

**KPR**  
SERIES



■ **Application**

Basically KPR series involves two modifications:

- KPR terminals for constant/variable air volume (VAV/CAV) operation mode;
- KPR STP terminals for static pressure control (STP mode);

**KPR** terminal units are meant for precise airflow control in zones of ventilation systems based on Demand Control Ventilation principle. Circular non-insulated VAV terminal units are suitable for supply or extract air and are available in wide size ranges. The control unit itself consist of 3 devices in one case:

- Differential pressure sensor used for pressure/airflow indicating;
- VAV controller used for allowing VAV/CAV operating mode;
- Damper Actuator controlled with analog signal 0/2-10 V.

**KPR STP** terminal units shall be employed at positive/negative pressure control applications (clean rooms, hospitals, laboratories etc.) for precise and highly responsive regulating. Circular non-insulated STP terminal units are suitable for supply or extract air and are available in wide size ranges. The unit itself consist of 3 devices in one case:

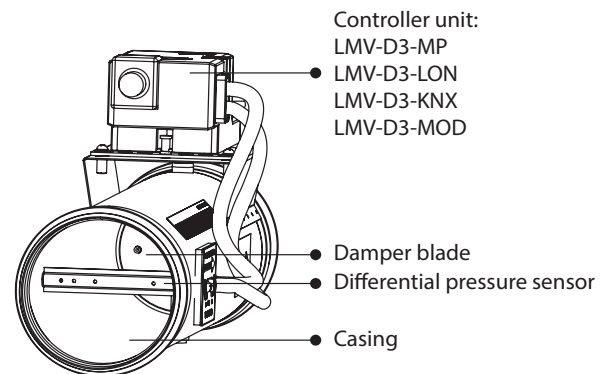
- Differential pressure transducer used for pressure indicating;
- VAV controller used for allowing VAV/CAV operating mode;
- Damper Actuator controlled with analog signal 0/2-10 V.

■ **Design**

**KPR terminals** employ measurement and control of volume flow rates based on a Pitot measurement principle jointly with PID VAV controller. Pitot tube communicates the differential pressure to the controller that in turn evaluates the damper position. This results in high control accuracy even in case of unfavorable flow conditions. The differential pressure sensor is resistant to dust and pollution.

**KPR STP terminals** use measurement and control of volume flow is carried out with employment of static pressure sensor VFP. VRP-M controller operates within the set range of pressure between the minimum and the maximum pressure. There are a few operation modes available: modulating between P-min and P-max, fixed step operation modes: CLOSED/Pmin/Motor stop/Pmax/OPEN and modulating between P-min and P-max with override into one of the following modes: CLOSED/Pmin/Motor stop/Pmax/OPEN. Static pressure sensor VFP uses a high-quality metal diaphragm as a sensor element. Pressure stroke the diagram and its deformation is tracked inductively and further converted into a linearized pressure output signal. Note that the sensor is factory-calibrated to be deployed in its vertical position. Otherwise mounted sensor needs recalibrating.

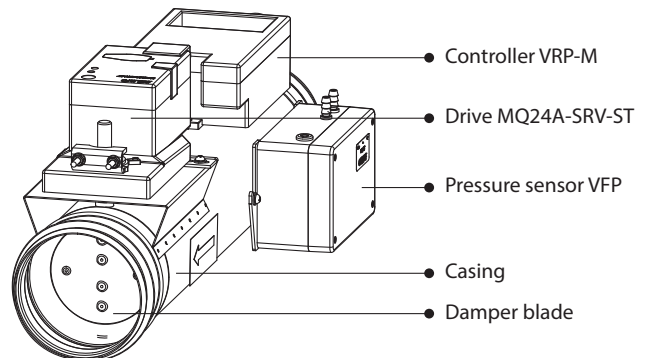
Factory-set and ready-to-commission unit consists of the mechanical parts and the electronic control components. Optional factory calibrated controls could be provided to meet all control strategies. Spigot with lip seal for circular connecting ducts ensures tight connection to the ducting. Position of the damper blade indicated externally at shaft extension. In addition, units possess an integrated NFC module ensuring non-contact communication and adjustment of application data such as Vmin and Vmax etc. via Android application. Casing and damper leakage are complied with: Closed blade air leakage to EN 1751, class 4; Casing air leakage to EN 1751, class C.



