

# ADAPT™ Diffusers

Room products for Swegon's WISE System for demand-controlled ventilation



ADAPT Diffusers

## Quick facts

- ▶ Active slot opening/damper
- ▶ Pressure-dependent and cleanable
- ▶ Integrated sensor module
- ▶ Simple wiring, Plug & Play
- ▶ Communication via Modbus RTU
- ▶ Supplied complete with commissioning box (master)

## Provision for control

- ▶ Radiator, or cooling circuit valve (max. 3 actuators per master)
- ▶ Slaves (supply air or extract air, 3 slaves)
- ▶ Lighting (via relay)

## Quick Selection

	New construction				New construction				Repair, Alteration and Extension			
	$\leq 30 \text{ dB(A)}, 50 \text{ Pa (max } P_{\text{tot}})$				$\leq 35 \text{ dB(A)}, 50 \text{ Pa (max } P_{\text{tot}})$				$\leq 35 \text{ dB(A)}, 80 \text{ Pa (max } P_{\text{tot}})$			
Product	$q_{\text{min}}$ (l/s)	$q_{\text{max}}$ (l/s)	$\Delta T=8 \text{ K}$	$l_{0.2}$ (m)	$q_{\text{min}}$ (l/s)	$q_{\text{max}}$ (l/s)	$\Delta T=8 \text{ K}$	$l_{0.2}$ (m)	$q_{\text{min}}$ (l/s)	$q_{\text{max}}$ (l/s)	$\Delta T=8 \text{ K}$	$l_{0.2}$ (m)
ADAPT Sphere 160	0/5	50	480	3.8	0/5	60	580	4.0	0/5	50	480	4.2
ADAPT Sphere 200	0/10	65	620	4.2	0/10	100	960	5.2	0/10	55	530	4.0
ADAPT Free 160	0/5	50	480	3.2	0/5	60	580	3.5	0/5	50	480	3.6
ADAPT Free 200	0/10	65	620	4.0	0/10	100	960	4.5	0/10	55	530	3.5
ADAPT Colibri 160	0/5	50	480	2.0	0/5	55	530	2.1	0/5	55	530	2.1
ADAPT Colibri 250	0/10	80	770	2.1	0/10	100	960	2.6	0/10	90	860	2.4
ADAPT Extract 200	0/5	60	-	-	0/5	75	-	-	0/5	65	-	-
ADAPT Extract 250	0/10	90	-	-	0/10	100	-	-	0/10	100	-	-

dB(A) is applicable to a normally attenuated room (4 dB room attenuation) and  $P_{\text{tot}}$  is the total pressure drop across the diffuser. The 0 l/s min. airflow is adjustable; regulation cannot take place if airflows are set below the normal minimum value. As an example, it is possible to obtain 0-flow when there are no occupants in the room.

# Technical Description

## Design

ADAPT is a series of flow-controlled supply air diffusers for Swegon's WISE VAV system. The air diffusers control the airflow via a motor-controlled adjustable gap between the visible design-section and the cone-shaped top section of the diffuser, or with an active damper in commissioning box (ADAPT Colibri and Extract). An ADAPT air terminal is always supplied with commission box. The controller with all the required set points and control functions and a sensor package with the most common integrated sensors; temperature and presence, is located inside the air diffuser.

The air terminals are also equipped with a control function that continuously checks through the air diffuser and informs you if some component part is not functioning properly. All air diffusers can close or open completely in response to signals from a main control system, a so-called fire function.

## Sensor module

The sensor module, which is integrated in all supply air diffusers, contains sensors for room temperature and presence which meet most requirements. The temperature sensor controls the airflow to maintain correct temperature in the room. The presence detector makes it possible to save additional energy by lowering the airflow when there are no occupants in the room. Although there is a requirement for maintaining a certain temperature in the room, the temperature can still be lowered when there are no occupants in the room. The presence signal from the air diffuser can be fetched from the relevant commission box for controlling the lighting, and thus provides optimal savings potential.

## CONNECT Adapt

A junction box is included in every air diffuser delivery (Master). The junction box replaces the coupling box which otherwise is mounted on a wall/ceiling for wiring a 24 V supply voltage to the air diffuser and Modbus networks.

Both air diffuser and box are equipped with RJ45 quick-fit connector for quick and fault-free wiring. The device has provision for connection to a main control system (BMS) via ModBus. Connect the LINK Modbus accessory cable (RJ12) between air diffuser and box and the air diffuser will then be ready for the main control system. The following control functions can also be connected from the junction box: Heating in sequence, CO<sub>2</sub> sensor and set point adjuster.

The presence signal from the air diffuser can be fetched for controlling the lighting, for instance, and in this way save more energy.

## Functions

- Cools/heats and ventilates with air
- Two stage cooling with water in the second stage, cannot be combined with heating
- Controls airflow with regard to temperature and presence
- Ventilation boost after a longer period of vacancy
- Provision for wiring to a CO<sub>2</sub> controller
- Provision for manually setting set points
- Has provision for connection to a main control system (Modbus)
- Control of the heating in sequence if 2-stage cooling has not been selected
- Comfort control indicated by the LED if the room temperature or CO<sub>2</sub> value deviates too much from the set point



Figure 1. ADAPT Free and ADAPT Colibri



Figure 2. Sensor module.

1. Temperature detector
2. In-operation indicator
3. Presence detector

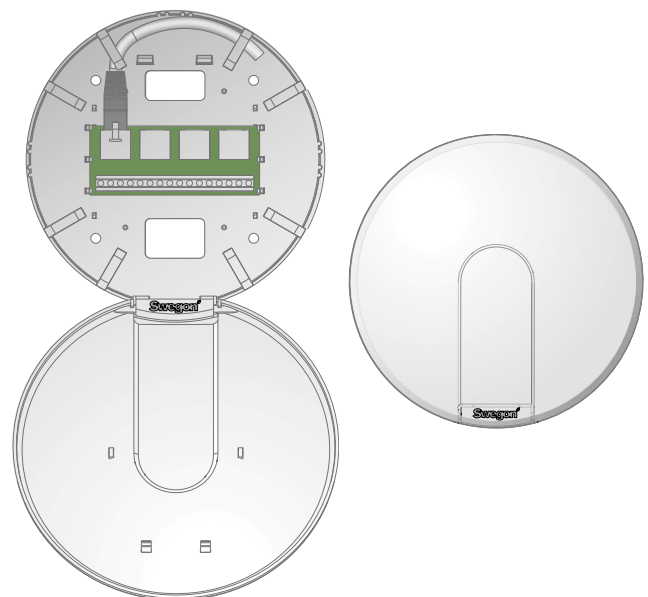


Figure 3. CONNECT Adapt.

## Planning

The air diffusers adjust themselves to the correct flow rate between preset min. and max. flows from applicable set points and sensor information. Since the air diffusers are flow-controlled, they adjust to correct flow regardless of the pressure that is available. The pressure drop upstream of the air diffuser must be determined with consideration given to sound levels. See the sizing diagram or quick selection tables. Even if the air diffusers are flow-controlled, the pressure will have to be controlled for each zone. This can be done either by the air handling unit in smaller systems, or by WIZE zone dampers, CONTROL Dampers, in larger systems. For further instructions on planning, see WISE System Technology.

Do not install light fittings or the like below the air diffusers. Such fittings disturb the temperature measurement function and the motion detection capability of the presence detector.

## Commissioning

Normally, the ADAPT air terminals are preset from the factory based on design values.

The TUNE Adapt hand-held terminal is used for manually checking the current air flow through the air diffuser, and for changing set points, if required. To connect this component, first remove the sensor package, then connect its cable to the quick-fit contact.

