

DKR, IDR

ERC

## **Butterfly valves** **Butterfly valves with actuator**

- For (hot) air and flue gas.
- Low leakage rate and pressure loss
- Wide range of nominal sizes DN 15 – 500
- Simple installation thanks to clamping between standard flanges
- Pre-assembled combination of actuator, attachment set and butterfly valve
- Suitable for intermittent operation
- Low-maintenance operation
- Robust design for a long service life

## Application



Butterfly valve DKR..F with free shaft end

Butterfly valve DKR is designed to adjust volumes of hot air and flue gas on various appliances and flue gas lines. It can be used for a control ratio of up to 1:10.

### DKR..F

With the mounted actuator IC 50, butterfly valve DKR..F is suitable for regulating flow rates for modulating-controlled or stage-controlled combustion processes.

### DKR..H

On butterfly valve DKR..H, flow rates can be set and fixed using a lever, for example to limit the high-fire rate on the burner. A scale indicates the set angle of opening.

### IDR: DKR with actuator IC 50

Pre-assembled combinations of actuator IC 50, attachment set and butterfly valve DKR are available as models IDR up to nominal size DN 300.

IDR is designed for applications with high torques of up to 30 Nm. The direction of rotation of the valve disc can be switched. The valve disc position can be read from the outside whereby the direction of rotation is indicated using a colour code.

Depending on the application, the actuator can be aligned to the butterfly valve using various attachment sets.

### Axial mounting

The actuator is axially aligned to butterfly valve DKR.

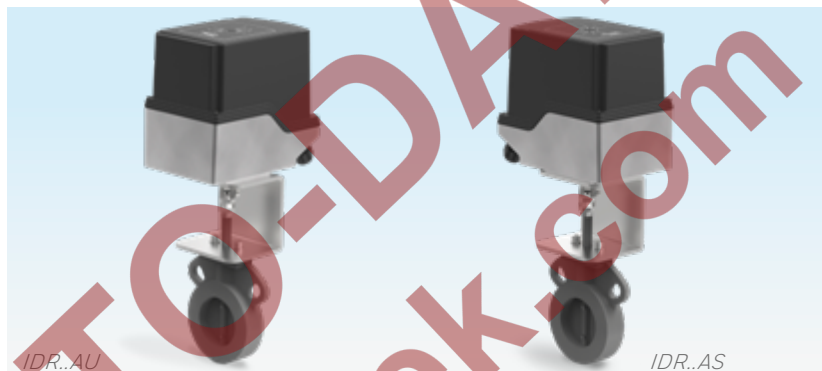
The installation position of the actuator can be selected as follows:

IDR..AU: the electrical connections of the actuator are positioned above the pipe.

IDR..AS: the electrical connections of the actuator are positioned to the side of the pipe.



Butterfly valve DKR..H with lever

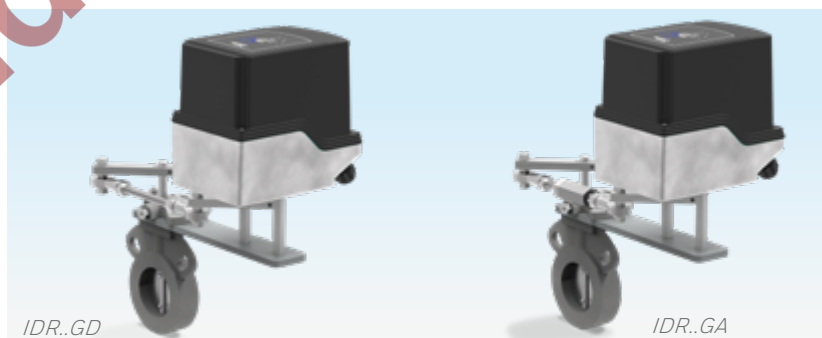


### Attachment with linkage

If the actuator is to be operated offset to the side of the butterfly valve, an attachment set with linkage can be used.

Attachment set GD is intended for butterfly valves with disc clearance DKR..D.

For butterfly valves with stop bar DKR..A, attachment set GA with shock suppressor is recommended.