Controller unit:  
LMV-D3-MP  
LMV-D3-LON  
LMV-D3-KNX  
LMV-D3-MOD

● Damper blade  
● Differential pressure sensor  
● Casing

- **VAV controller unit** - contains integrated drive, PID controller and differential pressure transducer;
- **Damper blade** - is sealed to comply with EN 1751. Damper rotates in a self-lubricating, long life, low friction thermoplastic bearing;
- **Differential pressure sensor** - enables measuring the differential pressure even at low velocities between 1 to 10 m/s;
- **Casing** - is sealed with double lip seal on both ends to comply with EN 1506.



● Controller VRP-M  
● Drive MQ24A-SRV-ST  
● Pressure sensor VFP  
● Casing  
● Damper blade

- Continuously welded to minimize leakage.
- **VRP-M controller unit** - PID controller with adaptive algorithms as well as communication protocol MP that could be subsequently converted into LONWorks, BACnet, Modbus, KNX;
- **Damper blade** - is sealed to comply with EN 1751;
- **Differential pressure sensor VFP** - enables measuring the differential pressure even at low velocities between 1 to 10 m/s;
- **Casing** - is sealed with double lip seal on both ends to comply with EN 1506 Continuously welded to minimize leakage;
- **Drive MQ24A-SRV-ST** - ensures high precision control by extremely low react time - 2.5 s.

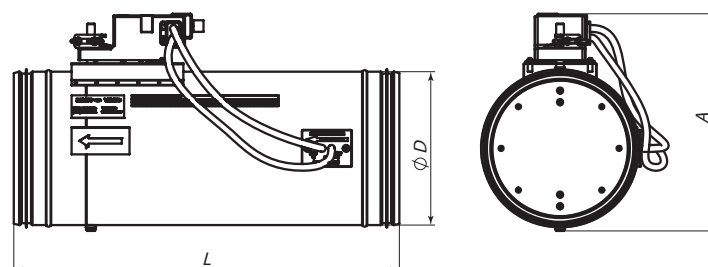
## TERMINAL UNITS

### Special features of the control device provide integration into BMS systems via a variety of interfaces

Control function	Controller	Differential pressure transducer	Actuator	Communication protocol	Feedback value
VAV/CAV	LMV-D3-MP	Dynamic, integral	Integral	MPbus	Actual volume, Damper position, dP measurement
VAV/CAV	LMV-D3-LON	Dynamic, integral	Integral	LONWorks	Actual volume, Damper position, dP measurement
VAV/CAV	LMV-D3-KNX	Dynamic, integral	Integral	KNX	Actual volume, Damper position, dP measurement
VAV/CAV	LMV-D3-MOD	Dynamic, integral	Integral	MODbus	Actual volume, Damper position, dP measurement
VAV/CAV	LMV-D3-BAC	Dynamic, integral	Integral	BAC net (additionally requires UK24BAC)	Actual volume, Damper position, dP measurement
STP	VRP-M	VFP-100 (0-100 Pa) Static, external	MQ24A-SRV-ST	MPbus (LON, KNX, MODbus and BACnet can be obtained via UK24LON/BAC/MOD)	Damper position
STP	VRP-M	VFP-300 (0-300 Pa) Static, external	MQ24A-SRV-ST	MPbus (LON, KNX, MODbus and BACnet can be obtained via UK24LON/BAC/MOD)	Damper position
STP	VRP-M	VFP-600 (0-600 Pa) Static, external	MQ24A-SRV-ST	MPbus (LON, KNX, MODbus and BACnet can be obtained via UK24LON/BAC/MOD)	Damper position

### Overall dimensions of KPR terminal units

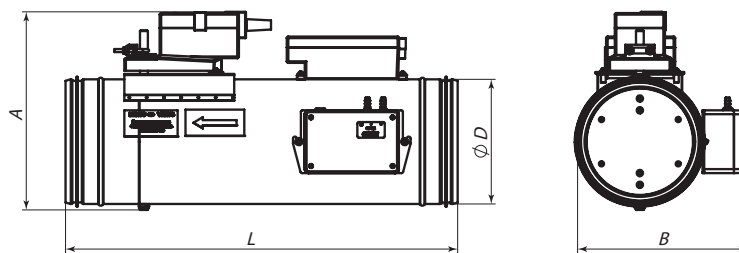
Designation	Dimensions, [mm]			Mass [kg]
	∅ D	L	A	
VAV/CAV terminal unit KPR 80	79	500	159	1.64
VAV/CAV terminal unit KPR 100	99	500	185	1.87
VAV/CAV terminal unit KPR 125	124	500	206	2.16
VAV/CAV terminal unit KPR 150	149	500	233	2.45
VAV/CAV terminal unit KPR 160	159	500	242	2.57
VAV/CAV terminal unit KPR 200	199	500	282	3.07
VAV/CAV terminal unit KPR 250	249	500	331	3.73
VAV/CAV terminal unit KPR 315	314	500	398	5.05
VAV/CAV terminal unit KPR 400	399	650	485	8.43
VAV/CAV terminal unit KPR 500	499	760	586	12
VAV/CAV terminal unit KPR 630	629	830	717	16.56



