

Pressure controller EMPA, EMPD

TECHNICAL DATA





KEY FEATURES

- Constant pressure
- Sound attenuation
- Real-time pressure monitoring with FG compact controller
- Can be connected to Modbus

PRESSURE CONTROLLER EMPA, EMPD

EMPA and EMPD are compact pressure controllers for the OPTIVENT system. EMPD is insulated, EMPA is without insulation. These round controllers are designed for use in ducting systems where constant pressure is required. EMSA is a separate device for measuring static pressure.

SPECIFICATIONS

- EMPA without insulation
- EMPD with acoustic insulation
- Unenclosed control equipment
- FG compact controller as standard
- Pressure adjustment (max, min) without special tools
- Real-time pressure monitoring
- Operating range: static pressure 35 - 300 Pa
- CEN3 blade seal
- Operating temperature 5 - 50 °C
- Nine sizes, 100-630 mm

PRODUCT CODE EXAMPLE

Pressure controller for supply or exhaust air
EMPA-125

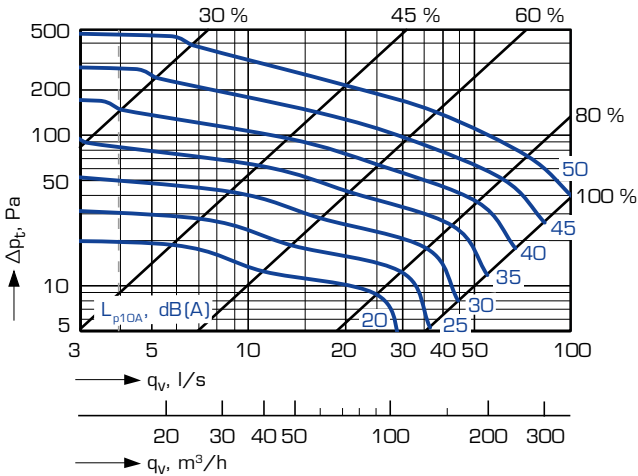
Measuring device EMSA-125

SOUND PRESSURE LEVELS AND AIR FLOW

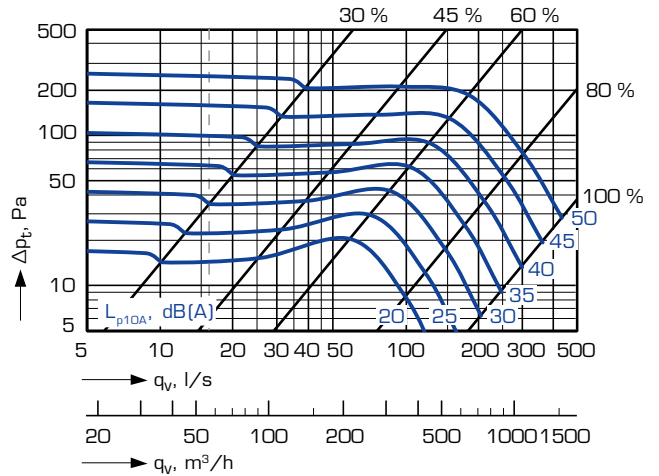
SOUND PRESSURE LEVELS IN ROOM

Damper blade opening 30% = operating area begins.

