

Operating Instructions
Bedienungsanleitung
Instructions de Service



Type 1066

Control Head

Steuerkopf

Tête de commande

We reserve the right to make technical changes without notice.
Technische Änderungen vorbehalten.
Sous réserve de modification techniques.

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Operating Instructions No. 804 547 - ind 00 - jul 02
Bedienungsanleitung No. 804 547 - ind 00 - jul 02
Instructions de service No. 804 547 - ind 00 - jul 02

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GENERAL NOTES

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Symbols Used

The following symbols are used in these Operating Instructions:

→ marks a work step that must be carried out.



ATTENTION!

Indicates information which, if not followed, could result in danger to your health or to the functionality of the machine.



NOTE

Indicates important additional information, tips and recommendations.

Safety instructions



To ensure that the device functions correctly and will have a long service life, please comply with the information in these operating instructions, as well as with the operating conditions and the permissible ranges that are specified in the data sheets of the Control Head for Process Valves.

- When planning the application of the device, and during its operation, observe the general technical rules!
- Installation and maintenance work may only be carried out by specialist staff using the correct tools!
- Observe the relevant accident prevention and safety regulations applicable for electrical equipment while operating and maintaining the device!
- Always switch off the electrical power supply before carrying out any works on the system!
- Note that piping or valves must not be removed from a system that is under pressure!
- Take suitable measures to prevent unintentional operation or impermissible impairment.
- Following an interruption of the electrical or pneumatic supply, ensure a defined and controlled re-start of the process!
- If these instructions are ignored, no liability will be accepted from our side, and the guarantee on the device and its accessories will also become invalid!

Scope of Delivery

Immediately after receiving the shipment, ensure that the contents are undamaged and correspond to the scope of the delivery listed on the enclosed packing note. In case of discrepancies, please immediately contact the following address:

Südmo Components GmbH
 Industriestraße 7, D-73469 Riesbürg
 Tel.: (09081) 803-01 / Fax: (09081) 803-158
 eMail: info@sudmo.de
 Homepage: www.sudmo.de

Guarantee conditions

This document contains no agreement to provide a guarantee. We would refer you here to our General Selling and Business Conditions. The precondition for the guarantee is the correct usage of the device under compliance with the specified application conditions.



ATTENTION!

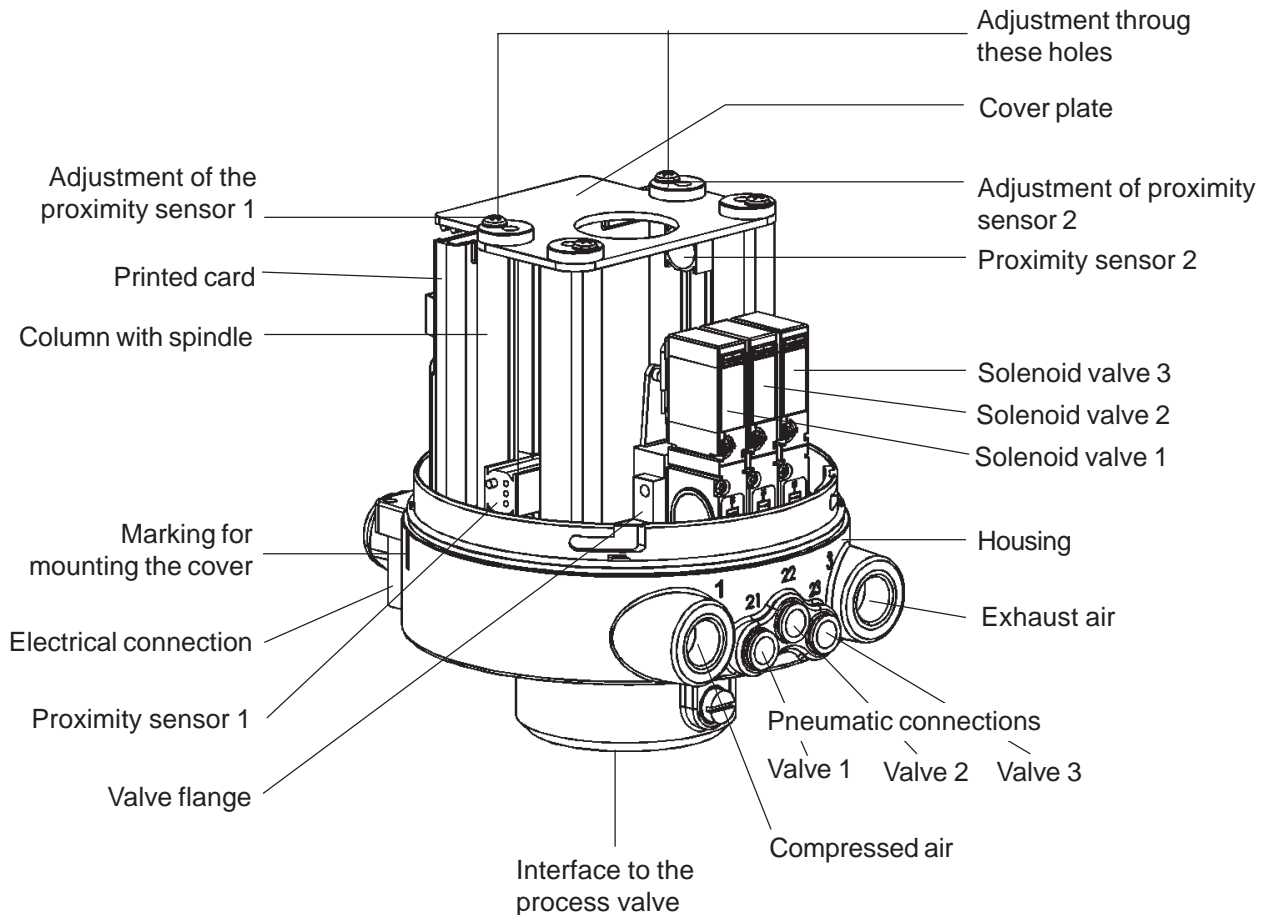
The guarantee only applies to the freedom from fault of the Head Control of the process valves. No liability will be accepted, however, for consequential damage of any kind that could arise from the failure or malfunctioning of the device.

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Structure and Function of the Control Head

The Type 1066 control head is used to control pneumatically operated process valves from various manufacturers. Depending on the configuration, it can be fitted with up to three solenoid valves (pilot valves) for control of the process valve and with a maximum of three height-adjustable inductive proximity sensors for position feedback. One of these sensors can also be an external sensor (3-pole screw terminal on the circuit board for Multipol or Field bus).



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Characteristics

With the Type 1066 control head, there is a de-central solution for driving the process valves in addition to the intended central solution for valve blocks. The advantages of this solution in the form of the compact *control head* unit with the pilot valves and optionally usable field bus interfaces are:

Lower installation outlay.

Simple commissioning.

Short response times due to the short distance between the pilot valve and the process valve.

Main areas of application:

Foodstuff industry (e.g. dairies)

Chemical industry

Pharmaceutical industry

Cosmetics industry

Breweries

Options

Number of pilot valves

Operating mode / Type of application	Number of pilot valves
Single-acting actuators	1
Double-acting actuators	2
Dual-seat valves with integrated air supply to both valve seats	3

Multi-pole connections

8-pole screw terminal for 24 V DC

8-pole round plug for 24 V DC

2 x 6 screw terminals for 24 / 110 / 230 V AC-DC

Field bus connections

Actuator sensor interface (ASI)

DeviceNet



ATTENTION!

