

SRI983 ELECTRO-PNEUMATIC POSITIONER Ex d / EXPLOSION PROOF

These instructions are to be used as a guide for quick start-up. For more detailed information please refer to the standard documents "Master Instructions" and "Product Specification Sheet". These can be found on our Website.

1 MOUNTING TO LINEAR ACTUATORS

Single-acting diaphragm actuators

Check whether the actuator is in the safety position required by the process. (Does the actuator open or close with spring force?) The mounting side is selected from the table below in accordance with the direction of action and the required direction of movement of the spindle for an increasing input signal.

Actuator closes with spring force	Changeover plate setting	Actuator opens with spring force	Changeover plate setting

The arrow indicates the direction of movement of the spindle at increasing input signal.

The direction of action of the input signal can be set on the changeover plate 13 :

N = Normal direction of action (increasing input signal produces increasing control pressure to the actuator)

U = Reverse direction of action (increasing input signal produces decreasing control pressure to the actuator)

Double-acting diaphragm actuators

For double-acting positioners the changeover plate 13 always stays in the "N" setting. The assignment of the input signal to the direction of movement of the actuator spindle is determined by the selection of the mounting side of the positioner and the piping of the positioner outputs to the actuator:

	Changeover plate setting		Changeover plate setting

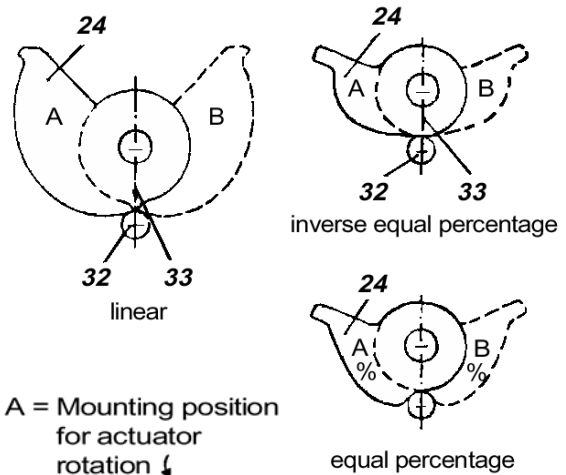
Ensure that the feedback lever 11 is horizontal at 50 % stroke.

Fasten housing cover in such a way that air vent of attached device faces downwards (see Mark 'M').

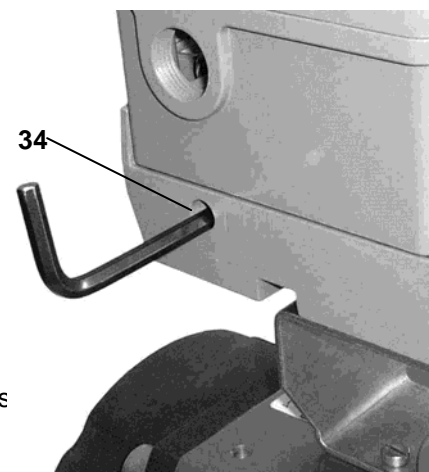
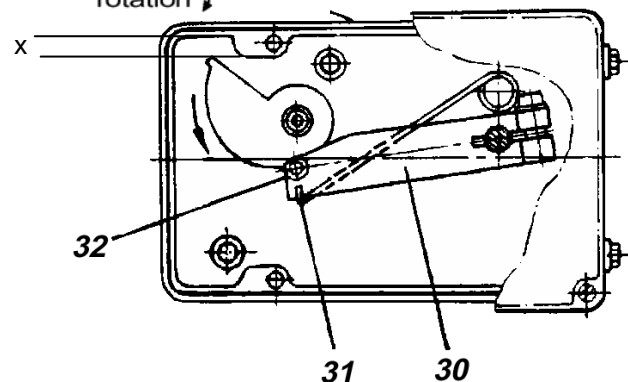


