

WISE Adriatic

Climate beam for Swegon's WISE System for demand-controlled ventilation



QUICK FACTS

- Climate beam for demand-controlled indoor climate, integrated in Swegon's control platform WISE
- Climate beam with cooling, heating and ventilation
- Designed for suspended installation, either hanging or mounted directly against the ceiling.
- Complete product with integrated damper for variable air flow control 0-100%
- Energy-efficient operation since the room is ventilated, heated and cooled exactly as called for by the load, neither more or less.
- Highest possible comfort with provision for individual control on a product or room level
- Straightforward installation and connection to the WISE system
- Available with water and air connections on different short sides.
- Draught-free indoor climate, 2-way air distribution and Swegon's ADC (Anti Draught Control) provide maximum comfort and flexibility, both today and for future needs
- Large working range in one and the same product simplifies planning
- Standard colour White RAL 9003
 - 5 alternative standard colours
 - Other colours upon request

Variant		Supply air			Performance	
Size (m)	Air connection \varnothing	Pa*	l/s	m ³ /h	Total cooling capacity [W]**	Sound level [dB(A)] ***
1.2	125	50	14	50.4	518	<20
1.2	125	50	21	75.6	596	24
1.8	125	50	10	36	539	<20
1.8	125	50	20	72	796	<20
1.8	125	50	31	111.6	934	25
2.4	125	50	14	50.4	788	<20
2.4	125	50	30	108	1101	21
2.4	125	50	44	158.4	1236	28
3.0	125	50	17	61.2	946	<20
3.0	125	50	34	122.4	1298	20
3.0	125	50	52	187.2	1467	30

*Total pressure duct (Pa)

**Air: $\Delta T_{air}=7K$, Water: $\Delta T_{mk}=8.5K$, water flow=0.05 l/s for 1.2 m and 1.8 m, water flow=0.1 l/s for 2.4 m and 3.0 m

***Including -4dB room attenuation

Contents

Technical description	3
WISE system	3
Variants	3
Compact plug & play unit	5
Factory fitted components	5
Advantages of WISE Adriatic.....	6
Function	6
Flow distribution	8
ADC	8
Installation	9
Connection.....	10
Water	10
Air	11
Control equipment.....	11
Technical data.....	12
Electrical data	12
Cooling.....	12
Heating.....	12
Accessories and optional extras	15
Factory-fitted accessories/optional extras.....	15
Loose accessories.....	16
Kit for upgrade to functions in the WISE system.....	18
Dimensions and weight.....	19
Specification.....	20
Product.....	20
Accessories	21
Contractor demarcation	22
Specification text.....	23

Technical description

WISE system

Demand-controlled ventilation with the new WISE system has never been easier. For a description of the WISE system, see the WISE System Guide at www.swegon.com

Communicates wirelessly

The WISE system's intelligent room products/nodes communicate wirelessly with the built-in radio transmitter. Products that have a power supply work both as a transmitter and receiver and in some instances, can be used to boost/repeat the system's radio communications. Products powered by a battery act only as transmitters.

WISE supports different combinations of indoor climate systems

The option is now given to combine waterborne and airborne within the building, right down to floor level to zone and room level. WISE makes it possible to combine a number of system solutions at the same time.

Climate beam WISE Adriatic

Climate beam WISE Adriatic is a part of the WISE system and demand-controls air flow as well as cooling and heating for the best energy efficiency and comfort.

WISE Adriatic can be adapted and combined to meet comfort requirements in most projects, both now and in the future. WISE Adriatic is a complete and fully flexible product with an adjustable air distribution pattern and the possibility of factory-fitted accessories.

Variants

Sizes

- 1.2, 1.8, 2.4 and 3.0 m

With its high capacity, WISE Adriatic can often replace another, larger product.

Design

WISE Adriatic is available in two versions.

- Prisma, design component with a more traditional form
- Ellips, design component with a softer, rounder form

The different designs allow a choice to fit in with other decor in the room. Covers for concealing water and air pipes are available as an option, if required.

Functions

- Cooling and ventilation
- Cooling, heating and ventilation

Installation

WISE Adriatic is designed for suspended installation, either hanging or mounting directly against the ceiling. In those instances you wish to conceal the ventilation duct and water pipes, there is also a connection casing as an optional extra.

If you want the product with water and air connections on different short sides, Variant TH is available as an option.



Figure 1. WISE Adriatic with design component Prisma

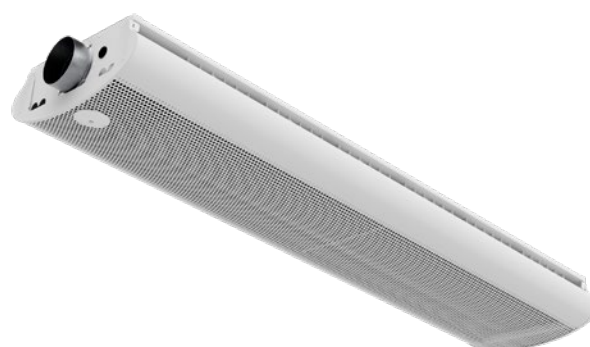


Figure 2. WISE Adriatic with design component Ellips

Colour

The product, the connection casing and the surface mounted assembly piece are painted as standard in RAL 9003 standard colour, white, gloss ratio 30 ± 6%, but can also be ordered in the following colours.

RAL 7037 Grey, gloss ratio 30-40%

RAL 9010 White, gloss ratio 30-40%

RAL 9005 Black, gloss ratio 30-40%

RAL 9006 White, gloss ratio 70-80%

RAL 9007 Grey, gloss ratio 70-80%

Special types

On request, the product, the connection casing and the surface mounted assembly piece can also be supplied painted in an optional colour or relief finish paint.

For further details about special types, get in touch with your nearest Swegon representative.

Project design / Typical room

See the separate documentation "WISE System Guide", which is available for download via www.swegon.com.

Maintenance

The product does not require any maintenance/service, except for any cleaning when necessary. See the separate Instructions for Use, available on www.swegon.com.

Environment

The Building Materials Declaration is available from www.swegon.com.

Material

The casing is made from prepainted sheet steel.

The face plate on the Prisma is made of prepainted sheet steel, while for Ellips it is made of aluminium and sheet steel.

The coil is made of copper and aluminium.

The connection casing is made of prepainted sheet steel.

Unique control functions

WISE Adriatic has an integrated damper that regulates the product's slot openings and thus the air flow.

With our unique control sequence, we always ensure that the comfort module supplies the room with the right flow in each operating case. By maintaining a high velocity across the slot openings, we also realise a good coanda effect and with that good comfort.



www.eurovent-certification.com
www.certiflash.com

Easy to install

With its high cooling capacity, WISE Adriatic can often replace another, larger product, thereby resulting in simpler handling, especially when handling the products on the site, which gives less handling damage and a better working environment.

High capacity

With its high capacity, WISE Adriatic occupies 40-50% less ceiling space to handle the cooling requirement in a normal office, compared with a traditional climate beam.

Range of application

WISE Adriatic is especially suitable for use in the following premises:

- Conference rooms with a need of demand controlled regulation and normal to high cooling load. There are demands on occupancy control to save energy when the room is vacant. The users must be able to influence and regulate the room temperature for the best comfort.
- Offices with a need of demand controlled regulation and normal to high cooling load. There are demands on occupancy control to save energy when the user is not in the room during the day and after office hours. The user must be able to influence and regulate the room temperature for the best comfort.

The product is also well suited for use in other premises such as:

- Classrooms
- Hotels
- Restaurants
- Data processing rooms
- Bank premises
- Shops
- Shopping centres

Compact plug & play unit

WISE Adriatic is supplied with control equipment including a radio unit for pairing with the WISE system. Only a 24 V supply needs to be routed to units, which are then easily paired to the main wireless system SuperWISE and allocated functions.

The control equipment is installed concealed on the base module, but with simple access by folding down the face plate.

WISE Adriatic can also be equipped with numerous different accessories that are fitted to the product at the factory.

WISE Adriatic sends its values continuously to SuperWISE and you can see the current flow and pressure in real time. The integrated radio node in the product's control unit communicates with the room's setpoint selector switch or any temperature sensor and sensors in the room.

WISE Adriatic works individually and can easily be allocated new functions and set point values to realise the demanded room functions or, if new functions are required, then these can easily be introduced via our new software Room Unit Design and our new, well-designed web interface SuperWISE. This gives major advantages, for example, in the event of modifications and changes in floor layout such as switching from an open-plan office to individual offices.

Also see the WISE System Guide on www.swegon.com.

