

SRI983 电气阀门定位器Ex d “防爆”

Electro-Pneumatic Positioner

- explosion proof or Ex d version



快速指导..... (中文版)

Quick Guide (English)

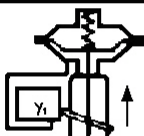

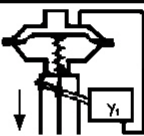

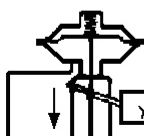

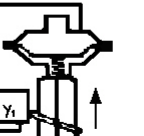

SRI983 电气阀门定位器 Ex d /防爆型

此说明书是用于使定位器快速启动的指导。如果需要更多具体的信息，请参见标准文件“主说明书”和“产品规格单”。这些文件可以在我公司的网站找到。

1 安装到线形执行机构上

单作用执行机构隔膜阀

检查执行机构是否在工艺要求的安全位置上。（在弹簧力作用下执行机构是开或关？）。安装位置的选择依照当输入信号增大时的作用方向和所要求阀杆运动的方向来决定，请参见下表。

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

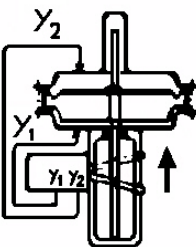

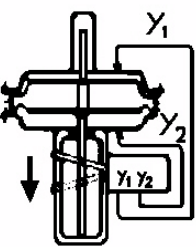

箭头表示输入信号增大时阀杆运动的方向。输入信号的作用方向可通过转换板13来设置：

N = 正常的作用方向（输入信号增大，产生对执行机构的控制压力增大。）

U = 相反的作用方向（输入信号增大，产生对执行机构的控制压力减少）

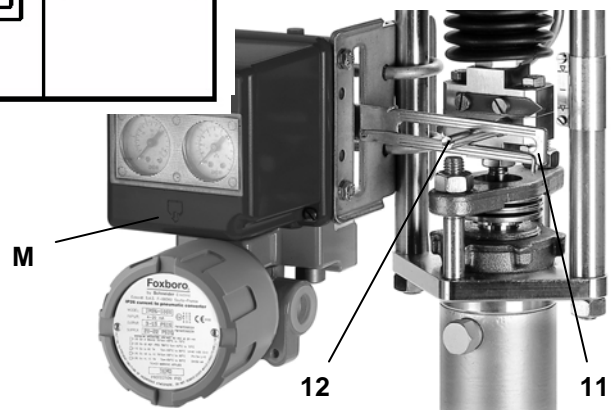
双作用执行机构隔膜阀

对于双作用定位器，转换板13总是设定在“N”的位置上。输入信号后执行机构主轴的运动方向是由定位器安装的位置和定位器对执行机构输出信号的管路来决定的。

	Changeover plate setting		Changeover plate setting
			

