Gas Damper



662R23 (-20 ... +60 °C / -4 ... +140 °F)



Sensors and Systems for Combustion Engineering

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1 Important Information about this Document

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1.1 Validity of these Instructions

These instructions apply to LAMTEC gas damper 662R23 This equipment is to be used only in accordance with these basic documentation:

- Electrical LAMTEC actuator (DLT7210)
- Electrical actuator for CMS (DLT210...)
- BurnerTronic BT300 (DLT1201)

1.2 Target Group

These instructions must be read carefully and completely before commencing with any work. The basic prerequisite for working safely is compliance with all the specified safety instructions.

NOTICE

- All assembly, commissioning, troubleshooting and maintenance work may only be carried out by authorised and trained personnel.
- The device may be operated and maintained only by those who are capable of doing so in terms of their level of knowledge and training.
- ► For safety reasons, access to parameter settings must be restricted to authorised and trained personnel.

1.3 Safekeeping of the Manual

Store the manual and all related documents in a safe place.

The manual is part of the product and must be kept safe and be accessible to personnel at all times.

In addition, it is important that the manual:

- Is available when required.
- Is kept for the entire service life of the device.
- is available to the subsequent operator.

1.4 Standards, Directives and Approvals

Approval:

EU Type Examination Certificate according to EU Regulation 2016/426 (regulation on appliances burning gaseous fuels)

2 General Safety Instructions

2 General Safety Instructions

2.1 Classification of the Safety Instructions and Warnings

The following symbols are used in this document to draw the user's attention to important safety information. They are located at points where the information is required. It is essential that the safety information is observed and followed, and that applies particularly to the warnings.

DANGER!

This draws the user's attention to imminent danger. If it is not avoided, it will result in death or very serious injury. The plant including its surroundings could be damaged.

WARNING!

This draws the user's attention to the possibility of imminent danger. If it is not avoided, it may result in death or very serious injury. The plant including its surroundings could be damaged.

This draws the user's attention to the possibility of imminent danger. If it is not avoided, it may result in minor injuries. The plant including its surroundings could be damaged.

NOTICE

This draws the user's attention to important additional information about the system or system components and offers further tips.

The safety information described above is incorporated into the instructions.

Thus, the operator is requested to:

- 1 Comply with the accident prevention regulations whenever work is being carried out.
- 2 Do everything possible within his control to prevent personal injury and damage to property.

2.2 Product Safety

In order to maintain the perfect safety-related condition, it is imperative that the fitter/user strictly adhere to the manufacturer information from this documentation and have the appropriate professional qualification.

NOTICE

The gas damper must only be used for the purpose corresponding to their design.

NOTICE

The gas damper must only be operated with an adjusting mechanism intended for this purpose (actuator, hand lever, etc.).

NOTICE

Likewise, the gas damper must only be operated in accordance with the values specified in the technical data.

NOTICE

The gas damper must not be mounted, commissioned or adjusted on defective supply lines or flanged system parts. This same applies for damaged actuators.

- Use caution when touching the surfaces. Risk of combustion and freezing.
- Depending on the permissible medium temperature, the surfaces of the gas damper can become hot or very cold.
- The operator must ensure the necessary protection against contact.

2.3 Product-specific Dangers

The mounting, maintenance and commissioning of the gas damper may only be carried out by qualified specialists.

- Before mounting or maintenance work on the gas damper, all affected devices/machines/ plants must be switched off!
- The gas supply must be disconnected.

Before switching off devices/machines/plants, you must check to make sure that the switchoff process cannot have any hazardous moments.



Ensure that no danger to people, the environment and devices/machines/plants can arise from mounting or maintenance work.



• Repairs to the gas damper may only be carried out by the manufacturer.

2.4 Safety Instructions for Mounting and Maintenance

NOTICE

When performing mounting or maintenance work on the gas damper, the applicable safety and accident prevention regulations of the employers' liability insurance association must be observed!

NOTICE

Before mounting an actuator, check the gas damper for ease of movement

NOTICE

Before mounting/maintenance, make sure that the safety devices are working correctly.

WARNING!

