

Automatic  
valves

Actuators

Accessories

**bar**

## Operating, mounting and adjusting instruction



**bar**switchcontrol

# Safety Regulations

## Read these instructions before commissioning the equipment.

The bar switchcontrol is designed for operation as an optical display for inter mediary and end positions from position indicators, on industrial fittings. Just before reaching the end position, an electrical signal is generated, e.g. for feedback to the process control point.

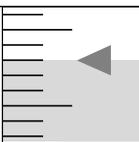
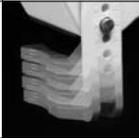
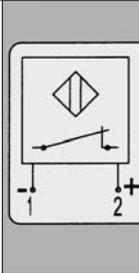
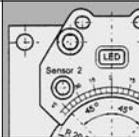
All of these units are to be installed only by suitably qualified skilled personnel. The hereby quoted regulations are to be strictly adhered to.

Incorrect handling or non-adherence to the designated usage can lead to the loss of function of the unit described in this document!

- Work on the bar switchcontrol must be always carried out without connection to the voltage supply and under acceptance and adherence to the current national and international Safety Regulations. Also disconnect the compressed air supply to the actuator!
  - Before installing, i.e. commissioning the unit described in this document, check the technical parameters, especially the electrical connection values of the applied sensors.
  - Take note of the diagram on the inside of the housing.
  - A change in the actuator pivoting angle requires renewed adjustment of the unit described in this documentation.
- Do not mount the unit described in this document with the cable glands pointing upwards.
  - The unit may only be operated when it is correctly closed according to this documentation.
  - In Ex-areas, adjustment work on the opened units only to be carried out under the following conditions::
    - you fulfil the authorised regulations (informing the fire brigade etc.)
    - you follow exactly the local necessaryprotective measures! (Continuous measurement of combustible atmosphere etc.)
    - you avoid electrostatic charges, even the metallic housing on the sensors.
  - When laying cables in Ex-areas, make sure you adhere to DIN EN 60079-14.
  - In explosion-protected areas, it may be necessary to provide direct sunlight protection, to shield the surface of the unit from the overheating effects of too much direct sunlight. In explosion-protected areas, only intrinsically safe solenoid valves may be connected in the switchcontrol.
  - Do not use thinners or abrasive mediums to clean the unit, the plastic window may lose its clarity.
  - **The switchcontrol is not designed to be used for the transport, leverage in any way of actuators or automatic valves. It is also not a step or climbing help for fitters. The fixings can break under these loads.**

## bar GmbH

Auf der Hohl 1  
D-53547 Dattenberg  
Tel.: +49 (0) 26 44-96 07-0  
Fax: +49 (0) 26 44-96 07 35  
eMail: sales@bar-gmbh.com

<p>Technical Data and Manufacturer's declaration</p>		<p><b>1</b></p>
<p>Mounting</p> <ul style="list-style-type: none"> <li>• Adjusting the mounting feet</li> <li>• Mounting on the actuator</li> </ul>		<p><b>2</b></p>
<p>Connecting</p> <ul style="list-style-type: none"> <li>• Electrical connection</li> <li>• Connection diagram for round initiator</li> <li>• Connection diagram micro-switch</li> <li>• Connection diagram slot initiator</li> </ul>		<p><b>3</b></p>
<p>AS-interface, Electrical connection and programming instructions</p>		<p><b>4</b></p>
<p>Setting</p> <ul style="list-style-type: none"> <li>• switching cams</li> <li>• round initiators</li> <li>• micro-switches</li> <li>• slot initiators</li> <li>• position indicator</li> </ul>		<p><b>5</b></p>
<p>Identification</p>		<p><b>6</b></p>
<p>Accessories and spare parts (Mounting instructions)</p>		<p><b>7</b></p>

## Technical Data – General Data:

<b>Fixing dimensions:</b>	acc. to VDI/VDE 3845 for flange plates 30x80mm and 30x130mm
<b>Materials:</b>	
<b>Housing:</b>	Aluminium, resin-coated
<b>Viewing glass:</b>	Makrolon (PMMA), with ATEX model anti-static coated
<b>Screws:</b>	stainless steel A2
<b>Blanking plugs and cable glands:</b>	PA
<b>Plate:</b>	Bayblend T45 (ABS+PC), ATEX model excl. plate
<b>Protection type:</b>	IP 66
<b>Temperature range:</b>	-20°C to + 70°C
<b>Cable glands:</b>	M20x1,5; clamping range 7-13mm
<b>Cable:</b>	Ø 7-13mm, max. 2,5mm <sup>2</sup> , screw terminal with protection; i.e. AS-i flat-band cable, conn. type: penetration technique
<b>Weight:</b>	0,8 kg
<b>Display and switching range:</b>	0 to 180° pivoting angle

