

**Motorised Butterfly
Valve for Hot Air
DMKH , DMKH-A
Nominal Widths
DN 40 - DN 200**

DUNGS®

11.13



Technical Description

DMKH ... and DMKH-A ... are actuators for pre-heated air.

- Max. operating temperature up to 450 °C
- Max. operating pressure 500 mbar
- Max. differential pressure 100 mbar
- DMKH ... without limit stop
- DMKH-A ... with limit stop

Application

The Dungs DMK ... is used to regulate the supply of pre-heated air to gas burners and gas appliances for industrial thermal processing systems.

DMKH...
DMKH-A...

Actuator without zero shut-off for regulating tasks. Suitable for mechanical and electromechanical drives.
Ambient/ medium temperature 0 °C to +450 °C

Technical Data

Nominal widths	DN 40 50 65 80 100 125 150 200 Intermediate flange suitable for welding neck flanges as per DIN 26 33 (PN6/10/16) DN 40-DN 200, ISO 7005-1 (PN6/10/16), ISO 7005-2 (PN6/10/16)
Max. operating pressure	500 mbar (50 kPa)
Max. differential pressure	100 mbar (10 kPa)
Pressure stage	PN 1
Gap volumetric flow in closed position (0°)	Valve disc without limit stop DMKH... approx. 1% of the KVS value Limit stop bar in the housing DMKH-A... approx. 0.2% of the KVS value
Torque	max. 2 Nm for DMKW max. 8 Nm for DMKH and DMKH-A
Adjusting angle	max. 90 °C
Diameter of throttle valves	DMK ... 5040 40 mm DMK ... 5050 50 mm DMK ... 5065 65 mm DMK ... 5080 80 mm DMK ... 5100 100 mm DMK ... 5125 125 mm DMK ... 5150 150 mm DMK ... 5200 200 mm
Materials used for parts which have contact with the medium	Housing grey cast iron 25 Shaft 1.4541 Seals aluminium silicate Disc 1.4541 up to DN100 grey cast iron 25 from DN125 onwards
Ambient temperature, medium temperature DMKH 5 ..., DMKH-A 5 ...	0 °C to +450 °C
Installation position	Any installation position; refer to the technical data of the actuator drive.

Technical Data of Actuator Drives, type DMA..., see data sheet 11.21

Functional Description

The Dungs motorised butterfly valve for pre-heated air is an automatic actuator which is operated with auxiliary power supply.

The position of the valve depends on the electromechanical actuator drive.

The partial load and full load settings of the valve are made by adjusting the switching cams or other functions of the actuator drive.

If the operating voltage (auxiliary power supply) is disconnected, the actuator remains in its current position.

Installation

- Comply with the specified installation position of the actuator drive.
- When you install the appliance, do not use the actuator drive as a lever.

Electrical Connection

Insert the cable through the screwed cable gland; electrical connection with the screw terminals in the connecting box of the actuator drive.

kv values

DN	Opening angle								
	10°	20°	30°	40°	50°	60°	70°	80°	90°
40	0,9	2,9	6	15	29	33	36	38,5	60
50	1,9	5,2	13	27	44	63	68	71	115
65	4,5	12	19	42	74	95	108	125	190
80	5,5	16	30	55	95	130	165	188	280
100	8	22	58	100	160	230	288	350	480
125	9	35	80	170	250	370	490	610	800
150	15	56	120	225	320	530	715	910	1200
200	22	102	210	370	650	1010	1550	1990	2180

The kv values are m³ water per hour at 20 °C and pressure drop 1 bar.
kvs = kv at 60° opening angle

Selecting the Appliance

You must know the following values to select the DMK model:

1. Maximum volumetric flow $V_{\max}$
2. Pressure loss Δp at maximum volumetric flow
3. Minimum volumetric flow $V_{\min}$
4. Pressure loss Δp at minimum volumetric flow

Alternatively, you can calculate the valve diameter with the kv value.

Check whether the required minimum volumetric flow is achieved at valve position 0°. If the calculated or measured value is higher than the minimum volumetric flow, the valve can be used.

