

# 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 CO<sub>2</sub> 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, 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.

The application in automation systems is made really easy thanks to the integrated filter and brake chopper (up to 22 kW) and analog inputs and outputs with switchover options between a current and voltage interface. Clever installation technology with plug-in terminals and installation on standard top-hat rails thereby saves valuable time.



## Highlights

- ▶ Power range  
EFC 3610: 1 x AC 230 V 0.4 kW to 3 x AC 400 V 22 kW  
EFC 5610: 1 x AC 230 V 0.4 kW to 3 x AC 400 V 90 kW
- ▶ 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) 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)
- ▶ 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
- ▶ 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



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

**Perfect service**

- ▶ Long-term availability of components
- ▶ Fan replacement without tools (devices up to 0.75 kW 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

**Electrical properties**

- ▶ Power supply: 1 x AC 230 V or 3 x AC 400 V
- ▶ Power range: 0.4 to 22 kW (EFC 3610)/90 kW (EFC 5610)
- ▶ High overload capacity: 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

**Mechanical properties**

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

**Advantages at a glance**

- ▶ Expanded power range from 5.5 kW and use with HD (heavy duty)/ND (normal duty) configuration
- ▶ Significant energy savings and longer engine life through freely definable V/f curve and optimal torque control
- ▶ 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
- ▶ No external components thanks to the built-in brake chopper (up to 22 kW) and built-in mains filter (EN61800-3 C3)
- ▶ Fast start-up with the integrated operating panel
- ▶ Save space with side-by-side mounting up to 22 kW
- ▶ Extreme connectivity thanks to multi-Ethernet interface (sercos, PROFINET, EtherCAT, EtherNet/IP and Modbus/TCP)



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

- ▶ Easy installation thanks to pluggable I/O connection terminals
- ▶ Flexible use with various I/O and fieldbus option modules

# Optimal easy-to-use handling

Rexroth technology stands for easy installation and applicability. Thus the integrated control panel is everything that is needed for fast start-up and simple operation. Without a PC or an additional programming device, start-up really is easy. The copy function of the operator panel can be used to configure several frequency converters with the same or similar parameters.

Simply user-friendly: All parameter values are entered with robust keys. The 5-digit LED display clearly and precisely visualizes all operating variables. The documentation takes you step by step through the parameterization and explains the menu structure.

You can use the integrated mini-USB programming interface to simply back up, archive and restore parameters with any PC.