# Technical Data for Switchcontrol variations

<b>Micro-switch:</b>	Type SC-M2
<b>Voltage range:</b> <b>Constant current:</b> <b>Switching function:</b>	to 250 VAC 16A changer, contacts- precious metal-coated
<b>Inductive round sensor:</b>	Type SC-D2 (Signal "OPEN + CLOSED") Type SC-DA (Signal "OPEN") Type SC-DZ (Signal "CLOSED")
<b>Voltage range:</b> <b>Operating current IL:</b> <b>Idling current:</b> <b>Switching function:</b>	10 - 30VDC 0 - 100 mA < 15 mA PNP closer, with yellow switch position display (LED)
<b>Inductive round sensor NAMUR:</b>	Type SC-N2 (Signal "OPEN + CLOSED") Type SC-NA (Signal "OPEN") Type SC-NZ (Signal "CLOSED")
<b>Rated voltage U<sub>o</sub>:</b> <b>Current input:</b> <b>Switching function:</b> <b>Switch type:</b>	8 VDC damped < 1 mA; undamped > 3 mA NAMUR opener, yellow switch position display (LED) Pepperl + Fuchs NCN4-12GM35-NO EC-type examination certificate PTB 00 ATEX 2048 X and ZELM 03 ATEX 0128 X (You find the ATEX certificate also on the Internet: <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> )
<b>ATEX-identification:</b>	Ⓔ II 2GD EEx ia IIB T6 EEx ia D 21
<b>Inductive slot sensor NAMUR:</b>	Type SC-NS2 (Signal "OPEN + CLOSED") Type SC-NSA (Signal "OPEN") Type SC-NSZ (Signal "CLOSED")
<b>Rated voltage U<sub>o</sub>:</b> <b>Current input:</b> <b>Switching function:</b> <b>Switch type:</b>	8 VDC damped < 1 mA; undamped > 3 mA NAMUR opener, yellow switch position display (LED) Pepperl + Fuchs SC3,5-NO-yellow EC-type examination certificate PTB 00 ATEX 2219 X and ZELM 03 ATEX 0128 X (You find the ATEX certificate also on the Internet: <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> )
<b>ATEX-identification:</b>	Ⓔ II 2GD EEx ia IIB T6 EEx ia D 21
<b>AS-interface:</b>	Type SC-AS-i
<b>Operating voltage UB:</b> <b>Operating current IL:</b> <b>Total current input:</b> <b>Load rating</b> <b>(e.g. solenoid valve)</b>	via AS-i-Network < 40 mA < 150 mA max. 100 mA; 25 - 30 VDC; max. 2,6W / 24 VDC

1

2

3

4

5

6

7

# Manufacturer`s Declaration

---

We hereby declare, that this product is an incomplete component of a machine/component group under the implications laid down in The Directive for Machines, and in the case of the usage of microswitches thereof, as electrical equipment under the implications laid down in The Low-voltage Directive.

The electrical connection data contained in the Operating Instructions have to be strictly adhered to. The commissioning thereof is to be prohibited, until the machine/component group conforms to the stipulations of the EC directive.

**Manufacturer:** bar GmbH  
Auf der Hohl 1  
Germany – 53547 Dattenberg

**Name of the Machine:** bar-switchcontrol

**Machine type:** SC-M2; SC-D2;  
SC-DA; SC-DZ

**Appropriate EC Directive:** Directive for Machines 98/37/EC  
EMC-Directive 89/336/EEC  
Low-voltage Directive 73/23/EEC,  
as from July 1993

**Appropriate standards and technical specifications:** DIN EN 292: 1991 (Safety of Machines)  
EN 60947-5-2 (EMV)  
DIN 41635 (Mikro-switches)  
EN 50262 (Cable glands)  
VDI/VDE 3845 2003  
(Connectional Fittings, Actuators,  
Auxiliary devices)

Dattenberg, the 5th of April 2004

© by bar

bar Automatik-Armaturen GmbH



B. Scholz Bsc. Eng.  
Quality Management



P. Willscheid  
Procurator

# Declaration of conformity

We hereby declare, that this product is an appliance of the Category 2G for application in Zone 1 under the implications laid down in the ATEX Directive.