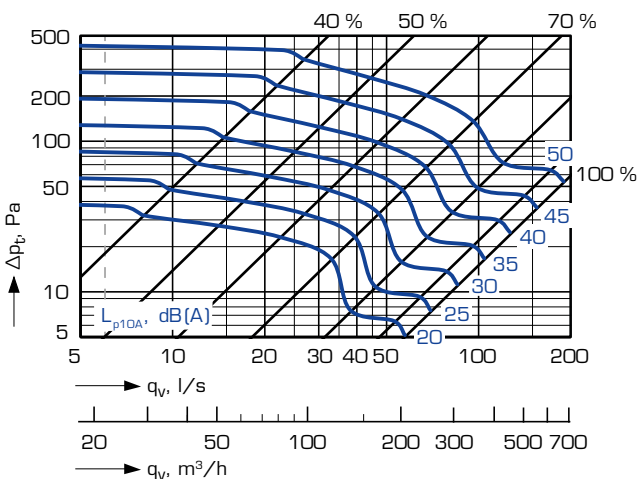
EMPA/EMPD-100



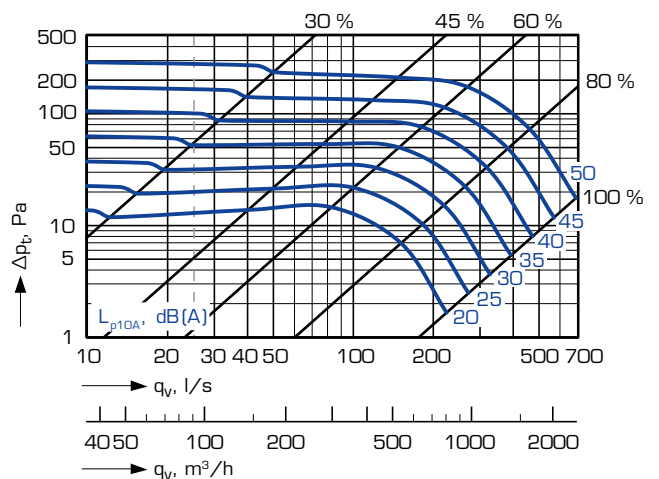
EMPA/EMPD-200



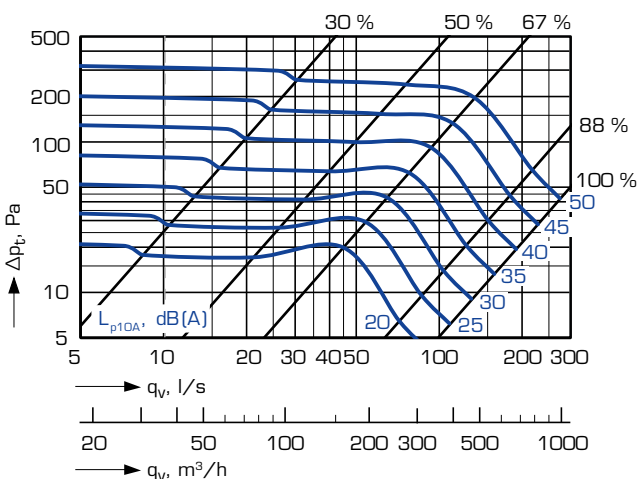
EMPA/EMPD-125



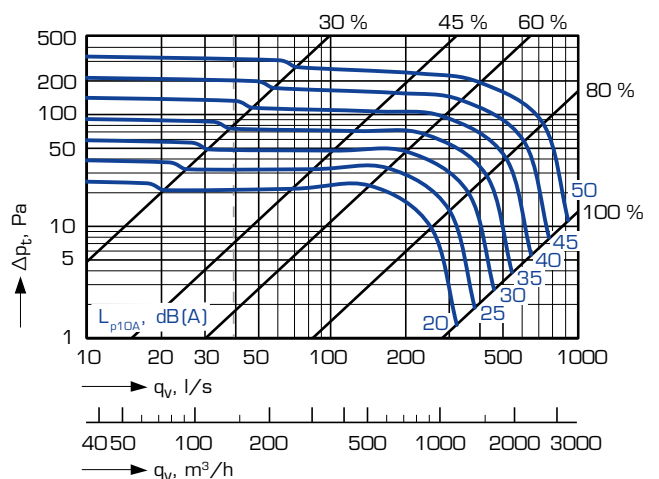
EMPA/EMPD-250



EMPA/EMPD-160



EMPA/EMPD-315



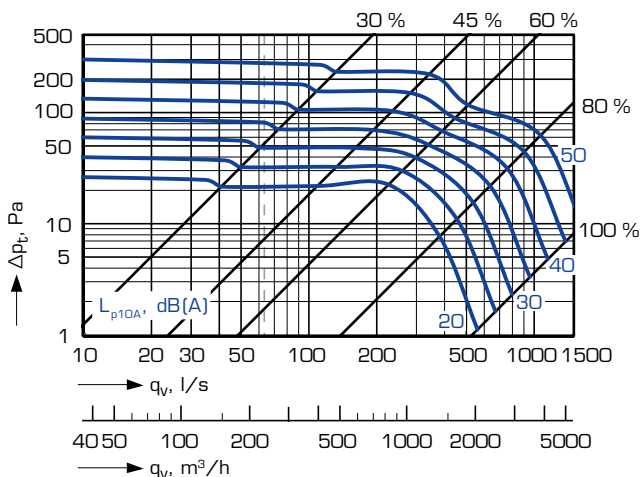
----- Velocity in the duct 0.5 m/s.

