
EFC 5610 3.0 kW, 3 AC 380 ... 480 V, 50/60 Hz, 7.4 A, LED display, STO	EFC5610-3K00-3P4-MDA-7P-NNNNN-L1NN	R912007276
EFC 5610 4.0 kW, 3 AC 380 ... 480 V, 50/60 Hz, 9.7 A, LED display, STO	EFC5610-4K00-3P4-MDA-7P-NNNNN-L1NN	R912007277
EFC 5610 5.5 kW, 3 AC 380 ... 480 V, 50/60 Hz, 12.7 A, LED display, STO	EFC5610-5K50-3P4-MDA-7P-NNNNN-L1NN	R912007278
EFC 5610 7.5 kW, 3 AC 380 ... 480 V, 50/60 Hz, 16.8 A, LED display, STO	EFC5610-7K50-3P4-MDA-7P-NNNNN-L1NN	R912007279
EFC 5610 11 kW, 3 AC 380 ... 480 V, 50/60 Hz, 24.3 A, LED display, STO	EFC5610-11K0-3P4-MDA-7P-NNNNN-L1NN	R912007280
EFC 5610 15 kW, 3 AC 380 ... 480 V, 50/60 Hz, 32.4 A, LED display, STO	EFC5610-15K0-3P4-MDA-7P-NNNNN-L1NN	R912007281
EFC 5610 18.5 kW, 3 AC 380 ... 480 V, 50/60 Hz, 39.2 A, LED display, STO	EFC5610-18K5-3P4-MDA-7P-NNNNN-L1NN	R912007282
EFC 5610 22 kW, 3 AC 380 ... 480 V, 50/60 Hz, 45.2 A, LED display, STO	EFC5610-22K0-3P4-MDA-7P-NNNNN-L1NN	R912007283
EFC 5610 30 kW, 3 AC 380 ... 480 V, 50/60 Hz, 60.8 A, LED display, STO	EFC5610-30K0-3P4-MDA-7P-NNNNN-L1NN	R912005981
EFC 5610 37 kW, 3 AC 380 ... 480 V, 50/60 Hz, 73.7 A, LED display, STO	EFC5610-37K0-3P4-MDA-7P-NNNNN-L1NN	R912005982
EFC 5610 45 kW, 3 AC 380 ... 480 V, 50/60 Hz, 89.0 A, LED display, STO	EFC5610-45K0-3P4-MDA-7P-NNNNN-L1NN	R912005983
EFC 5610 55 kW, 3 AC 380 ... 480 V, 50/60 Hz, 108 A, LED display, STO	EFC5610-55K0-3P4-MDA-7P-NNNNN-L1NN	R912005984
EFC 5610 75 kW, 3 AC 380 ... 480 V, 50/60 Hz, 147 A, LED display, STO	EFC5610-75K0-3P4-MDA-7P-NNNNN-L1NN	R912005985
EFC 5610 90 kW, 3 AC 380 ... 480 V, 50/60 Hz, 176 A, LED display, STO	EFC5610-90K0-3P4-MDA-7P-NNNNN-L1NN	R912005986
EFC 5610 0.4 kW, 1 AC 200 ... 240 V, 50/60 Hz, 2.4 A, dust cover, STO	EFC5610-0K40-1P2-MDA-NN-NNNNN-L1NN	R912007066
EFC 5610 0.75 kW, 1 AC 200 ... 240 V, 50/60 Hz, 4.1 A, dust cover, STO	EFC5610-0K75-1P2-MDA-NN-NNNNN-L1NN	R912007067
EFC 5610 1.5 kW, 1 AC 200 ... 240 V, 50/60 Hz, 7.3 A, dust cover, STO	EFC5610-1K50-1P2-MDA-NN-NNNNN-L1NN	R912007068
EFC 5610 2.2 kW, 1 AC 200 ... 240 V, 50/60 Hz, 10.1 A, dust cover, STO	EFC5610-2K20-1P2-MDA-NN-NNNNN-L1NN	R912007069
EFC 5610 0.4 kW, 3 AC 380 ... 480 V, 50/60 Hz, 1.3 A, dust cover, STO	EFC5610-0K40-3P4-MDA-NN-NNNNN-L1NN	R912007042
EFC 5610 0.75 kW, 3 AC 380 ... 480 V, 50/60 Hz, 2.3 A, dust cover, STO	EFC5610-0K75-3P4-MDA-NN-NNNNN-L1NN	R912007043
EFC 5610 1.5 kW, 3 AC 380 ... 480 V, 50/60 Hz, 4.0 A, dust cover, STO	EFC5610-1K50-3P4-MDA-NN-NNNNN-L1NN	R912007044
EFC 5610 2.2 kW, 3 AC 380 ... 480 V, 50/60 Hz, 5.6 A, dust cover, STO	EFC5610-2K20-3P4-MDA-NN-NNNNN-L1NN	R912007045
EFC 5610 3.0 kW, 3 AC 380 ... 480 V, 50/60 Hz, 7.4 A, dust cover, STO	EFC5610-3K00-3P4-MDA-NN-NNNNN-L1NN	R912007046
EFC 5610 4.0 kW, 3 AC 380 ... 480 V, 50/60 Hz, 9.7 A, dust cover, STO	EFC5610-4K00-3P4-MDA-NN-NNNNN-L1NN	R912007047
EFC 5610 5.5 kW, 3 AC 380 ... 480 V, 50/60 Hz, 12.7 A, dust cover, STO	EFC5610-5K50-3P4-MDA-NN-NNNNN-L1NN	R912007048
EFC 5610 7.5 kW, 3 AC 380 ... 480 V, 50/60 Hz, 16.8 A, dust cover, STO	EFC5610-7K50-3P4-MDA-NN-NNNNN-L1NN	R912007049
EFC 5610 11 kW, 3 AC 380 ... 480 V, 50/60 Hz, 24.3 A, dust cover, STO	EFC5610-11K0-3P4-MDA-NN-NNNNN-L1NN	R912007050
EFC 5610 15 kW, 3 AC 380 ... 480 V, 50/60 Hz, 32.4 A, dust cover, STO	EFC5610-15K0-3P4-MDA-NN-NNNNN-L1NN	R912007051
EFC 5610 18.5 kW, 3 AC 380 ... 480 V, 50/60 Hz, 39.2 A, dust cover, STO	EFC5610-18K5-3P4-MDA-NN-NNNNN-L1NN	R912007266
EFC 5610 22 kW, 3 AC 380 ... 480 V, 50/60 Hz, 45.2 A, dust cover, STO	EFC5610-22K0-3P4-MDA-NN-NNNNN-L1NN	R912007267
EFC 5610 30 kW, 3 AC 380 ... 480 V, 50/60 Hz, 60.8 A, dust cover, STO	EFC5610-30K0-3P4-MDA-NN-NNNNN-L1NN	R912005988
EFC 5610 37 kW, 3 AC 380 ... 480 V, 50/60 Hz, 73.7 A, dust cover, STO	EFC5610-37K0-3P4-MDA-NN-NNNNN-L1NN	R912005989
EFC 5610 45 kW, 3 AC 380 ... 480 V, 50/60 Hz, 89.0 A, dust cover, STO	EFC5610-45K0-3P4-MDA-NN-NNNNN-L1NN	R912005990
EFC 5610 55 kW, 3 AC 380 ... 480 V, 50/60 Hz, 108 A, dust cover, STO	EFC5610-55K0-3P4-MDA-NN-NNNNN-L1NN	R912005991
EFC 5610 75 kW, 3 AC 380 ... 480 V, 50/60 Hz, 147 A, dust cover, STO	EFC5610-75K0-3P4-MDA-NN-NNNNN-L1NN	R912005992
EFC 5610 90 kW, 3 AC 380 ... 480 V, 50/60 Hz, 176 A, dust cover, STO	EFC5610-90K0-3P4-MDA-NN-NNNNN-L1NN	R912005993

