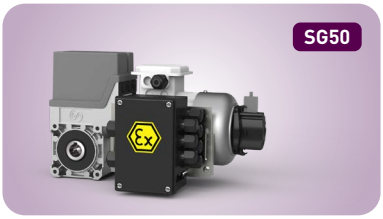
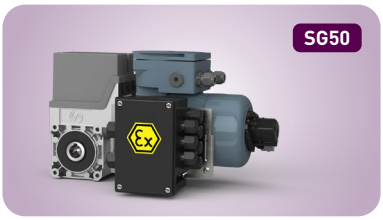
ELEKTROMATEN® SE

Sectional-door-drive
comply to ATEX

Series SG50
SE 9.24 Ex-e T3
SE 9.24 Ex-de T4

ELEKTROMATEN SE are special drives for counterbalanced sectional doors to be used in potentially explosive atmospheres. The drive unit is normally directly fitted to the door shaft.
ELEKTROMATEN SE comply to ATEX comprises of:
Worm gear with hollow shaft, emergency manual operator, integrated limit switches and electrical motor.





Approvals and certificates

ELEKTROMATEN

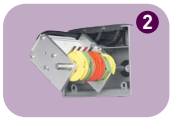
Type test according to:
DIN EN 12453
DIN EN 60335-1
DIN EN 60335-2-103
TÜV NORD CERT GmbH

Holding torque

Certificate of conformity:
Examination of the static holding torque
Test report 630900
TÜV SÜD Industrieservice GmbH

ATEX - Registration number

Registration number:
8000306986
TÜV NORD CERT GmbH



Emergency manual operation

- Hand crank NHK 1

Limit switch

Mechanical limit NES 2

- 2 operating, 2 emergency- and 2 auxiliary limit switches

Terminal box

- **Terminal box** 3

Mounting

- Fitting thread 8xM8 (standard fitting)
- Torque mount
- Flange bracket

Electrical accessories

For ELEKTROMATEN in potentially explosive atmospheres:
- Door control
- Evaluators
- Push buttons etc.

Details of all GfA door controls to be used in in potentially explosive atmospheres can be found from page 6.051.

1. Technical data

ELEKTROMATEN Series				SE 9.24 Ex SG50
Type of protection	Motor Ex-e Increased Safety	T3	Ex	**Assemblies fitted:** Gas: II 2G Ex db eb h IIC T3 Gb Dust: II 2D Ex tb h IIIC 190°C Db
	Motor Ex-de Flameproof Enclosures	T4		**Assemblies fitted:** Gas: II 2G Ex db eb h IIC T4 Gb Dust: II 2D Ex tb h IIIC 130°C Db
Output torque			Nm	90
Output speed			rpm	24
Output shaft / hollow shaft (Ø) [1]			mm	25,4
Max. holding torque [2]			Nm	450
Max. door weight			kg	4000
Motor power			kW	0,37
Supply voltage			V	3~230 / 400
Operating frequency			Hz	50
Operating current [3]	Ex-e T3 Ex-de T4		A	2,10 / 1,20 1,65 / 0,95
Max. cyles per hour [4]				15 (14,5)
Limit switch range [5]				20 (40)
Permissible temperature range			°C	-10...+40
Weight	Ex-e T3 Ex-de T4		kg	18 29
Part no. installation drawing (dxf, dwg)	Ex-e T3 Ex-de T4			50000711 50002194
Part no. ELEKTROMATEN	Ex-e T3 Ex-de T4			10002595 10005491

Generally applies: Degree of protection IP65 (SE 9.24 Ex-de T4: IP55), operating sound pressure level SPL <70 dB(A)
1) Additional outputshafts / hollow shafts (Ø) on request · **2)** See 2.5 · **3)** See 2.6 · **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 2.2 · **5)** Maximum revolutions of the output shaft / hollow shaftt; optional limit switch ranges are listed in brackets (→ change in cycles per hour)

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 Cyles 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 / Counterbalancing

Manual operation with NHK hand crank, the door and self-locking gear construction remain inter-connected. There is no danger of a door crashing down, e.g. if a spring breaks.

The counter-balancing should be inspected at least once a year.

2.5 Holding torque

Counterbalanced door leaves are prevented from falling down if the drive is capable of holding the weight of the leaf when the spring breaks. The holding capability is the admissible load bearing of the gear construction which can occur when the spring breaks.

Static stability M_{stat} is calculated as follows:

M [N] = door weight [N] x radius of the cable drum [m]

The greatest winding diameter should be taken into account in the case of conical cable drums are in use.

Since it is possible for two counterbalancing springs to fail simultaneously, the German technical committee, Structural equipment (FABE) recommends that the drive be dimensioned such that it can support.

