

Smoke Control Damper Round DKI1-R and Rectangular DKI1-S



CE
1396 - CPD - 0058

INSTALLATION, OPERATION AND MAINTENANCE MANUAL

EACH SMOKE DAMPER HAS TO BE INSTALLED ACCORDING TO THIS MANUAL!

EN - Original Installation, Operation and Maintenance manual

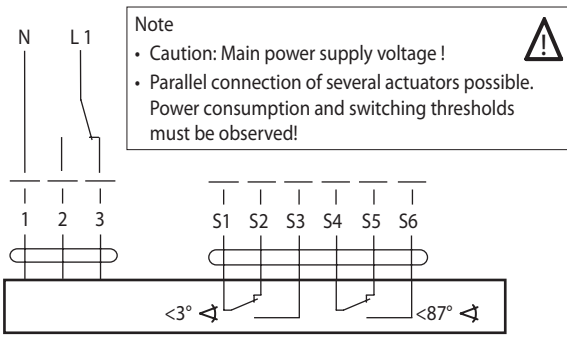


Fig. 1: Connection of the servo BELIMO BLE 230

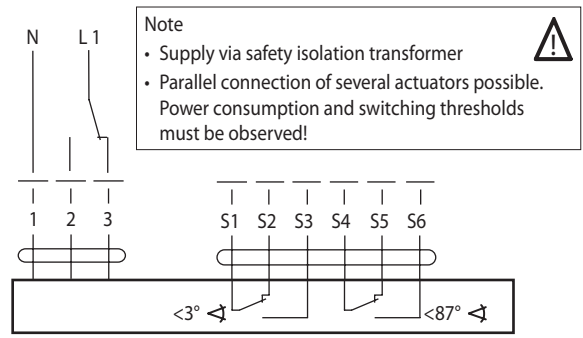


Fig. 2: Connection of the servo BELIMO BE 230-12

Application with the SBSE-Control damper control and monitoring system

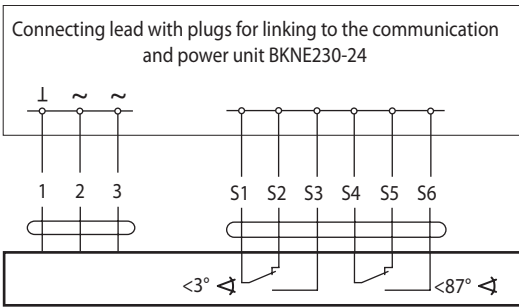


Fig. 3: Connection of the servo BELIMO BLE 24

Application with the SBSE-Control damper control and monitoring system

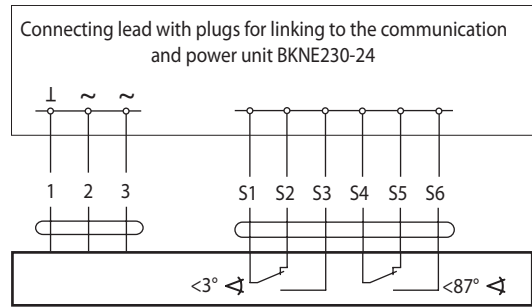
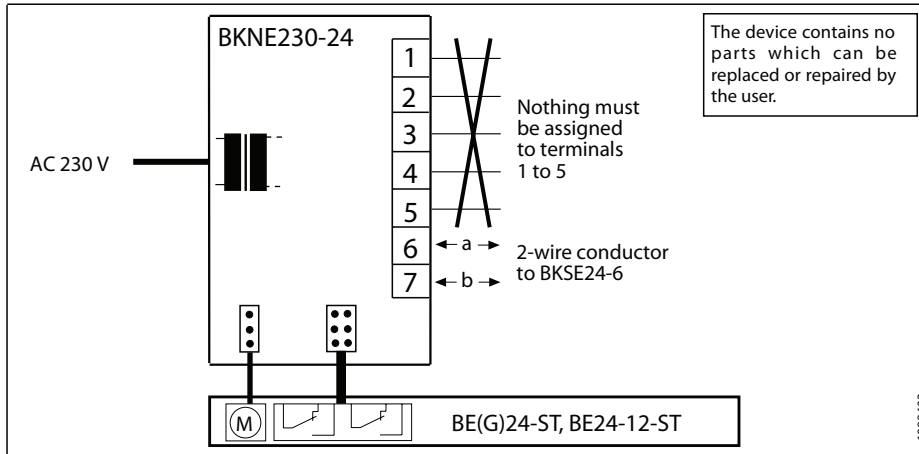


