

ELEKTROMATEN SI

Safedrive®

For driving: Roller shutters and rolling grilles which require an anti-fallback device

Series SG63F

SI 17.15

Series SG85F

SI 25.10 - SI 55.15

Series SG115F

SI 75.10 - SI 140.7

"Safedrive®" 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 directly fitted to the door shaft.

Safedrive® ELEKTROMATEN comprises:

Worm gear with safety brake and hollow shaft, emergency manual operator, integrated limit switches and electrical motor.

Control panels to suit all requirements can be found in section 7.

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

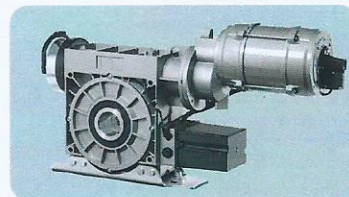
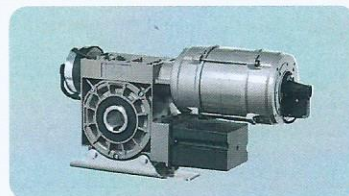
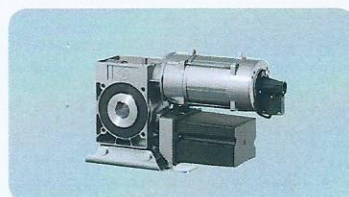
Approvals and certificates

ELEKTROMATEN and control panels:

Mark approval certificate according to DIN EN 12453

Built-in safety brake:

Certificate of conformity according to DIN EN 12604/12605



Emergency manual operation

- Hand crank NHK 1
- Hand chain operator KNH 2

Limit switches

Mechanical limit NES 3

- For WS 900, TS 956/961 control panels
- 2 operating, 2 emergency- and 2 auxiliary limit switches

Digital limit DES 4

- For TS 958/970/981 control panels
- Absolute encoder
- After a power failure, re-adjustment is not required.

Mounting

- Floating foot (standard fitting)
- Torque mount (page 1.56)
- Anroll-torque mount (page 1.56)

Special versions

- Higher motor duty cycle
- Higher protection class
- Other voltages, frequencies on request
- Explosion-proof according to ATEX (page 5.11)

Control panels

- Simple connection to the limit switch by means of non-interchangeable plug connections allowing simple exchange with other GfA control panels.
- Control voltage: 24V, 50Hz
- Supply voltage: 1x230V/N/PE, 3x230V/PE, 3x400V/N/PE, 3x400V/PE

To be used with mechanical limit switch NES

- Reversing contactor control WS 900 (page 7.11) 5
- Hold to run control panel TS 956 (page 7.21) 6
- Automatic control panel TS 961 (page 7.31) 6

To be used with digital limit switch DES

- Hold to run control panel TS 958 (page 7.25) 6
- Automatic control panel TS 970 (page 7.41) 6
- Automatic control panel with traffic management TS 981 (page 7.51) 6

Details of the above GfA control panels can be found in section 7.

1. Technical data

ELEKTROMATEN Series		SI 17.15 SG63F	SI 25.10 SG85F	SI 25.15 SG85F	SI 25.15 WS SG85F	SI 40.10 SG85F	SI 40.15 SG85F
Output torque	Nm	170	250	250	250	400	400
Output speed	rpm	15	10	15	15	10	15
Hollow-shaft Ø	mm	30	30	30	30	40	40
Locking torque ¹	Nm	510	635	635	635	1020	1020
Safety brake (approval number)		TorFV 4 / 024	TorFV 4 / 025	TorFV 4 / 025	TorFV 4 / 025	TorFV 4 / 025	TorFV 4 / 025
Permitted OPEN / CLOSE output speed in frequency-inverter operating mode ²	rpm	26 / 15	18 / 15	26 / 15	--	18 / 15	26 / 15
Motor power	kW	0,40	0,55	0,40	0,75	0,75	1,10
Supply voltage, frequency	V - Hz	3x230/400- 50	3x230/400- 50	3x230/400- 50	1x230-50	3x230/400- 50	3x230/400- 50
Nominal current ³	A	4,3 / 2,5	3,5 / 2,0	3,1 / 1,8	8,0	4,8 / 2,8	4,6 / 2,7
Motor duty cycle	ED	S3-60%	S3-60%	S3-60%	S3-40%	S3-60%	S3-60%
Max. cycles per hour		20	20	20	14	16	16
Supply side wiring / fusing (delayed action)		5x1,5² / 10A	5x1,5² / 10A	5x1,5² / 10A	3x1,5² / 10A	5x1,5² / 10A	5x1,5² / 10A
Limit switch range ⁵		20	20 (60, 110)	20 (60, 110)	20 (60, 110)	20 (60, 110)	20 (60, 110)
Max. hand force NHK / KNH ⁴	N	75 / 100	85 / 110	85 / 110	85 / 110	130 / 75	130 / 75
ELEKTROMATEN weight	kg	15,5	23	21	27	26	28
Spare parts: Catalogue page		8.53	8.54	8.54	8.54	8.54	8.54
Part no. installation drawing (dxf, dwg)		50001039	50000580	50000580	50000751	50000580	50000580
Part no. ELEKTROMATEN		10003055	10002363	10002364	10002514	10002367	10002368