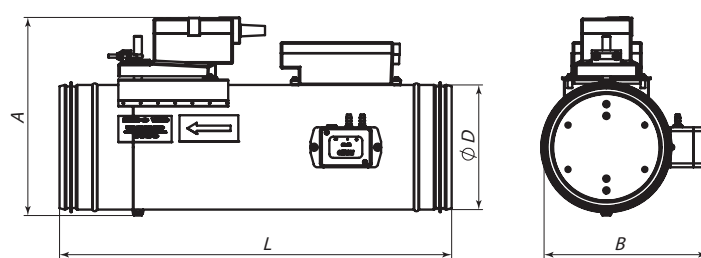
## TERMINAL UNITS

### Overall dimensions KPR STP terminals

Designation	Dimensions, [mm]				Mass [kg]
	$\varnothing D$	A	B	L	
STP terminal unit KPR 80 STP - 100	79	171	154.5	500	2.77
STP terminal unit KPR 80 STP - 300; -600			145.5		2.55
STP terminal unit KPR 100 STP - 100	99	195	164.5	500	2.99
STP terminal unit KPR 100 STP - 300; -600			155.5		2.77
STP terminal unit KPR 125 STP - 100	124	219	182	500	3.27
STP terminal unit KPR 125 STP - 300; -600			173		3.05
STP terminal unit KPR 150 STP - 100	149	243	207	500	3.57
STP terminal unit KPR 150 STP - 300; -600			198		3.35
STP terminal unit KPR 160 STP - 100	159	252	217	500	3.68
STP terminal unit KPR 160 STP - 300; -600			208		3.46
STP terminal unit KPR 200 STP - 100	199	292	257	500	4.17
STP terminal unit KPR 200 STP - 300; -600			244		3.95
STP terminal unit KPR 250 STP - 100	249	342	282	500	4.82
STP terminal unit KPR 250 STP - 300; -600			264		4.6
STP terminal unit KPR 315 STP - 100	314	408	338	500	5.72
STP terminal unit KPR 315 STP - 300; -600			320		5.5
STP terminal unit KPR 400 STP - 100	399	498	399	500	7.99
STP terminal unit KPR 400 STP - 300; -600					7.77
STP terminal unit KPR 500 STP - 100	499	598	499	600	11.09
STP terminal unit KPR 500 STP - 300; -600					10.87
STP terminal unit KPR 630 STP - 100	629	728	629	600	14.04
STP terminal unit KPR 630 STP - 300; -600					13.82



