



Air unit heaters ATD(A,G)
Air unit heater/cooler ATDC

LUVATA

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Good to know

For over 70 years, Luvata Söderköping has been developing and producing heat exchangers for air and liquids. We deliver about 50,000 heat exchangers per year from Söderköping. All of our operations are characterised by extensive technical know-how and quality awareness.

Luvata Söderköping is part of the Luvata Heat Transfer Solutions division and a worldwide brand of heat exchangers. At Luvata, we are committed to working in partnership with our customers. Our focus on results and unfailing reliability make us a partner that customers can build their future on:

Partnerships Beyond Metals.

Quality and the environment - priorities

Because we supply heat exchangers that are components of larger projects, we know the importance of delivery accuracy. The products should always be delivered on time, to the right place and with the right quality. Our ongoing development and testing facilities ensure that the products remain at the forefront of the market and that they meet the provided specifications.

Several of our products play an active role via their function in energy reuse and a better indoor environment. We work in a deliberate and structured manner to protect the environment throughout the product lifecycle including development, production, use, decommissioning and recycling.

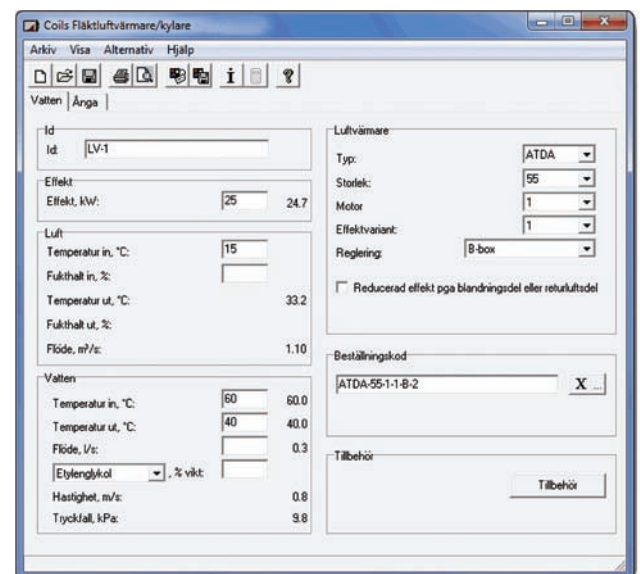
Luvata Söderköping's management system is certified according to ISO 9001: 2008, ISO 14001: 2004 and ISO 3834-2.



Use COILS to make sure you're getting the proper Air unit heater/cooler.

COILS is a flexible, user-friendly software programme that makes it easy to select the correct heater/cooler. You can let COILS choose or provide targets for size or motor. COILS features:

- Eight different display languages
- Option to select printer language independently of display language
- Humidity can be specified in different units
- Liquid flow can be specified in different units
- Most antifreeze liquids are included
- Consideration for altitude
- Ability to select accessories
- Printout containing performance and data on noise level, weight, volume and price
- Ability to save your calculations for later
- Installation instructions and manuals



Download COILS at www.luvata.com/coiltech or contact us to receive the software.

Sizing



Examples of design for water-air heater.

1. Measure the floor area of the premises.

In the case above, it is $8\text{ m} \times 20\text{ m} = 160\text{ m}^2$.

2. Estimate the ceiling height.

Estimated average ceiling height of 3 m.

3. Then estimate the nature of the building and heating.

Select the required capacity according to the capacity requirement chart W/m^2

Average insulation and basic heating through a radiator system provides 60 W/m^2 .

4. Estimate required capacity.

In this case, the capacity required is $160 \times 60 = 9.6\text{ kW}$.

5. Estimate the number of unit heaters.

Expect that each air unit heater can heat an area of 80 m^2 ($8\text{ m} \times 10\text{ m}$), see adjacent picture. Here we have chosen to take two unit heaters and place them facing each other.

6. Then look at the table on page 11-12 with current temperature and inlet air temperature.

We intend to use the existing boiler which provides $60\text{--}30^\circ\text{C}$ water, and will want to quickly increase the heat in the work shop after weekends, during which the temperature is lowered to about 15°C .

7. Size and fan motor speed are found in the the table on page 12.

If two unit heaters are used, each will have to provide a capacity of 4.8 kW . The ATDA-33-1 unit heater by these temperatures will generate 6.0 kW at 1035 RPM , and this capacity will be more than efficient. The motor output required can be read from the Motor Data Table on page 9.

8. Motor.

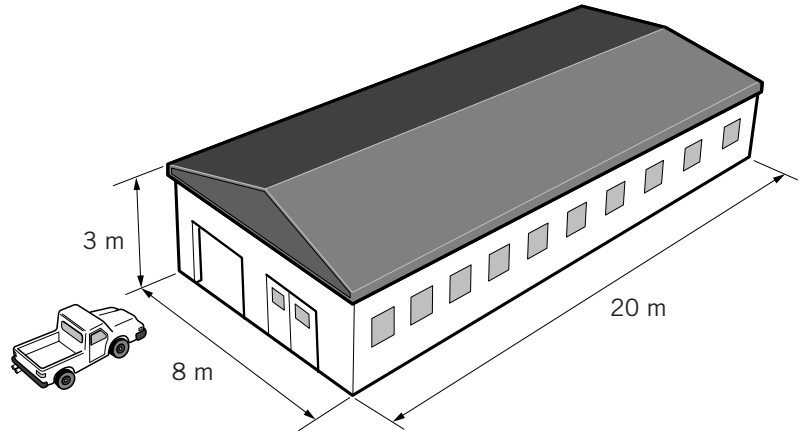
We will select a 1-phase, 230 V motor with manual switch. Should boosted or reduced capacity be required, the motor can easily be reswitched.

9. Control equipment.

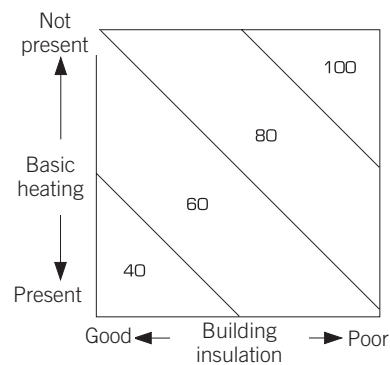
In this case, we will control the unit heater with a room thermostat. Should the need arise to use the unit heaters for automatically controlling the temperature in the premises, we can purchase the automatic unit heater control unit.

10. Select the appropriate accessories from the accessories range.

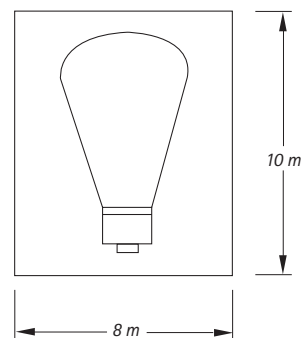
We intend to mount the unit heater on the wall, and therefore we need a set of mounting brackets.



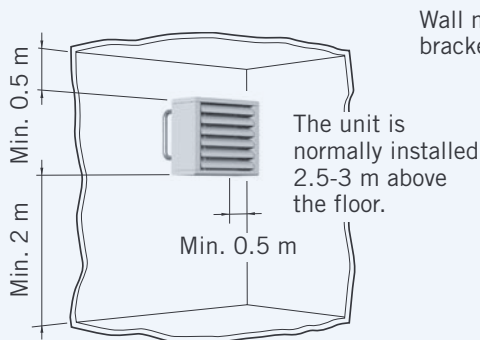
Capacity requirement W/m^2
(with a maximum of 5 m to the roof)



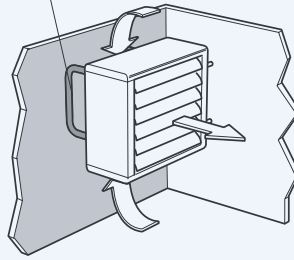
Maximum heating surface per unit heater.



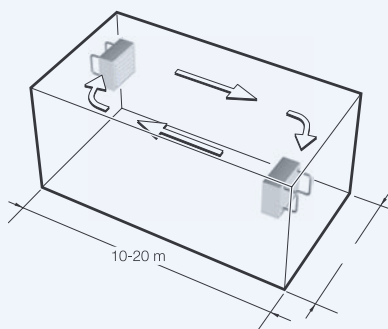
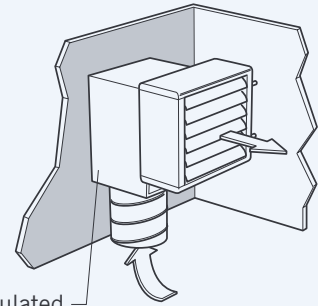
Installation instructions



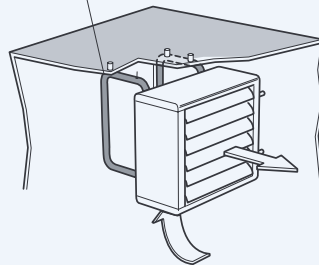
Wall mounting bracket



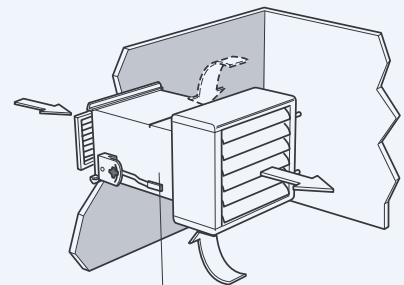
Recirculated air section



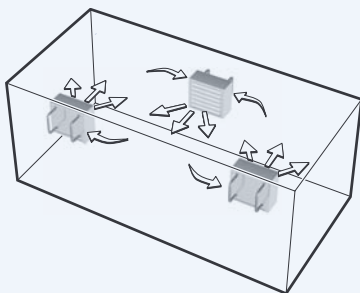
Ceiling mounting bracket



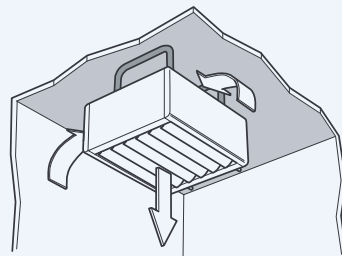
Mixing section



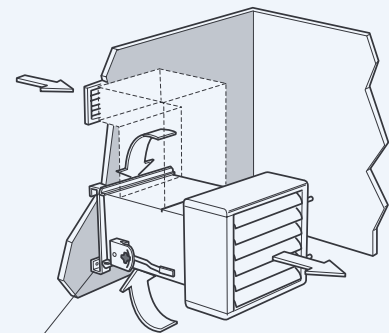
Distance is determined by the size of the unit heaters.