ELEKTROMATEN Series		SI 55.10 SG85F	SI 55.15 SG85F	SI 75.10 SG115F	SI 75.15 SG115F	SI 100.10 SG115F	SI 140.7 SG115F
Output torque	Nm	550	550	750	750	1000	1400
Output speed	rpm	10	15	10	15	10	7
Hollow-shaft Ø	mm	40	40	55	55	55	55
Locking torque ¹	Nm	1400	1400	2840	2840	2840	2840
Safety brake (test number)		TorFV 4 / 025	TorFV 4 / 025	TorFV 4 / 026	TorFV 4 / 026	TorFV 4 / 026	TorFV 4 / 026
Permitted OPEN / SHUT output speed in frequency-inverter operating mode ²	rpm	18 / 18	26 / 26	18 / 18	26 / 26	18 / 18	12 / 12
Motor power	kW	0,75	1,10	1,10	1,10	1,30	1,10
Supply voltage, frequency	V - Hz	3x230/400- 50	3x230/400- 50	3x230/400- 50	3x230/400- 50	3x230/400- 50	3x230/400- 50
Nominal current ³	A	8,0 / 4,6	7,3 / 4,2	7,8 / 4,5	7,1 / 4,1	11,3 / 6,5	7,1 / 4,1
Motor duty cycle	ED	S3-60%	S3-60%	S3-60%	S3-60%	S3-60%	S3-60%
Max. cycles per hour ⁴		16	16	14	14	12	10
Supply side wiring / fusing (delayed action)		5x1,5² / 10A	5x1,5² / 10A	5x2,5² / 16A	5x2,5² / 16A	5x2,5² / 16A	5x2,5² / 16A
Limit switch range ⁵		20 (60, 110)	20 (60, 110)	20 (60, 110)	20 (60, 110)	20 (60, 110)	20 (60, 110)
Max. hand force NHK / KNH ⁴	N	285 / 165	285 / 165	285 / 230	285 / 230	345 / 280	250 / 200
ELEKTROMATEN weight	kg	30	30	47	47	49	55
Spare parts: Catalogue page		8.55	8.55	8.56	8.56	8.56	8.56
Part no. installation drawing (dxf, dwg)		50000734	50000734	50000794	50000794	50000794	50000795
Part no. ELEKTROMATEN		10002479	10002480	10002402	10002535	10002536	10002537

The following applies for all ELEKTROMATEN: Protection class IP54, permissible temperature range -5°C to 40°C, operating sound pressure level SPL <70 dB(A)

¹ Read note in 3.5 · ² We recommend to select a special ELEKTROMATEN (enquire) for use with frequency inverter, OPEN drive speed at 87 Hz, read note in 3.7 · ³ The operating current in door drives can reach up to 4x the rated current for limited periods, read notes in 3.6 and 3.7 · ⁴ Read note in 3.2 · ⁵ Maximum possible revolutions of hollow shaft · ⁶ Read note in 3.4

