

Functions with the JA/S 4.SMI.1M

Possibilities of Diagnosis

GPG Building Automation

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It **does not** replace the necessary technical documentation required for planning, installation and commissioning of the product. Technical details are subject to change without notice.

Despite checking that the contents of this document are consistent with the current versions of the related hard and software of the products mentioned within, deviations cannot be completely excluded. We therefore assume no liability for correctness. Necessary corrections will be introduced as and when new versions of the document are generated.

Introduction

This description explains the workings of the SMI actuator. Functions, or diagnostic options are shown on the basis of the explanation

Objectives of the document

- This description is intended for the commissioning, which closer must be engaged in technology of SMI. It also helpful Diagnostics on the device are shown.

Content



Product: JA/S4.SMI.1M

Shutter Actuator with Manual Operation, 4-fold, SMI, MDRC

Controls 4 independent groups each with up to 4 SMI blind or roller shutter drives via ABB i-bus®. Allows exact positioning as well as status response of drive and hanging. With automatic control and manual operation.

Broadcast Mode

Each channel is working in broadcast operation, the motors connected to the channel must always respond commands. Changed the number of the connected Motors on the channel, an error message is generated while generally, but the basic functions must be guaranteed at all times.

Are more than 4 drives have been recognized on the Canal, only security functions are carried out.

Address Mode

At every restart of the SMI actuator, e.g. common switching off or switching to the bus voltage and mains voltage on the SMI actuator, ID's from the drives would be recalculated or newly awarded.

After each command via the KNX to the SMI side, a query is always send to the connected drives in Broadcast mode. On this query, each individual SMI drives sends back its status information to the SMI actor. (Master / slave) In this release, you can see exactly which drives are moving and where the drives are moving to.

This status information includes:

- The drives move up
- The drives move down
- Motor fault
- Position

The SMI drives connected to a SMI actuator channel, would be compared with the address table stored in the actuator itself after a set interval, which cannot be changed. So can be found on each channel exactly if the programmed number of drives corresponds to the actually connected devices.

The following properties are monitored

– Less drives recognized as parameterized:

Less SMI drives are detected at an addressing operation or a Broadcast query drives as in the ETS application registered, so only a diagnostic bit is set. This has no functional limitation in the current operating result.

– Min. a drive cannot be identified by its ID:

More drives are detected on the SMI side as in the ETS application registered. It's the same procedure as for less drives.

– More than 4 drives recognized the SMI:

The connected motors are addressed by the SMI actuator and will be assigned by an ID. Be recognized if more than 4 SMI drives are detected, only the incoming security commands would be possible. Thereby the connected drives should can be protected or moved in a defined end position. "Both LED's are blinking alternate". The number of the drives is constantly checked by the query of ID on the SMI side.

Lost communication to SMI drives:

Diagnosis bit is set to 1 when there are 18 V and no SMI responding drives. This diagnosis bit is also used with a SMI short circuit.

Short circuit at the SMI:

Voltage monitoring of the 18V at the SMI output

All LEDs at the front side indicate the actual state. This is very helpful for the first diagnosis of the connected SMI drives.



1. LED with arrow up flashes, drives are moving upwards.
2. LED with arrow down flashes, drives are moving downwards.
3. Both LED's are off, intermediate position e.g. not in end position.
4. Both LEDs quickly flash alternately, SMI communication fault, e.g. no drive is connected to this output or SMI data line is damaged.
5. Both LEDs slowly flash alternately, Function Safety is active, e.g. wind alarm. Manual operation of this output is blocked as long as the alarm is active.
6. Both LEDs flash simultaneously, Non-permissible number of SMI drives is connected." More than 4 drives"

Example of use

E.G Status information 05 Hex = 101 = 5 Dec

5.2 Diagnostic byte code table

Diagnostic value	Hexadecimal	No communication	Motor moves up	Motor moves down	Motor fault	Short circuit on SMI (hardware fault)	At least one drive cannot be identified via its ID	Less drives detected than configured	More than 4 drives detected on SMI
0	00								
1	01								
2	02								
3	03								
4	04								
5	05								
6	06								
7	07								

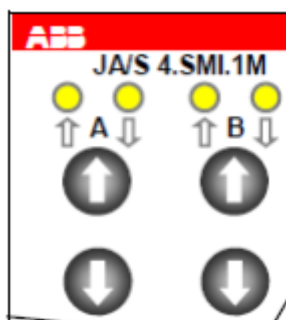
Combination of 2 status bit's:

- At least one drive cannot be identified via ID:
- More than 4 drives are detected on the SMI side:

What is the awareness:

Each SMI output can manage up to four SMI drives. Are detected more than four drives on the channel, only security commands on this channel are possible, if it's parametrized.

It's a protective function of the channel or the drives.



The security function is shown by the alternating flashing status LED's for UP and DOWN of the affected channel.

How are the SMI actuator assign adress ID's

The SMI actuator JAS/S 4.SMI.1M is doing a SMI commissioning by itself. It will only be assigned the SMI ID's. They only serve to detect the number of drives, and to determine the status of the SMI drives. This ID's would be controlled even on reboot of the actuator "Bus voltage and 230V reset" and repeated every 60 minutes.

Duplicate ID's can already be possible, E.G. if after 60 minutes a reordering of the ID. The ID's be awarded always ascending without gap.

Duplicated ID's have no impact to the functionality of the drives connected to the channel.

References to other documents

- [FAQ Home and Building Automation](#)
- [FAQ Blind Actuators SMI](#)
- [Engineering Guide Database](#)

Summary

The information of diagnostic could be very helpful for the first step to understand how the SMI is working. The SMI actuator is working like a gateway between KNX and SMI technology.