

13 Technical data

13.1 Power supply

Mains/power connection	230 V, 50 Hz – 60 Hz 120 V, 50 Hz – 60 Hz 100 V, 50 Hz – 60 Hz
Current consumption	230 V: 10.5 A 120 V: 12 A 100 V: 15 A
Power consumption	230 V: Maximum 1650 W 120 V: Maximum 1440 W 100 V: Maximum 1500 W
EMC: Noise emission (radio interference)	230 V: IEC 61326-1/CISPR 11/EN 61326-1/EN 55011 – Class A 120 V: CFR 47 FCC Part 15 – Class A 120 V: IEC 61326-1/CISPR 11 – Class A 100 V: IEC 61326-1/CISPR 11 – Class A
EMC: Noise immunity	IEC 61326-1/EN 61326-1 industrial electromagnetic environment
Overvoltage category	II
Pollution degree	2

13.2 Weight/dimensions

Dimensions		Width: 71.5 cm Depth: 62.0 cm/68.0 cm Height: 36.8 cm/85.0 cm	
Weight without rotor		109 kg	
Rotor weights:		Accessories without caps:	
S-4xUniversal	6790 g	Universal bucket	920 g
S-4x750	5100 g	Round bucket	605 g
		DWP bucket	700 g
S-4x500	5400 g	Bucket	585 g
		Flex bucket	810 g
		Form bucket 7x50	880 g
S-4x400	5200 g	Round bucket	490 g
FA-6x250	5300 g		
FA-6x50	3300 g		
FA-48x2	2500 g		
FA-20x5	2800 g		
FA-30x2	1800 g		

F-48x15	2100 g	Sleeve	30 g
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13.3 Noise level

The noise level was measured frontally in a sound measuring chamber with accuracy class 1 (DIN EN ISO 3745) at a distance of 1 m from the device and at lab bench height.

	Swing-bucket rotor	Fixed-angle rotor
Noise level at maximum rotor speed	< 53 dB(A) (S-4xUniversal) < 57 dB(A) (S-4x750)	< 59 dB(A) (FA-6x50)

13.4 Ambient conditions

Environment	For indoor use only
Ambient temperature	10 °C – 35 °C
Relative humidity	10 % – 75 %, non-condensing
Atmospheric pressure	79.5 kPa – 106 kPa Use up to a height of 2 000 m above sea level.

13.5 Application parameters

Run time	10 s – 99:59 h, infinite (∞), • can be set in increments of 1 s
Temperature	-11 °C – 40 °C
Relative centrifugal force	$1 \times g$ – $22132 \times g$ • can be set in increments of $1 \times g$
Rotational speed	10 rpm – 14000 rpm • can be set in increments of 1 rpm
Maximum load	Fixed-angle rotor: 6×250 mL Swing-bucket rotors: 4×1000 mL
Maximum kinetic energy	36400 J
Permitted density of the material for centrifuging (at maximum g -force (rcf) or rotational speed (rpm) and maximum load)	1.2 g/mL 1.0 g/mL for rotor FA-6x250
Inspection obligation in Germany	Yes

13.6 Temperatures

All rotors of the Centrifuge 5910 Ri safely maintain a temperature of $4\text{ °C} \pm 2\text{ °C}$ at maximum rpm.

The rotor S-4x750 in combination with the device variant for 120 V is an exception for the Centrifuge 5910 Ri:

Centrifuge	Rotor	Temperature at max. rpm	rpm for safe temperature maintenance at $4\text{ °C} \pm 2\text{ °C}$
Centrifuge 5910 Ri100 V	S-4x750	$4\text{ °C} \pm 2\text{ °C}$	n/a
Centrifuge 5910 Ri120 V	S-4x750 round bucket	$6\text{ °C} \pm 2\text{ °C}$	4400 rpm
Centrifuge 5910 Ri230 V	S-4x750	$4\text{ °C} \pm 2\text{ °C}$	n/a

To safely maintain a temperature of 4 °C at an ambient temperature of 23 °C , the speed must be reduced to 4 400 rpm.