Accessories

Description	Type code	Material number
Shield plate for 0.4 ... 4 kW (0.5 ... 5 hp)	FEAM03.1-001-NN-NNNN	R912006012
Shield plate for 5.5 ... 22 kW (7.5 ... 30 hp)	FEAM03.1-002-NN-NNNN	R912006013
Shield plate for 30 ... 37 kW (40 ... 50 hp)	FEAM03.1-003-NN-NNNN	R912006460
Shield plate for 45 ... 90 kW (60 ... 125 hp)	FEAM03.1-004-NN-NNNN	R912006461
Brake chopper for EFC5610 30 ... 55 kW (40 ... 75 hp)	FEAE07.1-EA1-NNNN	R912007181
Brake chopper for EFC5610 75 ... 90 kW (100 ... 125 hp)	FEAE07.1-EA2-NNNN	R912007182
LOT user panel, IP20, medium gray (RAL7046)	FPCC02.1-EANN-7P-NNNN	R912005783
LCD user panel, IP20, medium gray (RAL7046)	FPCC02.1-EANN-LP-NNNN	R912006375
Dust cover, IP20, medium gray (RAL7046)	FPCC02.1-EANN-NN-NNNN	R912005785
Mounting plate for IP20 user panel, medium gray (RAL7046)	FEAM02.1-EA-NN-NNNN	R912005787
2 m connection cable for user panel	FRKS0006/002.0	R912004657
3 m connection cable for user panel	FRKS0004/003.0	R912004410
Replacement plug set for EFC x610	FEAE05.1-B2-NNNN	R912006054