The connection to other (higher) bus systems is possible using commercially available Gateways.

Operating conditions

Media	Compressed air, non-oiled; neutral gases
Medium temperature	-10 ... + 50 °C
Ambient temperature	-10 ... + 50 °C
Protection class	IP 67



ATTENTION!

The control head is not suitable for use outdoors!

Mechanical data

Weight	0.5 bis 0.65 kg (depending on model)
Housing material	Housing PA / PPE Cover PSU (transparent, blue-grey)
Sealing material	NBR

Pneumatic data

Port connections	Compressed air/Exhaust air G 1/4 Service ports tube hose connection 6/4 mm or 1/4 inch, plug-in
Pressure range	2.5 to 7 bar
Air flow, control valve	110 l/min Type 6510, 40 l/min Type 6106 Flow: Q_{Nn} - value air (l/min) Measurement at +20 °C, 6 bar pressure at the valve inlet and 1 bar pressure difference
Response times	Type 6510 / Type 6106 Opening 15 / 23 ms Closing 10 / 21 ms Measurement at valve outlet at 6 bar and +20 °C Opening: pressure rise 0 to 90 % Closing: pressure fall 100 to 10 %
Control range	min. stroke 2mm max. stroke 73 mm

Electrical data

Protection class	IP 67
Operating voltage	24 V DC ± 10 % with max. 3 x 6510 DN2.5 valves; 24/110/230 V AC-DC with 1x valve 6106 DN1.2 valve
Max. electrical power loss	5 W for 3 x Type 6510 or 1 x Type 6106
Connections	
Multipol:	8-pole round plug (DIN 45326) for 24 V DC 8-pole screw terminals for 24 V DC 2 x 6-pole screw terminals for 24/110/230 V AC-DC
ASI:	Cut-clamp connector and cable fitting M12 plug and cable fitting M12 flange plug, 4-pole
DeviceNet:	5-pole M12 plug connection
Solenoid valves	
Nominal power	1 W Type 6510 / 3 W Type 6106
Operating mode	continuous (ED 100 %)
Proximity switches	
Operating voltage	8 to 30 V DC
Output signal	max. 100 mA, short-circuit proof
Micro-switch	potential-free, max. 1 A switched current

INSTALLATION

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Installation of the control head

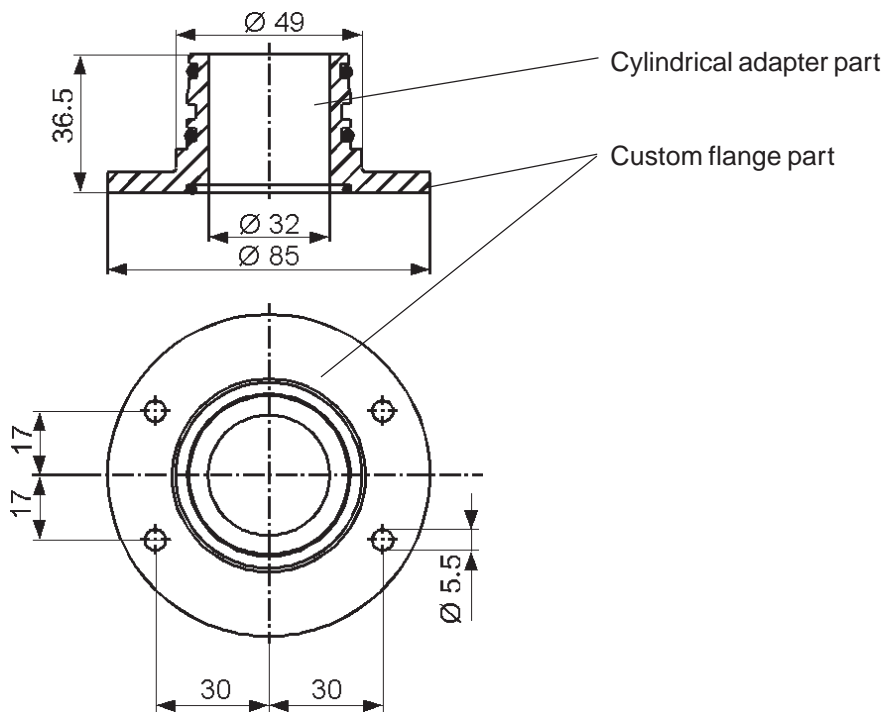
Flange adaptor

To mount the control head type 1066 on a process valve from a different manufacturer, you need an adapter with customized flange (flange adaptor) and a customized switching knob (see also Data Sheet). The connecting part for the control head is Südmö-specific. The flange component must be adapted to the shape of the process valve. The drawing below shows an application for a special process valve. The control head can be installed in any position, but preferably with the cover at the top.

When making your own flange, comply exactly with the following parameters:

- Dimensions
- Number of sealed positions
- Dimension for the O-ring
- Measurement tolerance
- Material data

Main dimensions for the flange adaptor



NOTE

Please request detailed dimensional drawings if you are manufacturing your own flange adaptor.



ATTENTION!

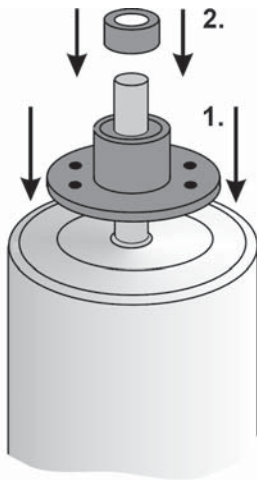
A centring device is necessary for the installation of the flange adaptor. The maximum permissible deviation is ± 0.1 mm. If this tolerance is exceeded, there is the danger that the proximity sensors may not function correctly.

Use a special installation sleeve to avoid exceeding this tolerance.

Installation procedure

- ① **Fix the flange adapter to the process valve/Fix switching knob to piston rod (customer-specific)**

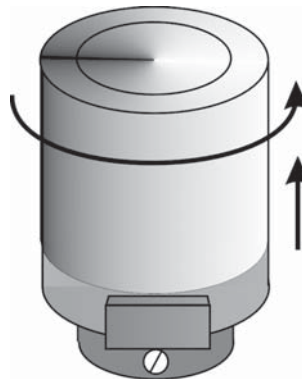
→ ensure that it is centred



- ② **Remove the cover from the control head**

→ Turn the cover to the left to the stop

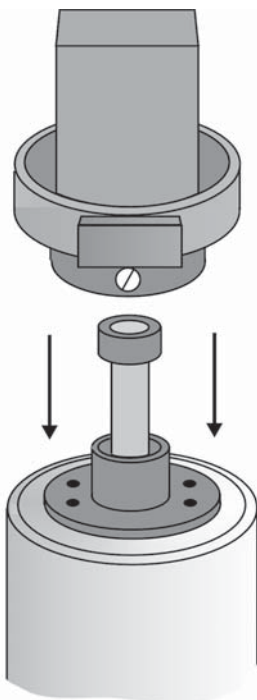
→ Pull the cover off upwards



- ③ **Insert the control head onto the flange adapter**

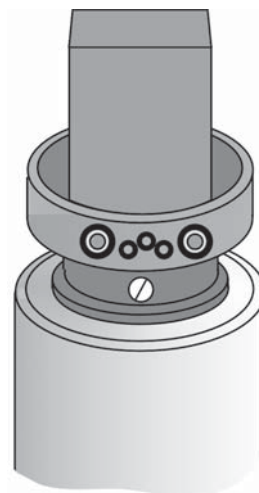
→ Position the control head
(control head can be turned through 360°)