## The user panel: Inputs, functions and displays

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

# Technical data

## Performance data

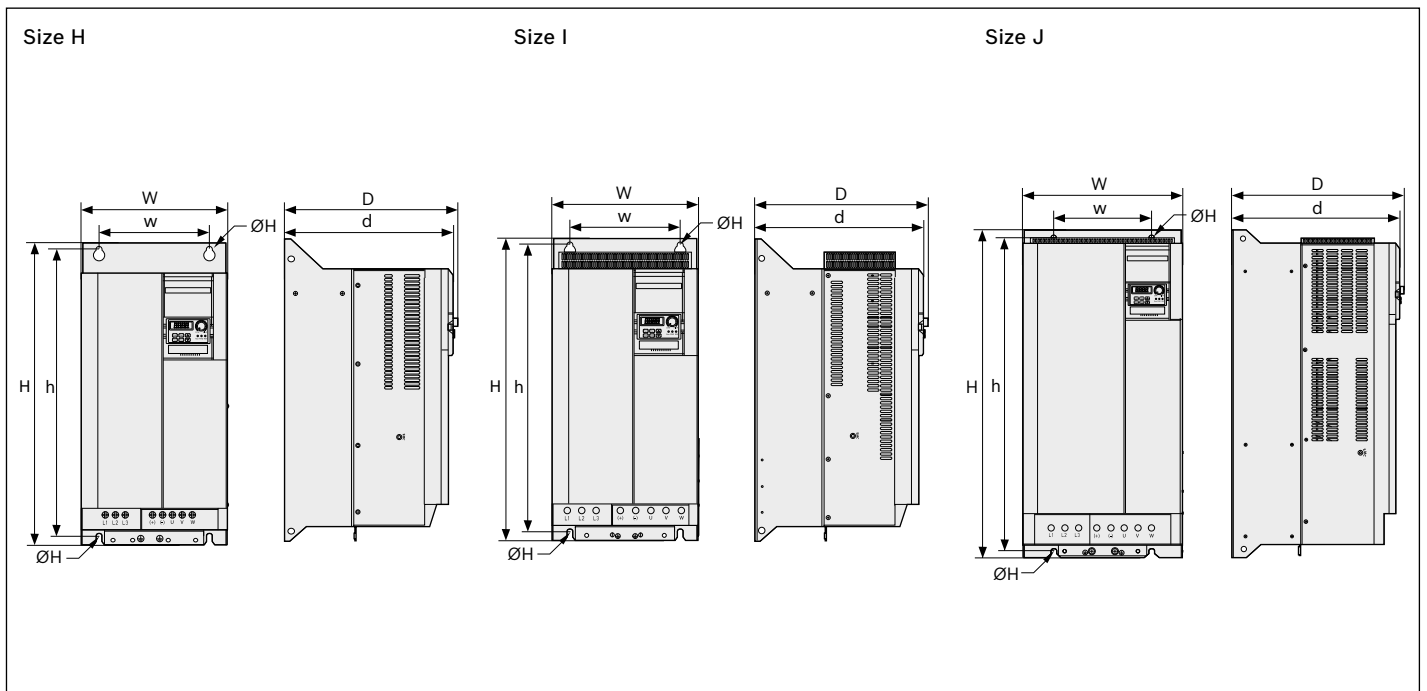
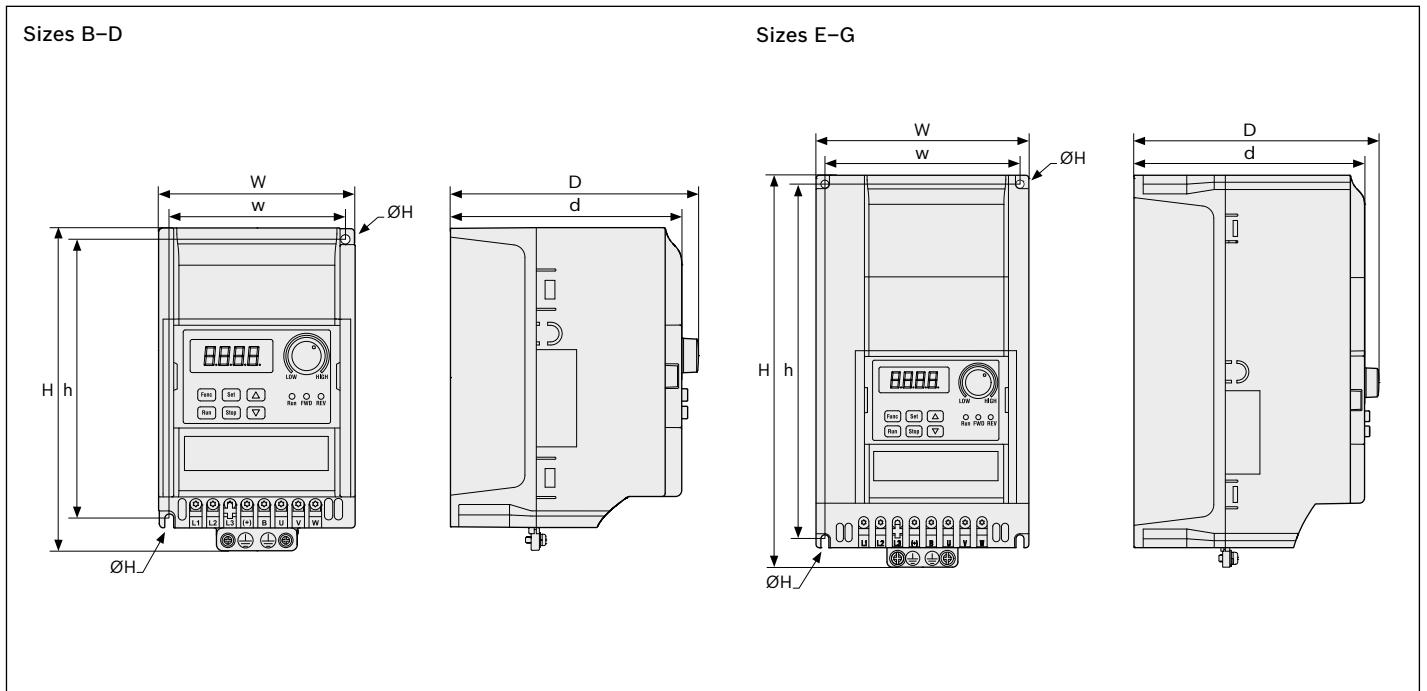
Type (1P 200–240 V AC ±10%)	Heavy duty		Normal duty	
	Rated continuous current	Motor rating	Rated continuous current	Motor rating
	A	kW	A	kW
EFC3610-0K40-1P2-/EFC5610-0K40-1P2-	2.4	0.4	–	–
EFC3610-0K75-1P2-/EFC5610-0K75-1P2-	4.1	0.75	–	–
EFC3610-1K50-1P2-/EFC5610-1K50-1P2-	7.3	1.5	–	–
EFC3610-2K20-1P2-/EFC5610-2K20-1P2-	10.1	2.2	–	–
<b>(3P 380–480 V AC -15%/+10%)</b>				
	Rated continuous current	Motor rating	Rated continuous current	Motor rating
	A	kW	A	kW
EFC3610-0K40-3P4-/EFC5610-0K40-3P4-	1.3	0.4	–	–
EFC3610-0K75-3P4-/EFC5610-0K75-3P4-	2.3	0.75	–	–
