

ELEKTROMATEN® SI FX

“Safedrive®” with separate frequency inverter

For driving:

High-speed sectional doors and high-speed rolling doors which require an anti-fallback device

Series SG63F
SI63 5.250 FX - SI63 8.180 FX

Series SG85F
SI 40.40 FX

Series SG115F
SI 75.45 FX - SI 100.30 FX

“Safedrive FX®” ELEKTROMATEN SI are special drives for industrial doors which require an anti-fallback device. The patented safety brake is built into the gear. The drive unit is fitted directly to the door shaft.

Safedrive ELEKTROMATEN SI FX comprises of:

Worm gear with safety brake and hollow shaft, emergency manual operator, integrated limit switches, electric motor and frequency inverter in a flexibly placeable separate housing.

Patented built-in safety brake

- Safety against failure of worm or wheel
- Independent of speed / direction
- Maintenance free, self-monitoring
- Excellent damping characteristics in operation

Separate frequency inverter to be used with door controls TS 970, TS 971 or TS 981

- Individual adjustable output speed ¹⁾
- The speed appears directly into the display – extra work to evaluate frequency and speed is not required
- Soft start and soft stop
- Automatic optimising of acceleration and deceleration speed
- Adjustable distance for acceleration and deceleration speed
- Individual adjustment and programming of all functions from the ground by a selector switch with digital display

Approvals and certificates

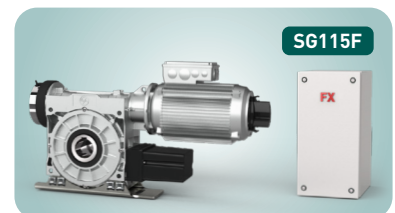
ELEKTROMATEN FX

Type test according to:
DIN EN 12453
DIN EN 60335-1
DIN EN 60335-2-103
TÜV NORD CERT GmbH



Built-in safety brake

Certificate of conformity according to:
DIN EN 12604 / 12605
ift Rosenheim GmbH



Emergency manual operation

- Hand crank NHK ¹
- Hand chain operator KNH ²

Limit switches

- Digital limit DES ³
- Absolute encoder, after a power failure, re-adjustment is not required

FX module

- Frequency inverter in a flexibly placeable separate housing ⁴

Mounting

- Floating foot (standard fitting)
- Torque bracket

Special versions

- Other drive speeds and other drive torques on request

Door controls

- Simple connection to the limit switch by means of non-interchangeable plug connections allowing simple exchange with other GfA door controls
- Control voltage: 24 V DC
- Frequency: 50 Hz / 60 Hz
- Mains supply at motors with 1,5 kW / 2,2 kW: 1N~230 V, 3~230 V ²⁾, 3N~400 V
- Mains supply at motors with 4,0 kW / 7,5 kW: 3N~400 V, 3~400 V

Details of all GfA door controls can be found in Section 8.

¹⁾ See 3.6
²⁾ Use additional adapter part no. 30005855

1. Technical data

ELEKTROMATEN Series		SI63 5.250 FX SG63F	SI63 8.180 FX SG63F	SI 40.40 FX SG85F	SI 75.45 FX SG115F	SI 100.30 FX SG115F	
Output torque	Nm	50	80	400	750	1000	
Output speed	rpm	30-250	30-180	9-40	8-45	5-30	
		CLOSE > 2,5 m	30-150	30-90	9-35	8-28	5-18
		CLOSE ≤ 2,5 m ¹⁾	30-100	30-90	9-24	8-28	5-18
Output shaft / hollow shaft (∅)	mm	25/25,4/30/31,75/40	25/25,4/30/31,75/40	40	55	55	
Locking torque ²⁾	Nm	510	510	760	2800	2800	
Safety brake (approval number)		14-003612- PR02	14-003612- PR02	14-003612- PR03	14-003305- PR01	14-003305- PR01	
Max. holding torque ³⁾	Nm	90	140	400	750	1000	
Motor power	kW	1,1	1,1	1,5	3,6	3,6	
Supply voltage	V	1N~230	1N~230	3~400	3~400	3~400	
Operating frequency	Hz	50 / 60	50 / 60	50 / 60	50 / 60	50 / 60	
Operating current	A	7,1	7,1	6,8	10,15	10,15	
Max. cycles per hour ⁴⁾		34 [33]	30 [29,5]	11 [6,9]	12 [11,0]	11 [7,5]	
Limit switch range ⁵⁾		20	20	20	20	20	
Max. hand force NHK / KNH ⁶⁾	N	145 / 161	158 / 175	255 / 126	240 / 194	186 / 150	
Weight (without FX module)	kg	17	17	26	45	53	
Spare parts: Catalogue page		9.054	9.054	9.055	9.056	9.056	
Part no. installation drawing (dxf, dwg)		50002373	50002373	50002374	50002375	50002376	
Part no. ELEKTROMATEN		10005762 (∅ 25) 10005763 (∅ 25,4) 10005674 (∅ 30) 10005764 (∅ 31,75) 10005760 (∅ 40)	10005765 (∅ 25) 10005766 (∅ 25,4) 10005673 (∅ 30) 10005767 (∅ 31,75) 10005768 (∅ 40)	10005755 (∅ 40)	10005609 (∅ 55)	10005633 (∅ 55)	