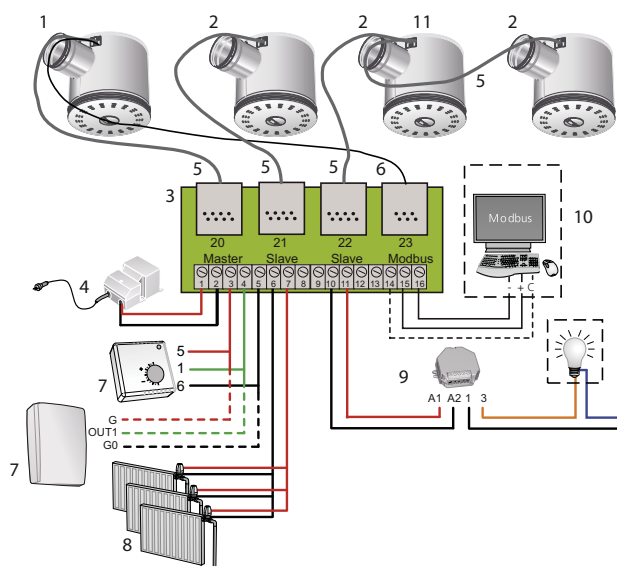


Figure 4. How to wire the accessories (normal power consumption is indicated below in brackets)

1. ADAPT Master diffuser (3VA)
2. ADAPT Slave diffuser (3 x 3VA)
3. CONNECT Adapt, conn. terminal
4. Transformer, 230-24 V AC
5. LINK Adapt 5 m (RJ45 cord)
6. LINK Modbus 5 meter long (RJ12 cord)
7. DETECT Quality (3 VA) or TUNE Temp (1 VA)
8. ACTUATOR, radiator or cooling unit control system (24 V PWM), max. 3 valves at 6 VA
9. ADAPT Relay for lighting. Available with several different relay variants, see accessories.
10. Wiring of main control system (Modbus RTU)
11. SPLIT Link

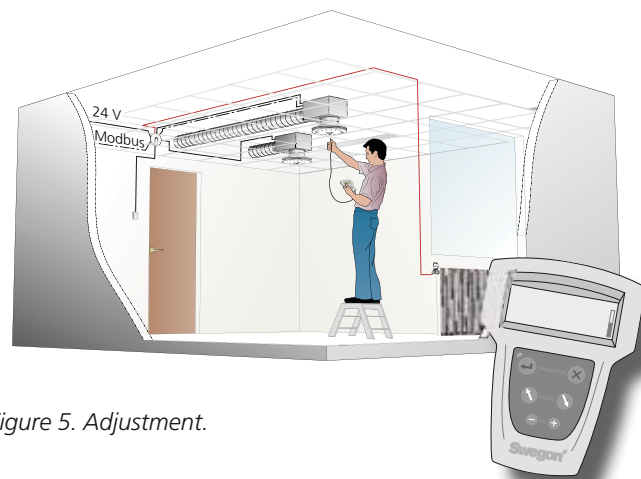


Figure 5. Adjustment.

Table. Coverage area of the presence detector

H	A1	B1	A2	B2
2.2	4.5	4.0	2.9	2.5
2.4	4.8	4.3	3.3	2.9
2.6	5.3	4.7	3.7	3.2
2.8	5.7	5.0	4.1	3.6
3.0	6.1	5.4	4.5	4.0

Dimensions given in meters

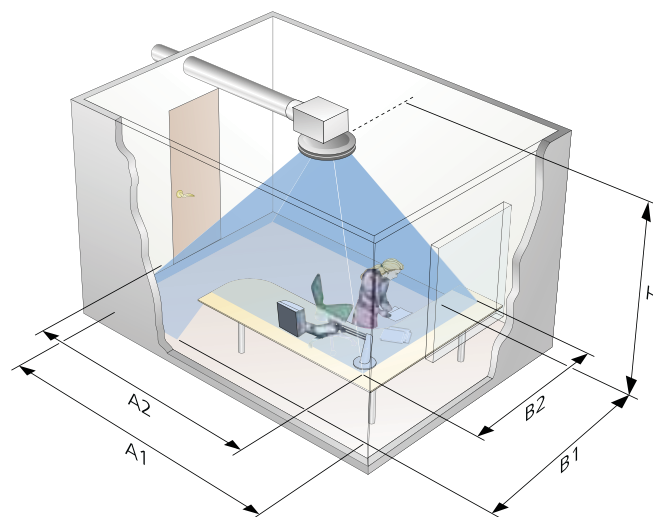


Figure 6. Presence detector detection area.

## Materials and finish

ADAPT air terminals are made of galvanized sheet steel and have parts made of plastic, rubber. The ADAPT air terminals also contain electronic components. The ADAPT air terminals are powder coated in Swegon's white interior colour RAL 9010, both on the inside and on the outside. The air terminals are also available in alternative standard colours; matt grey RAL 7037, white aluminium RAL 9006, black RAL 9005 and grey aluminium RAL 9007.

The sensor package and junction box are made of ABS plastic.

The commissioning box is made of galvanized sheet steel with internal insulation.

## Maintenance

The ADAPT air terminals can be cleaned on the outside, if necessary, using lukewarm water with dishwashing detergent added.

The duct system is accessible without need for tools. (See mounting).

## Declaration

The product is CE marked. The Declaration of Construction Materials and CE Declaration are available from: [www.swegon.com](http://www.swegon.com).

## Electrical data

ADAPT is supplied with power via the junction box. See wiring diagram.

For more information about various wiring and room solutions, see the Technical Section.

Supply voltage	24 V AC $\pm 10\%$
Max. power consumption	3 VA
Cable rating	0.6 A
Ambient temperature:	0 °C - +50 °C

## Forms of delivery

Certain ADAPT-products with standard settings for airflow and Modbus address are available from stock.

The delivery of a master air diffuser contains complete air diffuser with commissioning box, junction box CONNECT Adapt and 5 metre long RJ45 cable LINK Adapt. See Figure 7.

The delivery of a slave air diffuser contains complete air diffuser with commissioning box and 5 metre long RJ45 cable. LINK Adapt.

## Standard settings

### Temperatures (°C)

Presence	22	$\pm 1$ K
Absence	22	+3 / -2 K
Night-time cooling	17	

Airflows (l/s)	Absence	Min. airflow	Max. airflow
The smallest size	5	10	50
The largest size	10	15	80

Air quality (ppm)	Min.	Max.
CO <sub>2</sub>	800	1000

### Presence

Switch on delay	0 sec.
Switch out delay	20 min.

### Communication RS485

Modbus ID	1
Speed	38,400 bps
Word length	8 bits
Stop bits	1 bit
Parity	None



Figure 7. Delivery of master air diffusers.

# ADAPT Sphere

## Sizing

- The specified sound levels dB(A) are applicable to rooms with an equivalent sound absorption area of 10 m<sup>2</sup> (4 dB room attenuation).
- The throw  $L_{0.2}$  is measured under isothermal discharge conditions.
- Recommended max. permissible temperature below room temperature is 12 K.
- All technical data applies to 360° distribution pattern.
- For calculating the air stream propagation, air velocities in the occupancy zone, or sound levels in rooms with other dimensions, we refer to our ProAir Web calculation program. ProAir Web is available at [www.swegon.com](http://www.swegon.com).

## Air flow - Pressure drop - Sound level - Throw

- The diagrams should not be used for commissioning.
- The dB(C) value is normally 6-9 dB higher than the dB(A) value.
- The throw can be read at the design max. air flow and pressure drop.



