

# KRFe

Electronic room regulator for  
air flow regulation



## FUNCTION

KRFe is an electronic flow regulation unit with LONTALK® communications and is included in the e.r.i.c. system. Pressure class A and damper (circular design) in class 4 air tightness for shut off.

## QUICK FACTS

- Static non-fouling flow measurement
- Slave control of KSA with the air flow as a parameter, digital or analogue
- Can control heating radiators
- Can control mixing box BLB
- Can control extra secondary cooling
- Can control the switching on/off of lighting
- Also available in an insulated design
- LONMARK®-approved
- Available in sizes Ø100 to Ø500 and most rectangular duct sizes up to 2000 x 1200 mm
- Enclosure class IP 30

## QUICK GUIDE

| KRFe<br>Size | FLOW RANGE |     |
|--------------|------------|-----|
|              | Min        | Nom |
| 100          | 10         | 40  |
| 125          | 16         | 60  |
| 160          | 27         | 100 |
| 200          | 44         | 155 |
| 250          | 69         | 240 |
| 315          | 110        | 390 |
| 400          | 180        | 630 |
| 500          | 286        | 980 |

A flow tolerance of  $\pm 10\%$  applies for the minimum air flow.

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## DESIGN

KRF is available as standard in a circular design for sizes 100-500. A rectangular model is built onto a flap damper and can be provided on most markets in sizes up to 2000 mm x1200 mm. The circular variant is also available in an insulated design to fit silencer CLA/CLB, see figure 1. Circular sizes have a shut-off damper for class 4 air tightness, rectangular in class 3 air tightness, enclosure class conforming to IP30. KRF is supplied as standard completely assembled and configured for the air flow.

## MATERIALS AND SURFACE TREATMENT

All sheet metal parts are in galvanized sheet steel. ABS-plastic is mainly used in the electronic components.

## ACCESSORIES

Mounting bracket FSR to aid dismantling when cleaning the duct system. Different room control units such as KST (temperature), KSO (occupancy detector) and KSC (CO<sub>2</sub>-sensor). Operator panel KOP for setting/adjusting data.

## INSTALLATION

KRF can be installed in any position in climate-conditioned areas. The pressure sensor position should be attached so that its diaphragm is always in the vertical position when KRF is installed horizontally; this is done by loosening the pressure sensor's securing screws and changing the position. KSR is connected to the duct system using the mounting sleeve FSR on ducts that must be cleaned. KRF should always be installed with straight sections preceding the unit. Electrical connection is carried out as per the wiring diagram KRF.

## COMMISSIONING

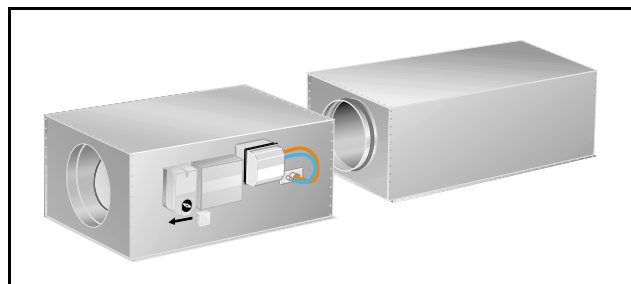
KRF is usually set at the factory and no trimming is necessary. Reprogramming can be done using the operator panel KOP or via the LON network with the help of a computer and LON-MAKER™ for Windows or similar program

## MAINTENANCE

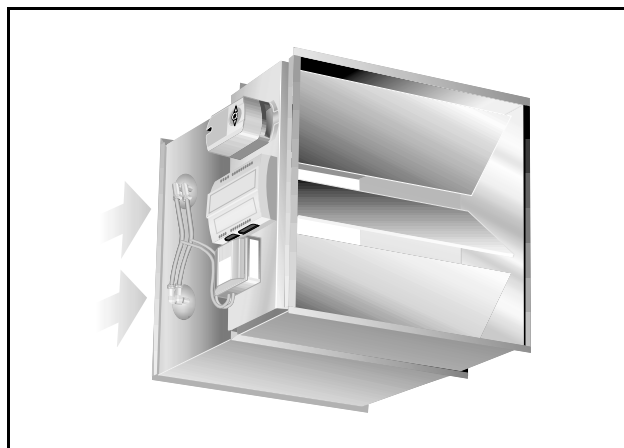
Dirty products may be cleaned by wiping or vacuum cleaning only.

## DECLARATIONS

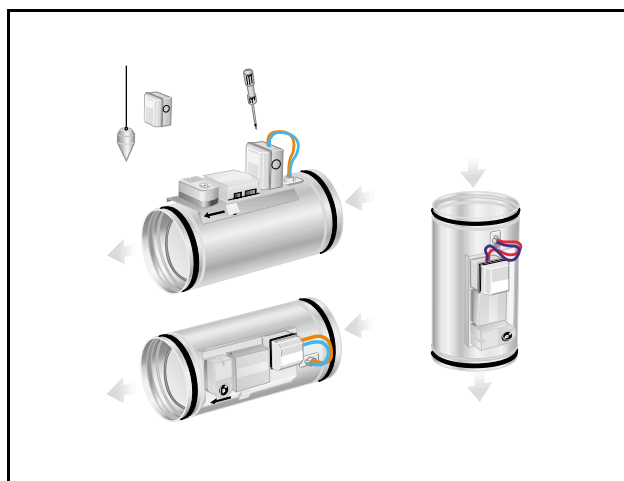
The product is CE marked.  
CE declaration and Environmental Product Declaration are available from our website.  
Standard: Conforms to LONMARK® Interoperability Guidelines and LONMARK® Functional Profile: VAV Controller.



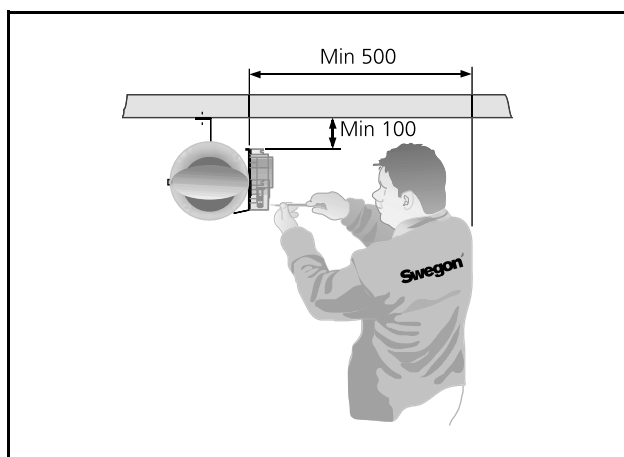
**Figure 1.** KRF insulated design and sound attenuator CLA/CLB.



