SOLERO
TECHNOLOGIES

Protecting What Matters. Automatically.

Reliable Fire Protection Systems for Doors and Gates

Fire-protection technology

The advantages at a glance

Fire protection gates have the task to ensure that the fire does not interfuse through wall openings in fire-resistant or fire-proof walls. In case of fire the fire doors have to close without extra energy source. Counter weights or spring brakes trigger the closing force.

According to internationally valid fire protection standards, shutting-speed regulators are applied to attain a permanent and selected shutting speed. Furthermore sliding doors / gates have to be equipped with automatically activating locking devices.

In case of emergency the closing-offs at building openings have to lock automatically. Upon actuation of a locking device, a once initiated shutting procedure may be interrupted only for the purpose of protecting persons. The shutting process must automatically continue after the shutting area has been freed. All of this is achieved by our shutting-speed regulators.

(Eddy current radial dampers) for fire-protection doors, lift-gates and similarly moved masses

Shutting-speed regulators with locking device

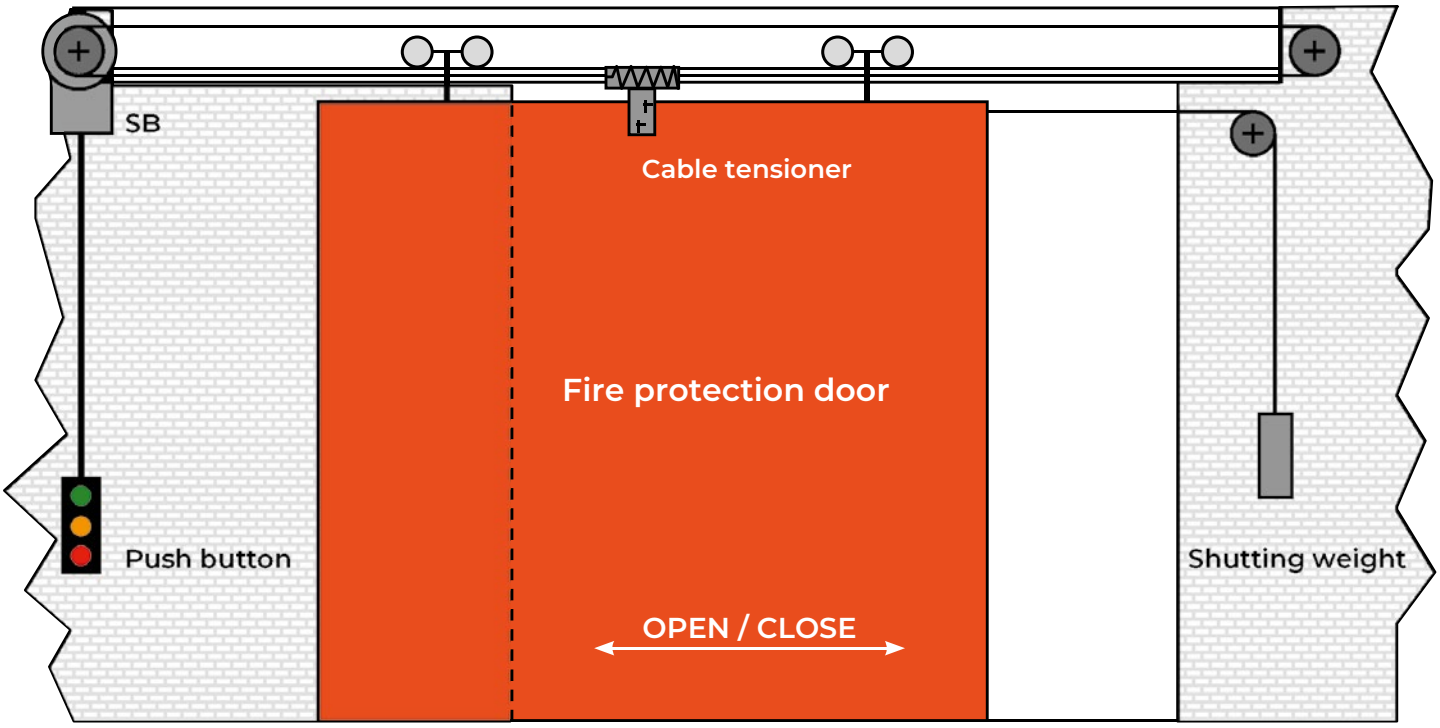
Shutting-speed regulators (SB) cause a regulation of velocity for sliding doors or similarly moved masses.

The door can be kept open due to the electro-magnetic locking device. If it switches off with a manual pushbutton or smoke alarm the door closes automatically. The closing occurs by a shutting weight or a feather-cable-roll which is connected by a rope with the door. The shutting-speed is adjustable. The eddy current equipment works without abrasion.

Variants

- SB without locking device: As shutting-speed regulator
- SB with locking device: Serves as locking and shutting device on sliding doors.
- SB with opening aid and with electromotive opening aid or locking device: via chain winch (for heavy gates).

