

Rexroth IndraDrive Fc Compact, high-performance standard frequency converters

Simply a better drive



Rexroth IndraDrive Fc – Simply a better drive

Rexroth IndraDrive Fc is the new, high-performance range of converters for open-loop applications. Housed in an ultra-compact book-sized format, four standard frequency converters cover the entire drive range from 0.25 kW to 7.5 kW. IndraDrive Fc is setting new standards in its class with its extensive functions including simple installation, start-up and operation.

Easy installation

The well thought-out design provides user-friendly installation and adjacent positioning of several units. Plug-in control terminals facilitate and speed up installation.

Quick and easy start-up

Simple start-up without the need for a PC is possible due to the intelligent automatic motor identification functionality of the drive.

Using a PC and Rexroth's start-up software, DriveTop Fc, the drive parameters can be set, documented and saved either offline or via the RS232 interface. If using the RS485 connection, simultaneous communication with up to 31 IndraDrive Fcs is possible.

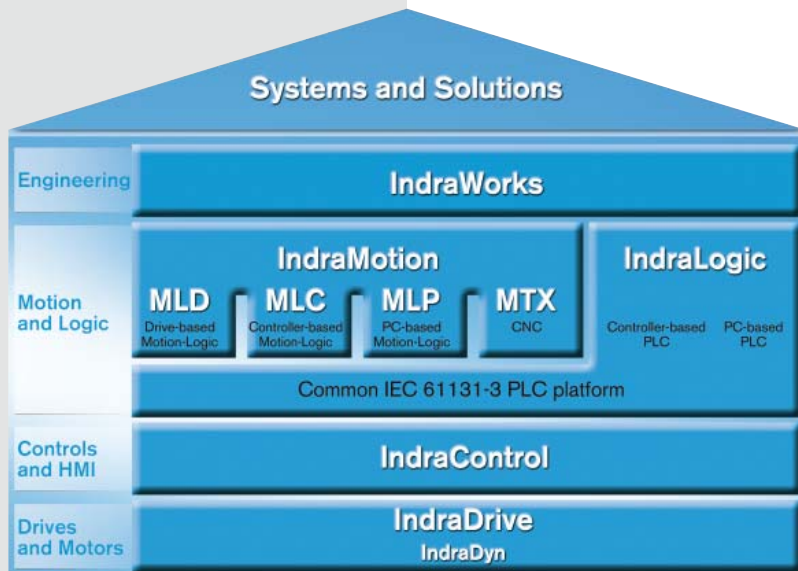
The integrated oscilloscope function assists with optimization of the drive.

Communication on all levels

IndraDrive Fc uses modular function modules to communicate at all automation levels. We supply two plug-in modules for operation without a PC:

- Standard operating module for parameter-oriented operation
- Deluxe operating module with text display in six languages for document-free start-up

The fieldbus interfaces available are PROFIBUS DP, CANopen and DeviceNet.



IndraDrive Fc is a family of compact standard frequency converters. These high-performance units, which are part of Rexroth's Automation House, offer a number of additional functions. Our unique Automation House gives you everything you need to develop your automation applications including drives, controllers, a powerful engineering framework and user-friendly operation. This innovative range of products is based on many years of applications experience, and it gives you access to the entire world of freedom offered by today's state-of-the-art automation systems.

Maximum plant availability

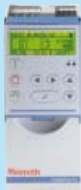














IndraDrive Fc integrates extensive monitoring functions and an EMC filter. Safe and reliable operation is assured by monitoring sensors controlling the input voltage, output current and motor temperature. Motor operation is safe every time thanks to the integrated brake management function.

