

- 1 Fuses for drive motor
- 2 Relays with LED function indication (relay 3* without LED)
- 3 Coding switch for range settings, direction of control action and sensitivity
- 4 Push button for starting automatic regulating distance adjustment
- 5 Status-LED
- 6 Error-LED Profibus*
- 7 Coding switches bus address Profibus*
- 8 Connection for service interface, external display
- 9 Switch termination resistors Profibus*
- 10 Terminals for bus line Profibus*
- 11 Terminals for signal output
- 12 Terminals for feedback potentiometer and actuating signal (wired internally)
- 13 Terminals for mains voltage and actuating output for actuator (wired internally)

Description

The position controller converts an incoming actuating signal into the associated drive position by comparing the signal with the position feedback from a potentiometer built into the drive, and by setting the drive position via relays 1 and 2. An output signal 4..20 mA for position feedback is in the standard equipment. Optionally, an additional contact with regard to the actuator position is possible, for example for the limitation of the valve travel to a minimum or maximum opening degree.

The automatic and maintenance-free device is integrated into the actuator. All main basic parameters for range, operating direction and sensitivity are set via coding switches. Optionally, various interfaces to higher-level master computers or PLCs are available, both for data acquisition or remote maintenance purposes and for executing digital control commands.

The device is only accessible once the drive cover has been removed. Commissioning only consists of checking the settings and a single activation of the adjustment button; an LED indicates completion of the automatic adjustment to the end positions. The device is then ready for operation.

Type summary

Basic unit

Additional fittings:

Extra voltage (1=115V AC, 2=24V AC, 8=24V DC), others on request

Position feedback output 0..10V instead of 4..20mA

Interface RS485, protocol 2.0

Profibus DP interface

Additional contact (potential free N.O. 250V, 2A)

Mobile display and control unit

* = available depending on type

Li.no.

49sr5

49sr5_..

49sr5.k

49sr5.s

49sr5.sp

49sr5..1

49sr59z

Description

The option additional contact contains of an additional relay with a potential-free normally open contact. This can be used for minimum or maximum stroke limitation of the control valve or for signal purposes. The operating direction and the switching point are adjustable, also preadjusted on customer's demand.

Putting into operation

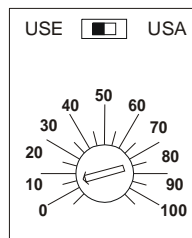
Before putting into operation the correct wiring and adjustments (see next chapter) are to be checked.

Hint: Before activating the automatic regulating distance adjustment the switching point of the additional contact is to be adjusted to 0% (US A) or 100% (US E). Otherwise the full regulating range cannot be driven!

Adjustments

Switching point:

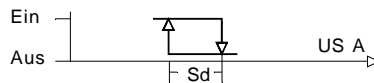
adjustable to 0 ... 100 %, referring to valve position



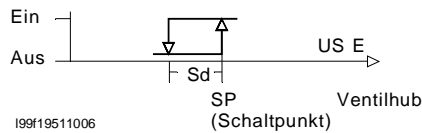
Operating direction:

adjustable, alternatively:

US A: Relay switches off in case of rising valve stroke



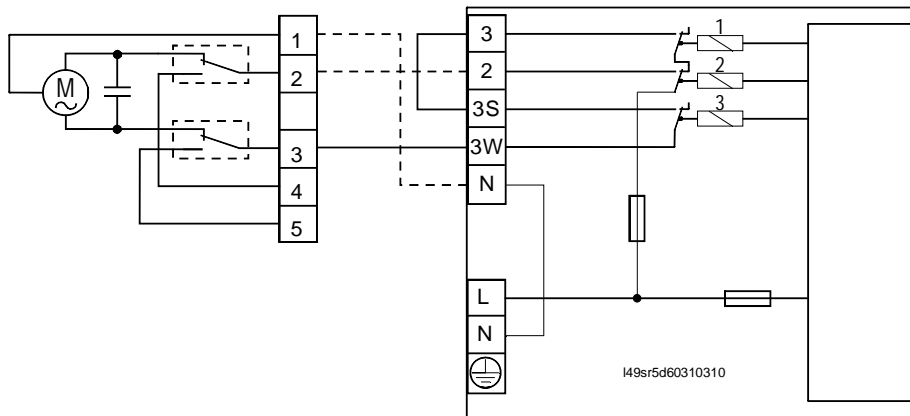
US E: Relay switches on in case of rising valve stroke