Arrange unit heater(s) in the room so that good circulation is obtained.



NOTE! Not suitable for steam



Spacer mounting bracket
ATDZ-05

Product description ATDA & ATDG

ATDA & ATDG

The Air unit heaters ATDA and ATDG are designed for heating and ventilating of industrial, manufacturing, retail premises and warehouses, garages, supermarkets and similar spaces. The device is available in two different versions; for heating water (ATDA) and steam (ATDG). Both types of unit heater incorporate a corrosion-resistant coil consisting of aluminium fins and copper tubes.

Sizes

ATDA is available in four physical sizes and ATDG is available in three physical sizes. Both models are available with different power variants for varying air flow and power requirements that cover most operating conditions.

Sizes ATDA (heating water):

31, 32, 33, 42, 43, 52, 53, 63

Sizes ATDG (steam): 31, 41, 51

Openable casing

The Air unit heaters ATDA and ATDG have a casing made of corrosion-resistant white lacquered sheet steel or EN 1.4301 stainless steel. The casing can be opened for cleaning the interior. The roof and base are easy to remove with two screws. The pipe connections for water and steam are found at the side of the unit. The motor, fan impeller and protective grille are designed as a compact and composite unit.

General specifications

- Contemporary design with smooth, rounded metal surfaces
- Can be opened for easy internal cleaning
- One air deflector is including as standard
- Airflow up to 2.2 m³/s
- Unit heaters have high efficiency
- Motor for single-phase 230V or 3-phase 400V.
- Complies with EU requirements for machine safety, MD 2006/42/EC
- Wide range of accessories
- Variety of control options

Installation

ATDA can be fitted for either horizontal or vertical airflow. ATDG can only be fitted for horizontal airflow.



Air unit heater ATDA with aluminium fins and copper tubes. Inset shows the cross section of ATDA.

Motor

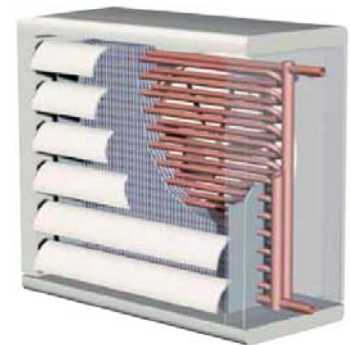
The motor is external rotor type. All single-phase fans can be switched between high and low speed. All motors have a built-in thermal contact. It is retractable for sizes 42 and 43 with three-phase motor and all larger fans. Protection class IP44 for size 31, 32, 33, 42 and 43. IP54 for other motors. Maximum ambient temperature around the motors is 40°C.

Materials and finish

Unit casing: Made of white painted hot-galvanised sheet steel, NCS 0502B or EN 1.4301 stainless steel.

Impeller and protective grille: Black lacquered steel/wire.

Coil: Copper tubes with aluminium fins or materials for corrosive environments. ATDA has headers with smooth 22 mm dia. connection for brazed joints or compression rings. ATDG has threaded connections for steam and condensate.



Other designs

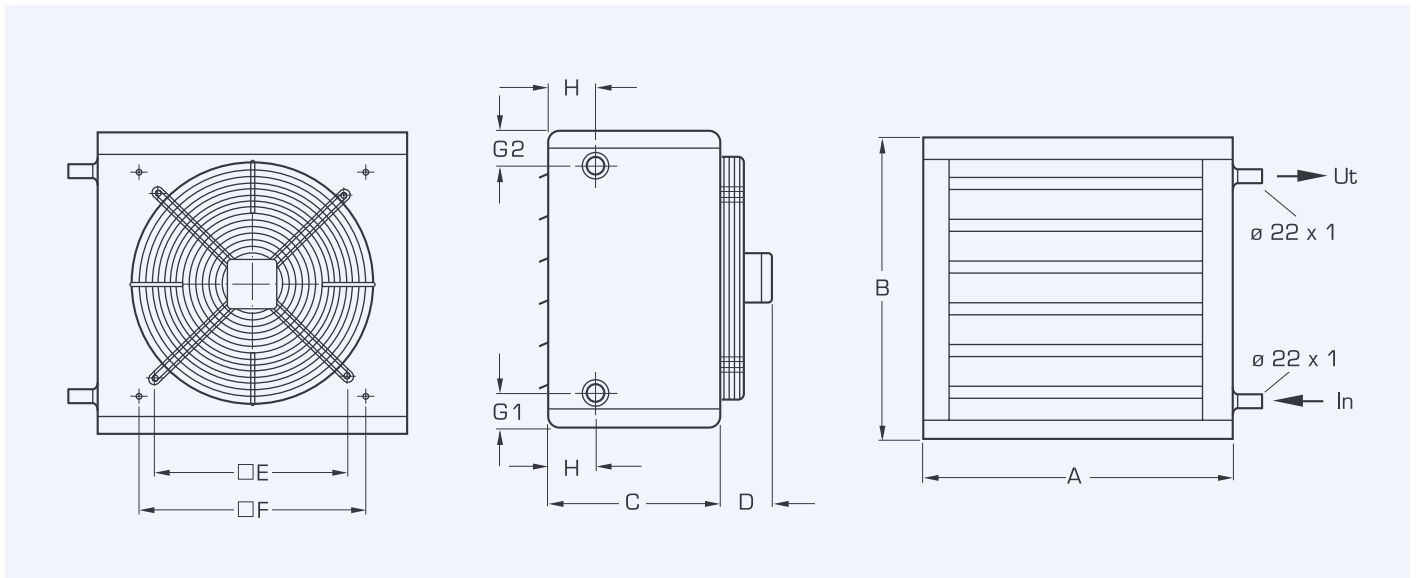
The ATD is also available with a corrosion-protected coil and with stainless steel casing. There are also other motors such as EEx e (increased safety), 500 Volt and higher IP classes. ATD is also available as an industrial model, ATDI, which can be equipped with an explosion-proof motor, steel coils etc.

Accessories

Luvata offers a variety of accessories, see page 25.

Dimensions & Weight: ATDA

Air unit heater ATDA, heating water

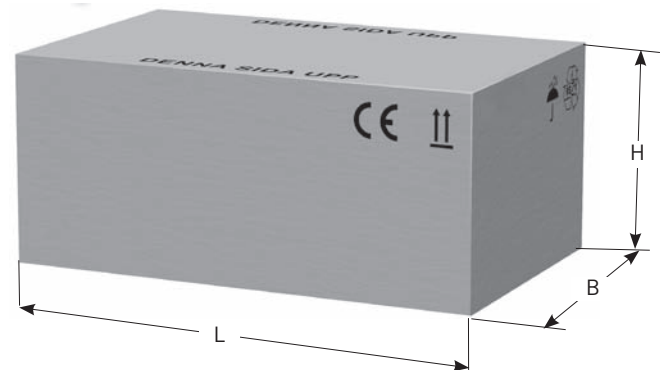


ATDA Dimensions and weight (all dimensions in mm)

Size ATDA	A	B	C	D	E	F	G1	G2	H	Weight, kg
31	514	465	270	82	290	350	57	69	76	18
32	514	465	270	82	290	350	57	69	76	18
33	514	465	270	82	290	350	57	69	76	19
42	670	632	310	82	355	510	57	57	89	28
43	670	632	310	82	355	510	57	57	89	29
52	770	732	340	100	440	610	62	62	89	48
53	770	732	340	100	440	610	62	62	89	48
63	990	832	370	136	495	740	62	62	115	65

Packaging

The air unit heater ATDA with accessories is supplied in a corrugated cardboard carton. The heater is also protected by transparent plastic. CE marked.

