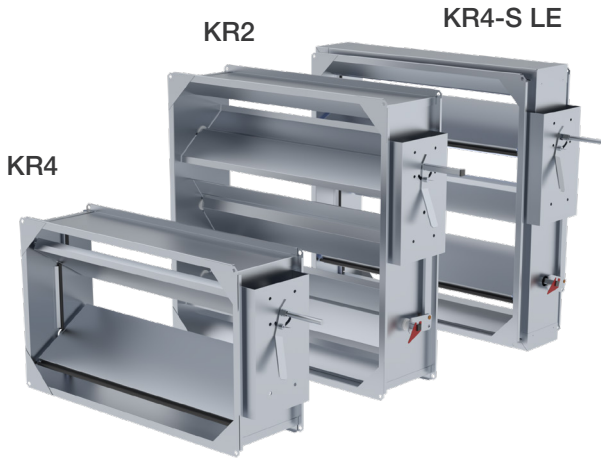
KR Regulating and shut-off damper

KR-type square dampers with blades are intended for regulating and closing airflow volumes in ventilation systems and air openings used for ventilation.



Standard properties:

- Material hot-dip galvanized steel Z275
- Z-profile/E20 profile duct connection
- Damper external casing leakage class is C (EVS-EN 1751:2014)
- Operating temperature -40 °C ... +80 °C
- Width 200–2500 mm
- Height 200–3000 mm

Options:

- Material acid-proof steel (AISI 316L) or zinc-magnesium steel (ZM310)
- Circular connection fitting on one or both sides
- Damper mechanism cover
- Actuator weather protection
- Wall mounting frame

Application and Structure

KR dampers are manufactured of galvanized steel. Dampers with horizontal blades can be manufactured with a width of up to 2500 mm. Polyamide bearings are used for blades.

All KR4 damper blades have a sandwich structure and a smooth surface to prevent thermal bridges and avoid the accumulation of dirt. In insulated dampers, 30 mm mineral wool is used as the insulation material.

The connection profile of the dampers is suitable for connection with Z-profile/E20 profile.

All KR dampers are delivered with an actuator base.

KR dampers are manufactured in 4 versions:

Type	Tightness class EVS-EN 1751:2014	Sealed blades	Insulated blades	Insulated casing	Damper shaft (mm)		Manual control lever
					Cross-sectional area of the damper < 0,6 m^2	Cross-sectional area of the damper ≥ 0,6 m^2	
KR2	1				15×15	15×15	x
KR4	3	x			Ø12	15×15	-*
KR4-S	3	x	x		Ø12	15×15	-*
KR4-S LE	3	x	x	x	Ø12	15×15	-*

KR2 – Regulating damper. Used for regulating air flow in ventilation systems.

KR4 – Damper with sealed blades. Used for regulating and shut-off air flow in ventilation systems.

KR4-S – Damper with sealed and insulated blades. Used for regulating and shut-off air flow in ventilation systems that need to separate zones with significant temperature differences.

KR4-S LE – Damper with sealed and insulated blades and with insulated (30 mm mineral wool) casing.

*If needed, a manual control lever can be added, ordered separately.

Dimensions

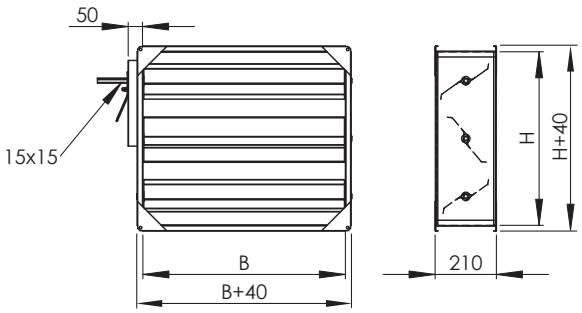
*Dimensions of the damper with horizontal installation	
Width B	200 mm, ... , 2500 mm (pitch is 10 mm)
Height H	200 mm, ... , 3000 mm (pitch is 50 mm)

*Dampers with horizontal blades can be installed up to a width of 2500 mm. Dampers with longer blades are installed vertically.