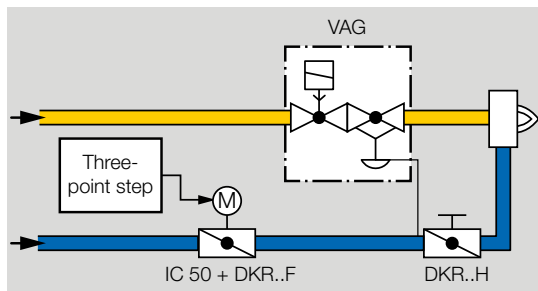


As of a medium temperature of  $> 250^{\circ}\text{C}$  ( $482^{\circ}\text{F}$ ), the actuator is to be protected by a heat deflector.



## Examples of application

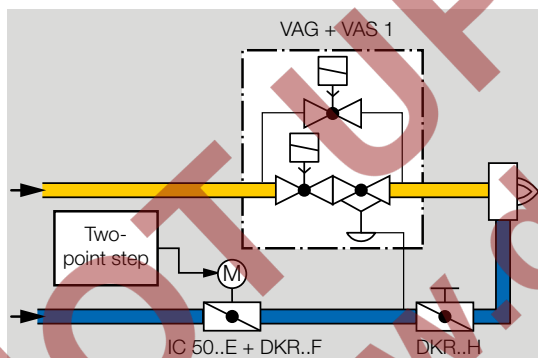
### Modulating control via three-point step signal



For processes that require high temperature accuracy and low circulation in the furnace. Actuator IC is controlled by a three-point step controller and moves the butterfly valve to the ignition position. The burner starts. The butterfly valve opens or closes between the low-fire/high-fire rate positions depending on the capacity demand of the burner. When the three-point step signal is disconnected, the butterfly valve stops at its current position.

Butterfly valve DKR..H with manual adjustment is used to adjust the high-fire rate.

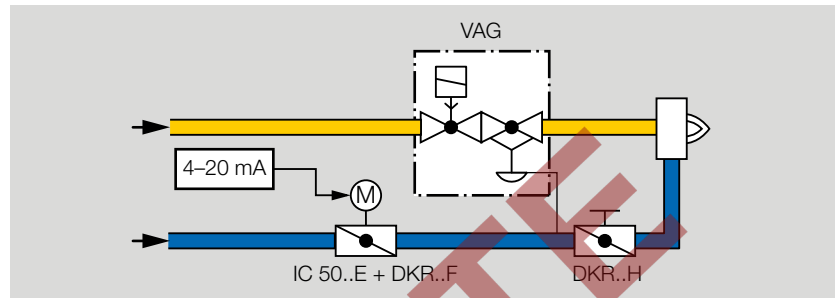
### Staged control via two-point step signal



For processes that require a homogeneous temperature distribution in the furnace. Actuator IC..E is controlled by a two-point step controller and operates in On/Off or High/Low intermittent mode. The actuator closes when the voltage supply is interrupted.

Butterfly valve DKR..H with manual adjustment is used to adjust the high-fire rate.

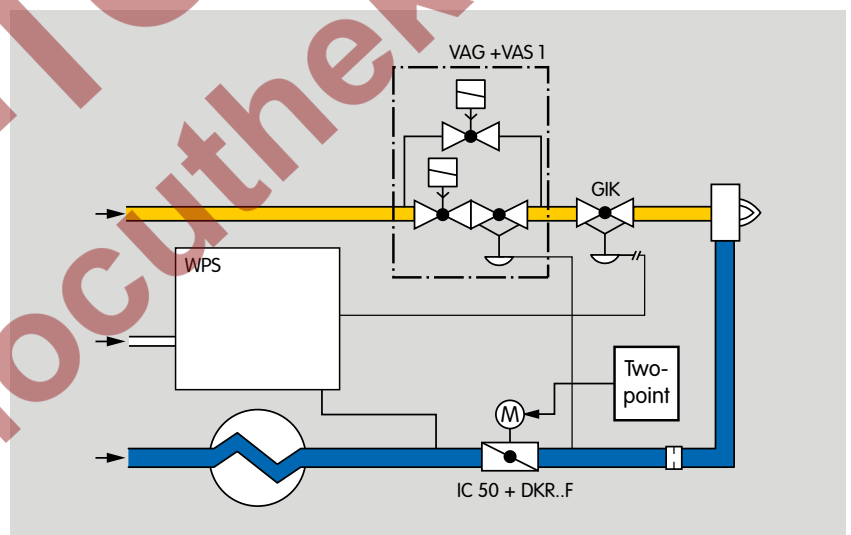
### Modulating control with continuous input signal



