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OPERATION AND MAINTENANCE MANUAL

NYBORG CIRCULAR FIRE DAMPER

TYPE BSS 500-1400 R-LD

Version A-30



CONTENT

1. INTRODUCTION	3
2. SUBJECT OF DOCUMENTATION	3
3. INTENDED USE	3
4. CONSTRUCTION AND OPERATION	3
5. MARKING	5
6. TRANSPORTATION AND STORAGE	6
7. PERIODICAL INSPECTIONS AND MAINTENANCE	6
8. TERMS OF WARRANTY	6
9. TECHNICAL DATA	7
10. DECLARATION OF CONFORMITY WE.....	9
11. GENERAL ARRANGEMENT DRAWING.....	10
12. DRAWING OF LIFTING.....	11



1. INTRODUCTION

The present Operation and Maintenance Manual is intended for future owner and user of circular fire damper BSS R-LD with pneumatic operation. Instruction include information concerning application, construction and secure: transport, transmission to operation, operation and service. Each worker perform these actions or add additional equipment to fire damper have to know content of this O&M.

Observance the instructions below provide correct functioning of device in range of fire protection and safety of system users.

2. SUBJECT OF DOCUMENTATION

The subject of this operation and maintenance manual are circular fire dampers BSS R-LD type. They are used in ventilation and air conditioning ducts. The fire dampers are intended to installation on A-0, A-15, A-30 walls. The circular fire dampers BSS R-LD type made by Nyborg-Mawent S.A. have been tested according to FTP code and obtained MED certificate no 1463 given by Polish Register of Shipping.

Standard execution is flanged type drilled acc. to ISO 15138. Other types of drilling are acceptable.

3. INTENDED USE

Circular fire dampers BSS R-LD type with thermal release are intended to installation in ventilation and air conditioning ducts. The main intend is installation in places where duct is crossing the fire bulkhead or deck. During fire damper protect the fire resistance of bulkhead and deck, which is perforated by ventilation duct. During normal work the fire damper is in open position. When outbreak of fire damper is closed. The Nyborg Circular Fire Damper have been tested acc. to International Code for Application of Fire Test Procedures (FTP Code IMO Resolution MSC. 61(67)) and achieved MED certificate. Fire dampers in standard execution are made acc. to sizes included in ISO 15138 (standard Norsok).

Versions

- Pneumatic, release temperature 72°C, with terminal box mounted on deck
- Pneumatic, release temperature 72°C, with terminal box mounted on bulkhead

4. CONSTRUCTION AND OPERATION

Structure and Dimension

The casing of fire damper BSS R-LD is circular and made of hot dip galvanized black. The blade and shaft inside are made of stainless steel. The release mechanism is based on thermal sensor. Fire damper could be closed by thermal release indicator or manually by disconnect the power. Nyborg Circular Fire Dampers are produced in diameters from Ø500 to Ø1400. The length of dampers is equal to diameters acc. to ISO 15138. Dampers are produced in flanged execution. For special order possible to produce other diameter between Ø500 and Ø1400.

