

BA AM-835 EN 1.0



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INFORMATION

These operating instructions are only valid in combination with the operating manual for automatic textile curtain systems type SmokePROtec.

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These operating instructions are only valid with the supplied supplementary sheet „Safety instructions and Warranty conditions“!

In general

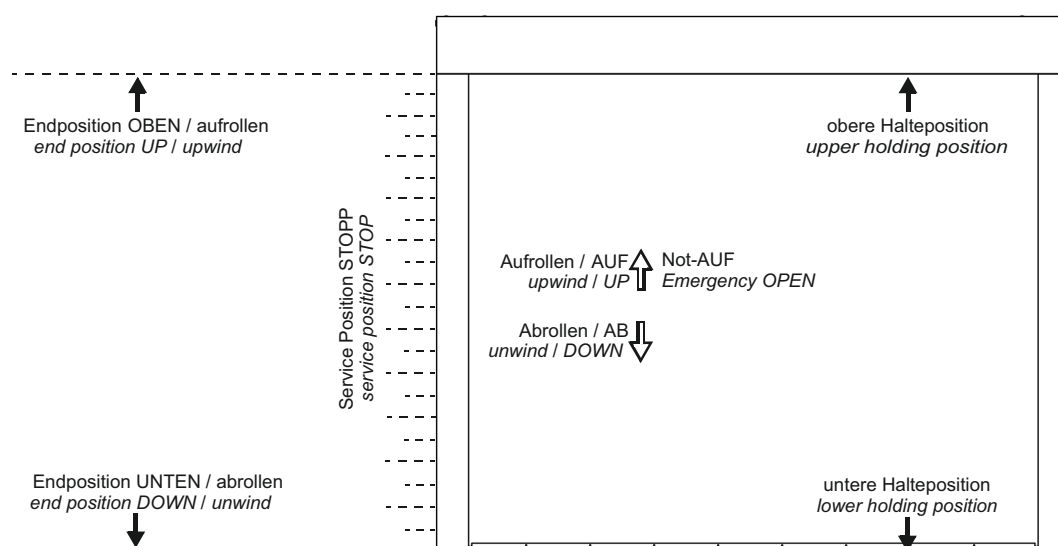
1. In general

1.1. Use for the intended purpose

See supplementary sheet "Safety instructions and Warranty conditions"!

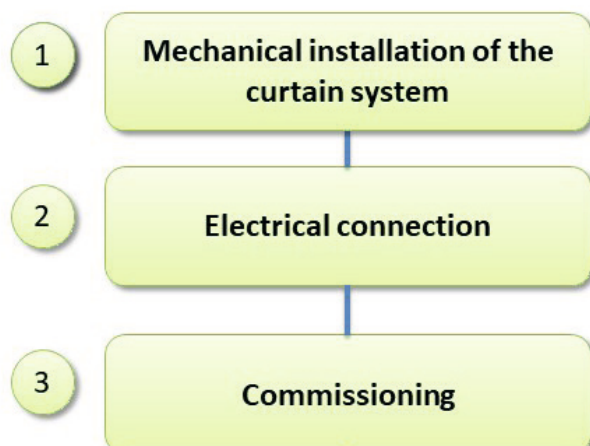
1.2. Functional description

The AM-835 overload cut-off is the control circuitry for fire and smoke curtains. The microprocessor-based control circuitry controls the functions of the curtain system, such as up- and unwinding, holding mode, unwind position and the forwarding of signals. Up to 12 AM-835 units can be connected in synchronous operation mode.



2. Installation

2.1. Installation procedure



2.2. Installation instructions

See supplementary sheet „Safety instructions and warranty conditions“!



ATTENTION

For motors with position detection, do not extend the motor cable. Maximum cable length 2 m (factory default).

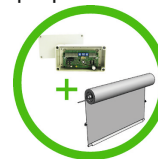


ATTENTION

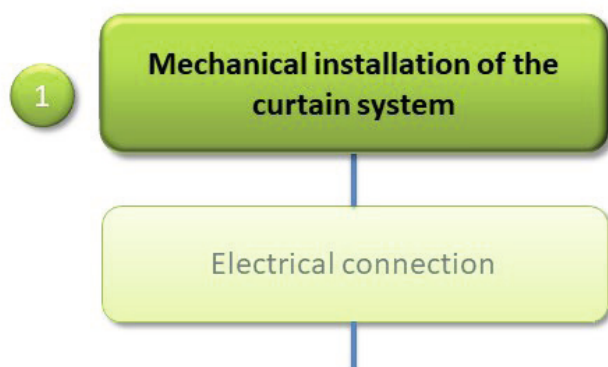
For motors with position detection, if the connection cable of the roller assembly is to be shortened for connection to the AM-835, this must be done wire by wire. There must be no connection between the individual wires!



Use a suitable mobile power supply (incl. control unit, no battery alone). Using an inappropriate power supply (rechargeable battery) can permanently damage the roller assembly; always use the combination of roller assembly and AM-835, even for test purposes.

