

Sequence Control FGS 2a

Installation and Operation Instructions - Version 1/14

Please read these instructions carefully and completely.

Only qualified personnel may conduct work on the device!

1 Concept

- Sequence Control for use with electric window catch EFR 1.1x and actuator (variant 1), EFR 1.2x and actuator (variant 2) or two actuators (variant 3):

Variant 1 (EFR 1.1x)

- The window catch is initially triggered during opening. The actuator is not triggered until the window catch has opened fully.
- The actuator is initially triggered during closing. The window catch is not triggered until the actuator has closed fully.

Variant 2 (EFR 1.2x)

- The window catch is initially triggered during opening. The actuator is not triggered until the window catch has opened fully.
- The window catch is initially triggered during closing. The actuator is not triggered until the window catch has closed fully.

Variant 3 (two actuators)

- Triggering of the second actuator is delayed during opening; triggering of the first actuator is delayed during closing.
- Adjustable delay time (see 4).

- Selecting the variant by DIP switch
- A SHEVS Control Centre or ventilation control, for instance, provides power supply and control
- Plastic enclosure, light grey (like RAL 7035)

2 Installation / putting into service / putting out of service

- Fasten the enclosure securely using suitable mounting material. Pass the connection cables through the holes provided.
- Select the variant (see 3)
- Set any necessary delay time (see 4).
- Put the power supply (e.g. SHEVS Control Centre) out of service as specified in the corresponding operating instructions to install the **FGS**. Wire the **FGS** according to the terminal diagrams enclosed.
- Put the power supply back in service.

📌 *There are no further steps necessary to put in and out of service as the **FGS** only operates based on active travel commands.*

3 Variant configuration

- Select the variant according to the following table (* = factory setting):

Variant	DIP switch	
	S1-1	S1-2
* 1	-	-
2	-	●
3	●	-

(EFR 1.1x + actuator)

(EFR 1.2x + actuator)

(2 x actuator)

● = DIP switch ON

- = DIP switch OFF

🔑 *The catch / actuator(s) must be closed to change the variant.*

4 Setting the delay (only for variant 3)

- Use a screwdriver on potentiometer ⊕ to set the delay time to between 1.5 and 30 s (factory setting: 15 s).
- ⚠ Set the delay time slightly longer than required to prevent any functional impairment.

5 Technical data

FGS 2a (8166 2100 0000)

Dimensions in mm (W x H x D)	130 x 85 x 37
Cable feed through knockouts	from the left
Environmental class I (VdS 2581)	-5 ... +75 °C
Maximum constant ambient temperature	+60 °C
Relative humidity	20 ... 80 %, non-condensing
Enclosure protection rating (according to EN 60529)	IP54
Voltage supply (inversion of polarity for OPEN / CLOSE)	24 V $\overline{\text{=}}$ (+6 V / -8 V)
– permissible ripple	2 V _{SS}
– required pause time for change of travelling direction	1 s
Max. output current	2 x 4 A
Max. conductor cross section	4 x 4 mm ² (rigid), input 2 x 4 mm ² (rigid) per output

Allowed cable length from power supply to **FGS** for simple arrangement without extensive branching

Current Cross-section	1.0 A	2.0 A	3.0 A	4.0 A	5.0 A	6.0 A	7.0 A	8.0 A
2 x 1.5 mm ²	44 m	22 m	15 m	11 m	9 m	7 m	6 m	5 m
2 x 2.5 mm ²	73 m	36 m	24 m	18 m	15 m	12 m	10 m	9 m
2 x 4.0 mm ²	116 m	58 m	39 m	29 m	23 m	19 m	17 m	15 m
4 x 1.5 mm ²	87 m	44 m	29 m	22 m	17 m	15 m	12 m	11 m
4 x 2.5 mm ²	145 m	73 m	48 m	36 m	29 m	24 m	21 m	18 m
4 x 4.0 mm ²	232 m	116 m	77 m	58 m	46 m	39 m	33 m	29 m

When 4 cores are used,
connect 2 cores each in
parallel.

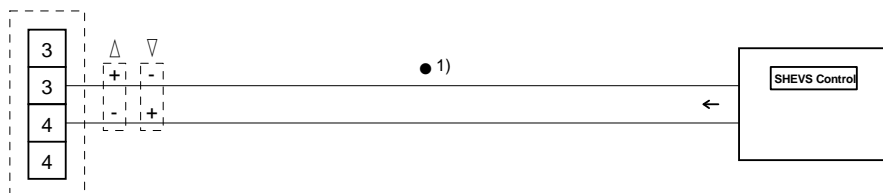
The allowed cable length from the **FGS** to the catch / actuator is 2.5 m.

