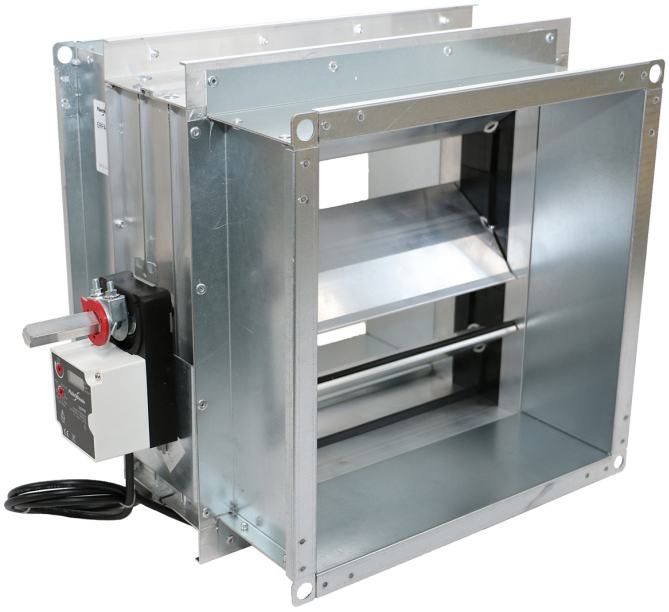
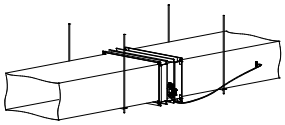
Pressure control damper ERPA



Key features

- Constant pressure
- Real-time pressure monitoring with FW compact controller
- Can be connected to Modbus
- Available in IPSUM compatible version



ERPA is a rectangular pressure control damper for the OPTIVENT system. ERPA is designed for use in ducting systems where constant pressure is required or when unsymmetrical ductworks need to be balanced.

Specifications

- Pressure controller for supply and exhaust air
- FW compact controller
- Pressure adjustment (max, min) without special tools
- Real-time pressure monitoring
- Operating range: static pressure 50 - 300 Pa
- Available in vast number of sizes

Product code example

Pressure control damper for supply or exhaust air ERPA-1-060-030-2

Pressure control damper equipped with FW 227PM actuator, width 60 and height 30 cm with flange joint, a measuring probe and 3 m of measurement hose.

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ERPA pressure control damper

The damper 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 control damper consists of an aluminium multileaf damper and sheet metal casing, an actuator mounted on the device and a separate measurement hose (PVC) (see table below for hose lengths), and a measuring probe (TPR).

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

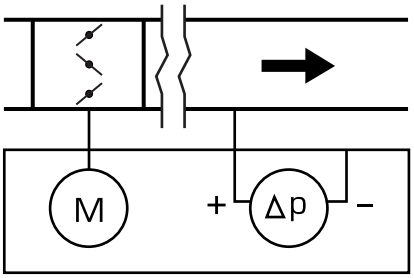
The damper conforms to air tightness class 2 in accordance with EN 1751:1998.

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

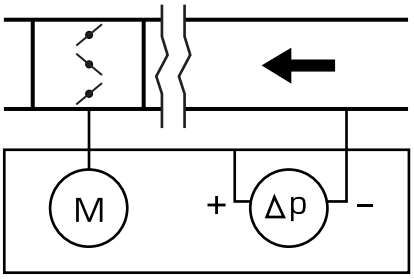
Air tightness is class B in accordance with EN1751:1998.

ERPA width [cm]	Measurement hose length [m]
≤ 40	2
≤ 60	3
≤ 100	5
≤ 160	8

Supply air



Extract air

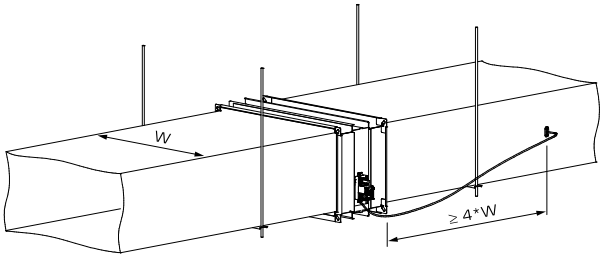


The recommended minimum duct pressure for ERPA is 50 Pa. The recommended maximum air velocity for ERPA is 8 m/s.

The actuator is calibrated to air density of 1.2 kg/m3. If ERPA is installed above sea level and the air density differs from the calibration value the actuator can be adapted to match the correct air density. For more information, see the installation instructions.