2. Selection chart

ELEKTROMATEN Tube DIN 2448 [mm]	SI 17.15 F [N] v _a [cm/s]	SI 25.10 F [N] v _a [cm/s]	SI 25.15 F [N] v _a [cm/s]	SI 25.15 WS F [N] v _a [cm/s]	SI 40.10 F [N] v _a [cm/s]	SI 40.15 F [N] v _a [cm/s]
101,6 x 3,6	2237 9,6	3289 6,4	3289 9,6	3289 9,6	--	--
108,0 x 3,6	2125 10,1	3125 6,7	3125 10,1	3125 10,1	5000 6,7	5000 10,1
133,0 x 4,0	1778 12,0	2614 8,0	2614 12,0	2614 12,0	4183 8,0	4183 12,0
159,0 x 4,5	1520 14,1	2235 9,4	2235 14,1	2235 14,1	3575 9,4	3575 14,1
177,8 x 5,0	1375 15,5	2022 10,4	2022 15,5	2022 15,5	3236 10,4	3236 15,5
193,7 x 5,4	--	1872 11,2	1872 16,8	1872 16,8	2995 11,2	2995 16,8
219,1 x 5,9	--	--	--	--	2677 12,5	2677 18,8

ELEKTROMATEN Tube DIN 2448 [mm]	SI 55.10 F [N] v _a [cm/s]	SI 55.15 F [N] v _a [cm/s]	SI 75.10 F [N] v _a [cm/s]	SI 75.15 F [N] v _a [cm/s]	SI 100.10 F [N] v _a [cm/s]	SI 140.7 F [N] v _a [cm/s]
159,0 x 4,5	4916 9,4	4916 14,1	6704 9,4	6704 14,1	--	--
177,8 x 5,0	4449 10,4	4449 15,5	6067 10,4	6067 15,5	8089 10,4	11325 7,2
193,7 x 5,4	4118 11,2	4118 16,8	5615 11,2	5615 16,8	7487 11,2	10482 7,8
219,1 x 5,9	3680 12,5	3680 18,8	5019 12,5	5019 18,8	6692 12,5	9368 8,8
244,5 x 6,3	--	--	4537 13,8	4537 20,8	6049 13,8	8469 9,7
273,0 x 6,3	--	--	4096 15,3	4096 23,0	5461 15,3	7645 10,7
298,5 x 7,1	--	--	3768 16,7	3768 25,0	5024 16,7	7033 11,7
323,9 x 7,1	--	--	--	--	4653 18,0	6514 12,6

■ F = Lift [N]
■ v_a = initial speed [cm/s]

■ Includes 20% friction for single-wall profiles
(profile thickness 20mm)
■ Read note in 3.2

3. Notes

3.1 European directive

In accordance with the product standard DIN EN 13241-1 Doors- and DIN EN 12453 Safety in use of power operated doors-Requirements.

3.2 Selection chart

Reduce weight of the door if the stated number of cycles per hour is exceeded (item 1 of technical data) – e.g. high frequently used doors (enquire).

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

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 / electric brake / brake release

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

On ELEKTROMATEN with electric brake, stopping is achieved by the external brake. Brake inspection must always be carried out by trained service engineers. Ensure that the brake is not released.

3.4 Manual operation

In accordance with EN 12453 and 12604 hand force up to 390N is permissible.

For large, heavy doors manual operation is only used for closing the door. In the case of ELEKTROMATEN units with electric brake, emergency manual operation is carried out against the engaged brake.

3.5 Locking torque

The locking torque moment must not exceed the admissible loads on mechanical components such as e.g. fixings, shafts, keys etc.

3.6 Motor overload protection

Motor overload protection must be able to withstand 4x the nominal motor current because the starting current of the drive unit can reach these levels for short periods.

3.7 Use with frequency inverter

A higher than recommended output speed puts extra load onto the gear. This extra load must be taken into account when sizing a drive by reducing the available output torque.

Increasing the drive speed by 10% reduces the admissible drive torque by 5%. In the case of higher drive speeds reduce the drive torque accordingly (enquire if necessary). The admissible drive speeds may not be exceeded (item 1, technical data). The operating forces must comply with DIN EN 12453. If selecting a frequency inverter, note that the starting current of the drive unit can reach 4x of the nominal motor current.