After completing mounting work, check whether the settings on the drive corresponded to the mechanical position of the gas damper. This applies in particular to the end positions.

NOTICE

Permissible settings for the gas damper must be carried out in accordance with the operating instructions for the gas-consuming device.

WARNING!

 After completion of any work on the gas damper, leak and function monitoring must be carried out.

3.1 Important Information about the Product

The gas damper is used to adjust the volume of gas supplied to gas-consuming devices. For higher control accuracy, the gas damper can be used with reduced nominal diameter (reduced by one or two nominal diameters). This means that reducers are not needed.

The desired volumetric flow is set via the damper position with an opening angle between 0° and 90° .

The gas damper has a smooth-running damper disc without limit stop. The damper disc is also optionally available with a sealing system without limit stop for reducing the minimum volumetric flow when the damper is closed.



The gas damper is not intended for safely shutting off the gas supply.

3.2 Technical Data

3.2.1 Butterfly Data





Fig. 3-1 gas damper with console

Fig. 3-2 gas damper with ground terminal for Ex application

Description	Actuator for control without zero flow, in the complete combustion technology
Test specification	type approval according to 90/396/EWG Prod. ID. No. CE-0085- AR0408 DIN 3394-1 Class R _O DIN 3391 (for medium temperature of: -20 +60 °C / -4 +140 °F)
Operating pressure	0 to 4 bar
Type of control	for electrical actuators
Mounting position	optional
Design	butterfly disc without limit-stop
Differential pressure delta P _{max.}	DN25-DN50 4 bar DN65-DN100 2 bar
Leakage rate without stop bar	1 % of K _{VS} -value 90°
Mounting	intermediate flange butterfly - clamp design
Explosion protection	the gas damper is not covered by the directive 2014/34/EU, because with the loads occurring in practice, no effective ignition source occurs even in the event of a fault. The damper must be grounded.

Gas Damper 662R23	
Housing material	grey cast iron
Material control disk / shaft	stainless steel
Shaft seal	NBR- O-ring

Environmental Conditions								
Operation	permissible temperature range	-20 +60 °C / -4 140 °F						
Storage/Transport	permissible temperature range	-20 +60 °C / -4 140 °F						

Environmental Conditions Gas Damper 662R23V									
Ambient Temperature	permissible temperature range	-20 +60 °C / -4 +140 °F							
Medium	gases of 1 st , 2 nd and 3 rd gas families and air								
Flow Rate	non-linear								

NOTICE The gas damper is not suitable for pure hydrogen (> 98 %) or pure oxygen.



Fig. 3-3 Butterfly disc (non-linear flow rate)

Suitable pressure stages:	DN25 - DN80	PN10 - PN40, ANSI 300 lbs
	DN100	PN10 - PN40, ANSI 150 lbs, 300 lbs
	DN125 - DN150	PN10 - PN16, ANSI 150 lbs, 300 lbs
	DN200	PN10 - PN16, ANSI 150 lbs
	DN250	PN10, ANSI 150 lbs
	DN300	PN6 - PN10
	DN350 - DN400	PN6 - PN16





Fig. 3-4 Gas damper with console and coupling mounted on actuator controlled by ETAMATIC/FMS/VMS



Fig. 3-5 Gas damper with console and coupling mounted on actuator controlled by BT300



Fig. 3-6 Gas damper with console and coupling mounted on Ex-actuator controlled by ETAMATIC/FMS/VMS

Non-linear type standard	DN	L	Ø C	q D	E	weight in kg
662R23V/025/000	25=32	153	70	60	25	2.2
662R23V/032/000	32	153	70	60	25	2.2
662R23V/040/000	40	166	90	60	25	2.5
662R23V/050/000	50	183	104	60	25	2.7
662R23V/065/000	65	195	124	60	25	3.1
662R23V/080/000	80	211	139	60	30	3.8
662R23V/100/000	100	231	161	60	30	4.4
662R23V/125/000	125	258	191	60	35	5.9
662R23V/150/000	150	283	214	60	35	6.3
662R23V/200/000	200	344	270	80	40	12.7
662R23V/250/000	250	394	320	80	40	13.7
662R23V/300/000	300	444	370	80	45	16.2
662R23V/350/000	350	523	428	80	45	27.7
662R23V/400/000	400	561	465	80	45	39

All mentioned nominal diameters are available with reduction! Ordering example for reduction DN100 to DN80: 662R23V/100/080

3.2.3 Selection Electrical Servomotor

- The total torque of the butterfly valve is the results of the addition of the diagram and spindle sealing torque.
- The max. permitted differential pressure (p_e-p_a) must not exceed during operation.
 The limits can be taken from the diagram.