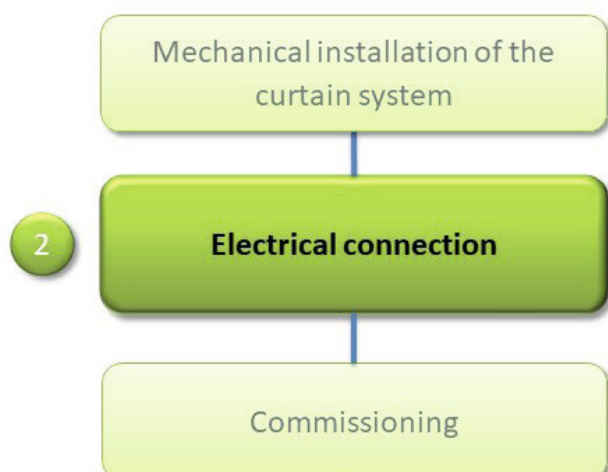


2.3. Mechanical installation of the curtain system



- Complete the curtain system according to the installation instructions until the roller assembly(s) is/are hooked in and secured.

2.4. Electrical connection



- Install the control unit and peripherals in accordance with the relevant operating instructions and E-plan.
- Position and fasten the AM-835 motor control modules according to the relevant connection diagram (see pages 6-8).
- Connect the AM-835 voltage-free to the motor units of the roller assemblies according to the individual wire colours.
- For multiple rollers, establish SICO-BUS connection (C2/ GND).
- Set the DIP and rotary switches according to the type of tubular motor and MASTER/SLAVE application (see 2.5: 'Functions' on page 7).



DANGER

Disconnect all poles of the connecting cable from the mains. The control unit must only be connected and switched off when it is disconnected from the power supply!



ATTENTION

Before unwinding the curtain fabric for the first time, the electrical connection must be completed (voltage-free connection of the AM-835)!

The control unit is equipped with electronics and micro-processors that can be destroyed by incorrect connection or improper handling. ESD regulations must be complied with!

The safety straps on the roller assembly should only be removed after the electrical connection has been established.

After the housing has been fixed to a suitable surface, the enclosed plastic caps must be attached for protective insulation. Failure to do so may cause damage to electronic components!



INFORMATION

According to EN 12101-1, function-preserving cable installation is not required for ASB 3 systems.

