

Signal Converter

SEM61.4



Input: continuous analog signals DC 0...10 V, or
two-position signals DC 0/10 V

Output: pulse/pause two-position signals AC 24 V

Use

The signal converter is used in HVAC plants for the control of heating elements.

It converts DC 0...10 V or DC 0/10 V output signals (e.g. from a controller) to AC 24 V pulse/pause control signals for current valves.

Ordering

When ordering, please give name and type reference: signal converter **SEM61.4**.

Equipment combinations

The input of the signal converter can be connected to any type of control unit operating on AC 24 V and delivering continuous output signals of DC 0...10 V or DC 0/10 V.

The output of the signal converter can be connected to the following type of current valve:

Name	Type reference	Data sheet
Current valve	SEA41.2	4936

Mechanical design

The signal converter consists of a two-sectional plastic casing. The base carries the printed circuit board and the terminal block. The connection terminals are easily accessible from the front. If required, they can be protected by a cover (refer to "Accessories").

At the rear of the base, there is a snap-on facility for fitting the signal converter to DIN mounting rails.

The casing snaps on the base. The front of the casing carries the type field, the connection diagram and the function diagram.

Accessory (optional)

Name	Type reference
Terminal cover (two pieces)	ARG81.1

Engineering notes

To generate the operating voltage, a transformer for safety extra low voltage (SELV) with separate windings and 100 % duty is required. When sizing it, the signal converter's power consumption must be taken into consideration.

Terminal G0 of the signal delivering device (e.g. controller) and terminal G0 of the signal converter must be interconnected via the common system neutral (SN) (refer to "Connection diagram").

The permissible line lengths between the controller and the signal converter must be observed (refer to "Technical data").

Up to 20 current valves SEA41.2 can be connected to one signal converter.

Mounting and installation notes

Mounting location: on a wall or in a control panel.

Mounting method: the signal converter snaps on DIN mounting rails.

If used in a dirty or dusty environment, the terminal cover ARG81.1 should be fitted (refer to "Accessory").

The local regulations for electrical installations must be complied with.

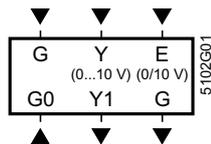
Technical data

Operating voltage (SELV to EN 60 730)	AC 24 V \pm 20 %
Frequency	50 or 60 Hz
Power consumption	1 VA
Input signals	
Terminal Y	DC 0...10 V, \pm 0.1 mA
Terminal E	DC 0/10 V, \pm 0.3 mA
Switching threshold	DC 8.5 V
Output signal (terminal Y1)	AC 24 V, 0.5 A max
Pulse/pause cycle time	35 s
Perm. line length (terminals E and Y)	
Copper cable 0.6 mm dia.	40 m
Copper cable 1.0 mm ²	130 m
Copper cable 1.5 mm ²	200 m
Copper cable 2.5 mm ²	300 m
Connection terminals for	1 x 2.5 mm ²
Degree of protection of housing	
Without terminal cover	IP 20 as per EN 60 529
With terminal cover	IP 40 as per EN 60 529
Safety class	III as per EN 60 730

Environmental conditions	
Operation	as per IEC 721-3-3
Climatic conditions	class 3K5
Temperature	-5...+50 °C
Humidity (non-condensing)	5...95 % r. h.
Transport	as per IEC 721-3-2
Climatic conditions	class 2K3
Temperature	-25...+70 °C
Humidity	<95 % r. h.
Mechanical conditions	class 2M2
Electromagnetic compatibility	
Emissions	EN 50 081-1
Immunity	EN 50 082-2
CE conformity to EMC directive	89/336/EEC
Weight (excl. packing)	approx. 0.065 kg

Diagrams

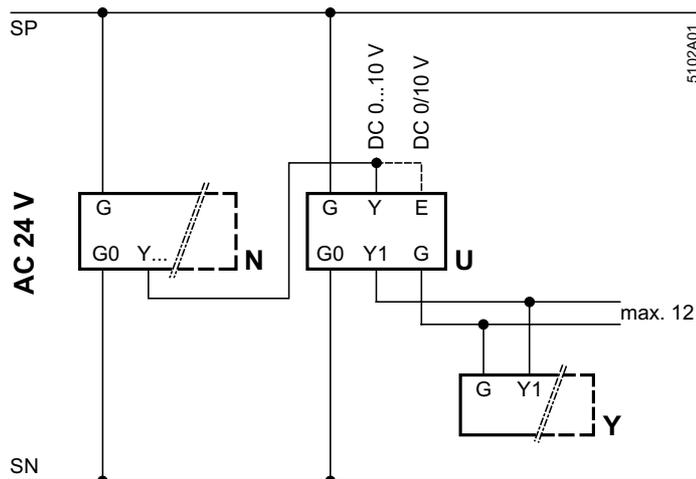
Connection terminals



Legend

G, G0	System voltage (SELV) AC 24 V
Y	Analog signal input DC 0...10 V
E	Digital signal input DC 0/10 V
Y1	Pulse/pause signal output AC 24 V

Connection diagram



Legend

N	Controller (RWF61...; RWI65..., RCE84..., etc.)
U	Signal converter SEM61.4
Y	Current valve SEA41.2

Dimensions