保证反馈杆11在50%的行程时是水平的。

将盖子盖紧，使连接设备的气孔面朝下（见标志‘M’）



2 安装到角行程执行机构上

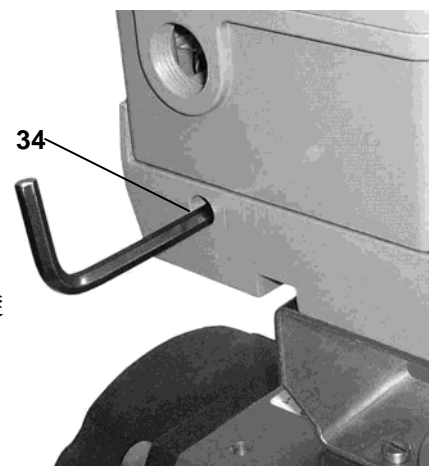
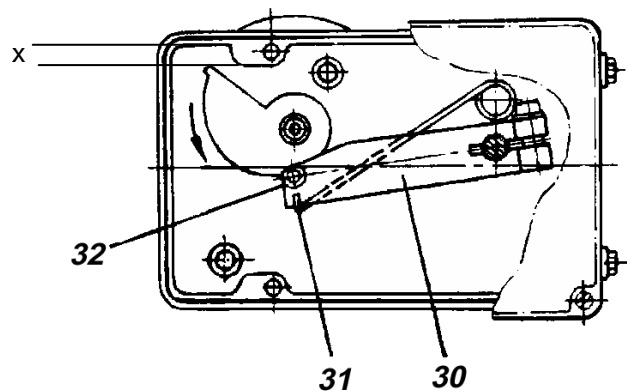
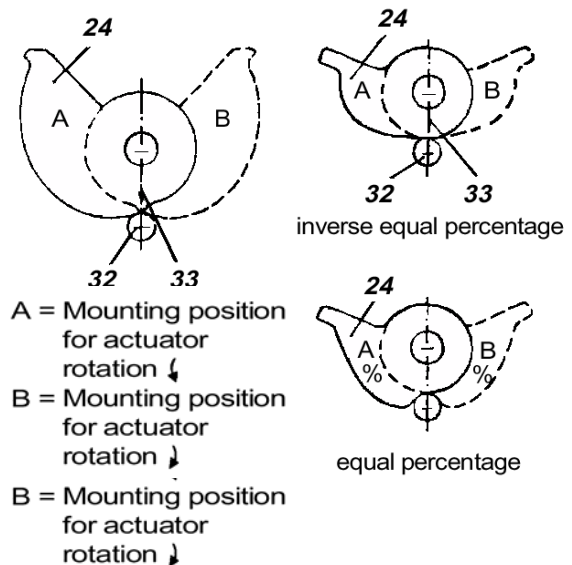
- a) 从带有附件的外壳上移开透明盖板。
- b) 将带有附件的外壳安装到角行程执行器或电枢上；如有必要，请使用执行机构制造商提供的安装硬件。
- c) 移动执行机构到期望的开始位置。（旋转角度 = 0°）
- d) 依照执行机构的旋转方向安装凸轮24。线性凸轮紧紧的扣住执行机构的传动轴，于是在外壳内侧与凸轮之间X距离为2mm,然而在等百分比凸轮的情况下，X的尺寸为大约17.5 mm。在反等百分比凸轮的情况下，X的尺寸为大约18 mm。

当使用等百分比凸轮和反向等百分比凸轮时，量程弹簧（黄色）EW420493013必须被安装在定位器上。

- e) 紧固反馈杆30以使角行程执行机构安装到定位器的轴15上。
- f) 将定位器安装到带有附件的外壳上。连接弹簧31到反馈杆30上并使凸轮从动件32抵住凸轮。把定位器用螺丝固定到带有附件的外壳上。安装线性凸轮和反向等百分比凸轮时，检查标记33是否指向凸轮从动件32的中心；否则需调整。安装等百分比凸轮时，检查凸轮从动件是否在凸轮轮角起点的前面；否则需调整。
- g) 最后安装反馈杆到定位器的轴上，安装时行程在0%处，例如旋转角度为0°。首先通过孔34将反馈杆30的5mm A/F六角固定螺丝松动，然后压行程系数杆17到止位螺钉18（见第5页）并紧固六角固定螺丝。

注意！

如果执行机构移动到了底端位置，且凸轮的安装位置与执行机构的旋转方向不相符，在这种情况下，请以反向位置安装凸轮24。



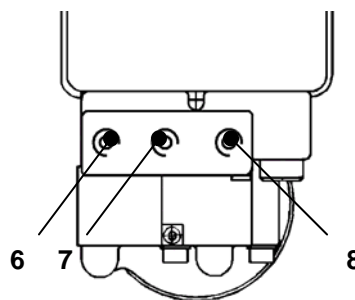
3 气动连接

气源: 1,4 to 6 bar (但不能大于执行机构的最大压力), 无油、灰尘和水!