WISE Adriatic is equipped as standard with the following components

- WISE CU with built-in pressure sensor and 2 inputs for WISE sensors that communicate over Modbus. You can also connect sensors for the function, WISE dewpoint monitoring.
- Motor for regulation of the internal damper, 0-10 V.
- Sensor for measuring the supply air temperature.

Factory fitted components as an option

- The air quality sensor WISE SMA measures temperature, RH and VOC is factory fitted.
- Presence sensor WISE SMB measures temperature and detects occupancy.
- Condensation sensor CG-IV
- WISE dew point regulation
- Valves and actuators

Loose accessory kit

There are also several accessory kits for retrofitting if you should wish to expand your WISE Adriatic with additional functions. (See loose accessory kit)

- WISE SMA kit
- WISE CG-IV-kit
- WISE dew point regulation
- WISE face plate with SMB

Factory fitted components

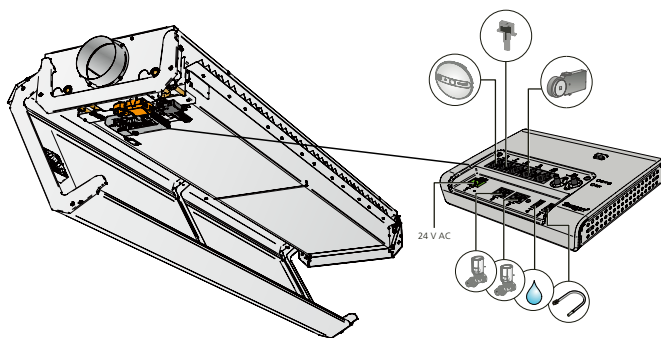


Figure 3. Components that are factory fitted on WISE Adriatic.

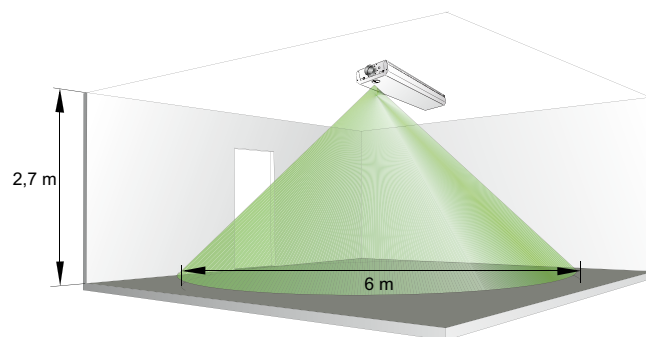


Figure 4. Detection range for use of sensor module in the face plate

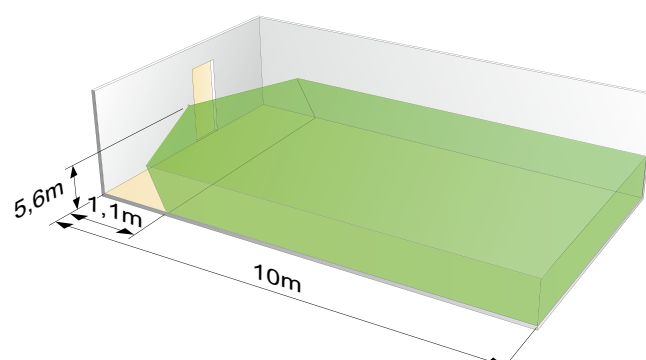


Figure 5. Detector range from wall

Advantages of WISE Adriatic

- The product has an attractive design and extremely low installation height that fits in well in all types of room decor.
- Since WISE Adriatic is a closed climate beam with integrated recirculated air opening in the face plate, it can be mounted directly against the ceiling without regard to circulation air slots.
- WISE Adriatic combines demand-controlled ventilation with the superior air discharge properties of ceiling units and the stringent design requirements of the suspended climate beam. The discharge of air provides the optimal coanda effect that is always the objective when it is desirable to maintain low air velocities in the occupied zone.
- The connection components are concealed in a simple manner by an attractive connection casing. The casing is installed after the chilled beam has been suspended and connected.
- The product provides a unique opportunity to demand control the ventilation in the room as well as to monitor and adjust the air discharge thanks to ADC and Swegon's slot adjustment as standard.

Function

The climate beam uses supply air to operate the cooling and heating function of a central air handling unit and therefore does not include an integrated fan or other moving parts. This gives very quiet operation and minimal maintenance requirements.

The distribution air is spread from two sides of the unit, and utilises a large part of the ceiling to spread the air and ensure comfort in the occupancy zone.

Adriatic has variable k-factor setting and large air flow range. The product is a DCV variant complete with mounted control equipment for demand-controlled ventilation, but is also available as a CAV product with fixed k-factor ADRIATICd and a VAV variant ADRIATIC VAV.

Adriatic has variable control. It is also possible to set an asymmetric air flow in order to adapt to various room types and refurbishments.

The integrated slot control of the air flow means that the product can retain pressure internally and at the same time supply air with the correct throw lengths, even at low flows.

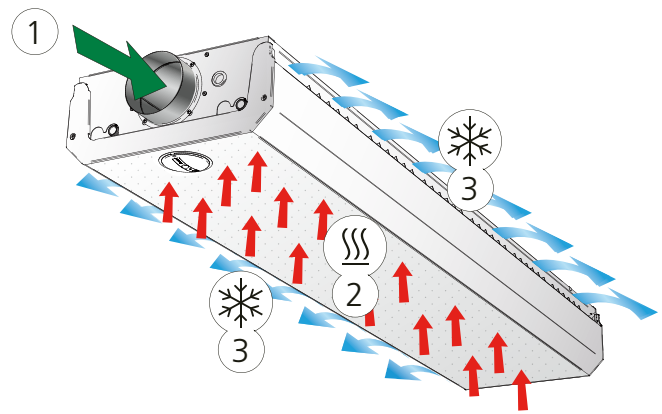


Figure 6. Variant A: Cooling and supply air function
 1 = Primary air
 2 = Induced room air
 3 = Primary air mixed with chilled room air

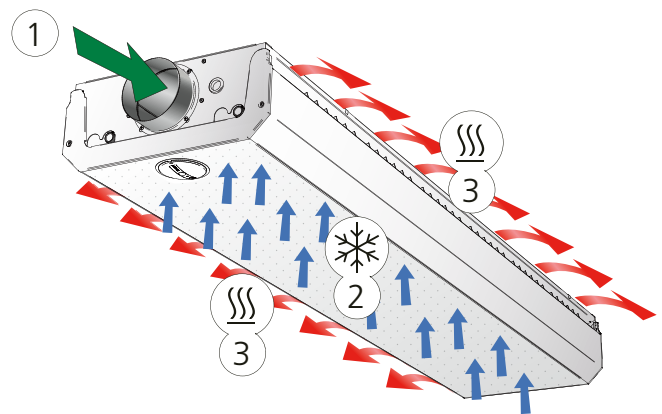


Figure 7. Variant B: Heating and supply air function (also including cooling function)
 1 = Primary air
 2 = Induced room air
 3 = Primary air mixed with heated room air

Induction principle

Primary air (A) from the air handling unit provides WISE Adriatic with supply air via a supply air duct and builds up positive pressure in the unit's plenary.

The supply air is forced out at high speed through small slots (B). The high speed means that the surrounding air is drawn in and mixed with supply air, which generates negative pressure above the unit's integrated heat exchanger (C). Room air (D) is continuously drawn up from the room through the water-based heat exchanger where, if necessary, it is cooled or heated before it mixes with the supply air.

The mixed air is then distributed to the room via aerodynamically designed outlets. The outlets are designed to ensure that the distributed air follows the suspended ceiling by utilising the so-called Coanda effect (E). The supplied air is then mixed with additional room air, which further lowers the air velocity and lessening the temperature difference before it reaches the occupied zone.

The proportion of recirculated room air drawn through the heat exchanger is typically about 3-5 times the proportion of primary air, i.e. if 20 l/s supply air comes from the air handling unit, then approximately 60-100 l/s room air will pass through the exchanger and be tempered.

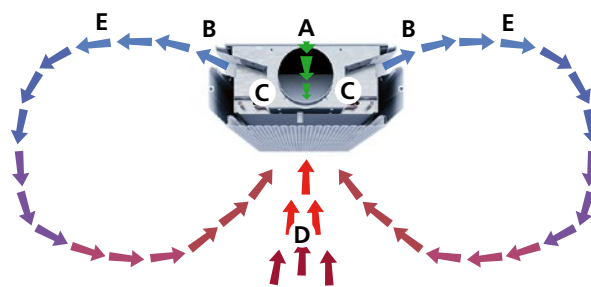


Figure 8. Induction principle in WISE Adriatic

Condensation-free cooling

WISE Adriatic has been developed to work condensation-free and therefore requires no drainage system or filter. Normally inlet temperatures between 14-16 °C are used for the cooling water.