KPR STP-100



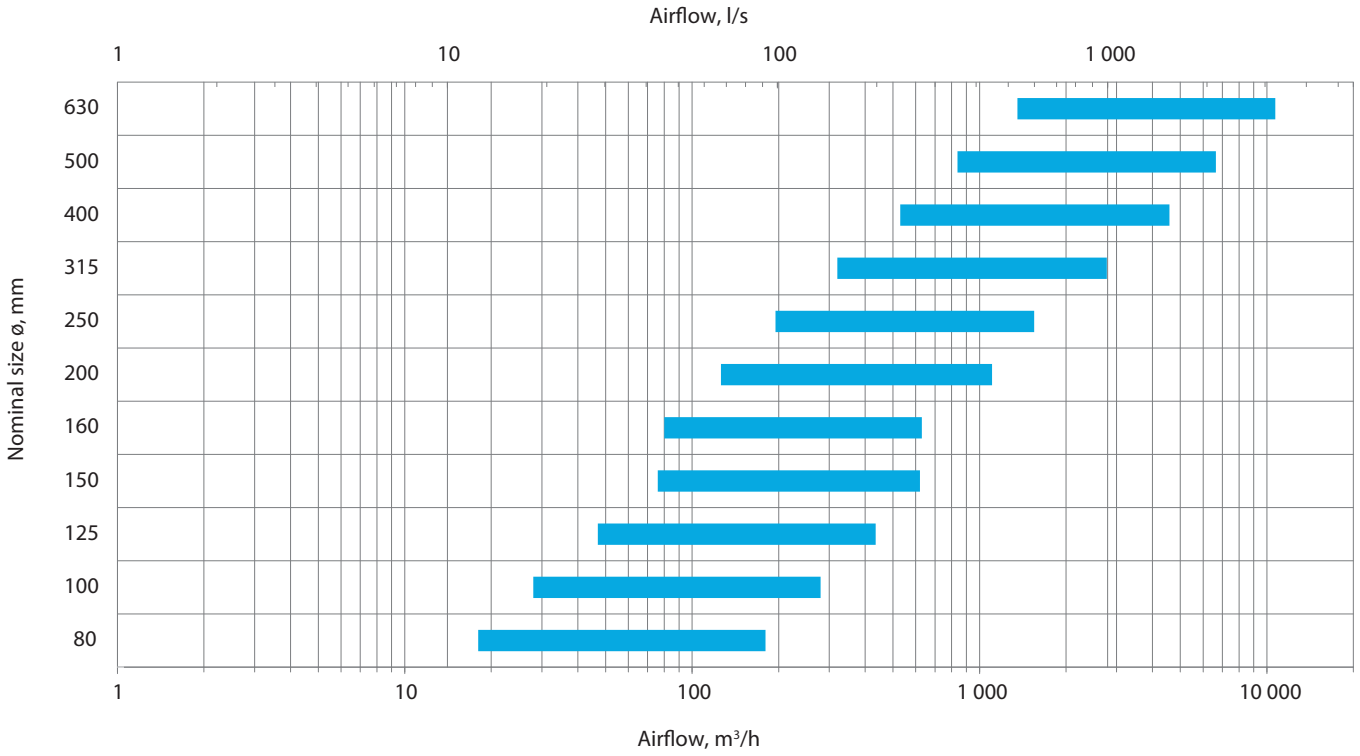
KPR STP-300, 600

■ Volume flow ranges and effective pressure

Nominal size	Airflow		$\Delta P_{ef}$	$\Delta$ Airflow
	l/s	m <sup>3</sup> /h	Pa	%
80	5	18	2	17
	12	44	12	12
	28	100	70	6
	48	180	200	3
100	8	28	2	17
	35	126	40	9
	63	227	125	6
	78	280	198	3
125	13	47	2	17
	30	180	30	9
	80	295	80	5
	121	435	175	3
150	21	76	2	17
	108	389	55	8
	145	522	90	5
	172	620	125	3
160	22	80	2	17
	110	396	50	8
	156	562	100	5
	175	630	125	3
200	35	126	2	17
	194	700	60	9
	280	1010	125	2
	307	1105	150	3
250	54	195	2	17
	258	929	45	9
	365	1314	90	6
	430	1550	125	2
315	89	320	2	17
	562	2023	80	8
	703	2530	125	2
	770	2772	150	3
400	147	530	2	17
	656	2360	40	8
	984	3543	90	5
	1271	4576	150	3
500	233	838	2	17
	1166	4198	50	8
	1475	5310	80	5
	1844	6639	125	2
630	376	1354	2	17
	1878	6761	50	8
	2655	9558	100	4
	2969	10689	125	2

# TERMINAL UNITS

## Quick selection diagram



## Discharge sound power level depending on airflow and static pressure Legend:

**Ps** – differential static pressure of the VAV terminal unit. Reference for damper position (nearly closed/nearly open/open/fully open etc.);

**L<sub>wa</sub>**–A-weighted sound power level at discharge.

	Q <sub>v</sub> , m³/h	P <sub>s</sub> , Pa	L <sub>wa</sub> dB(A)	Non-weighted sound power level, dB/Oct							
				63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
KPR 80	44	100	43	42	44	42	42	39	32	25	20
		250	53	44	45	48	50	49	44	40	35
		500	61	46	47	52	56	57	52	51	47
		750	66	48	48	54	59	62	58	58	54
		1000	69	48	48	56	62	65	61	63	58
	100	100	63	61	64	63	60	58	56	52	48
		250	69	59	63	65	66	64	60	56	53
		500	73	58	63	67	71	69	63	60	56
		750	75	57	63	69	73	72	65	62	59
		1000	77	56	63	70	75	73	66	63	60
	180	100	73	70	73	71	68	67	67	64	60
		250	76	66	71	73	73	71	68	64	60
		500	78	63	70	74	77	74	68	64	61
		750	80	61	69	75	79	76	69	64	61
		1000	81	60	69	76	81	77	69	64	61

