



TECHNICAL MANUAL

FIRE GATES SOMATI SYSTEM

Type RGS – Rolling Fire Shutter

(Description, Use and Maintenance)

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1 INTRODUCTION TO FIRE GATES SOMATI SYSTEM

Fire gate is fire-resisting structure to prevent spread of fire outside the fire areas, able to resist effects of fire for a specified period of time. Fire resistance is the period of time the gate is able to resist the effects of fire without damage to its function, specified by the limit states of fire resistance. In terms of its function ČSN EN 1634-1 covers fire gates type EI or EW for which these limit states apply: E - integrity, I - insulation, W - radiation.

Rolling fire shutters SOMATI SYSTEM can be delivered in the following versions and are tailor-made according to the customers' dimensional requirements.

Version: RGS			
Type	RGS-NI	RGS-22	RGS-60/RGS-120
Fire resistance	EW 30	EW 45 EW 60	EI 60/EI 120 EW 180/EW 120
Structure	DP1	DP1	DP1
Variants	- rolling	- rolling	- rolling - horizontal
Variants of gate leaf	single walled slat non-insulated, height 100 mm, from steel galvanized sheet	double walled slat, thickness 22 mm, height 100 mm from steel galvanized sheet - without filling, non-insulated - filled with mineral wool, thickness 20 mm, insulated, thermal bridge uninterrupted	double walled slat, thickness 62 mm, height 100 mm from steel galvanized sheet - filled with mineral wool, thickness 60 mm - with sandwich filling with ceramic wool, thickness 44 mm and calcium silicate boards, thickness 8 mm
Control	- self-locking shaft motor - self-locking tubular motor	- self-locking shaft motor - non-self-locking chain motor	- non-self-locking chain motor - non-self-locking chain motor - self-locking shaft motor for horizontal variant
Control box	- for self-locking motor, control box type: FS Tronic DES-FI; TS - for not self-locking motor, control box type: FS Tronic DES-FS; TS		

Gate leaf consists of individual slats made from steel galvanized sheet with filling or without filling according to the type of structure depending on the required thickness and fire resistance. Slats are wound on steel roller, in case of horizontal variant the slats are guided on horizontal support structure.

This manual describes rolling fire shutter and is intended for maintenance and operations personnel. It includes:

- technical specification
- description of the control box
- description of maintenance and periodic inspections
- faults and repairs
- list of spare parts

The instructions described in this manual apply only to the rolling fire shutters RGS. Please, read this manual carefully before any maintenance or repairs.

Before any work being performed on the supplied equipment, switch off the main power supply and check that no one can switch it on again without Your knowledge.





Maintenance and periodic inspections must be carried out in accordance with the instructions mentioned in this manual by the producer's workers or authorized persons trained by the producer. All works must be carried out in compliance with all safety measures and with respect to the current fire safety regulations.

In most European countries, the fire gates must be approved by their authorized body. The user is also obliged to carry out regular inspections of gates' correct operation. The frequency of inspections is depended on the current regulations valid in each country where the fire gates are installed.

To ensure proper operation of the fire gate it is necessary to remove all obstacles or remnants of combustible materials (textiles, paper and the like) from the movement area of the gate leaf, i.e. below the bottom edge of gate leaf.

1.1 MANUAL NOTES

This manual has been developed in Microsoft Word Version 2000.

Images located in this text are also available as *.plt files, on request. Photos are *.tif files also available on request.

1.2 PRODUCTION LABELS

Each leaf of the fire gate is marked with metal label containing these nominal data:

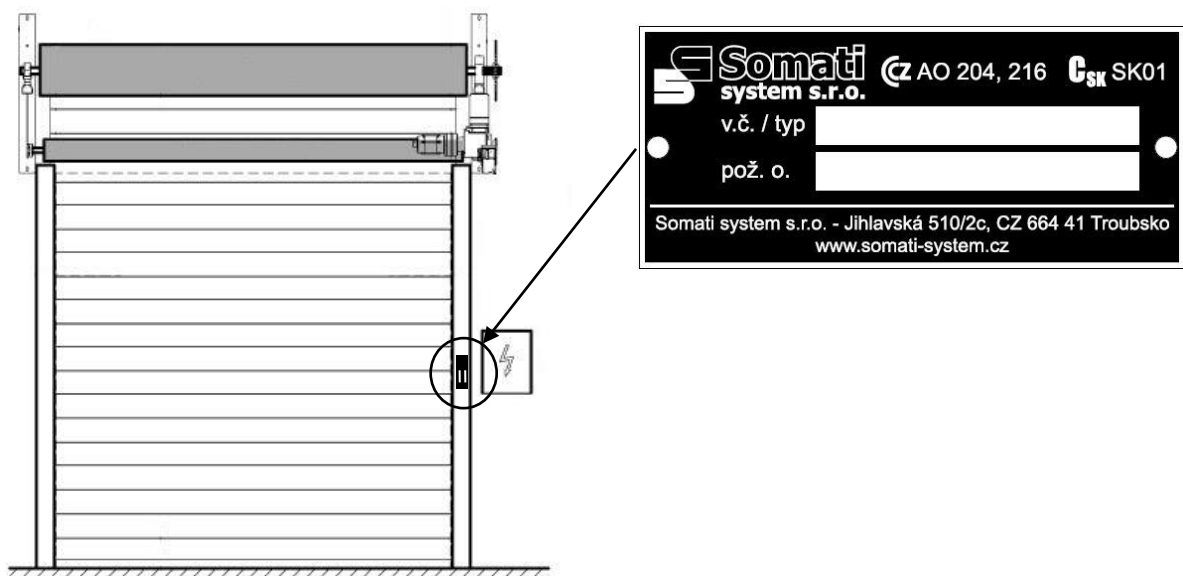
- identification of the producer
- identification of the authorized person, who issued the certification
- serial number
- fire resistance
- type

When contacting the producer, always provide the serial number and the type of fire gate.

Label of the control box contains the following information:

- identification of the producer
- serial number
- type

Production label is usually riveted to the right guide from its view side in height of approx. 1 400 mm from the floor.





1.3 USED MATERIALS

Information about used materials.

Gate leaf and guides

Fire-resistant boards, e.g. Promatect H

Chains

Guide tracks

Belt pulley

Chain pulley

Hinges

Speed control

Roller bearing

Safety brake

Guide wheels for horizontal gates

Steel cable

Rope pulley

Safety latch

Control:

Motor with worm gearbox

Control boxes:

Terminal blocks (Z1, A2, M1, etc.)

Electromagnet (holding magnet)

Photocells

Relay

Detectors (optical-smoke)

Ionization detectors

Detector base

Limit switches

Building waste

Recyclable metal material

Recyclable metal material

Recyclable metal material

Recyclable metal material

Recyclable metal material

Recyclable metal material after removing the oil filling. Oil: minor amount of the specific waste

Recyclable metal material

Recyclable metal material

Recyclable metal/ plastic material

Recyclable metal material

Recyclable metal material

Recyclable metal material

Recyclable metal material after removing the oil filling. Oil: minor amount of the specific waste

Electronic waste

Recyclable metal material

Electronic waste

Electronic waste

Electronic waste

Detectors contain radioactive material. Please, follow the instructions of your safety officer.

Electronic waste

Recyclable metal material

2 GENERAL INSTRUCTIONS FOR USE AND MAINTENANCE

Fire gate is a fire safety device, of which proper function is a basic condition for dividing of fire area in case of fire. As a producer of fire gates, we would like to draw attention to the fact that fire gates are liable to annual inspections according to regulation MV 246/2001 Coll. on fire prevention. The annual inspection of fire safety device shall be carried out according to the valid regulations and producer's instructions. The annual inspection of fire safety device may only be carried out by a qualified person trained by the producer.

Responsibility of the user is to perform visual control of the gate during use:

- * Visual control of the gate leaf surface, guides and motor to exclude the possibility of potential damage.
- * Space between the gate leaf surface and guides.
- * Chain tension
- * Noise during closing and opening.
- * Overall function





3 DESCRIPTION OF THE GATE MECHANICAL SYSTEM

3.1 ROLLING FIRE SHUTTER



The rolling fire shutter is designed to separate two fire areas automatically without human intervention and for a defined period of time, has created fire barrier to prevent or limit the spread of fire. The fire gates are not determined, due to their weight, for frequent use as the ordinary gates. Their primary function is closing in case of fire. Recommended number of opening/ closing is max 5x/ hour.