## Sound data – ADAPT Sphere

### Sound power level $L_w$ (dB)

Table  $K_{OK}$

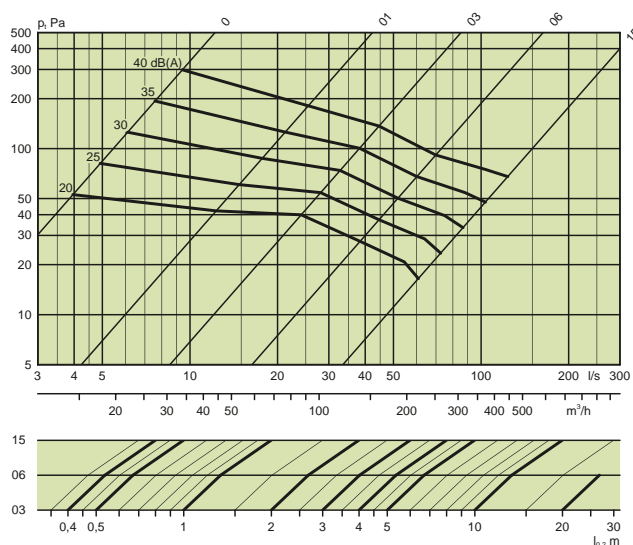
Size	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
160	1	-6	-6	-2	1	-4	-13	-20
200	-6	-6	-6	-1	-1	-3	-10	-18
Tol. ±	2	2	2	2	2	2	2	2

### Sound attenuation $\Delta L$ (dB)

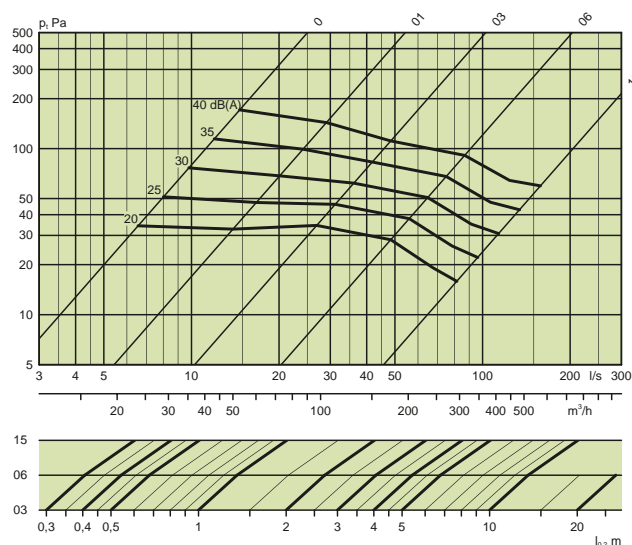
Table  $\Delta L$

Size	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
160	16	12	14	19	21	17	20	18
200	18	11	13	20	19	17	20	18
Tol. ±	2	2	2	2	2	2	2	2

### ADAPT S 160



### ADAPT Sb 200



### Sizing example:

given airflow 10-50 l/s,  $P_t$  50 Pa.

Max. sound level 30 dB(A), max. throw at line 06 = 3.8 meters.



## Installation

1. If the air diffuser backing box is fitted to an ADAPTER diffuser mounting plate, it should be fitted first, see the assembly illustration for the accessory. Place the air diffuser backing box with the diffuser mounting plate in the supporting framework of the suspended ceiling before you install the commissioning box.
2. The commissioning box can be suspended from a ceiling and connected to duct system. Use hanger system 1 or 2.
3. The bottom plate of ADAPT Sphere can be dismantled by pressing the fixing pins of the bottom plate outward, which will loosen then from the upper cone. The bottom plate is with safety cord secured in the upper cone.
4. Press the ADAPT Sphere air diffuser into the outlet of the commissioning box. Take the direction of the sensor module into consideration. It should follow the room (diffuser form) direction. Then secure the air diffuser by means of screws or pop rivets. Readjust the hanger rods of the commissioning box if needed, so that the air diffuser sits tight against the ceiling.
5. Connect the air diffuser connector to the contact on the upper part of the diffuser section and attach the safety cord, press together the S-hook to prevent it from coming loose.
6. Attach the diffuser section to the cone by means of the 3 pins.

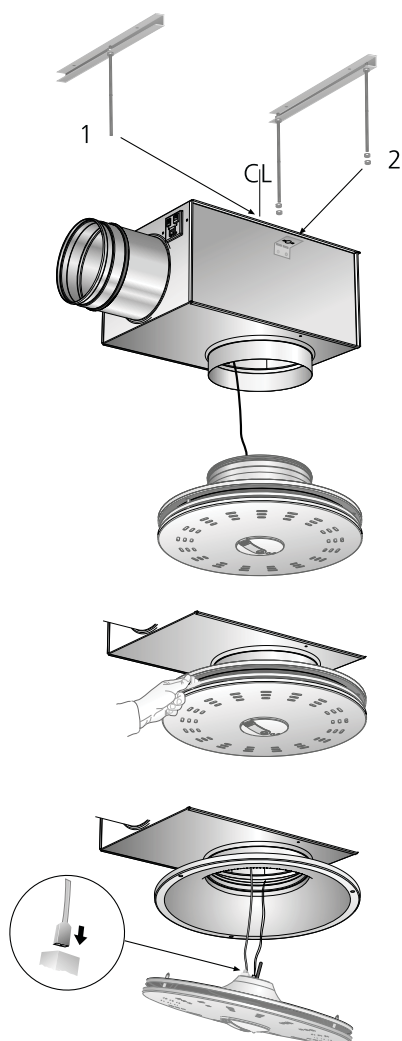


Figure 8. ADAPT Sphere, installation.

## Dimensions and weights

### ADAPT Sphere

Size	ØA	B	C	ØD	Ød	E
160	380	404	288	159	200	295
200	456	504	332	199	250	350

Size	F	G	H	I	ØJ	K	Weight
160	201	180	375	335	280	100	6.3
200	239	205	465	395	350	115	9.0

ØJ = Cutting hole size

CL = Center line

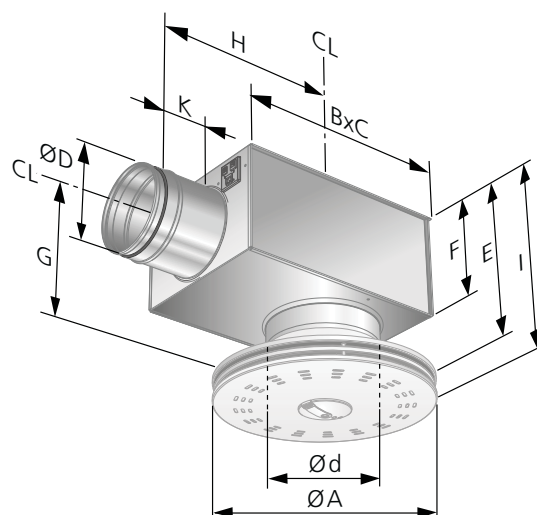


Figure 9. ADAPT S, dimension figure.

## Ordering key

### Product

Circular active air diffuser for ceiling ADAPT S b -bbb -c

Version:

Connection dimensions:

M = Master

S = Slave

N.B.! Specify absence, min./max. air flows.

Standard range:

Size: 160, 200

### Accessories (see detailed description at the end of the document)

ADAPTER	Diffuser mounting plate for 600x600 suspended ceilings
DETECT Quality	Temperature and CO <sub>2</sub> sensor with set point selector knob
TUNE Adapt	Hand-held terminal for reading/changing settings
TUNE Temp	Temperature adjuster
LINK Modbus	RJ12-cable for connecting up Modbus RTU
LINK Adapt	RJ45 cable for connecting up in other lengths
SPLIT Link	split connector
FIX Link	For securing cords to ducts, etc.
POWER Adapt	Transformer
ACTUATOR	Valve actuator, on/off
VALVE	Radiator valve
ADAPT Relay	Relay for light or heat control
CABLE Ext	Extension cable between box and diffuser

## ADAPT Free

### Sizing

- The specified sound levels dB(A) are applicable to rooms with an equivalent sound absorption area of 10 m<sup>2</sup> (4 dB room attenuation).
- The throw  $L_{0,2}$  is measured under isothermal discharge conditions.
- Recommended max. permissible temperature below room temperature is 12 K.
- All technical data applies to 360° distribution pattern.
- For calculating the air stream propagation, air velocities in the occupancy zone, or sound levels in rooms with other dimensions, we refer to our ProAir Web calculation program. ProAir Web is available at [www.swegon.com](http://www.swegon.com).