**TERMINAL UNITS**

	Qv, m³/h	Ps, Pa	L <sub>wa</sub> dB(A)	Non-weighted sound power level, dB/Oct							
				63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
KPR 100	126	100	50	53	56	50	47	45	39	31	25
		250	58	52	56	55	55	54	48	43	38
		500	64	52	55	60	61	60	55	53	48
		750	68	51	55	62	64	64	59	59	54
		1000	71	51	55	64	67	66	63	63	58
	227	100	57	54	58	54	56	52	49	43	40
		250	67	59	64	65	66	63	58	53	50
		500	75	62	69	72	74	71	65	61	58
		750	79	65	72	77	78	75	69	65	62
		1000	83	66	74	80	82	79	72	68	65
	280	100	61	54	59	56	59	55	54	49	47
		250	72	62	68	69	71	67	63	58	55
		500	80	67	75	78	80	75	70	64	62
		750	85	71	79	83	85	80	74	68	66
		1000	89	73	82	87	88	84	77	70	68
	KPR 125	180	100	50	53	56	49	49	44	39	30
250			58	54	56	56	57	52	48	43	38
500			64	56	56	60	63	58	56	52	49
750			68	56	57	63	66	62	60	58	55
1000			71	57	57	65	69	64	64	62	59
295		100	57	62	65	58	55	51	45	40	35
		250	67	65	69	67	66	62	56	51	47
		500	75	67	72	74	75	70	64	59	56
		750	80	68	75	79	80	75	69	64	61
		1000	83	69	76	82	83	78	72	68	64
435		100	60	66	68	62	58	54	48	45	40
		250	72	69	75	73	71	66	59	55	51
		500	80	72	80	81	80	75	68	62	59
		750	86	74	83	86	86	80	73	67	63
		1000	90	75	85	89	90	84	76	70	67
KPR 150		389	100	54	63	63	56	53	47	40	33
	250		65	65	68	66	64	59	53	47	42
	500		73	66	72	73	72	68	63	58	53
	750		78	67	74	78	77	73	69	64	60
	1000		82	68	75	81	80	77	73	68	65
	522	100	60	63	65	60	58	55	49	46	41
		250	70	68	73	70	69	65	60	56	52
		500	79	72	80	79	78	73	67	63	59
		750	83	75	84	83	82	77	72	67	64
		1000	87	77	87	87	86	81	75	70	67
	620	100	63	63	65	61	60	59	54	51	48
		250	73	70	76	73	71	68	63	59	56
		500	81	75	84	81	80	75	69	65	62
		750	85	78	88	86	85	79	73	69	66
		1000	89	80	92	90	89	82	76	71	68

**TERMINAL UNITS**

	Qv, m³/h	Ps, Pa	L <sub>wa</sub> dB(A)	Non-weighted sound power level, dB/Oct							
				63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
KPR 160	396	100	52	58	59	52	52	46	39	32	25
		250	61	57	61	60	60	56	52	45	40
		500	69	56	62	65	67	64	61	55	51
		750	73	55	63	68	70	68	67	61	58
		1000	77	55	64	71	73	72	71	65	62
	562	100	60	67	65	59	58	55	49	44	39
		250	69	69	72	69	68	64	59	54	50
		500	76	71	77	76	75	71	67	62	58
		750	81	72	81	81	80	75	71	66	63
		1000	84	73	83	84	83	78	74	69	66
	630	100	64	70	68	62	61	59	54	50	45
		250	73	74	77	73	71	68	62	58	55
		500	80	77	84	81	79	74	69	65	61
		750	85	79	88	86	84	78	73	69	66
		1000	88	81	91	89	87	81	76	71	68
	KPR 200	700	100	55	66	61	54	55	46	40	33
250			63	63	64	62	63	57	53	46	41
500			71	62	66	68	70	65	62	56	52
750			75	61	68	71	73	70	68	62	58
1000			79	60	69	74	76	74	72	67	63
1010		100	61	77	69	60	59	55	49	44	39
		250	70	78	75	70	69	64	60	55	50
		500	78	80	80	78	77	71	68	63	58
		750	82	81	83	82	81	75	72	67	63
		1000	85	81	85	86	84	78	75	71	67
1105		100	65	81	72	62	61	60	54	49	44
		250	74	85	80	74	72	68	63	58	54
		500	81	88	86	82	80	74	70	66	61
		750	86	90	90	87	85	78	74	70	66
		1000	89	91	92	91	88	80	77	73	69
KPR 250		929	100	55	59	60	55	55	48	42	34
	250		64	59	63	63	63	58	53	47	41
	500		70	59	66	69	69	65	62	57	52
	750		75	59	68	72	72	70	67	63	59
	1000		78	60	69	75	75	73	71	67	63
	1314	100	59	72	66	60	58	52	47	41	35
		250	69	72	73	70	68	62	58	53	47
		500	76	74	78	77	75	70	66	62	57
		750	81	74	81	82	80	74	71	67	62
		1000	84	75	83	85	83	78	75	71	66
	1550	100	62	78	69	62	60	54	50	44	38
		250	71	79	77	73	70	64	60	55	50
		500	79	81	83	81	78	72	68	64	59
		750	84	82	87	86	83	76	73	69	64
		1000	87	82	90	90	86	80	76	72	68