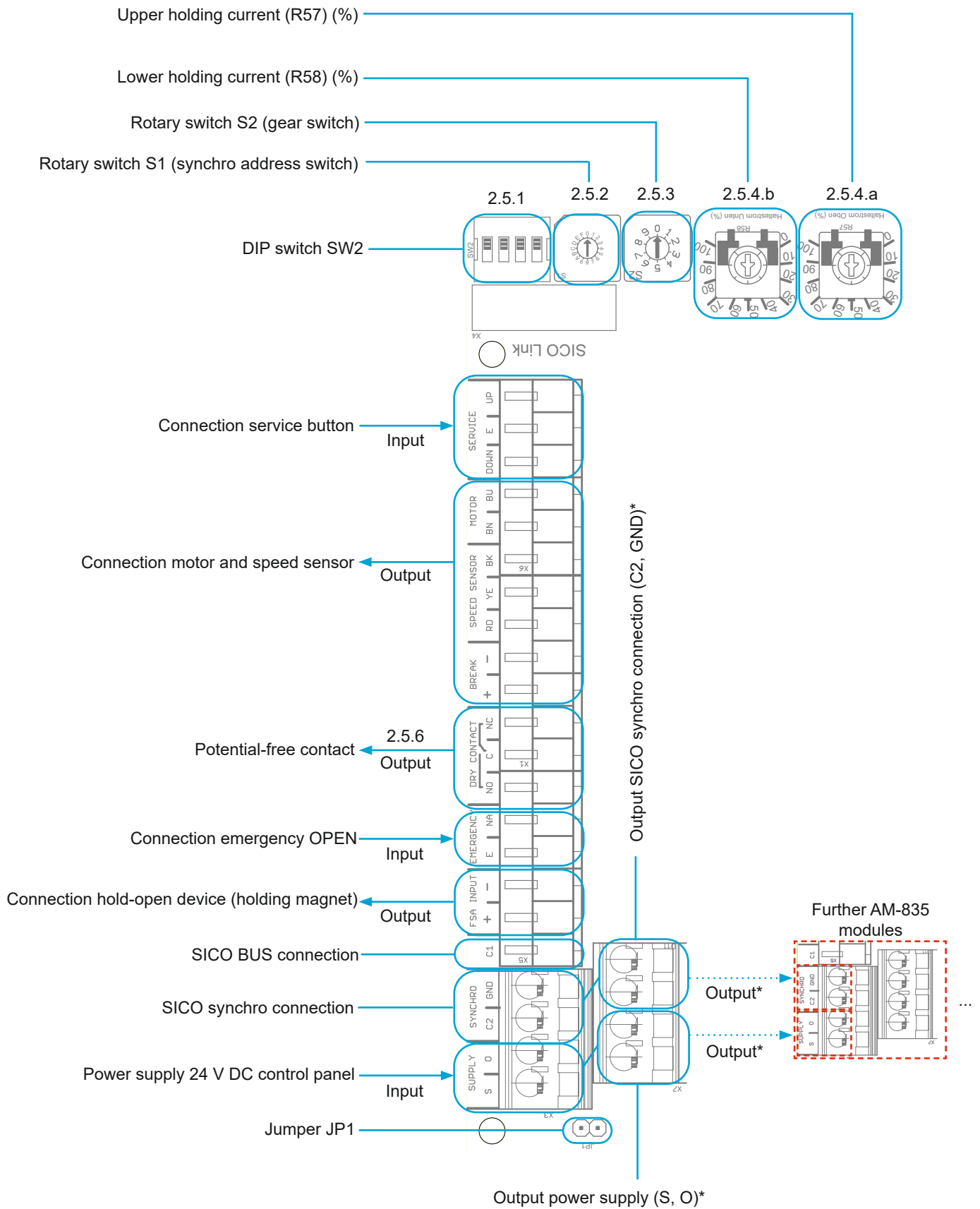


INFORMATION

Tip: Disconnect the motor channel for installation and ensure it cannot be switched on during installation.

Installation

Figure 1: AM-835



*Connection to further AM-835 modules

Installation

Figure 2: Connection diagram single roller

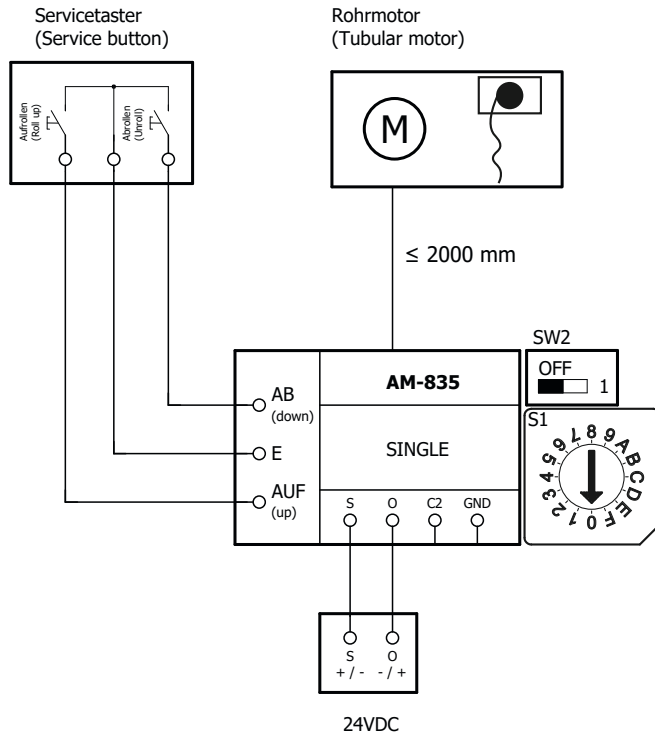
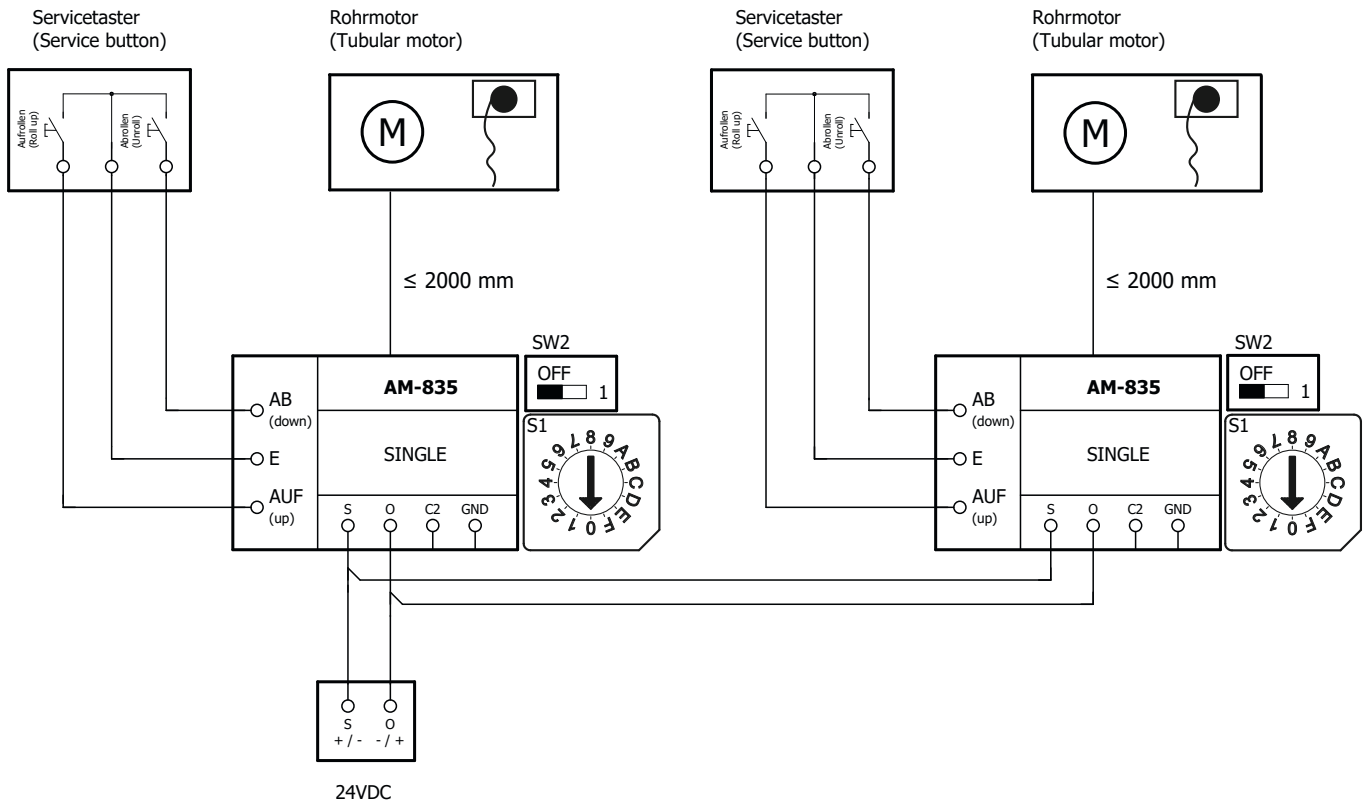