### Air flow - Pressure drop - Sound level - Throw

- The diagrams should not be used for commissioning.
- The dB(C) value is normally 6-9 dB higher than the dB(A) value.

### Sound data – ADAPT Free

#### Sound power level $L_w$ (dB)

Table,  $K_{ok}$

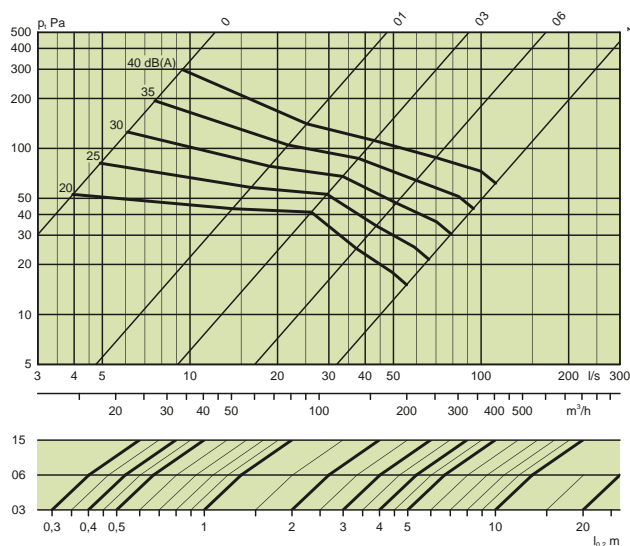
	Mid-frequency (Octave band) Hz							
Size	63	125	250	500	1000	2000	4000	8000
160	7	2	-3	1	-1	-6	-14	-17
200	8	2	-1	2	-1	-7	-18	-21
Tol. ±	2	2	2	2	2	2	2	2

#### Sound attenuation $\Delta L$ (dB)

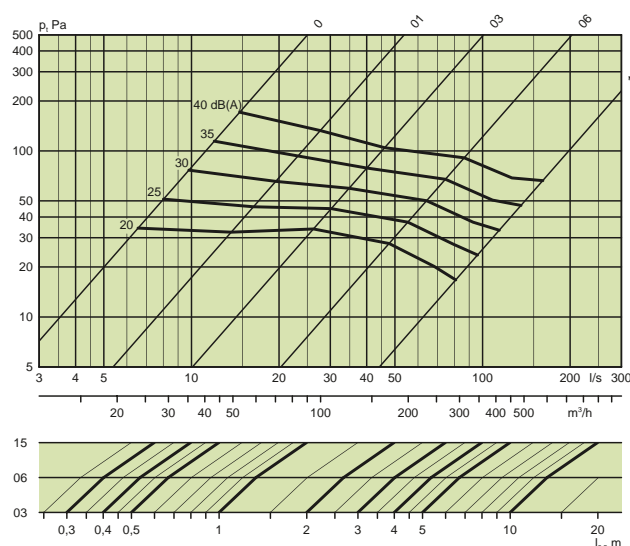
Table,  $\Delta L$

	Mid-frequency (Octave band) Hz							
Size	63	125	250	500	1000	2000	4000	8000
160	21	16	24	21	19	10	11	11
200	18	13	23	21	14	10	10	12
Tol. ±	2	2	2	2	2	2	2	2

### ADAPT F 160



### ADAPT F 200



Sizing example:

Given airflow 10-50 l/s,  $P_t$  50 Pa.

Max. sound level 30 dB(A), max. throw at line 06 = 3.2 meters.

## Installation

1. Adapt Free is suspended from the ceiling. Female-threaded grommets are available on the top of the air diffuser.
2. Secure the connecting duct by means of pop rivets.
3. The bottom plate can be dismantled by pressing the fixing pins of the bottom plate outward, which will loosen it from the upper cone. Secure the bottom plate to the upper cone with the safety cord, press together the S-hook to prevent it from coming loose.
4. **N.B.!** Disconnect the electric cable from the motor.

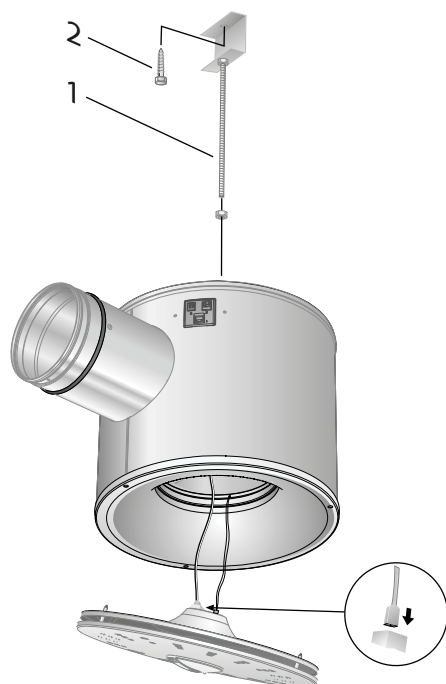


Figure 10. Adapt Free, installation.

- 1\*) M8 threaded rod and lock nuts.  
 2\*) Securing to the ceiling or load-carrying structure.  
 \*) N.B.!

## Dimensions and weights

### ADAPT Free

Size	ØA	ØD	B	C	E	Weight
160	380	159	320	123	130	6.8
200	456	199	390	159	150	10.2

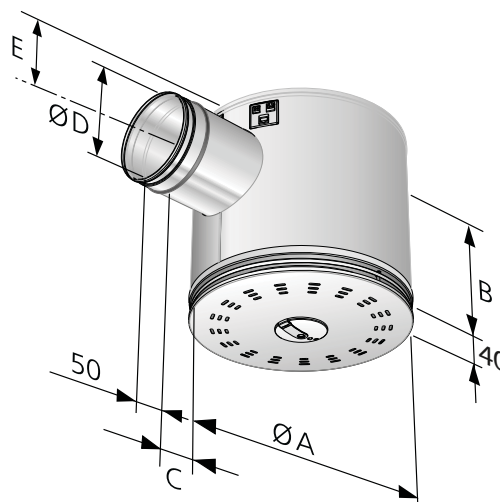


Figure 11. ADAPT Free, dimension figure.

## Ordering key

### Product

Circular active air diffuser for ceiling ADAPT F b -bbb -c

### Version:

Connection dimensions:

M = Master  
 S = Slave

N.B.!

Standard range:

Size: 160, 200

## Accessories (see detailed description at the end of the document)

DETECT Quality	Temperature and CO <sub>2</sub> sensor with set point selector knob
TUNE Adapt	Hand-held terminal for reading/changing settings
TUNE Temp	Temperature adjuster
LINK Modbus	RJ12-cable for connecting up Modbus RTU
LINK Adapt	RJ45 cable for connecting up in other lengths
SPLIT Link	split connector
FIX Link	For securing cords to ducts, etc.
POWER Adapt	Transformer
ACTUATOR	Valve actuator, on/off
VALVE	Radiator valve
FIX Link	Securing cords
ADAPT Relay	Relay for light or heat control



## ADAPT Colibri

### Sizing

- The specified sound levels dB(A) are applicable to rooms with an equivalent sound absorption area of 10 m<sup>2</sup> (4 dB room attenuation).
- The throw  $L_{0.2}$  is measured under isothermal discharge conditions.
- Recommended max. permissible temperature below room temperature is 12 K.
- All technical data applies to 360° distribution pattern.
- For calculating the air stream propagation, air velocities in the occupancy zone, or sound levels in rooms with other dimensions, we refer to our ProAir Web calculation program. ProAir Web is available at [www.swegon.com](http://www.swegon.com).