199f19511006

Installation example for minimum stroke limitation with three-way-valves

(straight way is closed when the spindle is in the upper position)



I49sr5d60310310

Commissioning

Prior to commissioning, the mechanical setting of the potentiometer in the drive should be checked and corrected if necessary!

During commissioning, first check the settings of the coding switches for input signal, operating range and signal flow direction.

Then press the push button for the automatic regulating distance adjustment for 5 seconds. The actuator then consecutively drives to both end positions, and the positioner adjusts itself automatically. Two LEDs indicate the function of the relay.

During the adjustment, the status LED flashes every 3 seconds. As soon as the adjustment process is complete, the LED changes to continuous light, thus indicating normal operating status.

Rapid flashing (1 second cycle) indicates a fault at the measuring inputs (feedback / control signal). Details can be displayed via an additional display and control unit or read via an interface and external software, e.g. PKS.

Status indicator

Status LED:

Continuous light	Normal function
Flashing, 3s	Adjustment process running
Flashing, 1s	Fault at the measuring inputs

Settings

Range: *Position of coding switches 1 to 3:*

0...20mA / 0...10V	000
4...20mA / 2...10V*	100
0...10mA / 0...5V	010
4...12mA / 2...6V	110
10...20mA / 5...10V	011
12...20mA / 6...10V	111

Response sensitivity: *Position of coding switch 4:*

normal*	1
reduced	0

Operating direction *Position of coding switch 5:*

direct*	0 for three-way valves 1 for straight-way valves (with off position below)
inverse	1 for three-way valves 0 for straight-way valves (with off position below)

direct: increasing input signal opens the straight way,
inverse: increasing input signal closes the straight way.

(* = factory setting)

Technical data:

Input (adjustable): 0...20mA / 0...10V
 4...20mA / 2...10V
 0...10mA / 0...5V
 4...12mA / 2...6V
 10...20mA / 5...10V
 12...20mA / 6...10V

Response sensitivity: switchable normal / reduced

Output: up to 4 relays, max. 250V, 2 A
 4..20mA for position feedback, load imp. <= 500 Ohm, alt. 0..20mA
 optional 0 .. 10 V, load impedance > 500 Ohm, alt. 2..10V

Operating direction (adjustable): direct: increasing input signal opens the straight way,
 inverse: increasing input signal closes the straight way

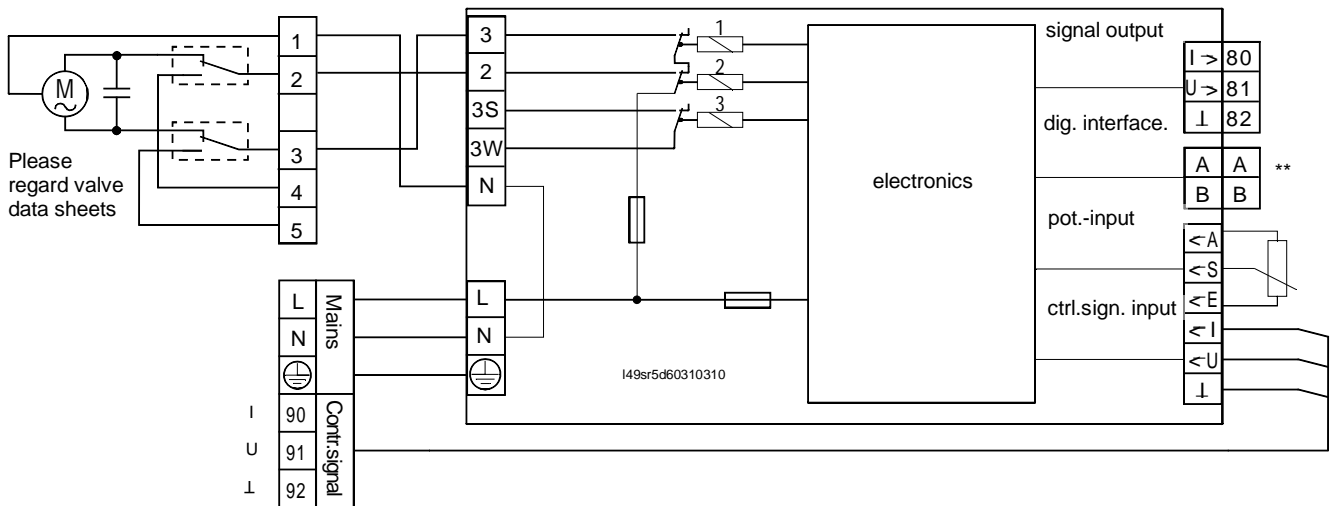
Status indicator: 1 status LED for adjustment procedure, normal operation, fault
 2 LEDs for function display relay 1 and 2; 1 fail.- LED Profibus(opt.)

