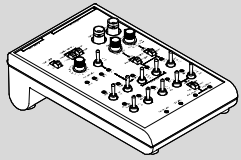


# Simulator CDSM-S1



**FESTO**

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Operating instructions

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Translation of the original instructions

For all available product documentation → [www.festo.com/pk](http://www.festo.com/pk)

## 1 Operating elements and connections

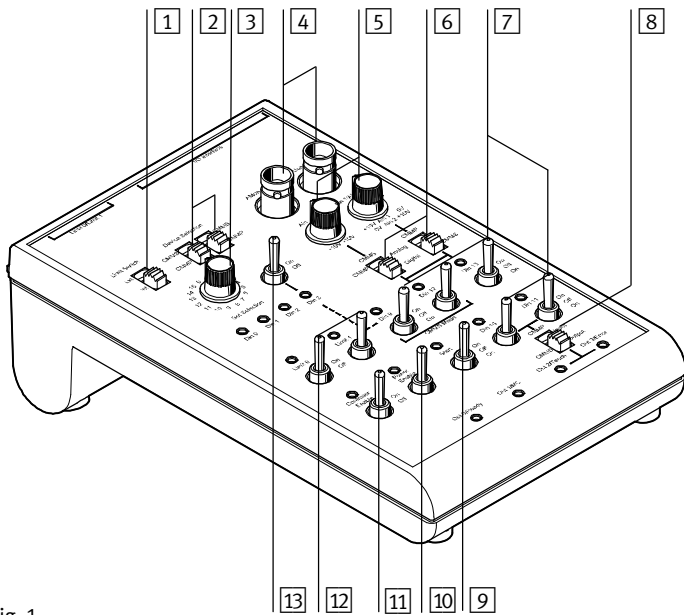


Fig. 1

- |                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1 Selector switch for limit switches (external/internal)</p> <p>2 Selector switches for presetting the controller type CMMS or CMMP (both switches must be set to the same type)</p> <p>3 Rotary switch for position set selection</p> <p>4 Sockets for analogue outputs (e.g. for oscilloscope)</p> <p>5 Potentiometers for setting the voltage of the analogue inputs</p> | <p>6 Selector switches for use as analogue or digital inputs</p> <p>7 Toggle switches for digital inputs</p> <p>8 Selector switch for use as output or input</p> <p>9 Toggle switch: Start</p> <p>10 Toggle switch for output stage enable</p> <p>11 Toggle switch for controller enable</p> <p>12 Toggle switch for simulation of limit switches (internal)</p> <p>13 Toggle switch for digital input Din3 (only for CMMS)</p> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Fig. 2

## 2 Function and application

The CDSM-S1 simulator is intended for use in simulating input and output signals for controllers of type CMMS, CMMP and SEC-AC from Festo during commissioning. Continuous use during operation is **not** permitted.

In order to use the simulators, you must generally have detailed knowledge of the functions and features of the connected controller. Further information on use in conjunction with the relevant controller can be found in the manual for the product. You must observe the:

- safety precautions and the
- designated use of the product.

## 3 Safety conditions



### Warning

Modification to the signal states and parameters with the simulator can trigger dangerous movements of the connected actuators.

- Make sure that nobody is in the positioning range of the connected actuators and be very careful with the parametrising and the manipulation of signal states.

These operating instructions are directed exclusively at personnel trained in commissioning and servicing, who have detailed knowledge of the functions and characteristics of the device connected to the simulator and of the relevant machine/system.



### Note

Improper handling can result in malfunctions.

- Make sure that all the instructions in this chapter are observed. The product will then function correctly and reliably.

- The product is not a safety component and must only be used as designated.
- Unauthorised product modification is not permitted.
- Make sure that safety measures cannot be ignored.
- Ensure that all applicable national and local safety laws are adhered to.
- Compare the maximum values specified in these operating instructions with your actual application (e.g. forces, torques, masses, speeds, temperatures). The product can only be used in accordance with the relevant safety guidelines if the maximum loading limits are observed.
- Take into consideration the ambient conditions at the location of use.
- Please note the instructions and explanations in the relevant description for the controllers.

## 4 Installation



### Note

An incorrect connection allocation may destroy the simulator. Use only the supplied original cable from Festo. The power supply for the simulator is provided by the connected controller.

- Connect the connectors as follows:
  - Connector (A) to controller using supplied cable. The pin allocation is summarised in the description for the controller.
  - Connector (B) for external limit switches.

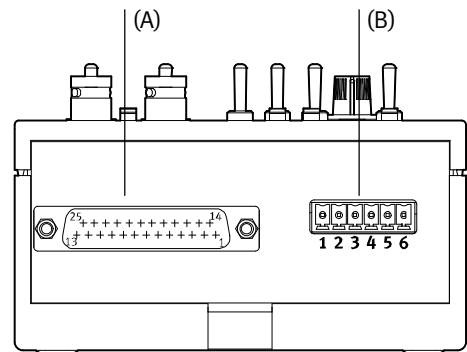


Fig. 3

PIN	Allocation	Connector (B)
1	24 V (out)	
2	Limit switch Limit 1 (external) (in)	
3	0 V (out)	
4	24 V (out)	
5	Limit switch Limit 0 (external) (in)	
6	0 V (out)	

Fig. 4

## 5 Commissioning



### Please note

- Make sure that the operating conditions → chapter 8 lie within the permitted ranges.

