

# Original-Betriebsanleitung Endschalterboxen



EUROTEC  
Antriebszubehör GmbH

## EN: Translation of the original manual for standard limit switch boxes

To secure the function and for your own safety, please read this manual attentively before you start the installation. Should there be any open questions, please contact:

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### 1 Description

Limit switch boxes serve as position feedback and control unit of valves that are operated by pneumatic part turn actuators.

Depending on the execution, the limit switch boxes of the types EP, EA, EBP and EBA contain 1 to 4 proximity or micro switches. The shaft of the limit switch box is connected form-fit to the shaft of the actuator and will turn when you actuate the actuator. The cams which are mounted on the shaft of the limit switch box will then actuate the switches which are responsible for the transmission of the electrical signal.

### 2 Labeling and intended use

The standard limit switch boxes from EUROTEC Antriebszubehör GmbH are suitable for use in normal areas without the presence of an explosive atmosphere. The allowed ambient temperature lies between -20°C and +80°C. By the use of adequate material we can reach a minimum temperature of down to -40°C. We mount different switch types into the switch box housings made of aluminum, polyamide or polycarbonate.

The marking on the housing is shown in figure 1. It changes with the integrated switch type.



Fig. 1

You will find the following information on the label: Article code, name and full address of manufacturer, company logo, CE-Logo, year of manufacture, and information about the housing and the integrated switch type.



**Do not use the housings as ladder to climb in the facility. By doing so, the housings could be damaged and affected in their function. Damaged housings are no longer protected against dirt and water. This can cause a short circuit.**

### 3 Safe initiation

To avoid failure, the equipment may only be installed, connected and initiated by skilled persons.



**Any liability of our legal person expires in case of non-compliance with the safety instructions in this manual, as well as in case of incorrect use and operation of the equipment. Furthermore, the warranty on the equipment and the associated spare parts expires!**

It is very important to read the following safety instructions before the final initiation:

- ☞ Verify if the classification on the label is appropriate to your application.
- ☞ Please consider the respective national regulations and legal requirements, as well as the requirements of the manufacturer and the generally accepted rules of technology.
- ☞ Please take appropriate measures to avoid accidental activation and improper external influence.
- ☞ Do not remove possibly existing cable entry devices until inserting the cables to ensure that any dirt remains outside the limit switch box.
- ☞ Ensure an adequate strain-relief for the supply cable or a static installation.
- ☞ Protect the equipment and cables effectively from any damage.
- ☞ Avoid static charging of plastic parts and cables. Thereto clean the equipment only with an antistatic or wet cloth.
- ☞ Connect all conductive metal parts, including accessories, to the potential equalisation.
- ☞ The equipment may only be operated in completely assembled status.
- ☞ Never disconnect energised cables or systems.

### 4 Assembly

The modules can be mounted quick and easy on the actuator or valve with the enclosed mounting kit according to VDI/VDE 3845.

- 1) Bring the actuator in the end position in which the flute of the actuator shaft is in parallel to the actuator housing.
- 2) Now attach the switch box with the suitable mounting bracket to the actuator.
- 3) The mounting bracket can now be fastened on the actuator with the 4 screws that are included in the delivery.
- 4) Release the 4 cover screws and open the switch box. Do not unscrew them too far so that the screws do remain plugged inside of the cover.

- 5) Lead the system cable through the cable gland into the switch box housing and connect the individual leads to the terminal block. Consider thereto the wiring diagram on the according data sheet or on the switch box cover and connect the housing to the potential equalization.
- 6) Close the switch box with the cover. Take care that the sealing of the cover is in proper position and tighten the screws firmly.

### 5 Disassembly

Consider the safety instructions in Chapter 3.

- 1) Disconnect the housing from the power supply.
- 2) Release the 4 cover screws and open the switch box. Do not unscrew them too far so that the screws do remain plugged inside of the cover.
- 3) Disconnect the cable of the facility from the terminal block of the switch box.
- 4) Release the 4 screws that hold the mounting bracket on the actuator and remove the switch box from the actuator.