Characteristics and functions

- Power supply voltages from 200 V to 480 V
 - Output frequency from 0 Hz to 400 Hz
 - Overload capacity: 200 % for 5 s and 150 % for 60 s
 - Continuously adjustable pulse frequency from 3 kHz to 16 kHz
- Operating modes:
 - Linear V/f curve
 - Sensorless vector control
 - Functions:
 - automatic motor parameter identification
 - 4 parameter sets, switchable online
 - PID controller and process controller
 - 31 fixed frequencies
 - 2 notch frequencies
 - Motor potentiometer function
 - Fast stop
 - Flying restart
 - Programmable dynamic braking
 - Acceleration ramp
 - and much more
 - Interfaces:
 - RS232 (Single Slave)
 - RS485 (USS)
 - 5 digital inputs (< 1 ms response time)
 - 2 analog inputs, can also be used as digital inputs
 - 1 analog output
 - 2 multi-function relays 230 V AC/30 V DC, 2 A
 - Integrated brake chopper
 - Integrated brake control
 - Internal EMC network filter for limit curve A according to EN 55011
 - Cooling system
 - Passive cooling depending on power range
 - Fan-cooled, temperature-controlled



Rexroth IndraDrive Fc – system overview

Standard frequency converter		Function modules and accessories	
	Rated motor Power	1/3 x AC 230 V	3 x AC 400 V
	0.25 kW	•	
	0.37 kW	•	
	0.55 kW	•	•
	0.75 kW	•	•
	1.1 kW	•	•
	1.5 kW	•	•
	2.2 kW	•	•
	3.0 kW		•
	4.0 kW		•
	5.5 kW		•
	7.5 kW		•
Consistent in all converters			
		Standard operating panel <ul style="list-style-type: none"> • 4 x 7 segment display • 1 parameter set, storable 	
		Comfort operating panel <ul style="list-style-type: none"> • Graphics-based display • 5 parameter sets, storable • Interactive start-up • Choice of 6 languages 	
		 PROFIBUS DP <ul style="list-style-type: none"> • 1.5 MBaud 	
		 PROFIBUS DP <ul style="list-style-type: none"> • 12 MBaud • External 24 V suitable for connection* 	
		 CANopen <ul style="list-style-type: none"> • Profile DS402 • External 24 V suitable for connection* 	
		 DeviceNet <ul style="list-style-type: none"> • External 24 V suitable for connection* 	
		<p>* For detection of bus node when converter is turned off</p>	
		 Product CD: <ul style="list-style-type: none"> • DriveTop Fc • PDF manuals 	
		 Accessories: <ul style="list-style-type: none"> • PC cable • EMC kit • Brake resistors 	