The product is ready for operation as soon as it is fitted and electrically and pneumatically connected.

### 5.1 Commissioning – basic settings

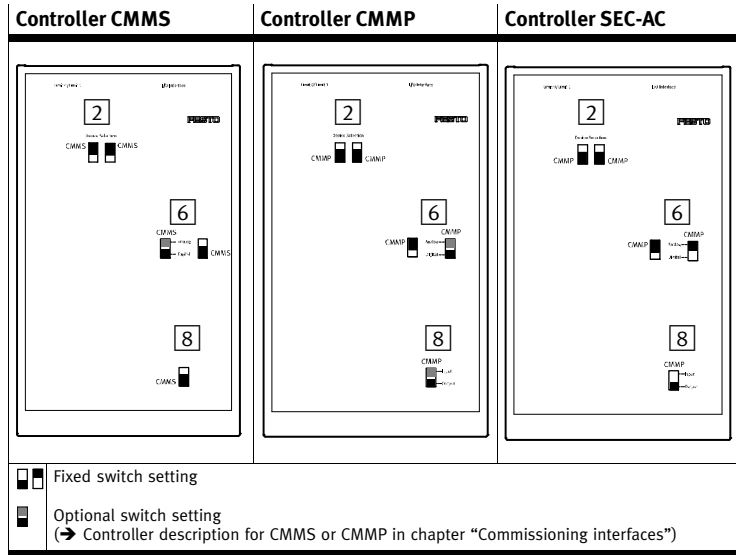


#### Warning

The actuators may perform sudden unexpected and dangerous movements.

- Make basic settings only in the de-energised state.

- Slide the selector switches **2**, **6** and **8** into the required basic setting for your controller type:



### 5.2 Commissioning – carrying out



#### Warning

Modification to the signal states and parameters with the simulator can trigger dangerous movements of the connected actuators.

- Make sure that nobody is in the positioning range of the connected actuators and be very careful with the parametrising and the manipulation of signal states.
- Make sure that the toggle switches **10** (output stage enable) and **11** (controller enable) are set to OFF.

- Energise the controller.
- Set the toggle switches **7** and **9** as well as **12** and **13**, and turn the rotary switch **3** in accordance with your application. For an exact description of the required signal states, please refer to the description for your controller.
- Turn the potentiometer **5** to the mid-position.
- First set the toggle switch **10** (output stage enable), then the toggle switch **11** (controller enable) to ON.
- Check whether the actuators react as expected.

Special case:

CMMS mode for toggle switches **7** and **13**. Please read the explanation in the chapter "Interfaces" in the CMMS-ST controller description.

## 6 Disassembly



### Warning

The actuators may perform sudden unexpected and dangerous movements.

- Disconnect the connections only in the de-energised state.

## 7 Troubleshooting

Fault	Possible cause	Remedy
Controller does not react as expected	Wrong controller type set on CDSM-S1	Set both selector switches <b>2</b> to the appropriate controller type (CMMS or CMMP)
Controller does not react to analogue or digital input signals or does not indicate the signal states	Different settings on simulator and controller	Compare settings of the selector switches <b>6</b> and <b>8</b> with the controller type (→ chapter "Commissioning – basic settings")
Controller does not react to start/positioning command	Stop Din 13 is active for CMMS	Set toggle switch Din 13 to inactive (→ chapter "Commissioning – carrying out, special case")
Internal/external limit switches are not detected	Selector switch <b>1</b> incorrectly set	Correct switch position
Din3 reacts unexpectedly	Rotary switch <b>3</b> and toggle switch <b>13</b> superimposed	Rotary switch <b>3</b> and toggle switch <b>13</b> are switched in parallel. Set desired function
Controller does not react as expected to Ain1 or Ain2	Selector switch <b>6</b> set to "digital" Potentiometer <b>5</b> turned in the wrong direction	Slide selector switch <b>6</b> to "analog" Potentiometer <b>5</b> is assigned in opposite directions for Ain1 and Ain2.  The level increases for Ain1 and decreases for Ain2: – when turned anti-clockwise  The level increases for Ain2 and decreases for Ain1: – when turned clockwise

## 8 Technical specifications

		CDSM-S1
Ambient temperature	[°C]	0 ... +50
Relative air humidity	[%]	90 (non-condensing)
Installation position		as desired
Protection class		IP20
Digital inputs (Out0 ... Out3) Digital outputs (Din0 ... Din13) Analogue inputs (AMon0 ... AMon1, signals to BNC sockets) Analogue outputs (Ain0 ... Ain2)		Is provided by the connected controller (see documentation for the controller)
Limit switch		
– Operating voltage DC	[V]	24 ±20 %
– Current	I <sub>max</sub> [mA] I <sub>min</sub> [mA]	100 5 ... 8
Dimensions:		
– Width	[mm]	106
– Depth	[mm]	180
– Height	[mm]	62
Materials:		
– Housing		Acrylonitrile butadiene styrene
Weight	[g]	340