→ Secure the control head using the two screws on the side



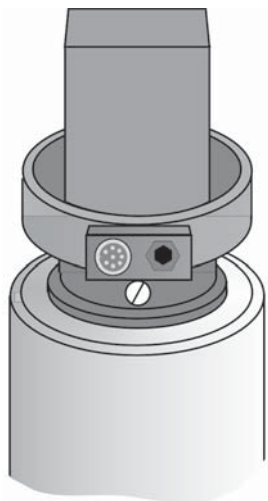
- ④ **Fit the pneumatic connections**

→ Refer to Pneumatic Installation,
(Installation/Commissioning chapter)



⑤ **Fit the electrical connections**

- Multipol, ASI or DeviceNet
(Refer to Installation/Commissioning chapter, AS-Interface, DeviceNet)



⑥ **Adjust**

the proximity sensors

- Using a screwdriver, turn the adjusting screw (spindle) until the optimal position of the proximity switch has been set up.
- The LED mounted on the proximity switch is an adjustment aid: it lights up when reaching the corresponding threshold value.

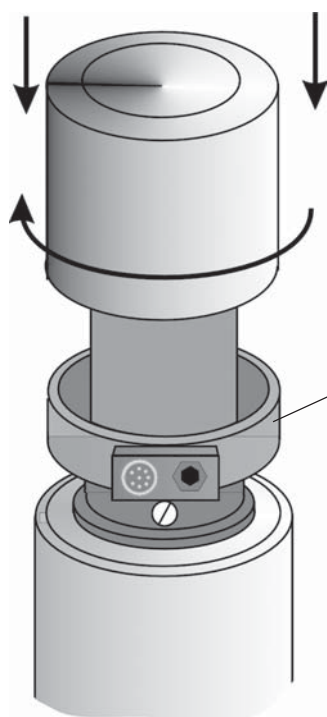
the limit position micro-switches

When using micro-switches, LEDs are not provided for reasons of cost

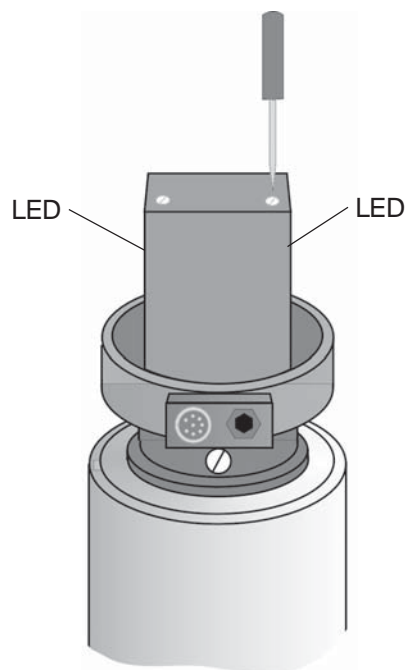
- Set the position as for the proximity switches
- Using the switching sound of the micro-switch (very quiet) as a setting aid or external electrical continuity check.

⑦ **Fit the cover**

- Check the seat of the cover O-ring, or pull a new O-ring onto the collar of the cover.
- Fit the cover.
- Turn the cover right until it reaches the stop.



Housing with cover collar and O-ring seat



NOTE

Secure the cover where necessary to prevent unauthorised access by inserting a lead seal and/or self-tapping screw in the holes in the cover and the housing.

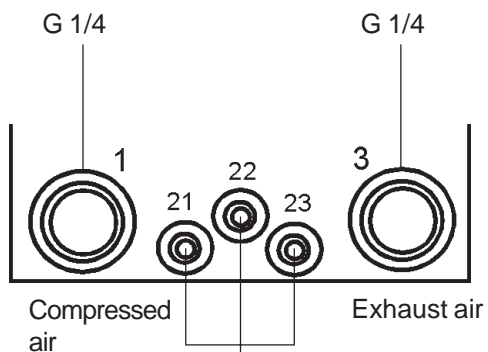
INSTALLATION AND COMMISSIONING

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Pneumatic installation

Wiring connections on the control head



Connections
for 6/4 mm or 1/4" hose
plug-in
for valves V1, V2 and V3



ATTENTION!

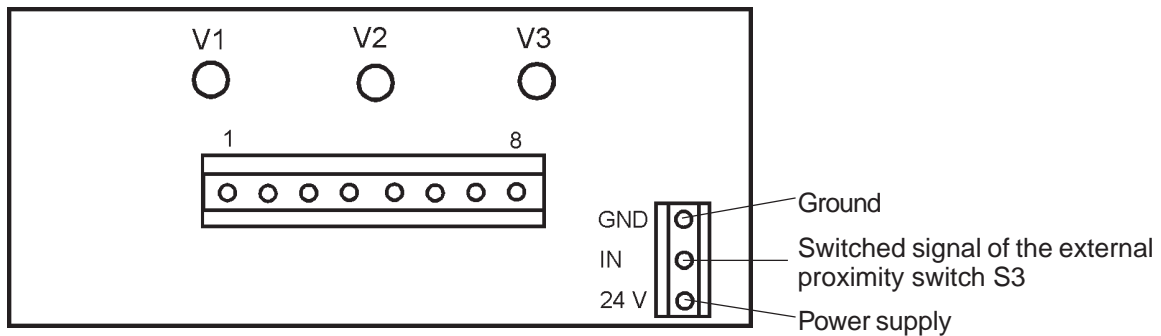
Only use calibrated hose lines with 6 mm or ¼ " external diameter.
Only cut these using a hose cutter (danger of damaging the hose).
Select the length of the hose so that the control head can be removed with the screw fitting.

Electrical Multipol installation

Multipol connections (without communication)

There are several variants of the Multipol connection. In the 24 V DC model, an LED will uniformly indicate the status of each valve.

LED status display Multipol 24 V DC

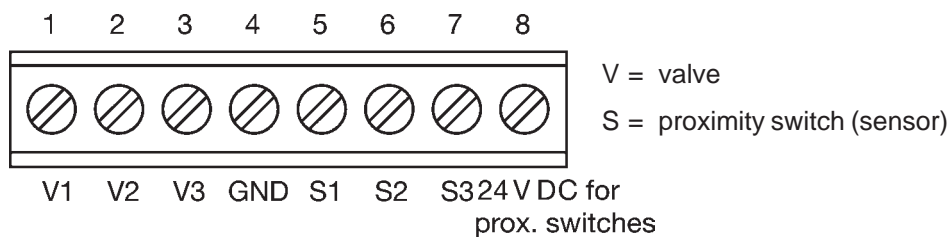


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8-pole screw terminal for 24 V DC

(in interior of housing, cable duct with screw fitting for cable)