### 6 Setting of cams

The cams are always preset on a swivel range of 0 - 90° by EUROTEC Antriebszubehör GmbH. If you need another swivel range, please execute the following steps:

#### Rectangular V3 switches:



Fig. 2



Fig. 3

- 1) Remove the visual indication. (Fig. 2)
- 2) Bring the actuator in the desired end position 1. Adjust the lower cam first. Press the cam down and turn it into the position in which it actuates the switch. Now let the cam engage again with the toothing. (Fig. 3)
- 3) Bring the actuator in the desired end position 2. Press the upper cam down and turn it into the position in which it actuates the switch. Now let the cam engage again with the toothing.
- 4) Finally verify your presetting through repeated switching.
- 5) Mount the visual indication to the shaft of the limit switch box.

### Cylindrical limit switches and Slot type sensors:

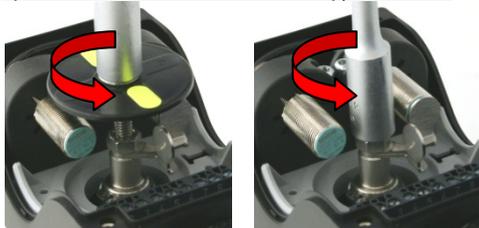


Fig. 4

Fig. 5



Fig. 6

Fig. 7



Fig. 8

Fig. 9

- 1) Remove the visual indication. (Fig. 4)
- 2) Release the M6 screw nut and remove the upper cam. (Fig.5)
- 3) Now unfasten the thread, bring the actuator in the desired end position 1, and adjust the lower cam. Then tighten the thread again firmly. (Fig. 6)
- 4) Bring the actuator in the desired end position 2, adjust the upper cam and tighten it again by means of the screw nut. (Fig.7)
- 5) Finally verify your presetting through repeated switching.
- 6) Mount the visual indication to the shaft of the limit switch box. Take care that the indication is in line with the upper end of the thread. This will avoid that the indication touches upon the fixture or the cover. (Fig. 8+9)



**Danger of injury!** During the switching process of the actuator you might squeeze body parts between switch and cam. Stay far enough away from the source of danger when switching the actuator!

**Attention, the switch can be damaged by the cams in the event of a wrong presetting. Take care that the cam does not hit the switch when switching the actuator.**

### 7 Connection of solenoid coils

Depending on the execution, the limit switch boxes of EUROTEC provide the possibility to connect one or two solenoid coils. The suitable switch boxes for one coil are marked with an additional '-MA' in their article code. This version has a 380mm long cable that is connected to the terminal block inside of the housing and lead outside the housing through a cable gland. The leads of the cable now only have to be connected to the solenoid coil. Please consider the instruction manual of the coil manufacturer and the wiring diagram on the cover or on the according technical data sheet. The same applies to the connection of two solenoid coils.

This version is marked with an additional '-2MA' in the article code and provides two cables with 380mm each.



Fig. 10: -MA

Fig. 11: -2MA

### 8 Maintenance

With the long-term outdoor use of the switch boxes and with extremely high or low ambient temperatures, the sealings inside of the cover and on the shaft can become porose. A safe use can only be guaranteed with a leak-proof housing. Sealings need to be replaced as soon as they are worn out, but no later than after 5 years. The necessary sealings can be ordered from EUROTEC.

### 9 Interferences

In the event of interferences, please check the cables, cable connections, and the position of the cams. Furthermore, check the switch box for condensation water inside the housing and check the proper function of the valve and the actuator. Repair occurring failures. In the event that the interference is still valid, disconnect the limit switch box from the power supply and contact authorised and skilled employees of the manufacturer.

### 10 Area of application

This manual is applicable for limit switch boxes of for standard applications from EUROTEC Antriebszubehör GmbH. The following products are considered:

EP...M-... | EP...I-... | EP...S-... | EP...D-... |  
EA...M-... | EA...I-... | EA...S-... | EA...D-... |  
EBPS...M-... | EBPS...I-... | EBPS...S-... |  
EBPS...D-... | EBPL...M-... | EBPL...I-... |  
EBPL...S-... | EBPL...D-... | EBAS...M-... |  
EBAS...I-... | EBAS...S-... | EBAS...D-... |  
EBAL...M-... | EBAL...I-... | EBAL...S-... |  
EBAL...D-