

# ELEKTROMATEN® SI FI

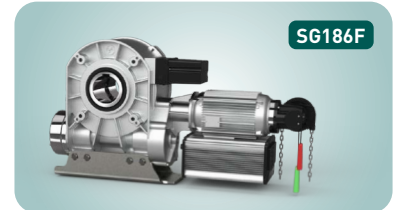
## Safedrive® with built-on frequency inverter

For driving:

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

Series SG186F  
SI 260.12 FI - SI 500.10 FI

“Safedrive® FI” 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 FI comprises of:  
Worm gear with safety brake and hollow shaft, emergency manual operator, integrated limit switches and electrical motor with built-on frequency inverter.



### 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

### Built-on frequency inverter to be used with door controls TS 970, TS 971 or TS 981

- Individual adjustable output speed <sup>1)</sup>
- 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 and FI-motors

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



1

### Emergency manual operation

- Hand chain operator KNH

1



2

### Limit switches

#### Digital limit DES

- Absolute encoder, after a power failure, re-adjustment is not required

2

### Mounting

- Floating foot  
(Fitting requires a torque mount system)

### Door controls

- Simple connection by means of non-interchangeable plug connections allowing simple exchange with other GfA control panels
- Control voltage: 24 V
- Frequency: 50 Hz / 60 Hz
- Mains supply: 3N~400 V, 3~400 V

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

<sup>1)</sup> See 3.6

## 1. Technical data

| ELEKTROMATEN                             |  |     | SI 260.12 FI       | SI 360.12 FI       | SI 500.10 FI       |
|--|--|-----|--------------------|--------------------|--------------------|
| Series                                   |  |     | SG186F             | SG186F             | SG186F             |
| Output torque                            |  | Nm  | 2600               | 3600               | 5000               |
| Output speed                             | OPEN<br>CLOSE > 2,5 m<br>CLOSE ≤ 2,5 m <sup>1)</sup> | rpm | 2-12<br>2-5<br>2-5 | 2-12<br>2-5<br>2-5 | 6-10<br>2-5<br>2-5 |
| Output shaft / hollow shaft (∅)          |  | mm  | 80                 | 80                 | 100                |
| Locking torque <sup>2)</sup>             |  | Nm  | 8255               | 8255               | 8255               |
| Safety brake (approval number)           |  |     | 16-000574-PR03     | 16-000574-PR03     | 16-000574-PR01     |
| Max. holding torque <sup>3)</sup>        |  | Nm  | 2600               | 3600               | 5000               |
| Motor power                              |  | kW  | 4,50               | 4,50               | 4,50               |
| Supply voltage                           |  | V   | 3-400              | 3-400              | 3-400              |
| Operating frequency                      |  | Hz  | 50 / 60            | 50 / 60            | 50 / 60            |
| Operating current                        |  | A   | 12,4               | 12,4               | 12,4               |
| Max. cycles per hour <sup>4)</sup>       |  |     | 11 (6,0)           | 11 (6,0)           | 10 (3,9)           |
| Limit switch range <sup>5)</sup>         |  |     | 10                 | 10                 | 10                 |
| Max. hand force KNH <sup>6)</sup>        |  | N   | 182                | 215                | 261                |
| Weight                                   |  | kg  | 143                | 143                | 143                |
| Part no. installation drawing (dxf, dwg) |  |     | 50001578           | 50001578           | 50001578           |
| Part no. ELEKTROMATEN                    |  |     | 10005230           | 10005231           | 10004095           |

Generally applies: Degree of protection IP65, permissible temperature range +5 °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, other limit switch ranges on request · 6) See 3.4

## 2. Selection chart

| Roller shutters<br>Tube EN 10220 [mm] | SI 260.12 FI |            | SI 360.12 FI |                       | SI 500.10 FI |                       |
|---------------------------------------|--------------|------------|--------------|-----------------------|--------------|-----------------------|
|                                       | F [N]        | v [cm/s]   | F [N]        | v <sub>b</sub> [cm/s] | F [N]        | v <sub>b</sub> [cm/s] |
| 298,5 x 7,1                           | 11429        | 3,3 - 20,0 | 15824        | 3,3 - 20,0            | --           | --                    |
| 323,9 x 7,1                           | 10584        | 3,6 - 21,6 | 14655        | 3,6 - 21,6            | 20355        | 3,6 - 18,0            |
| 368,0 x 8,0                           | 9381         | 4,1 - 24,4 | 12990        | 4,1 - 24,4            | 18041        | 4,1 - 20,3            |
| 406,4 x 8,8                           | 8537         | 4,5 - 26,8 | 11820        | 4,5 - 26,8            | 16417        | 4,5 - 22,3            |
| 419,0 x 10,0                          | 8292         | 4,6 - 27,6 | 11481        | 4,6 - 27,6            | 15945        | 4,6 - 23,0            |
| 457,2 x 10,0                          | --           | --         | --           | --                    | 14669        | 5,0 - 25,0            |
| 508,0 x 11,0                          | --           | --         | --           | --                    | 13258        | 5,5 - 27,6            |

■ F = Lift [N]

■ v<sub>b</sub> = Range of speed

■ Includes 30 % friction for single-wall profiles (profile thickness 20 mm)

■ Read note in 3.2

## 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 30 % friction for roller shutters with single-wall profiles (profile thickness 20mm) 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 EN 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