Small size – big performance



Size A
W x H x D:
76 x 186 x 151 mm
L1: 220 mm



Size B
W x H x D:
76 x 226 x 151 mm
L1: 260 mm



Size C
W x H x D:
98 x 241 x 178 mm
L1: 275 mm



Size D
W x H x D:
98 x 286 x 178 mm
L1: 320 mm



L1 = Installation
dimension



Technical data with the power to convince

Type	FCS01.1E-W ...								FCS01.1E-W ...											
	0003-A-02- NNBV	0005-A-02- NNBV	0006-A-02- NNBV	0008-A-02- NNBV	0011-A-02- NNBV	0015-A-02- NNBV	0019-A-02- NNBV	0003-A-04- NNBV	0005-A-04- NNBV	0006-A-04- NNBV	0008-A-04- NNBV	0011-A-04- NNBV	0015-A-04- NNBV	0019-A-04- NNBV	0025-A-04- NNBV	0032-A-04- NNBV				
Power data																				
Mains input voltage	V	1 AC 200 ... 240 V 3 AC 200 ... 240 V (± 10 %) 47 ... 63 Hz								3 AC 380 ... 480 V (± 10 %/± 20 %) 47 ... 63 Hz										
Rated motor power	kW	0.25	0.37	0.55	0.75	1.1	1.5	2.2	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5			
Continuous current	A	1.7	2.2	3	4	5.5	7	9	1.7	2.3	3.1	4.0	5.5	7.5	9.5	12.5	16.0			
Maximum current	A	3.4	4.4	6	8	11	14	18	3.4	4.6	6.2	8	11	15	19	25	32			
Continuous input mains current 1 AC 230 V	A	3.7	4.8	6.5	8.7	12	15.2	19.6	-	-	-	-	-	-	-	-	-			
Continuous input mains current 3 AC 230 V	A	2.4	3.1	4.2	5.6	7.7	9.8	13.3	-	-	-	-	-	-	-	-	-			
Continuous input mains current 3 AC 400 V	A	-	-	-	-	-	-	-	2.4	3.2	4.3	5.6	7.7	10.5	13.3	17.5	22.4			