EFC3610-1K50-3P4-/EFC5610-1K50-3P4-	4.0	1.5	–	–
EFC3610-2K20-3P4-/EFC5610-2K20-3P4-	5.6	2.2	–	–
EFC3610-3K00-3P4-/EFC5610-3K00-3P4-	7.4	3.0	–	–
EFC3610-4K00-3P4-/EFC5610-4K00-3P4-	9.7	4.0	–	–
EFC3610-5K50-3P4-/EFC5610-5K50-3P4-	12.7	5.5	16.8	7.5
EFC3610-7K50-3P4-/EFC5610-7K50-3P4-	16.8	7.5	24.3	11.0
EFC3610-11K0-3P4-/EFC5610-11K0-3P4-	24.3	11.0	32.4	15.0
EFC3610-15K0-3P4-/EFC5610-15K0-3P4-	32.4	15.0	39.2	18.5
EFC3610-18K5-3P4-/EFC5610-18K5-3P4-	39.2	18.5	45.0	22.0
EFC3610-22K0-3P4-/EFC5610-22K0-3P4-	45.0	22.0	60.8	30.0
EFC5610-30K0-3P4-	60.8	30.0	73.7	37.0
EFC5610-37K0-3P4-	73.7	37.0	89.1	45.0
EFC5610-45K0-3P4-	89.0	45.0	108.0	55.0
EFC5610-55K0-3P4-	108.0	55.0	147.0	75.0
EFC5610-75K0-3P4-	147.0	75.0	176.0	90.0
EFC5610-90K0-3P4-	176.0	90.0	212.0	110.0