Layout of the 8-pole screw terminal

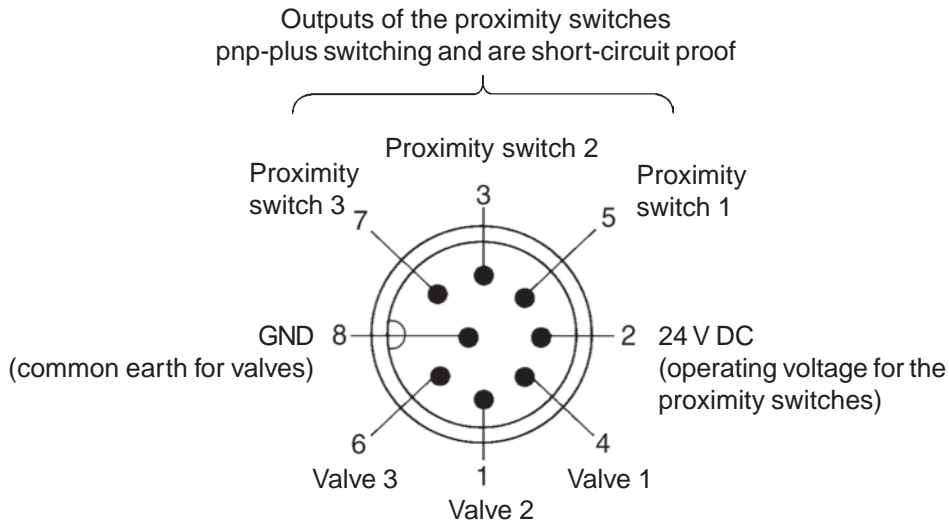


NOTE

|| The outputs of the proximity switches are pnp-plus switching and are short-circuit proof.

8-pole round plug (to DIN 45326) for 24 V DC

View of the sensor installed in the head, seen from the front looking at the pins, with the solder connections below.



NOTE

The outputs of the proximity switches are pnp-plus switching and are short-circuit proof.

2 x 6-pole screw terminals for 24 / 110 / 230 V AC-DC

The 2 x 6-pole screw terminal model consists of:

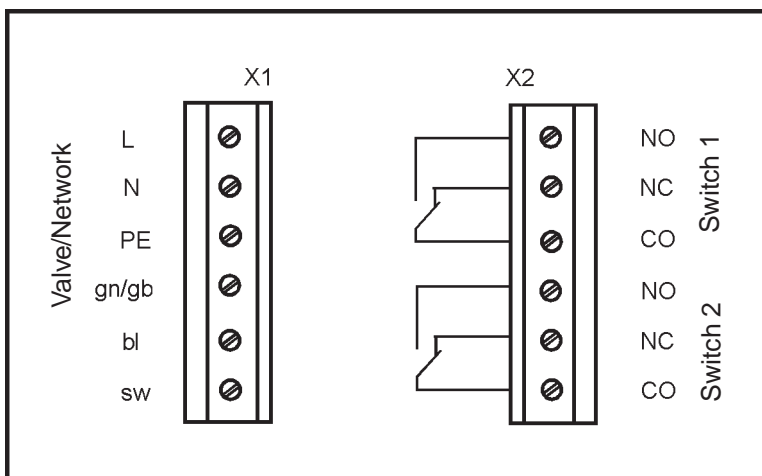
Cable gland with screw fitting for cable

Max. 1 valve (Type 6106, DN1.2)

2 mechanical limit switches with potential-free contacts for position feedback

(No LED status display)

Printed circuit board with 2 x 6-pole screw terminals for 24 / 110 / 230 V AC-DC



gn/gb	green/yellow
bl	blue
sw	black

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Electrical Installation of the ASI

ASI connection

ASI (Actuator Sensor Interface) is a field bus system that is used for networking (mainly) binary sensors and actuators to a master controller.

Bus line

Unscreened pairs (ASI line as ASI format cable) over which both information (data) and energy (power supplies for the sensors and actuators) are transmitted.

Network topology

Freely selectable within wide limits, i.e., star, tree and line networks are possible. Further details can be found in the ASWI specification.

Bus connection variants



NOTE

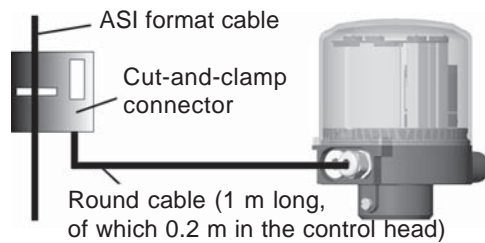
Data for the round cable

The electrical values of the round cable leading directly to the control head deviate slightly from the ASI specification. When calculating the maximum permissible line length according to the ASI specification, the length should therefore be set longer by the factor 1.5.

$$\text{ASI length} = 1.5 \times \text{real length}$$

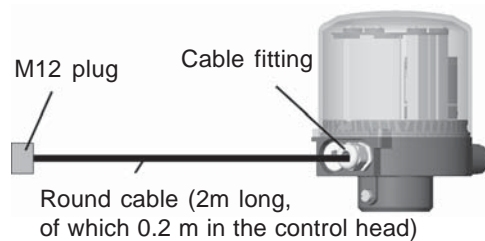
1. Cut-clamp connector on the 1 m round cable

ASI standard connection:

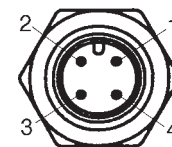


2. 4-pole M12 plug on the 2 m round cable

ASI standard connection 1: (on request)



4-pole M12 flange plug for ASI special connection 1 and 2

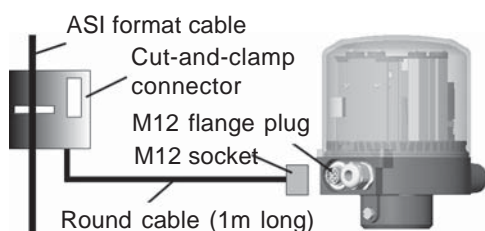


ASI PIN configuration

- 1 = brown, ASI+
- 2 = not used
- 3 = blue, ASI-
- 4 = not used

3. 4-pole M12 plug on the control head, without cable

ASI special connection 2: (on request)



Handling of the cut-and clamp connector

In the cut-and-clamp connector for ASI format cable, the contact is made in the form of a penetration technique, which makes an installation possible through the "clipping in" of the ASI cable without cutting and de-insulating.

Work steps

- Open the cut-and-clamp connector (loosen the screw and open)
- Insert the shaped cable with a positive fit
- Close the clamp connector again
- Tighten the screw.