The sensors may only be operated with intrinsically safe circuits. The electrical connection data contained in the Operating Instructions have to be strictly adhered to.

The risk of mechanical damage to the optical display is considered to be low. The display window is made of plastic & antistatically-coated, and therefore completely harmless electrostatically. The epoxy-resin coating is just as completely harmless electrostatically, because of the low coating thickness in connection with the metallic material of the housing.

The commissioning thereof is to be prohibited, until the machine/component group conforms to the stipulations of the EC directive.

**Manufacturer:** bar GmbH  
Auf der Hohl 1  
Germany – 53547 Dattenberg

**Name of the Machine:** bar-switchcontrol

**Machine type:** SC-NS2; SC-NSA; SC-NSZ  
SC-N2, SC-NA, SC-NZ

**Appropriate EC Directive:** EMC Directive 89/336/EEC  
ATEX Directive 94/9/EC

**Appropriate Standards and Technical Specifications:** DIN EN 292: 1991 (Safety of Machines)  
N 60947-5-2; NE 21 (EMC)  
DIN EN 60947-5-6 (NAMUR)  
DIN EN 13463-1: 2003 (Explosion Protection)  
DIN EN 50014: 1997 (Explosion Protection)  
DIN EN 50021: 2000 (Explosion Protection)  
EN 50262 (Cable Glands)  
VDI/VDE 3845: 2003  
(Connectional Fittings, Actuators,  
Auxiliary devices)

**Appliance identification:**  2GD EEx ia IIB T6 EEx ia D 21

Dattenberg, the 15th of Dezember 2004

© by bar

bar Automatik-Armaturen GmbH



B. Scholz Bsc. Eng.  
Quality Management



P. Willscheid  
Procurator

1

2

3

4

5

6

7

# Mounting the bar-switchcontrol

## Adjusting the mounting feet

The unit described in this documentation is equipped with mounting feet, which can be mounted onto all actuators fitted with an interface acc. to VDI/VDE 3845.

The dimensional width is achieved by having the feet mounted either inwards or outwards, and the height is adjusted by sliding the mounting feet along the guides on the side of the housing (Fig. 3).

Fig. 1: Feet mounted inwards:  
Fixing dimensions 80 x 30 mm

Fig. 2: Feet mounted outwards:  
Fixing dimensions 130 x 30 mm



Fig. 3: Height adjustment for different pinion lengths 20, 30, 40 and 50 mm



**When mounting the Signalbox onto the actuator interface, it is imperative to take note of the rotational direction of the actuator pinion, because incorrect mounting of round initiators can lead to damage to the initiator and drive.**

**Take care for stress-free mounting of the bar-switchcontrol. With the actuator!**

- 1a.** For the mounting on actuators which correspond with the factory provided adjusted mounting measures unscrew the back-sided screws, set the bar-switchcontrol onto the actuator and tighten the screws again.
- 1b.** For mounting onto actuators, whose connection dimensions differ from those of the mounting feet dimensions provided by the factory, then follow the instructions below:
  - Loosen and remove the two fixing screws.
  - Slide the mounting feet along the guide to reach the desired height.
  - If distance between the mounting feet is not correct, then change over to reach the desired width.
  - Take fixing screws and washers and fix in position.

- 2.** Place the bar switchcontrol onto the actuator interface and fix in position using the fixing screw set provided.



1

2

3

4

5

6

7

# Connecting

## Electrical connection for the bar-switchcontrol

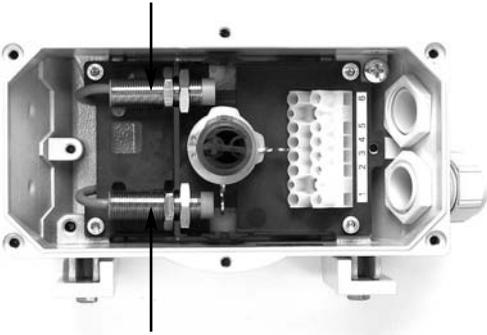
The supply cable must be fixed in position and protected against rotation!

Cable and supply lines must comply with DIN EN 60079-14 in Ex-areas!