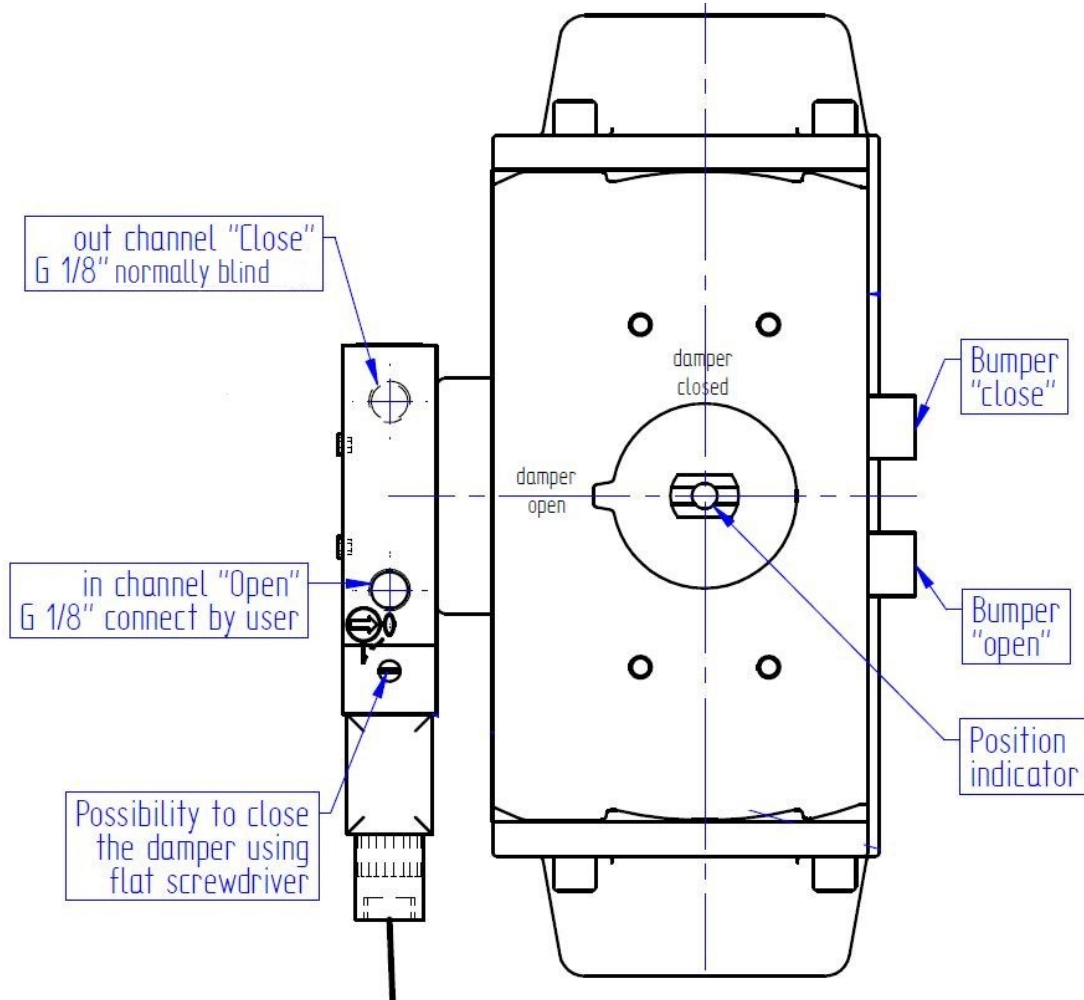
Operation

During normal work the fire dampers are in open position. Change to safe position (close) is provide by automatic work of thermoelectric tripping device. Fire dampers are closing because cut of power supply. Closing damper is provided by spring inside the actuator. Thermoelectric release would work when temperature inside or outside the damper exceeds the set (72°C). Fire damper is out of used and destroyed after melt of thermal fuse. Fire damper could be used in horizontal and vertical position.

Try to close or open the damper by push the damper blade is not permitted. That action could destroy the mechanism of actuator. It is not covered under warranty.