Brake resistors

Description	Type code	Material number
Brake resistor, 60 W 400 Ω xFC 230 V 400 W 10% OT	FCAR01.1W0060-N400R0-B-03-NNNN	R911370664
Brake resistor, 100 W 400 Ω xFC 230 V 400 W 20% OT	FCAR01.1W0100-N400R0-B-03-NNNN	R911370667
Brake resistor, 100 W 190 Ω xFC 230 V 750 W 10% OT	FCAR01.1W0100-N190R0-B-03-NNNN	R911370666
Brake resistor, 200 W 190 Ω xFC 230 V 750 W 20% OT	FCAR01.1W0200-N190R0-B-03-NNNN	R911370670
Brake resistor, 200 W 95 Ω xFC 230 V 1.5 kW 10% OT	FCAR01.1W0200-N095R0-B-03-NNNN	R911370669
Brake resistor, 400 W 95 Ω xFC 230 V 1.5 kW 20% OT	FCAR01.1W0400-N095R0-B-03-NNNN	R911370676
Brake resistor, 300 W 65 Ω xFC 230 V 2.2 kW 10% OT	FCAR01.1W0300-N065R0-B-03-NNNN	R911370674
Brake resistor, 500 W 65 Ω xFC 230 V 2.2 kW 20% OT	FCAR01.1W0500-N065R0-B-03-NNNN	R911370677
Brake resistor, 80 W 750 Ω xFC 400 V 400 W & 750 W 10% OT	FCAR01.1W0080-N750R0-B-05-NNNN	R911370665
Brake resistor, 150 W 750 Ω xFC 400 V 400 W & 750 W 20% OT	FCAR01.1W0150-N750R0-B-05-NNNN	R911370668
Brake resistor, 260 W 400 Ω xFC 400 V 1.5 kW 10% OT	FCAR01.1W0260-N400R0-B-05-NNNN	R911370671
Brake resistor, 520 W 350 Ω xFC 400 V 1.5 kW 20% OT	FCAR01.1W0520-N350R0-A-05-NNNN	R911370678
Brake resistor, 260 W 250 Ω xFC 400 V 2.2 kW 10% OT	FCAR01.1W0260-N250R0-B-05-NNNN	R911370673
Brake resistor, 520 W 230 Ω xFC 400 V 2.2 kW 20% OT	FCAR01.1W0520-N230R0-A-05-NNNN	R911370679
Brake resistor, 390 W 150 Ω xFC 400 V 3.0 kW & 4.0 kW 10% OT	FCAR01.1W0390-N150R0-B-05-NNNN	R911370675
Brake resistor, 780 W 140 Ω xFC 400 V 3.0 kW & 4.0 kW 20% OT	FCAR01.1W0780-N140R0-A-05-NNNN	R911370681
Brake resistor, 780 W 75 Ω xFC 400 V 5.5 kW & 7.5 kW 10% OT	FCAR01.1W0780-N075R0-A-05-NNNN	R911370680
Brake resistor, 1560 W 70 Ω xFC 400 V 5.5 kW & 7.5 kW 20% OT	FCAR01.1W1K56-N070R0-A-05-NNNN	R911370683
Brake resistor, 1560 W 40 Ω xFC 400 V 11 kW & 15 kW 10% OT	FCAR01.1W1K56-N040R0-A-05-NNNN	R911370682
Brake resistor, 2000 W 47 Ω xFC 400 V 11 kW 20% OT	FCAR01.1W02K0-N047R0-A-05-NNNN	R911370684
Brake resistor, 3000 W 34 Ω xFC 400 V 15 kW 20% OT	FCAR01.1W03K0-N034R0-A-05-NNNN	R911370685
Brake resistor, 3500 W 18.9 Ω xFC 400 V 18.5 & 22 kW 10% OT	FCAR01.1W3K50-N018R9-A-05-NNNN	R911378270
Brake resistor, 10000 W 28 Ω xFC 400 V 18.5 kW 20% OT	FCAR01.1W10K0-N028R0-A-05-NNNN	R911370687
Brake resistor, 4000 W 16 Ω xFC 400 V 30 & 37 kW 10% OT	FCAR01.1W4K00-N016R0-A-05-NNNN	R911378271
Brake resistor, 6500 W 10 Ω xFC 400 V 45 & 55 kW 10% OT	FCAR01.1W6K50-N010R0-A-05-NNNN	R911378272
Brake resistor, 10000 W 6 Ω xFC 400 V 75 & 90 kW 10% OT	FCAR01.1W10K0-N006R0-A-05-NNNN	R911378273