The circuit diagram on the inside of the housing gives the connection system.  
Take care to observe the connection data for the switch and/or initiator.

## Connecting round initiators (Type SC-D and SC-N)

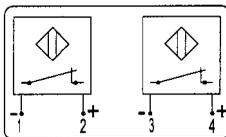
onto terminal 3 and 4 (Type SC-N), and/or 4,5 and 6 (Type SC-D)



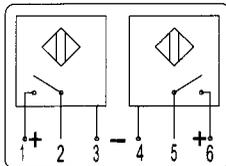
onto terminal 1 and 2 (Type SC-N), and/or 1,2 and 3 (Type SC-D)

## Connection diagram for round initiators (Type SC-N and SC-D)

inductive switch,  
NAMUR round initiator:  
( Typ SC-N )



inductive switch, 3-core:  
( Typ SC-D )



## Connecting micro-switches (Type SC-M)

- The upper operating cam/actuating element actuates the higher ranking switch on the bar switchcontrol (terminal 4-6), which is preferentially allocated the "Open-Position" of the valve.
- The lower operating cam/actuating element actuates the lower-ranking switch on the bar switchcontrol (terminal 1-3), which is preferentially allocated the "Closed-Position" of the valve.
- The micro-switches are changers. The exact terminal connection plan is dependant on the wiring system of the whole plant.

1

2

3

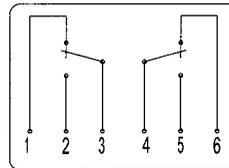
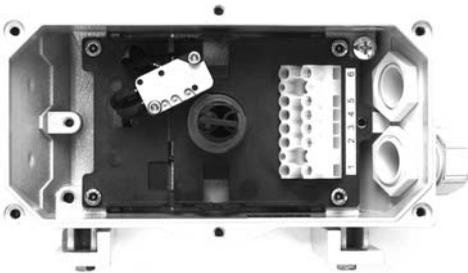
4

5

6

7

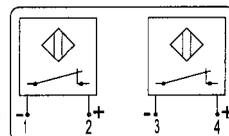
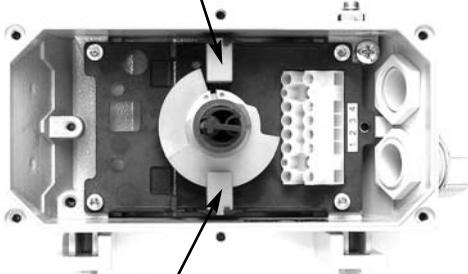
**Connection diagram micro-switch (Type SC-M)**



## Connecting slot initiators (Type SC-NS)

onto terminal 3 and 4

**Connection diagram slot initiator (Typ SC-NS)**



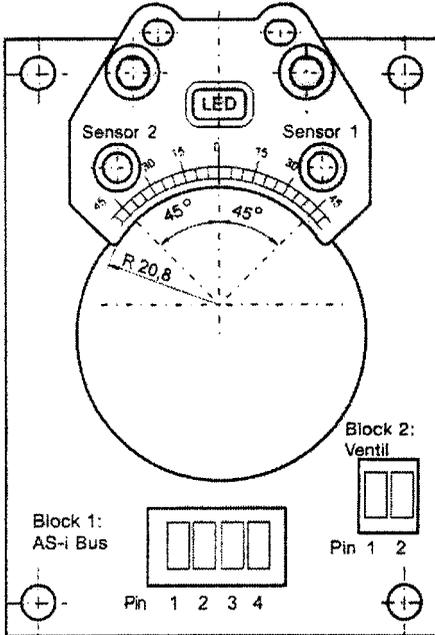
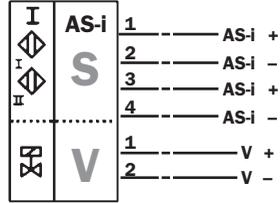
onto terminal 1 and 2

Inductive switch,  
NAMUR slot initiator:  
( Typ SC-NS )

# AS-Interface

## Electrical Connection:

BUS		VALVE	
Pin 1	ASi +	Pin 1	Valve +
Pin 2	ASi -	Pin 2	Valve -
Pin 3	ASi +		
Pin 4	ASi -		



