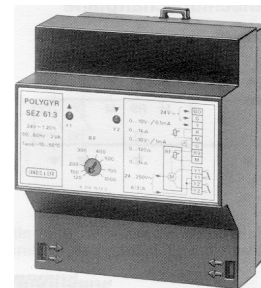


POLYGYR®

## Three-Position Converter

0...10 V d.c. control, electronic

## SEZ61.3



### Application

The SEZ61.3 three-position converter is used where the continuous 0...10 V d.c. control signal of the POLYGYR system must be converted into a three-position control signal for continuous control action, thus providing control of regulating units having a three-position control input (two-wire control), whereby each regulating unit requires one SEZ61.3. Voltages between 24 and 250 V a.c. can be switched.

An additional input for a potentiometer of 0...1000 Ω makes the following applications possible:

- Operation of a continuous frost protection unit\*
- Manual positioning (e.g. of air dampers) from a remote setting unit\*
- Adjustment of the minimum position (e.g. of air dampers) by means of a remote setting unit\*

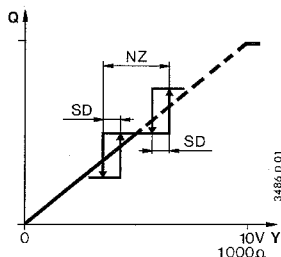
\* See also under «Other Units»

The following additional functions can be provided:

- Parallel operation of several actuators with 0...10 V control (up to 10) as referred to an actuator with three-position control
- Control of an on/off switch for auxiliary switching functions
- Connection of a position indicator

### Function

The SEZ61.3 is a signal converter. It converts the continuous 0...10 V d.c. control signal of the controller or the resistance signal of the 0...1000 Ω potentiometer into a three-position signal. The output of the SEZ61.3 operates with slave control. For this reason the actuator must be equipped with a feedback potentiometer (see also under «Other Units»). Its resistance range must be a minimum of 0...120 Ω and a maximum of 0...1000 Ω. Within these limits the SEZ61.3 can be adapted to the feedback potentiometer. The SEZ61.3 converts the resistance signal of the feedback potentiometer into a proportional 0...10 V d.c. signal which is then fed to output terminal U. This signal can be used for the parallel operation of several actuators, for position indication, or for switching operations with the SEZ61.1 on/off switch.



Q Load  
Y Control signal (0...10 V or 0...1000 Ω)  
NZ Neutral zone  
SD Switching differential

### Design Features

The plastic casing consists of base and cover. It is suitable for wall or DIN rail mounting. The cover clips on. A screwdriver is required to open it. The casing contains a printed circuit board

carrying the electronic circuit, the connecting terminals and the changeover relays. The connecting terminals are easily accessible after removal of the cover. Knockout holes (Pg11) for the cable entry are provided at the bottom and the rear of the unit. The setting knob for the adaptation of the feedback potentiometer is accessible from outside. The switching commands (open/closed) for the actuator are indicated by two LED's.

### Other Units

#### Actuator

The actuator must have the following characteristics:

- Operating voltage 24...250 V a.c.
- Three-position control (two-wire control)
- Built-in feedback potentiometer
  - min. 0...120 Ω
  - max. 0...1000 Ω

**Frost protection units** type QAF21.2 and QAF61 (Data Sheets 3448 and 3449) when there is a risk of frost.

**Remote setting units** type FZA... (Data Sheet 3470) for manual operation and minimum position.

**On/off switch** type SEZ61.1 (Data Sheet 3484).

### Technical Data

Operating voltage	24 V a.c. ±20%
Frequency	50...60 Hz
Power consumption	3 VA
Control signal at input (Y)	
Voltage	0...10 V d.c.
Current	0,1 mA max.
Potentiometer input (R)	0...1000 Ω
Switching differential	approx. 100 mV, or 10 Ω
Neutral zone	approx. 500 mV, or 50 Ω
Feedback (R9)	0...120 Ω min. 0...1000 Ω max.
Measuring voltage (U)	
Voltage	0...10 V d.c.
Current	1,0 mA max.
Switching capacity of output relays (Y1, Y2)	
Voltage	24...250 V a.c.
Current	3 A (ind.), 5 A (res.)
Permissible ambient temp.	
Operation	–10...+50°C
Transport and storage	–25...+65°C
Permissible ambient humidity	class F to DIN 40040
Radio interference protection	N to VDE 0875, §4
Protection standard of housing	IP41 to DIN 40050
Weight	0,153 kg

### Application Advice

In the event of an operating voltage failure at terminal G, or when the unit is switched off, both relays return to their rest position, i.e. the actuator stops running.