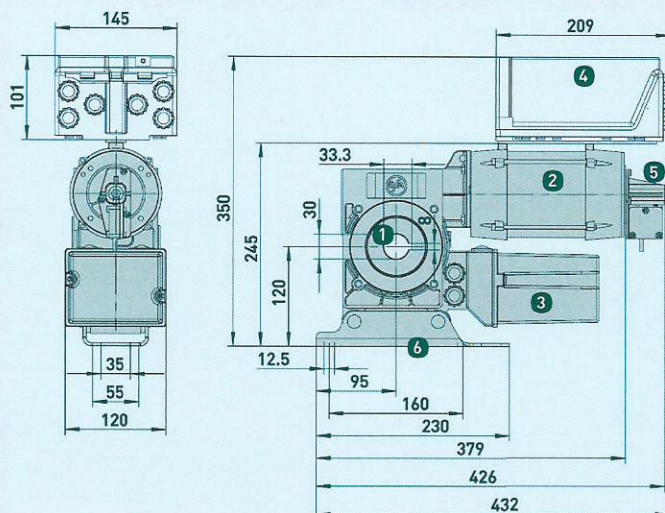
When using a frequency inverter we recommend ELEKTROMATEN in special version (enquire).

4.1 Dimensions • SI 17.15

Series SG63F

- 1 Worm gear with safety brake
- 2 Motor
- 3 Limit switches

- 4 Optional: WS 900 control panel, removable, with 0.7m cable
- 5 Hand crank NHK
- 6 Floating foot



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

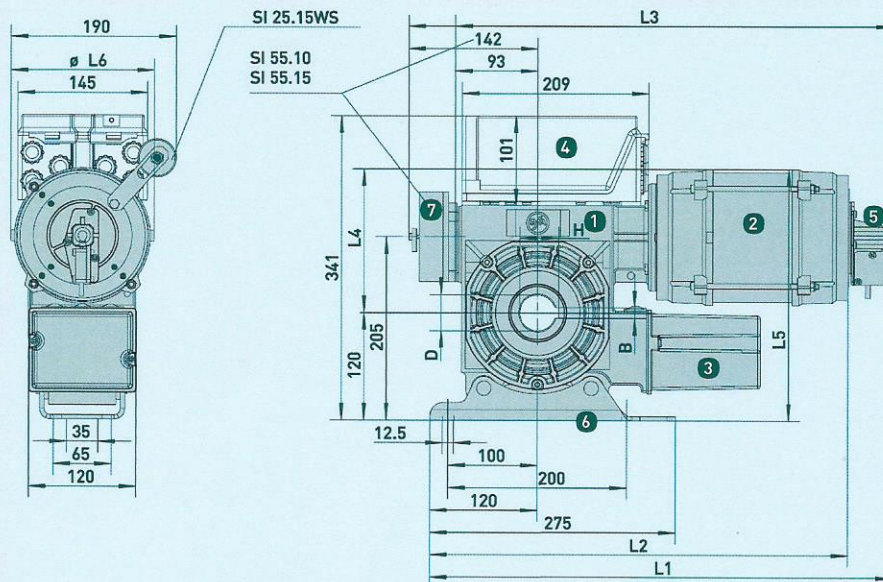
4.2 Dimensions • SI 25.10 - SI 55.15

Series SG85F

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

- 1 Worm gear with safety brake
- 2 Motor
- 3 Limit switch

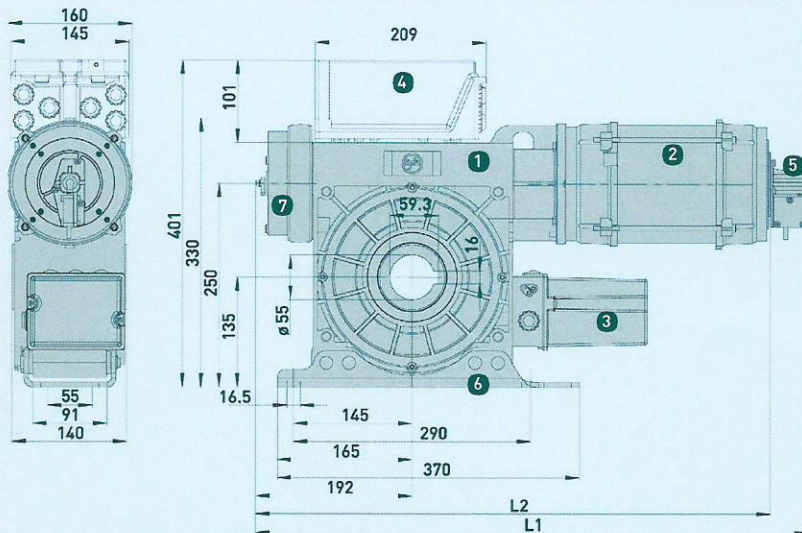
- 4 Optional: WS 900 control panel, removable, with 0.7m cable
- 5 Hand crank NHK
- 6 Floating foot
- 7 Electric brake