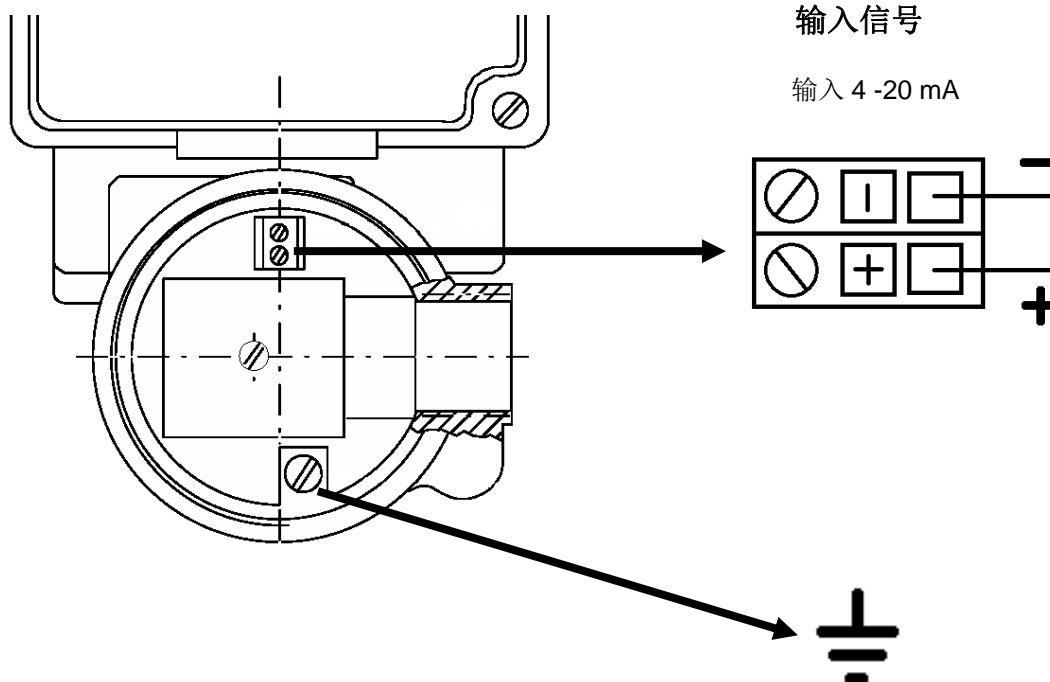
6内螺纹 G1/8 用于输出 II (y2)
(只在双作用定位器上)

7内螺纹 G 1/8用于供气

8内螺纹 G 1/8 用于输出 I (y1)



4 电动连接



5 设置和启动

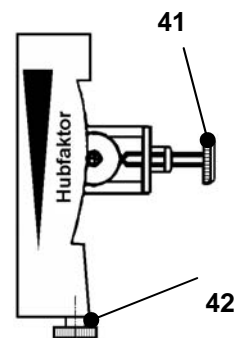
5.1 在定位器上设置零点和行程

(参见第5页中的数量)

在启动并设置之前, 向左右方向交替按挡板40几次以使挡板正确的对齐。

- a) 设定输入信号w的最小值 (行程起点)
- b) 旋拧零点螺钉41直到执行机构开始从它的底端移动。
- c) 设定输入信号w的最大值 (行程终点)。
- d) 旋拧行程系数螺钉42直到执行机构精确的到达它的底端:
向右旋拧:减少行程
向左旋拧:增大行程

重复操作 (a到d步骤) 2至3次以保证准确定位。



注意:

改变增益将影响零点和行程的设置。

如果以现有安装的弹簧无法调节行程, 那么可以在第5页表格中的选择适合的弹簧。

5.2 设置阻尼

可以通过调整阻尼螺丝46的方式来减缓定位器的气体输出。双作用定位器被安装了阻尼螺丝47和48以分别校正变量y1和变量y2。在正常设定时，阻尼螺丝与放大器本体大约在一个齐平位置上。当阻尼螺丝被完全拧开时，气体输出能力减少大约为系数2.5。