Fig. 4: Connection of the servo BELIMO BE 24-12-ST



Displays

LED	Status	Function
yellow	flashing light	damper moving to OPEN
yellow	steady light	damper open
green	flashing light	damper moving to CLOSED
green	steady light	damper closed
yellow or green	flashing at double frequency	fault
yellow + green	dark	power failure

Fig.5: Connection and display of the supply and communication unit BKNE230-24

Introduction

Instructions for installation, operation and control refers to the smoke dampers (hereafter dampers) circular DKI1- R and rectangular DKI1 - S, the products of IMOS-Systemair. It contains basic information and recommendations regarding the installation, use and inspections that need to be followed to ensure proper and smooth operation of the dampers. The key is to carefully read this manual and use of the dampers according to the instructions and compliance with safety requirements.

Attention

Some of the dampers may have sharp edges – it is necessary to use gloves when handling and installing the damper. To avoid electric shock, fire or other damage that could occur due to incorrect use and operation of the dampers, it is important to:

- install damper according to installation instructions.
- check the damper according to the instructions for maintenance and inspection.

Operating conditions

Smoke dampers are part of the Smoke and Heat Exhaust Ventilation System (SHEVS). Functionality of the smoke damper is following. In case of fire damper:

- opens and removes the heat and smoke through a special fan from the fire compartment affected by fire or
- closes and prevents the spread of smoke and heat in the fire compartment unaffected by fire.

All smoke dampers have electric actuator as standard. They are designed to be installed in the SHEVS ducts in locations that are protected from weather.

IMOS-Systemair fire dampers are passive in terms of noise. There is increased noise only when closing or opening the damper in case of inspection or fire (and it takes less than 60 seconds).

1 Installation

The installation must be done as follows:

- duct connected to the damper must be supported or suspended so that the damper do not bear its weight. The damper must not bear any part of the supporting construction. This could lead to damage and subsequent failure of the damper.
- Servo can be on either side of the supporting construction, but it must be placed so that it is easy to access for inspection and repairs.
- Distance between dampers and building structures, distribution technology and ventilation equipment must be large enough for reliable performance of the installation, functional testing, inspection and repair.
- The distance between the dampers must be at least 200 mm according to EN 1366-10.
- The distance between dampers and the wall or ceiling must be at least 200 mm according to EN 1366-10.
- The gap between the damper and the selfstanding grill (when installed) must be at least 200 mm according to EN 1366-10. Otherwise the damper must be tested together with the grill.

During installation, it is necessary to protect the damper mechanism and its interior against dirt. The blade must be in the closed position. It is necessary to avoid deformation of the damper. Installation and setup of the dampers is always determined by SHEVS project plans that must comply with the applicable regulations.

After damper installing into the SHEVS duct it is necessary to connect electrical installation that must be done only by authorized persons – connection has to be done according to Fig. 1 – 5. The servos have two microswitches indicating the open and closed positions of the blade - see Fig. 1 – 4.

Setup, install, repair, overhaul and inspections of the dampers must be done only by the manufacturer or by the personnel trained by the manufacturer.

Before putting dampers into service after installation (and in subsequent periodic inspections) visual inspection and functional test must be conducted. After the visual inspection and functional test a record must be made into operational diary.

2 Operating and Maintenance

2.1 The damper operation

After installation, the damper must be set up into the operating position - closed. By connecting a power source to activate the motor the blade shall move. Respective switching power supply achieves entry into the operating position - closed.

2.2 Maintenance

IMOS-Systemair dampers are maintenance free.