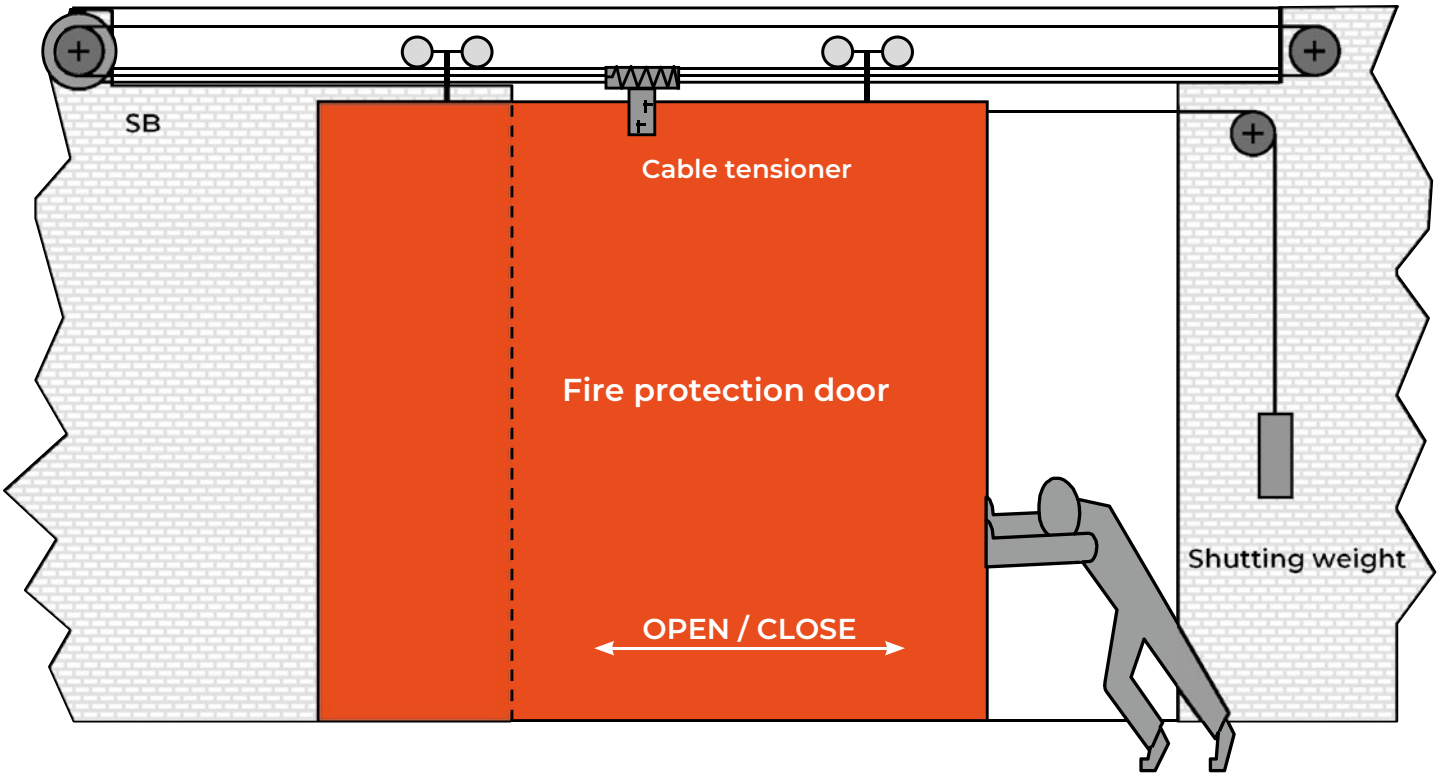
Application for gates up to 1,9 tons.