5.3 弹簧量程

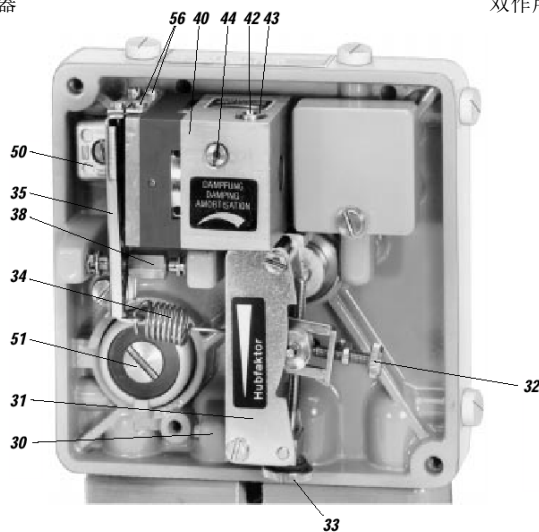
五种不同量程范围的弹簧可以匹配行程和输入信号范围。

下列表格中给出了在正常应用情况下（4-20 mA电信号和我公司的标准反馈杆）的行程范围。

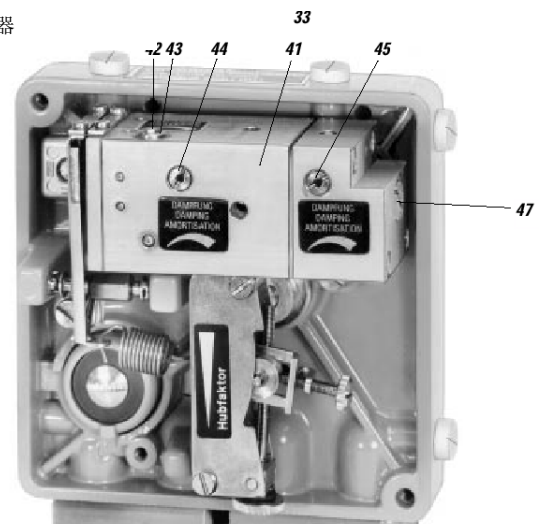
弹簧量程		行程范围 mm	备注
识别号	颜色		
EW420493013	黄色	8 - 34	
EW420494019	绿色	17 - 68	内置
EW502558017	- 无 -	28 - 105	
EW420496011	灰色	40 - 158	
EW420495014	蓝色	55 - 200	

5.4 功能设计

单作用定位器



双作用定位器



Invensys Systems, Inc.
38 Neponset Avenue
Foxboro, MA 02035
United States of America

schneider-electric.com

Global Customer Support
Toll free: 1-866-746-6477
Global: 1-508-549-2424
Website:
<http://support.ips.invensys.com>

Copyright 2010-2016 Invensys Systems, Inc.
All rights reserved.

Invensys, Foxboro, and I/A Series are trademarks of Invensys Limited, its subsidiaries, and affiliates. All other trademarks are the property of their respective owners.

DOKT 556 608 052
FD-QG-PO-003-CH

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

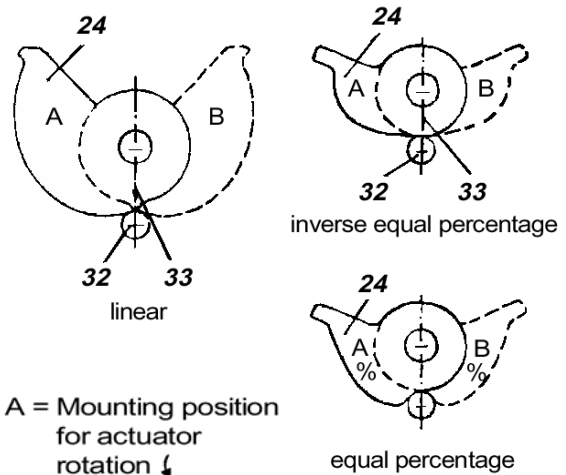
Ensure that the feedback lever **11** is horizontal at 50 % stroke.