## Programming Instructions:

- pre-set 00, changeable via BUS-Master or Programming unit

### Adress

IO-Code D  
IO-Code F

### Data Bit

D0 output  
D1 LB/KS at valve  
D2 input sensor 1  
D3 input sensor 2

### Parameter Bit

P2 not used  
P3 not used  
P0 not used  
P1 not used

## General Instructions– Attention

- Before setting the switching cams in actuators with adjustable pivoting angle- valve and actuator must be adjusted beforehand.
- A suitable electrical testing device is required for setting, e.g. Pepperl and Fuchs ST03 (not for use in Ex-areas).
- Before working on the switchcontrol, make sure the voltage supply is isolated!
- In the setting instructions, it is assumed that the valve (looking from above the axis) closes in a clockwise direction.
- During the setting, it is best to remove the white position indicator from the camshaft. Inside every switchcontrol there is an adjusting tool (E) for the cam setting- this can be found in the actuating shaft.



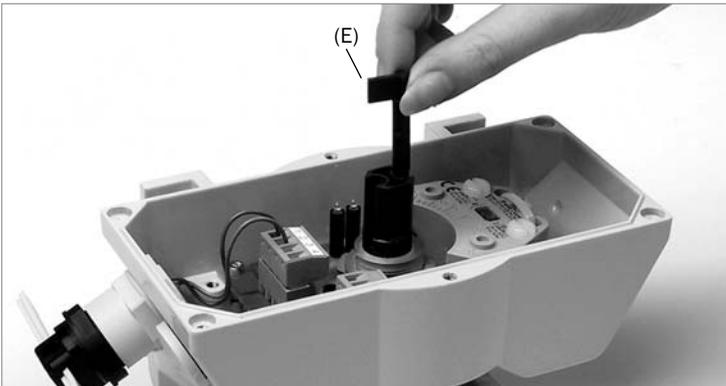
**Fig. A:**

The **lower** switching cam can be set, when the adjusting tool is pressed down as far as marking 1 as delivered!



**Fig. B:**

To set the **upper** switching cam, adjusting tool is pressed into the opposite-lying recess as far as marking 2.



- After the position setting, the adjusting tool (E) must not be rotated. Additionally, it must be then pulled out and inserted into the deeper recess of the camshaft, so that the "Flag" lies over the other recess (Fig. C), otherwise it is not possible to replace the position indicator.

**Fig. C:**



- After successfully completing the setting, the position indicator is inserted onto the camshaft, whereby the cam is finally snapped in place.

- Screw the cover back in position before restarting.

1

2

3

4

5

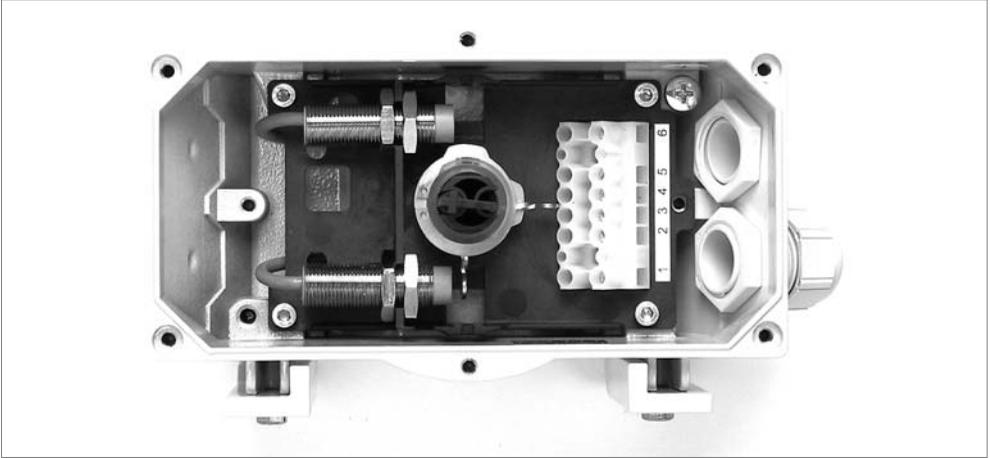
6

7

# Setting the round initiators and Position Indicator

## Setting the round initiators

- According to the General Instructions, the appropriate actuating device for die Open- i.e. Closed-Position in the basic position of the automatic valve is to be set, so that it generates a signal a few degrees before reaching the end position
- Then set the other actuating device slightly less than 90° to the first actuating device (see picture this page)
- Take the valve to the other end position, and set the actuating device, so it also generates a signal a few degrees before reaching the end position.