One SEZ61.3 can control one actuator with three-position control. Several actuators (up to 10) with 0...10 V d.c. control can be run in parallel operation via terminal U (see also «Wiring Diagrams»).

## Installation Advice

The SEZ61.3 is to be mounted in a control panel, either on its back panel or on a DIN rail.

## Ordering Specification

When ordering, please give full type reference: **SEZ61.3**

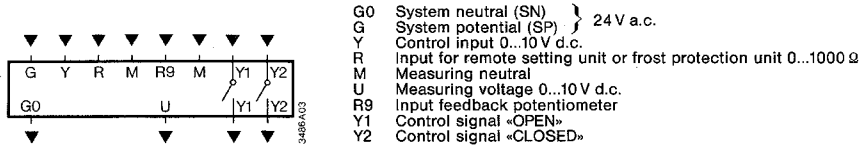
## Commissioning Advice

When commissioning the installation, the wiring is to be checked and a function test is to be made.

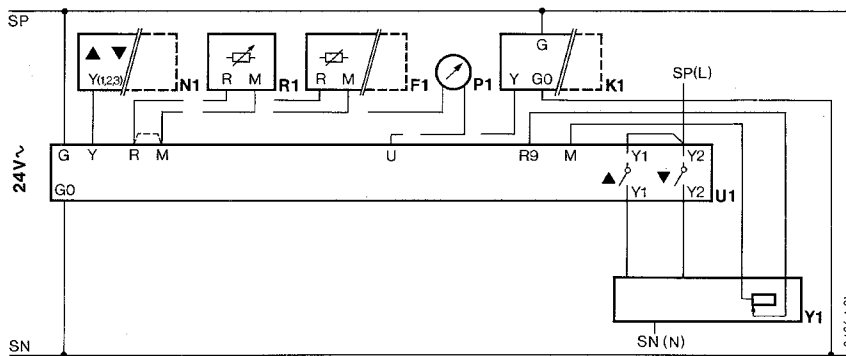
If the potentiometer inputs R and M are used, the link across R and M must be removed. The setting knob must be set to the maximum value of the feedback potentiometer in the actuator.

## Wiring Diagrams

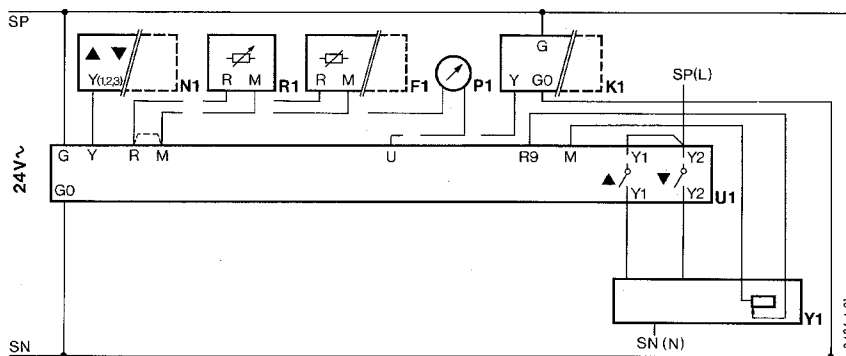
### Connecting terminals



The wiring diagrams show all connections possible. How many and which of these are used depends on the plant.



### Parallel operation of several actuators with one remote setting unit



- F1 Frost protection unit
- K1 On/off switch
- N1 Controller
- P1 Position indicator
- R1 FZA... remote setting unit
- U1 SEZ61.3 three-position converter
- Y1 Actuator with three-position control and feedback potentiometer
- Y2 Actuator with 0...10 V d.c. control

## Dimensions