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

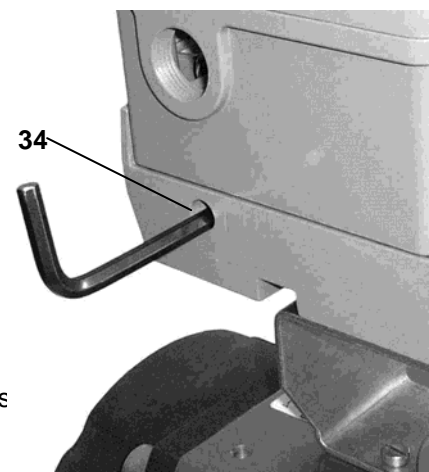
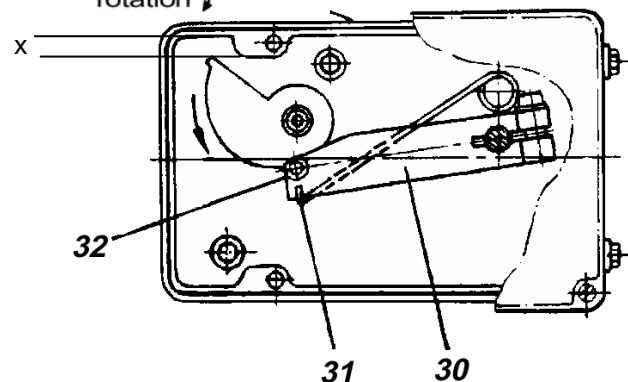


2 MOUNTING TO ROTARY ACTUATORS

- 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.
 When employing equal percentage and the inverse equal percentage cams, the range spring (yellow) EW420493013 must be installed in the positioner.
- 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 ↓



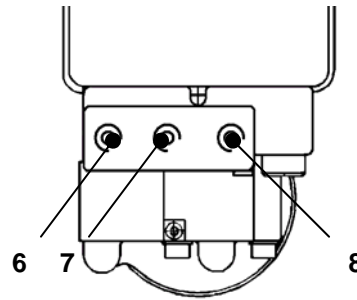
Note !

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.

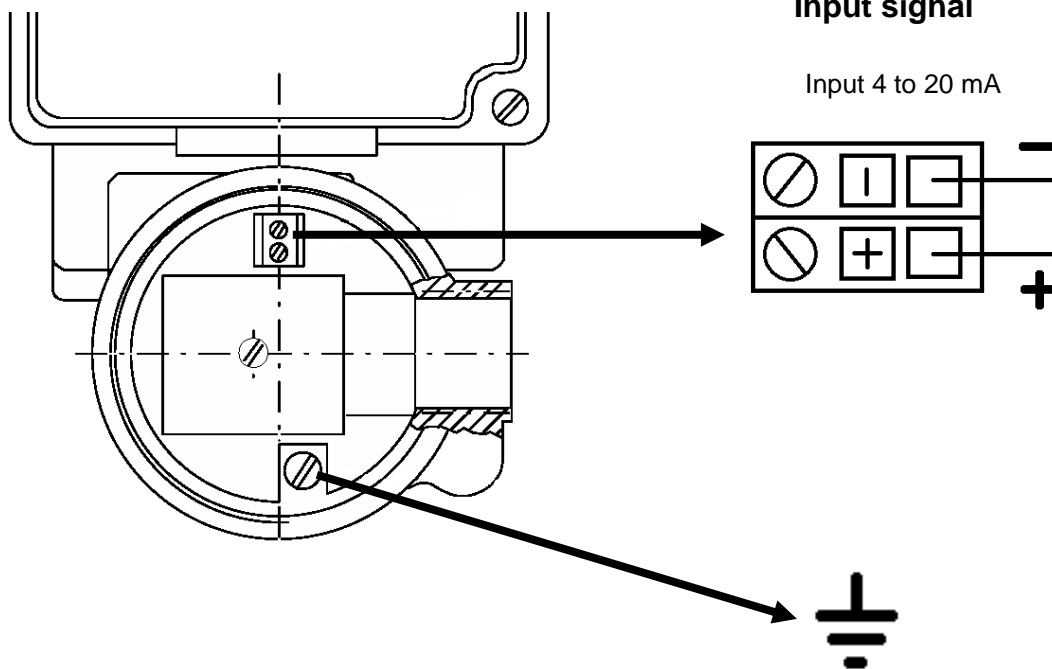
3 PNEUMATIC CONNECTIONS

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)

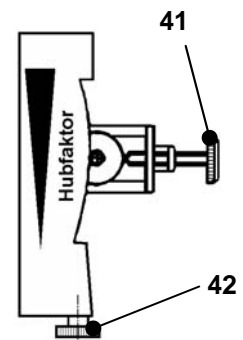
Before starting with the set-up push the flapper lever **40** several times alternately to the left and right in order to align the flappers correctly.