Generally applies: Degree of protection IP65, permissible temperature range -10 °C...+40 °C [+60 °C], operating sound pressure level SPL <70 dB(A)

1) See 3.6 · 2) See 3.5 · 3) Maximum torque that may act on the output shaft of the drive unit when the door is stationary · 4) One cycle consists of a complete opening and closing movement of the door. The value according to EN 60335-2-103 is given in brackets. If the limit switch range is not fully used, the number of possible cycles can be increased in relation to the reduced number of revolutions of the output shaft, see also 3.2 · 5) Maximum revolutions of hollow shaft, E20 standard with DES · 6) See 3.4

2. Selection chart

2.1 Roller shutters Tube EN 10220 [mm]	SI 40.40 FX F [N]	SI 75.45 FX F [N]	SI 100.30 FX F [N]
108,0 x 3,6	5050	--	--
133,0 x 4,0	4183	--	--
159,0 x 4,5	3575	6704	--
177,8 x 5,0	3236	6067	8089
193,7 x 5,4	2995	5615	7487
219,1 x 5,9	2677	5019	6692
244,5 x 6,3	--	4537	6049
273,0 x 6,3	--	4096	5461
298,5 x 7,1	--	3768	5024
323,9 x 7,1	--	--	4653

■ F = Lift [N]

■ Read note in 3.2

■ Includes 20 % friction for single-wall profiles (profile thickness 20 mm)

■ Select not mentioned drives as required by the door construction

2.2 Sectional doors Cable drum [mm]	SI63 5.250 FX F [N]	SI63 8.180 FX F [N]
∅ 160	563	900
∅ 200	450	720

■ F = Lift [N]

■ Read notes in 3.2 and 3.7

■ Includes 10 % friction

■ Select not mentioned drives as required by the door construction

■ Suitable cable drums are available as accessories in Chapter 9

3. Notes

3.1 European directive

In accordance with the product standard EN 13241 Doors- and EN 12453 Safety in use of power operated doors-Requirements.

3.2 Selection chart / Cycles per hour

The specified cycles per hour (see technical data) apply to even distribution and the limit switch range first mentioned. When using the temperature range +40 °C to +60 °C, the specified value must be halved. For other limit switch ranges, the values must be converted accordingly.

The selection chart includes 20 % friction for roller shutters with single-wall profiles (profile thickness 20 mm) and 10 % friction for sectional doors.

Reduce the weight by a further 20 % for vertical lifted doors and insulated shutters with double walled, thick and/or deep sections. Do not calculate using the tube diameter. The highest torque will occur normally after 1-2 turns of the barrel from close.

3.3 Gear self-braking / Brake

Drives without an electric brake have a self-sustaining worm gear and stop automatically.

On drives with an electric brake, stopping is achieved by the external brake. Brake inspection must always be carried out by qualified service engineers.

3.4 Manual operation

In accordance with EN 12453 and 12604 hand force up to 390 N is permissible. For large, heavy doors, manual operation is only used for closing the door. In the case of drive units with an electric brake; emergency manual operation is carried out against the closed brake (Read note in 3.3).

3.5 Locking torque / Holding torque

The permissible loads on walls, fastenings, mountings and transmission elements must not be exceeded, even for maximum holding torques or locking torques.

3.6 Output speed

The maximum admissible speed is dependent on the door construction and type of the door. All materials must be designed to be used for doors with higher speeds.

The admissible closing speed shall be adjusted so that the operating forces must comply with EN 12453

3.7 Cable / Cable drums

When calculating the cable size the max. permitted door weight is required with a safety of 6x for the cables requirement of EN 12604.