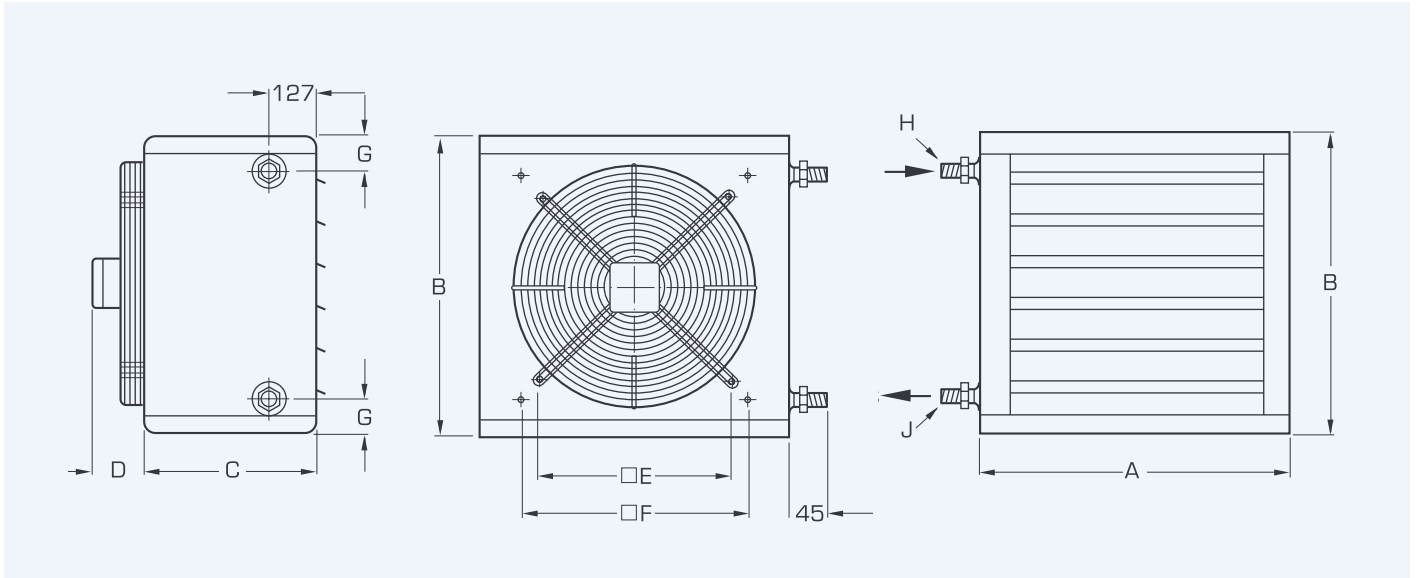


Packaging ATDA

Size ATDA	L (cm)	B (cm)	H (cm)	Weight (kg)
31, 32, 33	70	48	40	18
42, 43	84	64	44	30
52, 53	94	74	46	45
63	115	83	57	57

Dimensions & Weight: ATDG

Air unit heater ATDG, steam

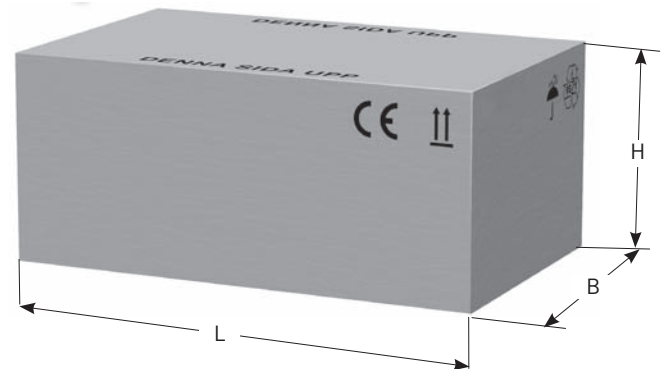


ATDG Dimensions and weight (all dimensions in mm)

Size ATDG	A	B	C	D	E	F	G	pipe conn.		Weight, kg
								H	J	
31	514	465	270	82	290	350	58	25	25	18
41	670	632	310	82	355	510	61	32	25	28
51	770	732	340	100	440	610	61	32	32	47

Packaging

Air unit heater ATDG with accessories is supplied in a corrugated cardboard carton. The heater is also protected by transparent plastic. CE marked.



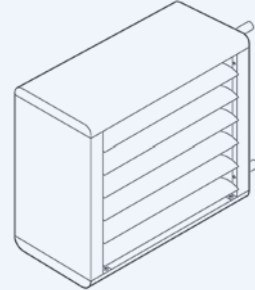
Packaging ATDG

Size ATDG	L (cm)	B (cm)	H (cm)	Weight (kg)
31	70	48	40	18
41	84	64	44	30
51	94	74	46	45

Technical specifications ATDA

Operating data ATDA

- Maximum ambient temperature around the motor = + 60 °C.
- Maximum operating pressure: 1.6 MPa at a maximum operating temperature of 100 °C.
- Maximum operating pressure: 1.0 MPa at a maximum operating temperature of 150 °C.
- All heat exchangers are pressure and leak tested with dry air under water.
- Designed and manufactured according to the Pressure Equipment Directive PED/97/23/EC.
- ErP2015-compliant.



Sound level, sound power level. Heating water - ATDA

Size ATDA	Speed RPM	Sound level ²⁾ dB(A)	Sound power ³⁾ dB(A)	Linear sound power, dB, octave band, centre frequency, Hz						
				125	250	500	1000	2000	4000	8000
31-1	1350	54	70	66	68	65	63	61	57	48
	1035	48	65	60	62	59	57	55	51	42
	685	39	55	51	53	50	48	46	42	33
32-1	1350	54	70	66	68	65	63	61	57	48
	1035	48	65	60	62	59	57	55	51	42
	685	39	55	51	53	50	48	46	42	33
33-1	1350	53	69	65	67	64	62	60	56	47
	980	47	64	59	61	58	56	54	50	41
	685	39	55	51	53	50	48	46	42	33
42-1	1430	58	74	68	73	70	66	64	61	53
	900	48	64	58	63	60	56	54	51	43
	600	41	57	51	56	53	49	47	44	36
42-3	1450	58	74	68	73	70	66	64	61	53
43-1	1430	57	73	67	72	69	65	63	60	52
	1035	50	66	60	65	62	58	56	53	45
	750	43	59	53	58	55	51	49	46	38
43-3	1450	58	74	68	73	70	66	64	61	53
52-1	865	58	74	74	76	65	66	63	58	50
	720	50	66	68	66	58	59	57	49	38
	555	43	59	61	59	51	52	50	42	31
52-3	1340	66	82	82	84	73	74	71	66	58
	1060	60	76	76	78	67	68	65	60	52
53-1	865	58	74	74	76	65	66	63	58	50
	720	40	56	58	56	48	49	47	39	28
	555	35	51	53	51	43	44	42	34	23
53-3	1340	66	82	82	84	73	74	71	66	58
	1060	59	75	75	77	66	67	64	59	51
	920	60	76	78	76	71	70	68	68	59
63-1	630	52	67	74	65	63	61	61	54	45
	515	45	61	68	60	57	56	54	44	34
	1350	67	83	80	82	78	77	75	74	69
63-3	1110	53	79	79	78	75	73	71	71	65

Tolerance ± 2 dB

2) Noise level at a distance of 5 metres, Q = 2, absorption area = 200 m² Sabine.

3) Noise compliant with ISO 3744.

The speeds specified in bold type are for the delivery version without the use of an accessory. Other speeds are available with accessories.

Throw, horizontal Heating water - ATDA

Size ATDA	Speed RPM	Single air deflector Throw, m L _{0,2}
31-1	1350	5.8
	1035	4.5
	685	3.0
32-1	1350	5.8
	1035	4.5
	685	3.0
33-1	1350	5.0
	980	3.5
	685	2.5
42-1	1430	6.0
	900	4.0
	600	3.5
42-3	1450	6.0
43-1	1430	6.0
	1035	5.0
	750	3.0
43-3	1450	6.0
52-1	865	7.3
	720	5.3
	555	3.7
52-3	1340	10.1
	1060	8.1
53-1	865	7.0
	720	2.5
	555	1.5
53-3	1340	9.0
	1060	7.5
	920	12.0
63-1	630	7.0
	515	5.0
	1350	18.0
63-3	1110	15.0



The specified throw is applicable to supply air temp. of +40°C and indoor temp. +18°C. The air deflector is placed in horizontal position. The premises are free from interference from air drafts and nearby furnishings. L = L_{0,2} perpendicular distance from fan heater at air speed v = 0.2m/s. The speeds specified in bold type are for the delivery version without the use of an accessory. Other speeds are available with accessories.

Motor data Heating water - ATDA

Size ATDA	Speed RPM	Rated output W	Rated current (A), 50 Hz			Thermal contact	Enclosure class
			1 Phase 230V	3 Phase 400 V D	3 Phase 400 V, Y		
31-1	1350 1000 ¹⁾	110	0,52	-	-	Yes ²⁾	IP44
32-1	1350 1000 ¹⁾	110	0,52	-	-	Yes ²⁾	IP44
33-1	1350 1000 ¹⁾	110	0,52	-	-	Yes ²⁾	IP44
42-1	1430 900 ¹⁾	160	0,73	-	-	Yes ²⁾	IP44
42-3	1450	135	-	-	0.44	Yes	IP44
43-1	1430 900 ¹⁾	160	0,73	-	-	Yes ²⁾	IP44
43-3	1450	135	-	-	0.44	Yes	IP44
52-1	865	220	0,97	-	-	Yes	IP54
52-3	1340 1060 ¹⁾	710 480	-	1.4 -	- 0.8	Yes	IP54
53-1	865	220	0,97	-	-	Yes	IP54
53-3	1340 1060 ¹⁾	710 480	-	1.4 -	- 0.8	Yes	IP54
63-1	920	390	1,78	-	-	Yes	IP54
63-3	1350 1110 ¹⁾	1100 760	-	2.32 -	- 1.3	Yes	IP54

1) Speed is obtained by reswitching the motor (see diagram in the ATD manual).