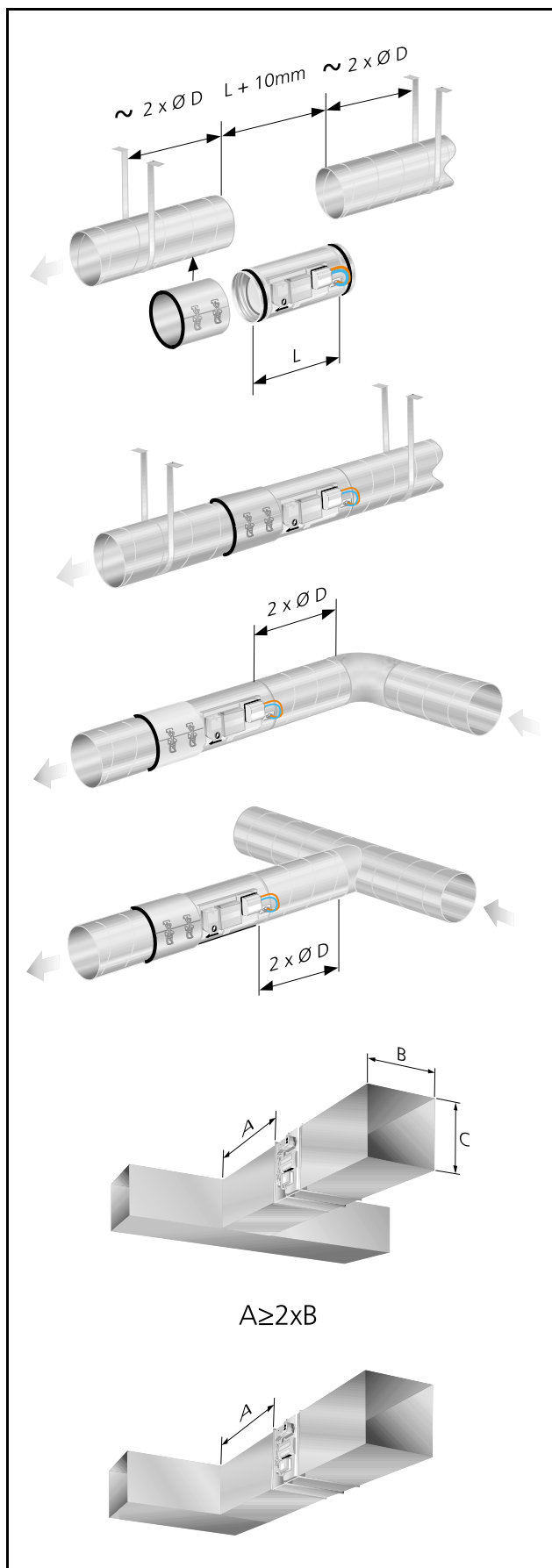
**Figure 2.** KRF for rectangular ducts.



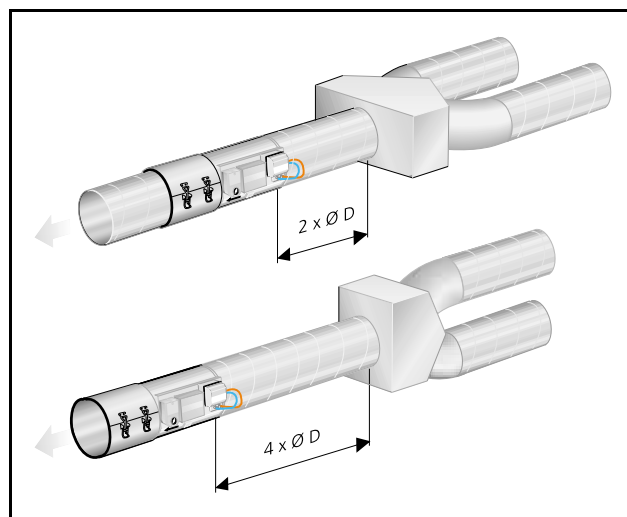
**Figure 3.** KRF installation position and changing the flow sensor position.



**Figure 4.** Installation area requirements.



**Figure 5.** Installation.



**Figure 6.** Installation.

## PLANNING

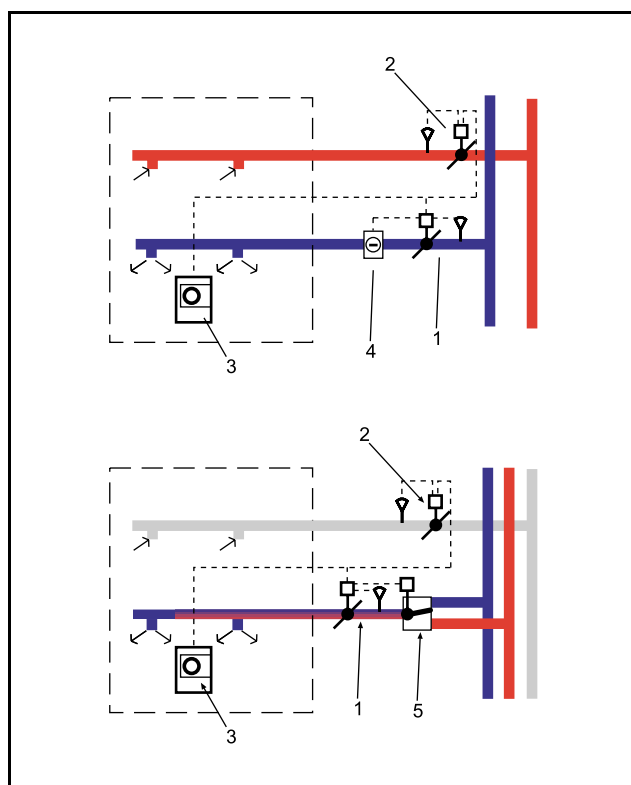
A comprehensive planning guide that describes the overall e.r.i.c. concept is given in the technical section.

KRF is an air flow regulator for regulating branch ducts or to separate rooms. KRF (1) can slave control another flow regulator KSA (2) in an corresponding duct, for example, exhaust air. The air flow, which is transferred digitally via LONTALK® to KSA (2) for slave control, can be offset in % or by a fixed l/s. There is also a possibility to transfer the slave flow analogically with 0-10 V voltage when only applies to slave regulator KSA with the regulators in the KCPb version. Any flow variations are programmed on the slave regulator with analogue transfer.

KRF is controlled by the room unit KST (3), which is a temperature sensor with set point value setting.

Further room units can be connected to KRF such as occupancy sensor, CO<sub>2</sub>-sensor, window switch or radiator valve control. Increase/decrease types or thermo-actuator connected to different outputs on the regulator can be used as radiator valve actuators.

The 0-10 V output on Y1 can be used for heating purposes as above, or to control the mixing box BLB, or as extra secondary cooling. At function with extra cooling the sequence is: first increase of air flow then the cooling valve be opened.



**Figure 7.** Flow regulation with room unit and slave control.

1. Room regulator KRF
2. Slave regulator KSA
3. Room unit KST, occupancy detector KSO, CO<sub>2</sub>-sensor KSC
4. Cooling coil
5. Mixing box BLB

## CONNECTION

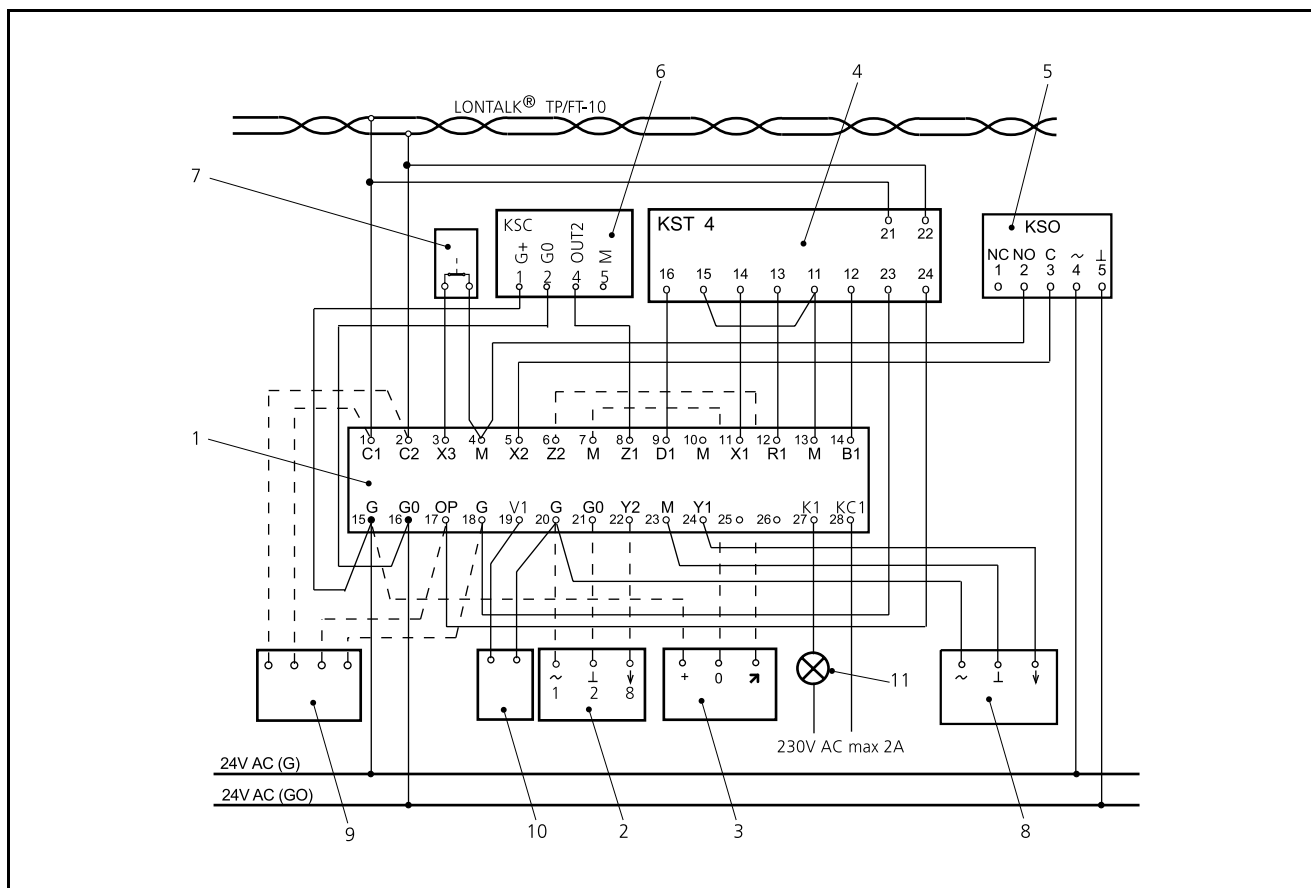
KRF is connected to a supply voltage of 24 V AC and LONTALK® as set out in the wiring diagram.