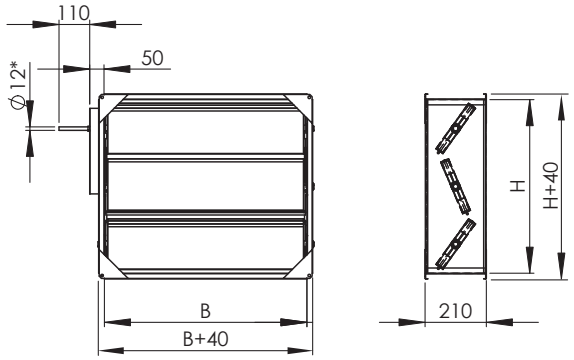
NB!

- Dampers with dimensions up to 1400x2000 mm (damper area <3 m^2) are manufactured with 1 actuator base.
- Dampers with dimensions 1500x2000 mm or more (damper area ≥3 m^2) are manufactured with 2 actuator bases.
- Dampers with a cross-sectional area > 5 m^2 are manufactured from 2 or more modules.
- Each module can be operated by one or more actuators or manual control levers.
- KR4 dampers with a cross-sectional area < 0,6 m^2 are manufactured with a rounded shaft (12 mm).
- The KR2 damper has a 15×15 mm shaft.

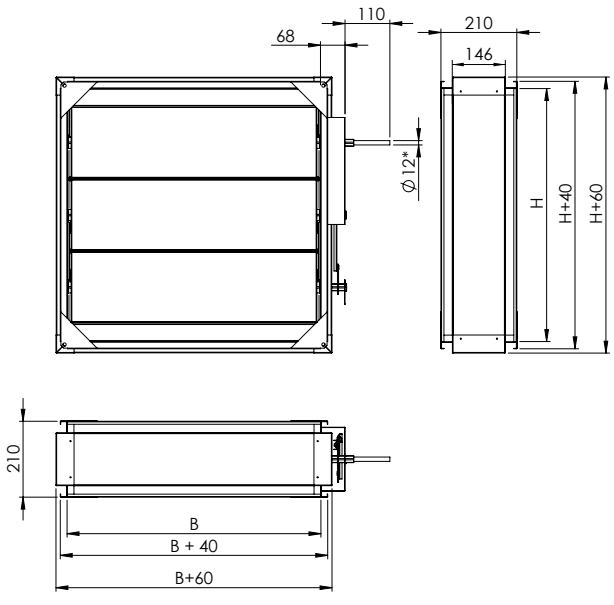
KR2 damper with Z/E20 connection profile (standard)



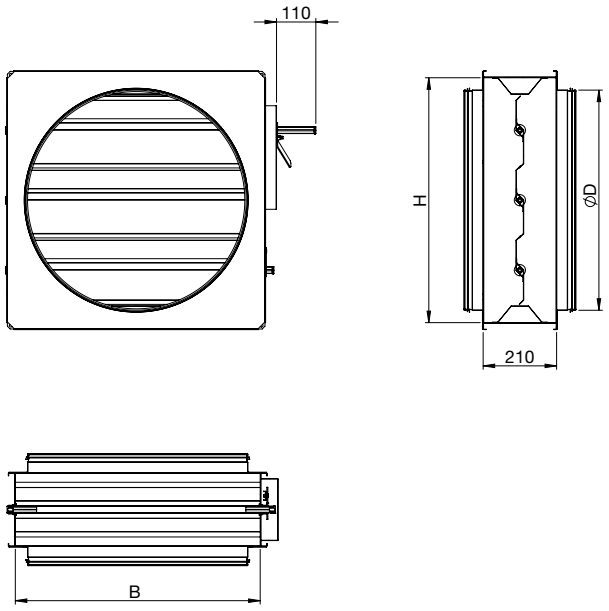
KR4 damper with Z/E20 connection profile (standard)