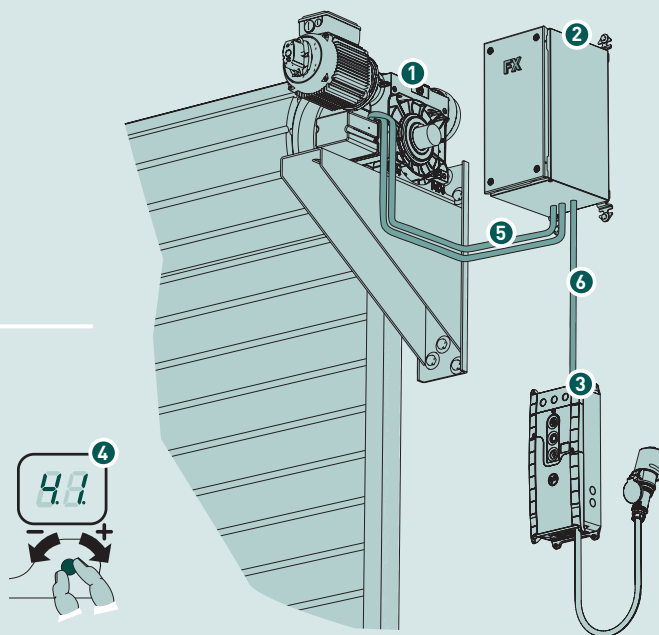
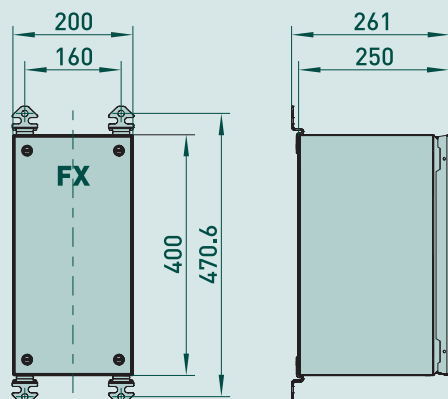
Cable drum selection – ensure that two turns of the cable remain on the drum at all times. The diameter of the cable drum must be at least 20x the diameter of the cable.

4. Dimensions

4.1 FX module

The FX solution offers the following advantages:

- Alternative to ELEKTROMATEN FI
- Flexible placement of the module independent of the ELEKTROMATEN
- Very well suited for increased protection rating requirements
- Pluggable connection technology with the well-known DES connection cables



- 1) ELEKTROMATEN FX
- 2) FX module with frequency inverter¹⁾
- 3) TS door controls (TS 970, TS 971, TS 981 with an intuitive operating concept⁴⁾²⁾
- 5) Pluggable cables for ELEKTROMATEN (2 m)
- 6) DES connection cables from 1.5 m to 50 m²⁾

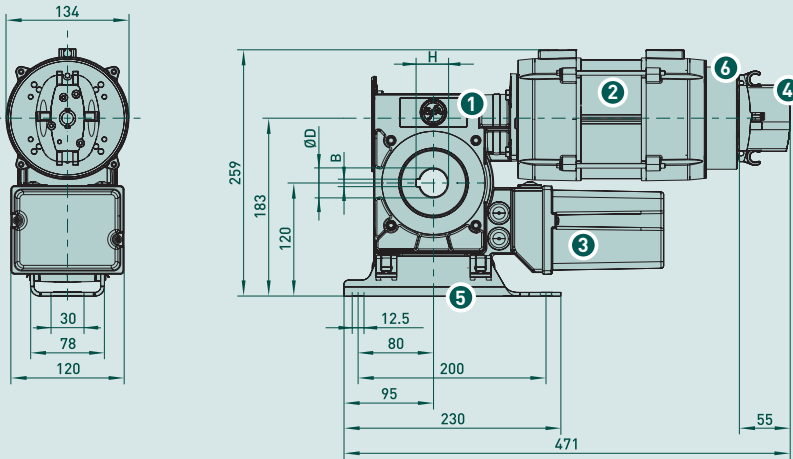
■ 1) Weight with 2 m cable: approx. 10 kg