### Electrical data

|                                                        |                                |
|--------------------------------------------------------|--------------------------------|
| Input voltage                                          | 24 V AC -10% +20%,<br>50-60 Hz |
| Operation of KOP connected via the controller requires | > 23 V AC                      |
| Power consumption:                                     |                                |
| KRF with operator panel KOP                            | 8 VA                           |
| Digital outputs                                        | max. 12 VA                     |
| In total                                               | max. 16 VA                     |
| Ambient temperature:                                   |                                |
| Operation                                              | 0 °C – +50 °C                  |
| Storage                                                | -20 °C – +50 °C                |
| Humidity                                               | max. 90% RH, non condensing    |
| Inputs for air flow Z2                                 |                                |
| Measurement range                                      | 2-10 V DC                      |
| Accuracy                                               | ±0,05 V                        |
| Output for actuator Y1-Y2                              |                                |
| Output voltage range                                   | 0-10 V DC                      |
| Normal amperage                                        | 2 mA                           |
| Accuracy                                               | ±0,2 V                         |
| Thermo-actuator heating V1                             | 24 V max 0,8 A                 |
| Network protocol                                       | LONTALK®                       |
| Channel                                                | TP/FT-10, 78 kbps              |
| Neuro ntype                                            | 3150, 10 MHz                   |

### Wire cross-section requirements

Supply voltage (24 V AC) with max fuse 6 A requires ≥1.5 mm<sup>2</sup>. Signal wiring from connected units max 30 m requires 0.7 mm<sup>2</sup>. Connection to LONTALK® TP/FT-10 Free Topology Channel should be made using twisted pair cable.



**Figure 7.** Wiring diagram.

**Legend to the Wiring diagram**

Dashed lines indicate factory connected components.

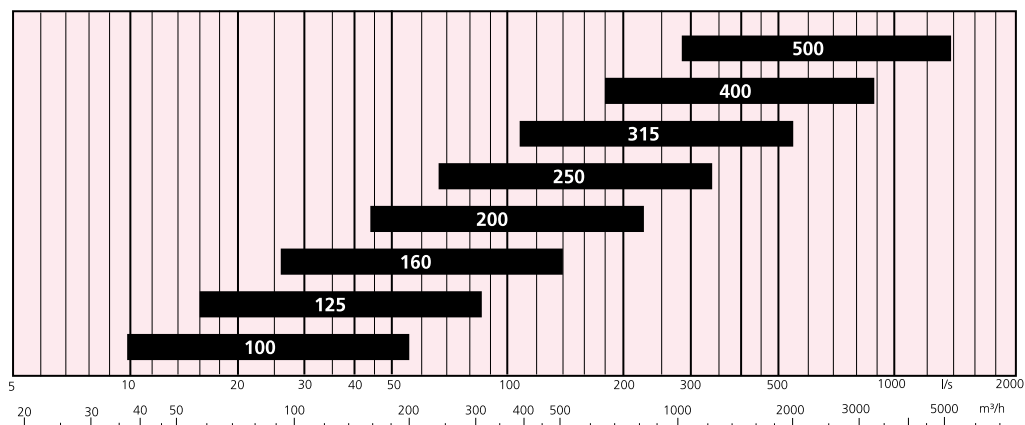
1. Regulator KRF
2. Damper motor 0-10 V DC
3. Flow pressure sensor
4. Room unit for temperature etc., KST
5. Occupancy sensor KSO
6. CO<sub>2</sub> KSC
7. Window or door switch
8. Actuator 0-10 V DC for post heat/radiator, alternatively mixing box BLB or extra secondary cooling (valve controlled) Connector for KOP
9. Thermo-actuator for post heat/radiator
10. Lighting control with occupancy sensor connected.

## TECHNICAL DATA FOR CIRCULAR DESIGN

**Air flow capacity**

The product's air flow capacity is important in planning when the air flow measurement is included in the product, see diagram. The normal working velocity range lies between 1.5-8 m/s in the duct. The upper control limit lies at approx. 13 m/s,

but then gives significantly increased pressure losses and sound problems.



### Sound power level

The diagram for the different sizes shows the total sound power ( $L_{Wtot}$ dB), as a function of the air flow and pressure drop across the damper. By correcting  $L_{Wtot}$  with the correction factors from Table 1 the sound power levels are obtained for respective octave bands ( $L_W = L_{Wtot} + K_{OK}$ ).

**Table 1**

Correction factor  $K_{OK}$  for KRF

| Size<br>KRFc | Mid-frequency (Octave band) Hz |     |     |     |      |      |      |      |
|--------------|--------------------------------|-----|-----|-----|------|------|------|------|
|              | 63                             | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 100          | 0                              | -2  | -8  | -16 | -19  | -28  | -37  | -42  |
| 125          | 1                              | -2  | -8  | -17 | -20  | -28  | -36  | -42  |
| 160          | 0                              | -3  | -7  | -16 | -19  | -24  | -33  | -40  |
| 200          | 1                              | -2  | -8  | -16 | -18  | -23  | -31  | -38  |
| 250          | 1                              | -4  | -6  | -12 | -17  | -20  | -28  | -36  |
| 315          | 0                              | -3  | -7  | -13 | -18  | -22  | -31  | -37  |
| 400          | 1                              | -2  | -10 | -13 | -17  | -20  | -30  | -36  |
| 500          | 1                              | -4  | -6  | -10 | -14  | -17  | -26  | -31  |

**Table 3**

Integral attenuation for KRF with CLA 500 mm (size 100-125) 1000 mm (size 160-500).

| Size<br>KRFc | Mid-frequency (Octave band) Hz |     |     |     |      |      |      |      |
|--------------|--------------------------------|-----|-----|-----|------|------|------|------|
|              | 63                             | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 100          | 7                              | 11  | 15  | 23  | 39   | 50   | 50   | 36   |
| 125          | 7                              | 10  | 12  | 19  | 29   | 38   | 44   | 24   |
| 160          | 12                             | 14  | 16  | 31  | 42   | 50   | 50   | 25   |
| 200          | 11                             | 11  | 15  | 31  | 44   | 50   | 32   | 22   |
| 250          | 8                              | 9   | 13  | 20  | 31   | 45   | 26   | 27   |
| 315          | 7                              | 9   | 13  | 21  | 31   | 31   | 17   | 23   |
| 400          | 3                              | 5   | 9   | 15  | 17   | 16   | 12   | 12   |
| 500          | 4                              | 4   | 14  | 22  | 27   | 22   | 16   | 13   |

### Transmitted sound

The sound transmitted from KRF is calculated according to the formula:

$$L_{Wout} = L_{Wduct} + K_{trans}$$

Data refers to non-insulated KRF and is related to the duct length that KRF makes up.