KR4-S LE damper

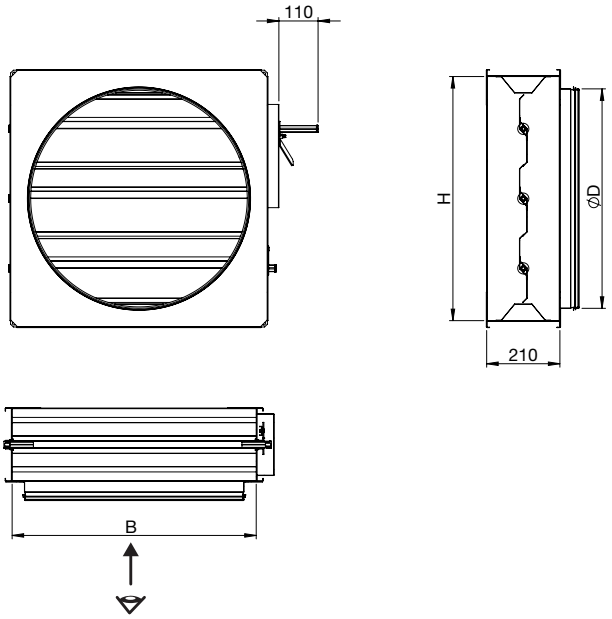


KR damper with D2 circular connection



* Ø12 mm shaft with damper area <0,6 m^2, 15x15 shaft for larger damper

KR damper with D1 circular connection

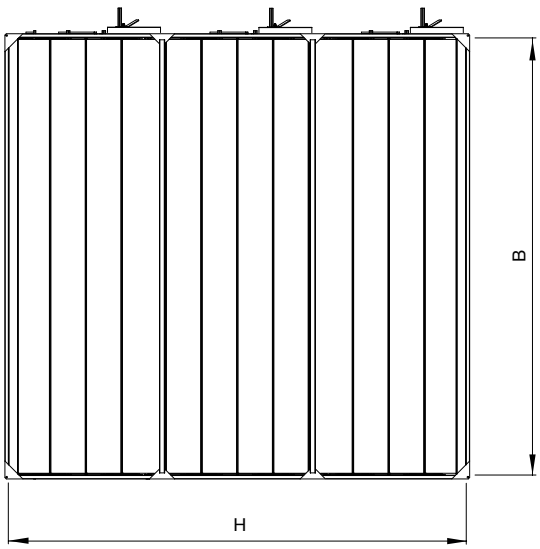


By default, a one-sided circular connection is attached to the side of the damper where the actuator base is seen on the right. If a different configuration is needed, it must be specified in the order.

Dimensions for vertical installation			
Width B, mm	2600	2800	3000
H max. mm (one module)	1200	1000	800

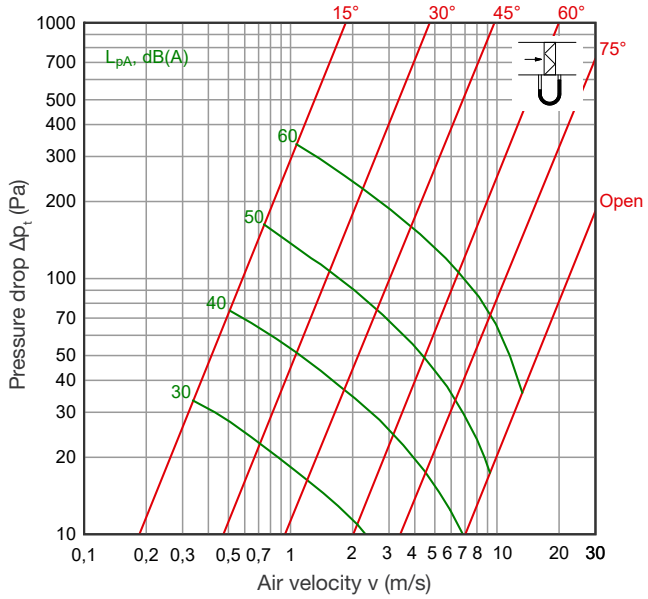
If the damper width B > 2500 mm, the damper is installed vertically.

Sample for vertical installation



Technical parameters

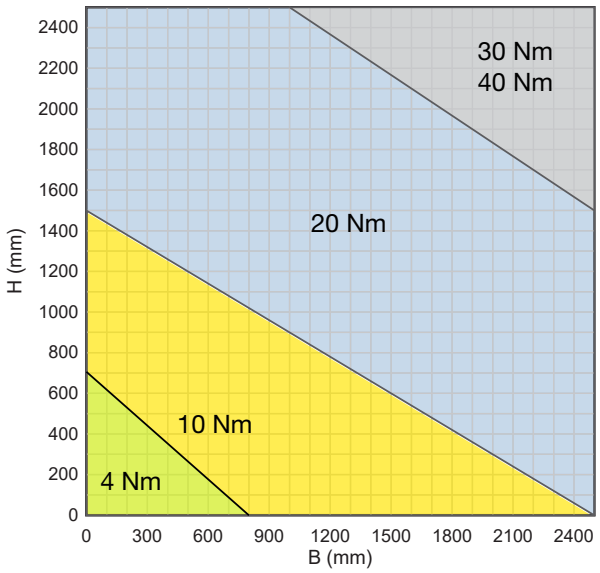
Pressure drop in the duct



KR-type regulating damper blades tightness class has been tested according to standard EN 1751: 2014.