Technical data for the ASI circuit board

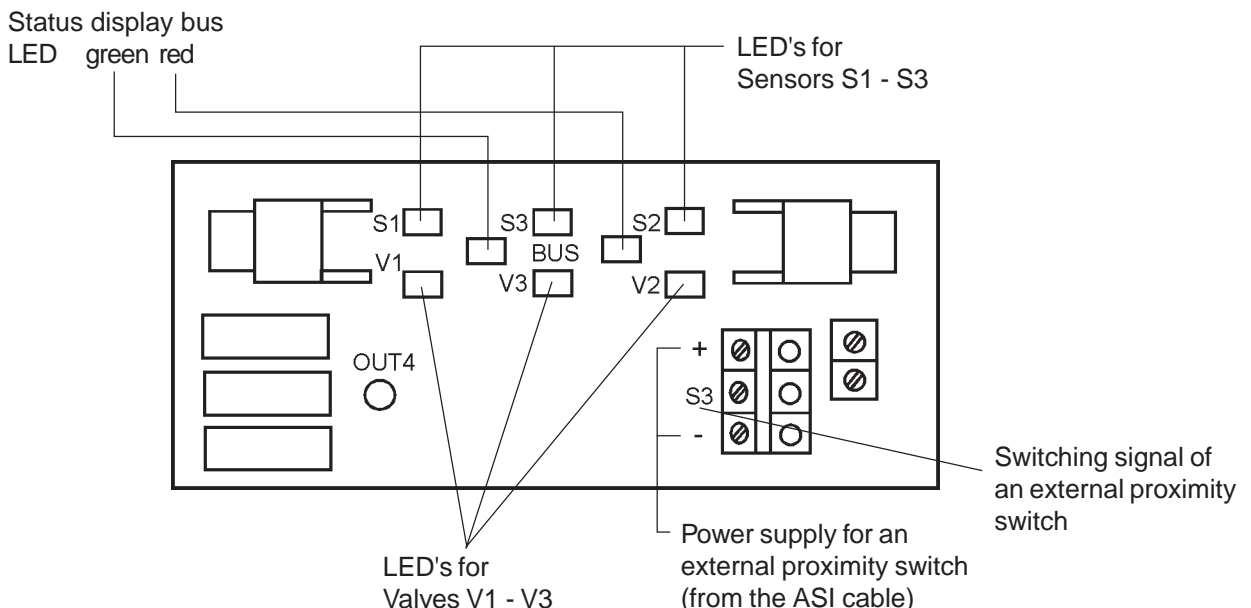
Inputs	3 sensors S1 top S3, pnp plus-switching
	Supply via the AS interface (24 V +20 % / -10 %), short-circuit proof, current limited to 60 mA
	Switch level High signal ≥ 10 V
	Limitation of input current ≥ 6.5 mA, input current Low signal ≥ 1.5 mA
Outputs	3 valves V1 - V3
	max. 3 x 1 W
	Power reduction after approx. 100 ms, with integrated Watch-Dog function

Programming data

I/O-Code	7 hex (4 outputs and 4 inputs)
ID-Code	F hex (see following table for bit allocation); extended ID codes 1 and 2 = F hex
Profile	7.F

LED status display ASI

Visible part of the ASI printed circuit board



Overview of ASI LED Status display

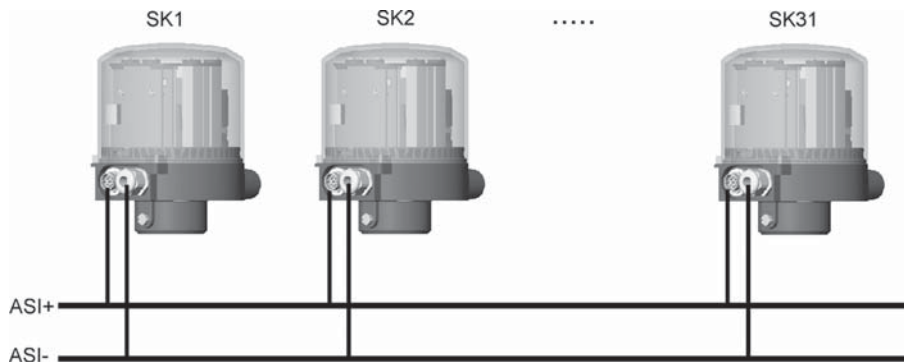
LED		Bus status
green	red	
dark	dark	POWER OFF
dark	light	No data traffic (expired watch-dog with Slave address not 0)
light	dark	ok
blinking	blinking	Peripheral fault (overload in sensor supply)
blinking	light	Slave address equal to 0
dark	blinking	RESET

Bit allocation

Data bit	D3	D2	D1	D0
	Output LED yellow	Output Valve 3	Output Valve 2	Output Valve 1
	Input Not used	Input Prox. Switch 3	Input Prox. Switch 2	Input Prox. Switch 1
Parameter bit	P3	P2	P1	P0
	Not used			

Number of connectable control heads and maximum length of the bus line

A maximum of 31 control heads can be connected to a single bus line. According to the ASI specification, the bus cable may be a maximum of 100 m long.



NOTE || When using other cable diameters, the maximum cable length also changes (refer to ASI specification).

Process data

Data bits for inputs (sensor and prox. switches):

Bit No.	Sensor	Value allocation
Bit 0	S1 (prox. sw. 1)	0 Prox. sw. 1 OFF 1 Prox. sw. 1 ON
Bit 1	S2 (prox. sw. 2)	0 Prox. sw. 2 OFF 1 Prox. sw. 2 ON
Bit 2	S3 (terminal for add. prox. sw.)	0 Prox. sw. 3 OFF 1 Prox. sw. 3 ON
Bit 3	Not used	always 0

Data bits for outputs (actuators and valves):

Bit No.	Valve	Value allocation
Bit 0	V1 (Valve 1)	0 Valve 1 OFF 1 Valve 1 ON
Bit 1	V2 (Valve 2)	0 Valve 2 OFF 1 Valve 2 ON
Bit 2	V3 (Valve 3)	0 Valve 3 OFF 1 Valve 3 ON
Bit 3	Not used	always 0

Parameter bits: not used

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Explanation of expressions used

DeviceNet

- DeviceNet is a field bus system that is based on the CAN protocol (Controller Area Network). It makes possible the networking of actuators and sensors (slaves) with a master control unit (master).
- In the DeviceNet, the Type 1066 control head is a slave device according to the Predefined Master/Slave Connection laid down in the DeviceNet specification. Polled I/O, Bit Strobed I/O and Change of State 4 (COS) are supported as I/O connection types.
- In DeviceNet, a differentiation is made between cyclic or event-controlled transmitted process messages of higher priority (I/O Messages) and non-cyclic management messages of lower priority (Explicit Messages).
- The protocol corresponds to **DeviceNet Specification Release 2.0**



NOTE

A diskette with configuration files (BUE1066.EDS and BUE1066.ICO) is always delivered with the DeviceNet models. You can also obtain these files over the Internet.

Technical data

Baud rate	125 kBit/s, 250 kBit/s, 500 kBit/s (via DIP switch); Factory setting: 125 kBit/s
Addresses	0 ... 63 (via DIP switch); Factory setting: 63
Process data	2 static input assemblies (Input: from control head 1066 to DeviceNet Master/Scanner) 1 static Output Assembly
Inputs	3 sensors S1 - S3, pnp, plus-switching Supply via the DeviceNet line (11 to 25 V DC) Switching level High signal ≥ 5 V Switching level Low signal ≤ 1.5 V
Files	BUE1066.EDS BUE1066.ICO You can also obtain these files over the Internet.

Maximum line lengths

The maximum total line lengths (sum of main and drop lines) of a network depend on the baud rate.

Total line lengths according to the DeviceNet specification

Baud rate	Maximum total line length when using Thick Cables according to the DeviceNet specification ¹⁾
125 kBaud	500 m
250 kBaud	250 m
500 kBaud	100 m

¹⁾ According to the DeviceNet specification. When using another cable type, lower maximum values apply (refer to the DeviceNet specification).

Drop line lengths

Baud rate	Maximum length of a drop line	Max. accumulated length in the network
125 kBaud	6 m	156 m
250 kBaud	6 m	78 m
500 kBaud	6 m	39 m

Safety setting for bus failure

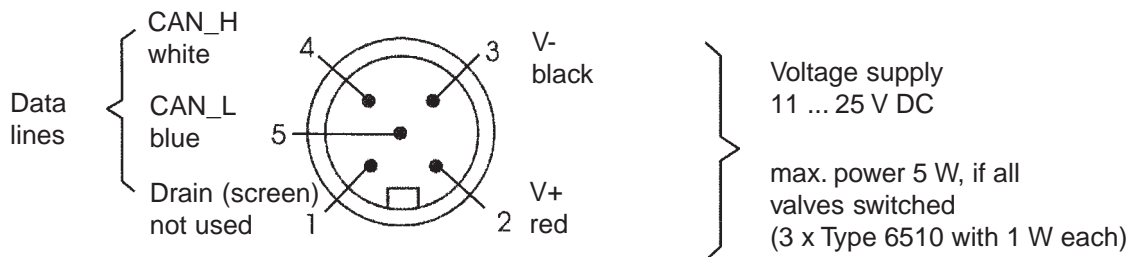
In case of a bus failure, the setting of the last data byte of the bus outputs will be retained as long as power is connected.