**Table 2**

Correction factor  $K_{OK}$  for KRF with sound attenuator CLA length 500 mm size 100-125 and 1000 mm for size 160-400. For size 500 the straight section  $2 \times \varnothing D$  applies between KRF and CLA.

| Size<br>KRFc | Mid-frequency (Octave band) Hz |     |     |     |      |      |      |      |
|--------------|--------------------------------|-----|-----|-----|------|------|------|------|
|              | 63                             | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 100          | 1                              | 0   | -9  | -19 | -27  | -34  | -37  | -40  |
| 125          | 1                              | -1  | -11 | -22 | -29  | -35  | -39  | -42  |
| 160          | 0                              | -1  | -13 | -23 | -27  | -29  | -32  | -36  |
| 200          | 0                              | -1  | -13 | -20 | -24  | -25  | -30  | -34  |
| 250          | 1                              | -1  | -12 | -19 | -22  | -23  | -28  | -35  |
| 315          | 0                              | -2  | -10 | -17 | -18  | -21  | -26  | -33  |
| 400          | 1                              | -2  | -9  | -15 | -17  | -22  | -26  | -33  |
| 500          | 0                              | -4  | -9  | -12 | -14  | -17  | -24  | -32  |

**Table 4**

Correction factor  $K_{trans}$  refers to non-insulated KRF

| Size<br>KRFc | Mid-frequency (Octave band) Hz |     |     |     |      |      |      |      |
|--------------|--------------------------------|-----|-----|-----|------|------|------|------|
|              | 63                             | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 100          | -5                             | -9  | -7  | -5  | -2   | 0    | 1    | 0    |
| 125          | -6                             | -10 | -8  | -6  | -3   | -1   | 0    | -1   |
| 160          | -7                             | -11 | -9  | -7  | -4   | -2   | -1   | -2   |
| 200          | -8                             | -12 | -10 | -8  | -5   | -3   | -2   | -3   |
| 250          | -9                             | -13 | -11 | -9  | -6   | -4   | -3   | -4   |
| 315          | -10                            | -14 | -12 | -10 | -7   | -5   | -4   | -5   |
| 400          | -11                            | -15 | -13 | -11 | -8   | -6   | -5   | -6   |
| 500          | -12                            | -16 | -15 | -12 | -9   | -7   | -6   | -7   |



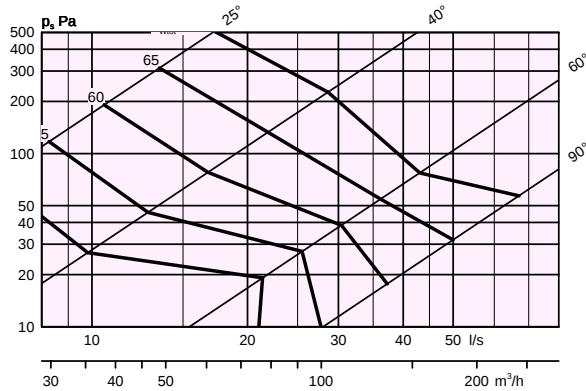
## Engineering graphs - KRF - Duct installation

### Air flow - Pressure drop - Sound level

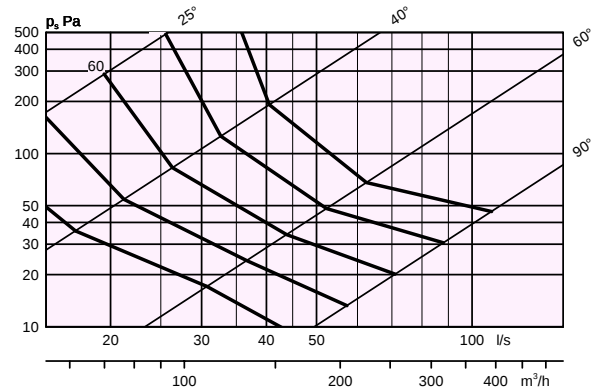
- Data applies to sound generation in the duct.
- Flows according to the air flow capacity diagram should be observed.

- Documented sound levels  $L_{Wtot}$  50, 55, 60, 65 and 70 dB for the illustrated lines in the diagram.

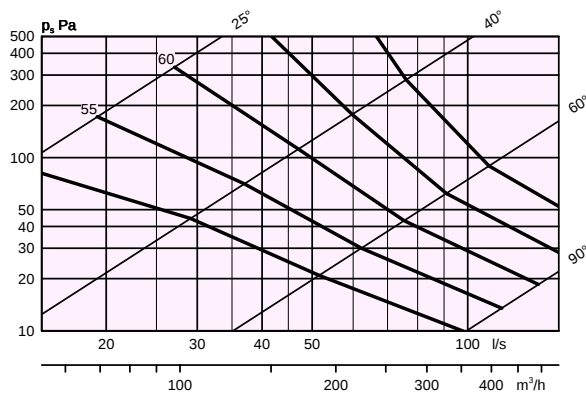
**KRFc 100**



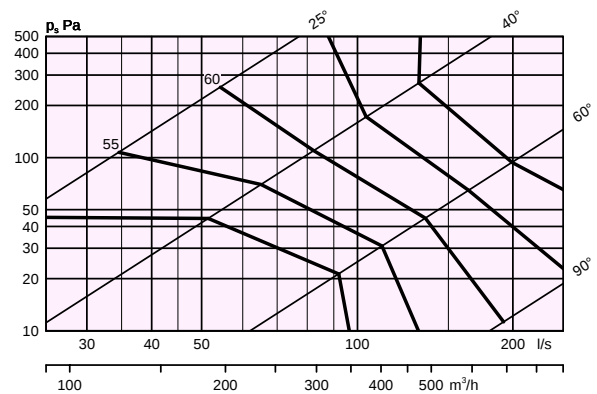
**KRFc 125**



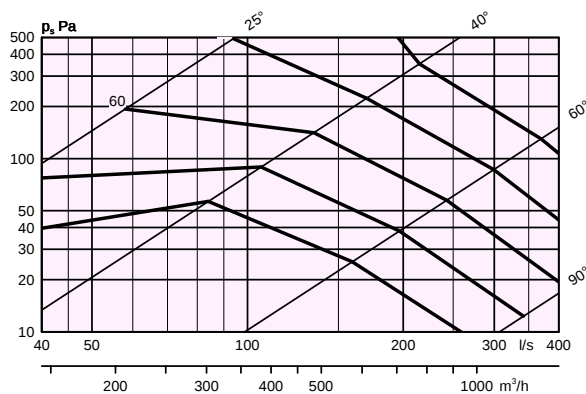
**KRFc 160**



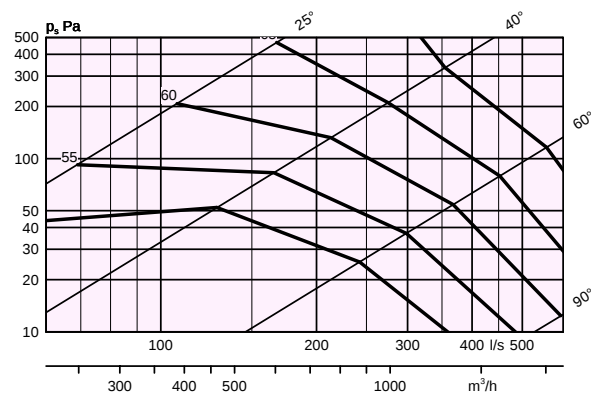
**KRFc 200**



**KRFc 250**



**KRFc 315**

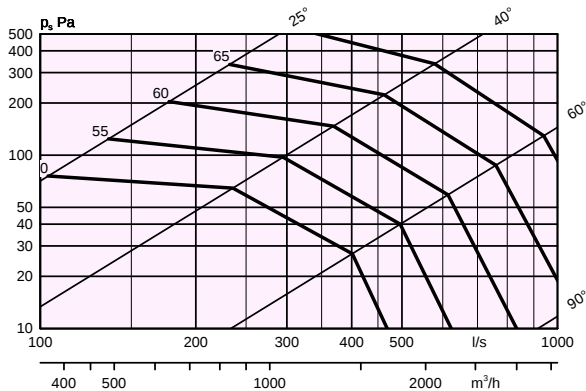


## Engineering graphs - KRF - Duct installation

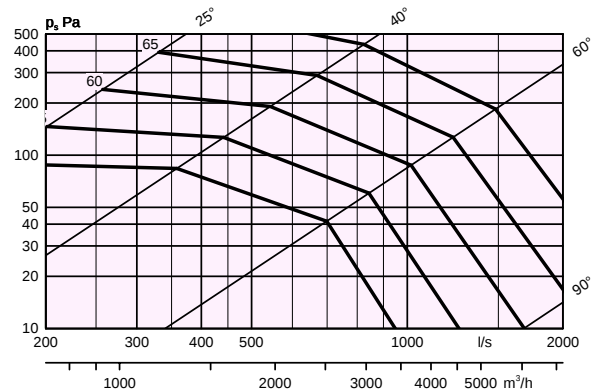
### Air flow - Pressure drop - Sound level