13.7 Acceleration and deceleration times

The following table contains acceleration times and deceleration times of the rotors for the Centrifuge 5910 Ri. The data was determined with the rotor at maximum load. Fluctuations may occur depending on the condition of the device and the load.

- Level 9: shortest acceleration time/deceleration time
- Level 0: longest acceleration time/deceleration time (with the brake off)

Rotor		0	1	2	3	4	5	6	7	8	9
S-4x Universal (230 V, 120 V)	Acceleration time	≤506 s	≤294 s	≤219 s	≤152 s	≤114 s	≤91 s	≤85 s	≤78 s	≤73 s	≤69 s
	Deceleration time	≤1609 s	≤706 s	≤282 s	≤192 s	≤129 s	≤97 s	≤80 s	≤68 s	≤62 s	≤54 s
S-4x Universal (100 V)	Acceleration time	≤911 s	≤484 s	≤346 s	≤337 s	≤167 s	≤131 s	≤113 s	≤97 s	≤88 s	≤78 s
	Deceleration time	≤1351 s	≤495 s	≤357 s	≤192 s	≤130 s	≤94 s	≤82 s	≤71 s	≤66 s	≤63 s
S-4x750 (230 V, 120 V)	Acceleration time	≤406 s	≤257 s	≤194 s	≤130 s	≤96 s	≤76 s	≤62 s	≤54 s	≤48 s	≤41 s
	Deceleration time	≤1017 s	≤383 s	≤247 s	≤165 s	≤112 s	≤87 s	≤74 s	≤59 s	≤49 s	≤39 s
S-4x750 (100 V)	Acceleration time	≤951 s	≤491 s	≤384 s	≤298 s	≤172 s	≤124 s	≤108 s	≤90 s	≤79 s	≤66 s
	Deceleration time	≤1223 s	≤494 s	≤231 s	≤157 s	≤108 s	≤83 s	≤68 s	≤57 s	≤51 s	≤44 s
S-4x500 (230 V, 120 V)	Acceleration time	≤345 s	≤218 s	≤165 s	≤110 s	≤82 s	≤65 s	≤53 s	≤46 s	≤40 s	≤33 s
	Deceleration time	≤771 s	≤360 s	≤210 s	≤138 s	≤100 s	≤76 s	≤58 s	≤49 s	≤44 s	≤35 s
S-4x500 (100 V)	Acceleration time	≤880 s	≤455 s	≤356 s	≤232 s	≤160 s	≤116 s	≤97 s	≤84 s	≤72 s	≤57 s
	Deceleration time	≤932 s	≤375 s	≤215 s	≤145 s	≤101 s	≤76 s	≤62 s	≤54 s	≤45 s	≤39 s
S-4x400 (230 V, 120 V)	Acceleration time	≤406 s	≤260 s	≤189 s	≤126 s	≤91 s	≤68 s	≤59 s	≤48 s	≤43 s	≤35 s
	Deceleration time	≤860 s	≤386 s	≤231 s	≤164 s	≤114 s	≤82 s	≤70 s	≤57 s	≤50 s	≤40 s
S-4x400 (100 V)	Acceleration time	≤1132 s	≤583 s	≤455 s	≤297 s	≤203 s	≤146 s	≤121 s	≤102 s	≤86 s	≤67 s
	Deceleration time	≤861 s	≤370 s	≤240 s	≤167 s	≤118 s	≤85 s	≤72 s	≤62 s	≤53 s	≤43 s
FA-6x250 (230 V)	Acceleration time	≤900 s	≤561 s	≤420 s	≤276 s	≤202 s	≤155 s	≤123 s	≤105 s	≤89 s	≤71 s
	Deceleration time	≤1700 s	≤503 s	≤340 s	≤235 s	≤165 s	≤114 s	≤95 s	≤82 s	≤67 s	≤51 s