### Air flow - Pressure drop - Sound level - Throw

- The diagrams should not be used for commissioning.
- The dB(C) value is normally 6-9 dB higher than the dB(A) value.

### Sound data – ADAPT Colibri

#### Sound power level, $L_w$ (dB)

Table,  $K_{ok}$

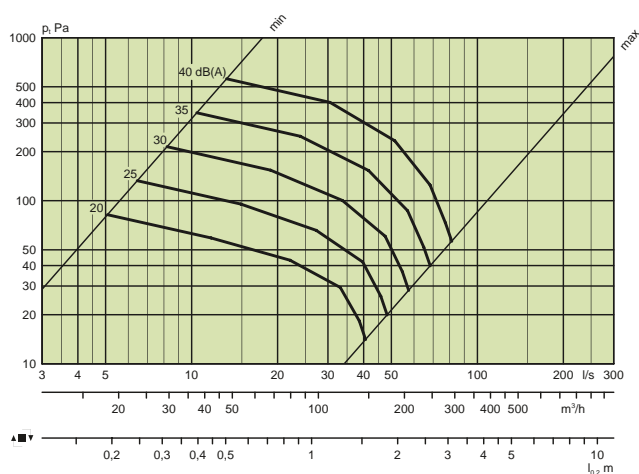
Size	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
160	0	8	6	2	-2	-10	-17	-18
250	3	8	4	1	-1	-9	-20	-20
Tol. ±	2	2	2	2	2	2	2	2

#### Sound attenuation $\Delta L$

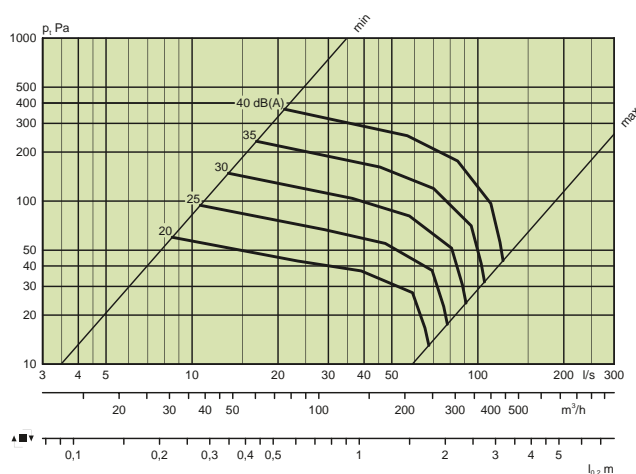
Table  $\Delta L$

Size	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
160	15	9	9	20	19	15	16	14
250	13	8	10	19	16	13	16	16
Tol. ±	2	2	2	2	2	2	2	2

### ADAPT C 160



### ADAPT C 250



Sizing example:

Given airflow 10-50 l/s,  $P_t$  50 Pa

Max. sound level 30 dB (A), throw = 2.0 metres

## Installation

1. The commissioning box can be suspended from a ceiling and connected to duct system. Use hanger system 1 or 2.
2. Press the ADAPT Colibri air diffuser into the outlet of the commissioning box and secure it with screws or pop rivets. Readjust the hanger rods of the commissioning box if needed, so that the air diffuser sits tight against the ceiling, or the framework of the modular suspended ceiling.
3. Dismantle the bottom section of the air diffuser according to the Quick Access principal, see Figure 13.
4. Connect the air diffuser connector to the appropriate contact in the upper part of the diffuser section.
5. Flip the diffuser front in position.

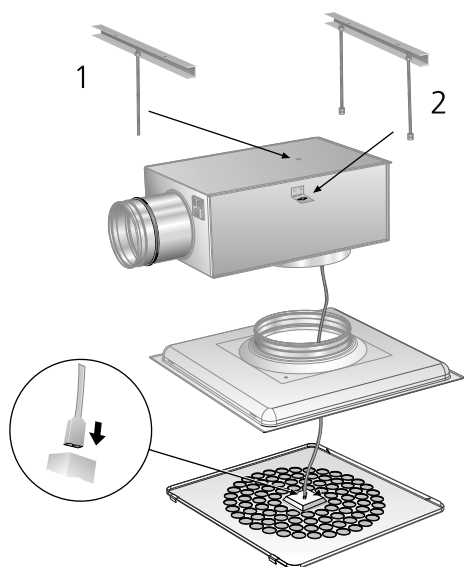


Figure 12. ADAPT Colibri, installation.

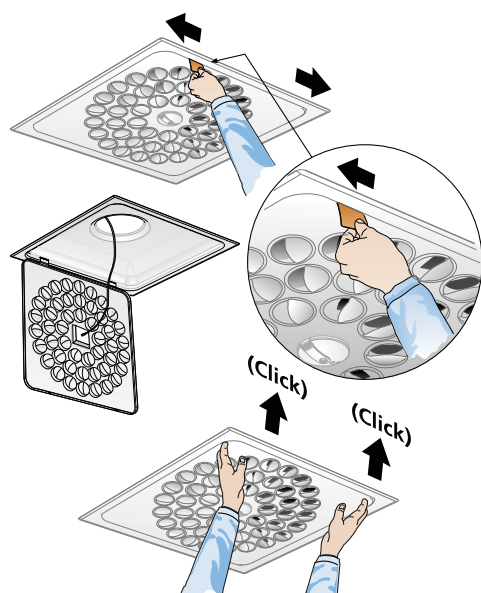


Figure 13. Quick Access.

## Dimensions and weights

### ADAPT Colibri

Size	A	B	C	ØD	Ød
160	595x595	504	332	159	250
250	595x595	622	388	249	315

Size	E	F	G	H	K	Weight
160	314	201	205	450	100	8.5
250	395	300	230	575	140	11.3

CL = Center line

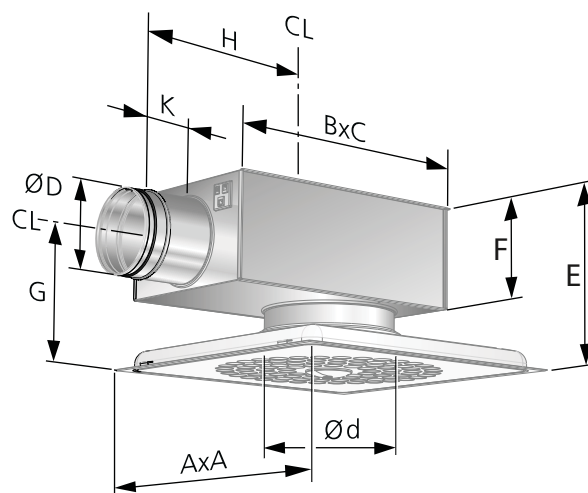


Figure 14. ADAPT Colibri, dimension figure.

## Ordering key

### Product

Rectangular active air diffuser for ceiling ADAPT C b -bbb -c

### Version:

Connection dimensions:

M = Master

S = Slave

N.B.! Specify absence, min./max. airflows in your specification!