■ 2) Available as an accessory → see Section 8

4. Dimensions

4.2 SI63 5.250 FX / SI63 8.180 FX

SG63F



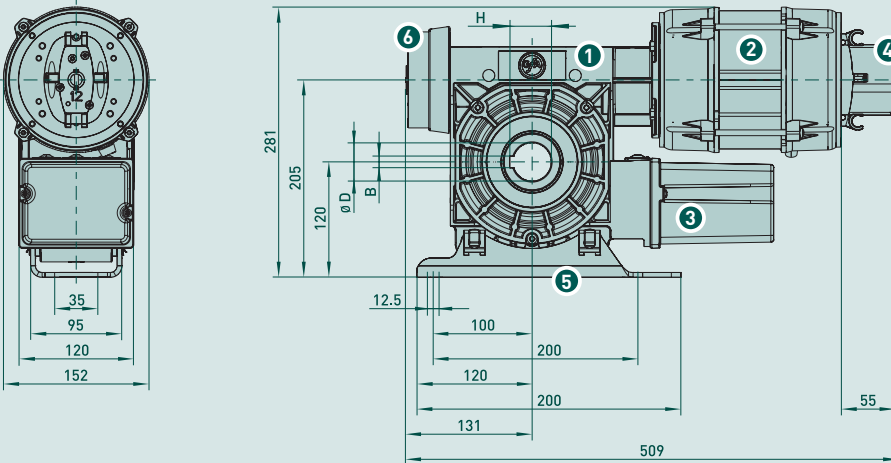
- 1 Worm gear with safety brake
- 2 Motor FX
- 3 Limit switch
- 4 Hand crank NHK
- 5 Floating foot
- 6 Brake

Ø D	H	B
25	28,3	8
25,4	28,4	6,35
30	33,3	8
31,75	34,7	6,35
40	43,3	12

■ Permitted installation: Horizontal (as shown) or vertical (motor at the bottom)

4.3 SI 40.40 FX

SG85F

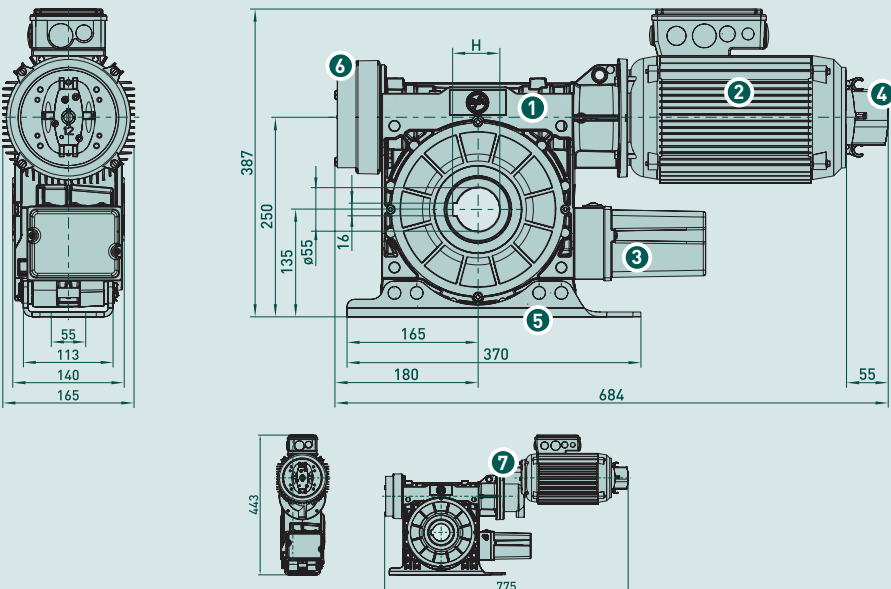


- 1 Worm gear with safety brake
- 2 Motor FX
- 3 Limit switch
- 4 Hand crank NHK
- 5 Floating foot
- 6 Brake

■ Permitted installation: Horizontal (as shown) or vertical (motor at the bottom)

4.4 SI 75.45 FX / SI 100.30 FX

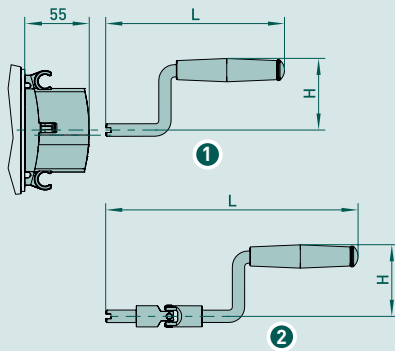
SG115F



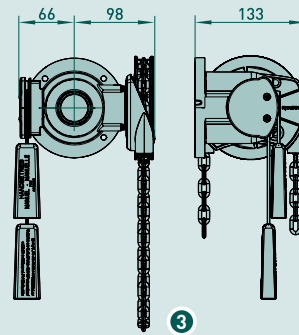
- 1 Worm gear with safety brake
- 2 Motor FX
- 3 Limit switch
- 4 Hand crank NHK
- 5 Floating foot
- 6 Brake
- 7 Intermediate gear (SI 100.30 FX)