Actuator selection

The torque required for closing the damper is based on the dimensions of the damper:



When choosing an actuator, the cross-sectional area of the damper, the width-to-height ratio, the installation conditions and the functions intended for the actuator must be taken into account. NB! There are separate instructions for the actuators (www.belimo.com).

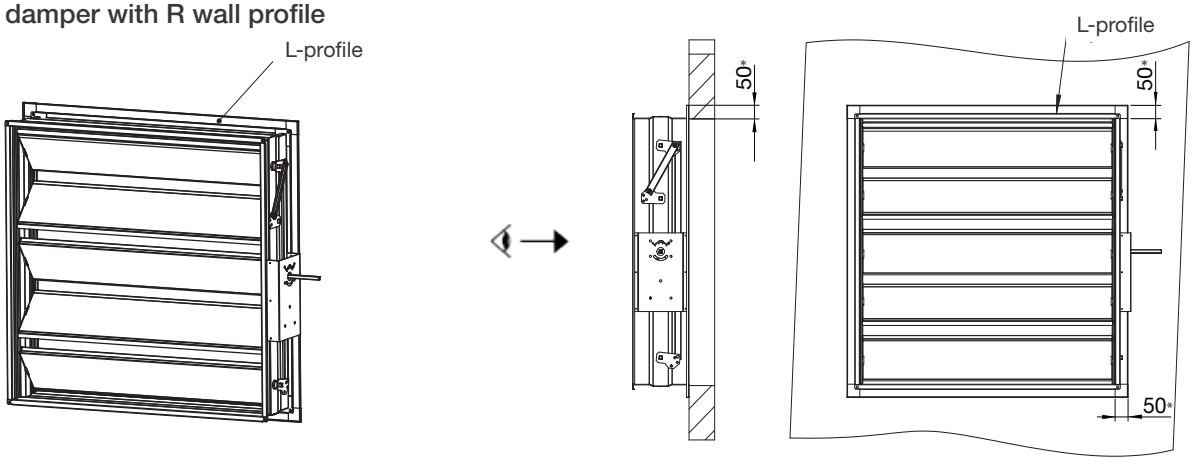
		24V	230V	Torque (Nm)
Spring return		LF 24 1,4 kg	LF 230 1,6 kg	4
		NFA 24-240V 2,0 kg		10
		SFA 24-230V 2,2 kg		20
		EF 24A 4,6 kg	EF 230V 2,0 kg	30
		GK 24A-1 1,9 kg		40
Without spring		LM 24A 0,46 kg	LM 230A 0,46 kg	5
		NM 24A 0,72 kg	NM 230A 0,72 kg	10
		SM 24A 0,94 kg	SM 230A 0,94 kg	20
		GM 24A-SR 1,6 kg	GM 230A 1,6 kg	40

Wall mounting

If the damper needs to be wall-mounted, a mounting frame made of L-profiles is attached to the damper. The width of the mounting frame is 50 mm for the standard KR damper and 70 mm for the KR4-S LE model. For wall mounting, select the appropriate fasteners based on the wall material and the damper's weight. When ordering, specify which side the motor is on when viewed from the room side. R - motor on the right, L - motor on the left.

NB! The location of the motor is always viewed from the side of the room!

KR damper with R wall profile



* 70 mm for KR4-S LE

Product marking

KR2 - H B x H - D2=d - 1 - R-50

Type
- KR2 - tightness 1
- KR4 - tightness 3
- KR4-S - tightness 3, with insulated blades
- KR4-S LE - tightness 3, with insulated blades and casing

Material
- Galvanized steel (DX51D+Z275), standard material (not marked)
- H - acid-proof steel (AISI 316L)
- ZM - Magnelis®, zinc-magnesium coated steel (ZM310)

Width B x Height H

Round connection
- D1 - diameter, circular connection one end
- D2 - diameter, circular connection both ends

Accessories
- 1 - damper mechanism cover
- 2 - actuator weather protection

Wall mount
- R - Wall profile (L profile width 50 mm, 70 mm for KR4-S LE), actuator on the right
- L - Wall profile (L profile width 50 mm, 70 mm for KR4-S LE), actuator on the left

  Note! View of the actuator location from the room side!

Example: KR2-H 400x400 - D1=400 - 1 - R-50