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	
<b>Functions</b>			
Control technology	V/f	V/f or SVC (sensorless vector control)	
Pulse width modulation (PWM) for converters with 0.4–18.5 kW	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	Analog	1/1000 of output frequency	
Frequency setting tolerance	Analog	0.01 Hz	
	Digital	0.4%	
V/f curve	Analog	0.04%	
	Digital	0.04%	
Ramps for acceleration and braking	Linear, quadratic, can be set as desired		
DC disc brake	Start frequency	Linear, S curve	
	Braking time	0–50 Hz	
Automatic PWM frequency adjustment	0–10 sec		
Integrated control	Load-dependent PWM frequency adjustment		
Controller	Integrated sequential circuit		
Bus systems	PI		
	On-board: Modbus		
No. 24 V DC digital inputs	Ext. options: PROFIBUS, CANopen, multi-Ethernet		
No. 24 V DC/50 mA digital outputs	5 (one 50 kHz pulse train)		
No. 230 V AC/30 V DC/3 A relay outputs	1 (32 kHz pulse train)		
No. 0–10 V or 0–20 mA analog inputs	1		
No. 0–10 V or 0–20 mA analog outputs	2		
Display	1		
Status LED	Dust cover with 5 diagnostic LEDs; 5-digit LED (optional); LCD (optional)		
<b>Brake</b>	Rotational direction and operating state		
Brake chopper	Internal up to 22 kW		
Brake resistor	External		
<b>Motor cable length</b>			
Internal C3 filter	0.4–4 kW	m	15
	5.5–22 kW	m	30
	30–90 kW	m	50
External C3 filter	0.4–4 kW	m	30
	5.5–22 kW	m	50
	30–90 kW	m	100
<b>Ambient conditions</b>			
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, cUL, Gost R, RCM		