Reference between output and mains voltage		if $U_{LN} < 230$ V: 2 % power reduction per 5 V if $U_{LN} > 230$ V: no power gain								if $U_{LN} < 400$ V: 1 % power reduction per 4 V if $U_{LN} > 400$ V: no power gain										
DC bus connection ¹⁾		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
DC bus capacity	mF	300	300	600	600	900	1200	1500	120	120	175	210	305	420	500	630	920			
Output voltage	V	0 ... power supply voltage																		
Brake resistor																				
Brake resistor		external																		
Continuous braking power	kW	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.4	0.4	0.6	0.6			
Maximum braking power	kW	0.7	0.7	0.7	0.7	2.2	2.2	2.2	1.3	1.3	1.3	2.6	2.6	5.2	5.2	8.6	8.6			
Control voltage data																				
Control voltage		internal																		
Mechanical data																				
Size		A				B				A				B				C		D
Width	mm	76								76								98		
Height	mm	186				226				186				226				241		286
Depth	mm	151								151								178		
Installation dimensions L1	mm	220				260				220				260				275		320
Weight	kg	1.4				1.8				1.4				1.8				2.7		3.1

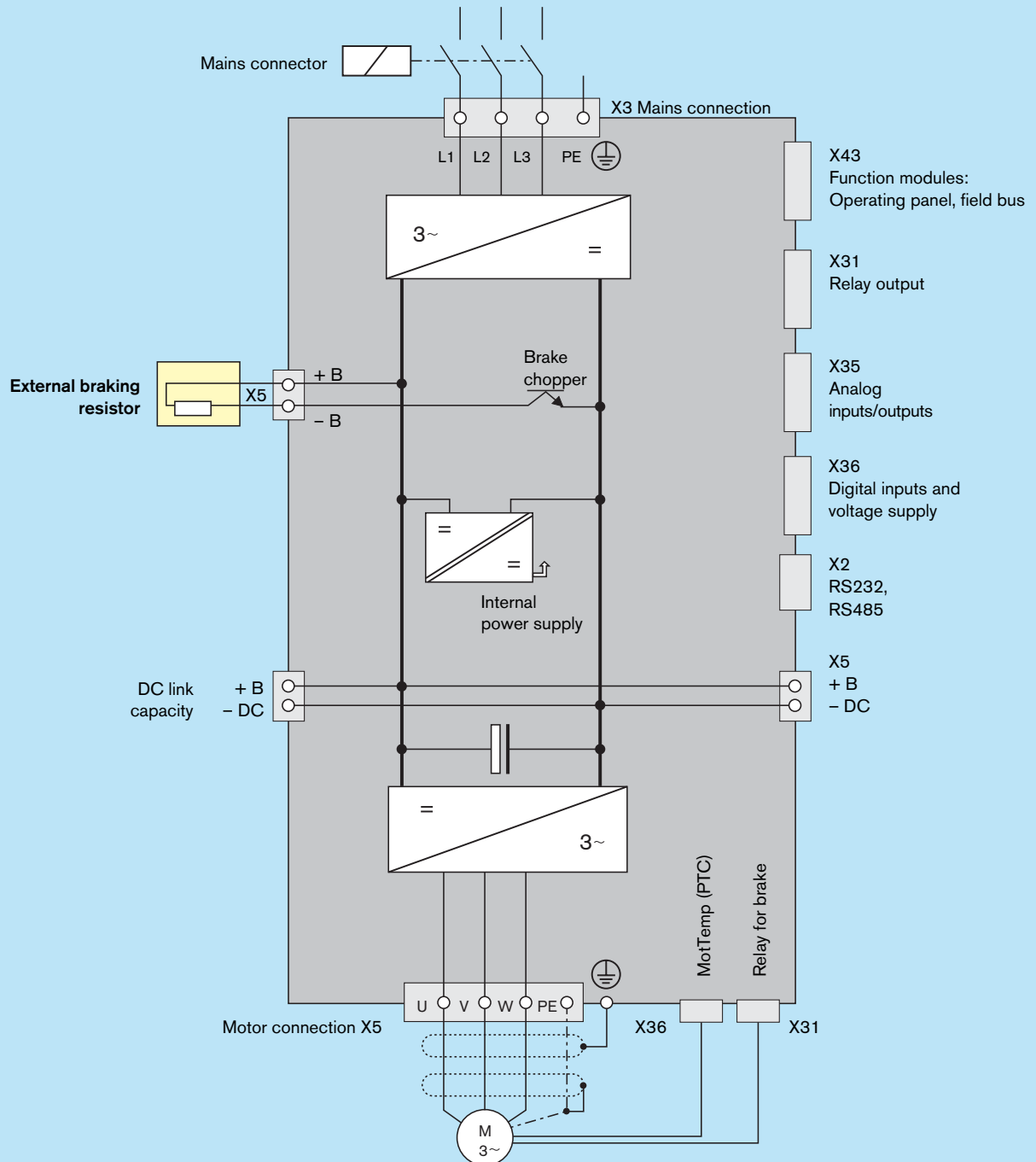
All data apply to rated operation from 4 Hz rotational frequency. Derating from 6 kHz switching frequency