Figure 3: Connection diagram several single rollers with central power supply



Installation

Figure 4: Connection diagram multiple rollers with a modular control panel type SIMON PROtec



ATTENTION

In synchronous mode, several AM-835s can be connected to one modular control panel. The synchro address switch (0-F) is used for MASTER and SLAVE. The number of connected SLAVE control modules is set on the MASTER, while the number of the respective SLAVE is selected in ascending order (1, 2, ...).

The maximum number of AM-835s connected to an MR-120 is limited to four per supply line for performance reasons. The required cable cross-section in mm can be calculated as follows:

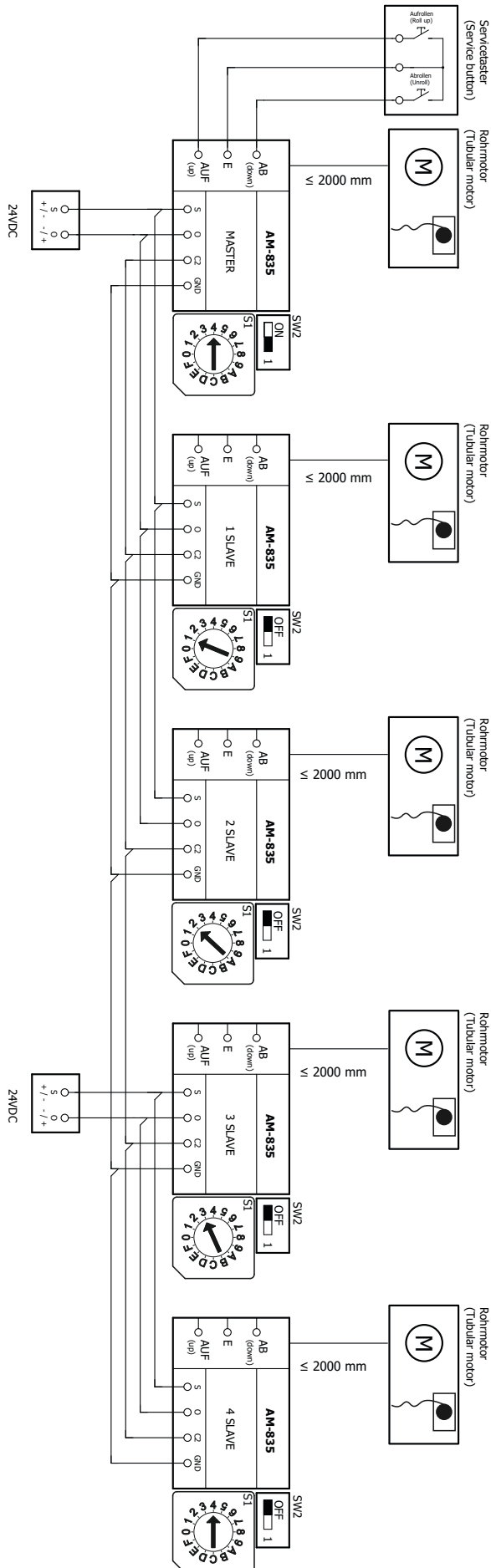
$$\text{Number of AM-835} \times 3 \times \text{single wire length} = \text{xx mm}^2$$

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ATTENTION

When connection the AM-835 to a modular control panel, always observe the E-Plan provided with the modular control panel.



Installation

2.4.1. Emergency OPEN button (optional)



INFORMATION

Usage is optional.

SICO settings required – see 2.5.6.!

