

## 1. INSTALLATION



### Attention!

Specific conditions (marked "X" of the EC type examination certificate number):

- When used as well as maintenance and cleaning no charging of plastic parts may occur. Therefore, a cleaning may only be performed with antistatic agents.
- The device must not be used in areas where charge carriers (free electrons or ions) in the atmosphere are possible. You may accumulate on the device and charge it threatening danger for gases.
- The device may be exposed to due to lack of resistance to UV light not ultraviolet rays, for example, direct sunlight.
- The device may for dark housing parts that may heat up considerably by thermal radiation, for example, not be exposed to direct sunlight.
- The device can withstand shocks to 4J (= case of 1kg from 40cm height). This corresponds to EN 60079-0 its high impact resistance of the transparent casing part and the low of the appliance plug.

### 1.1. Device Identification acc 2014/34/EU



II 2 G Ex ib IIC T4 Gb



II 2 D Ex ib IIIC T80°C Db



### Warning!

**Danger of injury through high pressure!**

Pressure acting on lines and valves may cause severe injuries!

- Before disconnecting any lines and valves, the pressure must be switched off and the lines must be vented.



### Warning!

**Danger of injury in case of incorrect assembly!**

Incorrect assembly may cause severe injuries.

- Assembly and installation must only be performed by authorized expert staff.
- Use suitable tools.



### Warning!

**Danger of injury through uncontrolled movements at the super-ordinate plant!**

Accidental switch-on or uncontrolled start-up after switch-off may cause severe injuries.

- Plant must be secured against accidental actuation.
- Ensure controlled start-up after assembly and installation.



### Notice!

**Property damage through incorrect operating voltage!**

Connection to incorrect operating voltage may cause irreparable damage to the device.

- Only connect the device to operating voltage that is in compliance with the technical data.



A low pre-load is always required for the contact-free limit switch. Therefore, the spindle must always be slightly actuated!

In case an actuator is retroactively installed and/or the diaphragm is re-adjusted or replaced, new initialization is required!



A video guide to commissioning and the complete operating instructions document for the contact-free limit switch is available on the internet from [www.sed-flowcontrol.com](http://www.sed-flowcontrol.com).

## 1.2. Mounting the contact – free limit switch



### Notice!

**Damage of the device by incorrect assembly!**

**Incorrect assembly may lead to damage of the contact-free limit switch, the actuator and/or the plastic spindle.**

- Only mount the contact-free limit switch on actuators with a stroke of less than 45 mm.
- Mount the contact-free limit switch in "Open" position.
- Do not mechanically retain the plastic spindle. e.g. by a pair of pliers, in order to counter the spindle extension.

### 1.2.1. Mounting on the actuator

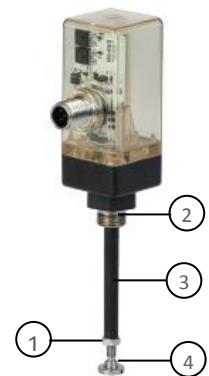
- ⇒ Determine the stroke of the actuator
- ⇒ Correctly adjust the path of the spindle extension (4) for M16x1
- ⇒ Counter the spindle extension against the plastic spindle (3) using the counter nut A/F 7 (1) for M16x1
- ⇒ During countering, firmly hold the plastic spindle not using any tools

**If the counter nut is not used:**

- ⇒ Screw the spindle extension (4) into the plastic spindle (3) to the stop
- ⇒ Tighten the spindle extension (4) by holding the plastic spindle (3)

**If a NO / DA actuator is used:**

- ⇒ Slide the o-ring (2) over the thread (M16x1/M12x1)



### 1.2.2. Technical data:

Supply voltage:	10 V DC (must only be operated in an intrinsically safe circuit for use in zones 1 and 2!)
Current consumption:	max. 40mA
Switching current:	max. 1mA each output (M12:2 – M12:3, M12:4 – M12:3)
Hub area:	3 – 45 mm
Accuracy:	+/- 0.1 mm
Elect. connector:	Multipol M12, 5 Pin, a- coded
Max. pressure (mounting thread):	8 bar
housing Material:	PPSU
protection class:	IP65 acc. EN60529 IP67 acc. EN60529
Ambient temperature Ta:	-10°C to +70°C

### 1.2.3. Mounting the device

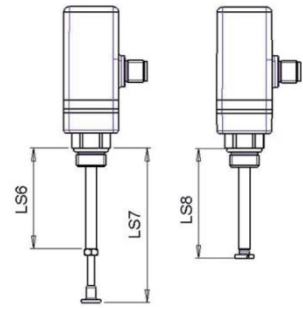
- ⇒ Remove the sealing cap of the actuator (if present)
- ⇒ Disassemble the attached structure (if present)
- ⇒ Move the actuator in "Open" position
- ⇒ Screw the contact-free limit switch into the actuator turning it clockwise
- ⇒ At the hex SW 19, tighten with max. 5 Nm
- ⇒ The contact-free limit switch is mounted