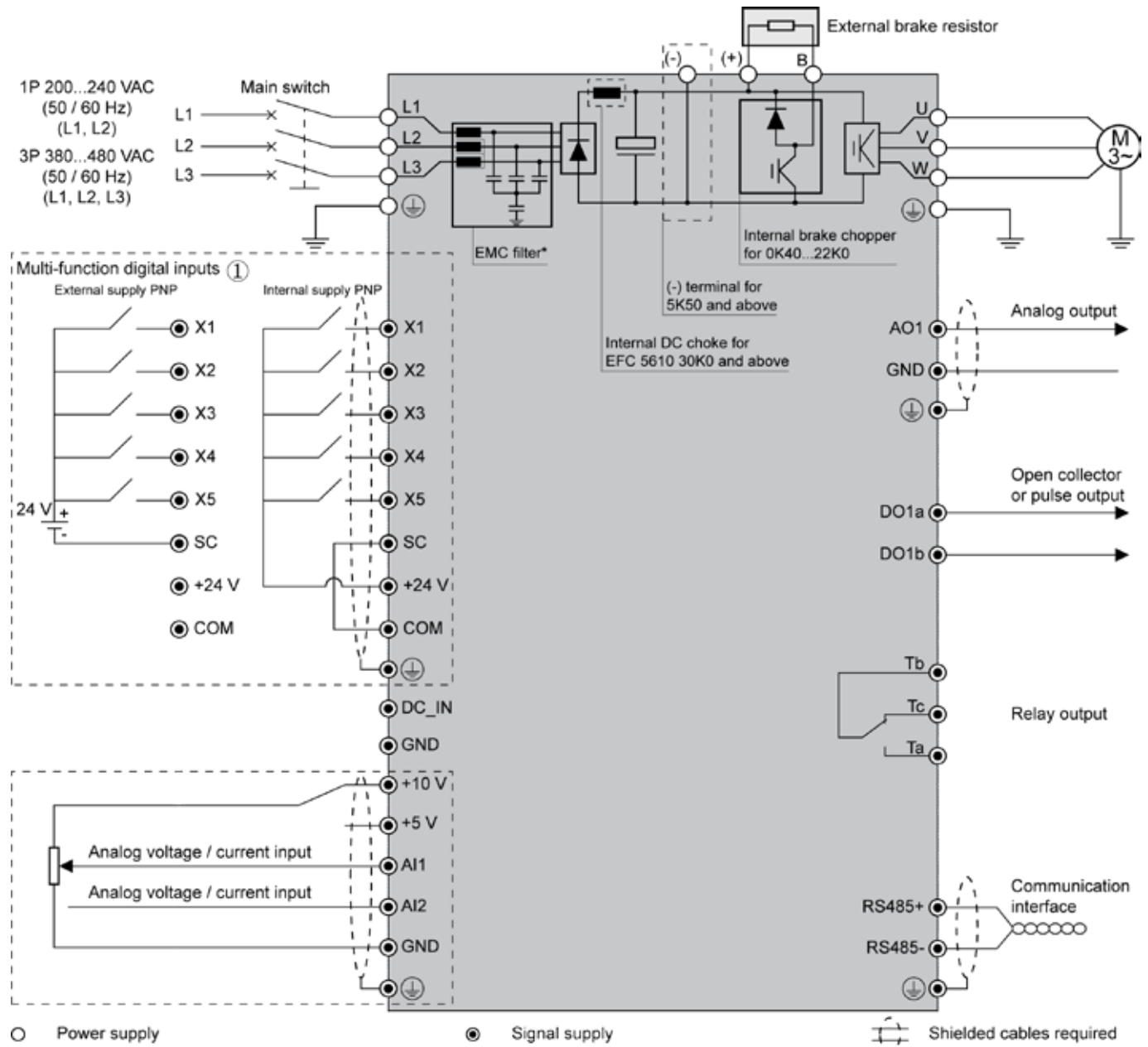


# Device dimensions



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
<b>(3P 380–480 V AC -15%/+10%)</b>		<b>W</b>	<b>w</b>	<b>H</b>	<b>h</b>	<b>D</b>	<b>d</b>	<b>ØH</b>	
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	313	295	241	233	6.5	8
G	EFC3610-22K0-3P4-/EFC5610-22K0-3P4-	165	140	313	295	241	233	6.5	8.8
H	EFC5610-30K0-3P4-	250	200	510	492	272	264	7	28.0
H	EFC5610-37K0-3P4-	250	200	510	492	272	264	7	29.0
I	EFC5610-45K0-3P4-	265	200	610	580	314	306	11	43.0
I	EFC5610-55K0-3P4-	265	200	610	580	314	306	11	44.0
J	EFC5610-75K0-3P4-	325	200	750	717	342	334	11	52.0
J	EFC5610-90K0-3P4-	325	200	750	717	342	334	11	60.0