SOUND PRESSURE LEVELS, AIR FLOW AND SOUND DATA

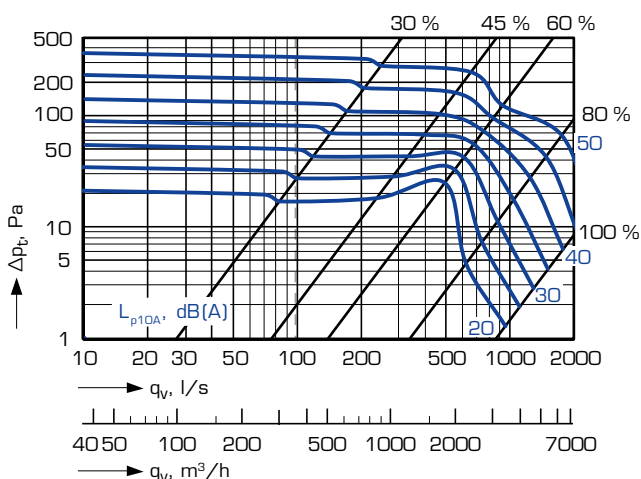
SOUND PRESSURE LEVELS IN ROOM

Damper blade opening 30% = operating area begins.

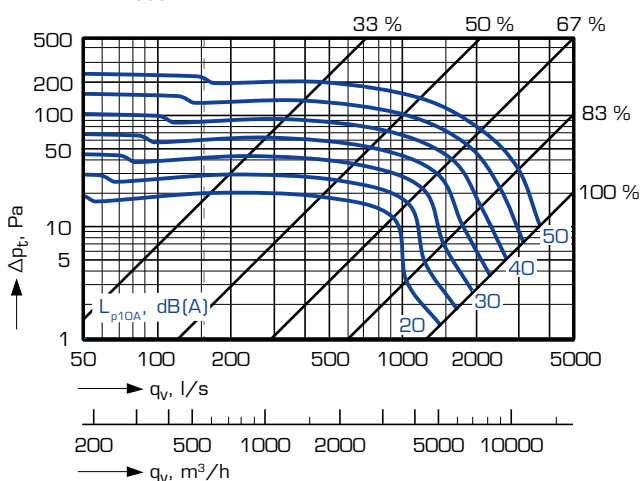
EMPA/EMPD-400



EMPA/EMPD-500



EMPA/EMPD-630



----- Velocity in the duct 0.5 m/s.

DUCT SOUND

EMP(A,D)	Correction of sound level K_{oct} (dB)							
	63	125	250	500	1000	2000	4000	8000
100	10	14	13	8	4	-2	-9	-18
125	14	15	12	7	3	-3	-8	-16
160	14	13	11	5	2	-4	-9	-16
200	9	11	9	4	1	-3	-8	-17
250	10	9	7	4	-1	-2	-8	-15
315	14	8	5	2	0	-2	-9	-15
400	10	9	8	4	-1	-8	-12	-8
500	11	8	7	3	-1	-7	-10	-8
630	8	7	6	3	0	-7	-13	-15
Tolerance ±	6	3	2	2	2	2	2	3

The sound power levels of the duct for every octave band are obtained by adding to the total sound pressure level $L_{p10A'}$ dB(A), the correction K_{oct} presented in the table according to the following formula:

$$L_{W_{oct}} = L_{p10A'} + K_{oct}$$

Correction K_{oct} is average value in range of use of the EMPA/EMPD.

SOUND TRANSMITTED THROUGH CASING

EMPA	Correction of sound level K_c (dB)							
	63	125	250	500	1000	2000	4000	8000
100	7	-7	-5	-17	-30	-36	-39	-42
125	-3	-9	-18	-21	-27	-34	-40	-42
160	-4	-11	-12	-19	-25	-28	-35	-39
200	-4	-9	-18	-24	-29	-32	-39	-39
250	-11	-11	-16	-19	-26	-30	-36	-35
315	-3	-8	-22	-15	-22	-31	-33	-43
400	-7	-14	-22	-16	-26	-25	-28	-46
500	3	-6	-18	-27	-33	-37	-41	-57
630	-2	-9	-17	-32	-31	-24	-29	-39
Tolerance ±	6	3	2	2	2	2	2	3