2 MOUNTING TO ROTARY ACTUATORS

- a) Remove the transparent cover plate from the housing of the attachment kit.
- b) Mount the housing of the attachment kit on rotary actuator or armature; use mounting hardware supplied by the actuator manufacturer if necessary.
- c) Move actuator into the desired starting position (rotation angle = 0°).
- d) Mount cam **24** in accordance with the direction of rotation of the actuator.
 The linear cam is fastened to the actuator drive shaft in such a manner that the distance x between the inside of the housing and the came amounts 2 mm, whereas in case of equal percentage cam the dimension x is approx. 17.5 mm.
 In case of inverse equal percentage cam the dimension x is approx. 18 mm.
 When employing equal percentage and the inverse equal percentage cams, the range spring (yellow) EW420493013 must be be installed in the positioner.
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- e) Fasten feedback lever **30** for the rotary actuator onto shaft **15** of positioner.
- f) Mount positioner on housing of attachment kit. Attach spring **31** to feedback lever **30** and cam follower **32** against cam.
 Screw positioner to housing of attachment kit. With the linear cam and the inverse equal percentage cam check whether mark **33** points to the center of the cam follower **32**; adjust if necessary.
 With the equal percentage cam check whether the cam follower lies directly ahead of the start of the cam lobe; adjust if necessary.
- g) Final mounting of feedback lever on shaft of positioner is performed at a stroke of 0 %, i.e. a rotation angle of 0°. First loosen 5 mm A/F Allen screw of feedback lever **30** through hole **34**, then press stroke factor lever **17** against stop screw **18** (see page 5) and tighten Allen screw firmly.



A = Mounting position for actuator rotation ↓
 B = Mounting position for actuator rotation ↓



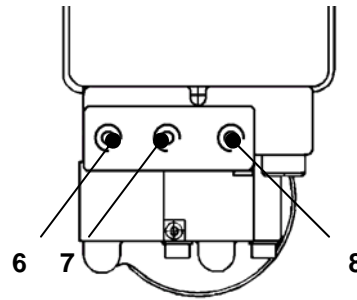
Note !

If actuator moves to an end position, the mounting position of cam does not coincide with the direction of rotation of the actuator. In this case install the cam **24** in the reverse position.

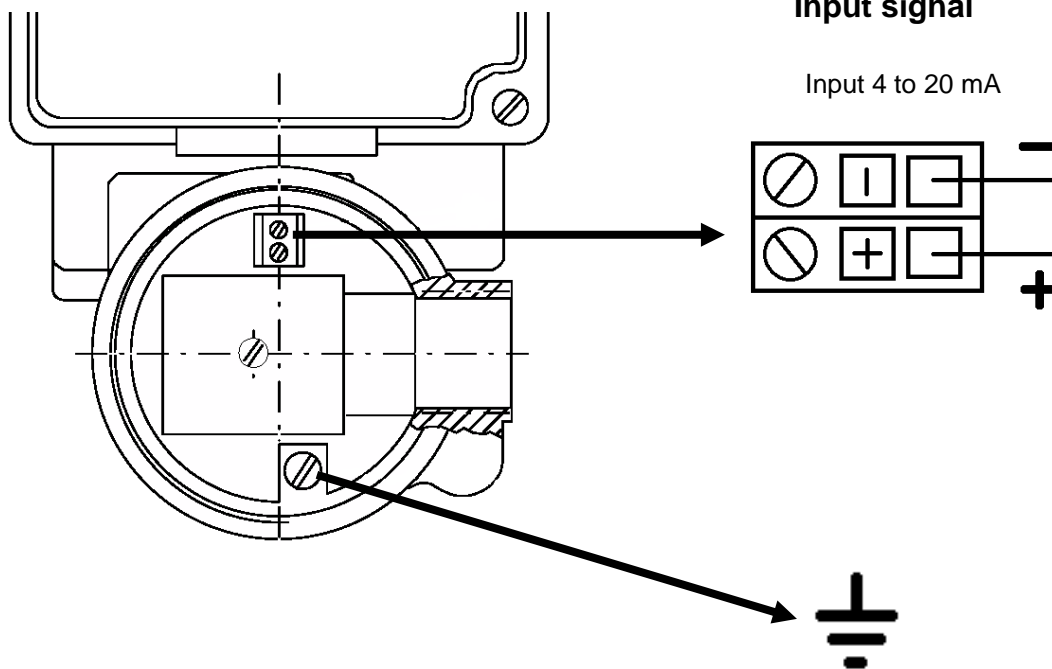
3 PNEUMATIC CONNECTIONS

Air supply (s): 1.4 to 6 bar (but not more than the max. pressure of actuator), free of oil, dust and water !