Mains connection: 230V +/- 10 %, 48...62Hz, approx. 3VA
 alternatively 115 V, other voltages on request

Optional interfaces: RS 485 / 2.0 protocol, Profibus DP, others

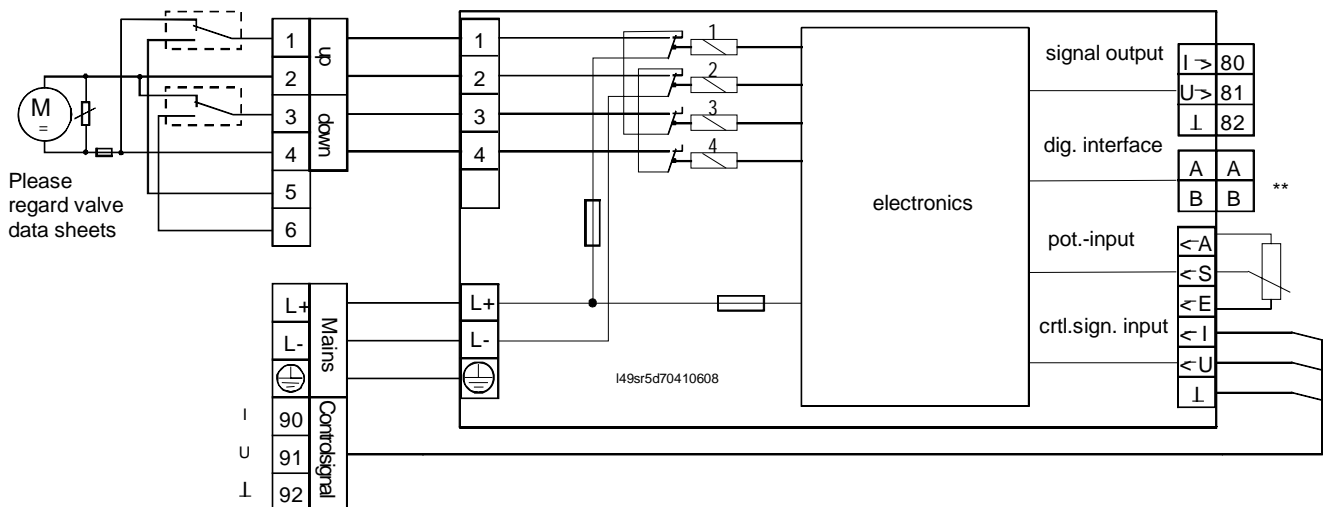
Permissible ambient temp.: 0...60°C, nominal temperature: 20°C

Internal function and connections 230V / 115V / 24V AC*: Positioner 49sr5



Internal function and connections 24V DC*:

Positioner 49sr58



* Example, depending on sub type some details can be missed. The wiring diagram glued into the bonnet is only valid for each delivered controller.

** The shield must be connected positioner sided on a large contact area to the ground potential cable clamp.