

Operation  
instructions

**Compact control  
unit**

**2SX7100-1KS..**



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# 1 General

## 1.1 Safety instructions

Safety-relevant procedures are marked by the following symbols in the operation instructions:



**Warning** marks activities which, if not carried out correctly, can affect the safety of persons or property.



**Notice** marks activities which have major influence on the correct operation. Non-observance of these notes may lead to consequential damage.

**Non-observance** of safety instructions may lead to serious injuries or damage.



Using the compact control units requires knowledge of the main operation instructions on **SEVEN ECOTRON**, **PROFITRON** or **HiMod** actuators. The respective safety instructions have to be observed!

## 1.2 Scope of supply

- Compact control unit  
The compact control unit is supplied in a robust aluminum housing, the left side is shaped as handle. Dimensions: 175 mm x 120 mm x 32 mm.  
The compact control unit is available with different cable lengths and for version with connection hood also available mains connection in the following basic versions:
  - a) hard-wired with round plug connection (plug & play);
  - b) hard-wired with round plug connection for fieldbus control (plug & play);
- Operation instructions

## 1.3 Transport, storage and disposal

### 1.3.1 Transport and storage

- The device must be supplied in sturdy packaging.
- Store in well-ventilated, dry room.

### 1.3.1 Disposal and recycling

- The packaging of our products consists of environmentally friendly materials which can easily be separated. For the disposal of the packaging material, we recommend recycling and collection centers.
- Arrange for controlled waste disposal of the disassembled material or for separate recycling according to materials.
- Observe the national/local regulations for waste disposal.

## 2 General description

The compact control unit is used to control electric SIPOS SEVEN actuators in control type "REMOTE", designed for commissioning, training and troubleshooting on the actuator. The compact control unit is used as a kind of control system. Even conventional feedback to the distributed control system can be assessed using this manual control unit. Typical applications of the compact control unit are listed in section 4.2.2.

**Control signals** for the compact control unit are created within the actuator. The illuminated LED located near the integral membrane switch indicates the active control signal. Analog values are changed via the Up/Down buttons and shown in the adjacent digital display:

- Binary control signals
  - CLOSE, OPEN, STOP, EMERGENCY (EMERGENCY for PROFITRON, HiMod only)
- Analog signals (PROFITRON, HiMod only)
  - analog input 0/4 – 20 mA (AI1)
  - analog input 0/4 - 20mA (AI2)

**Feedback signals** of the actuator show the eight LEDs or the digital display:

- Binary signals 1 – 8
  - ECOTRON: Signals 1 – 5 according to adjustment on the segment display
  - PROFITRON, HiMod: Signals 1 – 8 according to parameterization of signal outputs
- Actual position value 0/4 – 20 mA (AO1)

## 3 Connection to the actuator



The components are designed such that once correctly connected, uninsulated, live parts cannot be touched directly in the terminal area; i.e. protection against electric shock is provided in accordance with IP2X, or IPXXB.

The supply voltage must always be within the voltage range specified on the name and rating plate.



Dangerous voltages are also applied when the motor is at standstill. Before opening the terminal cover, disconnect supply voltage from the actuator. Allow 5 minutes for the capacitors to discharge.

The compact control unit generates the required supply voltages for the provision of binary and analog control signals from the auxiliary supply voltage created by the actuator.

### Note:

Due to their quick connection options (plug & play), compact control units with hard-wired connection hood are specifically suited for commissioning or troubleshooting on various actuators with identical mains connection.