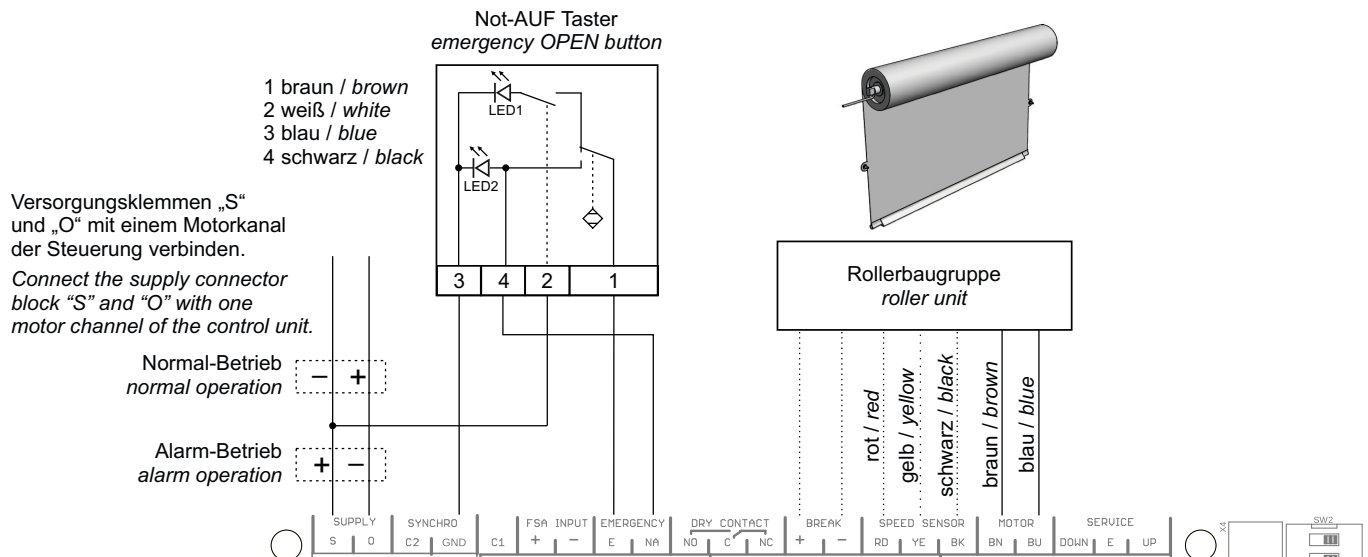
For multiple roller systems, it is sufficient to connect the emergency OPEN switch to the MASTER.



ATTENTION

Only use the emergency OPEN function after approval by the relevant regulations and/or authorities!

Figure 5: Connection emergency OPEN button type SIMON PROtec



2.5. Functions/Settings

See Figure 1: „AM-835“ on page 4.

2.5.1. DIP switch SW2

MASTER

1 2 3 4

OFF

SLAVE

1 2 3 4

OFF

- **Switch 1 (operation mode):**
ON: MASTER
OFF: SLAVE or single operation (factory setting)
- **Switch 2 (holding position):**
ON: Holding magnet
OFF: Holding current (default)
- **Switch 3 (incremental transmitter Y/N):**
ON: Default
- **Switch 4 (end position programming):**
ON: End position programming is started when switching on



ATTENTION

If several AM-835s are used in synchronised operation, DIP switches SW2-2 and SW2-3 must be set the same for all modules!

2.5.2. Synchro address switch (0-F)

When synchronizing multiple rollers, the synchro address switch activates the overall function. In single operation, 0 should be set.

The number of SLAVE modules must be set here on the MASTER module. The number of this module should be set on the respective SLAVE module (see Figure 4: “Connection diagram for multiple rollers” on page 6).

This setting is made at the factory, but can be adjusted later.

2.5.3. Gear switch S2

For drive units with incremental transmitters (DIP switch SW2-3 ON), the gear switch must be set according to Table 1. The designation of the drive unit is marked on the connecting cable.

This setting is made at the factory, but can be adjusted later.

Table 1: Gear switch settings by motor type

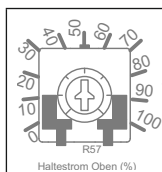
Motor type	Switch pos.	Article no. drive unit
AE-100:1-2P	5	RSV 52270/RSV 52273
AE-128:1-2P	5	RSV 52271/RSV 52274

Commissioning

2.5.4. Upper/lower holding current

These settings are used to set the holding current when the Holding Current DIP switch (SW2-2) is enabled at the upper or lower position.

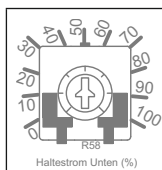
2.5.4.a. Upper holding current (R57)



The larger the curtain, the higher the holding current must be set (c.f. 3.2).

Default setting: 50%

2.5.4.b. Lower holding current (R58)



Default setting: 50%

2.5.5. Potential-free contact

SICO LINK The following states can be read via the potential-free contact

- Upper end position reached (default)
- Lower end position reached
- Curtain is unwinding



ATTENTION

The options 'Curtain is unwinding' and 'Lower end position reached' do not switch when unwinding without current due to the hardware!