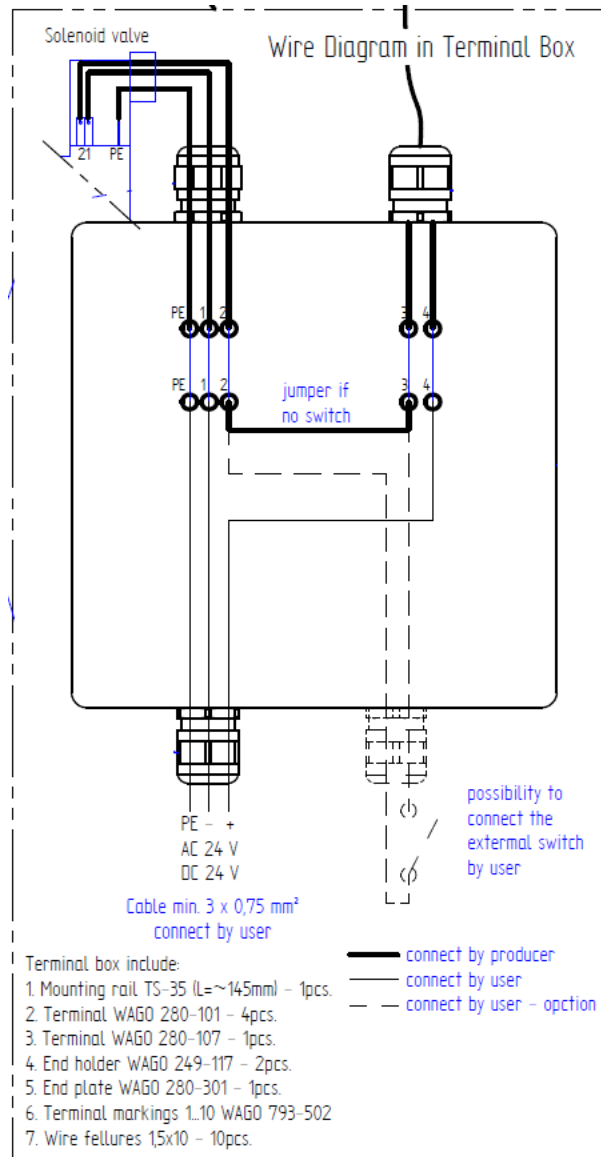
Drive and release systems

- Release system executed by axial spring-return actuator PA15S series for air pressure from 5 to 8 bar, controlled by power 24 V AC/DC, equipped with thermoelectric device 72°C. Indicator in axis of actuator - blade closed (safe position). Indicator across the actuator – blade open (normal work).



Technical data	PA15S
Nominal pressure	6 bar
Operating range	5÷8 bar
Rated voltage	24 V AC, 50/60Hz / 24 V DC
Temperature of normal work	-32°C ÷ +90°C
Torque of motor (6bar)	71/116.5 Nm
Torque of spring (initial÷final)	45.6÷30.8 / 71.5÷49 Nm
Torque of opening the damper blade	40.2÷25.4 / 67.5÷45 Nm
Torque of closing the damper blade	45.6÷30.8 / 71,5÷49 Nm
Angle of rotation	90°
Time of 90° turn, closing the damper	1 s
Time of 90° turn, opening the damper	1 s
Service	See point 7

Diagram of connecting the cables inside the terminal box.



5. MARKING

Example: **BSS 500 R-LD / V / A-30**

Standard series of sizes (diameter is equal to length, mm): 500, 560, 630, 710, 800, 900, 1000, 1120, 1250, 1400

Class of fire protected bulkhead acc. to FTP Code: A-0 or A-15 or A-30

Mounting position: H- horizontal (for deck) V- vertical (for bulkhead)



6. TRANSPORTATION AND STORAGE

The Circular fire Dampers are supplied on the pallets. The dampers should be checked for any damage which may have occurred during transit. They are protected by foil or other protecting material. Transport could be executed by any vehicle, in condition that is protected for weather conditions. Fire dampers during transport on vehicles should be protect from movement. Lifting the Fire Dampers is permitted only by special lifting lugs welded to the casing (horizontally or vertically). Don not lift by cables or any part of release mechanism or put the Fire Damper on release mechanism. Do not hit or drop the product. During transport and installation watch the damper blade.

Fire Dampers have to be stored in closed rooms, user should provide protection from weather conditions. If Fire Damper are stored on the ground, necessary to put them on protection sleepers in order to protect from damage or distortion.

7. PERIODICAL INSPECTIONS AND MAINTENANCE

Pneumatic release fire dampers

In order to keep in good condition necessary to close once per 1 month, by cut the power supply. Over it necessary to check cleanliness and pressure of air installation once per 12 months.

Necessary to fill up and keep the appropriate form of controls above. If fire damper do not close or closing is longer than 90 s. please contact with supplier.

8. TERMS OF WARRANTY

Producer undertake to assurance the warranty according to law regarding to Fire Dampers, which was correctly: transported, transmitted to operation, operated and maintenance acc. to instruction in point 7. Producer do not take responsibility for effect of wrong installation, using or maintenance.

Producer is release from warranty and other liabilities when:

- a) product have mechanical damaged,
- b) product have damaged because of supplied by wrong voltage,
- c) product have defects because of wrong storage,
- d) owner/user performed unauthorised change of construction,
- e) installation of product has been made wrongly or not in intended use,
- f) tag plate has been removed,
- g) periodical inspections have not been performed or in wrong terms,
- h) damper blade was closed because of exceed the release temperature.