- Data applies to sound generation in the duct.
- Minimum flow according to the air flow capacity diagram should be observed.

#### KRFc 400



#### KRFc 500

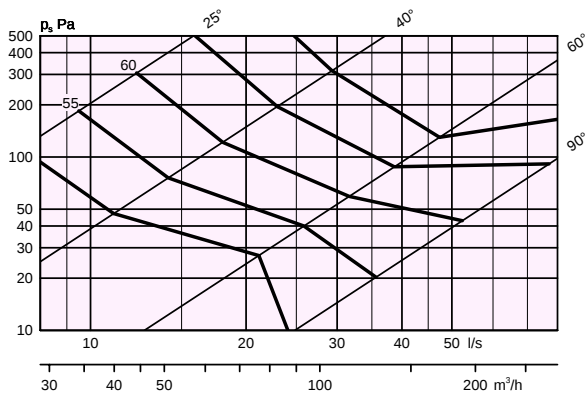


## Engineering graphs - KRF - Duct installation

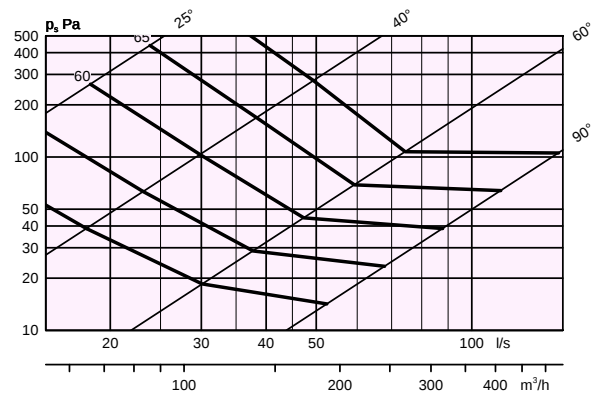
### Air flow - Pressure drop - Sound level

- Data applies to sound generation in duct with sound attenuator CLA/CLB.
- Minimum flow according to the air flow capacity diagram should be observed.

#### KRFc 100 + CLAc 100-500



#### KRFc 125 + CLAc 125-500



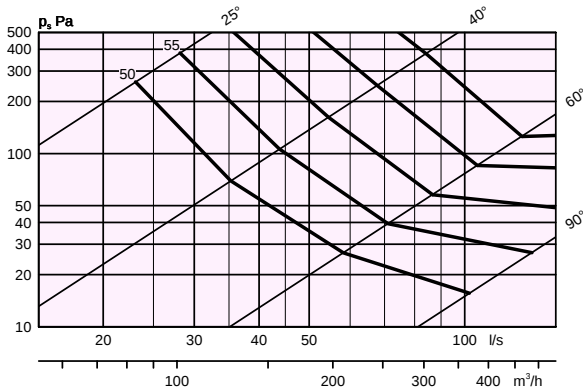
## Engineering graphs - KRF - Duct installation

### Air flow - Pressure drop - Sound level

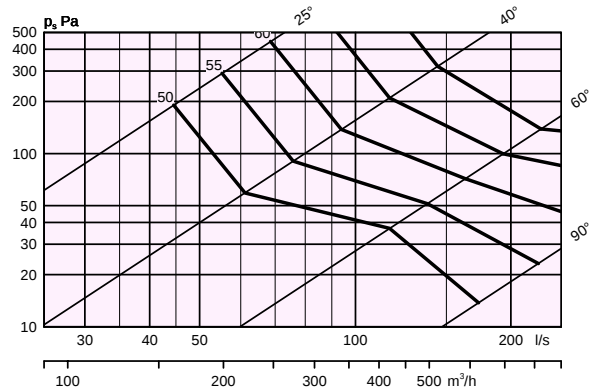
- Data applies to sound generation in duct with sound attenuator CLA/CLB.
- Minimum flow according to the air flow capacity diagram should be observed.

- Documented sound levels  $L_{Wtot}$  50, 55, 60, 65 and 70 dB for the illustrated lines in the diagram.