Installation guidelines

To ensure proper function of the pressure measurement and control it is recommended to install the static measuring probe at a minimum distance of 4xW from the damper.

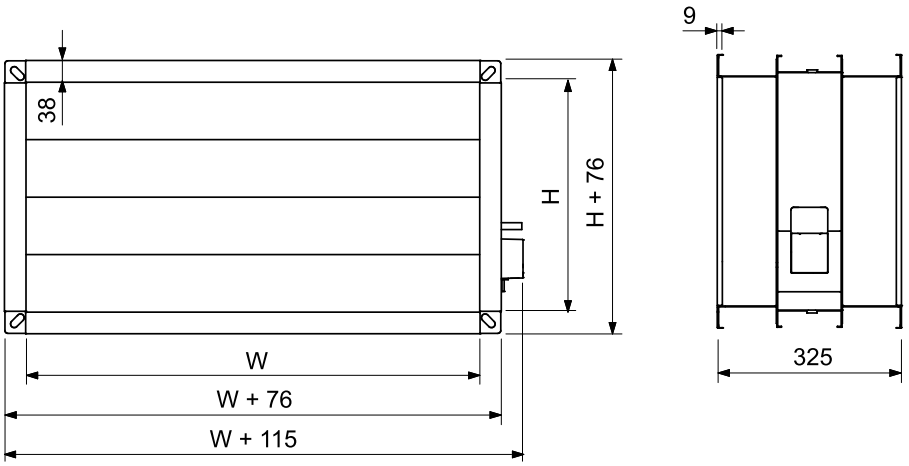


The recommended maximum length of the measurement hose is 10 m

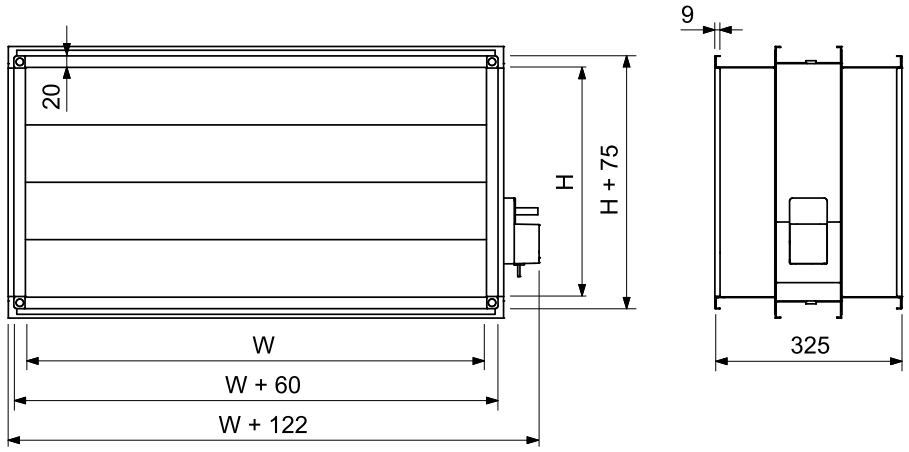
If a longer hose is used the pressure drop in the measurement hose should be compensated in the actuator. For more information, please contact FläktGroup sales support.

Dimensions and weights

Flange joint



Slip joint



Dimensions given in mm.

Weight (kg)

H (cm)/ W (cm)	020	025	030	040	050	060	070	080	100	120	140	160
020	3.9	4.3	4.5	5.5	6.3	7.3	8.3	9.3	10.9	-	-	-
025	4.3	4.5	5.0	5.7	7.1	8.1	9.1	10.1	12.3	-	-	-
030	-	-	5.5	6.2	7.7	8.9	9.9	10.9	13.7	-	-	-
040	-	-	-	7.2	8.7	9.9	10.9	11.9	15.2	16.8	18.4	20.0
050	-	-	-	-	9.7	10.9	11.9	12.8	16.8	18.4	20.0	21.6
060	-	-	-	-	-	11.9	12.8	13.8	18.4	20.0	21.6	23.2
070	-	-	-	-	-	-	13.8	14.8	20.0	21.6	23.2	24.8
080	-	-	-	-	-	-	-	15.8	21.6	23.2	24.8	26.4
100	-	-	-	-	-	-	-	-	24.4	26.0	27.6	29.2