2.5.6. Safety opening "Emergency OPEN" / anti-jamming in the closing area



INFORMATION

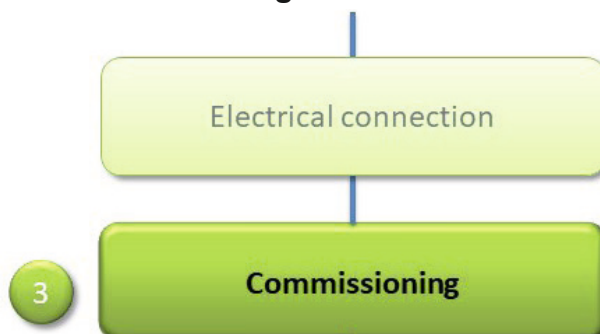
Optional additional function. Only available through accessories (SICO LINK software).

SICO LINK In SICO LINK, the function 'EMERGENCY OPEN', 'Anti-jamming protection' or OFF (default setting) can be selected.

The 'Emergency OPEN' safety opening of the curtain system via push-button (for escape purposes) is used, for example, to exit lifts secured with curtains when an alarm is triggered. After opening via 'Emergency OPEN', the curtain automatically unwinds again after a certain time (0 – 255 seconds, adjustable via SICO LINK).

The "Anti-jamming protection" function can be used to monitor whether an unauthorized object is in the closing area via an external sensor (light barrier, light grid, etc.). If the curtain receives a signal at the "Emergency" input while unwinding before it reaches the lower end position, it moves back to the upper end position and remains there for a set time (0 – 255 seconds, adjustable via SICO LINK). The curtain then unwinds again. This rolling up takes place a maximum of four times, after which the curtain remains permanently in the lower end position.

3. Commissioning



Holding the curtain system 'open' / 'up' with the AM-835 is possible either via the holding current of the tubular motor or via a separate holding magnet.

For motor units without a holding magnet, set DIP switch 2 to OFF and set the upper holding current in accordance with 3.2.1.

For drive units with holding magnet, set DIP switch 2 to ON and set the top holding current rotary switch to the central position (default).

If only a power supply in accordance with EN 12101-10 is used for smoke barriers, the input of the hold-open device must be unassigned and jumper JP1 must be set (default).

If a separate hold-open device is used to for holding open as 'ability to release' in accordance with EN 16034, the holding magnet output of the hold-open device must be connected to the FSA input with the correct polarity and jumper JP1 removed (ATTENTION: different potentials!).

3.1. Programming the end positions of the curtain system

In order for the curtain to save its zero point and the desired stop point, these end positions must be set in this step.



INFORMATION

After the end position programming has been completed, the value of the end position can be subsequently adjusted in the SICO LINK software.



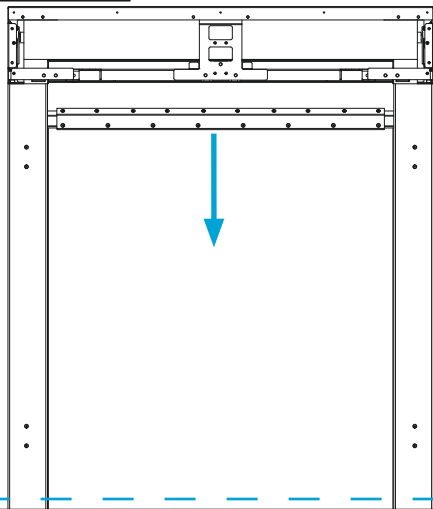
ATTENTION

If the roller assembly is disconnected from the power supply during end position programming, the programming procedure is cancelled. In this case, the values may not have been saved correctly. Restart programming.

Commissioning

- Allow the curtain to unwind completely without power (AM-835 connected) (stop at the motor output of the control).
- For multiple roller systems, install the weight rounds and end rail according to the installation instructions.
- Commission the control unit (e.g. SHEV) according to the respective operating instructions.

AM-835 ~~24 VDC~~

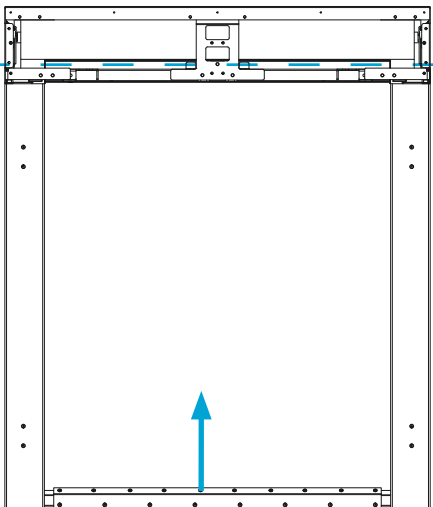


- Set DIP switch SW2-4 at the MASTER module to ON (see 2.5.1).