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Electrical connection

The bus line is a 4-pole cable with an additional screen that must correspond to the DeviceNet specifications and over which both information (data) and power (power supply for the low-power actuators and sensors) will be transmitted.

Bus connection (round plug M12, 5-pole)



Plug viewed from the front looking at the pins (not at the solder side).

The Type 1066 control head has a 5-pole Micro-style M12 round plug. The following pin configuration corresponds to the DeviceNet specification:

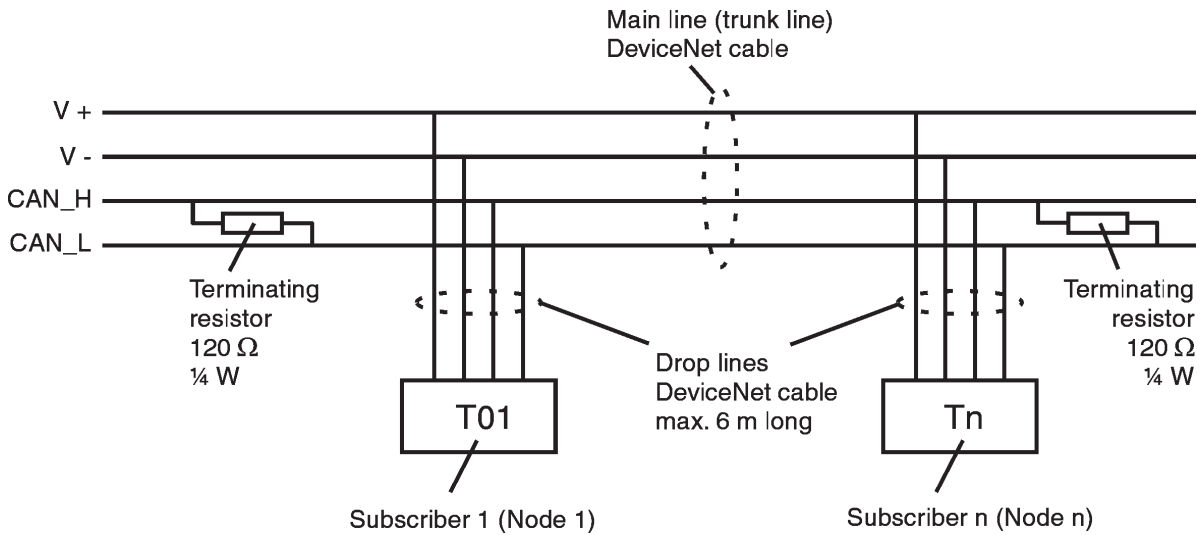
Pin	Signal	Colour
1	Screen	not used
2	V+	red
3	V-	black
4	CAN_H	white
5	CAN_L	blue

Termination circuit for DeviceNet systems

When installing a DeviceNet system, attention must be paid to the correct termination circuit for the data lines. This circuit prevents interference arising from signal reflection on the data lines. The main line must therefore be terminated as both ends, as shown, with resistors of 120 Ω with 1/4 W power rating.

Network topology of a DeviceNet system

Line with a main line (trunk line) and several drop lines.
The main line and the drop lines are made up from identical material (see sketch).



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ATTENTION!

To avoid reflections, fit terminating resistors at both ends of the trunk line (120 Ω).

Configuration

DIP switch

8 DIP switches are fitted for the configuration:

- DIP switches 1 to 6 for the DeviceNet addresses
- DIP switches 7 and 8 for the baud rate



NOTE

Before the commissioning of the controller with DeviceNet, the **EDS-Datei** must be read into DeviceNet Configuration Tool. The required files (BUE1066.EDS and BUE1066.ICO) are available on diskette or over the Internet.

Setting the DeviceNet address

MAC ID – Medium Access Control Identifier:

$$[\text{DIP 1}=\text{off}=0 / \text{DIP 1}=\text{on}=1 / \text{MAC ID}=\text{DIP 1} \cdot 2^0 + \text{DIP 2} \cdot 2^1 + \dots + \text{DIP 6} \cdot 2^5]$$

DIP 1 [2 ⁰ =1]	DIP 2 [2 ¹ =2]	DIP 3 [2 ² =4]	DIP 4 [2 ³ =8]	DIP 5 [2 ⁴ =16]	DIP 6 [2 ⁵ =32]	MAC ID
off	off	off	off	off	off	0
on	off	off	off	off	off	1
off	on	off	off	off	off	2
...
off	on	on	on	on	on	62
on	on	on	on	on	on	63

Setting the baud rate

Adapting the control head to the baud rate of the network.

DIP 7	DIP 8	Baud rate
off	off	125 kBaud
on	off	250 kBaud
off	on	500 kBaud
on	on	not allowed



ATTENTION!

Any change to the settings using the DIP switches will only become effective following a re-start of the device.

A re-start can be carried out by briefly unclamping and the re-clamping the control head from/to the network or by sending a corresponding Reset Message. It is also possible be switching the network power supply off and then on again.

Configuration of the Process Data

3 static inputs and 3 static output assemblies are available for the transmission of the process data via an I/O connection. Selected attributes are gathered together in one object in these assemblies, in order to be able to be transmitted together as process data via an I/O connection.

The process data can either be accessed cyclically in the connection variants "Polled I/O" and "Bit-strobed I/O" with "Change of State" when the input values change, or non-cyclically via Explicit Messages.

The access path for non-cyclic access is:

class	4
instance	1
attribute	3

With the *Get_Attribute_Single* service, non-cyclic read access can be obtained to the input data, and non-cyclic write access to the output data with *Set_Attribute_Single*.

1 Data Byte for inputs (sensors and/or proximity switches):

Bit	Sensor	Value allocation
Bit 0	S1 (Initiator 1)	0 Prox. switch 1 OFF 1 Prox. switch 1 ON
Bit 1	S2 (Initiator 2)	0 Prox. switch 2 OFF 1 Prox. switch 2 ON
Bit 2	S3 (Terminal for additional prox. switch)	0 Prox. switch 3 OFF 1 Prox. switch 3 ON
Bit 3 ... Bit 7	Not used	0 always