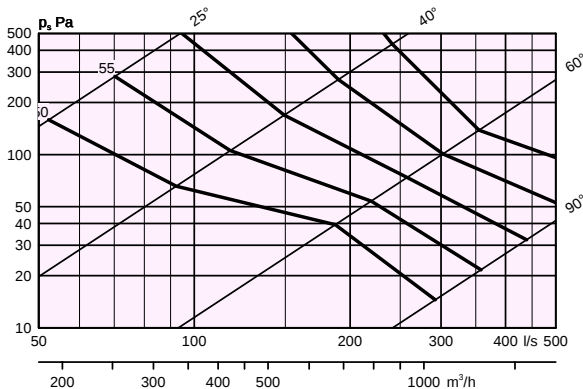
**KRFc 160 + CLAc 160-1000**



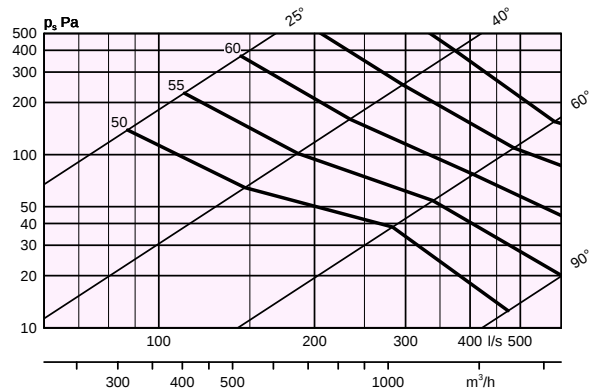
**KRFc 200 + CLAc 200-1000**



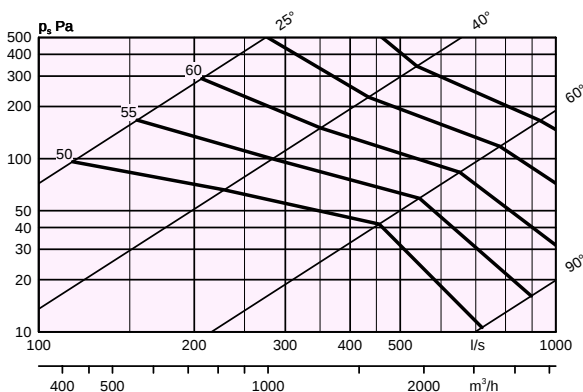
**KRFc 250 + CLAc 250-1000**



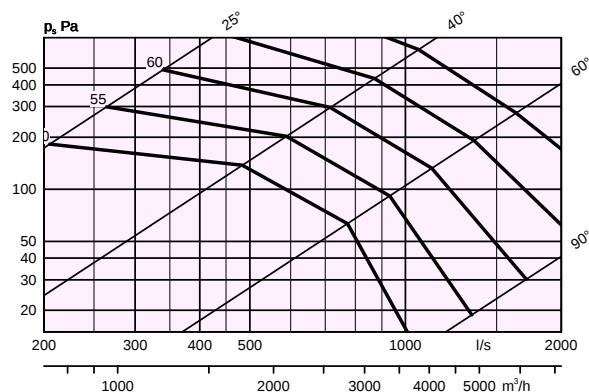
**KRFc 315 + CLAc 315-1000**



**KRFc 400 + CLAc 400-1000**



**KRFc 500 + CLBa 500-1200**



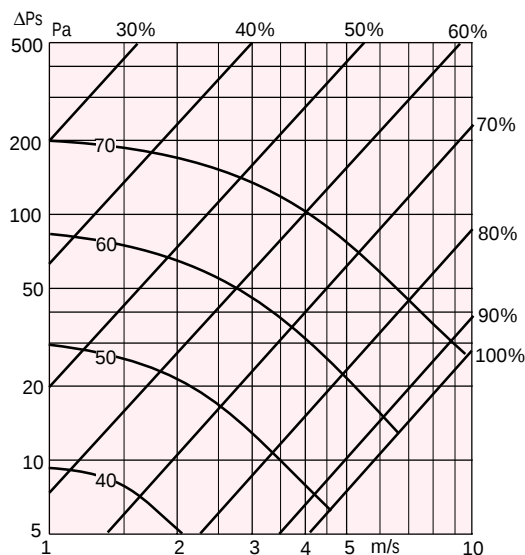
For size 500 the straight section  $2 \times \varnothing D$  applies between KRF and CLB.

## TECHNICAL DATA RECTANGULAR DESIGN

### Engineering graphs

#### Velocity - Pressure drop - Sound level

- Data applies to sound generation in the duct
  - Minimum flow applies at 1.5 m/s in the duct
- Calculate the face velocity across the damper and read the sound data and pressure drop at an appropriate damper position. At 100% the damper is fully open.



#### Sound power level

The diagram shows the total sound power ( $L_{Wtot}$  dB), as a function of the velocity and pressure drop across the damper. By correcting  $L_{Wtot}$  with the correction factors from Tables 1 and 2 the sound power levels for respective octave bands ( $L_W = L_{Wtot} + K_{OK} + K_k$ ).

**Table 1**

Correction factor  $K_{OK}$

| Size       | Mid-frequency (Octave band) Hz |     |     |     |      |      |      |      |
|------------|--------------------------------|-----|-----|-----|------|------|------|------|
| KRFc       | 63                             | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| All        | -1                             | -5  | -7  | -8  | -13  | -22  | -31  | -30  |
| Tol. $\pm$ | 4                              | 4   | 3   | 2   | 2    | 2    | 2    | 2    |

**Table 2**

Correction factor  $K_k$  for the damper's face area  $m^2$

| Area $m^2$ | 0,1 | 0,15 | 0,25 | 0,4 | 0,6 | 1,0 | 1,6 | 2,5 |
|------------|-----|------|------|-----|-----|-----|-----|-----|
| $K_k$      | -3  | -2   | 0    | 2   | 4   | 6   | 8   | 10  |

**Air flow capacity**

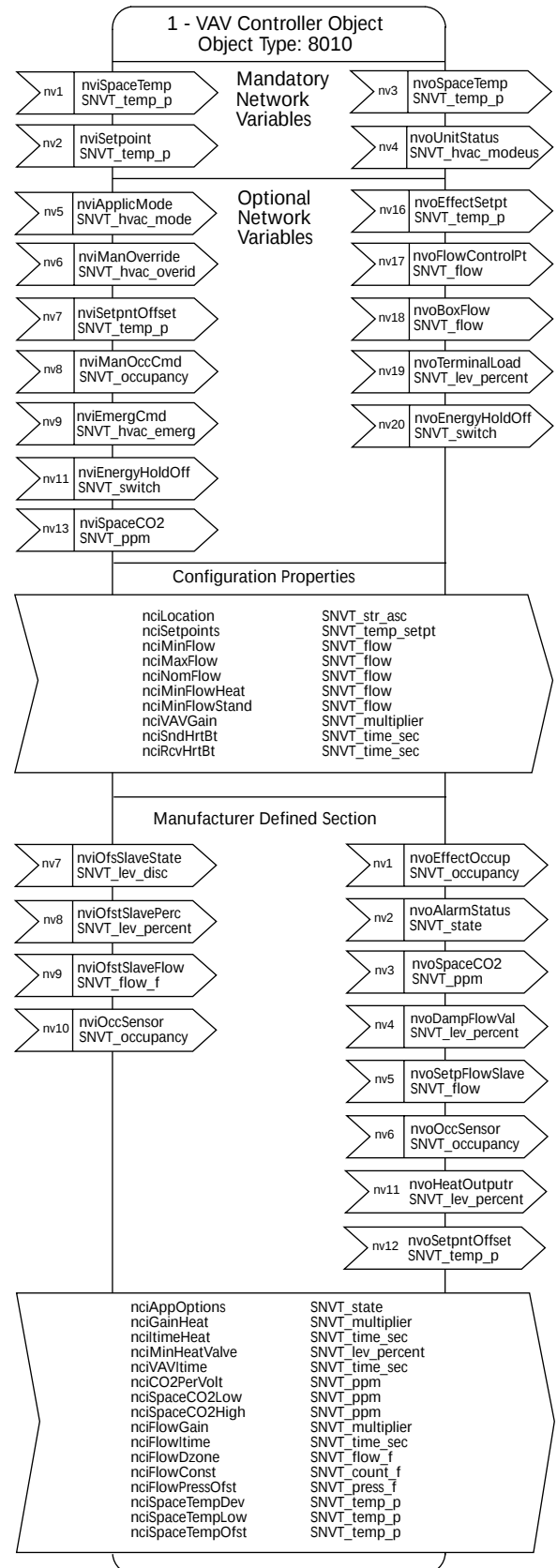
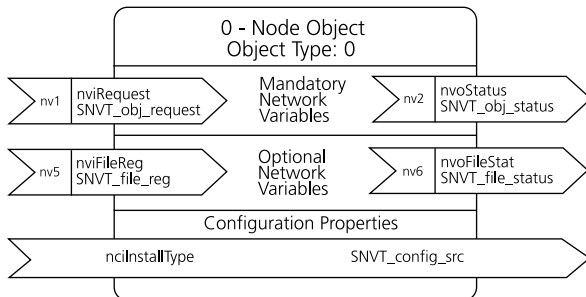
The product's air flow capacity is important in planning when the air flow measurement is included in the product. The normal working velocity range lies between 1.5-8 m/s in the duct. The upper control limit lies at approx. 13 m/s, but then gives significantly increased pressure losses and sound problems.