Rotor		0	1	2	3	4	5	6	7	8	9
FA-6x250 (120 V)	Acceleration time	≤890 s	≤560 s	≤419 s	≤276 s	≤202 s	≤155 s	≤124 s	≤105 s	≤88 s	≤70 s
	Deceleration time	≤1688 s	≤547 s	≤350 s	≤242 s	≤166 s	≤117 s	≤97 s	≤79 s	≤66 s	≤51 s
FA-6x250 (100 V)	Acceleration time	≤2244 s	≤1158 s	≤904 s	≤564 s	≤403 s	≤289 s	≤240 s	≤198 s	≤166 s	≤124 s
	Deceleration time	≤1523 s	≤537 s	≤343 s	≤244 s	≤164 s	≤117 s	≤97 s	≤79 s	≤66 s	≤51 s
FA-6x50 (230 V, 120 V)	Acceleration time	≤351 s	≤239 s	≤176 s	≤121 s	≤90 s	≤68 s	≤60 s	≤51 s	≤45 s	≤39 s
	Deceleration time	≤686 s	≤330 s	≤226 s	≤162 s	≤113 s	≤82 s	≤67 s	≤54 s	≤46 s	≤36 s
FA-6x50 (100 V)	Acceleration time	≤619 s	≤414 s	≤294 s	≤200 s	≤143 s	≤108 s	≤92 s	≤76 s	≤67 s	≤58 s
	Deceleration time	≤750 s	≤338 s	≤226 s	≤162 s	≤115 s	≤84 s	≤70 s	≤57 s	≤48 s	≤37 s
FA-20x5 (230 V, 120 V)	Acceleration time	≤304 s	≤205 s	≤147 s	≤100 s	≤75 s	≤56 s	≤49 s	≤41 s	≤37 s	≤31 s
	Deceleration time	≤605 s	≤290 s	≤200 s	≤140 s	≤98 s	≤74 s	≤61 s	≤49 s	≤44 s	≤33 s
FA-20x5 (100 V)	Acceleration time	≤486 s	≤324 s	≤239 s	≤161 s	≤115 s	≤87 s	≤74 s	≤62 s	≤54 s	≤44 s
	Deceleration time	≤723 s	≤296 s	≤204 s	≤143 s	≤100 s	≤74 s	≤62 s	≤51 s	≤43 s	≤33 s
FA-48x2 (230 V, 120 V)	Acceleration time	≤251 s	≤169 s	≤123 s	≤85 s	≤63 s	≤49 s	≤42 s	≤35 s	≤33 s	≤27 s
	Deceleration time	≤546 s	≤235 s	≤159 s	≤113 s	≤82 s	≤60 s	≤51 s	≤42 s	≤37 s	≤29 s
FA-48x2 (100 V)	Acceleration time	≤382 s	≤249 s	≤179 s	≤124 s	≤93 s	≤69 s	≤60 s	≤51 s	≤39 s	≤37 s
	Deceleration time	≤565 s	≤226 s	≤161 s	≤117 s	≤85 s	≤62 s	≤52 s	≤43 s	≤38 s	≤29 s
FA-30x2 (230 V, 120 V)	Acceleration time	≤245 s	≤164 s	≤120 s	≤82 s	≤62 s	≤49 s	≤42 s	≤36 s	≤31 s	≤26 s
	Deceleration time	≤359 s	≤224 s	≤155 s	≤109 s	≤79 s	≤56 s	≤48 s	≤40 s	≤34 s	≤28 s
FA-30x2 (100 V)	Acceleration time	≤373 s	≤242 s	≤179 s	≤121 s	≤90 s	≤68 s	≤59 s	≤50 s	≤38 s	≤35 s
	Deceleration time	≤463 s	≤223 s	≤156 s	≤112 s	≤80 s	≤59 s	≤49 s	≤40 s	≤35 s	≤27 s
F-48x15 (230 V, 120 V)	Acceleration time	≤205 s	≤137 s	≤100 s	≤68 s	≤50 s	≤39 s	≤34 s	≤29 s	≤26 s	≤23 s
	Deceleration time	≤397 s	≤196 s	≤123 s	≤87 s	≤61 s	≤45 s	≤39 s	≤33 s	≤28 s	≤23 s