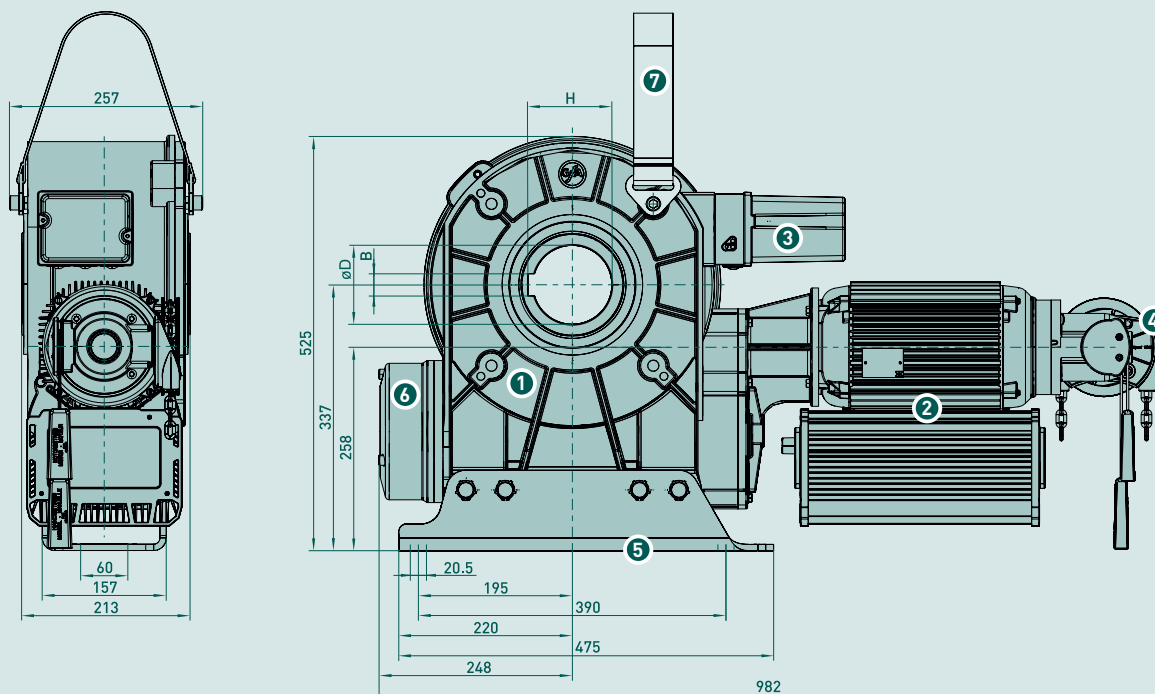
The maximum admissible speed is dependent on the door construction and type of the door. All materials must be designed to be used for doors with higher speeds.

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

## 4. Dimensions

SI 260.12 FI – SI 500.10 FI

SG186F



- 1 Worm gear with safety brake
- 2 Motor with built-on frequency inverter

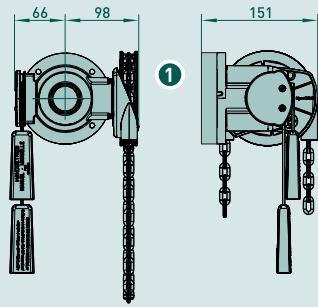
- 3 Limit switch
- 4 Emergency manual operation KNH
- 5 Floating foot

- 6 Brake
- 7 Assembling aid

| $\varnothing D$ | H     | B  |
|-----------------|-------|----|
| 80              | 85,4  | 22 |
| 100             | 106,4 | 28 |

■ Permitted installation: Horizontal with an additional torque mount system, see 6

## 5. Emergency manual operation • for horizontal installation



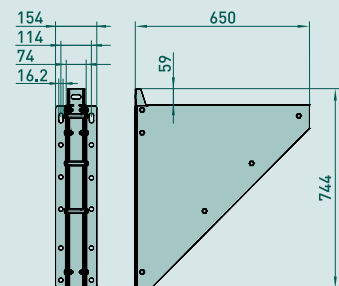
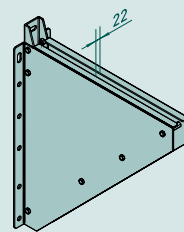
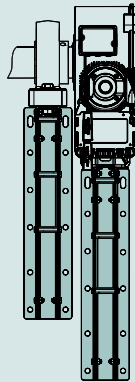
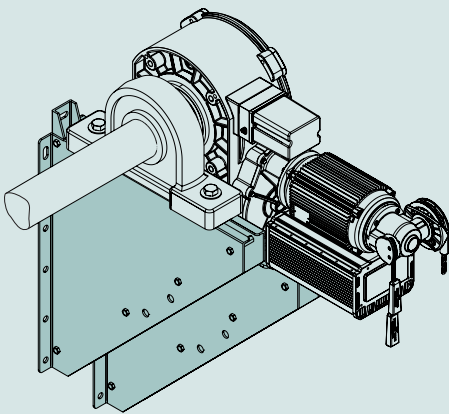
1 Hand chain operator KNH

■ Manual forces, see item 1 of technical data

■ Read note in 3.4

## 6. Attachments / Accessories

### Bracket



| For series | Part.-no. | Max. load |
|------------|-----------|-----------|
| SG186F     | 40016189  | 29 kN     |

■ Mounting of the door shaft via separate bearing

■ 2nd bracket as a torque mount is required

■ Permitted installation: Horizontal