

Folding-door-drive-ELEKTROMATEN® FT

Series SG50R-SG85
FT 60.4
FT 80.2
FT 80.5 FI

For driving:
 Folding doors

ELEKTROMATEN FT are special drives for industrial folding doors. The door is driven by a torque arm.

ELEKTROMATEN FT comprises of:

Two-step reduction worm gear, emergency manual operation with gear release, integrated limit switches and electrical motor respectively electrical motor with built-on frequency inverter (FT 80.5 FI).

Built-on frequency inverter (FT 80.5 FI) to be used with door control TS 981-FT:

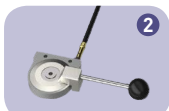
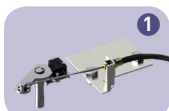
- Individual adjustable output speed ¹⁾
- The speed appears directly into the display – extra work to evaluate frequency and speed is not required
- Soft start and soft stop
- Automatic optimising of acceleration and deceleration speed
- Adjustable distance for acceleration and deceleration speed
- Individual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



Approvals and certificates

ELEKTROMATEN and FI-motors

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



Emergency manual operation

- Gear release ER ¹⁾
- Gear release lever with cable FB ²⁾ (optional)

Limit switch

- Mechanical limit NES ²⁾ ³⁾
- 2 operating, 2 emergency- and 2 auxiliary limit switches

Digital limit DES

- Absolute encoder, after a power failure, re-adjustment is not required ⁴⁾

Mounting / Output drive

- Mounting base (standard fitting)
- Galvanized torque arm

Special versions

- Increase of cycles per hour ¹⁾
- Higher protection class ²⁾
- Other voltages and frequencies

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 / 60 Hz
- Supply voltage: 1N~230 V, 3~230 V ³⁾, 3N~400 V, 3~400 V

Details of all GfA door controls can be found in section 8. Further door controls on request.

¹⁾ See 2.7
²⁾ Not for FT 80.5 FI
³⁾ For FT 80.5 FI, use additional adaptor part no. 30005855

1. Technical data

ELEKTROMATEN Series		FT 60.4	FT 80.2	FT 80.5 FI
		SG50R-SG85	SG50R-SG85	SG50R-SG85
Output torque	Nm	600	800	800
Output speed	rpm	4	2	0,5-5
Opening / closing time (150° at torque arm)	s	6	13	5
Holding torque ¹⁾	Nm	2900	2900	2900
Restoring torque ²⁾	Nm	<30	<30	<30
Permitted OPEN / CLOSE output speed in frequency-inverter operating mode ³⁾	rpm	7	3,5	5
Motor power	kW	0,45	0,37	0,85
Supply voltage	V	3-230 / 400	3-230 / 400	1N-230
Operating frequency	Hz	50	50	50 / 60
Operating current ⁴⁾	A	1,9 / 1,1	2,1 / 1,2	6,6
Max. cycles per hour ⁵⁾		17 (17)	17 (17)	17 (17)
Limit switch range ⁶⁾		1 (360°)	1 (360°)	1 (360°)
Weight	kg	35	34	46
Part no. installation drawing (dxf, dwg)		50001146	50001146	50001596
Part no. ELEKTROMATEN		10003292	10003232	10003958

Generally applies: Degree of protection IP65 (combined with WS 900: IP54), permissible temperature range -10 °C...+40 °C (+60 °C) → FT 60.4/FT 80.2, +5 °C...+40 °C (+60 °C) → FT 80.5 FI, operating sound pressure level SPL <70 dB(A)

1) See 2.5 · 2) See 2.4 · 3) We recommend the selection of a special GfA ELEKTROMATEN-FI for use with frequency inverter, OPEN drive speed at 87 Hz (not applicable for FT 80.5 FI), see 2.7 · 4) The operating current in door drives can reach up to 4x the rated current for limited periods, see 2.6 and 2.8 · 5) 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 2.2 · 6) Maximum revolutions of the torque arm

2. Notes

2.1 European directive

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

2.2 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.

2.3 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.

2.4 Manual operation / restoring torque

When moving the lever the door is unlocked, and the control-power supply is interrupted. The door can be opened by hand. The restoring torque values indicated here (see Technical data) must be exceeded in this case.

2.5 Holding torque / Slipping clutch

The factory-adjusted slipping clutch produces the indicated holding torque. If the clutch is subject to higher forces than the admissible (e.g. from wind) additional improvements of the door design may be required to prevent undesired opening of the door.

2.6 Motor overload protection

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

2.7 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.

2.8 Use with external frequency inverter

For external frequency inverters applies:

A higher than recommended drive 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).