Flexible assembling options for any application

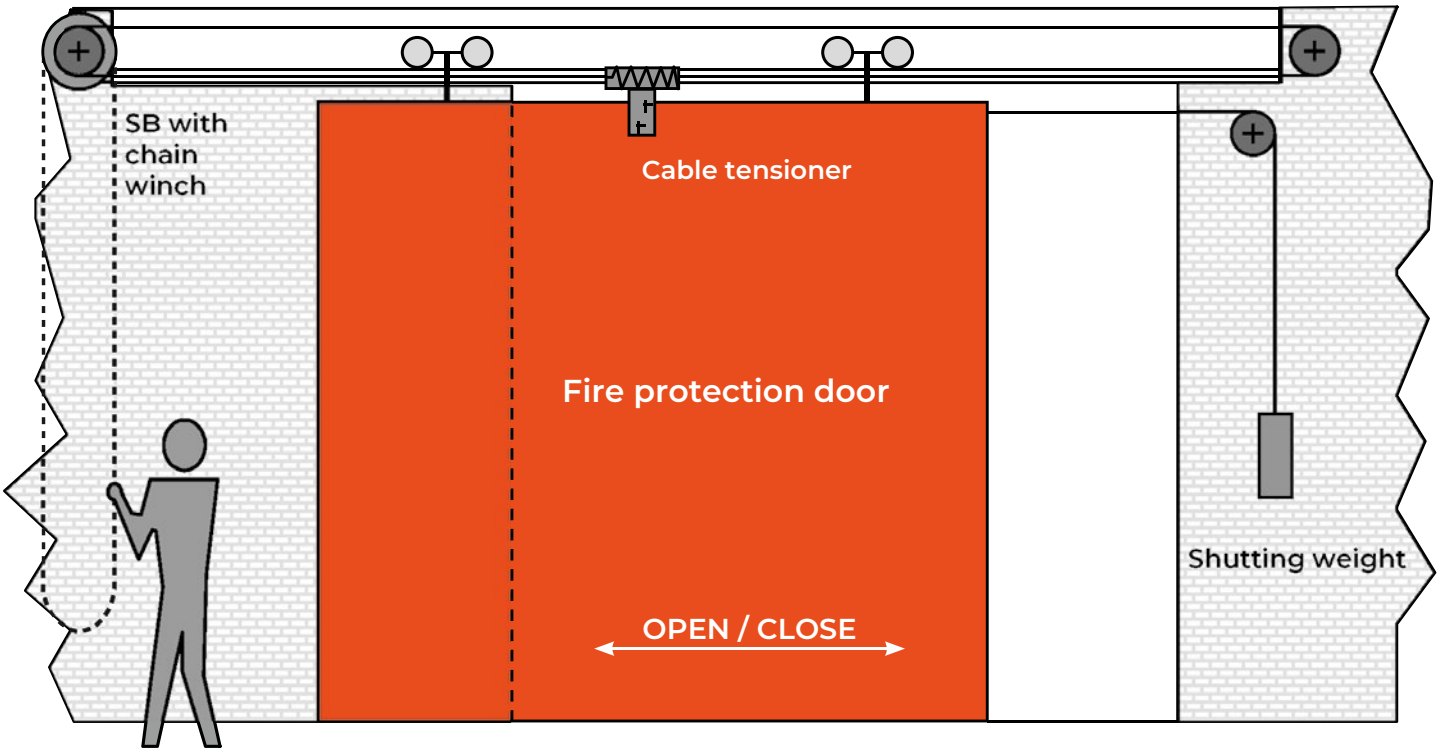
Shutting-speed regulators with locking device

Door / gate is opened manually and can be locked at any position.



Shutting-speed regulators with locking device and chain winch

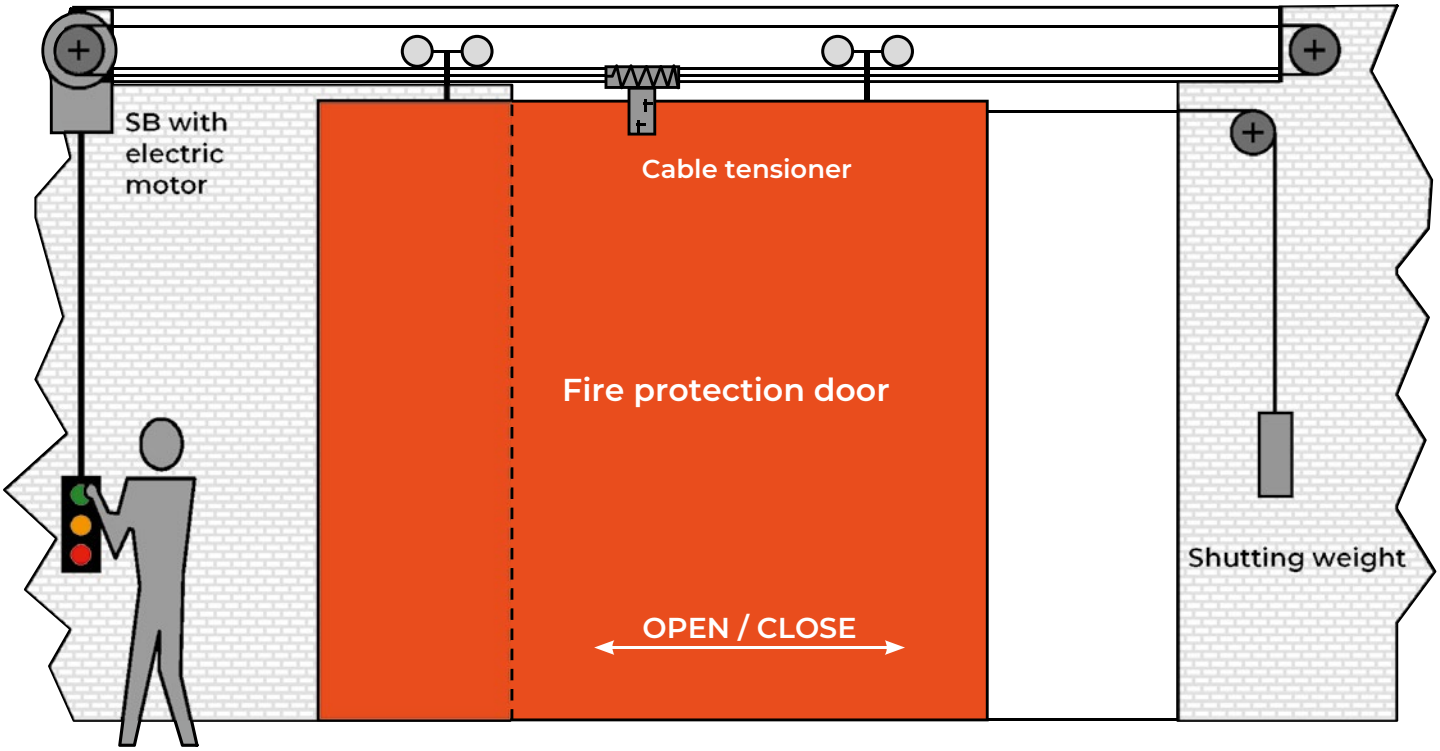
Door / gate is opened via chain winch and can be locked at any position.