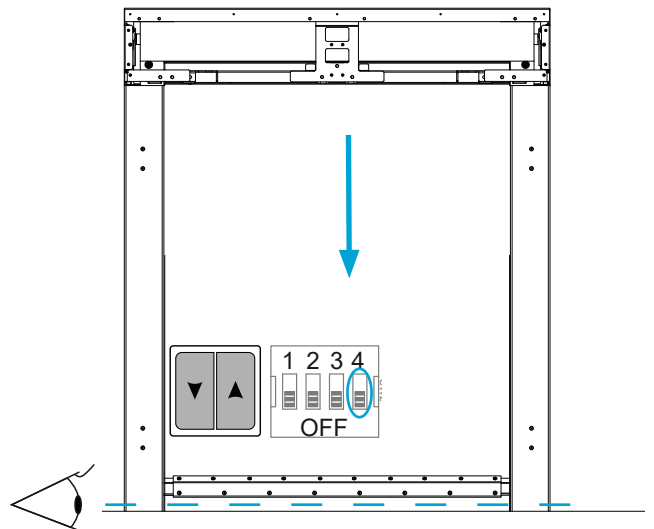
- Supply module(s) with power.
- Curtain upwinds until the upper end position is reached.

AM-835 ✓ 24 VDC

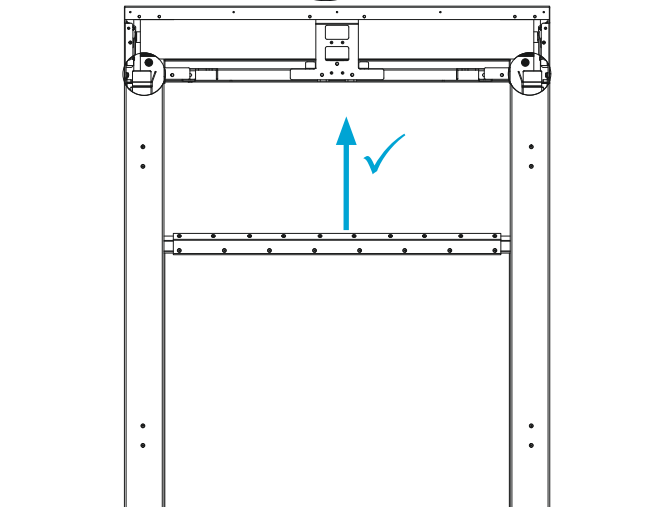


- Curtain unwinds automatically after approx. 5 seconds.

- Beobachten Sie während des Auf- und Abrollvorgangs die Mechanik. Sollte beim ersten Abrollen eine AM-835 abschalten, stoppen die anderen Module nach ca. 2 Sekunden.
- If the curtain has reached its desired end position during unwinding, stop it using the service button (press the OPEN and CLOSE buttons simultaneously) or set DIP switch SW2-4 to OFF.
- Set DIP switch SW2-4 to OFF.



- The curtain moves OPEN after approx. 5 seconds and switches off in the upper end position.



- Die Programmierung ist erfolgreich abgeschlossen.

3.2. Setting the holding currents

The holding currents must be set in this step so that the curtain can remain or hold in the respective position.



INFORMATION

Cut-off current and holding current correlate with each other, i.e.

large curtain size

= high cut-off current

= high holding current

This is why the setting values are linked to each other via rotary switches.

3.2.1. Upper holding current

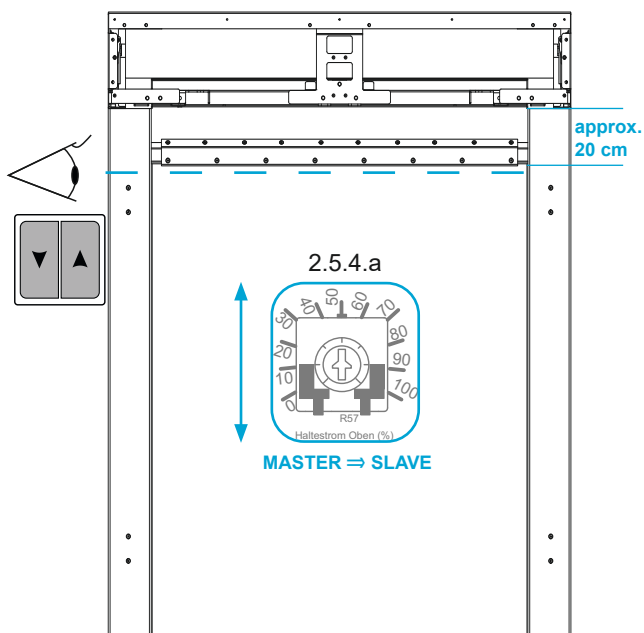


ATTENTION

A service button on the MASTER is required to set the upper holding current for the 'Holding current' holding position.

- The curtain must be in the UP position and supplied with power in normal operation.
- Move curtain to approx. 20 cm before upper end position.
- Stop the curtain (press the "UP" and "DOWN" buttons on the service button at the same time).
- Increase or decrease the holding current on the MASTER module for all roller assemblies until the curtain is being held.
- Adjust the holding current of individual assemblies as required on the individual SLAVE motor. The "upper holding current" rotary switch adopts the value of the MASTER module when in center position. Based on this, a negative (left) or positive (right) offset can be readjusted on the SLAVE.