Acoustic data

Following tables show sound power levels in octave bands L_{Woct} [dB] and sound power levels L_{WA} [dB(A)] for various air velocities and pressure drops over device. For controllers which width W is other than 500 mm, read data must be corrected by ΔL factor. Total sound power level can be calculated using following formula:

$$L_{WA\ tot} = L_{WA} + \Delta L$$

Sound power level at outlet

ERPA 050 x 020												
Frequency	100 Pa				250 Pa				500 Pa			
[Hz]	3 m/s	6 m/s	9 m/s	12 m/s	3 /m/s	6 m/s	9 m/s	12 m/s	3 m/s	6 m/s	9 m/s	12 m/s
125	48	58	61	70	57	63	68	74	63	66	74	79
250	44	53	59	70	54	61	66	74	60	64	71	77
500	40	53	60	69	52	58	65	73	56	65	71	77
1000	37	50	55	63	51	54	60	67	54	60	65	70
2000	33	46	52	60	49	53	57	66	53	60	64	68
4000	27	38	46	55	44	50	53	61	47	54	58	62
L_{WA} [dB(A)]	42	55	61	70	56	61	66	74	60	67	72	77

ERPA 050 x 025												
Frequency	100 Pa				250 Pa				500 Pa			
[Hz]	3 m/s	6 m/s	9 m/s	12 m/s	3 /m/s	6 m/s	9 m/s	12 m/s	3 m/s	6 m/s	9 m/s	12 m/s
125	49	58	62	70	58	63	69	74	64	67	75	80
250	45	54	59	69	55	61	67	74	62	66	71	77
500	40	54	60	68	53	60	65	73	57	66	72	77
1000	37	50	55	62	51	55	61	67	55	61	66	70
2000	33	46	53	60	49	53	58	66	55	61	64	69
4000	27	38	46	54	45	51	54	60	49	55	59	63
L_{WA} [dB(A)]	43	55	61	69	56	62	67	74	61	68	73	78

ERPA 050 x 030												
Frequency	100 Pa				250 Pa				500 Pa			
[Hz]	3 m/s	6 m/s	9 m/s	12 m/s	3 /m/s	6 m/s	9 m/s	12 m/s	3 m/s	6 m/s	9 m/s	12 m/s
125	50	57	62	70	59	64	70	74	66	68	75	80
250	45	54	60	69	56	62	68	74	64	67	72	78
500	41	54	61	68	54	61	66	73	59	67	73	78
1000	38	50	55	62	53	56	62	67	57	62	67	71
2000	34	46	53	60	50	54	59	66	56	62	65	69
4000	28	37	45	53	45	52	55	60	51	55	61	64
L_{WA} [dB(A)]	44	55	61	69	57	63	68	74	63	69	74	78

ERPA 050 x 040												
Frequency	100 Pa				250 Pa				500 Pa			
[Hz]	3 m/s	6 m/s	9 m/s	12 m/s	3 /m/s	6 m/s	9 m/s	12 m/s	3 m/s	6 m/s	9 m/s	12 m/s
125	50	58	63	71	59	64	71	75	67	68	75	80
250	46	55	61	69	57	62	68	75	64	68	73	79
500	42	55	61	68	55	61	67	73	60	67	73	79
1000	38	50	55	62	53	56	63	68	57	62	68	72
2000	34	47	53	60	50	55	59	66	57	63	65	69
4000	29	38	46	54	46	53	56	61	52	56	62	64
L_{WA} [dB(A)]	44	56	61	69	58	63	68	74	63	69	74	79

ERPA 050 x 050												
Frequency	100 Pa				250 Pa				500 Pa			
[Hz]	3 m/s	6 m/s	9 m/s	12 m/s	3 /m/s	6 m/s	9 m/s	12 m/s	3 m/s	6 m/s	9 m/s	12 m/s
125	51	58	63	71	60	65	72	75	68	69	75	81
250	47	55	62	70	57	63	68	76	65	69	73	80
500	42	56	61	68	55	61	67	74	60	67	73	80
1000	38	51	55	62	54	56	64	69	57	63	68	72
2000	34	47	54	60	50	56	60	66	58	63	65	70
4000	30	38	46	55	46	54	57	61	52	56	63	65
L_{WA} [dB(A)]	44	57	62	69	58	63	69	75	64	69	74	80

ERPA 050 x 060												
Frequency	100 Pa				250 Pa				500 Pa			
[Hz]	3 m/s	6 m/s	9 m/s	12 m/s	3 /m/s	6 m/s	9 m/s	12 m/s	3 m/s	6 m/s	9 m/s	12 m/s
125	52	59	64	72	61	66	73	77	69	70	76	82
250	48	56	63	71	58	63	69	77	65	71	74	81
500	43	58	61	69	56	63	68	76	60	68	74	81
1000	39	52	56	63	54	57	65	70	58	64	68	73
2000	35	48	55	62	51	57	61	67	60	64	66	71
4000	31	39	47	56	48	54	58	62	53	57	64	66
L_{WA} [dB(A)]	46	58	62	70	59	64	70	76	65	71	75	81