2) Connected internally, not retractable.

The speeds specified in bold type are for the delivery version without the use of an accessory. Other speeds are available with accessories.

Airflow Heating water - ATDA

Size ATDA	Speed RPM	Airflow m ³ /s	Airflow with accessories m ³ /s ²⁾
31-1	1350	0.51	0.38
	1035	0.39	0.29
	685	0.34	0.26
32-1	1350	0.45	0.34
	1035	0.34	0.26
	685	0.30	0.23
33-1	1350	0.43	0.32
	980	0.32	0.24
	685	0.22	0.17
42-1	1430	0.75	0.56
	900	0.48	0.36
	600	0.35	0.26
42-3	1450	0.75	0.56
43-1	1430	0.72	0.54
	1035	0.51	0.38
	750	0.37	0.28
43-3	1450	0.72	0.54
52-1	865	1.10	0.83
	720	0.79	0.59
	555	0.57	0.43
52-3	1340	1.56	1.17
	1060	1.22	0.92
53-1	865	1.05	0.79
	720	0.45	0.34
	555	0.35	0.26
53-3	1340	1.43	1.07
	1060	1.09	0.82
63-1	920	1.45	-
	630	1.02	-
	515	0.83	-
63-3	1350	1.96	-
	1110	1.61	-

2) Accessories refers to mixing section ATDZ-01 or recirculated air section ATDZ-02, both with filters.

The speeds specified in bold type are for the delivery version without the use of an accessory. Other speeds are available with accessories.

Speed with automatic fan control, automatic unit heater control or five-phase voltage control

Voltage	ATDA-31-1	ATDA-32-1	ATDA-33-1	ATDA-42-1	ATDA-43-1	ATDA-52-1	ATDA-53-1	ATDA-63-1
230 V	1350	1350	1350	1430	1430	865	865	920
150 V	1190	1190	1190	1210	1030	720	720	595
130 V	1035	1035	980	900	750	555	555	425
115 V	850	850	850	660	600	455	455	350
100 V	685	685	680	550	500	365	365	285

 = Speed of delivery performance

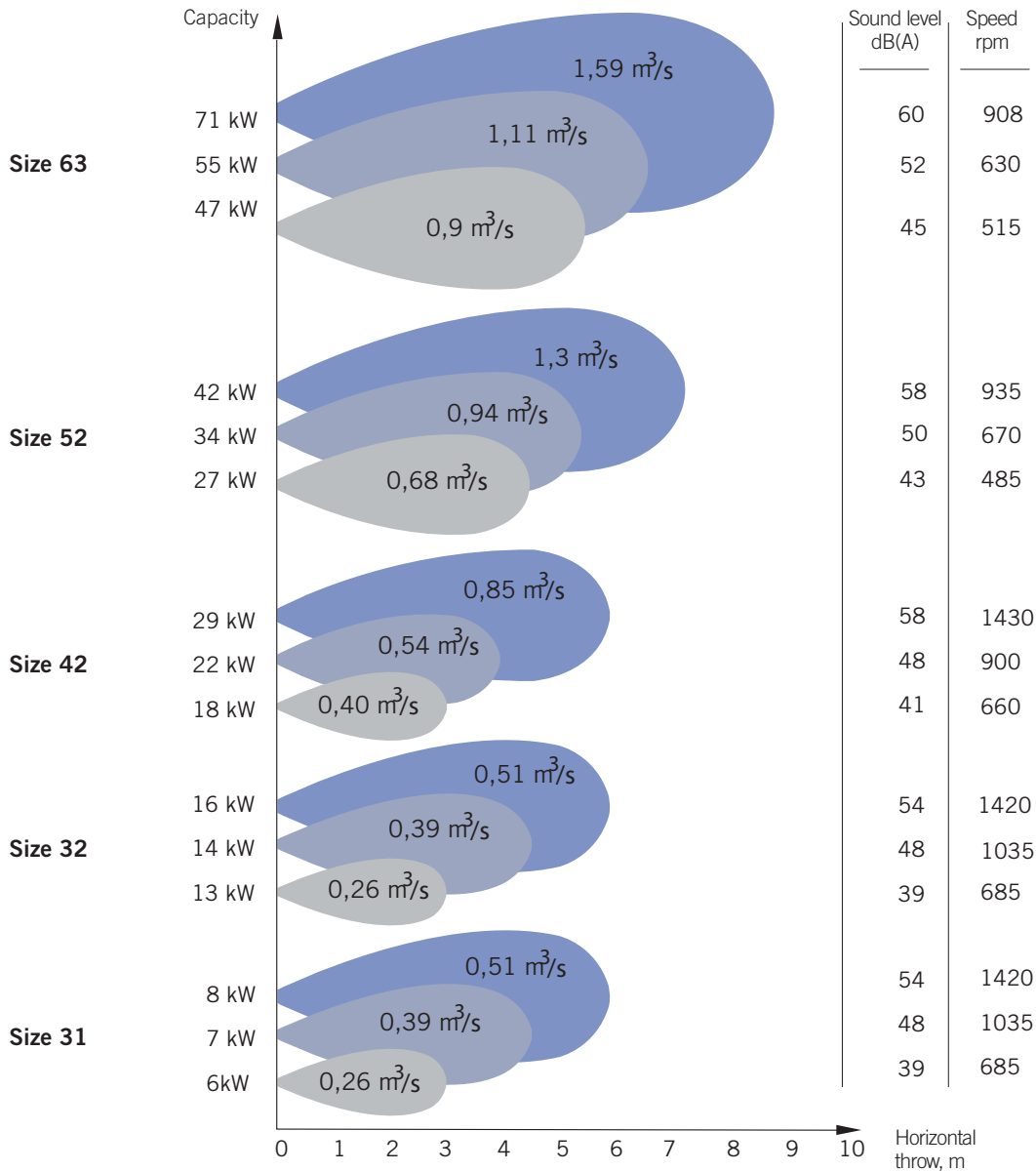
Accessories ATDZ-15-4 (automatic fan, air heater control), ATDZ-24-3 and 25-3 ATDZ-, ATDZ-28, ATDZ-29 and ATDZ-33 include a transformer that features five lower voltages for lower speed in addition to a 230 V output. ATDZ-15-4 (Automatic fan control) and ATDZ-24-3, ATDZ-28, ATDZ-29 and ATDZ-33 (3-speed manual switch) work with three different voltages. These accessories

are factory-wired to obtain the appropriate speed for each step. The table above shows the factory-connected voltages and corresponding speed.

If for some reason it is desirable to alter the speeds, this can be done by reconnecting the flexible connections on the transformer. Detailed wiring diagrams for motors and accessories can be found in the manual for ATD.

Technical specifications ATDA

Overview chart for quick selection



The above summary chart applies for water temperature 80-60 °C and inlet air temperature of +15 °C with motor type 1-speed 230V (highest speed standard, lower speed is obtained with accessories).

1) Applies to power variant 1

Careful dimensioning

For a more accurate selection, including for other operating conditions, use the Luvata calculation program COILS, see page 2 for more information.