| Size<br>B x H | Area<br>m <sup>2</sup> | min q<br>l/s | approx 8 m/s<br>l/s | max q<br>l/s | Motor<br>Nm |
|---------------|------------------------|--------------|---------------------|--------------|-------------|
| 200 x 200     | 0,04                   | 58           | 280                 | 566          | 5           |
| 300 x 200     | 0,06                   | 86           | 500                 | 850          | 5           |
| 400 x 200     | 0,08                   | 115          | 666                 | 1 133        | 5           |
| 500 x 200     | 0,10                   | 144          | 833                 | 1 416        | 5           |
| 600 x 200     | 0,12                   | 173          | 1 000               | 1 699        | 5           |
| 800 x 200     | 0,16                   | 231          | 1 333               | 2 266        | 5           |
| 1000 x 200    | 0,20                   | 288          | 1 666               | 2 832        | 5           |
| 300 x 300     | 0,09                   | 132          | 761                 | 1 294        | 5           |
| 400 x 300     | 0,12                   | 176          | 1 015               | 1 726        | 5           |
| 500 x 300     | 0,15                   | 220          | 1 269               | 2 157        | 5           |
| 600 x 300     | 0,18                   | 263          | 1 523               | 2 589        | 5           |
| 800 x 300     | 0,24                   | 351          | 2 030               | 3 452        | 5           |
| 1000 x 300    | 0,30                   | 439          | 2 538               | 4 315        | 5           |
| 400 x 400     | 0,16                   | 236          | 1 365               | 2 320        | 5           |
| 500 x 400     | 0,20                   | 295          | 1 706               | 2 900        | 5           |
| 600 x 400     | 0,24                   | 354          | 2 047               | 3 480        | 5           |
| 800 x 400     | 0,32                   | 472          | 2 730               | 4 640        | 5           |
| 1000 x 400    | 0,40                   | 590          | 3 412               | 5 800        | 6           |
| 1200 x 400    | 0,48                   | 708          | 4 094               | 6 960        | 6           |
| 1400 x 400    | 0,56                   | 826          | 4 777               | 8 121        | 6           |
| 1600 x 400    | 0,64                   | 944          | 5 459               | 9 281        | 7           |
| 1800 x 400    | 0,72                   | 1 062        | 6 142               | 10 441       | 7           |
| 2000 x 400    | 0,80                   | 1 181        | 6 824               | 11 601       | 8           |
| 500 x 500     | 0,25                   | 371          | 2 143               | 3 642        | 6           |
| 600 x 500     | 0,30                   | 445          | 2 571               | 4 371        | 6           |
| 800 x 500     | 0,40                   | 593          | 3 428               | 5 828        | 6           |
| 1000 x 500    | 0,50                   | 741          | 4 285               | 7 285        | 7           |
| 1200 x 500    | 0,60                   | 890          | 5 142               | 8 741        | 7           |
| 1400 x 500    | 0,70                   | 1 038        | 5 999               | 10 198       | 7           |
| 1600 x 500    | 0,80                   | 1 186        | 6 856               | 11 655       | 8           |
| 1800 x 500    | 0,90                   | 1 334        | 7 713               | 13 112       | 8           |
| 2000 x 500    | 1,00                   | 1 483        | 8 570               | 14 569       | 8           |
| 600 x 600     | 0,36                   | 535          | 3 092               | 5 257        | 7           |
| 800 x 600     | 0,48                   | 713          | 4 123               | 7 009        | 7           |
| 1000 x 600    | 0,60                   | 892          | 5 154               | 8 762        | 8           |
| 1200 x 600    | 0,72                   | 1 070        | 6 185               | 10 514       | 8           |
| 1400 x 600    | 0,84                   | 1 248        | 7 216               | 12 267       | 9           |
| 1600 x 600    | 0,96                   | 1 427        | 8 246               | 14 019       | 9           |
| 1800 x 600    | 1,08                   | 1 605        | 9 277               | 15 771       | 10          |
| 2000 x 600    | 1,20                   | 1 783        | 10 308              | 17 524       | 10          |
| 800 x 700     | 0,56                   | 834          | 4 822               | 8 197        | 8           |
| 1000 x 700    | 0,70                   | 1 043        | 6 027               | 10 246       | 9           |
| 1200 x 700    | 0,84                   | 1 251        | 7 232               | 12 295       | 9           |

| Size<br>B x H | Area<br>m <sup>2</sup> | min q<br>l/s | approx. 8 m/s<br>l/s | max q<br>l/s | Motor<br>Nm |
|---------------|------------------------|--------------|----------------------|--------------|-------------|
| 1400 x 700    | 0,98                   | 1 460        | 8 438                | 14 344       | 9           |
| 1600 x 700    | 1,12                   | 1 668        | 9 643                | 16 393       | 10          |
| 1800 x 700    | 1,26                   | 1 877        | 10 849               | 18 443       | 11          |
| 2000 x 700    | 1,40                   | 2 085        | 12 054               | 20 492       | 11          |
| 800 x 800     | 0,64                   | 954          | 5 517                | 9 379        | 9           |
| 1000 x 800    | 0,80                   | 1 193        | 6 896                | 11 723       | 10          |
| 1200 x 800    | 0,96                   | 1 432        | 8 275                | 14 068       | 10          |
| 1400 x 800    | 1,12                   | 1 670        | 9 654                | 16 412       | 11          |
| 1600 x 800    | 1,28                   | 1 909        | 11 034               | 18 757       | 11          |
| 1800 x 800    | 1,44                   | 2 147        | 12 413               | 21 102       | 12          |
| 2000 x 800    | 1,60                   | 2 386        | 13 792               | 23 446       | 12          |
| 1000 x 900    | 0,90                   | 1 344        | 7 767                | 13 204       | 11          |
| 1200 x 900    | 1,08                   | 1 612        | 9 320                | 15 845       | 11          |
| 1400 x 900    | 1,26                   | 1 881        | 10 874               | 18 485       | 12          |
| 1600 x 900    | 1,44                   | 2 150        | 12 427               | 21 126       | 13          |
| 1800 x 900    | 1,62                   | 2 419        | 13 981               | 23 767       | 13          |
| 2000 x 900    | 1,80                   | 2 687        | 15 534               | 26 408       | 14          |
| 1000 x 1000   | 1,00                   | 1 495        | 8 640                | 14 688       | 12          |
| 1200 x 1000   | 1,20                   | 1 794        | 10 368               | 17 626       | 13          |
| 1400 x 1000   | 1,40                   | 2 093        | 12 096               | 20 563       | 13          |
| 1600 x 1000   | 1,60                   | 2 392        | 13 824               | 23 501       | 14          |
| 1800 x 1000   | 1,80                   | 2 690        | 15 552               | 26 438       | 14          |
| 2000 x 1000   | 2,00                   | 2 989        | 17 280               | 29 376       | 16          |
| 1200 x 1100   | 1,32                   | 1 975        | 11 418               | 19 411       | 14          |
| 1400 x 1100   | 1,54                   | 2 305        | 13 321               | 22 646       | 14          |
| 1600 x 1100   | 1,76                   | 2 634        | 15 224               | 25 881       | 16          |
| 1800 x 1100   | 1,98                   | 2 963        | 17 127               | 29 116       | 17          |
| 2000 x 1100   | 2,20                   | 3 292        | 19 030               | 32 351       | 17          |
| 1200 x 1200   | 1,44                   | 2 157        | 12 470               | 21 200       | 16          |
| 1400 x 1200   | 1,68                   | 2 517        | 14 549               | 24 733       | 17          |
| 1600 x 1200   | 1,92                   | 2 877        | 16 627               | 28 266       | 17          |
| 1800 x 1200   | 2,06                   | 3 236        | 18 706               | 31 800       | 18          |
| 2000 x 1200   | 2,40                   | 3 595        | 20 784               | 35 333       | 19          |

## Lonmark objects and network variables

Standard objects applicable for KRF with regulator KCF are shown in the figure below. Not all these network variables are used for the applications managed by KRF. Further information about the use of variables can be found in the commissioning instructions for the e.r.i.c. system and in the Technical Manual. All documents are available for download from our website. The regulator is LONMARK®-approved. "xif-files" are available for download from our website.



**DIMENSIONS AND WEIGHT**

**KRFc Non-insulated**

| Size | Dimensions, mm |     |     | Weight,kg |
|------|----------------|-----|-----|-----------|
|      | ØD             | A   | E   |           |
| 100  | 99             | 472 | 382 | 2,5       |
| 125  | 124            | 472 | 382 | 2,7       |
| 160  | 159            | 472 | 382 | 3,0       |
| 200  | 199            | 472 | 382 | 3,6       |
| 250  | 249            | 472 | 382 | 4,0       |
| 315  | 314            | 472 | 382 | 4,9       |
| 400  | 399            | 594 | 504 | 6,2       |
| 500  | 499            | 711 | 621 | 9,2       |

