bürkert
FLUID CONTROL SYSTEMS

Type 2510, 2511

AS Interface Device Socket

Operating Instructions

MAN 1000479500 EN Version: AStatus: RL (released | freigegeben) printed: 19.02.2021

Contents

1 OPERATING INSTRUCTIONS

These operating instructions contain important information.

- ▸ Carefully read these instructions and follow the safety information.
- ▸ Keep the instructions and make them available to every user.
- ▸ People who work on the device must read and understand these instructions.

1.1 Symbols

DANGER!

Immediate danger! Fatal or serious injuries.

WARNING!

Potential danger! Fatal or serious injuries.

CAUTION!

Danger! Moderate or minor injuries.

NOTE!

Warns of material damage.

- ▸ Indicates instructions to avoid danger.

→ Indicates a procedure you need to carry out.

2 INTENDED USE

The cable plug type 2510/2511 is exclusively used to control DC coils with power output of ≤ 5 W without external power supply or ≤ 15 W with external power supply.

- Only use the AS-Interface device socket in conjunction with the coil versions provided for this purpose.
- Prerequisites for safe and error-free operation include correct transportation, correct storage, installation, start-up, operation and maintenance.
- Observe the permissible data, operating conditions and conditions of use for the respective devices or products. These specifications can be found in the contract documents, operating instructions and on the type label.
- Use the device only as intended. Improper use of the device may be dangerous to people, nearby equipment and the environment.

2.1 Definition of terms

Term	Definition for these instructions
Device	Cable Plug Type 2510 and Type 2511

3 BASIC SAFETY INSTRUCTIONS

These safety instructions do not take into account any unforeseen circumstances or events that occur during installation, operation and maintenance. The operator is responsible for observing the location-specific safety regulations, also in terms of personnel.

Risk of injury from electric shock.

- Switch off the power supply before working on the device or system. Secure it against reactivation.
- Observe any applicable accident prevention and safety regulations for electrical devices.
- Do not switch the power on again until the device has been correctly mounted, connected and the cover has been attached with the screw.
- Do not touch printed circuit boards and components. Even in a de-energized state, components may still have a dangerous charge on them.
- Observe any applicable accident prevention regulations and safety regulations for electrical devices.

Risk of injury due to unintentional operation.

- Use suitable measures to prevent unintentional actuation.

General hazardous situations.

Observe the following to prevent injury:

- Observe the general rules of technical equipment.
- Do not use the device in an area where explosions are possible.
- Only use the device when it is in a perfect state and only use it in accordance with the operating instructions.
- Secure the device or system to prevent unintentional activation.
- After an interruption in the power supply, ensure that the process is restarted in a controlled manner.
- Do not modify the device.
- Do not mechanically load the device.
- Only trained technicians may perform installation and maintenance work.
- Only use suitable tools to perform installation and maintenance work.
- Install the device according to the regulations applicable in the respective country.

NOTE!

Electrostatically sensitive components / assemblies

The device contains electronic components that are susceptible to the effects of electrostatic discharging (ESD). Components are at risk if they come into contact with electrostatically charged persons or objects. In the worst-case scenario they will be destroyed immediately or will fail after start-up.

- Observe the requirements of EN 61340-5-1for minimising or avoiding the possibility of damage caused by sudden electrostatic discharge.
- Do not touch electronic components when the supply voltage is connected.

4 GENERAL NOTES

4.1 Contact address

Germany

Bürkert Fluid Control Systems
Sales Centre
Christian-Bürkert-Str. 13-17
D-74653 Ingelfingen
Tel: +49 (0) 7940 - 10-91 111
Fax: +49 (0) 7940 - 10-91 448
E-mail: info@burkert.com

International

The contact addresses can be found on the back pages of the printed operating instructions. Also on the Internet at:
http://www.burkert.com

4.2 Warranty

A precondition for the warranty is that the device is used as intended and that the specified usage conditions are taken into account.

4.3 Information on the Internet

Operating instructions and data sheets for Bürkert products can be found on the Internet at:
https://country.burkert.com.

5 STRUCTURE AND DESCRIPTION

5.1 Design

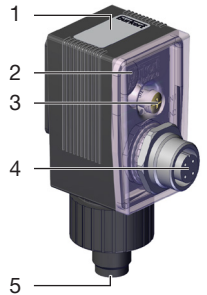


Figure 1: Cable Plug Type 2511

Item	Designation
1	Type label
2	Cover
3	Fastening screw
4	Socket
5	Circular plug

5.2 Description

The device consists of a polyamide housing with integrated slave electronics and a connector diagram according to DIN EN 175301-803 (Form C and A).

The device is used exclusively for controlling direct current coils. The integrated rectifier allows operation with DC or AC voltage.

5.3 Conformity

The device conforms to EU directives as per the EU Declaration of Conformity.

5.4 Standards

The applied standards used to verify compliance with the Directives can be found in the EU type examination certificate and/or the EU Declaration of Conformity.