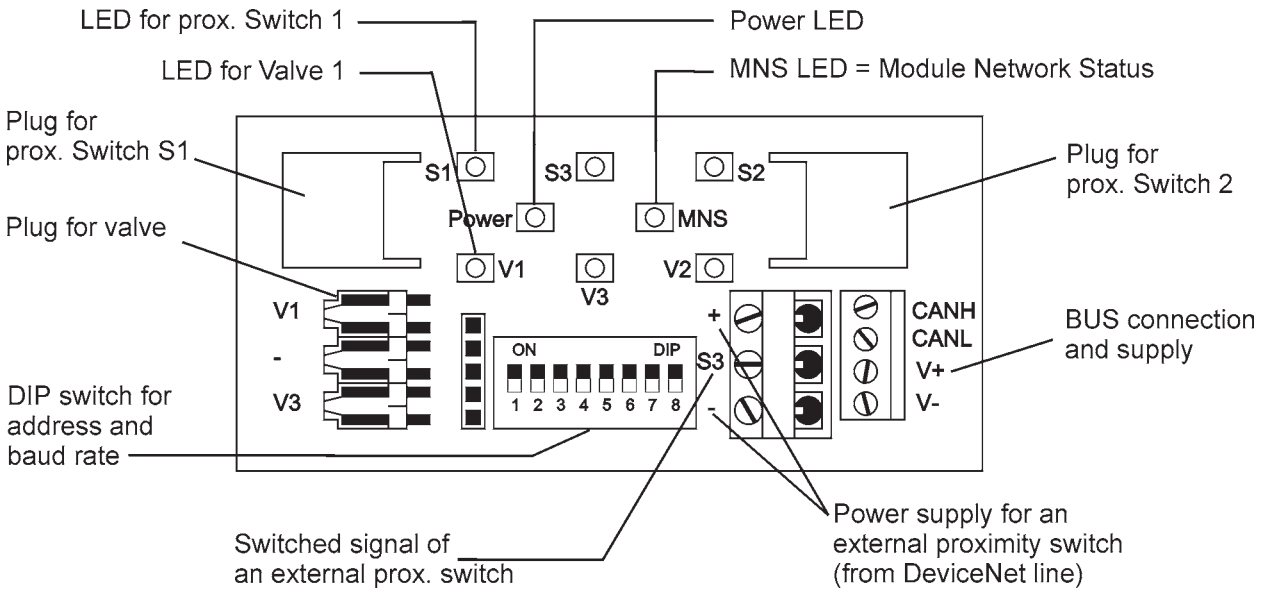
1 Data Byte for inputs (sensors and/or proximity switches):

Bit	Sensor	Value allocation
Bit 0	S1 (Valve 1)	0 Valve 1 OFF 1 Valve 1 ON
Bit 1	S2 (Valve 2)	0 Valve 2 OFF 1 Valve 2 ON
Bit 2	S3 (Valve 3)	0 Valve 3 OFF 1 Valve 3 ON
Bit 3 ... Bit 7	Not used	0 always

LED Status Display

The device status will be indicated by 2 LEDs ("Power" and "MNS").

Name of the LED	Type / Colour	Function
POWER	Single-colour, green	LED lit up: device has electrical power
MNS	Two-colour, red / green	Corresponds to MNS-LED according to DeviceNet specification (MNS Module Network Status)



Status of the MNS LED

Once electrical power has been applied (connection of the network line), the following functional tests of the two-coloured MNS LED are carried out:

- LED lights up green for a short time (ca. ¼ s).
- LED lights up red for a short time (ca. ¼ s).
- LED dark.

Once the functional tests have been completed, the MNS LED can indicate the device status as shown in the table below.

LED state	Device status	Explanation / Correction of problem
Dark	No power / not online	- No power supply to device. - Device has not yet finished the duplicate MAC ID Test (test lasts approx. 2s). - Connect additional devices if the device is the only network participant. - Replace the device.
Green	On-line, connection to Master exists	- Normal operational status with connection made to Master.
Green blinking	On-line, no connection to Master	- Normal operational status without connection made to Master.
Red blinking	Connection time-out	- One or more connections are in the Time-Out state. - Make new connection via the master to ensure that the I/O data will be transmitted cyclically.
Red	Critical fault	- Another device with the same MAC ID in the network > change MAC ID and restart. - BUS OFF as a result of communication problems. - Check the baud rate: replace the device if necessary.

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MAINTENANCE

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Maintenance 28

Maintenance

When used correctly, the Type 1066 control head works without maintenance and without problems. Repairs may only be carried out by authorised personnel using suitable tools.



ATTENTION!

Before using cleaning materials, always check the compatibility of these agents with the materials of the housing and the cover. ON cases of soiling, or following the use of acidic or alkaline cleaning agents, always rinse thoroughly rinse off the control head with clear water. In doing this, pay special attention that threaded holes and depressions are clean and drained.

REPAIRS

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Repairs	30
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Changing the proximity switch / micro-switch	33
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Repairs

In case of the failure of certain components or modules, the control head can be repaired.



ATTENTION!

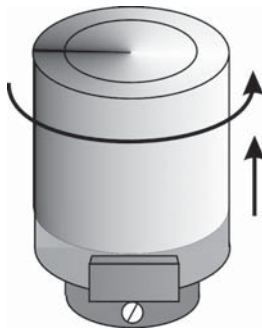
- Only use original spare parts for the repair work (refer to Spare Parts Table).
- Repairs may only be carried out by authorised specialists using suitable tools.
- Comply with the valid accident prevention regulations and the safety regulations.
- Ensure that the device is free of pressure and of electrical power before carrying out any work.
- Check that the parameters of the spare parts agree with those given on the rating plate of the control head being repaired.

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Removing and/or replacing the cover

Removing the cover from the control head

- Loosen the locking screw
- Turn the cover to the left until it reaches the stop
- Remove the cover by pulling upwards!

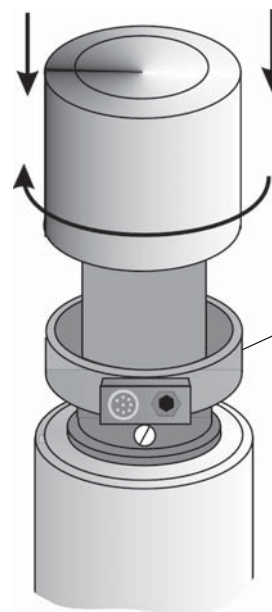


NOTE

Secure the cover where necessary to prevent unauthorised access by inserting a lead seal and/or a self-tapping screw in the holes in the cover and the housing.

Fitting the cover

- Check the seat of the cover O-ring, or pull a new O-ring onto the collar of the cover.
- Fit the cover.
- Turn the cover right until it reaches the stop.



Housing with cover collar and O-ring seat

Changing the printed circuit board

Proceed as follows:

- Remove the cover.
- Before disconnecting, mark the electrical connections so that it will be possible to reconnect them without error.
- Disconnect all electrical connections from the printed circuit board (plug and / or screw connections).
- Loosen the four screws (Torx 10) with which the cover plate is secured.
- Remove the cover plate.
- Remove all circuit boards (no screw fittings).
- Insert the new circuit boards.



ATTENTION!

Ensure the correct fit of the printed circuit boards into the housing projections!

- Replace the cover plate.



ATTENTION!

Ensure the correct fit of the circuit board on the screw heads in the projections and/or the cut-outs in the cover plate!

- Screw down the cover plate (Torx 10; tightening torque 0.7 Nm).
- Reconnect the electrical connections according to the markings made earlier.
- Refit the cover.

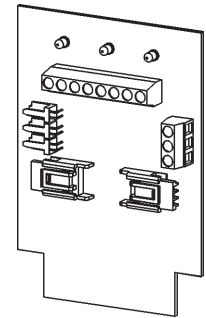
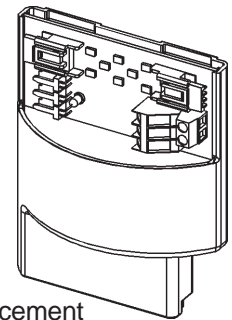
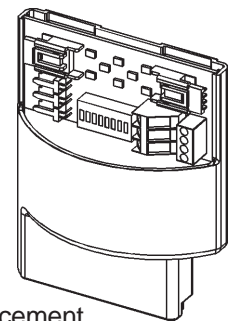


Plate for Multipol 24 V DC



Replacement ASI module, moulded



Replacement DeviceNet, moulded

Replacing the valve group

The valve group consists of a connection plate with 1, 2 or 3 flanged valves of the type 6510 and the O-rings for the fluidic flange to the housing.