Capacity table ATDA - Inlet air temperature $\pm 0\text{ }^{\circ}\text{C}$

Size ATDA	Speed RPM	Air flow m^3/s	Heating water								
			70-40 $^{\circ}\text{C}$			60-30 $^{\circ}\text{C}$			55-35 $^{\circ}\text{C}$		
			Capacity kW	$t_{\text{air out}}$ $^{\circ}\text{C}$	Water flow l/s	Capacity kW	$t_{\text{air out}}$ $^{\circ}\text{C}$	Water flow l/s	Capacity kW	$t_{\text{air out}}$ $^{\circ}\text{C}$	Water flow l/s
31-1	1350	0.51	6.8	10.2	0.05	4.8	7.3	0.04	5.8	8.7	0.07
	1035	0.39	6.0	11.8	0.05	4.3	8.4	0.03	5.1	10.0	0.06
	685	0.34	5.6	12.7	0.04	4.0	9.0	0.03	4.8	10.8	0.06
32-1	1350	0.45	15.6	26.7	0.12	12.1	20.7	0.10	12.9	22.1	0.16
	1035	0.34	13.3	30.1	0.11	10.3	23.3	0.08	11.0	24.9	0.13
	685	0.30	12.3	31.6	0.10	9.6	24.5	0.08	10.2	26.2	0.12
33-1	1350	0.43	19.3	34.6	0.15	15.1	27.1	0.12	15.9	28.5	0.19
	980	0.32	15.8	38.0	0.13	12.4	29.8	0.10	13.1	31.6	0.16
	685	0.22	12.0	41.9	0.10	9.4	32.9	0.08	9.9	34.7	0.12
42-1	1430	0.75	28.1	28.9	0.22	21.8	22.4	0.17	23.3	23.9	0.28
	900	0.48	21.4	34.3	0.17	16.6	26.7	0.13	17.7	28.3	0.21
	600	0.35	17.2	37.9	0.14	13.4	29.6	0.11	14.2	31.3	0.17
42-3	1450	0.75	28.1	28.9	0.22	21.8	22.4	0.17	23.3	23.9	0.28
43-1	1430	0.72	34.7	37.1	0.28	27.2	29.1	0.22	28.8	30.8	0.35
	1035	0.51	27.0	40.8	0.22	21.3	32.1	0.17	22.4	33.9	0.27
	750	0.37	21.0	43.8	0.17	16.6	34.5	0.13	17.4	36.3	0.21
43-3	1450	0.72	34.7	37.1	0.28	27.2	29.1	0.22	28.8	30.8	0.35
52-1	865	1.10	40.1	28.1	0.32	31.0	21.7	0.25	33.3	23.3	0.40
	720	0.79	32.9	32.1	0.26	25.5	24.9	0.20	27.3	26.6	0.33
	555	0.57	26.6	36.0	0.21	20.7	27.9	0.17	22.0	29.7	0.26
52-3	1340	1.56	48.5	23.9	0.39	37.4	18.5	0.30	40.3	19.9	0.48
	1060	1.22	42.5	26.8	0.34	32.9	20.7	0.26	35.3	22.3	0.42
53-1	865	1.05	49.4	36.3	0.40	38.7	28.4	0.31	41.1	30.1	0.49
	720	0.45	26.0	44.5	0.21	20.5	35.0	0.16	21.6	36.9	0.26
	555	0.35	21.0	46.2	0.17	16.6	36.4	0.13	17.4	38.3	0.21
53-3	1340	1.43	60.5	32.6	0.48	47.3	25.5	0.38	49.2	26.5	0.56
	1060	1.09	50.7	35.8	0.41	39.7	28.0	0.32	42.1	29.8	0.51
63-1	920	1.45	70.0	37.2	0.56	54.8	29.1	0.44	57.8	30.7	0.69
	630	1.02	55.1	41.6	0.44	43.3	32.7	0.35	45.4	34.2	0.54
	515	0.83	47.4	44.0	0.38	37.3	34.6	0.30	39.0	36.2	0.47
63-3	1350	1.96	84.4	33.2	0.68	65.9	25.9	0.53	69.8	27.4	0.84
	1110	1.61	74.8	35.8	0.60	58.5	28.0	0.47	61.8	29.6	0.74

The speeds specified in bold type are for the delivery version without the use of an accessory. Other speeds are available with accessories. The table applies to free-blowing unit without any accessories on the air side. When calculating power, air density at inlet air temperature has been taken into account, which at $\pm 0\text{ }^{\circ}\text{C}$ is 1.29 kg/m^3 .

Capacity table ATDA - Inlet air temperature $\pm 15\text{ }^{\circ}\text{C}$

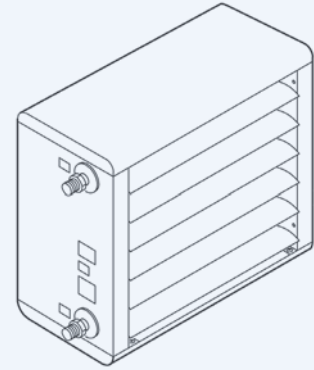
Size ATDA	Speed RPM	Air flow m ³ /s	Heating water								
			70-40 °C			60-30 °C			55-35 °C		
			Capacity kW	t _{air out} °C	Water flow l/s	Capacity kW	t _{air out} °C	Water flow l/s	Capacity kW	t _{air out} °C	Water flow l/s
31-1	1350	0.51	4.2	21.7	0.03	1.6	17.5	0.01	3.2	20.1	0.04
	1035	0.39	3.7	22.7	0.03	1.4	17.8	0.01	2.8	20.5	0.03
	685	0.34	3.5	23.3	0.03	1.3	18.1	0.01	2.7	21.3	0.03
32-1	1350	0.45	10.5	33.9	0.08	6.9	27.4	0.06	7.9	29.3	0.10
	1035	0.34	8.9	36.3	0.07	5.9	29.1	0.05	6.7	31.3	0.08
	685	0.30	8.3	37.3	0.07	5.5	29.8	0.04	6.2	31.9	0.07
33-1	1350	0.43	13.0	39.5	0.10	8.8	31.6	0.07	9.8	33.6	0.12
	980	0.32	10.6	41.8	0.08	7.2	33.2	0.06	8.0	35.3	0.10
	685	0.22	8.0	44.4	0.06	5.4	35.0	0.04	6.0	37.3	0.07
42-1	1430	0.75	18.9	35.4	0.15	12.4	28.5	0.10	14.3	30.5	0.17
	900	0.48	14.3	39.2	0.11	9.5	31.0	0.08	10.8	33.3	0.13
	600	0.35	11.5	41.8	0.09	7.6	32.7	0.06	8.7	35.2	0.10
42-3	1450	0.75	18.9	35.4	0.15	12.4	28.5	0.10	14.3	30.5	0.17
43-1	1430	0.72	23.2	41.2	0.19	15.8	32.8	0.13	17.6	34.9	0.21
	1035	0.51	18.1	43.8	0.14	12.3	34.5	0.10	13.7	36.8	0.16
	750	0.37	14.0	45.8	0.11	9.5	36.0	0.08	10.6	38.3	0.13
43-3	1450	0.72	23.2	41.2	0.19	15.8	32.8	0.13	17.6	34.9	0.21
52-1	865	1.10	26.9	34.8	0.21	17.5	28.0	0.14	20.3	30.0	0.24
	720	0.79	22.0	37.6	0.18	14.4	29.8	0.12	16.6	32.1	0.20
	555	0.57	17.8	40.3	0.14	11.6	31.6	0.09	13.4	34.1	0.16
52-3	1340	1.56	32.5	31.9	0.26	21.1	26.0	0.17	24.6	27.8	0.30
	1060	1.22	28.5	34.0	0.23	18.6	27.4	0.15	21.6	29.3	0.26
53-1	865	1.05	33.0	40.6	0.26	22.3	32.2	0.18	25.1	34.4	0.30
	720	0.45	17.3	46.2	0.14	11.7	36.1	0.09	13.1	38.7	0.16
	555	0.35	14.0	47.4	0.11	9.4	36.9	0.08	10.6	39.5	0.13
53-3	1340	1.43	40.5	38.0	0.32	27.3	30.5	0.22	30.8	32.5	0.37
	1060	1.09	33.9	40.3	0.27	22.9	32.0	0.18	25.7	34.2	0.31
63-1	920	1.45	47.2	41.4	0.38	31.8	32.8	0.25	35.6	35.0	0.43
	630	1.02	37.2	44.6	0.30	25.1	35.0	0.20	28.0	37.3	0.34
	515	0.83	32.0	46.3	0.26	21.7	36.2	0.17	24.1	38.6	0.29
63-3	1350	1.96	57.0	38.6	0.46	38.2	30.8	0.31	43.0	32.8	0.52
	1110	1.61	50.5	40.5	0.40	33.9	32.1	0.27	38.1	34.2	0.46

The speeds specified in bold type are for the delivery version without the use of an accessory. Other speeds are available with accessories. The table applies to free-blowing units without any accessories on the air side. When calculating capacity, air density at inlet air temperature has been taken into account, which at $\pm 0\text{ }^{\circ}\text{C}$ is 1.23 kg/m^3 .

Technical specifications ATDG

Operating data ATDG

- Maximum operating temperature: 185°C.
- Maximum operating pressure: 1.0 MPa at a maximum operating temperature of 185°C.
- Test pressure = 1.3 MPa.
- Steam pH value must not fall below 8.5 and should normally be at 9.5.
- Oxygen content - O₂ - should not exceed 0.01 mg/l.
- All heat exchangers are pressure and leak tested with dry air under water.
- Designed and manufactured according to the Pressure Equipment Directive PED/97/23/ec.
- ErP2015-compliant.



Sound level, sound power level Steam - ATDG

Size ATDG	Speed RPM	Noise level ²⁾ dB (A)	Noise level ³⁾ dB (A)	Linear sound power, dB, octave band, centre frequency, Hz						
				125	250	500	1000	2000	4000	8000
31-1	1350	54	70	66	68	65	63	61	57	48
	1035	48	65	60	62	59	57	55	51	42
	685	39	55	51	53	50	48	46	42	33
41-1	1430	58	74	68	73	65	66	64	57	48
	900	48	64	58	63	59	56	54	51	42
	600	41	57	51	56	50	49	47	42	33
41-3	1450	58	74	68	73	70	66	64	61	53
51-1	865	58	74	74	76	64	66	63	58	50
	720	50	66	68	66	58	59	57	49	38
	555	43	59	61	59	50	52	50	42	31
51-3	1340	66	82	82	84	73	74	71	66	58
	1060	60	76	76	78	67	68	65	60	52

Tolerance ± 2 dB

2) Noise level at a distance of 5 metres, Q = 2, absorption area = 200 m² Sabine.

3) Noise compliant with ISO 3744.

The speeds specified in bold type are for the delivery version without the use of an accessory. Other speeds are available with accessories.

Motor data Steam - ATDG

Size ATDG	Speed RPM	Nominal capacity W	Rated current (A), 50 Hz			Thermal contact	Enclosure class
			1 Phase 230V	3 Phase 400 V D	3 speed 400 V, Y		
31-1	1350	110	0,52	-	-	Yes ²⁾	IP44
	1000 ¹⁾						
41-1	1430	160	0,73	-	-	Yes ²⁾	IP44
	900 ¹⁾						
41-3	1450	135	-	-	0.44	Yes	IP44
51-1	865	220	0,97	-	-	Yes	IP54
51-3	1340	710	-	1.4	-	Yes	IP54
	1060 ¹⁾						

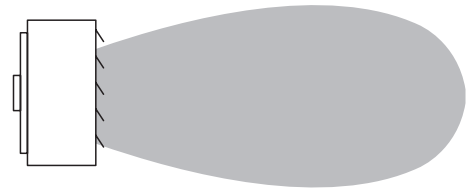
1) The speed is achieved by switching the motor, see the wiring diagram in the manual ATD.