High comfort – today and tomorrow.

A good indoor climate is characterized by good air quality and the correct room temperature without draughts and noise. Different requirements are made on air flow, cooling capacity and heating capacity depending on the type of building in question and how this will be used.

As greater demands are made on being able to offer customised office solutions and to easily change the floor layout for new or existing tenants if changed needs arise, it is important to take this into consideration as early as the design phase. As this will minimise future costs for rebuilding. Regardless of the scenario, new WISE Adriatic gives - through its simplicity in terms of air flow range, operation and commissioning - all the possibilities to find this flexible and optimal solution.

Flow distribution

symmetric and asymmetric setting

For symmetric and asymmetric setting, see WISE Adriatic instructions for use.

ADC

The climate beam is supplied with the ADC air deflector. ADC stands for Anti Draught Control, which enables you to set the diffusion pattern of the air being distributed to avoid risk of draught. A number of ADC sections with four air deflectors per section are arranged on each long side. Each section is adjustable from a straight setting to 40° air deflection to the right or left in increments of 10°. This provides great flexibility and can be easily adjusted without having to affect the system as a whole.

The ADC does not affect the noise level or static pressure at all. The water capacity is reduced by 5 - 10 % if the ADCII is adjusted to "fan-shape".

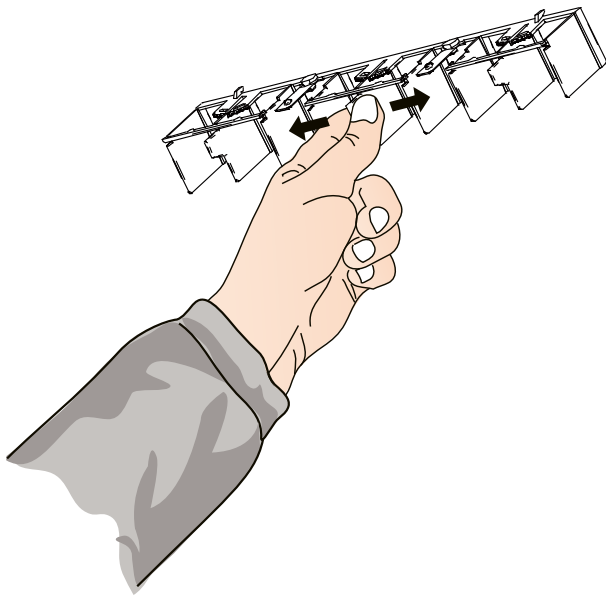


Figure 9. ADC, setting range from -40° to +40° in increments of 10°

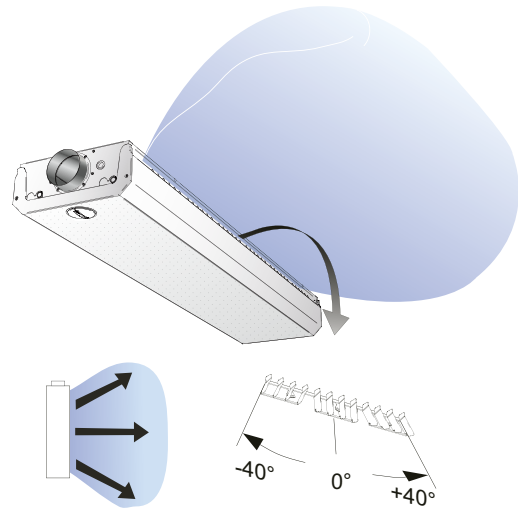


Figure 10. Possible settings for the ADC, Fan-shape

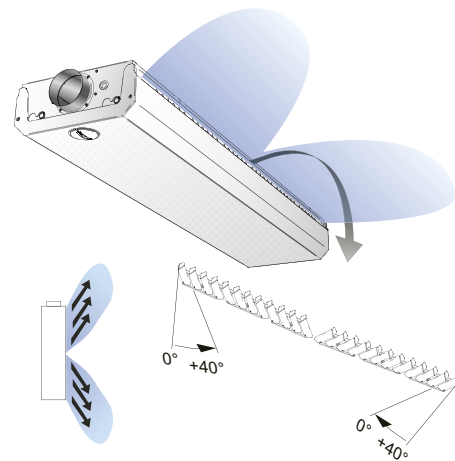


Figure 11. Possible settings for the ADC, V-shape

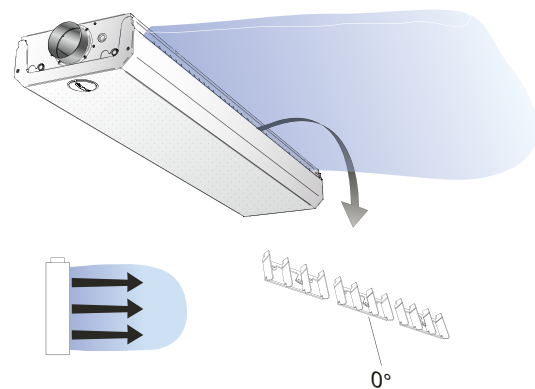


Figure 12. Setting options ADC, Straight setting

Installation

Suspension

WISE Adriatic is equipped with threaded blind rivets at each corner for simple installation with threaded rods in the ceiling.

The units are delivered without mounting parts. If assembly fittings are required, these can be ordered separately.

Installation accessories:

SYST MS-M8 is available for suspended installation.

ADRIATIC d-T-MD-4S is available for installation directly against the ceiling

Folding of the design component

The unit is fitted with a pushbutton at either end of one long side, for simple folding of the design component and access to e.g. control equipment. When folding, one long side is opened and the design component then hangs from the opposite long side.

Connection casing

The connection casings are available in several lengths and several selectable colours, and are ordered separately (ceiling brackets included).

Connection to wall

Connection casing that is mounted in the extended section of the climate beam and beyond to a wall designed for concealing pipe and duct connections.

Connection to ceiling

Connection casing with end connection panel is mounted in the extended section of the climate beam and beyond to a ceiling designed for concealing pipe and duct connections.

Note: Min. 3xØ before elbow.

Easily accessible water connections

The water pipes are very easily accessible, which facilitates connection, particularly if e.g. press couplings and associated tools are used.

This saves installation time and simplifies a safe water connection.

The pipes are placed in a standardised fashion, which means irrespective of product, the cooling/heating pipes are always positioned in the same way, which facilitates installation

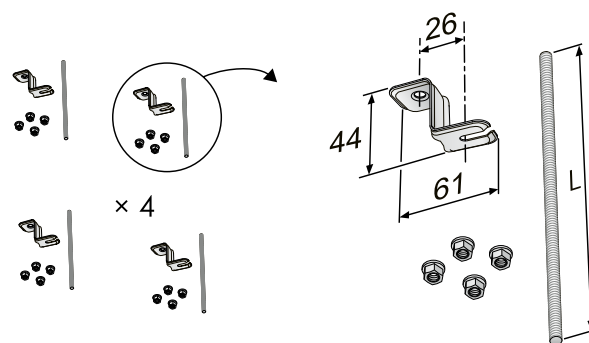


Figure 13. Assembly fitting SYST MS M8-1, ceiling mount and threaded rod

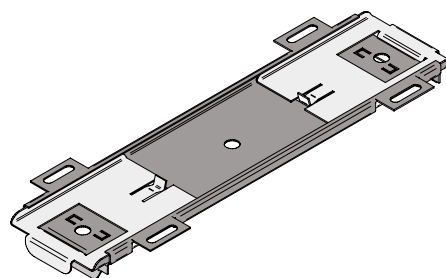


Figure 14. Assembly fitting ADRIATIC d-T-MD-4S, for direct ceiling installation.

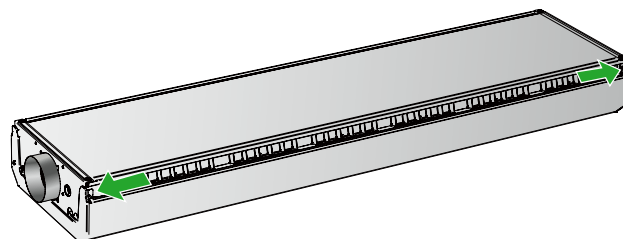


Figure 15. WISE Adriatic with pushbutton for simple folding of the design component (The product is shown with design component Prisma in the example).