ERPA 050 x 080												
Frequency	100 Pa				250 Pa				500 Pa			
[Hz]	3 m/s	6 m/s	9 m/s	12 m/s	3 /m/s	6 m/s	9 m/s	12 m/s	3 m/s	6 m/s	9 m/s	12 m/s
125	53	61	65	73	62	67	74	78	70	71	77	84
250	50	57	63	72	60	65	70	78	67	71	75	83
500	45	58	63	70	57	63	69	76	62	69	75	82
1000	41	54	57	64	56	59	65	71	59	65	70	74
2000	36	49	56	62	52	58	62	68	60	65	67	73
4000	31	40	48	57	48	56	58	62	54	58	64	68
L_{WA} [dB(A)]	47	59	64	71	60	66	71	77	66	71	76	82

ERPA 050 x 100												
Frequency	100 Pa				250 Pa				500 Pa			
[Hz]	3 m/s	6 m/s	9 m/s	12 m/s	3 /m/s	6 m/s	9 m/s	12 m/s	3 m/s	6 m/s	9 m/s	12 m/s
125	54	62	66	74	63	68	75	78	71	72	78	84
250	50	59	65	73	60	66	71	79	68	73	76	83
500	45	60	63	71	58	65	70	78	63	70	76	83
1000	41	54	59	65	56	60	67	72	61	66	70	75
2000	37	50	57	64	53	59	63	69	61	66	68	73
4000	33	41	49	58	49	56	60	63	55	60	66	68
L_{WA} [dB(A)]	47	60	65	72	61	67	72	78	67	73	77	83

Correction factor ΔL for various widths W of the regulator

W (cm)	020	025	030	040	050	060	070	080	100	120	140	160
ΔL (dB)	-4	-3	-2	-1	0	1	1	2	3	4	4	5

Sound power level emitted to surrounding

ERPA 050 x 020												
Frequency	100 Pa				250 Pa				500 Pa			
[Hz]	3 m/s	6 m/s	9 m/s	12 m/s	3 /m/s	6 m/s	9 m/s	12 m/s	3 m/s	6 m/s	9 m/s	12 m/s
125	44	53	50	57	55	60	56	59	53	59	59	61
250	36	47	46	51	48	55	50	54	50	55	55	58
500	30	43	45	51	40	49	49	53	46	53	51	54
1000	23	36	39	46	37	45	43	48	42	49	49	52
2000	21	35	38	45	35	42	40	47	39	48	49	53
4000	21	31	33	40	32	39	40	45	35	45	48	51
L_{WA} [dB(A)]	33	45	46	53	45	52	50	55	48	56	56	59

ERPA 050 x 025												
Frequency	100 Pa				250 Pa				500 Pa			
[Hz]	3 m/s	6 m/s	9 m/s	12 m/s	3 /m/s	6 m/s	9 m/s	12 m/s	3 m/s	6 m/s	9 m/s	12 m/s
125	45	55	52	57	56	61	58	61	56	59	61	63
250	38	49	47	51	50	55	51	55	53	55	56	60
500	31	45	46	51	42	50	51	54	49	53	53	56
1000	25	38	40	46	39	46	45	49	44	49	51	54
2000	22	37	39	44	36	43	42	48	41	48	51	55
4000	22	34	35	40	33	40	41	46	38	45	49	53
L_{WA} [dB(A)]	35	47	48	53	47	53	52	56	51	56	58	61

ERPA 050 x 030												
Frequency	100 Pa				250 Pa				500 Pa			
[Hz]	3 m/s	6 m/s	9 m/s	12 m/s	3 /m/s	6 m/s	9 m/s	12 m/s	3 m/s	6 m/s	9 m/s	12 m/s
125	47	58	55	57	58	62	61	63	59	60	63	66
250	40	51	49	52	52	56	54	57	56	56	58	63
500	33	47	48	51	44	51	54	56	52	54	56	59
1000	27	41	43	46	41	47	48	51	47	50	53	57
2000	24	40	41	44	37	44	45	49	44	49	54	57
4000	24	37	37	40	35	42	44	48	41	45	51	56
L_{WA} [dB(A)]	36	49	49	53	48	54	55	58	54	56	60	64