Option cards

Description	Type code	Material number
Option card module	FEAE02.1-EA-NNNN	R912006052
Relay card	FEAE04.1-IO2-NNNN	R912006051
I/O card	FEAE04.1-IO1-NNNN	R912006050
TTL/HTL Encoder card	FEAE04.1-EN1-NNNN	R912006414
Resolver card	FEAE04.1-EN2-NNNN	R912006415
I/O Plus card	FEAE04.1-IO3-NNNN	R912007257
CANopen interface	FEAE03.1-CO-NNNN	R912006133
PROFIBUS interface	FEAE03.1-PB-NNNN	R912006132
Multi-Ethernet interface	FEAE03.1-ET-NNNN	R912006134

Mains filters

Description	Type code	Material number
Mains filter, EFC x610 230 V 0.4 ... 0.75 kW (0.5 ... 1.0 hp)	FCAF01.1A-A050-E-0010-N-03-NNNN	R911370804
Mains filter, EFC x610 230 V 1.5 kW (2.0 hp)	FCAF01.1A-A050-E-0020-N-03-NNNN	R911370805
Mains filter, EFC x610 230 V 2.2 kW (3.0 hp)	FCAF01.1A-A050-E-0025-N-03-NNNN	R911370806
Mains filter, EFC x610 400 V 0.4 ... 4.0 kW (0.5 ... 5.0 hp)	FCAF01.1A-A050-E-0025-A-05-NNNN	R911370807
Mains filter, EFC x610 400 V 5.5 ... 7.5 kW (7.5 ... 10 hp)	FCAF01.1A-A050-E-0036-A-05-NNNN	R911370811
Mains filter, EFC x610 400 V 11 ... 15 kW (15 ... 20 hp)	FCAF01.1A-A050-E-0050-A-05-NNNN	R911370813
Mains filter, EFC x610 400 V 18.5 kW (25 hp)	FCAF01.1A-A050-E-0066-A-05-NNNN	R911371977
Mains filter, EFC x610 400 V 22 kW (30 hp)	FCAF01.1A-A050-E-0090-A-05-NNNN	R911370814
Mains filter, EFC 5610 400 V 30 ... 37 kW (40 ... 50 hp)	FCAF01.1A-A100-E-0120-A-05-NNNN	R911370815
Mains filter, EFC 5610 400 V 45 ... 55 kW (60 ... 75 hp)	FCAF01.1A-A100-E-0250-N-05-NNNN	R911370817
Mains filter, EFC 5610 400 V 75 ... 90 kW (100 ... 125 hp)	FCAF01.1A-A100-E-0320-N-05-NNNN	R911370818

Software

Start-up and data back-up with the PC

Using the freely available ConverterWorks PC software, Rexroth frequency converters EFC 3610 and EFC 5610 can be commissioned and remotely controlled. The connection with the PC is established via a standard USB interface. Using the software it is easily possible to specify converter speeds, to control start and stop and to adjust the parameters. Parameters can be saved and stored in order to ensure reliable archiving. Apart from that, the software provides additional functions which are not available for the local operation of the converter via the operating panel. Via the Multi-Ethernet interface, EFC frequency converters can be easily integrated into Rexroth control systems. Thus engineering is made possible via IndraWorks.

System requirements for using the software on a PC

- ▶ Processor: Intel Pentium or higher
- ▶ Operating system: Windows 7
- ▶ Display resolution: 1024 x 768
- ▶ Memory: 1 GB free hard disk space

The software is available in the download section of the online catalog:

www.boschrexroth.com/EFCx610



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