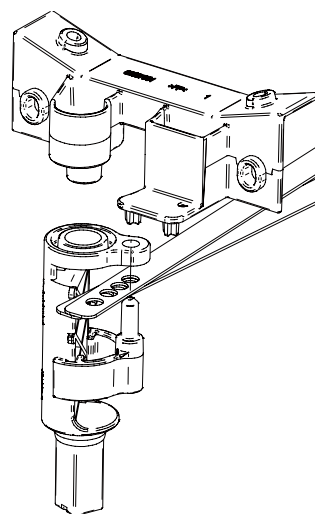


Figure 16. To adjust the flow distribution, it is also possible to e.g. lock one side. See the WISE Adriatic instructions for use.

Connection Water

Connection dimensions

Unit	Cooling and Heating
(m)	Supply and return
1.2, 1.8, 2.4, 3.0	plain pipe ends (Cu) Ø 12 x 1.0 mm

Alternative to factory-fitted valves

Unit	Cooling and Heating
(m)	Return
1.2, 1.8, 2.4, 3.0	DN15 male thread

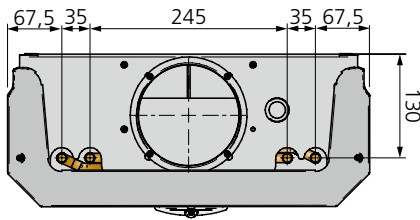


Figure 17. Dimensions WISE Adriatic Prisma, end view water connection

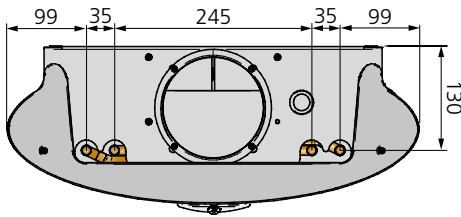


Figure 18. Dimensions WISE Adriatic Ellips, end view water connection

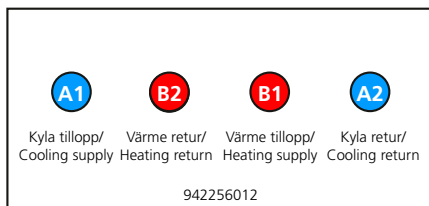


Figure 19. Water connection

- A1 = Supply cooling water Ø12x1.0 mm (Cu)
- A2 = Return cooling water Ø12x1.0 mm (Cu)
- B1 = Supply heating water Ø12x1.0 mm (Cu)
- B2 = Return heating water Ø12x1.0 mm (Cu)

Variant TH

If you want water and air connections on different short sides, Variant TH is available. The dimensions for connecting water and air are the same as for the standard variant.

Note: When ordering valves and actuators for Variant TH, these are enclosed and placed adjacent to the water pipes. They are connected, but installation on the relevant water pipes is required (see label and colour marking on the actuators).

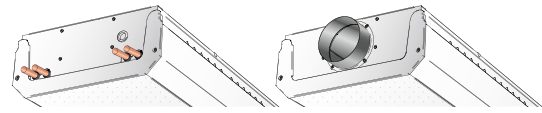


Figure 20. Variant TH with air and water connections on different short sides. The example shows both short sides with the TH connection on WISE Adriatic Prisma.

Connecting water

The water pipes are placed as standard on the same side as the air connection on one of the product's short sides. If you want water and air connections on different short sides, Variant TH is available (see Variant TH).

Connect the water pipes using push-on couplings or compression ring couplings when the product is ordered without valves.

Note that compression ring couplings require support sleeves inside the pipes.

Do not use solder couplings to connect the water pipes. High temperatures can damage the unit's existing soldered joints.

Flexible connecting hoses for water are available for flat-end pipes and valves, and can be ordered separately.

Water quality

Swegon recommends water quality according to VDI 2035-2 for both the heating and cooling systems. In order to maintain the oxygen content in the water below the levels (<0.1 mg/l) prescribed in VDI 2035-2, it is recommended to install a vacuum degasser, particularly in the cooling system where it's more challenging to dissolve gas. It is also important that the pre-pressure in the expansion vessel is dimensioned according to EN-12828 for both the heating and cooling systems and that regular checks are made of the pre-pressure. The cooling and heating systems must be designed to prevent oxygen from entering the system, this is particularly important when selecting flex hose, pipes and expansion vessels.

When the system is filled with fresh water, it has an oxygen content of approximately 8 mg/l, however, this oxygen is consumed quickly through corrosion processes and within a few days the oxygen in the water should be consumed. Nevertheless, it is important to avoid filling the system with fresh water unnecessarily.

Automatic deaerators are often installed to facilitate filling of the system. It is recommended that the automatic deaerators are turned off once the system has been fully vented to avoid these drawing in air in the system if the pre-pressure in the expansion vessel should drop.

Air

Unit	Air connection, diameter
(m)	Ø
1.2, 1.8, 2.4, 3.0	125

To connect the air

WISE Adriatic comes with air connection on one short side. The spigot must be connected to the primary air duct.

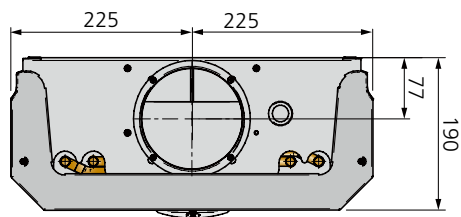


Figure 21. Dimensions WISE Adriatic Prisma, end view air connection

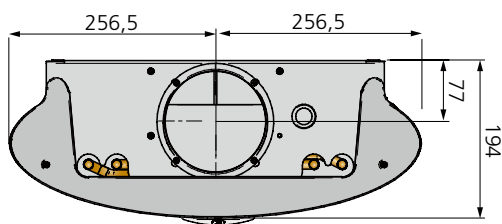


Figure 22. Dimensions WISE Adriatic Ellips, end view air connection

Control equipment

Factory mounted control equipment is connected to WISE CU.

Any other control equipment is connected in to WISE CU according to the label and wiring diagram in the enclosed Instructions for Use.

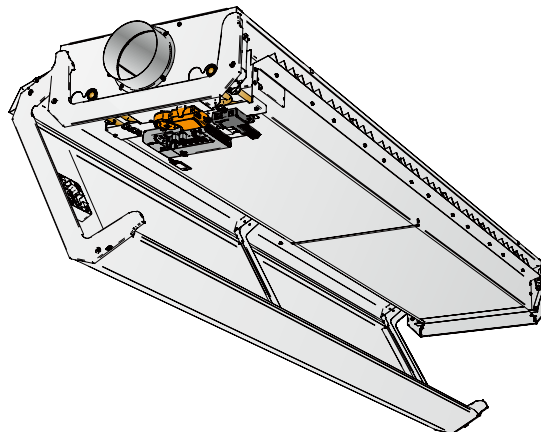


Figure 23. All factory mounted control equipment is connected to WISE CU on delivery.

Technical data

The following tables are only examples. For a precise calculation of the product, use RUD or SPC, which can be obtained from our website.

www.swegon.com

Key figures

Air flow range	min.	max.	
	0	98	l/s
	0	353	m ³ /h
Pressure range	min.	max.	
	20	150	Pa
Cooling capacity, total: *	Up to 3620 W		
* $\Delta t_{air}=10K, \Delta t_{mk}=12K$			
Heating capacity, water: *	Up to 6833 W		
*At $\Delta t_{mk} = 30K, water\ flow=0.08\ l/s, changeover\ system$			

Designations

ΔT_m :	Temperature difference [$t_r - t_m$] K
t_r :	Room temperature
t_m :	Average temperature of the water in the beam
ΔT :	Temperature difference between supply - return K
ΔT_{mk} :	Temperature difference, cooling
ΔT_{mv} :	Temperature difference, heating

Supplementary index: v = heating, k = cooling, l = air, i = commissioning

Electrical data

Power supply:	24V AC $\pm 15\%$ 50 - 60Hz
Connections pipe dim.	
Power:	Screw terminal max. 2.5mm ²
Valve actuator:	Push-in spring connection, max. 1.5 mm ²
Max. power consumption:	See table below

WISE Adriatic in standard version:	VA / unit	Standard VA total
WISE CU	2.3	4.8
Damper motor (UM24)	2.5	

Option:	VA / unit		
	x 1	x 2	x 3
Valve actuator, ACTUATORc	6	12	18
WISE SMA	0.8		
WISE SMB	0.6		

Example:
 WISE Adriatic in standard design with the following options:
 Actuators for cooling and heating as well as WISE SMA, gives a total power consumption of $4.8 + 6 + 0.8 = 11.6\ VA$

Recommended limit values

Pressure levels

Coil working pressure, max.	1600 kPa *
Coil test pressure, max.	2400 kPa *

*Applies without valves or other extra equipment mounted on the coil

Commissioning pressure

Recommended lowest commissioning pressure, cooling	Air flow (l/s)	Commissioning pressure (Pa)
	<10	50
	10-25	30
	>25	20

Water flow

Min. water flow ensures evacuation of any air pockets in the coil.