Flexible assembling options for any application

Shutting-speed regulators with locking device and electric motor

Door / gate is opened manually and can be locked at any position.



(Eddy current radial dampers) for fire-protection doors and similarly moved masses

Shutting-speed regulators SB2.4.1.1

1. General

For sliding doors and gates, the closures of building-openings – upon occurrence of a risk situation – must be equipped with automatically actuating locking devices and shutting-speed regulators. Upon actuation of a locking device in a risk case, a once initiated shutting procedure may be interrupted only for the purpose of protecting persons. The shutting process must automatically continue after the shutting area has been freed.

2. SB 2.4.1.1

Shutting-speed regulators for sliding doors and roll-up doors or similarly moved masses.

2.1. Features

Deflection pulley, locking device and 400 V electric motor as opening aid.

2.2. Control Ranges

The speed of the masses to be moved is variably adjustable.

v = 0.08 m / s ... 0.2 m / s

2.3. Design Features

- Manually-operated permanent-magnet system for regulation of the shutting speed.
- Single-stage transmission with internal toothing for speed increase of the permanent-magnet-system.
- Drive unit with free-wheel, designed as deflection pulley

3. Technical Data

3.1. Holding magnet

- U = 24 V
- I = 0.2 A
- R = 120 W
- P = 5 W ± 10 %
- Allowable holding torque at the output shaft of the transmission: 12.9 Nm
- Max. allowable braking and holding force: 300 N

3.2. Drive motor

- U = 230 / 400 V
- I = 0.7 A
- P = 0.07 kW
- Degree of protection: IP 44
- Drive torque at the output shaft of the transmission: 20 Nm
- Speed at the output shaft of the transmission: 31 rpm
- Tensile force with reference to shaft diameter Æ 86 = 460 N
- Total weight: 9.5 kg

4. Inspection certificates / Monitoring / Approval

- Inspection certificate No.: P-120004048.2
- DO No.: 10.2
- Approval No.: Z-6.510-2314

SB2.0.X / SB2.4.3.X / SB2.2.X / SB2.4.1.X

Shutting-speed regulators with or without locking device

X Wildcard for drive variant (deflection pulley, chain winch, toothed belt)

Inspection certificates and approvals

Shutting-speed regulators without locking device: General technically approved inspection certificate No. P-120004048.2

Shutting-speed regulators with additional locking device: General technically approved inspection certificate No. Z-6.510-2314

The regulations listed in these documents must be observed on principle. Other or deviating installations are subject to special authorization.

The shutting-speed regulators are used on single and double-wing fire-protection doors / gates. Their purpose is to enable the shutting procedure at constant yet adjustable speeds. Depending on version, the units are equipped with an electromagnetic locking device for keeping doors/gates open.

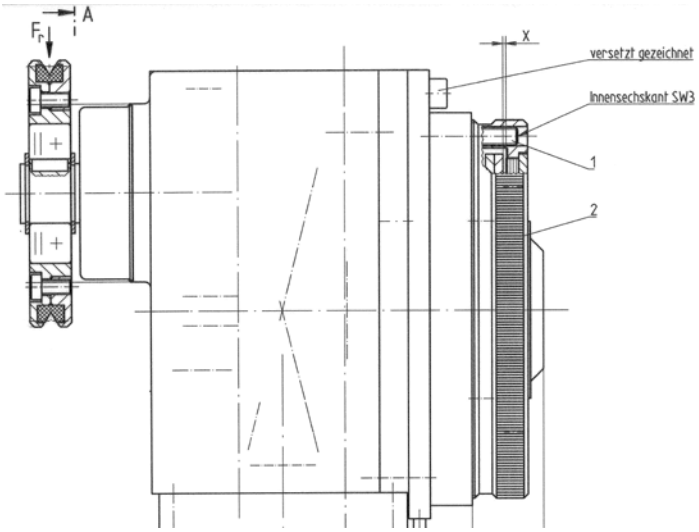
The shutting-speed regulators are screwed to appropriate holders using 4 M6 bolts. The hole pattern is identical for all versions. In this, deflection pulley, chain gear, etc. are to be removed.