3.2 LIST OF COMPONENTS

	Name	Type RGS NI	Type RGS 22	Type RGS 60/120	Producer
1	Slats	RGS NI	RGS 22	RGS 60/120	MIR
2	Roller	Ø 168	Ø 168	Ø 324	SOMATI
			Ø 102	Ø 133	SOMATI
3	Side guides	RGS NI	RGS 45	RGS 60	SOMATI
4	Horizontal lathing	RGS NI	RGS 45	RGS 60	SOMATI
5	Roller bracket	RGS NI	RGS 45	RGS 60	SOMATI
6	Bearing parts	UCP 206	UCP 206	UCP 206	Haberkorn Ulmer
		UCP 208	UCP 208	UCP 208	Haberkorn Ulmer
			UCP 210	UCP 210	Haberkorn Ulmer
			UCFL 206	UCFL 206	Haberkorn Ulmer
			UCFL 208	UCFL 208	Haberkorn Ulmer
			UCFL 210	UCFL 210	Haberkorn Ulmer
7	Safety brake	FG 40-30	FG 40-30	FG 40-30	GfA
		FG 80-40	FG 80-40	FG 80-40	GfA
			FG 120-50	FG 120-50	GfA
8	Chain	10B-1	10B-1	10B-1	Haberkorn Ulmer
			12B-1	12B-1	Haberkorn Ulmer
9	Chain wheel	10B-1 (15 - 114 t.)	10B-1 (15 - 114 t.)	10B-1 (15 - 114 t.)	Haberkorn Ulmer
			12B-1 (15 - 114 t.)	12B-1 (15 - 114 t.)	Haberkorn Ulmer
10	Motor bracket	RGS NI	RGS 45	RGS 60	SOMATI
11	Tubular motor FS Tronic DES-FS	R60/11M FKB			Becker
		R80/11M FKB			Becker
		R120/11M FKB			Becker
		R20/11M FKB			Becker
11	Motor SI for control boxes: FS Tronic DES-FI TS	SI 17.15	SI 17.15	SI 17.15	GfA
		SI 25.15	SI 25.15	SI 25.15	GfA
		SI 40.15	SI 40.15	SI 40.15	GfA
		SI 55.15	SI 55.15	SI 55.15	GfA
		SI 75.15	SI 75.15	SI 75.15	GfA
		SI 140.7	SI 140.7	SI 140.7	GfA
12	Motor FS for control box FS Tronic DES-FS	FS 15.20	FS 15.20	FS 15.20	GfA
		FS 25.20	FS 25.20	FS 25.20	GfA
		FS 50.20	FS 50.20	FS 50.20	GfA
		FS 110.18	FS 110.18	FS 110.18	GfA
13	Motor KE for control Boxes: FS Tronic DES-FI TS	KE 9.24	KE 9.24	KE 9.24	GfA
		KE 20.24	KE 20.24	KE 20.24	GfA
		KE 30.24	KE 30.24	KE 30.24	GfA
		KE 40.24	KE 40.24	KE 40.24	GfA
		KE 60.24	KE 60.24	KE 60.24	GfA
		KE 80.24	KE 80.24	KE 80.24	GfA
14	Control box DES-FS	FS Tronic DES-FS	FS Tronic DES-FS	FS Tronic DES-FS	SOMATI-EPO
15	Control box DES-FI	FS Tronic DES-FI	FS Tronic DES-FI	FS Tronic DES-FI	SOMATI-EPO
16	Control box TS	TS 956	TS 956	TS 956	GfA
		TS 961	TS 961	TS 961	GfA

Note: List of components is general for standard gate types. For specific list of spare parts, contact the producer with serial number of the gate. Gates are tailor-made thus other parts can be used according to the type of construction.





3.3 DESCRIPTION OF INDIVIDUAL TYPES AND VARIANTS OF RGS

3.3.1 TYPE RGS-NI

Rolling fire shutters with fire resistance up to EW 30, structure type DP1. The gate leaf is made of single-walled non-insulated slats from steel galvanized sheet of thickness 1 mm. Height of slats is 100 mm. Gates RGS-NI are made only in rolling variant, slats are wound on steel roller of diameter 168 mm right above the opening.