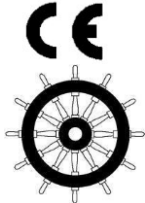


9. TECHNICAL DATA

HVAC EQUIPMENT FIRE AND GAS DAMPERS DATA SHEET		Rev. 1, July 2014	
Package No.	Doc. No.	Rev. 1	Page 1 of 2
Made by. A.Swieca	Date: 2014-04-21	Checked by:	Date:
Tag No.	TBA	Location/Module	Ref. Schedule
Unit		No. req'd	
HVAC System No.		Inquiry No.	
Size & Type	Ref. Schedule	Quote No.	
Supplier	NYBORG	P.O. No.	
Manufacturer	NYBORG-MAWENT	Job No.	
Model	BSS R-LD	Serial No.	Ref. Schedule
1 Technical Data			
2 Certificate no.			
3 Certifying Authority	Polish Register of Shipping		
4			
5 Actuation (Fail safe)		Pneumatic: <input type="checkbox"/>	Electric: <input type="checkbox"/> Manual: <input type="checkbox"/>
6 Actuator	Manufacturer:	Prisma / Belimo	
7	Ref. Data Sheet No:		
8 Fusible Link/Bulb	Type	Belimo BAE72-S	
9 Release Temperature	°C	72°C	
10 Instrument Air Pressure Max/Min.	barg	8/5	
11 Power Supply	v/Hz/Ph	24V AC/DC; 50/60 Hz; 3-phase	
12 Quick Release Valve	Make/Type	-	
13 Pneumatic fittings	Type	-	
14 Cable Glands	mm	Lapp Kabel MS-M 16x1,5 / 25x1,5	
15 Solenoid valve	Type	ASCO SCG551A001MS	
16	Ref. Data Sheet No:		
17 Limit switch	Note 2	Type	option
18	Ref. Data Sheet No:		
19 Non-return valve	Make/Type		
20 Junction box	Make/Type	Abtech BPG 8, GRP	
21 Open/closed indicator		Yes	
22 Protection cover on linkage/levers		No	
23 Manual opening/locking arm		Yes:	No: X
24 Flange standard		ISO 15138	
25 Closing time (v=20 m/s, p=2000Pa)		Pneumatic 1 sec.	
26			
27			
28			
29 Materials			
30 Casing Material		S235 HDG	
31 Casing Thickness	mm		
32 Blade Material		AISI 316L	
33 Blade Thickness	mm		
34 Shaft Material		AISI 316L	
35 Shaft Thickness	mm	25 mm	
36			
37			
38 Bearing Type/material		Slide Bearing / MO58	
39 Insulation Material	Note 3		
40			
41 Notes:			
42	Note 1: BSS RL-D is a circular fire damper A30		
43	Note 2: Included in pneumatic actuator		
44			
45			



10. DECLARATION OF CONFORMITY WE.



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DECLARATION OF CONFORMITY WE

Owner of certificate:
Nyborg AS
N6230 Sykkylven
Norway

Name of manufacturer:
Nyborg-Mawent S.A.
Ciepła 6
82-200 Malbork

Herewith we declare, that Circular Fire Damper:

Type: **BSS 500-1400 R-LD**

Drawing no.: **R5-230.00.00**

Marked as:

TAG no. :