Block diagram



# Ordering information

<b>EFC3610-0K40-1P2-MDA-7P-NNNN-L1NN</b>	
<b>Motor control</b> <b>EFC 3610</b> = V/f control <b>EFC 5610</b> = SVC vector control	<b>Version</b> <b>NN</b> = without <b>L1</b> = start lockout
<b>Continuous power</b> E.g., 0K40 = 0.4 kW	<b>Display</b> <b>NN</b> = without (dust cover) <b>7P</b> = 7-segment LED display
<b>Power connection</b> <b>1P2</b> = 1 x AC 200–240 V <b>3P4</b> = 3 x AC 380–480 V	<b>IP rating</b> <b>A</b> = IP20
<b>Fieldbus interface</b> <b>M</b> = RTU Modbus	<b>EMC rating</b> <b>D</b> = 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 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	EFC5610-0K40-1P2-MDA-7P-NNNNN-NNNN	R912005739
EFC 5610 0.75 kW, 1 AC 200–240 V, 50/60 Hz, 4.1 A, LED display	EFC5610-0K75-1P2-MDA-7P-NNNNN-NNNN	R912005740
EFC 5610 1.5 kW, 1 AC 200–240 V, 50/60 Hz, 7.3 A, LED display	EFC5610-1K50-1P2-MDA-7P-NNNNN-NNNN	R912005741
EFC 5610 2.2 kW, 1 AC 200–240 V, 50/60 Hz, 10.1 A, LED display	EFC5610-2K20-1P2-MDA-7P-NNNNN-NNNN	R912005742
EFC 5610 0.4 kW, 3 AC 380–480 V, 50/60 Hz, 1.3 A, LED display	EFC5610-0K40-3P4-MDA-7P-NNNNN-NNNN	R912005743
EFC 5610 0.75 kW, 3 AC 380–480 V, 50/60 Hz, 2.3 A, LED display	EFC5610-0K75-3P4-MDA-7P-NNNNN-NNNN	R912005744
EFC 5610 1.5 kW, 3 AC 380–480 V, 50/60 Hz, 4.0 A, LED display	EFC5610-1K50-3P4-MDA-7P-NNNNN-NNNN	R912005745
EFC 5610 2.2 kW, 3 AC 380–480 V, 50/60 Hz, 5.6 A, LED display	EFC5610-2K20-3P4-MDA-7P-NNNNN-NNNN	R912005746
EFC 5610 3.0 kW, 3 AC 380–480 V, 50/60 Hz, 7.4 A, LED display	EFC5610-3K00-3P4-MDA-7P-NNNNN-NNNN	R912005747
EFC 5610 4.0 kW, 3 AC 380–480 V, 50/60 Hz, 9.7 A, LED display	EFC5610-4K00-3P4-MDA-7P-NNNNN-NNNN	R912005748
EFC 5610 5.5 kW, 3 AC 380–480 V, 50/60 Hz, 12.7 A, LED display	EFC5610-5K50-3P4-MDA-7P-NNNNN-NNNN	R912005099
EFC 5610 7.5 kW, 3 AC 380–480 V, 50/60 Hz, 16.8 A, LED display	EFC5610-7K50-3P4-MDA-7P-NNNNN-NNNN	R912005100
EFC 5610 11 kW, 3 AC 380–480 V, 50/60 Hz, 24.3 A, LED display	EFC5610-11K0-3P4-MDA-7P-NNNNN-NNNN	R912005101
EFC 5610 15 kW, 3 AC 380–480 V, 50/60 Hz, 32.4 A, LED display	EFC5610-15K0-3P4-MDA-7P-NNNNN-NNNN	R912005102
EFC 5610 18.5 kW, 3 AC 380–480 V, 50/60 Hz, 39.2 A, LED display	EFC5610-18K5-3P4-MDA-7P-NNNNN-NNNN	R912005749
EFC 5610 22 kW, 3 AC 380–480 V, 50/60 Hz, 45.2 A, LED display	EFC5610-22K0-3P4-MDA-7P-NNNNN-NNNN	R912005980
EFC 5610 30 kW, 3 AC 380–480 V, 50/60 Hz, 60.8 A, LED display	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	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	EFC5610-45K0-3P4-MDA-7P-NNNNN-L1NN	R912005983