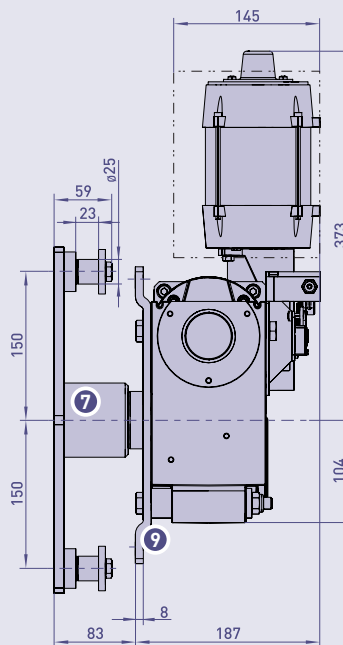
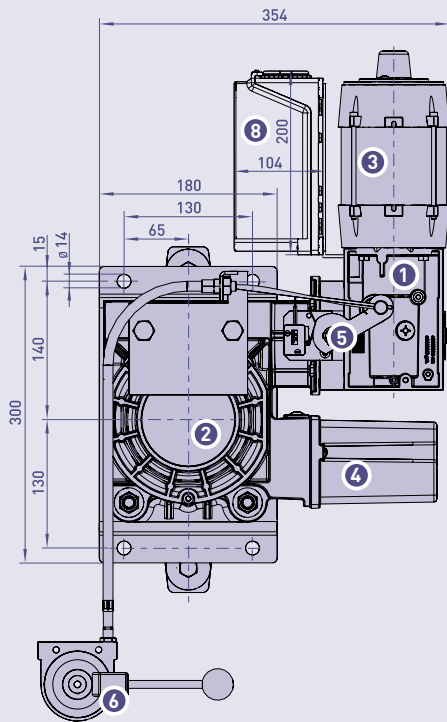
The admissible drive speeds may not be exceeded (see Technical data). The operating forces must comply with EN 12453, and the corresponding EMC directives must likewise be observed.

If selecting a frequency inverter, note that the starting current of the drive unit can reach 4x the operating motor current.

3. Dimensions

3.1 FT 60.4 / FT 80.2

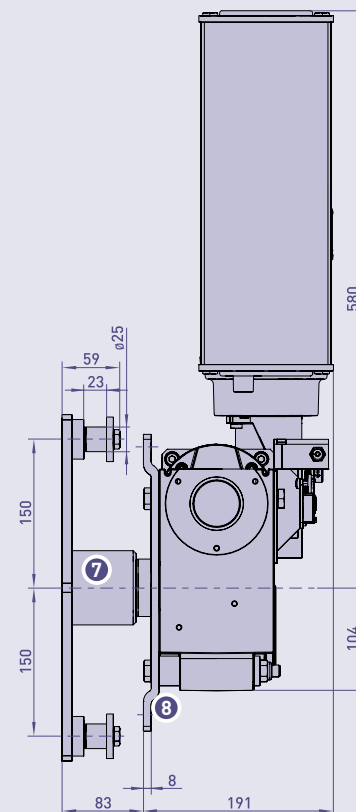
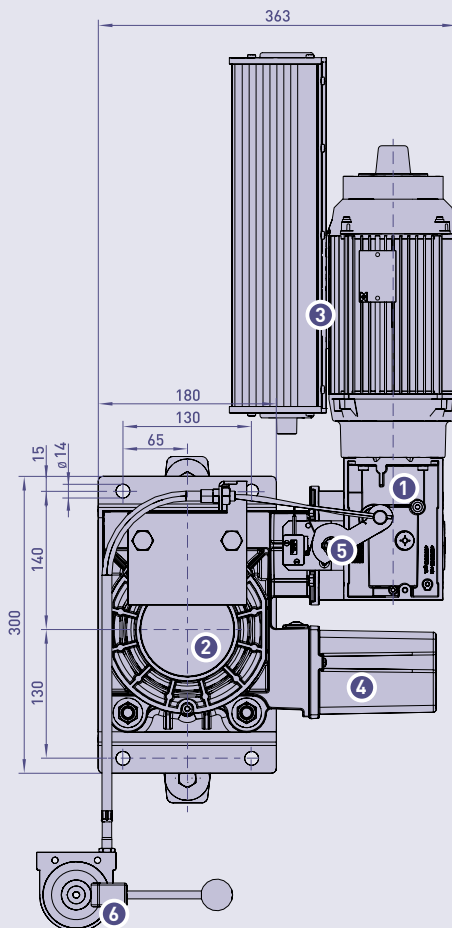
SG50R-SG85



- 1 Worm gear 1 reduction with integrated slipping clutch
- 2 Worm gear 2 reduction
- 3 Motor
- 4 Limit switch
- 5 Gear release ER
- 6 Gear release lever with cable FB (optional)
- 7 Torque arm
- 8 Optional: WS 900 door control, removable, with 0,8 m cable
- 9 Mounting base

3.2 FT 80.5 FI

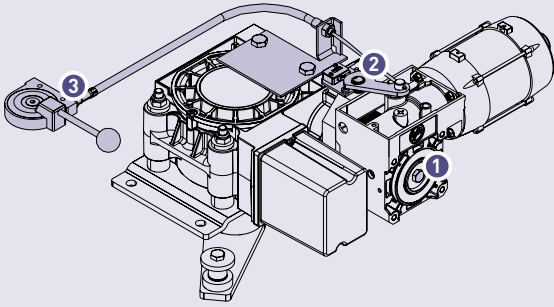
SG50R-SG85



- 1 Worm gear 1 reduction with integrated slipping clutch
- 2 Worm gear 2 reduction
- 3 Motor with built-on frequency inverter
- 4 Limit switch
- 5 Gear release ER
- 6 FB gear release lever with cable (optional)
- 7 Torque arm
- 8 Mounting base

4. Slipping clutch and emergency manual operation

SG50R-SG85



The drives have a slipping clutch (1) as standard for overload protection. The slipping clutch is set to the output torque at the factory. The gear release ER (2) that is also standard is intended for opening or closing the gate without electrical energy supply. The gearbox can be unlocked from the operating height with the additionally available gear release lever with cable (3).

Designation		Part no.
Slipping clutch	1	Standard
Gear release ER	2	Standard
Gear release lever with cable FB (8m)	3	20001925