**TERMINAL UNITS**

	Qv, m³/h	Ps, Pa	L <sub>wa</sub> dB(A)	Non-weighted sound power level, dB/Oct							
				63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
KPR 315	2023	100	57	64	66	57	55	51	46	37	28
		250	67	65	70	67	64	62	57	50	44
		500	74	66	73	75	72	69	65	60	56
		750	79	67	75	80	76	74	70	66	62
		1000	82	68	77	83	79	77	74	71	67
	2530	100	62	71	69	61	62	55	51	45	40
		250	71	75	76	72	70	64	61	56	51
		500	78	78	82	80	76	71	68	64	60
		750	82	80	85	84	80	76	73	69	65
		1000	85	82	88	87	82	79	76	72	69
	2772	100	65	75	70	63	66	57	54	49	45
		250	73	80	79	74	72	66	63	59	54
		500	80	84	86	82	78	73	70	66	62
		750	84	86	90	86	81	76	74	70	66
		1000	87	88	93	90	84	79	76	73	69
	KPR 400	2360	100	55	67	61	55	53	50	44	36
250			67	70	69	67	64	62	57	51	45
500			76	73	76	77	73	71	68	62	57
750			82	75	80	82	78	77	74	69	65
1000			86	76	83	86	82	81	78	74	70
3543		100	65	75	68	63	66	58	54	48	42
		250	73	79	76	72	72	67	64	59	54
		500	79	83	82	79	77	74	71	67	63
		750	84	85	86	84	80	78	76	72	68
		1000	86	87	89	87	82	81	79	75	71
4576		100	71	78	72	66	73	62	58	53	49
		250	76	83	79	74	76	70	66	62	58
		500	81	87	85	81	79	75	73	69	65
		750	85	90	89	84	81	79	77	73	69
		1000	87	91	91	87	82	81	79	76	72
KPR 500		4198	100	56	64	57	53	52	52	47	40
	250		66	69	68	65	63	62	58	53	47
	500		74	73	76	75	71	69	66	63	59
	750		80	75	81	80	76	74	71	69	66
	1000		83	77	85	84	79	77	74	73	71
	5310	100	63	73	66	62	61	58	54	49	41
		250	71	78	74	70	68	66	63	59	53
		500	78	82	81	77	73	72	70	67	63
		750	81	85	85	81	76	75	73	71	68
		1000	84	87	88	84	78	78	76	74	72
	6639	100	67	76	69	66	65	61	57	53	46
		250	73	82	77	73	70	68	65	61	56
		500	79	87	84	78	74	73	71	68	64
		750	82	89	87	81	76	76	75	72	69
		1000	84	91	90	83	78	78	77	75	72



## TERMINAL UNITS

	Qv, m <sup>3</sup> /h	Ps, Pa	L <sub>wa</sub> dB(A)	Non-weighted sound power level, dB/Oct							
				63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
KPR 630	6761	100	58	67	66	58	55	52	47	40	31
		250	68	71	71	68	66	63	60	55	49
		500	77	73	76	75	74	72	69	67	63
		750	83	75	80	80	79	77	74	74	71
		1000	86	76	82	83	82	80	78	79	77
	9558	100	66	76	76	67	65	58	54	49	43
		250	73	80	79	73	71	67	64	61	57
		500	80	83	82	78	77	74	72	71	67
		750	84	85	84	80	80	78	77	77	74
		1000	88	86	85	82	82	81	80	81	78
	10689	100	71	80	80	71	70	61	57	52	49
		250	76	84	83	75	74	69	66	64	60
		500	82	88	85	79	78	75	74	73	69
		750	85	89	86	81	80	79	78	78	74
		1000	88	91	87	82	82	82	81	82	78

### ■ Radiated sound power level

Legend:

$\Delta L_w$  – non-weighted radiated sound power correction values for non-insulated units, dB;

$L_w$  – non-weighted sound power level at frequency band, dB;

$L_w^c$  – non-weighted radiated sound power, dB  $L_w^c = L_w - \Delta L_w$ .