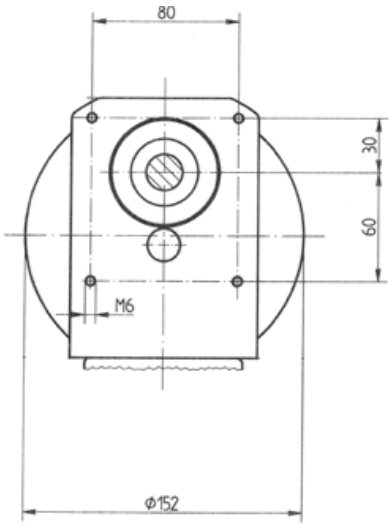
The output elements (deflection pulley, chain gear, etc.) are all equipped with a free-wheel. To change the rotation direction, remove the output element from the shaft, turn it by 180° and mount it again.

By changing the air gap “X”, the braking force is changed. This leads to a change of the shutting speed. The air gap can be variably adjusted. For this, loosen locking screw (1). Adjust the requested speed by turning the threaded cover (2). Tighten locking screw (1) again.

Advantages of Solero shutting-speed regulators

- Owing to the permanent magnetic braking, the shutting speed remains uniform, even at varying temperature ranges.
- Integrated locking device.
- Variably adjustable door/gate speed





	Fr max.	Tension locking device	Output locking device	Max. holding torque locking device (1)	Max. valid closing force in tow cable	Valid flank weight gate area	Valid flank weight door area	Engine data
SB2.0.X	1,000 N	–	–	–	200 N	1,900 kg	500 kg	
SB2.2.X	1,000 N	24 V	5W +/-10%	12.9 Nm	200 N	1,900 kg	500 kg	
SB2.4.1.X	1,000 N	24 V	5W +/-10%	12.9 Nm	200 N	1,900 kg	500 kg	a
SB2.4.3.X	1,000 N	–	–	–	200 N	1,900 kg	500 kg	c

	P	U	I	Duty type	Construction type	Surface	Isolation class	Degree of protection	Winding shield	Drive torque / speed
a	0.07 kW	230/400 V 50 Hz	0.7 A	S3-50 %	B14	not varnished	F	IP54	130 °C (2)	approx. 20 Nm / 31 1/min
c	0.07 kW	230/400 V 50 Hz	0.7 A	S3-50 %	B14	varnished	F	EEXeII T3	–	approx. 20 Nm / 31 1/min

(1) Holding torque measured at the output shaft

(2) Contact version “opening”; automatically shuts
reset temperature 30K+/- 15K;
response time: 1 min.

Electrical protection degree: IP54
Permitted braking power: 60 W
Shutting speed: 0.08 – 0.2 m/s

Shutting-speed regulators with or without locking device

X Wildcard for drive variant (deflection pulley, chain winch, toothed belt)

Inspection certificates and approvals
Shutting-speed regulators without locking device: General technically approved inspection certificate No. P-120004048.2

Shutting-speed regulators with additional locking device: General technically approved inspection certificate No. Z-6.510-2314

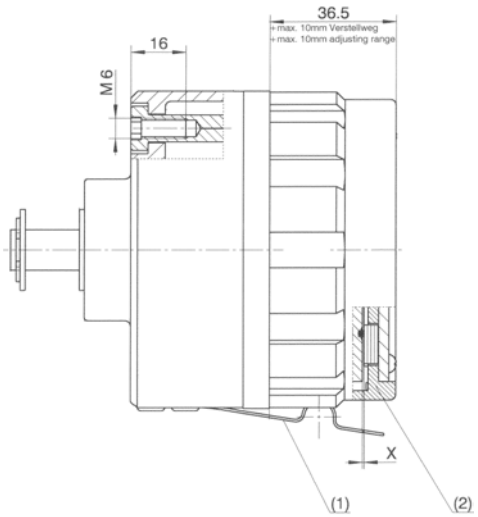
The regulations listed in these documents must be observed on principle. Other or deviating installations are subject to special authorization.

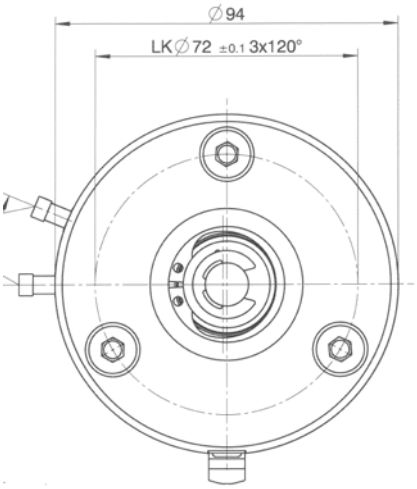
The shutting-speed regulators are used on single and double-wing fire-protection doors / gates. Their purpose is to enable the shutting procedure at constant yet adjustable speeds. Depending on version, the units are equipped with an electromagnetic locking device for keeping doors/gates open.