¹⁾For DC coupling of several frequency converters

The maximum braking power of the brake resistors is based on a rated DC link voltage of 400 V at FCS01.1E-Wxxx-A-02 and 720 V at FCS01.1E-Wxxx-A-04

FCS01

1/3 AC 200 ... 240 V for FCS01.1E-Wxxx-A-02-NNBV
 3 AC 380 ... 480 V for FCS01.1E-Wxxx-A-04-NNBV



Standard and geared motors – for your application

We recommend using IndraDrive Fc in conjunction with geared motors or three-phase asynchronous motors made by NORD Drive Systems or VEM Motors.

On request, we can supply all-in-one solutions, comprising frequency converter and motors, also sourced directly from Rexroth.

The range of geared motors covers various types of gears with different performance categories:

- Spur gear motors
- Offset-shaft geared motors

- Bevel gear motors
- Worm gear motors

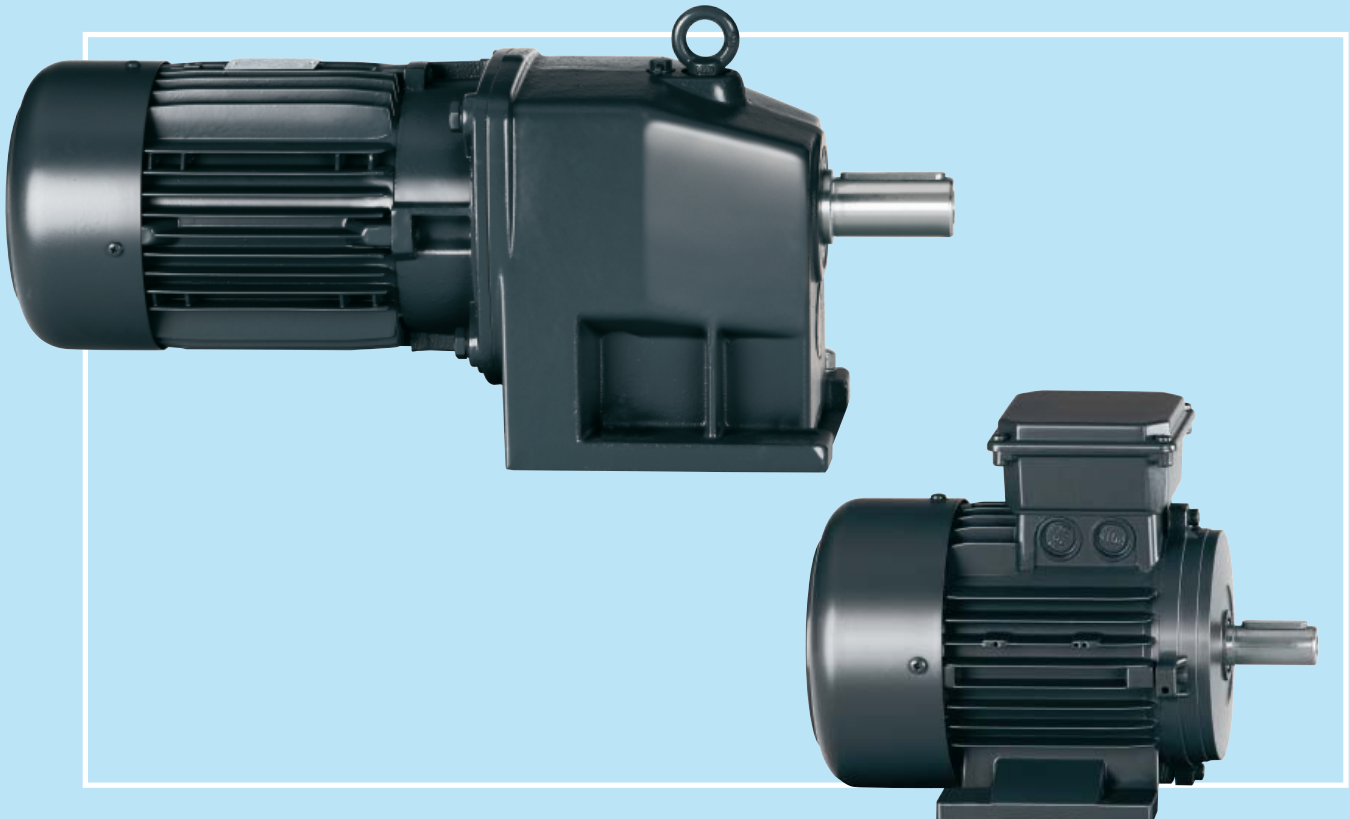
The range of three-phase asynchronous motors includes:

- Standard motors
- High-efficiency motors

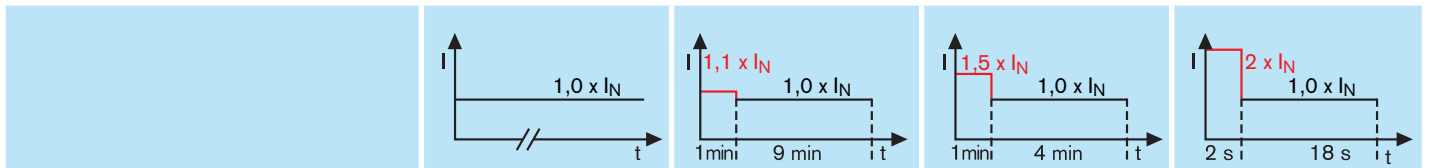
These motors are particularly suitable for operation with frequency converters and boast the following features:

- Motor design conforming to DIN EN 60034 (IEC 72)

- Mounting dimensions and output correlation compliant with DIN 42673, 42677
- Robust, low-vibration design in gray cast iron
- Protection category IP55, higher protection category up to IP65 optional
- Insulation class F with thermal reserve, insulation class H optional
- Additional options: brakes, encoder, position of terminal box, etc.