## Setting the Position Indicator

The red marking is there to indicate the open way for the valve.

To adjust the display segment to the correct shape, simply bend and tear off the unused segment from the red T-formed display clip. This is made easier by firstly taking the clip from the position indicator and then replacing after wards.

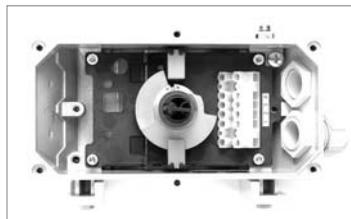
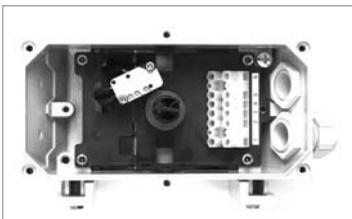
Bend and tear off the unused segment.



# Setting the micro-switches and slot initiators

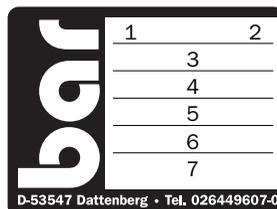
Carry out the setting according to Matrix. Attention!  
In the setting instructions, it is assumed that the valve  
(looking from above the axis) closes in a clockwise direction!

Micro switches	operated switching		Micro switches	not operated switching		
Slot initiators	damped switching		Slot initiators	undamped switching		
	Valve					
	„OPEN“		„CLOSED“			
	<ol style="list-style-type: none"> <li>1. Open the valve.</li> <li>2. Insert the adjusting tool according to fig. B/page 12</li> </ol>		<ol style="list-style-type: none"> <li>1. Close the valve.</li> <li>2. Insert the adjusting tool according to fig. A/page 12</li> </ol>		<ol style="list-style-type: none"> <li>1. Close the valve.</li> <li>2. Insert the adjusting tool according to fig. A/page 12</li> </ol>	
<b>2-fold</b>	<ol style="list-style-type: none"> <li>3a) <b>The switch is already operated/damped: ( I )</b> Turn the adjusting tool anticlockwise until the switch is no longer ( II ) actuated/damped. Keep on turning until ( III ) switching point is reached.</li> <li>3b) <b>The switch is not operated/damped: ( II )</b> Turn the adjusting tool anticlockwise until switching point is reached. ( III )</li> </ol>		<ol style="list-style-type: none"> <li>3a) <b>The switch is ( IV ) operated/damped:</b> Turn the adjusting tool clockwise until the switch is ( V ) no longer operated/ damped. Keep on turning until ( VI ) switching point is reached.</li> <li>3b) <b>The switch is not operated/damped: ( V )</b> Turn the adjusting tool clockwise until switching point is reached. ( VI )</li> </ol>		<ol style="list-style-type: none"> <li>3a) <b>The switch is not operated/damped: ( VII )</b> Turn the adjusting tool anticlockwise until the switch is actuated/damped. Keep on turning until ( VIII ) switching point is reached. ( IX )</li> <li>3b) <b>The switch is already operated/damped: ( VIII )</b> Turn the adjusting tool anticlockwise until switching point is reached. ( IX )</li> </ol>	
<b>1-fold „Open“</b>	<ol style="list-style-type: none"> <li>3a) <b>The switch is already operated/damped: ( I )</b> Turn the adjusting tool anticlockwise until switching point is reached. ( III )</li> </ol>				<ol style="list-style-type: none"> <li>3a) <b>The switch is operated/damped: ( XI )</b> Turn the adjusting tool clockwise until switching point is reached. ( XII )</li> <li>3b) <b>The switch is operated/damped: ( XI )</b> Turn the adjusting tool clockwise until switching point is reached. ( XII )</li> </ol>	
<b>1-fold „Closed“</b>			<ol style="list-style-type: none"> <li>3a) <b>The switch is not operated/damped: ( IV )</b> Turn the adjusting tool clockwise until the switch is no longer operated/damped. Keep on turning until ( V ) switching point is reached. ( VI )</li> <li>3b) <b>The switch is not operated/damped: ( V )</b> Turn the adjusting tool clockwise until switching point is reached. ( VI )</li> </ol>		<ol style="list-style-type: none"> <li>3a) <b>The switch is not operated/damped: ( VII )</b> Turn the adjusting tool clockwise until the switch is operated/damped. ( IX )</li> <li>3b) <b>The switch is operated/damped: ( VIII )</b> Turn the adjusting tool clockwise until switching point is reached. ( IX )</li> </ol>	