2) Connected internally, not retractable.

The speeds specified in bold type are for the delivery version without the use of an accessory. Other speeds are available with accessories.

Throw, horizontal Steam - ATDG

Size ATDG	Speed RPM	Simple air deflector Throw, m L _{0,2}
31-1	1350	5.8
	1035	4.5
	685	3.0
41-1	1430	6.0
	900	4.0
	600	3.0
41-3	1450	6.0
51-1	865	7.3
	720	5.3
	555	3.7
51-3	1340	10.1
	1060	8.1



The throw indicated applies to a supply air temperature of +40 °C and indoor temperature of +18 °C. Air deflector is fitted horizontally. Premises is completely free from disturbance from air draughts and nearby furnishings.

L = 0,2 perpendicular distance from the fan-assisted unit heater at velocity v = 0.2m/s.

The speeds specified in bold type are for the delivery version without the use of an accessory. Other speeds are available with accessories.

Speed with Automatic fan control, Automatic unit heater control or three-step switch – voltage control

Voltage	ATDG-31-1	ATDG-41-1	ATDG-51-1
230 V	1350	1430	865
150 V	1190	1210	720
130 V	1035	900	555
115 V	850	660	455
100 V	685	550	365

= speed of unit supplied

The accessories ATDZ-15-4 (Automatic fan, unit heater control), ATDZ-24-3 and ATDZ-25-3, ATDZ-28, ATDZ-29 and ATDZ-33 include a transformer which, besides 230 V output current, has five lower voltages for lower speed. The ATDZ-15-4 (Automatic fan control) and ATDZ-24-3, ATDZ-28, ATDZ-29 and ATDZ-33 (3-step manual switch) operate with 3 different voltages. These accessories are factory-wired to obtain the appropriate speed for each step. The table shows the factory-wired voltages and corresponding speed. The speed can be altered by reconnecting the flexible connections on the transformer. Detailed wiring diagrams for motors and accessories are available in the manual for ATD.

Capacity table ATDG - inlet air temperature ± 0 °C

Size ATDG	Speed RPM	Air flow m ³ /s	Steam							
			110 °C/1.4 bar(a)		130 °C/2.7 bar(a)		150 °C/4.7 bar(a)		170 °C/7.9 bar(a)	
			Capacity kW	t _{air out} °C	Capacity kW	t _{air out} °C	Capacity kW	t _{air out} °C	Capacity kW	t _{air out} °C
31-1	1350	0.51	13.4	20.2	15.8	23.9	18.3	27.7	20.8	31.4
	1035	0.39	12.0	23.7	14.2	28.1	16.5	32.5	18.7	36.9
	685	0.26	10.2	30.1	12.1	35.7	14.0	41.3	15.9	47.0
41-1	1430	0.85	27.3	24.7	32.3	29.3	37.4	33.9	42.5	38.5
	900	0.54	22.6	32.2	26.8	38.2	31.0	44.2	35.3	50.3
	600	0.40	19.9	38.3	23.6	45.5	27.4	52.7	31.2	60.0
41-3	1450	0.85	27.3	24.7	32.3	29.3	37.4	33.9	42.5	38.5
51-1	865	1.30	40.7	24.1	48.2	28.6	55.8	33.1	63.4	37.6
	720	0.94	35.6	29.2	42.2	34.6	48.9	40.0	55.6	45.5
	555	0.68	31.0	35.2	36.8	41.7	42.7	48.3	48.5	55.0
51-3	1340	1.84	46.8	19.6	55.4	23.2	64.0	26.8	72.7	30.4
	1060	1.44	42.4	22.7	50.3	26.9	58.1	31.1	66.0	35.3

The speeds specified in bold type are for the delivery version without the use of an accessory. Other speeds are available with accessories. The table applies to free-blowing units without any accessories on the air side. When calculating capacity, air density at inlet air temperature has been taken into account, which at ± 0 °C is 1.29 kg/m³.

Capacity table ATDG - Inlet air temperature +15 °C

Size ATDG	Speed RPM	Air flow m ³ /s	Steam							
			110 °C/1.4 bar(a)		130 °C/2.7 bar(a)		150 °C/4.7 bar(a)		170 °C/7.9 bar(a)	
			Capacity kW	t _{air out} °C	Capacity kW	t _{air out} °C	Capacity kW	t _{air out} °C	Capacity kW	t _{air out} °C
31-1	1350	0.51	11.5	20.2	15.8	23.9	18.3	27.7	20.8	31.4
	1035	0.39	10.3	23.7	14.2	28.1	16.5	32.5	18.7	36.9
	685	0.26	8.7	30.1	12.1	35.7	14.0	41.3	15.9	47.0
41-1	1430	0.85	27.4	24.7	32.3	29.3	37.4	33.9	42.5	38.5
	900	0.54	19.4	32.2	26.8	38.2	31.0	44.2	35.3	50.3
	600	0.40	17.0	38.3	23.6	45.5	27.4	52.7	31.2	60.0
41-3	1450	0.85	23.4	37.3	28.4	42.1	33.4	46.9	38.4	51.7
51-1	865	1.30	34.9	36.8	42.4	41.5	49.9	46.2	57.4	50.9
	720	0.94	30.5	41.4	37.1	47.0	43.7	52.7	50.3	58.4
	555	0.68	26.7	46.9	32.4	53.7	38.2	60.7	44.1	67.6
51-3	1340	1.84	40.1	32.7	48.6	36.5	57.2	40.3	65.8	44.1
	1060	1.44	36.4	35.5	44.1	39.9	51.9	44.3	59.8	48.7

The speeds specified in bold type are for the delivery version without the use of an accessory. Other speeds are available with accessories. The table applies to free-blowing units without any accessories on the air side. When calculating capacity, air density at inlet air temperature has been taken into account, which at ± 15 °C at sea level and normal air pressure is 1.23 kg/m³. For a more accurate selection, including for other operating conditions, use the Luvata software programme COILS, see page 2.

Product description ATDC

ATDC

ATDC is a combined fan unit heater/cooler and is designed for heating and cooling of industrial, manufacturing, retail and warehouse premises, garages, supermarkets and the like.

Sizes

ATDC unit heater/cooler is available in four different sizes for varying air flow and capacity requirements that cover most operating conditions.

ATDC: 33, 43, 53, 63

Hydrophilic fins

ATDC features a corrosion-proof cooling/heating coil of hydrophilic fins and copper tubes. The hydrophilic fins used for ATDC features a hygroscopic design enables a significantly higher rate of speed over the coil surface compared to aluminium. The hydrophilic fins also boasts better corrosion resistance compared with aluminium fins.

Openable casing

The ATDC unit cooler/heater features a white lacquered sheet steel or EN 1.4301 stainless steel casing. The casing can be opened for interior cleaning. Roof and base are easily removable with two screws. The pipe connection for water and steam are located in the side of the unit. The motor, impeller and protective grille are designed as a compact and composite unit.

General specifications

- Contemporary design with smooth, rounded metal surfaces
- Can be opened for easy internal cleaning
- One air deflector included as standard
- Airflows up to 2.15 m³/s
- Motor for single-phase 230V or 3-phase 400V.
- Complies with EU Safety of Machinery requirements, MD 2006/42/EC
- Wide range of accessories
- Variety of control options

Installation

ATDC is mounted for horizontal airflow.

Motor

The motor is external rotor type. All single-phase fans can be switched between high and low speed. All motors have built in thermal contact, which is retractable for size 43 with 3-phase motor and all larger fans. Protection class IP44 for size 33, 43, 53 and 63, IP54 for other motors. Maximum ambient temperature around the motors is 40 °C.

Materials and finish

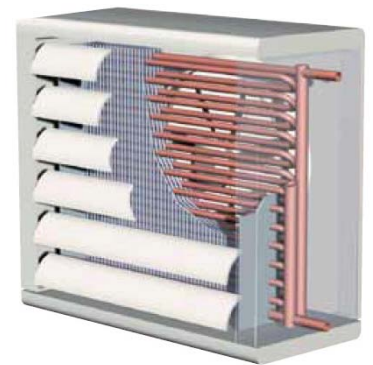
Unit casing: Made of white painted hot-galvanized sheet steel, NCS 0502B or EN 1.4301 stainless steel. Drip tray is always supplied as a stainless steel design with drain.

Impeller & protective grille: Black lacquered steel/wire.

Coil: Copper tubes with hydrophilic fins or materials for corrosive environments. Headers with smooth $\varnothing 22$ mm connection for brazed joints or compression rings.