3.3.2 TYPE RGS-22

Rolling fire shutters with fire resistance EW 45/EW 60, structure type DP1.

The gate leaf with fire resistance up to EW 45 is made from double-walled non-insulated slats from steel galvanized sheet of thickness 1 mm, the space between the slats is free without filling. Height of slats is 100 mm.

The gate leaf with fire resistance up to EW 60 is made from double-walled insulated slats, without interrupted thermal bridge, from steel galvanized sheet of thickness 1 mm, the space between slats is filled with mineral wool of thickness 20 mm. Height of slats is 100 mm.

Gates RGS-22 are made only in rolling variant, slats are wound on steel roller of diameter 168 mm at the top of the gate, above the lintel of the opening.

3.3.3 TYPE RGS-60/RGS-120

Rolling fire shutters with fire resistance EI 60/EW 180, structure type DP1. The gate leaf is made from double-walled insulated slats from steel galvanized sheet of thickness 0,8 mm, the space between slats is filled with mineral wool of thickness 60 mm. Height of slats is 150 mm.

Rolling fire shutters with fire resistance EI 120/EW 120, structure type DP1. The gate leaf is made from sandwich insulated slats from steel galvanized sheet of thickness 0,8 mm, the space between slats is filled with ceramic wool of thickness 44 mm and with calcium silicate boards of thickness 8 mm. Height of slats is 150 mm.

Gates RGS-60/RGS-120 are standardly produced in these variants:

- Rolling

Slats are wound on steel roller of diameter 324 mm right above the opening, at the top of the gate, above the lintel of the opening. Slats are pressed by pressure roller of diameter 133 mm.

- Horizontal

Non-insulated guide slats RGS-NI are wound on steel roller of diameter 168 mm, which is located at the back of the gate, these slats pull the insulated slats RGS-60/RGS 120 upwards and further horizontally along supporting structure to the winding roller. The advantage of the horizontal variant is to reduce the motor torque requirement, and above all the reduction of the space requirement in the lintel of the opening (optimum 450 mm).





4 DESCRIPTION OF THE GATE CONTROL SYSTEM

Fire gates RGS can be equipped with various types of control, for accurate description of the gate control, please read the manual of gate and motor control, which is supplied to the gate as its original accessory.

4.1 TYPES OF USED MOTORS AND CONTROL BOXES

4.1.1 GENERAL DESCRIPTION FOR GATE CONTROL FS TRONIC DES-FS

Control box FS Tronic DES-FS is designed for motor with non-self-locking gearbox. The gate is operated with control buttons in dead-man mode. In the event of fire alarm, the gate automatically closes by gravity. If the power supply to the control box and the motor is secured, the gate can be opened by the standard control button even when the alarm is sounded, when the button is released the gate starts closing again. In the event of power failure, the gate automatically closes gravitationally and cannot be opened.

There is no need to back up the motor to ensure functionality and operability of the fire gate, closing is secured gravitationally.

4.1.2 GENERAL DESCRIPTION FOR GATE CONTROL FS TRONIC DES-FI

Control box FS Tronic DES-FI is designed for motor with self-locking gearbox. The gate is operated with control buttons in dead-man mode. In the event of fire alarm, the gate automatically closes by motor powered from main power supply or from the back-up battery integrated in the control box. Switching between the main power supply and the battery backup is automatic. If the power supply to the control box and the motor is secured, the gate can be opened by the standard control button even when the alarm is sounded, when the button is released the gate starts closing again.

It is necessary to back up the motor to ensure functionality and operability of the fire gate, closing is secured from the back-up battery integrated in the control box.

4.2 OPENING AND CLOSING OF THE GATE

Open and close the gate with buttons or key switch with respect to the safety regulations. Stand next to the gate and visually inspect the gate when moving. Make sure that no persons or objects are in the security zone of the gate (see point 5.2). Observe the safe distance from all moving components during the movement of the gate leaf.

Control (buttons or key switch) is installed in the immediate proximity of the gate and is installed in the dead-man mode, this means that the gate stops immediately when the button or key is released.