For processes that require high temperature accuracy and low circulation in the furnace. Actuator IC..E is controlled by a (0) 4 – 20 mA or 0 – 10 V signal. The continuous signal corresponds to the adjustment angle to be approached and offers the option of monitoring the current position of the actuator.

Butterfly valve DKR..H with manual adjustment is used to adjust the high-fire rate.

### Hot air compensation



Butterfly valve DKR is used on burners that are operated with preheated combustion air at temperatures of up to 650°C (1202°F).

### Type code

#### DKR

Code	Description
DKR	Butterfly valve for air and flue gas
15-500	Nominal diameter
Z	for fitting between two DIN flanges
03	$p_{u \max}$ 300 mbar (4.35 psi)
H	with manual adjustment
F	with free shaft end
100	max. medium temperature: 100 °C (212 °F)
350	350 °C (662 °F)
450	450 °C (842 °F)
650	650 °C (1202 °F)
D	with disc clearance
A	with stop bar

Type code

IDR

Code	Description
IDR	Butterfly valve for hot air and flue gas with actuator
15 – 300	Nominal size
Z	For fitting between two DIN flanges
03	$p_{U\ max.}$ 300 mbar (4.35 psi)
D	With disc clearance
A	With stop bar
100 350 450 650	Temperature range: 100°C (212°F) 350°C (662°F) 450°C (842°F) 650°C (1202°F)
	Attachment set for axial mounting:
AU	Electrical connection: IC 50 above the pipe
AS	Electrical connection: IC 50 to the side of the pipe
	Attachment set with linkage:
GD	for DKR..D
GDW	and heat deflector for DKR..D
	Attachment set with linkage and shock suppressor:
GA	for DKR..A
GAW	and heat deflector for DKR..A

Code	Description
/50	Series 50, with higher torque
-03 -07 -15 -30 -60	Running time [s]/Adjustment angle [°]: 3.7/90 7.5/90 15/90 30/90 60/90
W Q H	Mains voltage: 230 V AC, 50/60 Hz 120 V AC, 50/60 Hz 24 V AC, 50/60 Hz
3 7 15 20 30	Torque: 3 Nm 7 Nm 15 Nm 20 Nm 30 Nm
E T	Continuous control Three-point step control
R10	Feedback potentiometer

Technical data

Gas type: air, flue gas.

Inlet pressure  $p_U$ : max. 300 mbar (4.35 psi).

Medium temperature:  
DKR..100: -20 to +100°C (-4 to +212°F),  
DKR..350: -20 to +350°C (-4 to +662°F),  
DKR..450: -20 to +450°C (-4 to +842°F),  
DKR..650: -20 to +650°C (-4 to +1202°F).

Ambient temperature:  
-20 to +60°C (-4 to +140°F).

Seals: free of asbestos.

DKR..150/350/450:  
Housing material: GG,  
valve disc: up to DN 100: steel,  
valve disc: from DN 125: GG,  
drive shaft up to max. 350°C: steel,  
drive shaft up to max. 450°C: stainless steel,  
packing: graphite.

DKR..650:  
housing material: heat-resistant cast iron,  
valve disc: up to DN 65: stainless steel,  
valve disc: from DN 80: heat-resistant cast iron,  
drive shaft: stainless steel,  
packing: aluminium silicate.

Maintenance cycles

Butterfly valve DKR requires little servicing.

We recommend a function check once a year.

**Technical Information bulletin for this product**  
www.docuthek.com  
Search term: DKR, IDR

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