	Size	$\Delta L_w$ , dB										
		80	100	125	150	160	200	250	315	400	500	600
$\Delta L_w$ [dB], in relation to fm [Hz]	63	31	31	30	30	30	29	25	22	20	21	19
	125	30	30	29	30	29	28	24	22	19	20	18
	250	27	27	25	25	24	23	20	19	18	17	16
	500	21	21	21	21	21	22	18	17	17	17	16
	1000	20	19	18	19	19	21	16	15	15	15	14
	2000	11	11	12	14	15	18	14	13	12	15	15
	4000	10	11	12	13	14	16	12	11	10	12	12
	8000	11	9	10	10	12	13	11	10	10	11	11

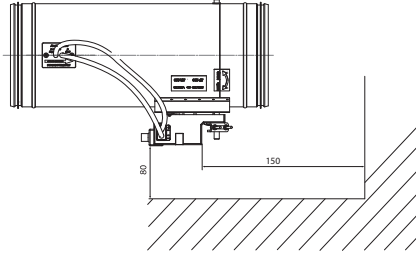
Example of calculation:

Case-radiated a-weighted sound of KPR 630 terminal unit at Ps = 500 Pa airflow = 9558 m<sup>3</sup>/h:

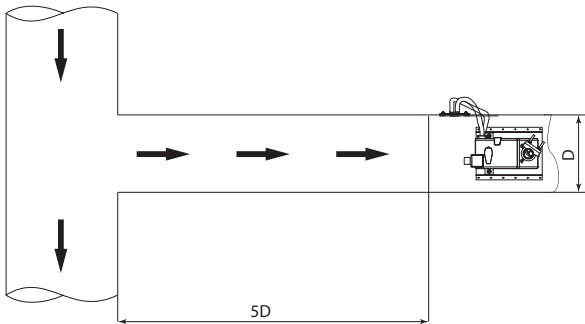
Frequency band	63	125	250	500	1000	2000	4000	8000
KPR 630 sound power level at discharge, dB	83	82	78	77	74	72	71	67
$\Delta L_w$ – non-weighted radiated sound power correction values	19	18	16	16	14	15	12	11
$L_w^c$ : non-weighted radiated sound power, dB	64	64	62	61	60	57	59	56
A-weighted radiated sound power level	38	48	53	58	60	58	60	55

**■ Mounting**

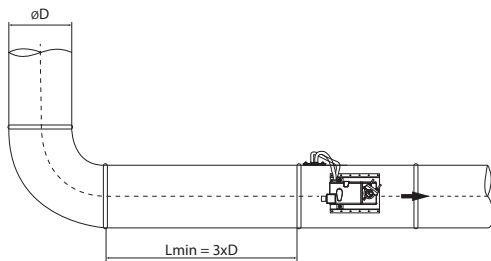
Connect ducting according to airflow direction sticker. While installing sufficient space should be ensured to enable access to the unit.



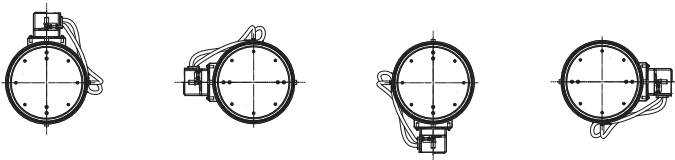
Note that it is mandatory to install the unit at a certain removal from bend, junctions etc. to avoid airflow miscalculating. Mounting position of STP terminal units by default is calibrated at factory to be vertical according to VFP sensor position. Other position should be mentioned upon order and will lead to sensor recalibration.



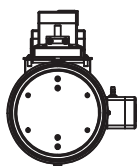
Recommended mounting positions



Front view of VAV/CAV terminal units



Front View of STP terminal units



**■ STP operation mode commissioning**

If overpressure in a premise is maintained, “+” tube should be drawn from sensor to the premise, and “-” tube to referent area (hallway, ceiling etc.)



If underpressure in a premise is maintained, “-” tube should be drawn from sensor to the premise, and “+” tube to referent area (hallway, ceiling etc.)