6 TECHNICAL DATA

6.1 Operating conditions

Cable Plug Type 2510 according to DIN EN 43650-803, Form C.

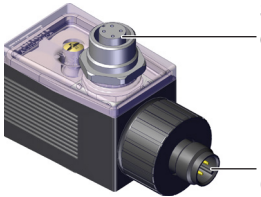
Cable Plug Type 2511 according to DIN EN 43650-803, Form A.

Material	PA
Dimensions	32x32x65 mm
Attachment	Cheese head screw Type 2510: M2.5x35 Type 2511: M3x35
cable side	M12 socket; 4-pin is required
on the device side (to the valve)	Socket for plug tabs according to DIN EN175301-803
Feedback inputs (optional)	M12 plug; 4-pin is required
Watchdog function:	Integrated
Ambient temperature	–0...+50 °C
Degree of protection	IP65

6.2 Electrical data

	Profile S-B.F.F	Profile I S-B.A.E
Supply voltage	29.5 - 31.5 V according to ASI specification (PELV)	
Max. power consumption	From AS-Interface	
With electronics	10 mA	10 mA
Bus-powered (electronics, valve, sensors)	300 mA	120 mA
Externally powered (electronics, sensors)	80 mA	-
Output voltage	24 V ±10%	

6.3 Electrical connection

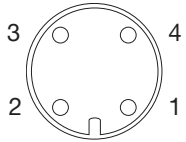


Socket M 12 (sensor), 4-pin
cable plug with feedback input

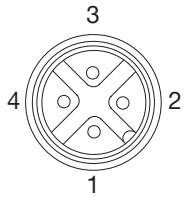
Round plug M 12
(AS-Interface), 4-pin

Figure 2: Electrical connection

6.4 Connection of socket and plug

M12 socket, 4-pin	PIN	Assignment
	1	+ 24 V sensor supply
	2	Sensor input 2
	3	GND
	4	Sensor input 1

Two sensors with a Y-distributor can be connected via the M 12 socket.
Two sensors (two or three wires) can be connected via a DUO connector if there is external power supply.

M12 plug, 4-pin	PIN	Assignment
	1	AS-Interface Bus+
	2	0 V [1]
	3	AS-Interface Bus-
	4	24 V [1]

[1] Only for externally supplied cable plugs

The nominal power of the valve does not correspond to the rated capacity. This can be much higher.

Output

	Profile S-B.F.F	Profile l S-B.A.E
Max. valve output current	Short circuit-proof	
Bus powered	205 mA, without inputs 125 mA, with 2 inputs	100 mA
Externally fed	700 mA	-
Outputs max. switching capacity	Short circuit-proof	
Bus powered	5 W without inputs 3 W with 2 inputs	2 W
Externally fed	15 W	-

If there is no data traffic, the output is reset after 50 - 100 ms.

Inputs

	Profile S-B.F.F	Profile l S-B.A.E
Input circuitry	3-wire voltage sensors PNP 2-wire voltage sensors	-
Supply voltage sensor	24 V ±20%	-
Max. sensor current	50 mA for 2 sensors	-
Level HIGH signal (logical=1)	≥ 10 V	-
Level LOW signal (logical=0)	≤ 1.5 mA	-
Max. input current	≤ 6.5 mA	-

Programming data

I/O configuration	B hex (1 output, 2 inputs)
ID code	F hex (for assignment see below)
Default address	0
Profile	B.F

Assignment of the data bits

D3	D2	D1	D0
IN 1[2)]	IN 2[2)]	-	OUT

[2)] Cable plugs with feedback inputs

6.5 LED display for device status

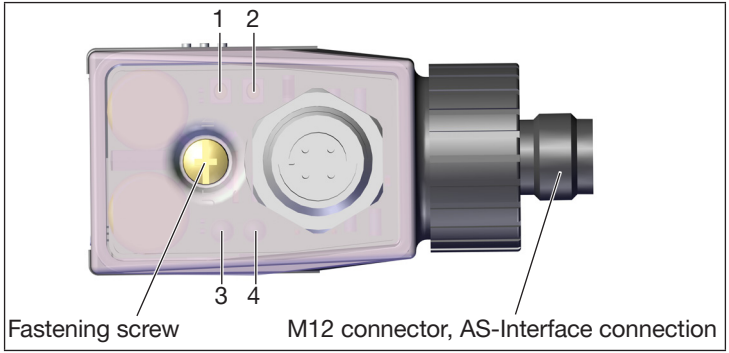


Figure 3: LED display for device status

Item	LED	Colour	On	Off	Flashing
1	Input 1	yellow	Valve switched	Valve not switched	-
2	Input 2				
3	Status display	green			
4	BUS		OK	Power OFF	Slave address 0

Table 1: Status displays

7 INSTALLATION

WARNING!