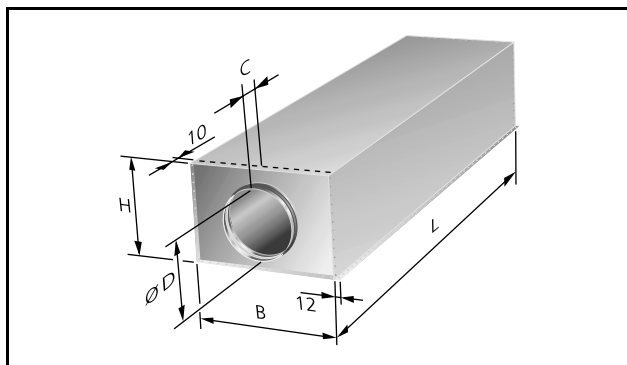
**KRFc Insulated**

| Size | Dimensions, mm |     |     |     | Weight,kg |
|------|----------------|-----|-----|-----|-----------|
|      | ØD             | B   | H   | L   |           |
| 100  | 100            | 212 | 152 | 542 | 4,5       |
| 125  | 125            | 242 | 177 | 542 | 5,6       |
| 160  | 160            | 282 | 212 | 542 | 6,1       |
| 200  | 200            | 332 | 252 | 542 | 7,9       |
| 250  | 250            | 392 | 302 | 542 | 9,0       |
| 315  | 315            | 462 | 367 | 542 | 11,2      |
| 400  | 400            | 550 | 459 | 602 | 13,3      |
| 500  | 500            | 650 | 560 | 707 | 16,8      |

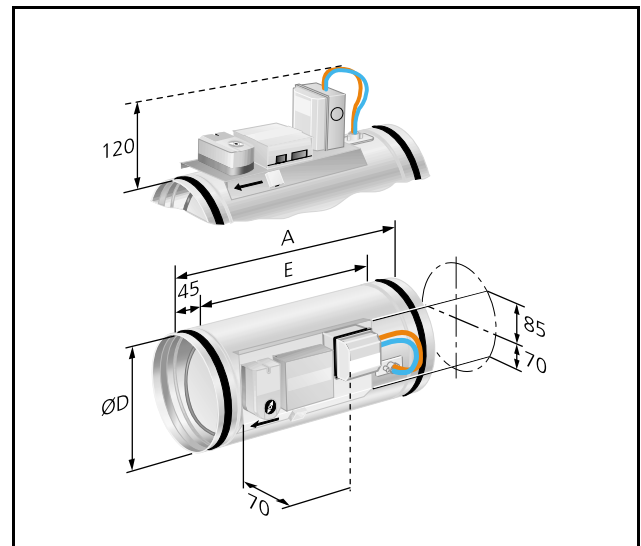
**CLAc / CLBa**

| Size | Dimensions, mm |    |     |     |      | Weight,kg |
|------|----------------|----|-----|-----|------|-----------|
|      | B              | C  | ØD  | H   | L    |           |
| 100  | 215            | 40 | 99  | 155 | 1020 | 4,2       |
| 125  | 245            | 40 | 124 | 180 | 1020 | 5,2       |
| 160  | 285            | 40 | 159 | 215 | 1020 | 9,7       |
| 200  | 335            | 40 | 199 | 255 | 1020 | 12,5      |
| 250  | 395            | 60 | 249 | 305 | 1020 | 18,0      |
| 315  | 465            | 60 | 314 | 370 | 1020 | 19,0      |
| 400  | 553            | 60 | 399 | 462 | 1020 | 24,5      |
| 500  | 682            | 60 | 499 | 580 | 1220 | 33,0      |

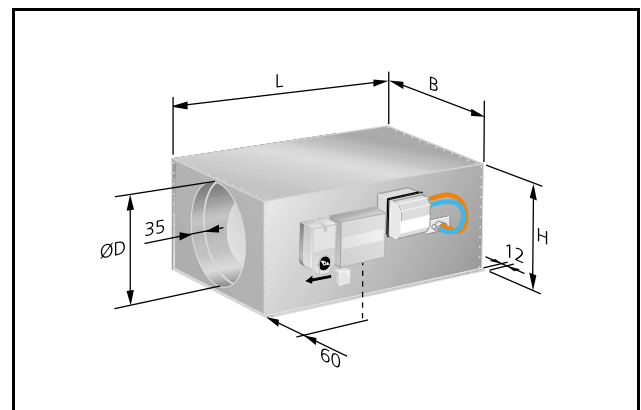
CLA applies to sizes 160-400, CLB applies only to size 500.



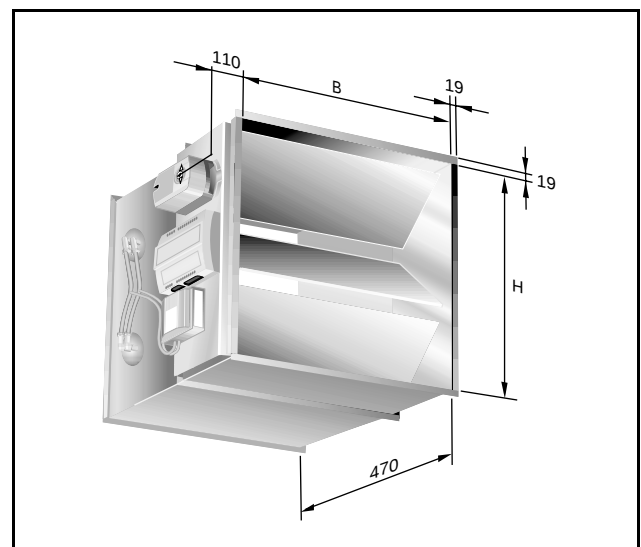
**Figure 9.** Sound attenuator CLA/CLB.



**Figure 10.** KRF non-insulated design.



**Figure 11.** KRF insulated design.



**Figure 12.** KRF rectangular design with guide joint.

## ORDER KEY

### Circular design

#### Product designation

Constant pressure regulator KRFc -aaa -b

Size:

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

Design:

N = Non-insulated

I = Insulated 50 mm

For factory setting state:

- min/max air flow and any slave flow variation in % or l/s
- if, air quality control with CO<sub>2</sub>-sensor should take place
- if, occupancy should take place
- if, window switch control should take place
- if, heat control (radiator or duct coil), extra cool control or mixing box control to be used
- if, binding of the slave flow, state the slave flow unit's rating. **NOTE!** Binding is not stated with analogue transfer

#### Accessories

Also see the separate catalogue sheets for respective accessories.

#### Accessories

Room unit KSTb -a

Model 0, 2 or 4

Sound attenuator CLAc -aaa -bbb

Size:

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

Length: 500, 1000

Sound attenuator CLBa 500-1200

Mounting sleeve FSRc -aaa

Size:

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

Occupancy sensor KSOa

CO<sub>2</sub>-sensor KSCb

Operator's panel KOPb

#### ORDERING EXAMPLE

5 rooms with slave controlled exhaust air and occupancy sensor, one of the rooms also has control of the carbon dioxide level.

|                   |         |
|-------------------|---------|
| KRF 315-N-100/350 | 5 items |
| KSA 315-N         | 5 items |
| KST 2             | 5 items |
| KSO               | 5 items |
| KSC 1             | 1 items |

#### Configuration example

This only applies to products that should be connected as master/slave via the LonWorks network.

- Products are configured in pairs, Master/Slave
- Exhaust air flow + 10 l/s in relation to the supply air flow
- Rating: Room 22, Supply air
- Binding (LON): KSAb Room 22 Exhaust air

The configuration of the exhaust air unit is specified according to the example documented on the KSAb catalogue sheet.

#### SPECIFICATION EXAMPLE

Example of the specification text according to VVS AMA.

KD XX

Swegon electronic air flow regulator type KRFc which is included in the e.r.i.c. system with the following functions:

- Closable damper in class 4 air tightness
- Non-fouling
- Insulated design
- Slave control of corresponding exhaust air unit
- LONTALK<sup>®</sup>-connection
- LONMARK<sup>®</sup>-approved

Accessories:

|                         |               |          |
|-------------------------|---------------|----------|
| Room unit               | KSTb -a       | xx items |
| Occupancy sensor        | KSOa          | xx items |
| CO <sub>2</sub> -sensor | KSCb          | xx items |
| Operator's panel        | KOPb          | xx items |
| Mounting sleeve         | FSRc          | xx items |
| Sound attenuator etc.   | CLAc -aaa-bbb | xx items |

|       |             |          |
|-------|-------------|----------|
| Size: | KRFc -aaa-b | xx items |
| etc.  | KRFc -aaa-b | xx items |

State the following: Qmin / Qmax, variation on the slave controlled air flow, accessories and rating.