4.2.1 FIRE SELF-CLOSING FUNCTION

If the gate is in open position when the FAS signal is received, the gate leaf is automatically closed.

IMPORTANT:

The gate leaf cannot be stopped, buttons or key switches are inactive. As mentioned in the safety regulations, no persons or objects can be in the area of gate leaf movement and moving components of the gate and on no account below the bottom edge of the gate leaf (see safety regulations "important").

Before operating the gate, read the safety instructions of the supplied motor!

5 SAFETY RULES FOR GATE CONTROL

5.1 GENERAL CONDITIONS

Somati system s.r.o. cannot bear any responsibility for damages caused by improper using of the RGS.

Repair works, adaptation or addition of the mechanical or electrical components can be done only by workers of the company Somati system s.r.o. (producer), or by persons authorized by the company Somati system s.r.o..

Maintenance, service and inspections are performed by the workers of the company Somati system s.r.o. (producer), or by authorized persons, trained by the company Somati system s.r.o. (producer).

Functional and operational tests according to the valid legislation (except for the above-mentioned regular operating inspections) are carried out only in the presence of a representative of the company Somati system s.r.o. (producer), or by authorized persons, trained by the company Somati system s.r.o. (producer).

If the given safety rules are not followed, the warranty cannot be applied.

To avoid accidents or injuries, the safety rules must be strictly followed.

5.2 SAFETY REGULATIONS

To control the gate and perform operational inspections there must be trained person or persons by the user. Safety zone around the gate is approx. 1 meter. We recommend to mark the safety zone on the floor. Before manipulation with the gate, make sure there are no persons or objects in the safety zone (around the gate, next to the gate or below the gate). During operation of the gate you must be outside of the safety zone. Always open or close the gate leaf to the end position, the gate automatically stops by the signal of the limit switch.

Important: Even if the gate is not in use, it is necessary to secure the free safety zone.

In the event of fire, the gate closes automatically (unattended and without human intervention). The gate leaf must be closed, so no objects are allowed to be left below the leaf. If the gates are not able to close completely (to the floor or the bottom stop profile), there is not secured proper functionality of the fire gate.

Please, read the manual carefully before manipulation with the gate!





6 WHAT TO DO IN THE EVENT OF AN ACCIDENT OR FAILURE

- mechanical damage to the gate guides: do not use the gate control, contact the service department of the company Somati system s.r.o. or an authorized and trained person
- mechanical damage to the gate leaf: do not use the gate control, contact the service department of the company Somati system s.r.o. or an authorized and trained person (significant amount of damage is caused by the forklift truck, when gates are not fully opened)
- gate leaf does not respond to signal OPEN/ CLOSE: check fuses
- gate leaf does not respond to signal OPEN/ CLOSE: safety function (“parachute”) is activated, do not use the gate control, contact the service department of the company Somati system s.r.o. or an authorized and trained person
- gate leaf does not go horizontally or the gate does not work well: the guides of the gate is closed or damaged, do not use the gate control, contact the service department of the company Somati system s.r.o. or an authorized and trained person
- when opening the gate or releasing the button (of the limit switch) or when reaching the position “OPEN” (the gate leaf is open, the limit switch at the top is activated) the gate leaf spontaneously closes: the gate leaf is „in self-closing mode“ after a fire alarm or after a test, check the alarm signal or contact the service department of the company Somati system s.r.o. or an authorized and trained person
- when opening the gate or releasing the button (of the limit switch) or when reaching the position “OPEN” (the gate leaf is open, the limit switch at the top is activated) the gate leaf spontaneously closes: the gate leaf is „in self-closing mode“ due to the insufficient capacity of the backup source (if installed), check the capacity and condition of the backup source or contact the service department of the company Somati system s.r.o. or an authorized and trained person
- gate is unrolling, during electric or automatic closing of the gate leaf there was an obstacle under the gate leaf: do not use the gate control, contact the service department of the company Somati system s.r.o. or an authorized and trained person
- gate or motor creaks or squeaks: ensure maintenance and service, contact the service department of the company Somati system s.r.o. or an authorized and trained person





7. NOTES

Lined area for notes, consisting of numerous horizontal dashed lines.