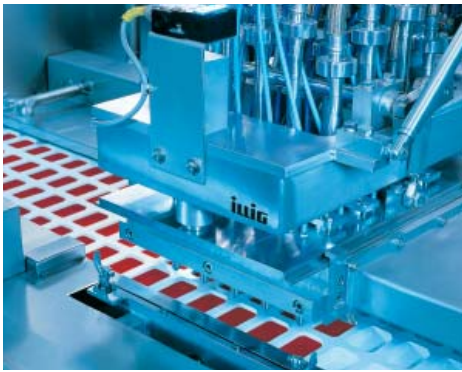
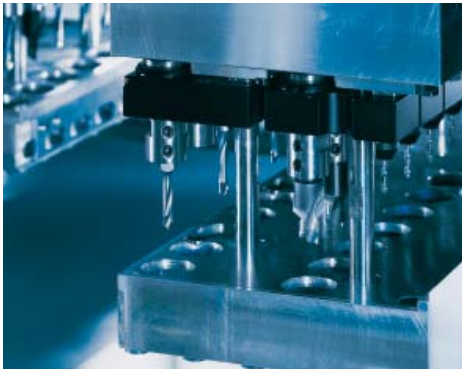
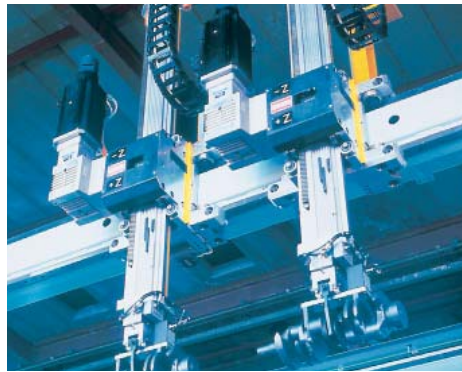
Standard frequency converter – for the full range of operating modes



Mechanical motor output P_N	U	I_N motor	Continuous duty $1.0 \times I_N$ (> 10 min)	Overload duty $1.1 \times I_N$ (1 min) $1.0 \times I_N$ (9 min)	Overload duty $1.5 \times I_N$ (1 min) $1.0 \times I_N$ (4 min)	Overload duty $2.0 \times I_N$ (2 s) $1.0 \times I_N$ (18 s)
0.25 kW	230 V	1.4 A	FCS01.1E-W0003-A-02-	FCS01.1E-W0003-A-02-	FCS01.1E-W0003-A-02-	FCS01.1E-W0003-A-02-
0.37 kW	230 V	1.9 A	FCS01.1E-W0005-A-02-	FCS01.1E-W0005-A-02-	FCS01.1E-W0005-A-02-	FCS01.1E-W0005-A-02-
0.55 kW	230 V	2.8 A	FCS01.1E-W0006-A-02-	FCS01.1E-W0006-A-02-	FCS01.1E-W0008-A-02-	FCS01.1E-W0008-A-02-
	400 V	1.6 A	FCS01.1E-W0003-A-04-	FCS01.1E-W0003-A-04-	FCS01.1E-W0005-A-04-	FCS01.1E-W0005-A-04-
0.75 kW	230 V	3.7 A	FCS01.1E-W0008-A-02-	FCS01.1E-W0008-A-02-	FCS01.1E-W0011-A-02-	FCS01.1E-W0011-A-02-
	400 V	2.1 A	FCS01.1E-W0005-A-04-	FCS01.1E-W0005-A-04-	FCS01.1E-W0005-A-04-	FCS01.1E-W0005-A-04-
1.1 kW	230 V	4.6 A	FCS01.1E-W0011-A-02-	FCS01.1E-W0011-A-02-	FCS01.1E-W0011-A-02-	FCS01.1E-W0011-A-02-
	400 V	2.6 A	FCS01.1E-W0006-A-04-	FCS01.1E-W0006-A-04-	FCS01.1E-W0006-A-04-	FCS01.1E-W0006-A-04-
1.5 kW	230 V	5.9 A	FCS01.1E-W0015-A-02-	FCS01.1E-W0015-A-02-	FCS01.1E-W0015-A-02-	FCS01.1E-W0015-A-02-
	400 V	3.4 A	FCS01.1E-W0008-A-04-	FCS01.1E-W0008-A-04-	FCS01.1E-W0008-A-04-	FCS01.1E-W0008-A-04-
2.2 kW	230 V	8.6 A	FCS01.1E-W0019-A-02-	FCS01.1E-W0019-A-02-	-	-
	400 V	5.0 A	FCS01.1E-W0011-A-04-	FCS01.1E-W0011-A-04-	FCS01.1E-W0011-A-04-	FCS01.1E-W0011-A-04-
3.0 kW	400 V	6.7 A	FCS01.1E-W0015-A-04-	FCS01.1E-W0015-A-04-	FCS01.1E-W0015-A-04-	FCS01.1E-W0015-A-04-
4.0 kW	400 V	8.8 A	FCS01.1E-W0019-A-04-	FCS01.1E-W0019-A-04-	FCS01.1E-W0025-A-04-	FCS01.1E-W0025-A-04-
5.5 kW	400 V	11.8 A	FCS01.1E-W0025-A-04-	FCS01.1E-W0025-A-04-	FCS01.1E-W0032-A-04-	FCS01.1E-W0032-A-04-
7.5 kW	400 V	15 A	FCS01.1E-W0032-A-04-	FCS01.1E-W0032-A-04-	-	-