## Accessories

### Room thermostat:

- On/off or 0-10 V control
- Integrated (NTC) or external Pt1000 sensor
- Detection sensor can be connected
- Three preset operating modes: Stan by, Occupied, Forced ventilation
- Change over function
- Supply: 18-30 V AC 50-60 Hz
- Protection: IP20
- 0-50 C setting range



Regin RC-C3

### Room controller:

- 3 universal outputs
- On/off or 0-10 V control
- Communication RS485 (ModBus, BACnet, EXOLine)
- Supply: 18-30 V AC 50-60 Hz
- Five preset operating modes: Off/Un-occupied/Stan by, Occupied, Forced ventilation
- Integrated (NTC) or external Pt1000 sensor
- Protection: IP20
- CO2 sensor can be connected
- Forced ventilation button
- 0-50 C setting range



Regin RC-C3 DOC

### Pressure controller:

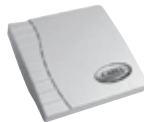
- Selectable measuring range 0...100, 0...300, 0...500, 0...1000 Pa
- Pressure signal output 0...10 V and 4...20 mA
- Controls output 0...10 V PID algorithm
- Long-service ceramic measurement element
- Protection: IP54
- Maximum overload 20 kPa



Regin DMD-C

### VOC sensor:

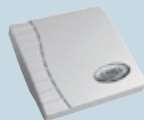
- Self-calibrated
- Signal output 0...10 V and 4...20 mA
- Protection: IP30



Carel DPWQ 30600

### CO2 sensor:

- Self-calibrated
- Signal output 0...10 V
- Measurement range: 0 ppm to 2000ppm CO2.
- Protection: IP30
- Expected lifetime is at least 36 months.



Carel DPWQ 40200

### Humidity sensor:

- Signal output 0...10 V
- Measurement range: 10 to 90 % rH
- Protection: IP30.



Carel DPWC 11200

### Fan optimiser:

- 1 to 8 VAV terminals per unit
- 0-10 V frequency converter output. Min. fan speed can be set
- Display with overall / individual actual volumes, damper positions, frequency converter setpoint, etc
- Provides communication and adjustment for every single connected VAV drive
- Supply voltage AC 24 V, 50/60 Hz / DC 24 V
- Supply: 18-30 V AC 50-60 Hz
- Communication MPbus (RJ12)
- Protection: IP10 (IP20 when commissioned)



COU24-A-MP

### Gateway MP to BACnet MS/TP:

- 1 to 8 VAV terminals per unit
- Provides communication and adjustment for every single connected VAV drive
- Supply voltage AC 24 V, 50/60 Hz / DC 24 V
- Communication MPbus (RJ12) to BACnet (RS485)
- Parameterization via BACnet client



UK24BAC

### Gateway MP to KNX:

- 1 to 8 VAV terminals per unit
- Provides communication and adjustment for every single connected VAV drive
- Supply voltage AC 24 V, 50/60 Hz / DC 24 V
- Communication MPbus (RJ12) to KNX (twisted pair)
- Parameterization via ETS 2 or higher



UK24EIB

### Gateway MP to LON:

- 1 to 8 VAV terminals per unit
- Provides communication and adjustment for every single connected VAV drive
- Supply voltage AC 24 V, 50/60 Hz / DC 24 V
- Communication MPbus (RJ12) to KNX (3 Pin Weidmüller plug)
- Parameterization via LNS engineering Tool



UK24LON

### Gateway MP to MODbus:

- 1 to 8 VAV terminals per unit
- Provides communication and adjustment for every single connected VAV drive
- Supply voltage AC 24 V, 50/60 Hz / DC 24 V
- Communication MPbus (RJ12) to KNX (RS485)
- Parameterization via DIP switches



UK24MOD

Adjustment tool:

- USB 2.0 interface
- ZK6 GEN cable optional



ZTH EU

Connecting cable:

- Used to communicate with the actuators via ZTH EU or ZIP-USB-MP



ZK1 GEN

Connecting cable:

- Used to communicate with VRP-M, UK24LON/UK24EIB via ZTH EU or ZIP-USB-MP



ZK4 GEN

Connecting cable:

- Used to communicate with COU24A-MP, UK24MOD/UK24BAC via ZTH EU or ZIP-USB-MP



ZK6 GEN

Humidity sensor:

- Signal output 0...10 V
- Measurement range: 10 to 90 % rH
- Protection: IP30.



Carel DPWC 11200

Adjustment tool:

- Tool used to program actuators, controllers and BUS masters via PC using PC tool



ZIP-USB-MP

**KPR - XXX - XXX - XXX**

**KPR** – variable air volume terminal

**Size:** 080, 100, 125, 150, 160, 200, 250, 315, 400, 500, 630

**Operation mode:**

\_ – variable/constant air volume operation mode;

**STP-100** – static pressure control, 0-100 Pa

**STP-300** – static pressure control, 0-300 Pa

**STP-600** – static pressure control, 0-600 Pa

**Communication BMS:**

**MP** – Mbus

**MOD** – ModBus

**BAC** – BACnet

**LON** – LONworks

**KNX** – KNX