Size	Cooling water, min. (l/s)	Heating water, min. (l/s)
1.2, 1.8	0.025	0.015
2.4, 3.0	0.05	0.015

The recommended max. water flow ensures that the pressure drop in the coil is not greater than max. 20 kPa

Size	Cooling water, max. (l/s)	Heating water, max. (l/s)
1.2, 1.8	0.1	0.11
2.4	0.14	0.11
3.0	0.2	0.11

Supply flow temperature

Cooling water, min.	**
Heating water, max.	60 °C

** Cooling water must always be kept at a level that ensures that no condensation is formed.

Cooling

Standard

Cooling capacities are measured in conformity with EN 15116

Note: The total cooling capacity is the sum of the airborne and waterborne cooling capacities.

WISE Adriatic is always supplied with cooling/heating, even if only cooling is required.

Heating

A beam that also has integrated heating is good, as this is an energy-efficient form of heating. It is also a single system, rather than needing to add another system, such as radiators.

The heat is conducted along the ceiling which, in order to work properly, requires a low supply flow temperature and a certain impulse. A temperature gradient of 3 K is normally obtained between floor and ceiling.

Recommendations for excess heat operation

Max. permissible supply flow temperature:	60°C
Min. permissible heating water flow:	0.013 l/s
Nozzle pressure, p _i :	>30 Pa

Table 1 – data – cooling. Dimensioning guide for WISE Adriatic at total pressure 30 Pa

Unit	Air flow		Sound level	Cooling capacity of primary air at ΔT_1 (K)				Cooling capacity, water at ΔT_{mk} (K)					Pressure drop constant, air
	l/s	m ³ /h		6	8	10	12	6	7	8	9	10	
m													
1.2	11	40	<20	79	106	132	158	223	262	301	340	379	2.02
1.2	16	58	<20	115	154	192	230	243	283	323	363	404	2.96
1.8	16	58	<20	115	154	192	230	353	416	474	537	595	2.96
1.8	24	86	<20	173	230	288	346	388	455	516	582	643	4.50
2.4	11	40	<20	79	106	132	158	363	424	485	546	602	2.02
2.4	23	83	<20	166	221	276	331	487	567	647	727	806	4.31
2.4	34	122	21	245	326	408	490	503	586	669	752	834	6.57
3.0	13	47	<20	94	125	156	187	426	497	568	638	702	2.39
3.0	27	97	<20	194	259	324	389	580	673	767	860	954	5.10
3.0	40	144	23	288	384	480	576	594	691	787	892	987	7.91

Table 2 – data – cooling. Dimensioning guide for WISE Adriatic at total pressure 50 Pa

Unit	Air flow		Sound level	Cooling capacity of primary air at ΔT_1 (K)				Cooling capacity, water at ΔT_{mk} (K)					Pressure drop constant, air
	l/s	m ³ /h		6	8	10	12	6	7	8	9	10	
m													
1.2	14	50	<20	101	134	168	202	280	327	374	422	469	1.99
1.2	21	76	24	151	202	252	302	295	344	393	447	496	3.01
1.8	10	36	<20	72	96	120	144	320	373	426	479	537	1.42
1.8	20	72	<20	144	192	240	288	438	514	590	666	743	2.86
1.8	31	112	25	223	298	372	446	472	553	634	714	795	4.50
2.4	14	50	<20	101	134	168	202	477	556	627	706	784	1.99
2.4	30	108	21	216	288	360	432	601	698	805	902	999	4.35
2.4	44	158	28	317	422	528	634	607	709	820	923	1025	6.59
3.0	17	61	<20	122	163	204	245	569	661	753	846	938	2.42
3.0	34	122	20	245	326	408	490	722	836	950	1075	1189	4.97
3.0	52	187	30	374	499	624	749	729	847	976	1095	1214	7.98

Table 3 – Data – Cooling. Dimensioning guide for WISE Adriatic at total pressure 70 Pa

Unit	Air flow		Sound level	Cooling capacity of primary air at ΔT_1 (K)				Cooling capacity, water at ΔT_{mk} (K)					Pressure drop constant, air
	l/s	m ³ /h		6	8	10	12	6	7	8	9	10	
m													
1.2	16	58	<20	115	154	192	230	308	365	417	469	521	1.92
1.2	24	86	28	173	230	288	346	329	384	439	499	554	2.90
1.8	12	43	<20	86	115	144	173	374	441	502	569	631	1.44
1.8	24	86	21	173	230	288	346	501	586	672	757	843	2.90
1.8	36	130	30	259	346	432	518	532	621	710	800	890	4.42
2.4	17	61	<20	122	163	204	245	560	651	742	834	925	2.04
2.4	35	126	25	252	336	420	504	677	785	904	1012	1121	4.29
2.4	52	187	33	374	499	624	749	679	793	917	1032	1157	6.58
3.0	20	72	<20	144	192	240	288	657	762	868	983	1088	2.41
3.0	40	144	25	288	384	480	576	813	940	1079	1207	1346	4.94
3.0	61	220	35	439	586	732	878	815	947	1091	1236	1369	7.90

Water flow=0.05 l/s for 1.2 m and 1.8 m, water flow=0.1 l/s for 2.4 m and 3.0m, temperature inlet flow +14°C.
 The specified sound level applies to straight connection without damper or with fully open damper. Room attenuation = 4 dB.

Table 4 – data – heating. Dimensioning guide for WISE Adriatic at 30 Pa

Unit	Air flow		Sound level	Heating capacity, water at ΔT_{mv} (K)					Pressure drop constant, air
	l/s	m ³ /h		15	20	25	30	35	
m			dB(A)						cmpl
1.2	11	40	<20	263	367	473	584	697	2.02
1.2	16	58	<20	284	394	509	628	749	2.96
1.8	16	58	<20	422	587	759	935	1118	2.96
1.8	24	86	<20	456	634	821	1009	1205	4.50
2.4	11	40	<20	476	658	842	1033	1222	2.02
2.4	23	83	<20	564	783	1004	1229	1462	4.31
2.4	34	122	21	619	850	1091	1337	1586	6.57
3.0	13	47	<20	572	787	1009	1234	1467	2.39
3.0	27	97	<20	672	928	1192	1466	1744	5.10
3.0	40	144	23	739	1014	1302	1594	1889	7.91

Table 5 – data – heating. Dimensioning guide for WISE Adriatic at 50 Pa

Unit	Air flow		Sound level	Heating capacity, water at ΔT_{mv} (K)					Pressure drop constant, air
	l/s	m ³ /h		15	20	25	30	35	
m			dB(A)						cmpl
1.2	14	50	<20	284	394	509	628	749	1.99
1.2	21	76	24	326	453	584	719	856	3.01
1.8	10	36	<20	399	550	709	871	1036	1.42
1.8	20	72	<20	483	669	866	1064	1268	2.86
1.8	31	112	25	522	727	939	1160	1381	4.50
2.4	14	50	<20	551	759	973	1191	1416	1.99
2.4	30	108	21	660	909	1166	1426	1690	4.35
2.4	44	158	28	717	990	1265	1551	1839	6.59
3.0	17	61	<20	665	917	1175	1438	1709	2.42
3.0	34	122	20	779	1076	1380	1690	2010	4.97
3.0	52	187	30	855	1181	1514	1853	2195	7.98

Table 6 – data – heating. Dimensioning guide for WISE Adriatic at 70 Pa

Unit	Air flow		Sound level	Heating capacity, water at ΔT_{mv} (K)					Pressure drop constant, air
	l/s	m ³ /h		15	20	25	30	35	
m			dB(A)						cmpl
1.2	16	58	<20	322	447	576	709	845	1.92
1.2	24	86	28	352	491	632	779	927	2.90
1.8	12	43	<20	435	602	774	954	1132	1.44
1.8	24	86	21	526	728	940	1162	1383	2.90
1.8	36	130	30	570	790	1018	1256	1497	4.42
2.4	17	61	<20	609	836	1073	1310	1554	2.04
2.4	35	126	25	716	989	1264	1550	1838	4.29
2.4	52	187	33	784	1079	1382	1689	2005	6.58
3.0	20	72	<20	723	1000	1284	1573	1860	2.41
3.0	40	144	25	847	1172	1505	1845	2187	4.94
3.0	61	220	35	934	1290	1650	2021	2395	7.90

Water flow=0.05 l/s, room temperature 20°C

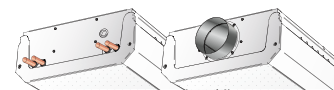
The specified sound level applies to straight connection without damper or with fully open damper. Room attenuation = 4 dB

Accessories and optional extras

Factory-fitted accessories/optional extras

Variant TH

Water and air on opposite sides



The air quality sensor, WISE SMA (Sensor Module Advanced)

WISE SMA is a sensor that measures temperature, RH and VOC.