A-30

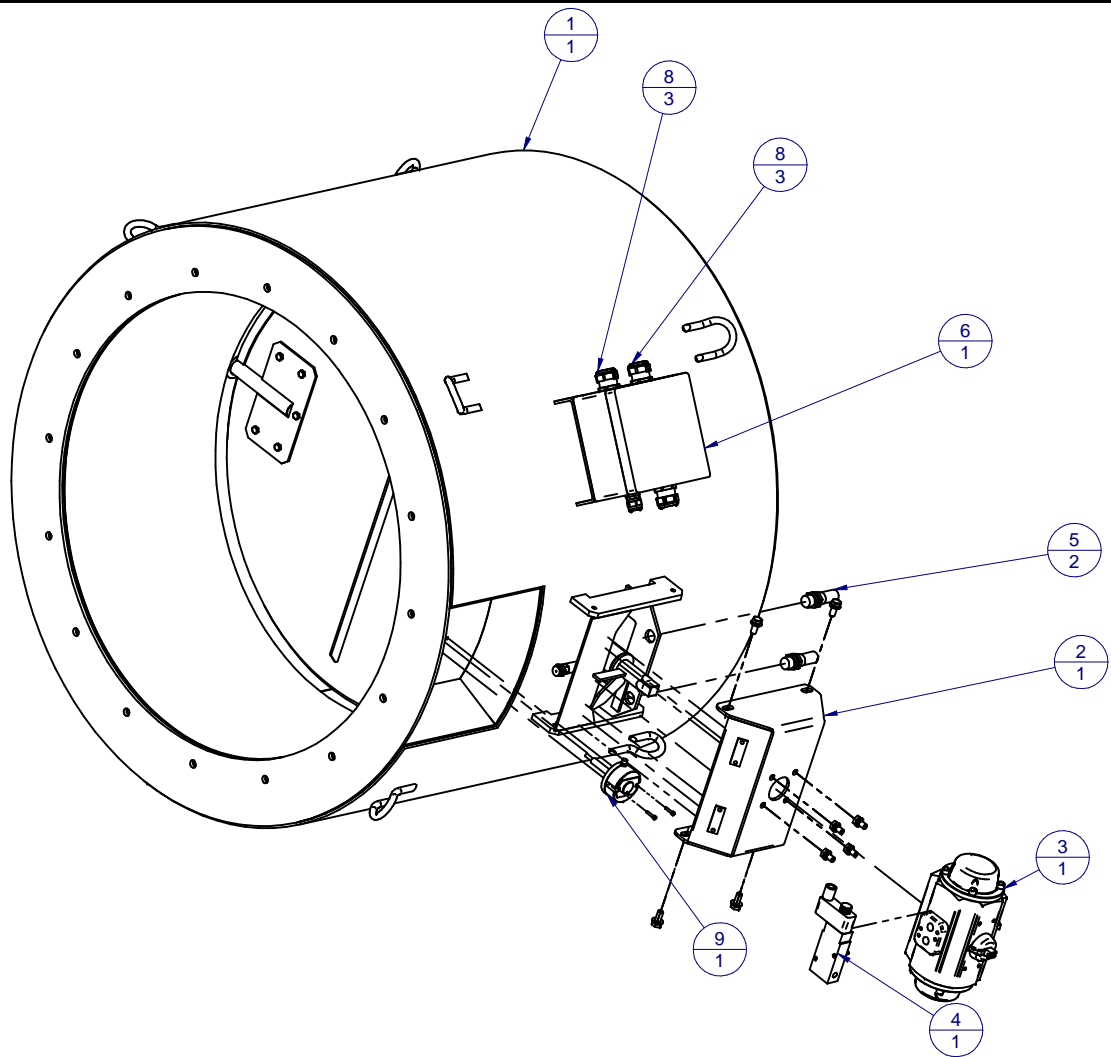
to which this declaration relates has MED certificate no. 1463 and is in conformity with the following standards:

- 1) Directive:
MED: 96/98/WE
modify MED: 2012/32/UE
- 2) IMO Resolution:
MSC. 61(67) – Adoption of the International Code for Application of Fire Test Procedures
- 3) Harmonized standards:
ISO 15138
- 4) General factory instruction of Nyborg-Mawent S.A.:
WTWiO 5306-3 from date 16.12.2004

This declaration lose its validity when product used not in accordance with intended use, when recommendations included in this manual are broken.


Malbork date:.....2015

.....
Name of authorized person



REVISION HISTORY			
REV. NO.	DESCRIPTION	DATE	APPROVED

9	Thermoelectric tripping device	BAE72B-S 72°C	Belimo		1	0,1 kg	
8	Cable gland MS-M	M25x1,5	Lapp Kabel	n. plated brass	3	0,1 kg	φ 9 - 17
7	Cable gland MS-M	M16x1,5	Lapp Kabel	n. plated brass	2	0,1 kg	
6	Terminal box	BPG 8	Abtech	GRP	1	0,8 kg	
5	Limit sensor	Bulletin 871TM, shielded, M18x1	Allen-Bradley	316L	2	0,2 kg	
4	Valve Namur 3/2 - SC G551	SCG551A001MS 24V AC or DC	ASCO	Aluminum	1	0,3 kg	connect. G1/4", 2÷10bar
3	Pneumatic actuator	PA15S	Prisma	Aluminum	1	3,5 kg	
2	Actuator bracket		R5-230.03.00	Steel	1	1,7 kg	
1	Casing		R5-231.01.00	Steel	1	114,1 kg	
Pos.	Item name	Title	Dwg. or norm number	Material	Qty	Mass [kg]	Note No.

This drawing is the property of NMDO and is not to be reproduced nor used in any manner detrimental to our interests. All rights are reserved.			Fire damper BSS 500÷1400 R-LD-SK / Cl. A-30		Format A3
Designed	A. Świeca	Item name	BSS 500÷1400 R-LD-SK for bulkhead		Mass 163 kg
Checked					Scale 1:8
Approved	T. Fabiański				
 DESIGN OFFICE NYBORG GROUP			Dwg. number R5-231.00.00	Rev.	Sheet 1/1