The shutting-speed regulators are screwed to appropriate holders using 3 M6 bolts. The hole pattern is identical for all versions. In this, deflection pulley, chain gear, etc. are to be removed.

The output elements (deflection pulley, chain gear, etc.) are all equipped with a free-wheel. To change the rotation direction, remove the output element from the shaft, turn it by 180° and mount it again.

By changing the air gap „X“, the braking force is changed. This leads to a change of the shutting speed. The air gap can be adjusted in 0.125mm stages. For this, loosen spring bracket from cap (1). Adjust the requested speed by turning the threaded cover (2). Lock spring bracket again and tighten.





	Fr max.	Tension locking device	Output locking device	Max. holding torque locking device [1]	Max. valid closing force in tow cable	Valid flank weight gate area	Valid flank weight door area
SB3.1.X	750 N	–	–	–	150 N	1,000 kg	1,000 kg
SB3.3.X	750 N	24 V	2.15 W +/-10%	8.9 Nm	150 N	1,000 kg	1,000 kg

[1] Holding torque measured at the output shaft

Electrical protection degree: IP50
Permitted braking power: 40 W
Shutting speed: 0.08 – 0.2 m/s

EL0108

Isolating transformer for shutting-speed regulators with locking device and opening aid

The absolute separation (isolation) of all electrical assemblies associated with the function of fire-resistant doors from the voltage source (power supply), as required by the **VdS Schadenverhütung GmbH** in the case of a fire, is ensured by means of the EL0108 isolating transformer.

Fire Alarm

When a voltage break is initiated at terminals 1 & 2 by the fire detector, relay 4 drops out **continuously**.

This leads to a continuous all-pole disconnection of the door/gate locking device and the motor-actuated opening aid from their voltage source.

All of the current paths in the isolating transformer will be switched to continuity again, however, not until after actuation of the external RESET BUTTON **while** voltage is applied by the self-resetting fire detector.

Advantages of the EL0108 isolating transformer for gates with motor-actuated opening aid

- The complete power supply of the locking device and the motor-actuated opening aid is provided via the isolating transformer. This ensures permanent separation (isolation) of the units.
- This isolating transformer is VdS-accepted and included in the general technical approval of the construction supervising authority.
- The audible LSE0073 alarm buzzer can be connected to the isolating transformer.

EL0108.1

Isolating transformer for shutting-speed regulators with locking device

The absolute separation (isolation) of all electrical assemblies associated with the function of fire-resistant doors from the voltage source (power supply), as required by the **VdS Schadenverhütung GmbH** in the case of a fire, is ensured by means of the EL0108.1 isolating transformer.

Fire Alarm

When a voltage break is initiated at terminals 1 & 2 by the fire detector, relay 1 drops out **continuously**.

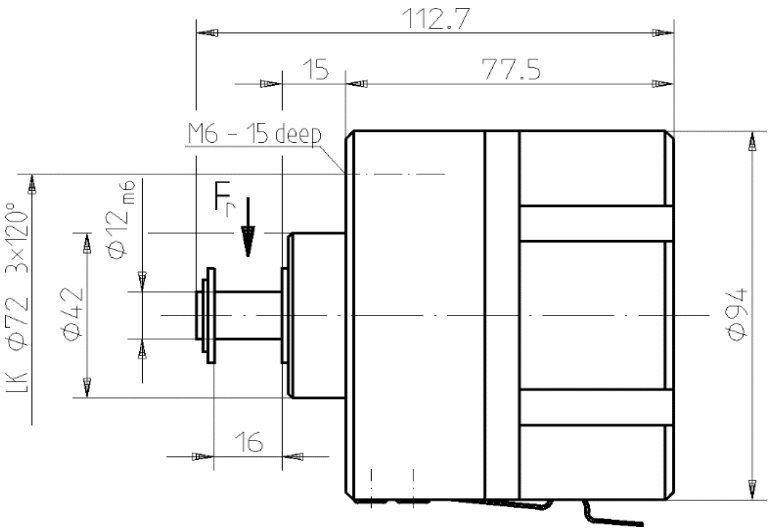
This leads to a continuous all-pole disconnection of the door / gate locking device from its voltage source.

All of the current paths in the isolating transformer will be switched to continuity again, however, not until after actuation of the external RESET BUTTON **while** voltage is applied by the self-resetting fire detector.

Advantages of the EL0108.1 isolating transformer

- Safe, secure and continuous of separation (isolation) of the locking device from the power supply.
- The isolating transformer is VdS-accepted and included in the general technical approval of the construction supervising authority.
- The isolating transformer is equipped with two push buttons in the housing, the SHUT GATE and RESET PUSH BUTTON. The RESET PUSH BUTTON is used to activate the system again after actuation of the shutting procedure and shutting of the gate / door.
- Less wiring expenditure through integrated switches.
- The audible LSE0073 alarm buzzer can be connected to the isolating transformer.