Standard range:

Size: 160, 250

### Accessories (see detailed description at the end of the document)

DETECT Quality	Temperature and CO <sub>2</sub> sensor with set point selector knob
TUNE Adapt	Hand-held terminal for reading/changing settings
TUNE Temp	Temperature adjuster
LINK Modbus	RJ12-cable for connecting up Modbus RTU
LINK Adapt	RJ45 cable for connecting up in other lengths
SPLIT Link	Split connector
FIX Link	For securing cords to ducts, etc.
POWER Adapt	Transformer
ACTUATOR	Valve actuator, on/off
VALVE	Radiator valve
FIX Link	Securing cords
ADAPT Relay	Relay for light or heat control
CABLE Ext	Extension cable between box and air diffuser

## ADAPT Extract

### Sizing

- The specified sound levels dB(A) are applicable to rooms with an equivalent sound absorption area of 10 m<sup>2</sup> (4 dB room attenuation).
- For the calculation of sound levels in rooms with other dimensions, we refer to our ProAir Web calculation program. ProAir Web is available at [www.swegon.com](http://www.swegon.com).

### Airflow - Pressure drop - Sound level

- The diagrams are not to be used for commissioning.
- The dB(C) value is normally 6-9 dB higher than the dB(A) value.



### Sound data – ADAPT Extract

#### Sound power level, $L_w$ (dB)

Table,  $K_{ok}$

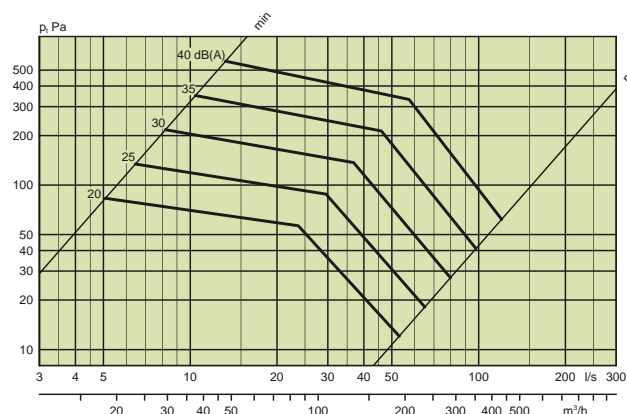
Size	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
200	-1	16	7	-2	-7	-17	-21	-19
250	4	15	8	-2	-7	-16	-23	-22
Tol. $\pm$	2	2	2	2	2	2	2	2

#### Sound attenuation $\Delta L$

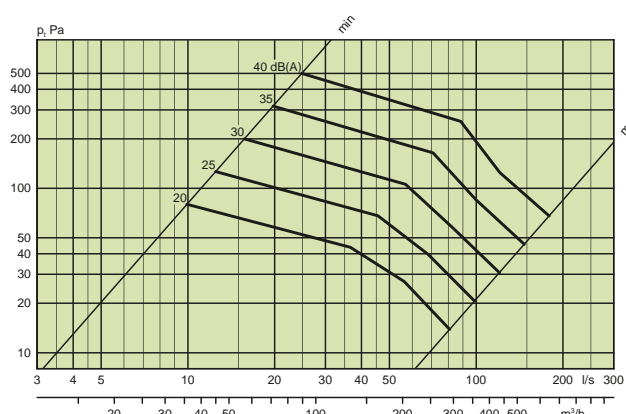
Table  $\Delta L$

Size	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
200	18	11	13	20	19	17	20	18
250	13	6	12	21	18	18	21	19
Tol. $\pm$	2	2	2	2	2	2	2	2

### ADAPT E 200



### ADAPT E 250



Sizing example:

Given airflow 10-50 l/s,  $P_t = 50$  Pa

Max sound level = 28 dB (A)

## Installation

1. If the air diffuser backing box is fitted to an ADAPTER diffuser mounting plate, it should be fitted first, see the assembly illustration for the accessory. Place the air diffuser backing box with the diffuser mounting plate in the supporting framework of the suspended ceiling before you install the commissioning box.
2. The commissioning box can be suspended from a ceiling and connected to duct system. Use hanger system 1 or 2.
3. Press the ADAPT Extract air diffuser into the outlet of the commissioning box. Take the direction of the sensor module into consideration. It should follow the room (diffuser form) direction. Then secure the air diffuser by means of screws or pop rivets. Readjust the hanger rods of the commissioning box if needed, so that the air diffuser sits tightly against the ceiling.
4. Connect the air diffuser's connector in the upper section of the air diffuser and attach the safety cord.

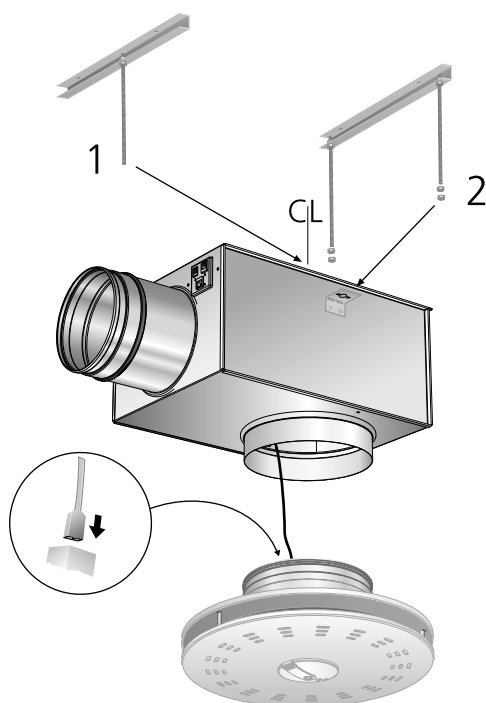


Figure 15. ADAPT Extract, installation

## Dimensions and weights

### ADAPT Extract

Size	A	B	C	ØD	Ød	E
200	456	504	332	199	250	335
250	568	622	388	249	315	415

Size	F	G	H	I	ØJ	K	Weight
200	239	205	465	405	350	115	6.5
250	300	250	575	485	450	140	8.3

ØJ = Cutting hole size

CL = Center line

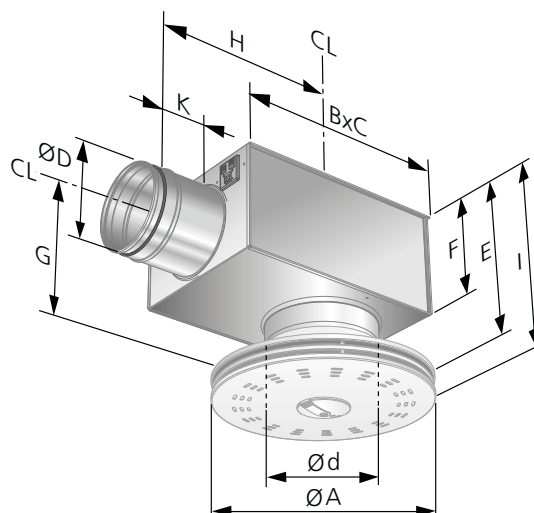


Figure 16. ADAPT Extract, dimension figure.

## Ordering key

### Product

Circular active air diffuser for ceiling ADAPT E b -bbb -S

### Version:

Connection dimensions:

Variant: Slave (supplied in the slave version only)

N.B.! Specify absence, min./max. air flows in your specification!

Standard range:

Size: 200, 250

### Accessories (see detailed description at the end of the document)

TUNE Adapt	Hand-held terminal for reading/changing settings
LINK Modbus	RJ12-cable for connecting up Modbus RTU
LINK Adapt	RJ45 cable for connecting up in other lengths
SPLIT Link	Split connector
FIX Link	For securing cords to ducts, etc.
ADAPTER	Diffuser mounting plate for 600x600 suspended ceilings
CABLE Ext	Extension cable between box and air diffuser

## Accessories

### DETECT Quality

DETECT Quality is an electronic CO<sub>2</sub> sensor used for CONTROL Damper in room version to control the need for ventilation in buildings. The setting values are managed by CONTROL Damper.