At low volumetric flows, the pressure loss of upstream appliances reduces, which increases the dp available to the valve. To obtain an optimum control response, always select the valve with the largest possible pressure loss Δp .

Dimensions [mm]

Motorised butterfly valve DMK...

	A	B	C	D	E	F
DMK... 5040 DN 40	25	75	40	83	259,5	173,5
DMK... 5050 DN 50	25	85	50	85	261,5	173,5
DMK... 5065 DN 65	25	105	65	95	271,5	173,5
DMK... 5080 DN 80	30	120	80	105	281,5	173,5
DMK... 5100 DN 100	30	140	100	115	291,5	173,5
DMK... 5125 DN 125	35	170	125	125	301,5	173,5

The motorised butterfly valve DMK... is limited by the following parameters:

Operating pressure $p_{\max.} = 500$ mbar
Pressure loss $\Delta p_{\max.} = 100$ mbar

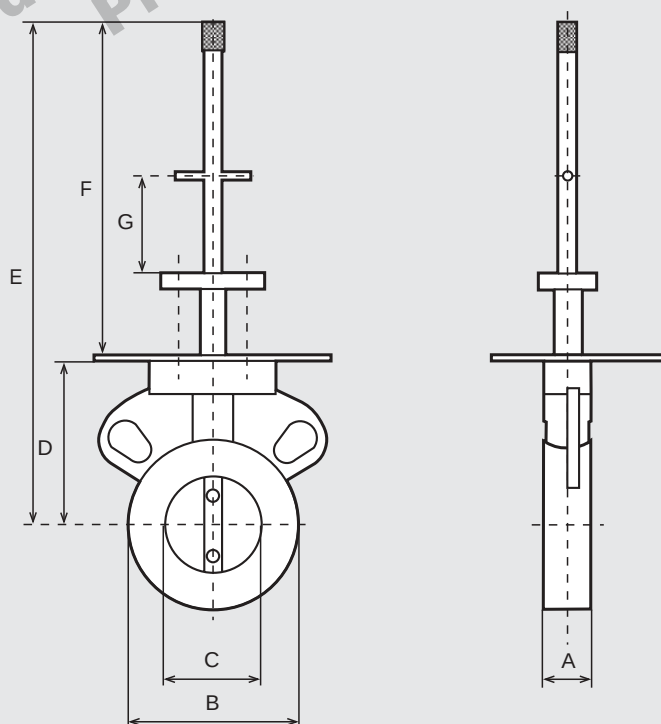
When the valve is used in uncritical flow states, the following applies:

$$V_n = 514 \cdot k_v \cdot \sqrt{\frac{\Delta p \cdot p_2}{\rho_n \cdot T_1}}$$

V_n [m³/h] volumetric flow, normal state

Δp [bar] pressure loss via DMK
 p_2 [bar] pressure downstream of DMK, absolute

ρ_n [kg/m³] standard gas density
 T_1 [K] gas temperature upstream of DMK, absolute



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DN 40 - DN 200

DUNGS®

Type	DN	ø [mm]	Order no.
DMKH 5040	40	40	241 954
DMKH 5050	50	50	241 955
DMKH 5065	65	65	241 981
DMKH 5080	80	80	241 982
DMKH 5100	100	100	241 983
DMKH 5125	125	125	241 984
DMKH 5150	150	150	241 985
DMKH 5200	200	200	241 986
DMKH-A 5040	40	40	241 987
DMKH-A 5050	50	50	241 988
DMKH-A 5065	65	65	241 989
DMKH-A 5080	80	80	241 990
DMKH-A 5100	100	100	241 991
DMKH-A 5125	125	125	241 992
DMKH-A 5150	150	150	241 993
DMKH-A 5200	200	200	241 994

Actuator drives, potentiometer, assembly set

Type	Order no.
DMA 60 W 230/07 3	241 878
DMA 60 W 230/20 3	241 879
DMA 34 W 230/07 3	241 880
DMA 34 W 230/20 3	241 881
Potentiometer for DMA ... W ... 1000 Ohm	241 885
Assembly set for DMKH ... up to 450 °C	241 884
Please specify the actuator drive type when you place the order.	

We reserve the right to make changes in the interest of technical progress.

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