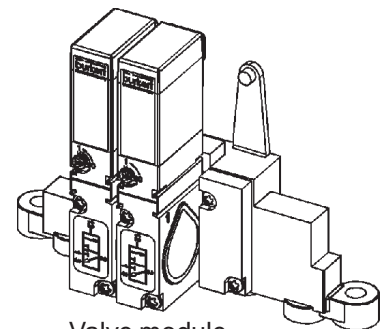


NOTE

With the Multipol 24 V DC, ASI and DeviceNet versions, only the replacement of the complete valve group is allowed.

Proceed as follows:

- Remove the cover.
- Before disconnecting from the circuit board, mark the electrical connections so that it will be possible to reconnect them without error.
- Disconnect all electrical connections from the printed circuit board (screw connections).
- Loosen the 2 screws (Torx 20) with which the valve group is secured.
- Remove the valve group complete with its O-rings.
- Fit the new valve group complete with its O-rings.
- Screw down the valve group (Torx 20; tightening torque 1.5 Nm).
- Reconnect the electrical connections according to the markings made earlier.
- Refit the cover, ensuring that the O-rings are correctly seated.



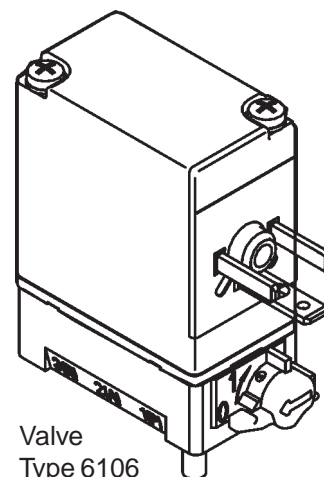
Valve module (Multipol, ASI, DeviceNet) with either 1, 2 or 3 valves

Changing the valve in Multipol versions for 24 / 110 / 230 V AC-DC

In the Multipol version for 24 / 110 / 230 V AC-DC, only the **Type 6106 valve** is replaced. The valve connection plate remains in the control head.

Proceed as follows:

- Remove the cover.
- Unscrew the screws on the appliance socket.
- Pull the appliance socket from the valve.
- Note the mounting position of the tag connectors and the manual override.
- Loosen the 2 fixing screws on the valve body.
- Remove the coil bobbin.
- Loosen the 2 fixing screws on the valve body.
- Remove the valve body complete with its O-rings.
- Fit the new valve body together with its O-rings on the correct side (manual override to the left)
- Retighten the screws alternately and evenly (tightening torque 0.5 Nm).
- Fit the new coil bobbin on the correct side (long tag connector to the left).
- Alternately and evenly tighten the coil screws (tightening torque 0.15 Nm).
- Mount the appliance socket on the valve.
- Secure the socket with a screw (tightening torque 1 Nm).
- Refit the cover.

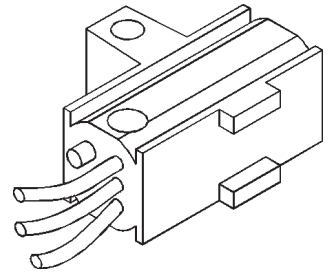


Valve
Type 6106

Changing the proximity switch / micro-switch

Proceed as follows:

- Remove the cover.
- Before disconnecting from the circuit board, mark the electrical connections so that it will be possible to reconnect them without error.
- Disconnect all electrical connections to the proximity switch / micro-switch from the printed circuit board (plug connections).
- Loosen the four screws (Torx 10) with which the cover plate is secured.
- Remove the cover plate.
- Note the positions of the proximity switch and the trigger of the micro-switch.
- Lift out the proximity switch / micro-switch with the adjusting screw and the connecting cable.
- Unscrew the old adjusting screws for re-use.
- Screw the adjusting screws into the threaded holes on the new proximity switch / micro-switch.
- Mount the new proximity switch with the adjusting screw in the guide column.



Inductive proximity switch with LED and moulded-on wire and plug.



ATTENTION!

Ensure the correct seating of the proximity switch / micro-switch in the guides and depressions on the body.

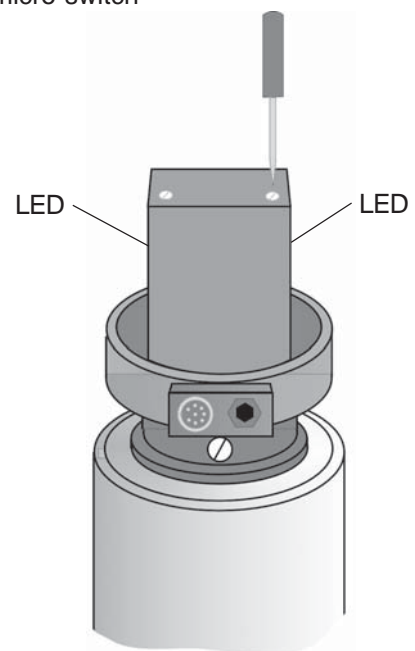
- Re-fit the cover plate.



ATTENTION!

Ensure the correct seating of the printed circuit board and the screw heads in the projections and cut-outs of the cover plate.

- Firmly screw down the cover plate (Torx 10; tightening torque 0,7 Nm).
- Reconnect the electrical connections to the proximity switch / micro-switch according to the note made earlier.
- Adjust the position of the proximity switch / micro-switch:
 - Using a screwdriver, turn the adjusting screw (spindle) until the optimal position of the proximity switch has been set up.
 - The LED mounted on the proximity switch is an adjustment aid: it lights up when reaching the corresponding threshold value.
- Refit the cover.



Spare Parts

Spare part	Order No.	Spare part	Order No.
Replacement ASI module, moulded	799 189	Multipol module, 1 valve 24 V DC *	193 375
ASI cable with cut-and-clamp connectors and cable fitting, 1 m long	798 249	Multipol module, 2 valve 24 V DC *	193 376
		Multipol module, 3 valve 24 V DC *	193 377
Replacement DeviceNet module, moulded	799 188	ASI module, 1 valve 24 V DC *	193 375
Plate for Multipol 24 V DC	799 137	ASI module, 2 valve 24 V DC *	193 376
Plate for Multipol 24/110/230 V AC-DC	799 057	ASI module, 3 valve 24 V DC *	193 377
Inductive proximity switch (Initiator)	798 546	DeviceNet module, 1valve 9 V DC *	198 195
Limit position micro-switch comp.	648 004	DeviceNet module, 2 valve 9 V DC *	198 196
1 setting screw prox. switch /micro-switch	798 064	DeviceNet module, 3 valve 9 V DC *	198 197
Set of M5 screws for securing the control head (pack of 10)	798 074	Single valve Type 6106, 24 V AC-DC *	141 073
1 cover for control head	798 073	Single valve Type 6106, 110 V AC-DC *	142 490
O-rings for cover (pack of 10)	798 072	Single valve Type 6106, 230 V AC-DC *	141 387

* Modules and valve complete with O-rings and fixing screws.

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