EMPD	Correction of sound level K_c (dB)							
	63	125	250	500	1000	2000	4000	8000
100	4	-9	-9	-19	-34	-41	-44	-47
125	-5	-13	-20	-21	-32	-35	-41	-47
160	-5	-16	-12	-20	-28	-34	-38	-45
200	-4	-9	-18	-27	-34	-36	-44	-47
250	-11	-11	-16	-20	-30	-35	-43	-45
315	-4	-7	-23	-16	-26	-36	-44	-52
400	-11	-14	-22	-18	-28	-30	-39	-50
500	1	-6	-18	-28	-35	-40	-47	-57
630	-2	-10	-18	-34	-34	-29	-38	-43
Tolerance ±	6	3	2	2	2	2	2	3

The power levels of the sound transmitted through casing of the flow variator for every octave band are obtained by adding to the total sound pressure level $L_{p10A'}$ dB(A), the correction K_c presented in the table according to the following formula:

$$L_{W_c} = L_{p10A'} + K_c$$

Correction K_c is average value in range of use of the EMPA/EMPD.

EMP(A,D) PRESSURE CONTROLLER

The controller can be used in both pressure-dependent and VAV systems for ensuring correct pressure and, if appropriate, for forced shut-off of supply or exhaust air.

The controller consists of a measuring point, a damper blade and an insulated (EMPD) or uninsulated (EMPA) casing.

The damper has stable bearings made of nylon that are maintenance-free.

The damper is equipped with an EPDM rubber blade seal and conforms to air tightness class 3 in accordance with EN 1751.

The casing of EMPD has double walls and intermediate glass wool insulation with a thickness of 50 mm and therefore gives low acoustic radiation.

Connection dimensions 100–630 mm.

Components in contact with the ventilation air conform to corrosivity classes C3 or C4 in accordance with EN-ISO 12944-2.

Air tightness class B in accordance with EN1751.

The actuator is mounted on the device body.

The display on the actuator provides a real-time reading of static pressure.

All duct connections have spigot dimensions and are equipped with sealing rings made of rubber.

A separate pressure measuring device EMSA is used when the static pressure needs to be measured further out in the system.

A 50 m PVC hose (EMSZ-1) is also available if required.

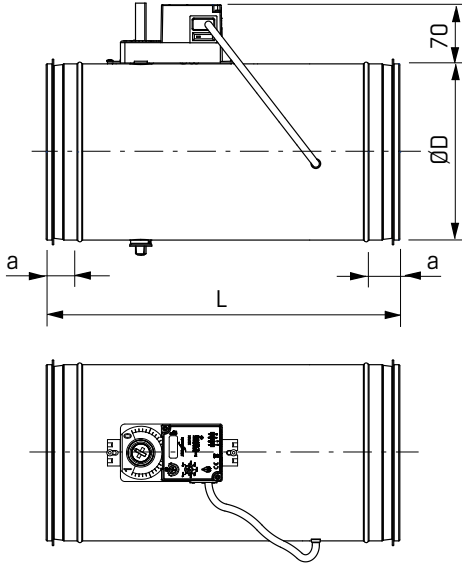
SAFETY DISTANCES

Type of disturbance	The required safety distance L
	m2 = ±10%
T-piece	2 x ØD
Bend	1 x ØD