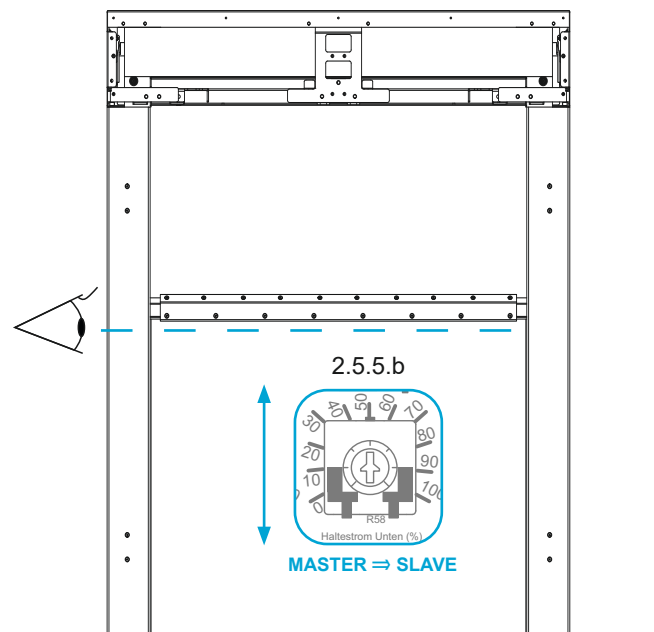
Figure 6: Setting the upper holding current



3.2.2. Lower holding current

- The curtain must be in the UP position in normal operation.
- Let the curtain unwind to the programmed position.
- Increase or decrease the holding current on the MASTER setting for all roller assemblies until the curtain is being held.
- Adjust the holding current of individual assemblies as required on the individual SLAVE motor. The "upper holding current" rotary switch adopts the value of the MASTER module when in center position. Based on this, a negative (left) or positive (right) offset can be readjusted on the SLAVE.

Figure 7: Setting the lower holding current



- Upwind the curtain again after adjusting the settings.
- Commissioning is complete.

4. Technical data

Table 2: Electrical characteristics

Rated voltage:	24 V DC
Permissible rated voltage range:	21 V – 28.3 V
Ripple of rated voltage:	< 500 mV
Undervoltage detection:	yes
Rated current ⁽¹⁾ :	max. 3.0 A
Maximum starting current:	3.2 A
Maxim cut-off current	3.2 A
Maximum holding current in the programmed unwinding end position ⁽²⁾ (operation mode with position detection):	3.2 A
Holding current (operation mode with holding magnet):	< 250 mA
Current consumption after cut-off (closed current):	overload cut-off only 100 mA excluding holding mode
Cut-off via:	electronic overload cut-off
Maximum number of synchronized motor units ⁽³⁾ :	12
Run-on-time ⁽⁴⁾ :	100 ms
Protection class:	I

(1) Current consumption under maximum load.

(2) See "Programming the end positions of the curtain system".

(3) Depending on the modular control panel. With common cut-off function (synchronous function). Max. cable length between two cut-offs in synchro is 10 m.

(4) The run-on time indicates how long the drives connected in synchro remain powered after the trigger drive is cut off.

Table 3: Potential-free contact (NO / NC)

Rated voltage:	max. 30 V DC
Relay contact load:	2 A



ATTENTION

The maximum contact load must not be exceeded.

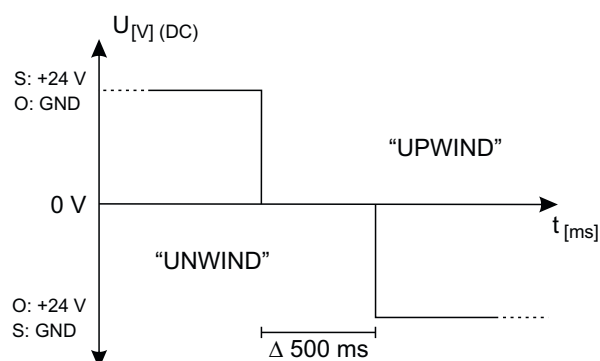
Table 4: Connection and operation

Motor connection cable length ⁽¹⁾ :	2 m
Pause time when changing direction ⁽²⁾ :	500 ms
Stability of opening and closing cycles:	10000

(1) Motor cable must not be extended!

(2) For change of direction (pole reversal), the supply voltage must ensure a pause time (zero volt range) of at least 500 ms.

Figure 8: Zero voltage range at changing of direction



ATTENTION

Voltage stability / quality: only defined cut-off processes are permitted (cut-off time from rated voltage 24 V to 0 V in $t < 10$ ms).

This applies in particular for switching operations from primary (mains operation) to secondary energy source (emergency power supplies).

Table 5: Installation and environmental conditions

Rated operating temperature:	0°C to 40°C
Ingress protection:	IP 66 ⁽¹⁾
Usage range:	Central European environmental conditions $\leq 2,000$ metres above sea level

(1) With appropriate use of IP 66 cable glands.

Table 6: Approvals and certificates

CE conformity:	In accordance with EMC directive 2014/30/EU and the low voltage directive 2014/35/EU
Usage with static smoke barriers:	according to EN 12101-1

Table 7: Mechanical characteristics

Dimensions (W × H × D):	180 × 130 × 90 mm
Weight:	approx. 270 g
Housing:	Polystyrol (halogen-free)
Colour:	grey (similar to RAL 7035)