ELEKTROMATEN	D	H	B	L1	L2	L3	L4	L5	L6
SI 25.10	30	33,3	8	491	444	464	153	273	Ø135
SI 25.15	30	33,3	8	464	417	437	153	273	Ø135
SI 25.15 WS	30	33,3	8	518	471	491	161	281	Ø160
SI 40.10	40	43,3	12	528	481	501	153	273	Ø135
SI 40.15	40	43,3	12	543	496	516	153	273	Ø135
SI 55.10	40	43,3	12	518	471	540	161	281	Ø160
SI 55.15	40	43,3	12	518	471	540	161	281	Ø160

4.3 Dimensions • SI 75.10 - SI 100.10

Series SG115F



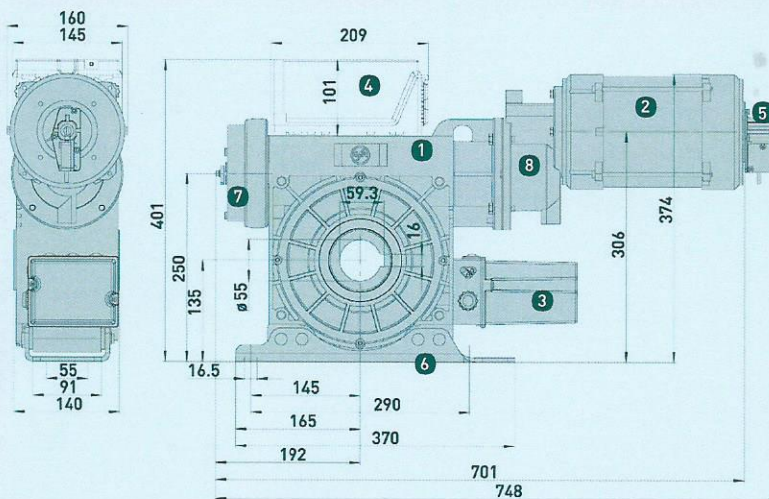
- 1 Worm gear with safety brake
- 2 Motor
- 3 Limit switch
- 4 Optional: WS 900 panel, removable, with 0.7m cable
- 5 Hand crank NHK
- 6 Floating foot
- 7 Electric brake

■ Permitted installation: horizontal (as shown), vertical (motor at the bottom) only with torque mount (page 1.56 section 6.2)

ELEKTROMATEN	L1	L2
SI 75.10	667	620
SI 75.15	667	620
SI 100.10	677	630

4.3 Dimensions • SI 140.7

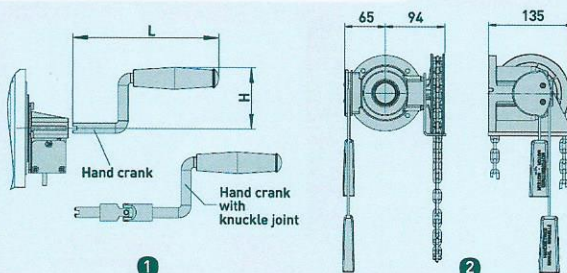
Series SG115F with intermediate gear



- 1 Worm gear with safety brake
- 2 Motor
- 3 Limit switch
- 4 Optional: WS 900 control panel, removable, with 0.7m cable
- 5 Hand crank NHK
- 6 Floating foot
- 7 Electric brake
- 8 Intermediate gear

■ Permitted installation: horizontal (as shown), vertical (motor at the bottom) only with torque mount (page 1.56 section 6.2)

5. Emergency manual operation for horizontal or vertical installation



- 1 Manual hand crank operation NHK/NHKK
- 2 Hand chain operator KNH

■ Manual forces, see item 1 of technical data
■ Read note in 3.4

Series	Emergency manual operation NHK / NHKK	L	H	part no.
SG63F/SG85F	Hand crank	205	142	30002749
	Hand crank with knuckle joint	420	152	30002750
SG115F	Hand crank	265	192	30003112

Subject to measurement and design revisions.