Accessories

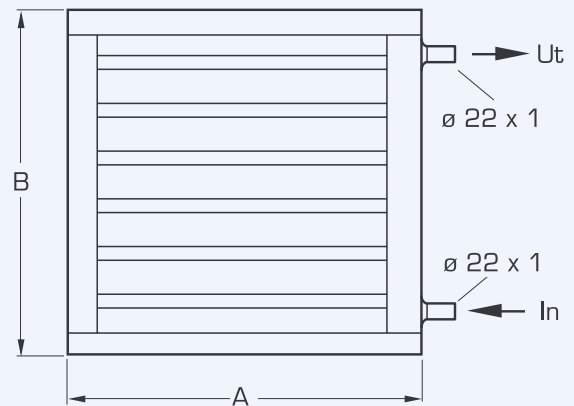
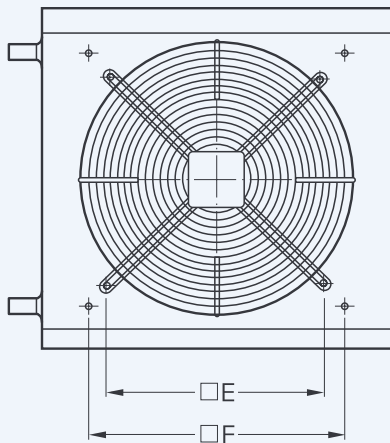
Luvata offers a variety of accessories, see page 25.



ATDC with hydrophilic fins and copper tubes. Inset shows the cross section of ATDC.

Dimensions & weight: ATDC

Air unit heater/cooler ATDC

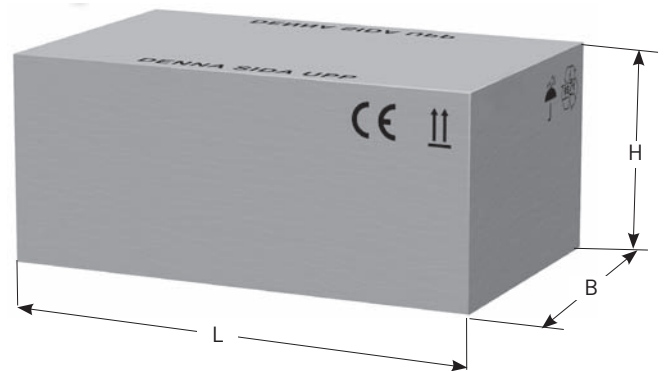


ATDC dimensions and weight (all dimensions in mm)

Size ATDC	A	B	C	D	E	F	G	H	J	Weight, kg
33	514	465	270	82	290	350	50	76	81	18
44	670	632	310	82	355	355	58	89	67	28
55	770	732	340	100	440	610	58	89	67	47
63	990	832	370	136	495	740	58	115	70	62

Packaging

The ATDC air unit heater/cooler with accessories is supplied in a corrugated cardboard carton. The fan unit heater is also protected by transparent plastic. CE marked.



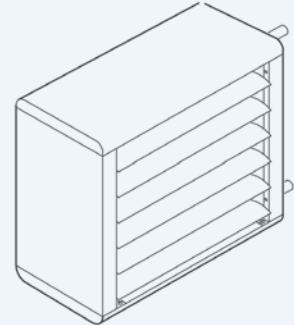
Packaging ATDC

Size ATDC	L (cm)	B (cm)	H (cm)	Weight (kg)
33	65	48	40	18
44	84	64	44	30
55	94	74	46	45
66	115	83	57	57

Technical specifications ATDC

Operating data ATDC

- Maximum ambient temperature around motor = + 60°C.
- Maximum operating pressure: 1.6 MPa at a maximum operating temperature of 100°C.
- Maximum operating pressure: 1.0 MPa at a maximum operating temperature of 150°C.
- All heat exchangers are pressure and leak tested with dry air under water.
- Designed and manufactured according to the Pressure Equipment Directive PED/97/23/ec.
- ErP2015-compliant.



Motor data - ATDC

Size ATDC	Speed RPM	Rated output W	Rated current (A), 50 Hz			Thermal contact	Protection class
			1 Phase 230V	3 Phase 400 V D	3 phase 400 V, Y		
33-1	1350 1000 ¹⁾	110	0,52	-	-	Yes ²⁾	IP44
43-1	1430 900 ¹⁾	160	0,73	-	-	Yes ²⁾	IP44
43-3	1450	135	-	0,44	-	Yes	IP44
53-1	865	220	0,97	-	-	Yes	IP54
53-3	1340 1060 ¹⁾	710 480	-	1,4 -	- 0,8	Yes	IP54
63-1	920	390	1,78	-	-	Yes	IP54
63-3	1350 1110 ¹⁾	1100 760	-	2,32 -	- 1,30	Yes	IP54

The speeds specified in bold type are for the delivery version without the use of an accessory. Other speeds are available with accessories.

1) The speed can be obtained by reswitching the motor, see the wiring diagram in the ATDC manual.

2) Connected internally, not retractable.

Speed with automatic unit cooler, heater or three-phase switch - voltage control

Size ATDC	ATDC-33-1	ATDC-43-1	ATDC-53-1	ATDC-63-1
230 V	1350	1430	865	920
150 V	1190	1030	720	595
130 V	980	750	555	425
115 V	850	600	455	350
100 V	680	500	365	285

= speed of unit supplied

Accessory ATDC-38-1 includes a transformer which, besides 230 V output current, has five lower voltages for lower speed. This accessory is factory-wired so that the appropriate speed is obtained for the respective phase. The table above shows the factory-wired voltages and corresponding speed. If for some reason one wishes to alter the speed, this can be achieved by reconnecting the flexible connections on the transformer. Detailed wiring diagrams for motors and accessories are available in the ATDC manual.

Airflow - ATDC

Size ATDC	Speed RPM	Airflow m ³ /s	Airflow with accessories ²⁾ m ³ /s
33-1	1350	0.48	0.36
	980	0.36	0.27
	685	0.25	0.17
43-1	1430	0.82	0.62
	1035	0.58	0.44
	750	0.43	0.32
43-3	1450	0.82	0.62
53-1	865	1.19	0.90
	720	0.51	0.38
	555	0.39	0.30
53-3	1340	1.7	1.28
	1060	1.3	0.98
63-1	920	1.59	-
	630	1.11	-
	515	0.90	-
63-3	1350	2.15	-
	1110	1.77	-

The speeds specified in bold type are for the delivery version without the use of an accessory. Other speeds are available with accessories.

2) Accessories refers to mixing section ATDC-01 or recirculated air section ATDC-02, both with filters.

-) No mixing section.

Technical specifications ATDC

Capacity table ATDC - Inlet air temperature $\pm 25\text{ }^{\circ}\text{C}$ (cooling)

Size ATDC	Cooling water, 7-14°C			
	Speed RPM	Power kW	t _{air out} °C	Water flow l/s
33-1	1350	4.6	18.3	0.14
	980	3.9	17.6	0.12
	685	3.1	16.7	0.09
43-1	1430	8.2	18.1	0.24
	1035	6.7	17.2	0.20
	750	5.5	16.5	0.16
43-3	1450	8.2	18.1	0.25
53-1	865	10.9	18.4	0.32
	720	6.4	16.5	0.19
	555	5.3	15.9	0.16
53-3	1340	13.2	19.2	0.40
	1060	11.4	18.6	0.34
63-1	920	13.9	18.6	0.41
	630	11.2	17.8	0.33
	515	9.7	17.4	0.29
63-3	1350	16.4	19.2	0.49
	1110	14.8	18.8	0.44

The speeds specified in bold type are for the delivery version without the use of an accessory. Other speeds are available with accessories. The table applies to free-blowing units without any accessories on the air side.

Capacity table ATDC - Inlet air temperature $\pm 15\text{ }^{\circ}\text{C}$ (heating)

Size ATDC	Heating water, 55-35°C			
	Speed RPM	Power kW	t _{air out} °C	Water flow l/s
33-1	1350	9.4	30.9	0.11
	980	7.7	32.4	0.09
	685	5.9	34.2	0.07
43-1	1430	17.0	31.8	0.20
	1035	13.3	33.6	0.16
	750	10.6	35.1	0.13
43-3	1450	17.1	31.8	0.21
53-1	865	23.6	31.1	0.28
	720	12.7	35.2	0.15
	555	10.2	36.3	0.12
53-3	1340	30.0	29.3	0.36
	1060	25.1	30.7	0.30
63-1	920	32.0	31.3	0.38
	630	25.0	33.3	0.30
	515	21.6	34.4	0.26
63-3	1350	39.0	29.7	0.47
	1110	34.4	30.8	0.41

The speeds specified in bold type are for the delivery version without the use of an accessory. Other speeds are available with accessories. The table applies to free-blowing units without any accessories on the air side. When calculating capacity, air density at inlet air temperature has been taken into account, which at $\pm 15\text{ }^{\circ}\text{C}$ is 1.23 kg/m^3 .

Sound level, sound power level - ATDC

Size ATDC	Speed RPM	Sound level ²⁾ dB (A)	Sound power ³⁾ dB (A)	Linear sound power, dB Octave band, centre frequency, Hz						
				125	250	500	1000	2000	4000	8000
33-1	1350	53	69	65	67	64	62	60	56	47
	980	47	64	59	61	58	56	54	50	41
	685	39	55	51	53	50	48	46	42	33
43-1	1430	57	73	67	72	69	65	63	60	52
	1035	50	66	60	65	62	58	56	53	45
	750	43	59	53	58	55	51	49	46	38
43-3	1450	67	83	80	82	78	77	75	74	69
53-1	865	58	74	74	76	65	66	63	58	50
	720	40	56	58	56	48	49	47	39	28
	555	35	51	53	51	43	44	42	34	23
53-3	1340	66	82	82	84	73	74	71	66	58
	1060	59	75	75	77	66	67	64	59	51
63-1	920	60	76	78	76	71	70	68	68	59
	630	52	67	74	65	63	61	61	54	45
	515	45	61	68	60	57	56	54	44	34
63-3	1350	67	83	80	82	78	77	75	74	69
	1110	53	79	79	78	75	73	71	71	65

The speeds specified in bold type are for the delivery version without the use of an accessory. Other speeds are available with accessories.