3 Check of the functionality

Switching the wires according to Figure 1 - 5 damper switch to the „open“:

- The blade must come to the end position parallel to the longitudinal axis of the damper casing and must remain there detented.
- After reaching the end position of the blade the appropriate signaling circuit must switch on.

Switching the wires according to Figure 1 – 5 switch damper to the „closed“:

- The blade must come up to the fully closed position and remain there detented.
- After reaching the end position of the blade the appropriate signaling circuit must switch on.

Now the damper is in standby mode, so it must rest for normal operation.

4 Inspection of the damper

Each damper should be inspected after installation and every 12 months using following steps:

1. Identification of damper
2. Date of inspection
3. Check of the electrical connection of the activation mechanism
4. Check of the the electrical connection of the end switches
5. Check of the damper for cleanliness and eventually treatment (where necessary)
6. Removing of the cover of the inspection lid.
7. Check of the inspection lid, cover tightness and eventually correction and record (where applicable)
8. Check of the blade and sealings, and eventually correction and record (where applicable)
9. Check of the safety damper closure - details see Chap. 3
10. Check of the damper functionality - details see Chap. 3 - opening and closing by the control system, tracking the physical behavior of the dampers and signalization of the end positions, and eventually correction and record (where applicable)
11. Closing of the cover of the inspection lid.
12. Set up into the operating position - see Chap. 2.1
13. Record into operational diary (page 6) with name and signature of the checker.

The damper is part of the SHEVS. Therefore the system must be checked as specified in its operational and maintenance requirements.

5 Warranty conditions:


1. IMOS-Systemair s.r.o. provides warranty for all its PKI fire dampers. The warranty period is 24 months, starting on the date of product shipment, by an exceptional agreement this period can be up to 30 months, starting on the date of shipment.
2. The product is tested in the production factory before the shipment. The producer guarantees that the product features shall be in accordance with the related technical standards during the whole warranty period, assuming that the customer uses it in a way that complies with the Operation manual. If, in spite of this, any unpredictable production defects occur, the producer shall secure their removal without charge.
3. The customer may apply for the warranty service only in written form including serial number of the claimed damper.
4. The warranty does not apply to defects caused by unprofessional handling, incorrect mounting, mechanical damage or not following the instructions stated in the Operation manual.
5. The warranty period shall be prolonged for the same period of time which has elapsed between the date when the customer lodged the claim for warranty service and the date when the repair was carried out.
6. The repair shall be carried out at the customer's premises and the producer shall bear all the costs which are necessarily needed for the repair.
7. If no warranty-applicable defects are found, the costs for sending a service technician or expert shall be borne by the customer who submitted a claim for repair.

It is necessary to transport the dampers in boxes, by such means of transport that provide a cover, according to the local regulations. When handling during transportation and storage, the dampers must be protected against damage and weather conditions. The damper blades must be in the "CLOSED" position. It is recommended to store these products in an enclosed, dry area where the temperature falls within the range of -10°C to +50°C.

OPERATING DIARY

Putting the smoke damper into operation		
Date	Found faults and defects	Signature of the inspector

Periodical controls		
Date	Found faults and defects	Signature of the inspector

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IMOS-Systemair 90043 Kalinkovo 146, Slovakia 1396 - CPD - 0058
EN 12101-8 Smoke damper: round DKI1-R DN, rectangular DKI1-S LxH E ₆₀₀ 120(V _{ed} i↔o)S500C ₁₀₀₀₀ AA single
Operational reliability: - cycling 10 200 cycles - passed
Fire resistance: E ₆₀₀ 120(V _{ed} i↔o)S500C ₁₀₀₀₀ AA single - mainten. of t. cross section (under E) - integrity E 600°C - smoke leakage S 500 Pa - mechanical stability (under E) - cross section (under E)
Durability of operational reliability: open and closing cycle Pass

Smoke damper identification	
Construction site	
Placement	
Room No.	
ID No.	
Label	
Signalization	

Warranty service

Date of claim submission	Date of the repair	Description of the repair	Service officer (signature & stamp)