#### Quick facts:

- CO<sub>2</sub> sensor
- Measuring range: 0-2000 ppm
- Output signal 0-10 V

#### Electrical data

Supply voltage	24 V ±20 % AC/DC
Power consumption	3 VA
Ambient temperature	0 °C – +50 °C
Reaction time	2 min
Humidity	0-95% RH (non-condensing)
Degree of protection, installed in a room	IP 20
OUT1 0-10 V DC	0-2000 ppm

#### Ordering key

Carbon dioxide sensor      DETECT Q      a      -a

Version:

Type:

Without display: 0

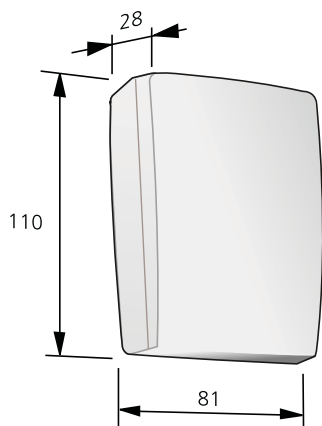


Figure 17. DETECT Qa-0

### ADAPTER

ADAPTER is a diffuser mounting plate designed for matching the ADAPT air diffuser to the various suspended ceiling system solutions available on the market. In this way, a uniform appearance can be achieved in the premises. If necessary, the ADAPTER can be placed above the supporting frame members of the suspended ceiling.

#### Materials and finish

The ADAPTER is made of sheet steel and is painted inside and out with our white standard colour, RAL 9010.

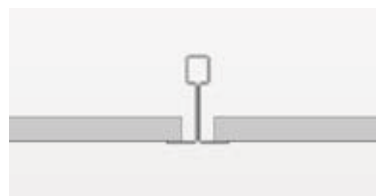


Fig 18. Profiled section variant T24/T15 Lay-In

#### Assembly

The backing box of the air diffuser should be fitted to the diffuser mounting plate before it is placed in the supporting framework of the suspended ceiling.

1. Place the diffuser mounting plate over the diffuser backing box and insert the fasteners into the pre-punched slots. Make sure that the sensor module on the diffuser backing box is correctly oriented and completely parallel with the side of the ceiling panel.
2. Fold the fastener as shown in the figure to secure the diffuser mounting plate to the diffuser backing box.
3. Place the diffuser mounting plate with the diffuser backing box in the supporting framework of the suspended ceiling. For further particulars, see the assembly instructions for each ADAPT air diffuser.

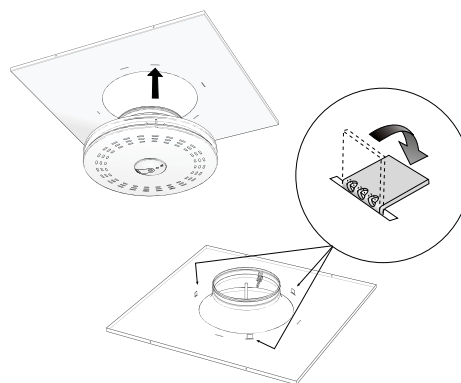


Fig 19. ADAPTER, installation

#### Ordering key

Diffuser mounting plate      ADAPTER      a      L      -bbb      -ccc

Version:

Design: L=T24/T15 Lay-in

Nom. external dimension: 600, 625, 675 mm

ADAPT Diffuser size:      Sphere: 160 and 200  
Extract: 200 and 250

Ordering example: ADAPTER a L-600-160



## TUNE Adapt

Hand-held unit for checking and setting values such as temperatures, CO<sub>2</sub> limits and airflows. Compatibility of the hand-held micro terminal: An older TUNE Adapt can always read all the later versions of the controller, a newer version of TUNE Adapt cannot read older controller variants.

Note: All the ADAPT products with version letter designation b are of Version 5.

- Simple connection directly to the air diffuser
- Supplied with power via the air diffuser
- Illuminated display window
- Simple and logical menu structure
- Protected against unintentional change of important control parameters

### Ordering key

Hand-held terminal TUNE A c -bbb

Version:

Language: 1 = EN, SE, DK, FI  
2 = EN, RU, PL, EE  
3 = EN, DE, FR, SE

Note: All the ADAPT products with version letter designation b are of Version 5.



Figure 20. TUNE Adapt

## TUNE Temp

TUNE Temp is a wall-mounted set point selector for room temperature in applications where the user shall be able to enter settings.

- Set point change  $\pm 3^{\circ}\text{C}$ .
- Output signal:  $5 \pm 5 \text{ V DC}$

### Electrical data

Supply voltage	24 V AC $\pm 10\%$
Power consumption	1 VA
Outputs: 0-10 V max load	10 mA
Degree of protection	IP 30

### Ordering key

Set point selector TUNE T a

Version:

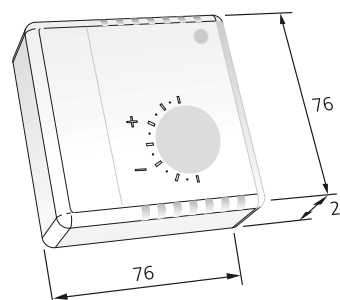


Figure 21. TUNE Temp

## LINK Modbus

RJ12 modular cable for wiring between master diffuser/damper and CONNECT Adapt for a main control system.

### Ordering key

RJ12 cable LINK M a -aa

Version:

Length: 2, 3, 5 or 10 m



Figure 22. LINK Modbus

## LINK Adapt

RJ45 modular cable for wiring between master diffuser/damper and CONNECT Adapt if lengths other than those which included in the supply are needed.

### Ordering key

LINK Adapt RJ45 cable	LINK A	a	-aa
-----------------------	--------	---	-----

Version:

Length:

2, 3, 5 or 10 m

5 m is standard and is always included in the supply.

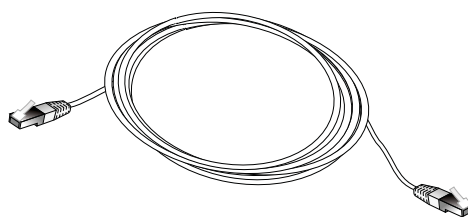


Figure 23. LINK Adapt.

## SPLIT Link

Fork operation allowing more diffusers to be connected to a master/slave group by using LINK Adapt or LINK Modbus to connect from one diffuser to another.

### Ordering key

Fork operation	SPLIT L	a	-aaa aa
----------------	---------	---	---------

Version:

Type:

SPLIT Adapt = LAa 45

SPLIT Modbus = LMa 12



Figure 24. SPLIT Link.

## FIX Link

Fix Link for fixing cords to ducts, for example. The holder is inserted into a 6 mm dia. drilled hole and is self-locking. The bundling strap locks the cords in place.

### Ordering key

FIX Link cable attachment, 100 pack.	FIX L	a
--------------------------------------	-------	---

Version:

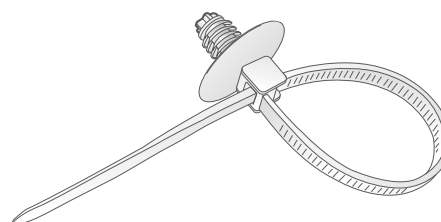


Figure 25. FIX Link.

## POWER Adapt

single phase protective transformer for main plug connection, unearthed or earthed. The transformer is made of impact-resistant, light grey, self-extinguishing thermoplastic. POWER Adapt manages to operate a normal office room with 2 pc ADAPT dampers and up to three radiator valves. Meets applicable requirements for electrical safety/emissions and immunity.