ERPA 050 x 040												
Frequency	100 Pa				250 Pa				500 Pa			
[Hz]	3 m/s	6 m/s	9 m/s	12 m/s	3 /m/s	6 m/s	9 m/s	12 m/s	3 m/s	6 m/s	9 m/s	12 m/s
125	47	58	56	58	59	63	61	63	60	61	63	67
250	40	52	50	52	52	57	55	58	57	56	58	63
500	33	48	49	51	44	51	54	57	53	54	56	60
1000	27	42	44	47	41	47	49	52	47	50	54	57
2000	24	41	41	45	37	44	46	50	45	50	55	58
4000	25	37	38	41	36	43	45	49	42	46	52	56
L_{WA} [dB(A)]	36	50	50	53	49	55	55	59	54	57	61	64

ERPA 050 x 050												
Frequency	100 Pa				250 Pa				500 Pa			
[Hz]	3 m/s	6 m/s	9 m/s	12 m/s	3 /m/s	6 m/s	9 m/s	12 m/s	3 m/s	6 m/s	9 m/s	12 m/s
125	48	59	56	58	59	64	62	63	60	61	63	68
250	40	52	50	52	52	58	56	59	57	57	59	64
500	34	49	49	52	45	52	54	58	53	54	57	60
1000	28	43	44	47	42	47	49	52	47	51	55	58
2000	25	41	42	45	37	45	46	51	45	51	55	58
4000	26	37	39	42	36	43	46	49	43	47	53	56
L_{WA} [dB(A)]	37	51	50	54	49	55	56	59	54	58	61	65

ERPA 050 x 060												
Frequency	100 Pa				250 Pa				500 Pa			
[Hz]	3 m/s	6 m/s	9 m/s	12 m/s	3 /m/s	6 m/s	9 m/s	12 m/s	3 m/s	6 m/s	9 m/s	12 m/s
125	48	60	57	59	60	65	62	64	60	62	64	69
250	41	53	51	53	53	59	57	60	57	58	60	65
500	35	50	50	53	46	53	55	59	53	55	58	61
1000	29	44	45	48	42	48	50	53	48	52	56	59
2000	25	42	42	46	38	46	47	52	45	52	55	59
4000	27	38	40	43	37	44	47	50	44	48	54	57
L_{WA} [dB(A)]	38	52	51	55	50	56	57	61	55	59	62	66

ERPA 050 x 080												
Frequency	100 Pa				250 Pa				500 Pa			
[Hz]	3 m/s	6 m/s	9 m/s	12 m/s	3 /m/s	6 m/s	9 m/s	12 m/s	3 m/s	6 m/s	9 m/s	12 m/s
125	50	61	58	60	61	66	64	65	62	63	65	71
250	42	54	52	54	54	60	58	61	59	59	61	66
500	36	51	50	54	47	55	56	60	54	56	59	62
1000	30	45	45	49	43	50	51	54	49	53	57	60
2000	26	43	43	47	39	47	48	53	46	53	57	60
4000	28	39	41	44	38	45	48	51	45	49	55	58
L_{WA} [dB(A)]	40	53	52	56	51	57	58	62	56	60	63	67

ERPA 050 x 100												
Frequency	100 Pa				250 Pa				500 Pa			
[Hz]	3 m/s	6 m/s	9 m/s	12 m/s	3 /m/s	6 m/s	9 m/s	12 m/s	3 m/s	6 m/s	9 m/s	12 m/s
125	50	62	59	62	62	67	64	66	63	64	66	71
250	42	55	53	55	55	62	58	63	59	60	62	68
500	37	52	52	55	48	55	57	61	56	57	60	63
1000	31	47	47	51	45	50	52	55	50	54	58	61
2000	28	44	44	48	40	49	49	54	48	54	58	61
4000	29	40	42	45	39	46	49	52	46	50	56	59
L_{WA} [dB(A)]	40	54	54	57	52	59	59	63	58	61	64	68

Product Code

Pressure control damper ERPA-a-bbb-ccc-d

Actuator (a)
1 = Compact controller FW 227PM
5 = Compact controller for Modbus, 227PM-MB
6 = Compact controller for Modbus, IPSUM version, 227PM-MB-ST

Width (bbb)
020, 025, 030, 040, 050, 060, 070, 080, 100, 120, 140, 160

Height (ccc)
020, 025, 030, 040, 050, 060, 070, 080, 100

Joint type (d)
1 = Slip joint
2 = Flange joint