- 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.

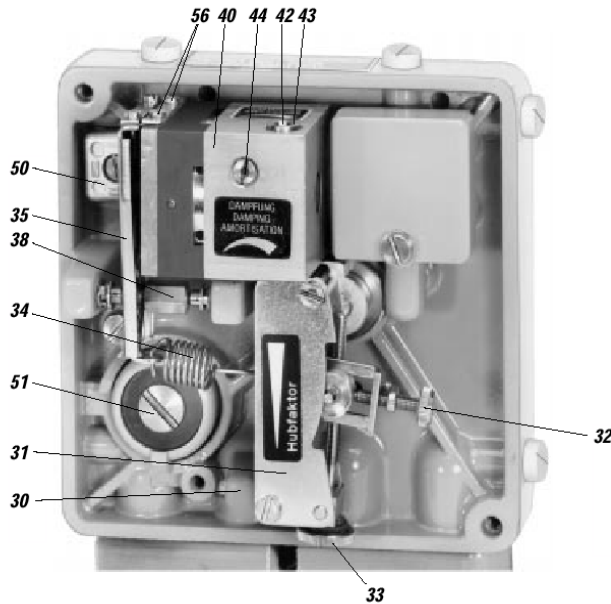
5.3 Spring range

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).

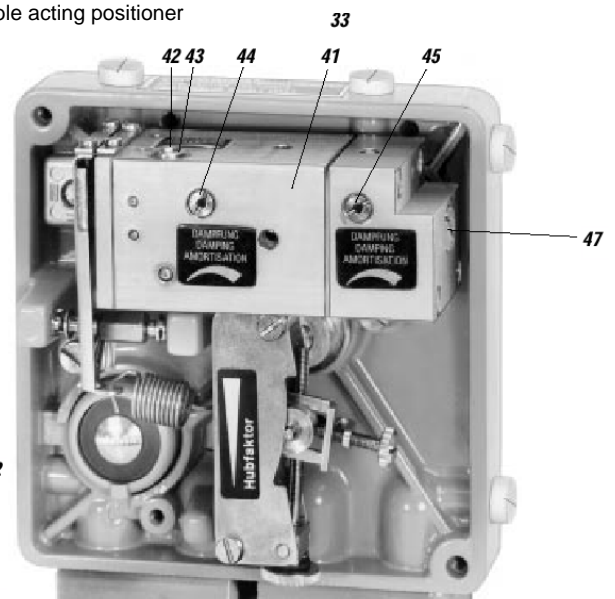
Spring range		Stroke range in mm	Remarks
Ident N°	Colour		
EW420493013	Yellow	8 - 34	
EW420494019	green	17 - 68	Built-in
EW502558017	- without -	28 - 105	
EW420496011	gray	40 - 158	
EW420495014	blue	55 - 200	

5.4 Functional designation

Single acting positioner



Double acting positioner



Invensys Systems, Inc.
38 Neponset Avenue
Foxboro, MA 02035
United States of America

schneider-electric.com

Global Customer Support
Toll free: 1-866-746-6477
Global: 1-508-549-2424
Website:
<http://support.ips.invensys.com>

Copyright 2010-2016 Invensys Systems, Inc.
All rights reserved.

Invensys, Foxboro, and I/A Series are trademarks of Invensys Limited, its subsidiaries, and affiliates. All other trademarks are the property of their respective owners.

DOKT 556 608 052 i01
FD-QG-PO-003-EN

Invensys Systems, Inc.
38 Neponset Avenue
Foxboro, MA 02035
United States of America

schneider-electric.com

Global Customer Support
Toll free: 1-866-746-6477
Global: 1-508-549-2424
Website:
<http://support.ips.invensys.com>

Copyright 2010-2016 Invensys Systems, Inc.
All rights reserved.

Invensys, Foxboro, and I/A Series are trademarks of Invensys Limited, its subsidiaries, and affiliates. All other trademarks are the property of their respective owners.

DOKT 556 608 052
FD-QG-PO-003-CH-EN

1116