The device complies with the requirements of the 2006/95/EC and 2004/108/EC Directives (emission: EN 61000-6-3 and EN 55022, immunity: EN 61000-6-2 and EN 50130-4).

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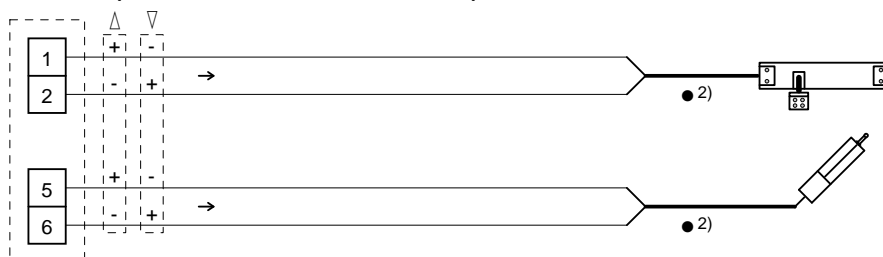
Connection diagram

Input



24 V- actuator output of a
SHEVS Control Centre or
Ventilation Control

Output, variant 1 / 2 (EFR 1.1x / EFR 1.2x and actuator)

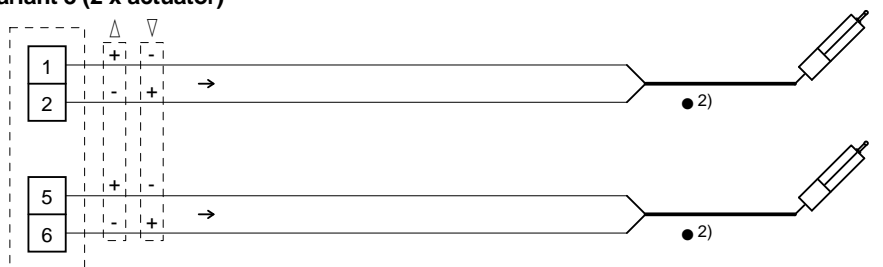


EFR 1.1x / EFR 1.2x

24 V- actuator, max. 4 A

! Use the DIP switch to select the variant
before putting into service.

Output, variant 3 (2 x actuator)



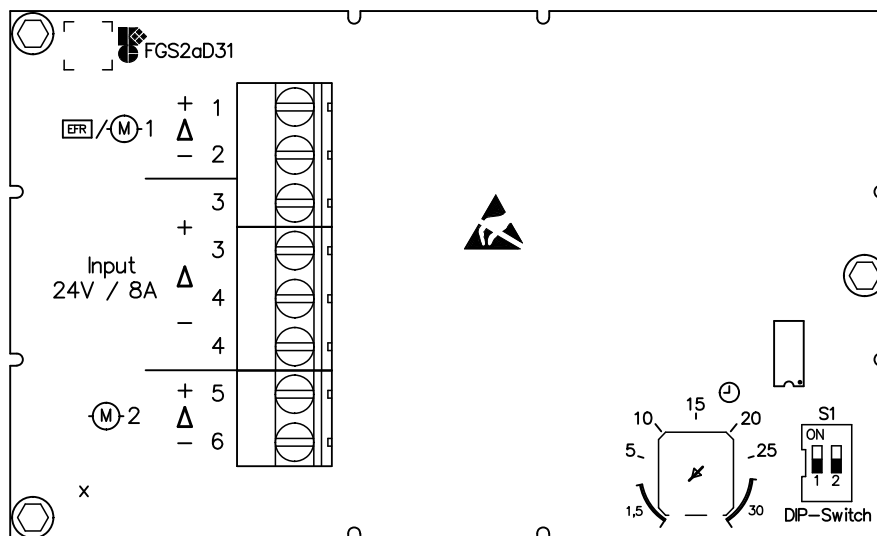
24 V- actuator, max. 4 A

24 V- actuator, max. 4 A

- 1) When using 4 cores (2 cores each in parallel) greater lengths can be achieved. Max. 10 mm² (rigid) can be clamped.
- 2) In the case of wrong sense of travel, the supply lines may only be pole-changed if proper connection of the line between FGS and Control Centre has been verified.

! When directly operating the FGS, e.g. by external accumulators in the course of installation or maintenance work, be sure the FGS has been disconnected from the power supply!

Allowed length of cable see section "Technical Data".



DIP switch

S1: 1: Setting see section
2: "Variant configuration"

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Layout diagram

FGS2aA11.pcb

Ver. 1/14 DR 3 Nov. 2014