The examples selected are based on the operation of 4-pin standard motors for 3 AC 230 V/400 V, 50 Hz at a switching frequency of up to 6 kHz and a rotational frequency > 4 Hz.

Rexroth IndraDrive Fc – the power to convince in all applications



Automation

Printing and converting
machines

Conveying and storage systems

Glass processing machines

Handling and assembly systems

Woodworking machines

Plastics processing machines

Food processing and
packaging machines

Textile machines

Metal forming

Machine tools

and much more

Rexroth IndraDrive Fc – Order quote form

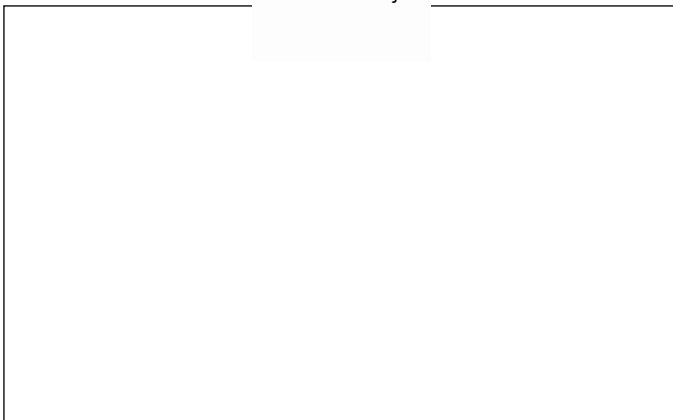
Company	Department
Name	Street
City, State	Zip/Postal Code
Phone	Fax
E-mail	