■ Permitted installation: Horizontal (as shown) or vertical (motor at the bottom)

5. Emergency manual operation • for horizontal or vertical installation



- 1 Manual hand crank operation NHK (Standard)
- 2 Manual hand crank with knuckle joint NHKK
- 3 Hand chain operator KNH



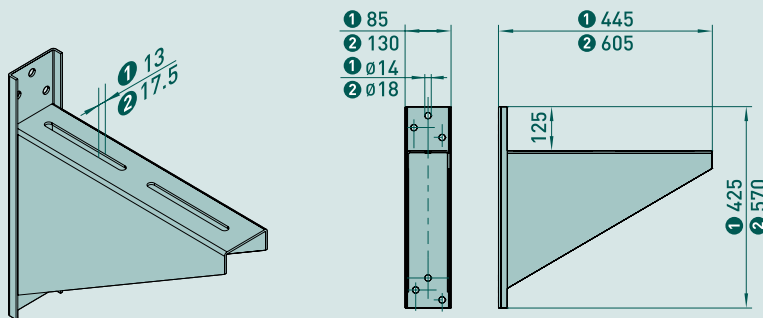
	For Series	Part.-no.	∅	L	H
1	SG63F	30002591	10	255	92
1	SG85F	30002749	12	235	122
1	SG115F	30003112	12	265	192
2	SG63F	30002715	10	415	111
2	SG85F	30002750	12	425	152

■ Manual forces, see item 1 of technical data

■ Read note in 3.4

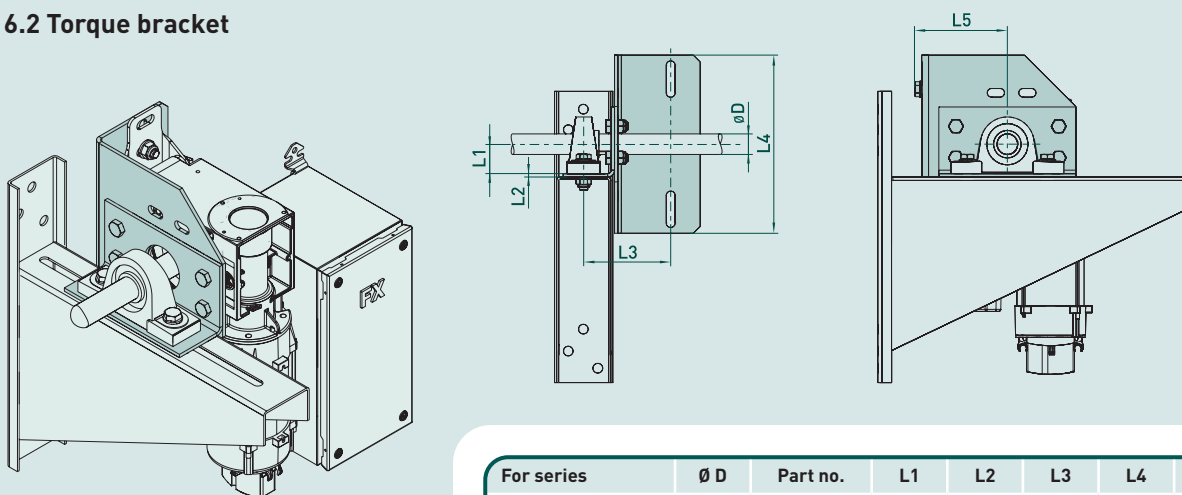
6. Attachments / Accessories

6.1 Bracket



For series	SG63F / SG85F 1	SG115F 2
Part no.	40006488	40012396
Max. load	5 kN	12 kN

6.2 Torque bracket



For series	∅ D	Part no.	L1	L2	L3	L4	L5
SG63F	25	30002930	36,5	5	127	260	135
SG63F / SG85F	30	30002930	42,9	5	127	260	135
SG85F	40	30002930	49,2	5	127	260	135
SG115F	55	30003162	63,5	6	174	350	148

■ Right- or left-hand use

■ ELEKTROMATEN vertical (as shown) or horizontal

■ For mounting with floating foot (additional requirements: bracket 6.1 and bearing)