Risk of injury due to improper installation

- Only trained technicians may perform installation work.
- Only carry out installations with suitable tools.
- Secure the system against unintentional activation.
- Following installation, ensure a controlled restart.

WARNING!

Risk of short circuit if the screw connection is not tight.

- When screwing in the cable plug, make sure that the seal is properly seated.
- Carefully fasten the cable plug.

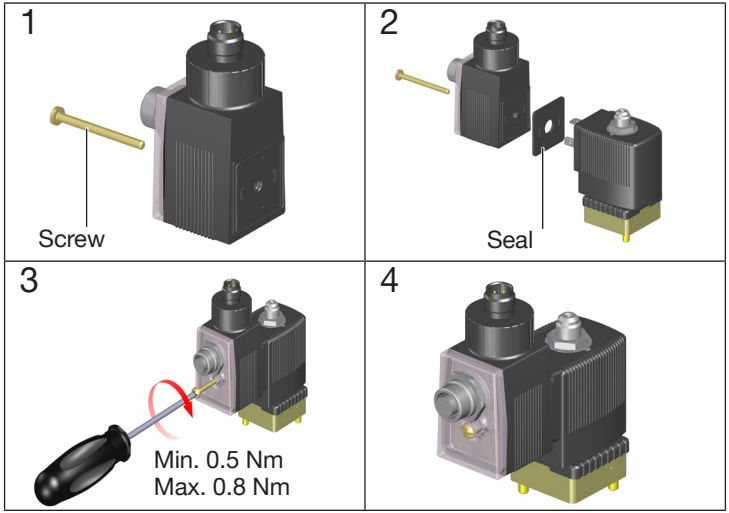


Figure 4: Installing the cable plug

→ Fit the seal and insert the screw through the opening. Make sure seals are properly seated.

→ Place coil on seal and screw together. Observe the tightening torque specification.

8 MAINTENANCE, TROUBLESHOOTING

WARNING!

Risk of injury due to improper maintenance work.

- Only trained technicians may perform maintenance work.
- Secure the system against unintentional activation.
- Ensure a controlled restart after maintenance is completed.

8.1 Maintenance work

When operated according to the instructions given in this manual, the appliance inlet functions without maintenance.

8.2 Faults

In case of malfunctions check the following:

→ Power supply

→ Check that the seal is properly seated (see “Table 2: Seal seat”)

→ Connections (see “Table 3: Ports”)

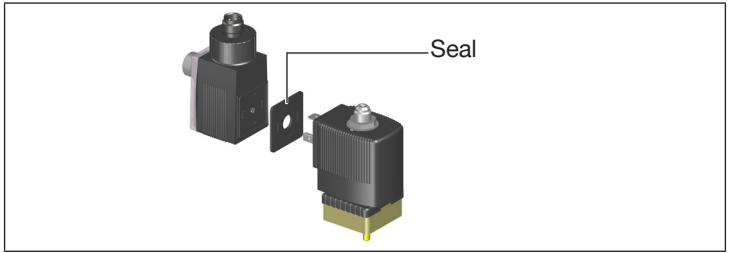


Table 2: Seal seat

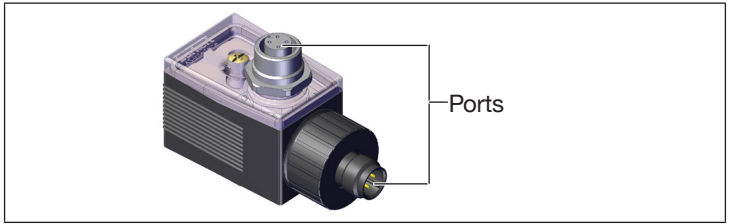


Table 3: Ports

9 DISASSEMBLY

DANGER!

Risk of injury from electric shock.

- Switch off the power supply before working on the device or system. Secure it against reactivation.
- Observe any applicable accident prevention and safety regulations for electrical devices.

WARNING!

Risk of injury due to improper disassembly.

- Only trained technicians may carry out disassembly work.

10 TRANSPORTATION, STORAGE, DISPOSAL

WARNING!

Risk of injury due to improper maintenance work.

- Only trained technicians may perform maintenance work.
- Secure the system against unintentional activation.
- Ensure a controlled restart after maintenance is completed.

NOTE!

Damage in transit due to inadequately protected devices.

- Protect the device against moisture and dirt in shock-resistant packaging during transportation.
- Observe permitted storage temperature.

Incorrect storage may damage the device.

- Store the device in a dry and dust-free location.

Permitted storage temperature: –20…+70 °C.

Damage to the environment caused by device parts that are contaminated with media.

- Dispose of the device and packaging in an environmentally-friendly manner.
- Observe applicable disposal and environmental regulations.

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Manuals and data sheets on the Internet: www.burkert.com
Bedienungsanleitungen und Datenblätter im Internet: www.buerkert.de
Manuels d'utilisation et fiches techniques sur Internet : www.burkert.fr

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