Shutting-speed Regulator without Locking Device



$F_{r\,max}$ = 750 N
v = 0.08 - 0.2 m/s
Weight = 2.0 kg
i = 1:9

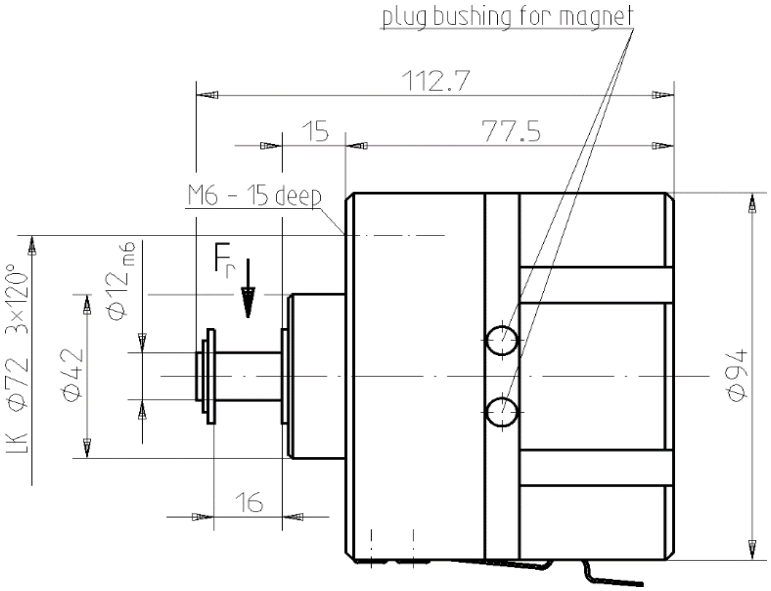
Permissible braking power = 40 W
Tensile load with deflection pulley ø 89.3 = 150 N

Type SB 3.1.X

(X = Drive variant on gate side)

	Type/Order No.:
Shaft end free	SB 3.1.0
With deflection pulley d_w = 89.3	SB 3.1.1
With chain gear Reference circle ø = 65.1	SB 3.1.2
With toothed belt wheel d_w = 86.6	SB 3.1.3
Shaft end free with bushing ø16	SB 3.1.4

Shutting-speed Regulator with Locking Device



$F_{r\,max}$ = 750 N
v = 0.08 - 0.2 m/s
U = 24 V
P = 2.15 W ± 10%
Weight = 2.1 kg
i = 1:9

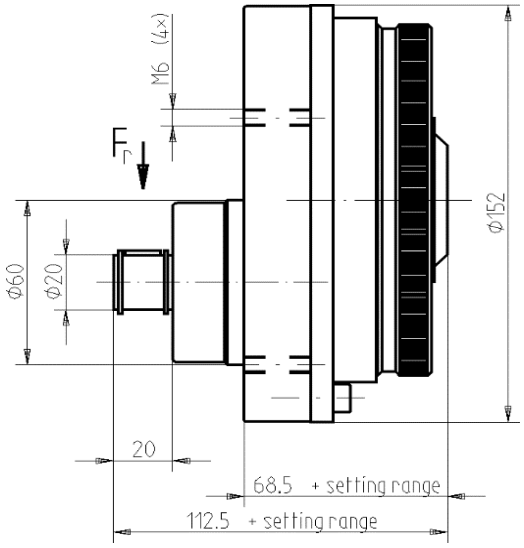
Permissible braking power = 40 W
Permissible holding torque = 8.9 Nm
Tensile load with deflection pulley ø 89.3 = 150 N

Type SB 3.3.X

(X = Drive variant on gate side)

	Type/Order No.:
Shaft end free	SB 3.3.0
With deflection pulley dw = 89.3	SB 3.3.1
With chain gear Reference circle ø = 65.1	SB 3.3.2
With toothed belt wheel dw = 86.6	SB 3.3.3
Shaft end free with bushing ø16	SB 3.3.4

Shutting-speed Regulator without Locking Device



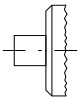
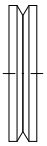
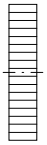
$F_{G\,max}$ = 300N
$F_{r\,max}$ = 1000 N
v = 0.08 - 0.2 m/s
i = 1:7

Permissible braking power = 60 W
Tensile load with deflection pulley ø 86 = 200 N