### 1.3. Spindle adjustment for actuators

Depending on the type of actuator, the appropriate attachment must be screw-fixed to the contact-free limit switch:

- ⇒ Screw in LS6 without extension
- ⇒ Screw in LS7 with the spindle extension and counter nut
- ⇒ Screw LS8 extension without the counter nut into the spindle to the stop and tighten
- ⇒ Do the spindle settings for the various actuator types



#### 1.3.1. Data for spindle adjustment for actuators

Actuator type	Diaphragm size	LS6	LS7 with counter nut	LS8 without counter nut	determine stroke *
186/ 188 NC/ NO/ DA	MA 10	x			
190 NC/ NO/ DA	MA 8	x			
195 NC/ NO/ DA	MA 10	x			
207 NC/ NO/ DA	MA 8	x			
285/ 385 / 485 NO/ DA	MA 25, 40, 50	x			
285/ 385 / 485 NO/ DA	MA 80, 100			x	
307 NC/ NO/ DA	MA 10	x			
385/ 485 NC	MA 25			x	
385/ 485 NC	MA 40		81 mm		
385/ 485 NC	MA 50		103 mm		
385/ 485 NC	MA 80		89 mm		
385/ 485 NC	MA 100				x
402/ 482 NC/ NO/ DA	MA 25, 40, 50			x	
407 NC/ NO/ DA	MA 25, 40, 50, 80			x	
495 NC	MA 25			x	
495 NC	MA 40		81 mm		
495 NC	MA 50		103 mm		
495 NC	MA 80		89 mm		
495 NC	MA 100				x
495 NO/ DA	MA 25, 40, 50	x			
495 NO/ DA	MA 80			x	
495 NO/ DA	MA 100		63 mm		
584 NC	MA 25, 40, 50			x	
585 NC	DN 20		77 mm		
585 NC	DN 25, 32		83 mm		
585 NC	DN 40, 50		92 mm		
585 NC	DN 65, 80		103 mm		
585 NO/ DA	DN 20, 25, 32, 40, 50			x	

\*The required spindle length depends on the individual valve configuration. The stroke has to be determined manually.

## 1.4. Connecting the contact-free limit switch



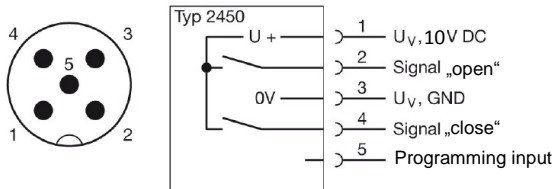
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### 1.4.1. Connecting the device



Color coding of wires acc. EN 50044:

- Pin1: brown
- Pin2: white
- Pin3: blue
- Pin4: black
- Pin5: grey

- ⇒ Connect the contact-free limit switch to a voltage supply
- ⇒ Type of connection: Multipole with round connector M12x1, 5-pin, A-coded
- ⇒ Voltage supply and position feedback is performed via 24 V DC

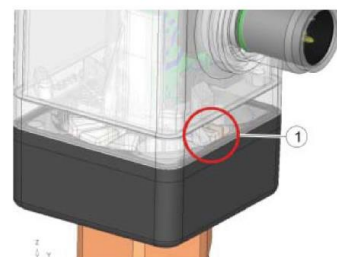
## 2. Programming

### 2.1. Programming the end positions



As standard, the contact-free limit switch is not programmed. In case the device is assembled on an actuator, the basic settings for the contact-free limit switch are made in the factory.