WISE SMA can be factory fitted in climate products, dampers or air diffusers in the WISE system and which are equipped with a WISE CU. The unit is powered by a 5V DC from WISE CU and communicates via Modbus with this.



Presence sensor, WISE SMB (Sensor Module Basic)

WISE SMB measures temperature and detects occupancy and indicates status via its LED.

WISE SMB can be factory fitted in air diffusers or climate products in the WISE system and which are equipped with a WISE CU.

The unit is powered by a 5 V DC from WISE CU and communicates via Modbus with this.



Valve, cooling & heating

Factory fitted valves for cooling and heating.

Unit	Function	Type	Dim.	K _v (m ³ /h)
1.2, 1.8, 2.4, 3.0	Cooling/ heating	VDN215	DN15 (1/2")	0.07-0.89

The valve is mounted on the product and preset fully open.

For more information about the valve, see the separate product data sheet on www.swegon.com.



Actuator, cooling & heating, ACTUATORc 24 V NC

Factory fitted valve actuators for cooling and heating.

24V AC/DC, NC (Normally Closed).

For more information about the actuator, see the separate product data sheet on www.swegon.com.



Transformer, Power Adapt 20 VA

Transformer for the voltage supply of the product.

Protective transformer with plug type F.

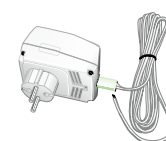
Input voltage 230 V 50-60 Hz

Output voltage 24 V AC

Power 20 VA

Double insulation

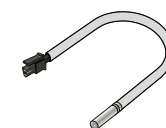
Enclosure IP33



WISE dewpoint monitoring

The PT1000 sensor measures the supply temperature on water pipes in order to give the function WISE dewpoint monitoring.

Note that other accessories that measure RH and temperature are needed in combination with the PT1000-sensor to realise this function.



Condensation sensor, CG IV

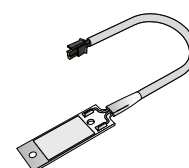
The condensation sensor is supplied fitted and connected from the factory. The actual sensor element consists of a circuit board with gold plated conductive paths that react when condensation occurs between these. When condensation arises, the cooling valve closes the incoming water flow to the product. When the condensation on the conductive paths has been wiped off, the cooling valve is permitted to open again.

The sensor is positioned on the coil fins by the cooling supply.

For more information about the condensation sensor, see the separate product data sheet on www.swegon.com.

For more information about the condensation sensor, see the separate product data sheet on www.swegon.com.

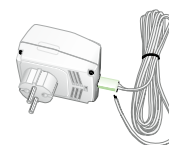
www.swegon.com.



Loose accessories

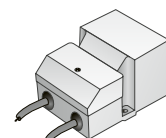
Transformer, Power ADAPT 20 VA (ARV)

Input voltage 230 V, 50-60 Hz
 Output voltage 24 V AC
 Power 20 VA
 Enclosure IP33



Transformer, SYST TS-1

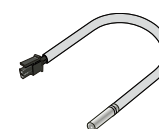
Double-insulated protective transformer 230 V, AC/24 V AC
 Input voltage 230 V, 50-60 Hz
 Output voltage 24 V AC,
 Power 20 VA, Enclosure IP33



For more information, see the separate product data sheet on www.swegon.com.

Temperature sensor, TEMP. SENSOR PT-1000

The temperature sensor is used to measure the supply temperature on water pipes in order to give the function WISE dewpoint monitoring. NOTE! Other accessories that measure RH and temperature are needed in combination with the TEMP SENSOR PT-1000-sensor to realise the dewpoint monitoring function.



Can also be used to measure the temperature of the main pipe in change-over systems.

Length: 1000 mm

Valve, SYST VDN215 / SYST VDN220

Straight valves for cooling and heating.
 VDN215 is preset fully open on Kv 0.89.
 VDN220 is preset fully open on Kv 1.41

Unit	Function	Type	Dim.	K _v (m ³ /h)
1.2, 1.8, 2.4, 3.0	Cooling/ heating	VDN215	DN15 (1/2")	0.07-0.89
2.4, 3.0	Cooling/ heating	VDN220	DN20 (3/4")	0.22-1.41

Note: VDN220 has to be installed outside the product.

For more information about the valve, see the separate product data sheet on www.swegon.com.



Valve actuator, cooling & heating, ACTUATORc 24 V NC

Valve actuators for cooling and heating.
 24V AC/DC, NC (Normally Closed).

For more information about the actuator, see the separate product data sheet on www.swegon.com.



Card switch, SYST SENSO II

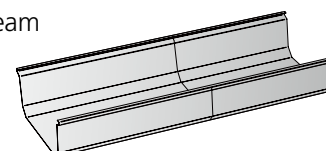
Key card holder for hotel rooms.



Connection casing, connection to wall, ADRIATIC d KA

Connection casing in two parts to be mounted in the extended section of the climate beam and beyond to a wall designed for concealing pipe and duct connections.

The casing is available in eleven different length ranges.



Connection casing, connection to ceiling, ADRIATIC d KA-G

Connection casing with end connection panel designed for concealing pipe and duct connections when connecting to a ceiling.

The casing is available in six different lengths.



Assembly fitting, SYST MS M8

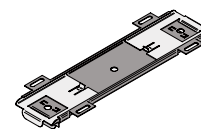
For installation use the assembly fitting containing threaded rods, ceiling brackets and nuts to all four mounting brackets.



Assembly fitting, ADRIATIC d-T-MD-4S

Special assembly piece for installation directly against the ceiling.

Available in 2-packs and 3-packs.



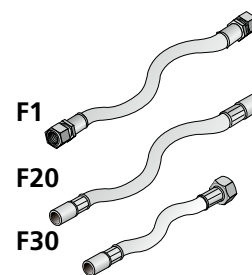
Flexible connection hoses, SYST FH

Flexible hoses are available with quick-fit, push-on couplings as well as clamping ring couplings for quick and simply connection. The hoses are also available in various lengths. Note that compression ring couplings require support sleeves inside the pipes.

F1 = Flexible hose with clamping ring couplings.

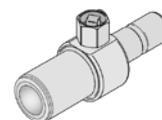
F20 = Flexible hose with quick couplings (push-on)

F30 = Flexible hose with quick couplings (push-on) on one end and the G20ID sleeve nuts on the other end.



Venting nipple, SYST AR-12

A venting nipple is available as a complement to the flexible hoses with push-on couplings. The venting nipple fits directly in the push-on hose coupling and can be fitted in an instant.



Connection piece, air – insertion joint, SYST AD1

SYST AD1 is used as a joint between WISE Adriatic and the duct system. Ø125



Connection piece, air, SYST CA

90° duct bend, Ø125



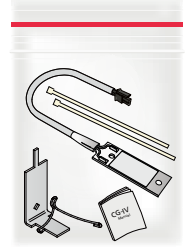
Kit for upgrade to functions in the WISE system

Upgrade kit WISE CG-IV-KIT

The upgrade kit includes condensation sensor and assembly parts

Condensation sensor's sensor element consists of a circuit board with gold plated conductive paths that react when condensation occurs between these. When condensation arises, the cooling valve closes the incoming water flow to the product. When the condensation on the conductive paths has been wiped off, the cooling valve opens again. The sensor is positioned on the coil fins by the cooling supply.

For more information about the condensation sensor, see the separate product data sheet and installation instructions on www.swegon.com.



Upgrade kit WISE dew point regulation

The upgrade kit includes temperature sensor PT1000



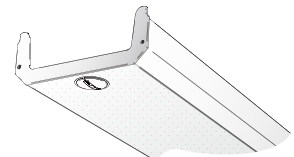
Upgrade kit WISE SMA

The upgrade kit includes WISE SMA incl. RJ9 cable and assembly plate.



Upgrade kit, WISE design module with WISE SMB

The upgrade kit includes WISE SMB incl. RJ9 cable and face plate.