- 100 % of the door weight with 1 or 2 counterbalancing springs
- 66 % of the door weight with 3 counterbalancing springs
- 50 % of the door weight with 4 counterbalancing springs

2.6 Motor overload protection

Drives for use in explosion protected zones have to be protected against overload, short circuits and phase failures (in three-phase systems). The motor protection switch has to be integrated in an external motor door control. The motor protection switch has to be adjusted in match to the operating current of the motor.

2.7 Cable / Cable drums

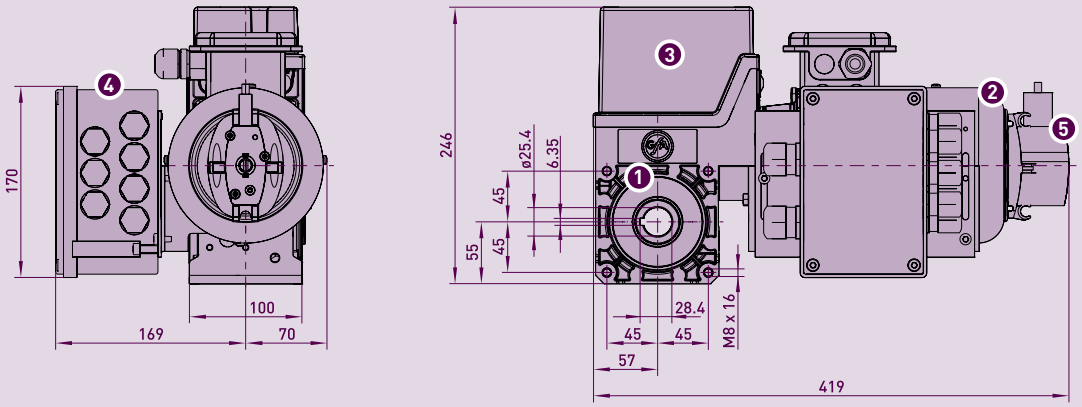
When calculating the cable size the max. permitted door weight is required with a safety of 6x for the cables; requirement of EN 12604.

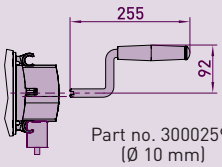
Cable drum selection – ensure that two turns of the cable remain on the drum at all times. The diameter of the cable drum must be at least 20x the diameter of the cable.

3. Dimensions

3.1 SE 9.24 Ex-e T3

SG50





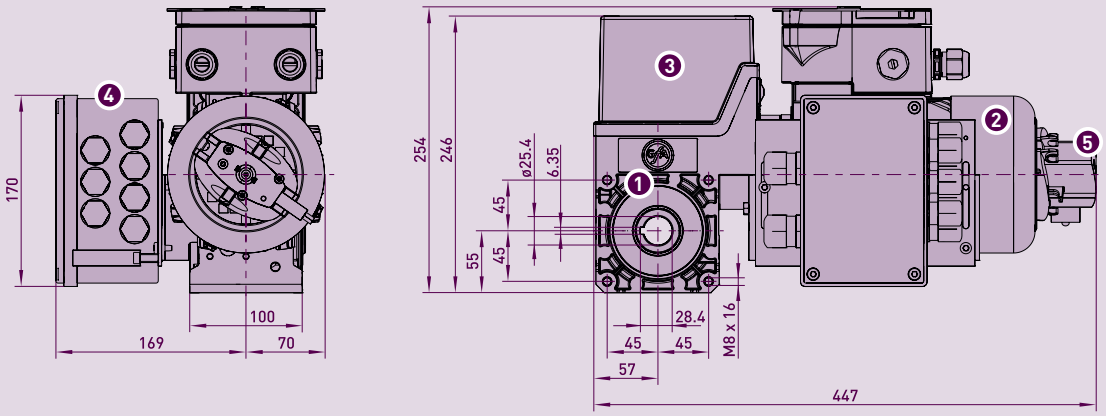
Part no. 30002591
(Ø 10 mm)

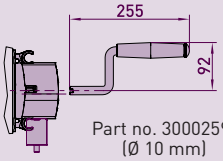
1. Worm gear
2. Motor Ex-e T3
3. Limit switch
4. Terminal box (mountable on both sides)
5. Hand crank NHK

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

3.2 SE 9.24 Ex-de T4

SG50





Part no. 30002591
(Ø 10 mm)

1. Worm gear
2. Motor Ex-de T4
3. Limit switch
4. Terminal box (mountable on both sides)
5. Hand crank NHK

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

4. Attachments / Accessories for ELEKTROMATEN SE

See section 3 - ELEKTROMATEN SE