Quantity	Frequency converter 230 V	Part number	
	FCS01.1E-W0003-A-02-NNBV	R911311054	0.25 kW/1/3 x 200...240 V, 50/60 Hz, 1.7/3.4 A
	FCS01.1E-W0005-A-02-NNBV	R911311055	0.37 kW/1/3 x 200...240 V, 50/60 Hz, 2.2/4.4 A
	FCS01.1E-W0006-A-02-NNBV	R911311056	0.55 kW/1/3 x 200...240 V, 50/60 Hz, 3/6 A
	FCS01.1E-W0008-A-02-NNBV	R911311057	0.75 kW/1/3 x 200...240 V, 50/60 Hz, 4/8 A
	FCS01.1E-W0011-A-02-NNBV	R911311058	1.1 kW/1/3 x 200...240 V, 50/60 Hz, 5.5/11 A
	FCS01.1E-W0015-A-02-NNBV	R911311059	1.5 kW/1/3 x 200...240 V, 50/60 Hz, 7/14 A
	FCS01.1E-W0019-A-02-NNBV	R911311060	2.2 kW/1/3 x 200...240 V, 50/60 Hz, 9.5/19 A
	Frequency converter 400 V		
	FCS01.1E-W0003-A-04-NNBV	R911311061	0.55 kW/3 x 380...480 V, 50/60 Hz, 1.7/3.4 A
	FCS01.1E-W0005-A-04-NNBV	R911311062	0.75 kW/3 x 380...480 V, 50/60 Hz, 2.3/4.6 A
	FCS01.1E-W0006-A-04-NNBV	R911311063	1.1 kW/3 x 380...480 V, 50/60 Hz, 3.1/6.2 A
	FCS01.1E-W0008-A-04-NNBV	R911311064	1.5 kW/3 x 380...480 V, 50/60 Hz, 4/8 A
	FCS01.1E-W0011-A-04-NNBV	R911311065	2.2 kW/3 x 380...480 V, 50/60 Hz, 5.5/11 A
	FCS01.1E-W0015-A-04-NNBV	R911311066	3 kW/3 x 380...480 V, 50/60 Hz, 7.5/15 A
	FCS01.1E-W0019-A-04-NNBV	R911311067	4 kW/3 x 380...480 V, 50/60 Hz, 9.5/19 A
	FCS01.1E-W0025-A-04-NNBV	R911311068	5.5 kW/3 x 380...480 V, 50/60 Hz, 12.5/25 A
	FCS01.1E-W0032-A-04-NNBV	R911311069	7.5 kW/3 x 380...480 V, 50/60 Hz, 16/32 A
	Function modules		
	FCC01.1T-STD-NNNN	R911311070	Standard operating panel: 4 x 7 segment, parameter set
	FCC01.1T-CMF-NNNN	R911311071	Comfort operating panel: graphic-based, 5 parameter set
	FCC01.1F-PB1-NNNN	R911311072	Fieldbus module: PROFIBUS DP
	FCC01.1F-PB2-NNNN	R911311073	Fieldbus module: PROFIBUS DP 12 Mbaud (ext. 24 V)
	FCC01.1F-CN1-NNNN	R911311074	Fieldbus module: CANopen (ext. 24 V)
	FCC01.1F-DN1-NNNN	R911311075	Fieldbus module: DeviceNet (ext. 24 V)
	Accessories		
	RKB0005	R911311896	PC cable IndraDrive Fc, RS232, 3 m
	SWA-DTOPFC-INB-01VRS-DO-CD650-COPY	R911311774	Product CD (includes DriveTop Fc, PDF manuals etc.)
	DOK-INDRV*-FCS01*****-IB01-DE-P	R911310782	Operating manual German, printed version
	DOK-INDRV*-FCS01*****-IB01-EN-P	R911310845	Operating manual English, printed version
	FAS02.1-001-EMC-NN	R911315469	EMC Kit for sizes A and B
	FAS02.1-002-EMC-NN	R911315470	EMC Kit for sizes C and D
	FAS01.1-001-TMP-NN	R911315466	Temperature switch for breaking resistor, based-mounted version FLR01.1U
	FLR01.1U-0100-N240R-A-004-NNNN	R911315459	Breaking resistor, based-mounted version for FCS 0.25 and 0.37 kW, 1/3 x 200...240 V
	FLR01.1U-0100-N150R-A-004-NNNN	R911315460	Breaking resistor, based-mounted version for FCS 0.55 and 0.75 kW, 1/3 x 200...240 V
	FLR01.1U-0200-N75R0-A-004-NNNN	R911315461	Breaking resistor, based-mounted version for FCS 1.1 – 2.2 kW, 1/3 x 200...240 V
	FLR01.1U-0100-N400R-A-007-NNNN	R911315462	Breaking resistor, based-mounted version for FCS 0.55 and 0.75 kW, 3 x 380...480 V
	FLR01.1U-0200-N220R-A-007-NNNN	R911315463	Breaking resistor, based-mounted version for FCS 1.1 – 2.2 kW, 3 x 380...480 V
	FLR01.1N-0400-N100R-A-007-NNNN	R911315464	Breaking resistor, for separate mounting FCS 3,0 and 4.0 kW, 3 x 380...480 V
	FLR01.1N-0600-N60R0-A-007-NNNN	R911315465	Breaking resistor, for separate mounting FCS 5.5 and 7.5 kW, 3 x 380...480 V

Copy, complete and fax. See next page for addresses

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Presented by



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