Dimensions and weight

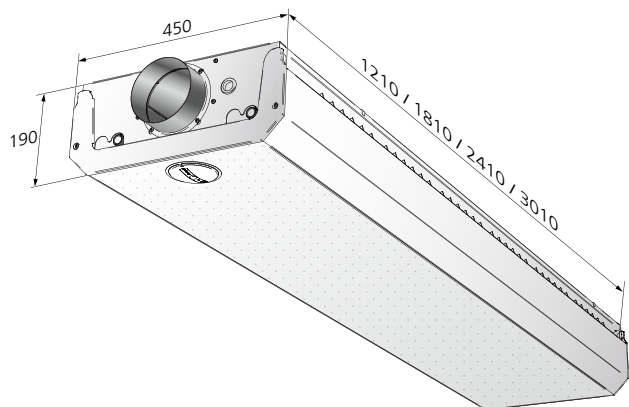


Figure 24. WISE Adriatic Prisma

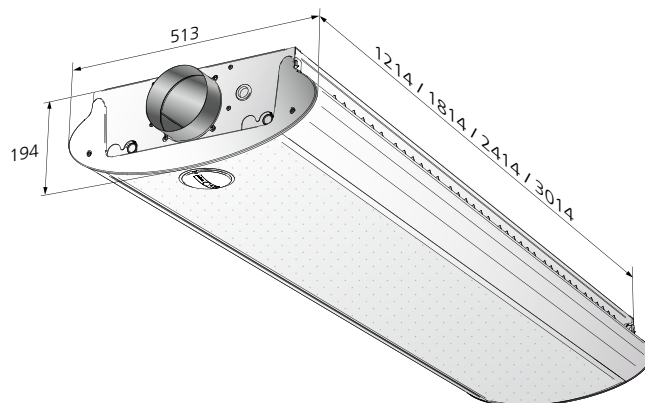


Figure 25. WISE Adriatic Ellips, side view

Installation

The c-c spacing is the same for WISE Adriatic with design modules Prisma and Ellips. Prisma is shown in the examples to the right.

	Suspended installation		Surface mounted installation	
Unit	c-c (mm)	c-c (mm)	c-c (mm)	c-c (mm)
(m)	Short side	Long side	Short side	Long side *
1.2	392	1173	280	250
1.8	392	1773	280	250
2.4	392	2373	280	250
3.0	392	2973	280	250

* Max. distance from the end of the product.

Weight

Weight, excluding controller, valves, actuators and sensors.

WISE Adriatic with design component Prisma			
Length	Dry weight	Weight, filled with water (kg)	
(m)	(kg)	A: Cooling	A/B: Cooling/Heating
1.2	20.3	21.3	21.5
1.8	28,9	30.4	30.8
2.4	37.2	39.3	39.8
3.0	44.9	47.5	48.2

WISE Adriatic with design component Ellips

Length	Dry weight	Weight, filled with water (kg)	
(m)	(kg)	A: Cooling	A/B: Cooling/Heating
1.2	20.6	21.6	21.9
1.8	29.3	30.8	31.2
2.4	37.3	39.4	39.9
3.0	45.9	48.5	49.2

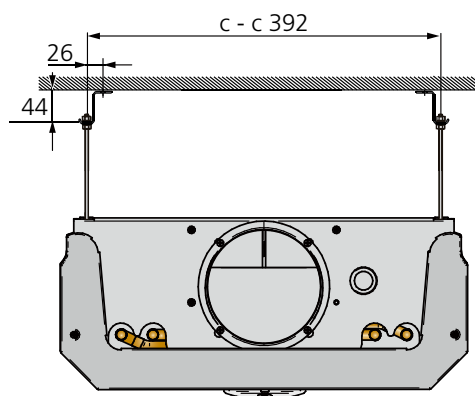


Figure 26. Installation - suspended installation with assembly fitting SYST MS-M8.

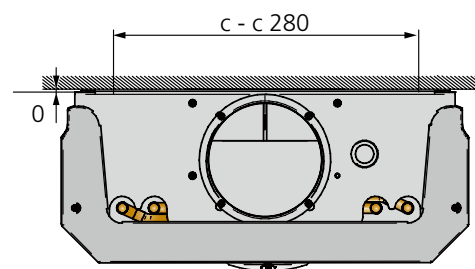


Figure 27. Installation - directly against ceiling with assembly fitting ADRIATIC d-T-MD-4S.

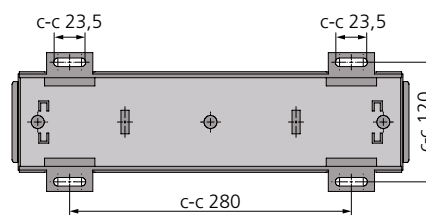


Figure 28. ADRIATIC d-T-MD-4S, c-c measure

Specification

Active climate beam type WISE Adriatic for demand-controlled ventilation.

The product is available with a large number of accessories and optional extras. See our product selection program WISE Design.

Product

Demand-controlled climate beam WISE Adriatic

WISE Adriatic	d	a-	bbb-	c-	d
Version					
Function:					
A = Cooling and supply air					
B = Cooling, heating and supply air					
Length m:					
1.2, 1.8, 2.4, 3.0					
Variant:					
P = Prisma					
E = Ellips					
Mounted WISE SMB					
1 = no					
2 = yes					

Demand-controlled climate beam WISE Adriatic variant TH

WISE Adriatic	d	a-	bbb-	c-	d	TH
Version						
Function:						
A = Cooling and supply air						
B = Cooling, heating and supply air						
Length m:						
1.2, 1.8, 2.4, 3.0						
Variant:						
P = Prisma						
E = Ellips						
Mounted WISE SMB						
1 = no						
2 = yes						
TH = Water and air on opposite sides						

Colour

The product, the connection casing and the surface mounted assembly piece are painted as standard in RAL 9003 standard colour, white, gloss ratio 30 ± 6%, but can also be ordered in the following colours.

RAL 7037 Grey, gloss ratio 30-40%

RAL 9010 White, gloss ratio 30-40%

RAL 9005 Black, gloss ratio 30-40%

RAL 9006 White, gloss ratio 70-80%

RAL 9007 Grey, gloss ratio 70-80%

Special types

On request, the product, the connection casing and the surface mounted assembly piece can also be supplied painted in an optional colour or relief finish paint.

For further details about special types, get in touch with your nearest Swegon representative.

Accessories

Connection casing	ADRIATIC d KA-	aaaa	bbbb
Length: (mm) 200-350, 300-450, 400-550, 500-650, 500-1000, 900-1050 900-1350, 900-1750, 1600-1750, 1600-2450, 1600-3150			

Connection casing with end connection panel	ADRIATIC d- KA-G	aaaa
Length: (mm) 200, 300, 400, 500, 900, 1600		

Assembly fitting (For suspended installation)	SYST MS M8	aaaa-	b-	RAL9003
Length of threaded rod: 200, 500, 1000 mm				
1 = threaded rod only				
2 = Double threaded rods with thread locking device				

Assembly fitting (For installation directly against the ceiling)	ADRIATIC d-T-MD-4S	a
Quantity per pack 2 = 2 pcs 3 = 3 pcs		

Flexible connection hose (1)	SYST FH F1	aaa	12
Clamping ring coupling against pipe on both ends			
Length: 300, 500 and 700 mm			
Dimension (Ø) mm: 12			

Flexible connection hose (1)	SYST FH F20	aaa	12
Quick-fit coupling (push-on) against pipes at both ends			
Length: 275; 475 or 675 mm			
Dimension (Ø) mm: 12			

Flexible connection hose (1)	SYST FH F30	aaa	12
Quick-fit coupling (push-on) against pipe on one end, G20ID sleeve nut on the other end			
Length: 200; 400 or 600 mm			
Dimension (Ø) mm: 12			

Connection piece (90° duct bend)	SYST CA-125-90
-------------------------------------	----------------

Factory fitted room control and accessories

- Control unit
 - WISE CU
- Transformer
 - Power ADAPT 20 VA (optional extra)
- Valves and actuators for cooling and heating
 - Straight valve, VDN 215 (optional extra)
 - Actuator, 24V NC (optional extra)
- Sensors
 - Temperature sensor
 - Air quality sensor, WISE SMA (optional extra)
 - Presence sensor, WISE SMB (optional extra)
 - WISE dewpoint monitoring (optional extra)
 - Condensation sensor, CG IV (optional extra)
 - Pressure sensor, WISE DPS Modbus