## Identification bar-switchcontrol

- 1 = Article number
- 2 = Protection class
- 3 = Type designation switchcontrol
- 4 = Type designation switch
- 5 = Number of operating instructions (only for Ex-protected units)
- 6 = Ex-Identification
- 7 = Delivery date



1

2

3

4

5

6

7

# Accessories and spare parts

Name	Consisting of	
<b>Spar part set No. 1</b> <b>Housing feet</b>	2 pieces 2 pieces 4 pieces 8 pieces 12 pieces	Housing feet Housing feet Screw M5 short Screw M5 long Washer
<b>Spar part set No. 2</b> <b>Display window</b>	3 pieces 3 pieces 3 pieces 3 pieces 3 pieces 3 pieces	Display glass O-Ring for display glass O-Ring for cover Position indicator Clip Cap
<b>Spar part set No. 3</b> <b>Actuating shaft Micro-switch</b>	3 pieces 3 pieces 3 pieces 6 pieces	Actuating shaft O-Ring Adjusting tool Switching cam
<b>Spar part set No. 4</b> <b>Actuating shaft Round Initiator</b>	3 pieces 3 pieces 3 pieces 6 pieces 6 pieces	Actuating shaft O-Ring Adjusting tool Switching cam Actuating device Round initiator
<b>Spar part set No. 5</b> <b>Actuating shaft Slot Initiator</b>	3 pieces 3 pieces 3 pieces 6 pieces 6 pieces	Actuating shaft O-Ring Adjusting tool Switching cam Actuating device Slot initiator
<b>Spar part set No. 6</b> <b>Pressure compensating element</b>	3 pieces 3 pieces 3 pieces	Pressure compensating element Counter-nut Reducer
<b>Spar part set No. 7</b> <b>Solenoid valve switching</b>	3 pieces 3 pieces 6 pieces 6 pieces 6 pieces	Terminal block 8x Flathead screw Locking washer Cable gland Counter-nut
<b>Spar part set No. 8</b> <b>Mikro-switch</b>	2 pieces 2 pieces 2 pieces	Micro-switch with connecting cable Nut M3 Screw M3
<b>Round Initiator NBN 4-12GM40-E2</b>	1 pieces	Round initiator
<b>Round Initiator NCN 4-12GM35-NO</b>	1 pieces	Intrinsically Round initiator for Ex-Areas
<b>Slot Initiator SC 3,5-N0 Gelb</b>	1 pieces	Intrinsically Slot initiator for Ex-Areas
<b>AS-i board NCN-F25-N4-ASI</b>	1 pieces	Board with double initiator for AS-i Network binding

# Mounting instructions for accessories and spare parts

**Before working on (mounting) the switchcontrol, isolate the unit from the voltage supply!**

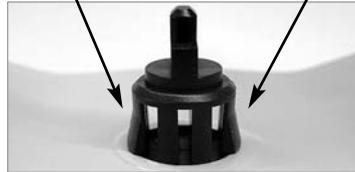
**Spare part set 2: Display window**

The display window can be pressed out using the thumbs. Pull the O-ring over the new display window before replacing the spare part in position.



**Spare part set 3: Actuating shaft micro-switch**

- Disconnect switchcontrol and remove from the actuator.
- Press together the snap lock on the actuating shaft and pull out the shaft. Press snap lock together here.



- Equip the spare actuating shaft with the supplied parts and insert in the housing.
- Mount the switchcontrol, set the cams, and remake the electrical connection.

**Typ: SC-M2**

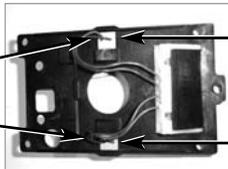
Connect to lower switch at 1, 2, 3. Connect to upper switch at 4, 5, 6.



- |         |                 |
|---------|-----------------|
| 1 blue  | Lower<br>Switch |
| 2 black |                 |
| 3 brown |                 |
| 4 brown | Upper<br>switch |
| 5 black |                 |
| 6 blue  |                 |

**Typ: SC-NS2**

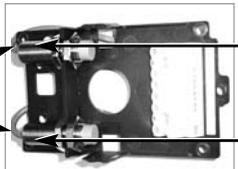
Connect the switch at 1, 2. Connect the switch at 3, 4.