EFC 5610 55 kW, 3 AC 380–480 V, 50/60 Hz, 108 A, LED display	EFC5610-55K0-3P4-MDA-7P-NNNNN-L1NN	R912005984
EFC 5610 75 kW, 3 AC 380–480 V, 50/60 Hz, 147 A, LED display	EFC5610-75K0-3P4-MDA-7P-NNNNN-L1NN	R912005985
EFC 5610 90 kW, 3 AC 380–480 V, 50/60 Hz, 176 A, LED display	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	EFC5610-0K40-1P2-MDA-NN-NNNNN-NNNN	R912005724
EFC 5610 0.75 kW, 1 AC 200–240 V, 50/60 Hz, 4.1 A, dust cover	EFC5610-0K75-1P2-MDA-NN-NNNNN-NNNN	R912005725
EFC 5610 1.5 kW, 1 AC 200–240 V, 50/60 Hz, 7.3 A, dust cover	EFC5610-1K50-1P2-MDA-NN-NNNNN-NNNN	R912005726
EFC 5610 2.2 kW, 1 AC 200–240 V, 50/60 Hz, 10.1 A, dust cover	EFC5610-2K20-1P2-MDA-NN-NNNNN-NNNN	R912005727
EFC 5610 0.4 kW, 3 AC 380–480 V, 50/60 Hz, 1.3 A, dust cover	EFC5610-0K40-3P4-MDA-NN-NNNNN-NNNN	R912005728
EFC 5610 0.75 kW, 3 AC 380–480 V, 50/60 Hz, 2.3 A, dust cover	EFC5610-0K75-3P4-MDA-NN-NNNNN-NNNN	R912005729
EFC 5610 1.5 kW, 3 AC 380–480 V, 50/60 Hz, 4.0 A, dust cover	EFC5610-1K50-3P4-MDA-NN-NNNNN-NNNN	R912005730
EFC 5610 2.2 kW, 3 AC 380–480 V, 50/60 Hz, 5.6 A, dust cover	EFC5610-2K20-3P4-MDA-NN-NNNNN-NNNN	R912005731
EFC 5610 3.0 kW, 3 AC 380–480 V, 50/60 Hz, 7.4 A, dust cover	EFC5610-3K00-3P4-MDA-NN-NNNNN-NNNN	R912005732
EFC 5610 4.0 kW, 3 AC 380–480 V, 50/60 Hz, 9.7 A, dust cover	EFC5610-4K00-3P4-MDA-NN-NNNNN-NNNN	R912005733
EFC 5610 5.5 kW, 3 AC 380–480 V, 50/60 Hz, 12.7 A, dust cover	EFC5610-5K50-3P4-MDA-NN-NNNNN-NNNN	R912005734
EFC 5610 7.5 kW, 3 AC 380–480 V, 50/60 Hz, 16.8 A, dust cover	EFC5610-7K50-3P4-MDA-NN-NNNNN-NNNN	R912005735
EFC 5610 11 kW, 3 AC 380–480 V, 50/60 Hz, 24.3 A, dust cover	EFC5610-11K0-3P4-MDA-NN-NNNNN-NNNN	R912005736
EFC 5610 15 kW, 3 AC 380–480 V, 50/60 Hz, 32.4 A, dust cover	EFC5610-15K0-3P4-MDA-NN-NNNNN-NNNN	R912005737
EFC 5610 18.5 kW, 3 AC 380–480 V, 50/60 Hz, 39.2 A, dust cover	EFC5610-18K5-3P4-MDA-NN-NNNNN-NNNN	R912005738
EFC 5610 22 kW, 3 AC 380–480 V, 50/60 Hz, 45.2 A, dust cover	EFC5610-22K0-3P4-MDA-NN-NNNNN-NNNN	R912005987
EFC 5610 30 kW, 3 AC 380–480 V, 50/60 Hz, 60.8 A, dust cover	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	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	EFC5610-45K0-3P4-MDA-NN-NNNNN-L1NN	R912005990
EFC 5610 55 kW, 3 AC 380–480 V, 50/60 Hz, 108 A, dust cover	EFC5610-55K0-3P4-MDA-NN-NNNNN-L1NN	R912005991
EFC 5610 75 kW, 3 AC 380–480 V, 50/60 Hz, 147 A, dust cover	EFC5610-75K0-3P4-MDA-NN-NNNNN-L1NN	R912005992
EFC 5610 90 kW, 3 AC 380–480 V, 50/60 Hz, 176 A, dust cover	EFC5610-90K0-3P4-MDA-NN-NNNNN-L1NN	R912005993