Product accessories

- Transformer, POWER Adapt 20 VA (ARV), xx items
- Transformer, SYST TS-1, xx items
- Temperature sensor, TEMP. SENSOR PT-1000, xx items
- Condensation sensor KIT for subsequent fitting CONDENSATION SENS CG IV-KIT, xx items
- Connection casing to wall, ADRIATICd KA-aaa-bbb, xx items
- Connection casing to ceiling, ADRIATICd- KA-G-aaaa, xx items
- Assembly fitting, SYST MS M8 aaaa-b-cccc, xx items
- Assembly fitting, ADRIATIC d-T-MD-4S, xx items
- Flexible connection hose, SYST FH aaa- bbb-12, xx items
- Venting nipple, push-on, SYST AR-12, xx items
- Connection piece, air – nipple, SYST AD1-125, xx items
- Connection piece, air (90°elbow), SYST CA-125-90, xx items
- Valve actuator, ACTUATORc 24 V NC, xx items
- Valve straight, SYST VDN 215/VDN220, xx items

Room accessories

- Hand-held terminal, TuneWISE, xx items
- Dongle for hand-held terminal, ConnectWISE USB, xx items
- Scanner, Scanner TuneWISE xx items
- Temp. sensor (WISE DPS Modbus)
- Setpoint selector switch with integrated temperature sensor, WISE RTA, xx items
- Sensor (VOC, CO2, RH, Temp), WISE IAQ MULTI, xx items
- Sensor (CO2, RH, Temp), WISE IAQ CO2, xx items
- Sensor (VOC, RH, Temp), WISE IAQ VOC, xx items
- Temperature sensor (IR) WISE IRT, xx items
- Occupancy sensor (Occupancy, RH, Temp), WISE OCS, xx items
- Control unit Input/output radio extender, WISE IORE, xx items
- Window/door contact WISE WCS, xx items
- Temperature sensor WISE RTS, xx items

- Sensor, Input radio extender for junction boxes, (analogue/digital) WISE IRE, xx items
- Sensor for wall mounting, Input radio extender (analogue/digital) WISE IRE-W, xx items
- Card switch, SYST SENSO II, xx items

Upgrade kits

- Upgrade kit, WISE CG-IV-KIT
- Upgrade kit, WISE dew point regulation
- Upgrade kit, WISE SMA
- Upgrade kit, WISE design module with WISE SMB

Contractor demarcation

Swegon’s delivery ends at the connection points for water and air and the connection of the room control equipment, see figures 17-28.

- Contractor demarcation at the connection points for water and air according to dimensional drawings
- The contractor demarcation for electric connection point according to dimension print
- The pipe contractor connects the connections points for water to the plain pipe ends and fills the system, bleeds it and tests the pressure, and assumes responsibility for the design water flows reaching each branch of the system and the index unit

Cooling, supply and return (Cu) Ø 12 x 1.0 mm	Heating, supply and return (Cu) Ø 12 x 1.0 mm
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Observe recommendations regarding water quality!

When the room control equipment is installed at the factory, the cooling and heating water’s return line is connected to the valve.

Function		Type	Dim.
Cooling	Cooling/heating	VDN215	DN15 (½")

- The ventilation contractor connects ducting to the air connecting piece ø125 mm.
- The ventilation contractor conducts initial commissioning of the air flows
- The electrical contractor connects the power (24 V) and signal cables to the connection terminal with spring-loaded snap-in connections. Maximum cable cross section 2.5 mm². For safe operation, we recommend cable ends with ferrules.

Further information is available for download from www.swegon.com

WISE System Guide

WISE Project Planning Guide - Heating, Cooling & Ventilation

WISE Project Planning Guide - Electricity & Control

WISE Adriatic Instructions for use

Specification text

VVS AMA PTD.4 0	Product with cooling & heating	
AMA-codes	XXX	Page 1
CODE	TEXT	QUANTITY
P	UNITS; PIPES ETC IN PIPE SYSTEMS OR PIPE NETWORKS	
PT	ROOM MOUNTED HEATER AND COOLER	
PTD	ROOM DEVICES FOR HEATING AND COOLING	
PTD.4	Duct connected room devices for heating and cooling	
P	UNITS; PIPES ETC. IN PIPE SYSTEMS OR PIPE NETWORKS	
PT	ROOM MOUNTED HEATER AND COOLER	
PTC	ROOM CHILLERS	
PTC.3	Chilled beams and convectors	
PTC.31	Chilled beams	
PTC.312	Duct connected chilled beams	
XXXX		
Make:	Swegon	
Type:	<p>WISE Adriatic d – A or WISE Adriatic d – B (cooling and heating are always included in the coil, regardless of whether A or B is selected).</p> <p>Demand-controlled climate beam with the potential to add integrated, pressure-independent VAV control.</p> <p>Waterborne cooling and heating for suspended installation or installation directly against the ceiling.</p> <p>Slot adjustment for retained air distribution and function, and to ensure that throw lengths are achieved, even at low air flows.</p> <p>Two-way air discharge climate beam with integrated comfort guarantee (ADC) for setting of the desired direction of the distributed air.</p> <p>Asymmetric air flow on the different sides is possible.</p> <p>Steplessly adjustable air flow.</p> <p>Two possible choices of design component, an angular variant "Prisma" and a rounded variant "Ellips".</p> <p>The design component is easily opened with the aid of a "lever function", and then hangs down along one long side.</p> <p>Actuators and controllers are concealed below the design component for a more minimalist expression.</p> <p>Air connection and water on the product's short side.</p> <p>Connection casing for covering pipes, designed to fit the selected design component.</p> <p>The product is Eurovent certified (verified cooling capacity according to EN-15116).</p>	
CODE	TEXT	QUANTITY
Colour:	White, RAL 9003, gloss ratio 30 ± 6 %	
Length (nominal):	1210, 1810, 2410, 3010 mm. (Prisma). 1214, 1814, 2414, 3014 mm. (Ellips).	
Width (nominal):	450 mm (Prisma), 513 mm (Ellips)	
Height:	190 (Ø125) mm (Prisma), 194 (Ø125) mm (Ellips)	
Tolerances:	± 2 mm	
Water connection:	Plain pipe ends Cu Ø12 x 1.0 mm; Cu Ø12 x 1.0 mm Alt.: 1.2/1.8/2.4/3.0: Male thread cooling and heating DN 15 (applies to factory-fitted valves).	
Air connection:	Spigot Ø125 Air and water connect to the same short side	
Product:	WISE Adriatic d-B-ccc-d or WISE Adriatic d-A-ccc-d	X pcs.

VS AMA PTD.4 0	Product with cooling & heating, continued	
AMA-codes	XXX	Page 2
CODE	TEXT	QUANTITY
Options/accessories Factory-fitted:		
	Various Design components	X pcs.
	Prisma, a design component with angles and a severe appearance.	
	Ellips, a design component with rounded lines that give a calm and gentle expression.	
	Variant TH	X pcs.
	Water and air on opposite sides	
	SYST VDN XXX	
	Valve (straight)	X pcs.
	DN15 (1/2"), Normally open, Kv-value 0.89 (adjustable 0.07-0.89)	
	ACTUATORc Thermal actuator	X pcs.
	On/off - 24 V AC/DC Normally closed	
Supplied with delivery, not mounted		
	ADRIATIC d-T-MD-4S	X pcs.
	Assembly fitting for installation directly against ceiling	
	SYST MS-M8 aaaa-b-RAL9003	X pcs.
	Assembly piece for suspended installation	
	assembly fitting containing threaded rods, ceiling brackets and nuts to all four mounting brackets.	
	SYST VDN 215 / SYST VDN 220	X pcs.
	Valve (straight)	
	DN15 (1/2"), Normally open, Kv-value 0.89 (adjustable 0.07-0.89)	
	DN20 DN20 (3/4") Normally open, Kv-value 1.41 (adjustable 0.22-1.41)	
	SYST CA	X pcs.
	90° duct bend for air connection. Nipple connections with seals.	
	Dimensions: Ø125 mm	
	SYST FH aaa- bbb - 12	X pcs.
	Flexible connection hose (available in different variants)	
	SYST AR-12	X pcs.
	Nipple for venting the water circuit. Push-on connector adapted for installation with flexible connection hose type F20 and F30.	
	SYST AD1	X pcs.
	Double nipple for the connection of the air duct to the product's air connection sleeve.	
	ADRIATIC d KA-aaa-bbb, xx pcs	X pcs.
	Connection casing to wall	
	ADRIATIC d- KA-G-aaaa, xx pcs	X pcs.
	Connection casing to ceiling	