- |         |
|---------|
| 1 blue  |
| 2 brown |
| 3 blue  |
| 4 brown |

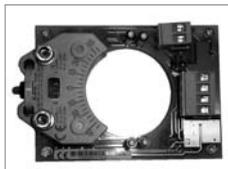
**Typ: SC-D2**

Connect to switch at 4, 5, 6. Connect to switch at 1, 2, 3.



- |         |
|---------|
| 4 blue  |
| 5 black |
| 6 brown |
| 1 brown |
| 2 black |
| 3 blue  |

**Typ: SC-AS-interface**



AS-interface is already completely cabled when delivered.

1

2

3

4

5

6

7

# Mounting instructions for accessories and spare parts

---

**Before working on (mounting) the switchcontrol, isolate the unit from the voltage supply!**

## **Spare part set 4: Actuating shaft round initiator**

- Disconnect the switchcontrol and remove from the actuator.
- Press together the snap lock on the actuating shaft and pull out the shaft.
- Equip the spare cam with the actuating devices, and push onto the spare actuating shaft. Take care to observe, that the actuating devices and their sides are next to one another.
- Place spare actuating shaft in housing.
- Mount the switchcontrol, set the actuating device, and remake the electrical connection.

## **Spare part set 5: Actuating shaft slot initiator**

- Disconnect the switchcontrol and remove from the actuator.
- Turn the actuating device with the adjusting tool, so that the actuating shaft can be pulled out upwards, without colliding with the initiator.
- Press together the snap lock on the actuating shaft and pull out the shaft.
- Equip the spare cam with the actuating device, and push onto the spare actuating shaft. Take care to observe, that the actuating devices with their sides are next to one another.
- Place spare actuating shaft in housing.
- Mount the switchcontrol, set the actuating device, and remake the electrical connection.

## **Spare part set 6: Pressure compensating element**

Replace blind plugs in the housing with a reducer and screw the pressure compensating element into the reducer.

## **Spare part set 7: Solenoid valve switching**

- Disconnect the switchcontrol and remove from the actuator.
- Remove the actuating shaft as described above.
- Remove the mounting plate.
- Disconnect the switch/initiator from the terminal block.
- Loosen the terminal block from the mounting plate, whereby the mounting on the underside is pushed temporarily to one side.
- Push and click the 8x terminal block into the mounting plate.
- Reconnect the switch/initiator according to the circuit diagram in the inner side of the housing (i.e. in the technical data page 8 + 9).
- Connect the descending cable to the solenoid valve to the free terminal block next to the switch/initiator cables.
- Replace mounting plate into the housing.
- Insert the actuating shaft with cam into the housing as described above.
- Fit the Switchcontrol onto the actuator, make the setting and electrical connection.

# Mounting instructions for accessories and spare parts

## Spare part set 8: Micro-switch

- Disconnect the switchcontrol and pull the cam from the actuating shaft. Remove the mounting plate and disconnect the switch from the terminal block.
- Exchange micro-switches and reconnect according to the circuit diagram on the inner side of the housing.
- Replace mounting plate into the housing.
- Push the cam onto the actuating shaft, whereby the exact positioning is to be secured (see also a diagram in the chapter "Adjusting the switching cams").
- Fit the Switchcontrol onto the actuator, make the setting and electrical connection.

## Spare part: Round initiator / Slot initiator

- Disconnect the switchcontrol and remove from the actuator.
- Press together the snap lock on the actuating shaft and pull out the shaft.
- Remove mounting plate and exchange initiator.
- Screw mounting plate back in position and place actuating shaft in the housing.
- Remount the switchcontrol, reset the actuating device, and remake the electrical connection.

## Spare part: AS-Interface Board

- Disconnect the switchcontrol and remove from the actuator.
- Press together the snap lock on the actuating shaft and pull out the shaft.
- Remove board and exchange.
- Screw board back in position and place actuating shaft in the housing.
- Remount the switchcontrol, reset the actuating device, and remake the electrical connection.

1

2

3

4

5

6

7

---

**bar GmbH**

Auf der Hohl 1  
D-53547 Dattenberg

Tel.: +49(0)26 44-96 07-0  
Fax: +49(0)26 44-96 07 35

eMail: [sales@bar-gmbh.com](mailto:sales@bar-gmbh.com)

Stand: Jan. 2005 – Z1XV0032e