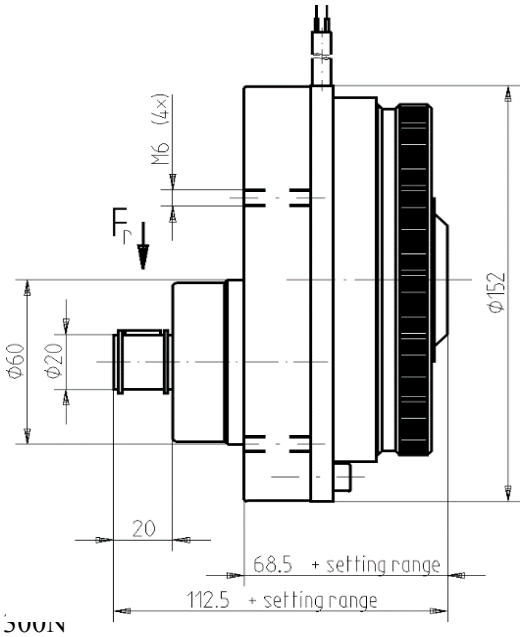
Type SB 2.0.X

(X = Drive variant on gate side)

Type/Order No.:

Shaft end free		SB 2.0.0
With deflection pulley d_w = 86		SB 2.0.1
With chain gear Reference circle ø = 65.1		SB 2.0.2
With toothed belt wheel d_w = 86.6		SB 2.0.3

Shutting-speed Regulator with Locking Device



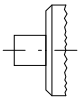
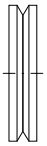
$F_{G\,max}$ = 300N
$F_{r\,max}$ = 1000 N
v = 0.08 - 0.2 m/s
U = 24 V
P = 5 W ± 10%
i = 1:7

Permissible braking power = 60 W
Permissible holding torque = 12.9 Nm
Tensile load with deflection pulley ø 86 = 200 N

Type SB 2.2.X

(X = Drive variant on gate side)

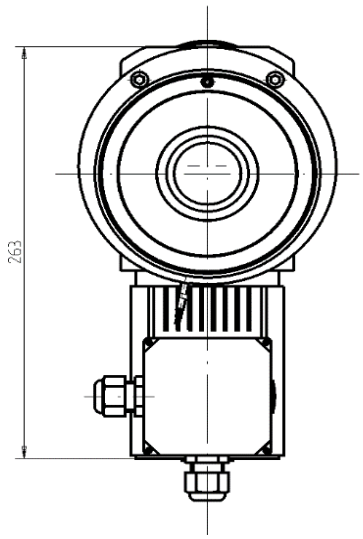
Type/Order No.:

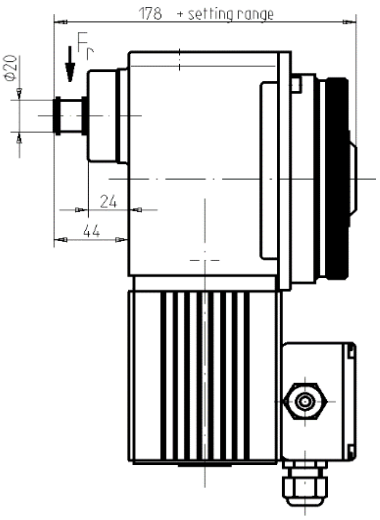
Shaft end free		SB 2.2.0
With deflection pulley d_w = 86		SB 2.2.1
With chain gear Reference circle ø = 65.1		SB 2.2.2
With toothed belt wheel dw = 86.6		SB 2.2.3

Shutting-speed Regulator with Locking Device and Electro Motor

Type SB 2.4.1.X

(X = Drive variant on gate side)





n_{shaft} = 31 rpm
$F_{r\,max}$ = 1000 N
v = 0.08 - 0.2 m/s
U = 24 V
P = 5 W ± 10%
i = 1:28

Permissible braking power = 60 W
Permissible holding torque = 12.9 Nm
Tensile load with deflection pulley ø 86 = 200 N
Driving torque = 20 Nm

Type/Order No.:

Shaft end free	SB 2.4.Y.0
With deflection pulley d_w = 86	SB 2.4.Y.1
With chain gear Reference circle ø = 65.1	SB 2.4.Y.2
With toothed belt wheel d_w = 86.6	SB 2.4.Y.3

Y = Motor version

1 = 380 V ; P = 0.07 KW ; I = 0.7 A
2 = 500 V
4 = 380 V ; P = 0.07 KW ; I = 0.7 A
(24 V drive signal)

ABOUT SOLERO

We are a global supplier for OEMs and Tier 1 in the automotive industry, specializing in Vehicle Dynamics, Fluid Management, and Transmission/E-Drive.

Contact us

We'll find the right product for your application!

Our qualified employees, the precisely defined manufacturing processes and globally-uniform, strict quality guidelines ensure top quality at the end of every production process – worldwide.

Our customers trust us because we have successfully been on the market for over 100 years, and always with the optimum for them in our focus. The cooperation with leading automotive manufacturers continually improves our know-how and processes. In this, we rely on production and logistics processes that enable both modular and individual production – regardless if large or small-lot orders are placed.

Feel free to contact us!
We‘ll find the right product for your application!

Solero Technologies Markdorf GmbH
Riedheimer Strasse 5
88677 Markdorf
Germany

solerotechnologies.com
/solerotechnologies
/solerotechnologies

Solero Technologies, 31.03.2025