## 4 Operation and control via compact control unit

### 4.1 Local control panel

- 1 Analog output AO1 actual position value [0/4 – 20 mA]
- 2 Analog input AI1
- 3 Modify analog input AI1 [0/4 – 20 mA]
- 4 Modify analog input AI2 [0/4 – 20 mA]
- 5 Analog input AI2
- 1 "STOP" button
- 2 "OPEN" button
- 3 "CLOSE" button
- 4 "EMERGENCY" button
- 5 Signal outputs indication
  - ECOTRON: 5
  - PROFITRON, HiMod: 8

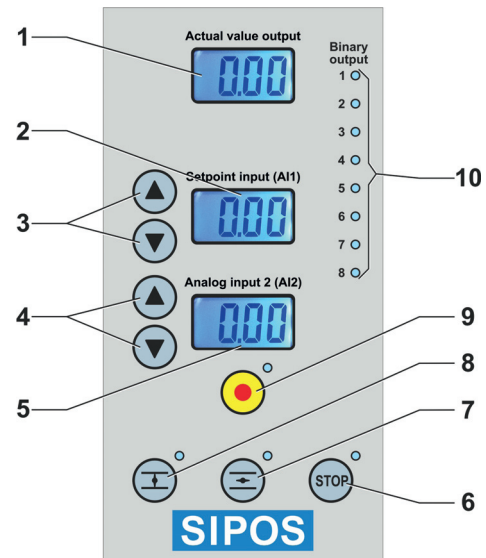


Fig.: Control panel of compact control unit



Operating the actuator via compact control unit is only possible in the "REMOTE" state (blue LED illuminated ); if required change to REMOTE via drive controller on the local control unit of the actuator.

Depending on the control mode set on the actuator (refer to section 4.2), the actuator can be controlled via the binary control inputs CLOSE, OPEN, STOP and EMERGENCY and analog inputs AI1 and AI2.

### 4.2 Control

All push buttons have clear tactile feedback. In detail, the compact control unit allows the following actuator control:

Control modes		Control signal (,---' = not available)					
		CLOSE	OPEN	STOP	EMERG.	Analog input 1 (AE1)	Analog input 2 (AE2)
<b>ECOTRON</b>	permanent contact	X	X	---	---	---	---
	pulse contact	X	X	X	---	---	---
<b>PROFITRON, HiMod</b>	Permanent contact	X	X	---	X	---	---
	Pulse contact	X	X	X	X	---	---
	Proportional operation	X	X	---	X	---	---
	Positioner	---	---	---	X	X	1)
	Process controller	---	---	---	X	X	X
	Speed setpoint	---	---	---	X	X	1)

1) Optional, if AE2 available

For PROFITRON or HiMod version with parameterized "REMOTE reconnect", another control mode may be selected pressing the STOP membrane key, so that the actuator can be controlled either via permanent contact or positioner.

### 4.2.1 Feedback signals

- Binary signal outputs
  - ECOTRON:  
Indication of the 5 signal outputs according to setting (LED 6, 7 and 8 out of order)
  - PROFITRON:  
Indication of all 8 signal output including parameterization
- Analog output (AO1) "Actual position value" 0/4 – 20 mA

### 4.2.2 Typical practical examples

The above mentioned functions and control modes turn the compact control unit into a useful tool for test and service purposes.

- Testing the actuator and its functions
  - Binary inputs and outputs
  - Analog inputs and outputs
- Indirect cable test
 

Should control signals sent by the DCS (or another control sources) not have the required function at the actuator or should feedback signals not be returned to the DCS due to their parameterization, the compact control unit can be used to check whether

  - correct control (input) signals from the actuator are implemented accordingly
    - 'Yes'      ► Wiring to / parameterization within the DCS incorrect
    - 'No'       ► wiring of the actuator connection may be defective
    - or
    - comprehensive malfunction
  - Feedback signals at the actuator correspond to actuator condition and parameterization
    - 'Yes'      ► Wiring to / parameterization within the DCS incorrect
    - 'No'       ► Actuator parameterization incorrect



**Commissioning:** The compact control unit is no commissioning tool!  
It can be used to test incorrect actuator behavior or an actuator malfunction during commissioning.

# 5 Connection diagram

**Kompaktsteuereinheit**  
**Compact Control Unit**  
2SX7100-1KS...-....



**Stellantrieb**  
**Actuator**  
SEVEN