3.2.4 **KV-Values of Butterfly Valves**

m³/h

2

m³/h

2,7

5,1

3.2.4.1 KV-Values of Butterfly Valves, non-linear



13

m³/h

19

m³/h

32

m³/h

56

m³/h

78

m³/h

97

m³/h

102

m³/h

9

m³/h

6,4

10000													
0 °	0°	5°	10°	20°	30°	40°	50°	60°	70°	80°	90°		
m ³ /h													
3,7	5	13	18	28	51	79	141	237	376	636	749		



0°	0°	5°	10°	20°	30°	40°	50°	60°	70°	80°	90°
m ³ /h											
2,5	3,3	7,5	9,6	15	26	50	83	141	234	328	401

Auslenkung in Grad / Deflection in degrees / Département en degrés



0°	0°	5°	10°	20°	30°	40°	50°	60°	70°	80°	90°
2	2	2	2	2	2	2	2	2	2	2	2
m³/h	m°/h	m³/h	m³/h	m³/h	m°/h	m³/h	m³/h	m³/h	m³/h	m³/h	m³/h
2	3	6,7	8,4	13	20	32	54	89	141	209	244









0°	0°	5°	10°	20°	30°	40°	50°	60°	70°	80°	90°
m ³ /h											
19	25	71	104	198	400	752	1080	1822	3285	5690	6570



0 °	0°	5°	10°	20°	30°	40°	50°	60°	70°	80°	90°
m ³ /h											
24	30	96	141	270	544	1024	1470	2480	4472	7745	9843



0°	0°	5°	10°	20°	30°	40°	50°	60°	70°	80°	90°
m ³ /h											
40	50	126	184	352	710	1337	1920	3240	5840	10116	11680

3.2.5 Gasket of the Flange

Recommended flange gasket Klingersil C4400 - a universal suitable high-pressure gasket



KLINGERSIL C-4400 Aramid fibres, bounded with NBR Resistant to oils, water, steam, gases, salt solutions, fuels, alcohols, moderate organic and inorganic acids, hydrocarbons, lubricants and refrigerants.

Fig. 3-7 Flange gasket Klingersil C-44000

Tests and certifications:

- BAM U W 28 for use with oxygen 100 °C/ 212 °F or 80 bar
- Approved for gas supply in accordance with DIN 3535/6.
- DIN-DVGW-permit NG-5123AT0251
- HTB tested, SVGW-permit, ÖVGW-permit, TÜV-Poland.
- KTW-recommended.
- Food toleration Austria, Germanischer Lloyd, BS 7531 Grade Y, TA-Luft (clean air) approval, tested in accordance with VDI2440 with 200 °C/392 °F.

Ensure all remains of old gasket materials are removed and the flanges are clean, in good condition and parallel.

The gasket materials are generally furnished with surfaces of low adhesion. In difficult installation conditions, separating agents can be used, but only in minimal quantities. Make sure, that the solvents and propellants are completely evaporated.

WARNING!

Ensure all gaskets are installed in a dry state. The use of gasket compounds is not recommended as this has a detrimental effect on the stability and load bearing characteristic of the material.Ensure gasket dimensions are correct. The gasket should not intrude into the bore of the pipework and have to be installed centrally.For safety reasons never re-use a gasket

When torquing, tighten bolts in three states to the required torque as follows:

- Finger tighten nuts
- Carry out tightening, making at least three complete diagonal tightening sequences i.e. 30 %, 60 % and 100 % of final torque value.
- In the final pass torque the bolts with 100 % of the torque value in a clockwise sequence again.

Provided that the above guidelines are followed, re-tightening of the screws is not necessary.



The information in this publication is subject to technical changes.

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