- 6** Internal thread G 1/8 for output II (y2)
(only on double-acting positioners)
- 7** Internal thread G 1/8 for supply air
- 8** Internal thread G 1/8 for output I (y1)



4 ELECTRICAL CONNECTIONS



5 SETTINGS AND START UP

5.1 Setting of zero point and stroke on the positioner

(see page 5 for the reference of the number)

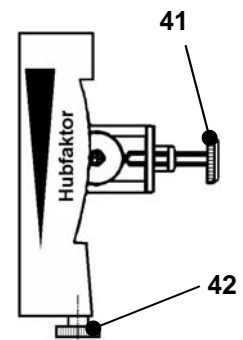
Before starting with the set-up push the flapper lever **40** several times alternately to the left and right in order to align the flappers correctly.

- a) Set the minimum value of the input signal w (start of stroke).
- b) Turn zero screw **41** until actuator just begins to move from its end position.
- c) Set maximum value of the input signal w (end of stroke).
- d) Turn the stroke factor screw **42** until actuator precisely reaches its end position:

Right turn: decrease of travel

Left turn: increase of travel

Repeat the operations (a to d) 2 or 3 times in order to insure an accurate positioning.



Note:

Changes of the gain will influence the settings of zero and span.

If the stroke cannot be adjusted with the installed spring, a suitable spring can be determined with the table on page 5.

5.2 Setting the damping

The air output capacity of the positioner can be reduced by means of the damping throttle **46**. Double-acting positioners are equipped with a damping throttle **47** for correcting the variable y1 and a damping throttle **48** for correcting the variable y2 . In its normal setting the damping throttle is approximately flush with the amplifier housing.

The air output capacity is reduced by a factor of approximately 2.5 when the damping throttle is turned completely.

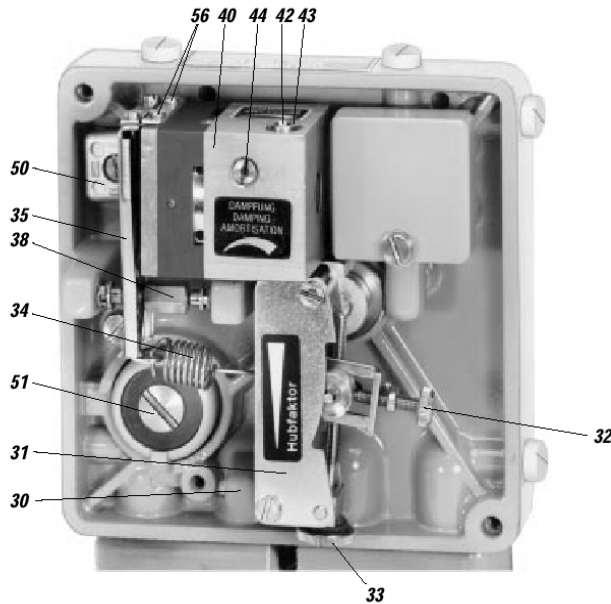
5.3 Spring range

Five different springs for the travel-ranges are available for matching to the stroke and input signal range. In the following table the stroke range is given for a normal application (4-20 mA and with our standard feedback lever).

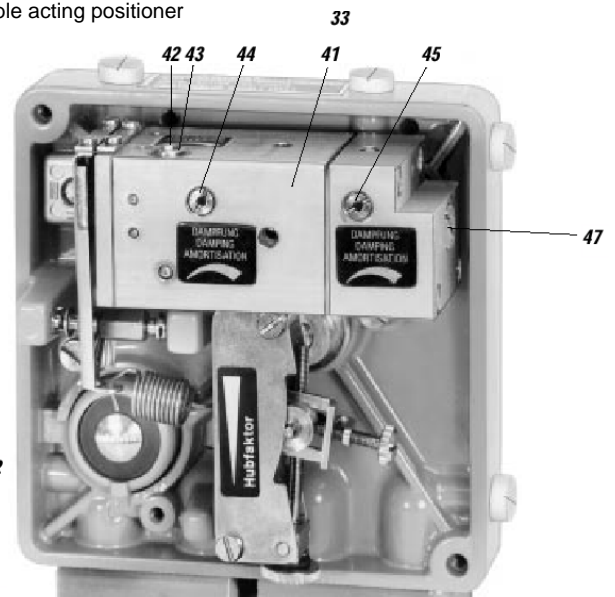
Spring range		Stroke range in mm	Remarks
Ident N°	Colour		
EW420493013	Yellow	8 - 34	
EW420494019	green	17 - 68	Built-in
EW502558017	- without -	28 - 105	
EW420496011	gray	40 - 158	
EW420495014	blue	55 - 200	

5.4 Functional designation

Single acting positioner



Double acting positioner



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