DIMENSIONS AND WEIGHTS

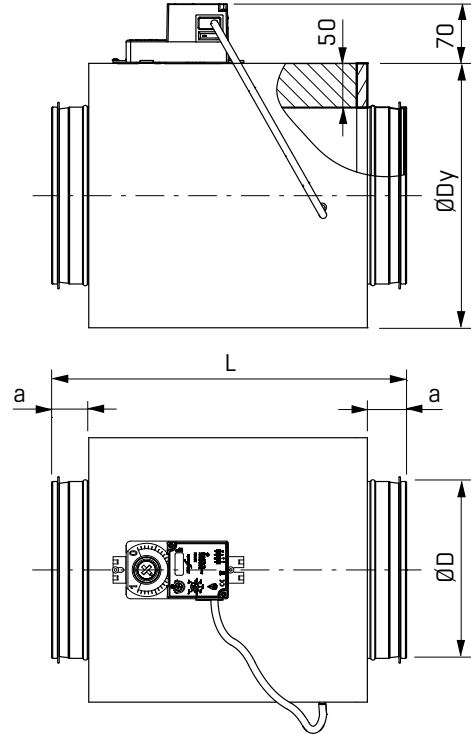
DIMENSIONS AND WEIGHTS

EMPA



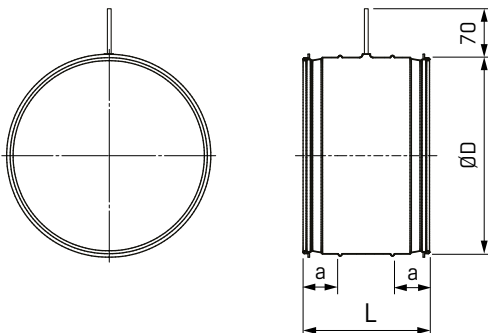
Size	ØD (mm)	a (mm)	L (mm)	Weight (kg)
100	99	35	400	1.4
125	124	35	400	1.7
160	159	35	400	2.2
200	199	35	400	2.7
250	249	40	580	4.1
315	314	40	580	5.4
400	399	60	650	9.3
500	499	60	850	14.2
630	629	60	850	19.5

EMPD



Size	ØD (mm)	ØDy (mm)	a (mm)	L (mm)	Weight (kg)
100	99	200	35	400	2.8
125	124	225	35	400	4.0
160	159	260	35	400	3.3
200	199	300	35	400	4.1
250	249	350	40	580	5.8
315	314	415	40	580	10.2
400	399	500	60	650	17.5
500	499	600	60	850	27.4
630	629	730	60	850	35.7

EMSA



Size	ØD (mm)	a (mm)	L (mm)	Weight (kg)
100	99	35	128	0.22
125	124	35	128	0.27
160	159	35	128	0.35
200	199	35	128	0.45
250	249	40	128	0.57
315	314	40	128	0.73
400	399	60	186	1.58
500	499	60	186	1.99
630	629	60	186	4.50

PRODUCT CODE AND ACCESSORIES

PRODUCT CODE

Pressure controller, round

EMPa-bbb

Execution (a)

A = without insulation

D = with insulation

Size (bbb)

100, 125, 160, 200, 250, 315, 400, 500, 630

Actuator

Compact controller 227PM

Material

Corrosivity class C3, galvanised sheet steel

Tightness

CEN3, blade with a seal

Pressure controller with Modbus, round

EMPa-bbb-c

Execution (a)

A = without insulation

D = with insulation

Size (bbb)

100, 125, 160, 200, 250, 315, 400, 500, 630

Actuator (c)

5 = Compact controller for Modbus 227PM-MB

Material

Corrosivity class C3, galvanised sheet steel

Tightness

CEN3, blade with a seal

SPARE PARTS

Compact controller 227PM

sizes 100-315

227PM-024-05-011

sizes 400-630

227PM-024-10-012

Compact controller for Modbus 227PM-MB

sizes 100-315

227PM-024-05-MB

sizes 400-630

227PM-024-10-MB

ACCESSORIES

Accessories are supplied loose, not installed.

Measuring connector set for supply air

EMPA-MCA

Pressure gauge

EMSA-aaa

Size (aaa)

100, 125, 160, 200, 250, 315, 400, 500, 630

Pressure hose

EMSZ-1

PVC hose 5/8.2 clear 50m coil

Circular attenuator

BDER-aa-bbb-ccc

Model (aa)

30, 40, 44, 45, 60, 61

Size, cm (bbb)

Length, cm (ccc)

BDER-40 straight M1-certified sound absorber with 50 mm polyester fibre filling.

BDER-44 straight M1-certified sound absorber with 100 mm polyester fibre filling.

BDER-45 straight M1-certified sound absorber with 100 mm polyester fibre filling and a 100 mm baffle.

BDER-30 straight sound absorber with 50 mm mineral wool filling, fire resistance class EI 30 (RISE 2525/80).

BDER-60 straight sound absorber with 100 mm mineral wool filling, fire resistance class EI 60 (RISE 2525/80).

BDER-61 straight sound absorber with 100 mm mineral wool filling and a 100 mm baffle, fire resistance class EI 60 (RISE 2525/80).

Rectangular attenuator with circular spigots

BDER-aa-bbb-ccc

Model (aa)

70, 71, 73

Size, cm (bbb)

Length, cm (ccc)

BDER-70 fixed casing, glass wool absorbent.

BDER-71 fixed casing, M1-certified, polyester absorbent.

BDER-73 openable casing, M1-certified, polyester absorbent.

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