**Accessories**

Description	Type code	Material number
Shield plate for 0.4–4 kW	FEAM03.1-001-NN-NNNN	R912006012
Shield plate for 5.5–18.5 kW	FEAM03.1-002-NN-NNNN	R912006013
LED user panel, IP20, medium gray (RAL7046)	FPCC02.1-EANN-7P-NNNN	R912005783
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

**Option cards**

Description	Type code	Material number
Option module support	FEAE02.1-EA-NNNN	R912006052
I/O card	FEAE04.1-IO1-NNNN	R912006050
Relay card	FEAE04.1-IO2-NNNN	R912006051
CANopen interface	FEAE03.1-CO-NNNN	R912006133
PROFIBUS interface	FEAE03.1-PB-NNNN	R912006132
Multi-Ethernet interface	FEAE03.1-ET-NNNN	R912006134

**Brake resistors**

Description	Type code	Material number
Brake resistor, 60 W 400 Ω   xFC 230 V 400 W 10% ED	FCAR01.1W0060-N400R0-B-03-NNNN	R911370664
Brake resistor, 100 W 400 Ω   xFC 230 V 400 W 20% ED	FCAR01.1W0100-N400R0-B-03-NNNN	R911370667
Brake resistor, 100 W 190 Ω   xFC 230 V 750 W 10% ED	FCAR01.1W0100-N190R0-B-03-NNNN	R911370666
Brake resistor, 200 W 190 Ω   xFC 230 V 750 W 20% ED	FCAR01.1W0200-N190R0-B-03-NNNN	R911370670
Brake resistor, 200 W 95 Ω   xFC 230 V 1.5 kW 10% ED	FCAR01.1W0200-N095R0-B-03-NNNN	R911370669
Brake resistor, 400 W 95 Ω   xFC 230 V 1.5 kW 20% ED	FCAR01.1W0400-N095R0-B-03-NNNN	R911370676
Brake resistor, 300 W 65 Ω   xFC 230 V 2.2 kW 10% ED	FCAR01.1W0300-N065R0-B-03-NNNN	R911370674
Brake resistor, 500 W 65 Ω   xFC 230 V 2.2 kW 20% ED	FCAR01.1W0500-N065R0-B-03-NNNN	R911370677
Brake resistor, 80 W 750 Ω   xFC 400 V 400 W & 750 W 10% ED	FCAR01.1W0080-N750R0-B-05-NNNN	R911370665
Brake resistor, 150 W 750 Ω   xFC 400 V 400 W & 750 W 20% ED	FCAR01.1W0150-N750R0-B-05-NNNN	R911370668
Brake resistor, 260 W 400 Ω   xFC 400 V 1.5 kW 10% ED	FCAR01.1W0260-N400R0-B-05-NNNN	R911370671
Brake resistor, 520 W 350 Ω   xFC 400 V 1.5 kW 20% ED	FCAR01.1W0520-N350R0-A-05-NNNN	R911370678
Brake resistor, 260 W 250 Ω   xFC 400 V 2.2 kW 10% ED	FCAR01.1W0260-N250R0-B-05-NNNN	R911370673
Brake resistor, 520 W 230 Ω   xFC 400 V 2.2 kW 20% ED	FCAR01.1W0520-N230R0-A-05-NNNN	R911370679
Brake resistor, 390 W 150 Ω   xFC 400 V 3.0 kW & 4.0 kW 10% ED	FCAR01.1W0390-N150R0-B-05-NNNN	R911370675
Brake resistor, 780 W 140 Ω   xFC 400 V 3.0 kW & 4.0 kW 20% ED	FCAR01.1W0780-N140R0-A-05-NNNN	R911370681
Brake resistor, 780 W 75 Ω   xFC 400 V 5.5 kW & 7.5 kW 10% ED	FCAR01.1W0780-N075R0-A-05-NNNN	R911370680
Brake resistor, 1560 W 70 Ω   xFC 400 V 5.5 kW & 7.5 kW 20% ED	FCAR01.1W1K56-N070R0-A-05-NNNN	R911370683
Brake resistor, 1560 W 40 Ω   xFC 400 V 11 kW & 15 kW 10% ED	FCAR01.1W1K56-N040R0-A-05-NNNN	R911370682
Brake resistor, 2000 W 47 Ω   xFC 400 V 11 kW 20% ED	FCAR01.1W02K0-N047R0-A-05-NNNN	R911370684
Brake resistor, 3000 W 34 Ω   xFC 400 V 15 kW 20% ED	FCAR01.1W03K0-N034R0-A-05-NNNN	R911370685
Brake resistor, 4800 W 32 Ω   xFC 400 V 18.5 kW 10% ED	FCAR01.1W04K8-N032R0-A-05-NNNN	R911370686
Brake resistor, 10000 W 28 Ω   xFC 400 V 18.5 kW 20% ED	FCAR01.1W10K0-N028R0-A-05-NNNN	R911370687

**Mains filters**

Description	Type code	Material number
Mains filter, EFC x610 230 V 0.4–0.75 kW	FCAF01.1A-A050-E-0010-N-03-NNNN	R911370804
Mains filter, EFC x610 230 V 1.5 kW	FCAF01.1A-A050-E-0020-N-03-NNNN	R911370805
Mains filter, EFC x610 230 V 2.2 kW	FCAF01.1A-A050-E-0025-N-03-NNNN	R911370806
Mains filter, EFC x610 400 V 0.4–4.0 kW	FCAF01.1A-A050-E-0025-A-05-NNNN	R911370807
Mains filter, EFC x610 400 V 5.5–7.5 kW	FCAF01.1A-A050-E-0036-A-05-NNNN	R911370811
Mains filter, EFC x610 400 V 11–15 kW	FCAF01.1A-A050-E-0050-A-05-NNNN	R911370813
Mains filter, EFC x610 400 V 18.5 kW	FCAF01.1A-A050-E-0066-A-05-NNNN	R911371977
Mains filter, EFC x610 400 V 22 kW	FCAF01.1A-A050-E-0090-A-05-NNNN	R911370814
Mains filter, EFC 5610 400 V 30–37 kW	FCAF01.1A-A100-E-0120-A-05-NNNN	R911370815
Mains filter, EFC 5610 400 V 45–55 kW	FCAF01.1A-A100-E-0250-N-05-NNNN	R911370817
Mains filter, EFC 5610 400 V 75–90 kW	FCAF01.1A-A100-E-0320-N-05-NNNN	R911370818

# Software

## Start-up and data back-up with the PC

The Rexroth EFC 3610 and EFC 5610 frequency converters can be started up and operated remotely with the free PC software. The connection to the PC is established via a standard USB interface.

With the software, it is very easy to specify converter speeds, control the starting and stopping and adjust the parameters. Parameters can be saved and stored to ensure reliable archiving.

In addition, the software provides additional features that are not available for local operation of the converter via the operator panel.

## 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](http://www.boschrexroth.com/EFCx610)



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