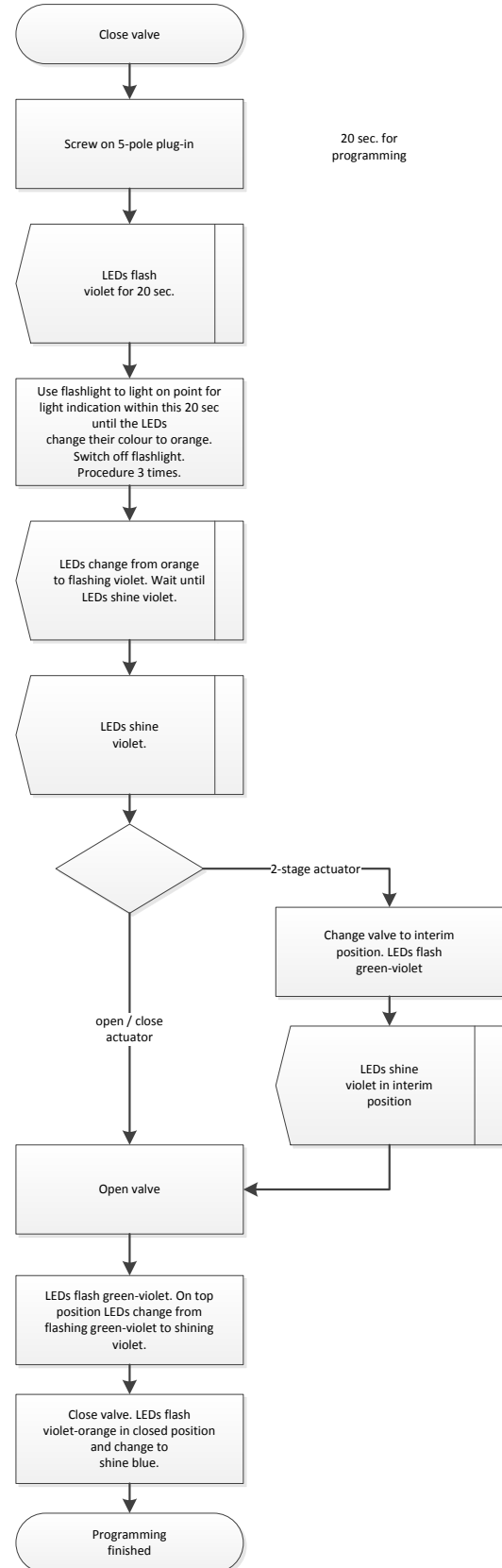
Manual programming of the end positions is used by means of a light source (flashlight).



1. Application point of the flashlight

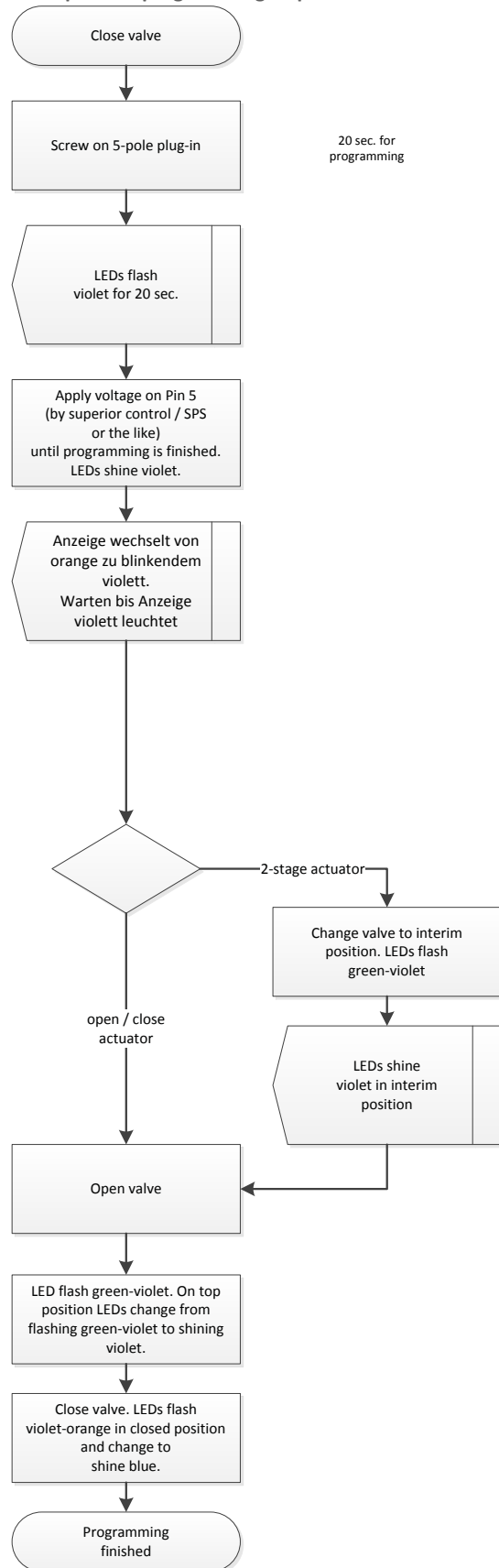
### 2.1.1. Manual programming using the flashlight

#### Description of programming sequence



### 2.1.2. External programming via pin 5

#### Description of programming sequence



### 2.1.3. Programming via teach-in cable

#### Description of programming sequence