### Technical data

Input voltage	230 V 50-60 Hz
Output voltage	24 V AC
Capacity	20 VA
Enclosure:	IP 33

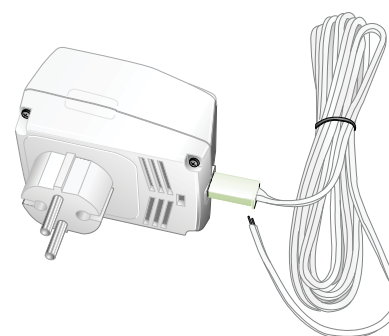


Figure 26. POWER Adapt.

### Ordering key

Single-phase transformer	POWER A	a	-aaa
--------------------------	---------	---	------

Version:

Size:

20 VA, 60 VA, 150 VA

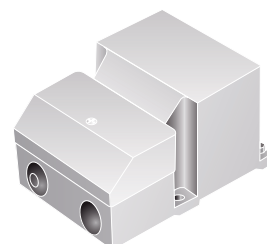


Figure 26b. POWER Adapt 60/150 VA.

## ACTUATOR

Thermo-actuator, on/off in NC version with pin-connection cable ends. NC = Normally closed.

Power supply	24 V AC/DC, $\pm 10\%$ , 0-60 Hz
Temperature	Operating temperature, room air: 0-60 °C Operating temperature, energy carrier: 10-100 °C
Cable	Fixed two-wire cable, L= 1.0 m, $\varnothing$ 0.75 mm <sup>2</sup>
Power consumption, start	6 VA for a maximum of 2 min.
Power consumption, operation	1.8 VA
Degree of protection	IP 54
Connection	As standard, the VA-80 adapter is included, fits an M30 x 1.5 mm threaded socket.

For alternative adapters contact Swegon.

### "First open" function

The actuator is set to the "first open" function on delivery. This means that the actuator is open when it is installed making it easier to pressure test and vent the water system. The function will be automatically disabled after the actuator has been energized for approx. 6 minutes. A clicking noise will be heard after which the actuator will change over to the NC mode and the normal regulation function will begin.

### Ordering key

Valve actuator	ACTUATOR	a
Version:		

## VALVE

Radiator valve of angled or straight design. Dull nickel-plated bronze.

Max. permissible operating pressure:	1000 kPa
Max. permissible pressure drop:	Across open valve: 20 kPa Across closed valve: 150 kPa
Min. permissible inlet flow temperature:	of 110 °C

### Ordering key

Radiator valve	VALVE	-a	-bbb
Straight version = S			
Angled version = A			
DN: 110, 115 or 120			

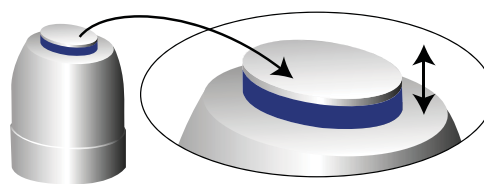


Figure 27. ACTUATOR valve position indicator. The actuator's cylinder shaped position indicator clearly shows, from all angles, which operating setting is current. When the indicator is at its lowest position and at the same height as the enclosure, the actuator is in closed position. When the indicator is in the raised position above the enclosure, the actuator is in the open position.

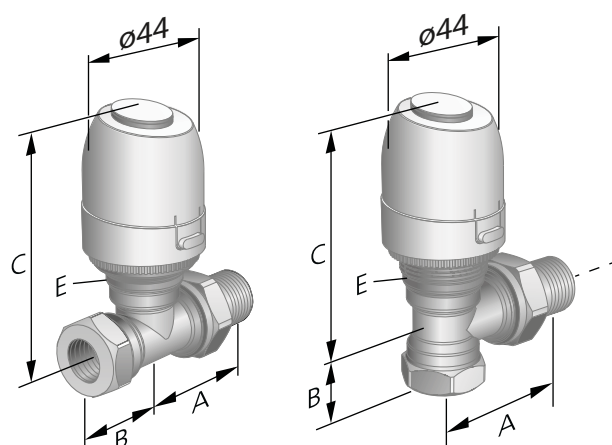


Figure 28. VALVE-S valve and VALVE-A respectively with ACTUATOR valve actuator mounted. E = M30 x 1.5 mm threaded mount

DN	Threads	Dimensions (mm)			
		A	B	C	k <sub>v</sub> value
S 110	3/8"	59	26	81	0.09-0.63
S 115	1/2"	61	33	81	0.10-0.89
S 120	3/4"	63	35	81	0.31-1.41
A 110	3/8"	49	20	81	0.09-0.63
A 115	1/2"	53	23	81	0.10-0.89
A 120	3/4"	63	26	81	0.31-1.14

## ADAPT Relay

Relay for on/off control of the lighting, designed for installation in a wall terminal box or similar. As an alternative, the relay can be supplied with a type CONNECT Adapt round IP30 enclosure.

### Electrical data

Supply voltage	24 V $\pm$ 2 V AC/DC
Power consumption	0,5 VA
Circuit-breaking capacity	10A/250 V AC
Incandescent and Halogen lamps	2000W
Fluorescent lamp load with KVG with lead-lag compensation or uncompensated	1000 VA
Fluorescent lamp load with KVG or shunt coupling or with EVG	500 VA
Compact fluorescent lamps with EVG and low energy lamps	I on < 70A/10ms*)

\*)You must pay attention to the inrush current of electrical HF devices; an electric current monitor relay is recommended.

### Ordering key

ADAPT Relay      ADAPT R    a    -a    24/230 V AC

Version:

Enclosed = C

Non-enclosed = N

Control voltage/Recovery voltage

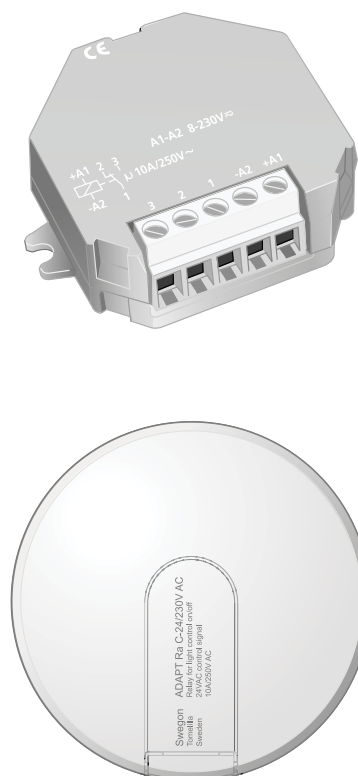


Figure 29. ADAPT Relay in non-enclosed version (N) and enclosed (C).

## ADAPT Relay RT

Semi-conductor relay for the control of in-duct or room-mounted electric air heaters and lighting in event of high current/voltage peaks. Together with ADAPT, electric air heaters need only be equipped with an overheat protection function in accordance with applicable local norms and directives. The enclosure is made of galvanized sheet steel and has an earth connection.

### Electrical data

Control voltage	20-230 V AC
Power consumption	0,5 VA
Circuit-breaking capacity	50A/250V AC
Max. continuous resistive load	2200W
Max. permitted surface temperature on the enclosure	45° C
Enclosure	IP 40

### Ordering key

Relay for control of electric heater/lighting      ADAPT RT    a    230V-50A

Version:

Type:

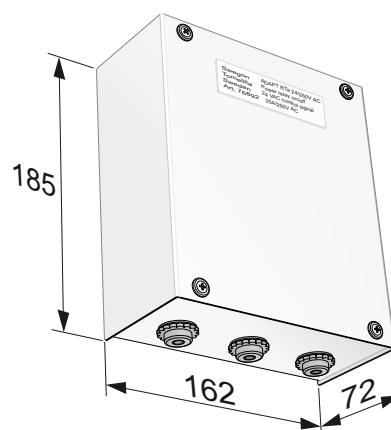


Figure 30. ADAPT RT, dimensions.