Tolerance $\pm 2\text{ dB}$

2) Noise level at a distance of 5 metres, $Q = 2$, absorption area = 200 m^2 Sabine.

3) Noise compliant with ISO 3744.

Installation package

In order to make it easier to select control equipment, we have developed packaged solutions for the most common control options. The selected installation package may be combined with other accessories, see the Installation example section. The contents of the installation packages are also sold as separate accessories.



Installation package - uses

- A-Box** – Entrances, gateways, warehouses, garages.
- B-Box** – Entrances, workshops, shopping centres, sports arenas.
- C-box** – Entrances, workshops, shopping centres, sports arenas with higher demands such as outdoor air section, night-time temperature reduction, alarms, network connection or microprocessor substation (0-10 V) control.
- F-box** – Most suitable for use in combination with the C-Box which has ready-to-use connector sockets for anti-frost protection thermostat and actuator motor.

The F-Box can also be combined with the A-Box. To facilitate wiring, the ATDZ-30 connection device should then be used.

Installation package - included components

Aggregate - control and regulation accessories	A-Box	B-Box	C-Box	F-Box
Air unit heater ATDA	x	x	x	-
Mounting bracket	x	x	x	-
Mixing section	-	-	-	x
Room thermostat	x	-	-	-
Automatic fan control, FHC, simple	-	x	-	-
Automatic unit heater control ATC, advanced	-	-	x	-
Temperature sensor	-	x	x	-
Liquid valve	x	x	x	-
Anti-frost protection indicator	-	-	-	x
Damper motor	-	-	-	x
Documentation	x	x	x	x

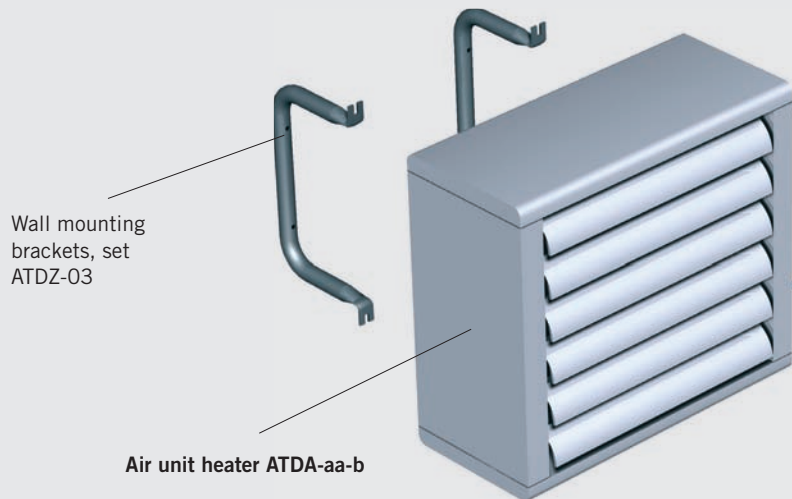
x = included

Overview, features

A-Box	Temperature-steered airflow control on/off with liquid valve on/off.
B-Box	Temperature-steered airflow control in 3 phases or off mode with liquid valve on/off.
C-Box	Temperature-steered airflow control in 3-phase or off mode with liquid valve on/off. Designed for time control. 0-10 V control. Remote control, network connection, alarm output, anti-frost protection and damper actuators.
F-Box	Combined with C-box. Temperature-steered airflow control with exterior air mixing in 3-phase or off position with antifrost protection and damper actuator and liquid valve on/off.

Installation package Standard

Standard version (without control equipment) contains:



Complete delivery includes:

Air unit heater **ATDA-aa-1**

Wall mounting bracket **ATDZ-03**

User Guide

Assembly, installation and maintenance instructions.

Ordering example

Air unit heater **ATDA-aa-b-c-d-e**

Size (a_) _____

31, 32, 33, 42, 43, 52, 53, 63

Capacity variant (_a) _____

31, 32, 33, 42, 43, 52, 53, 63

1 = High temperature water, low Δt , 1rr

2 = Low temperature water, high Δt , 2rr

3 = Low-temperature water, high Δt , 3rr

Motor (b) _____

1 = 1 x 230 V, 50Hz

3 = 3x400 V, 50Hz

5 = 500 V, size 42,43,52,53

6 = EEx e (increased safety), size 42,43,52,53

Material (c) _____

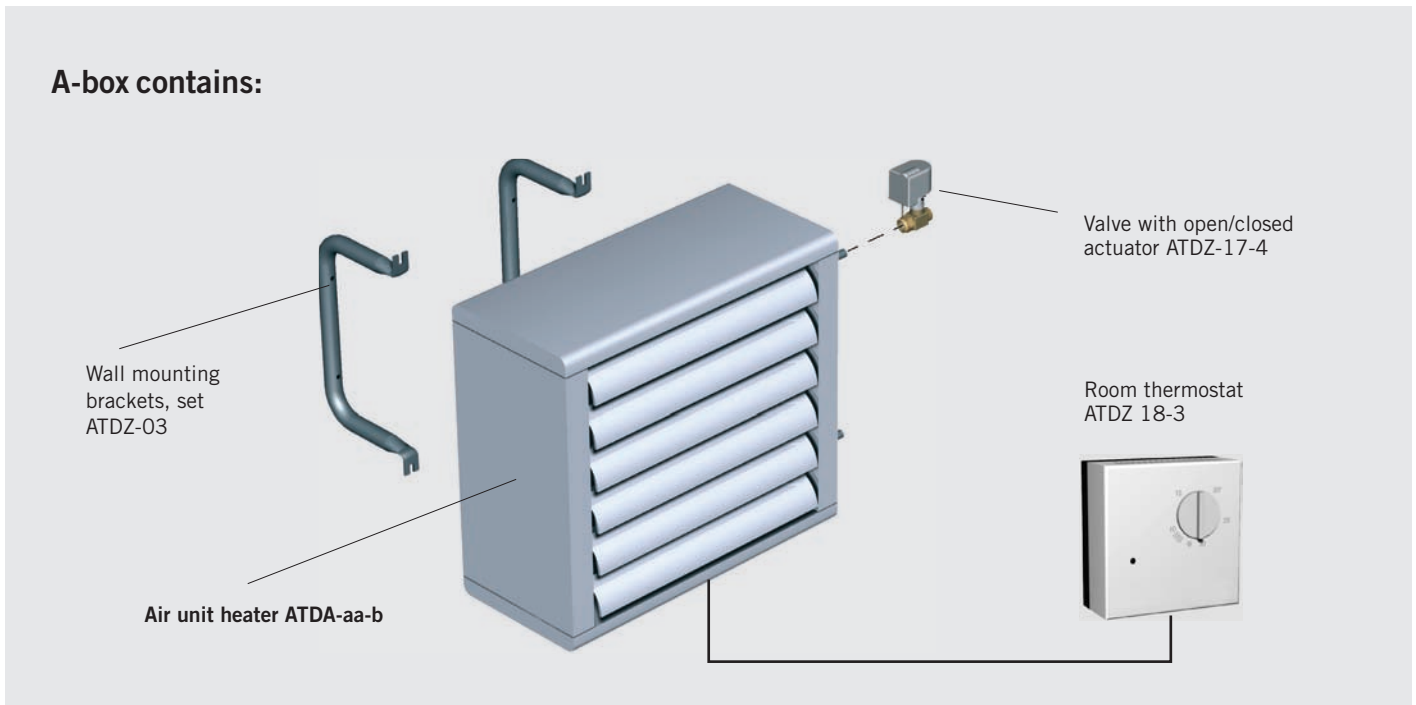
Control (d) _____

0 = without control

Design number (e) _____

3 = Internal code

Installation package A-box



Function

A-Box is suitable for entrances, ports, warehouses, garages, etc. If heating is needed, the room thermostat starts the heater and opens the liquid valve. Once the set temperature has been reached, the liquid valve closes and the fan stops.

Complete delivery of A-Box contains:

Fan unit heater **ATDA-aa-1**
aa = desired size: 31, 32, 33, 42, 43, 52, 53, 63

Room thermostat **ATDZ-18-3**
IP 30, 1 phase, 230 V, 16 A.

Valve with actuator, open/closed **ATDZ-17-4**
IP 54, 1 phase, 230 V, temperature range 2-110 °C, kvs 4.0, on/off, time 10 seconds.

User Guide

Assembly, installation and maintenance instructions.

Ordering example

Air unit heater

ATDA-aa-1-c-A-e

Size (a_) _____
31, 32, 33, 42, 43, 52, 53, 63

Capacity variant (_a) _____
31, 32, 33, 42, 43, 52, 53, 63
 1 = high-temperature water, low Δt , 1rr
 2 = Low-temperature water, high Δt , 2rr
 3 = low-temperature water, high Δt , 3rr

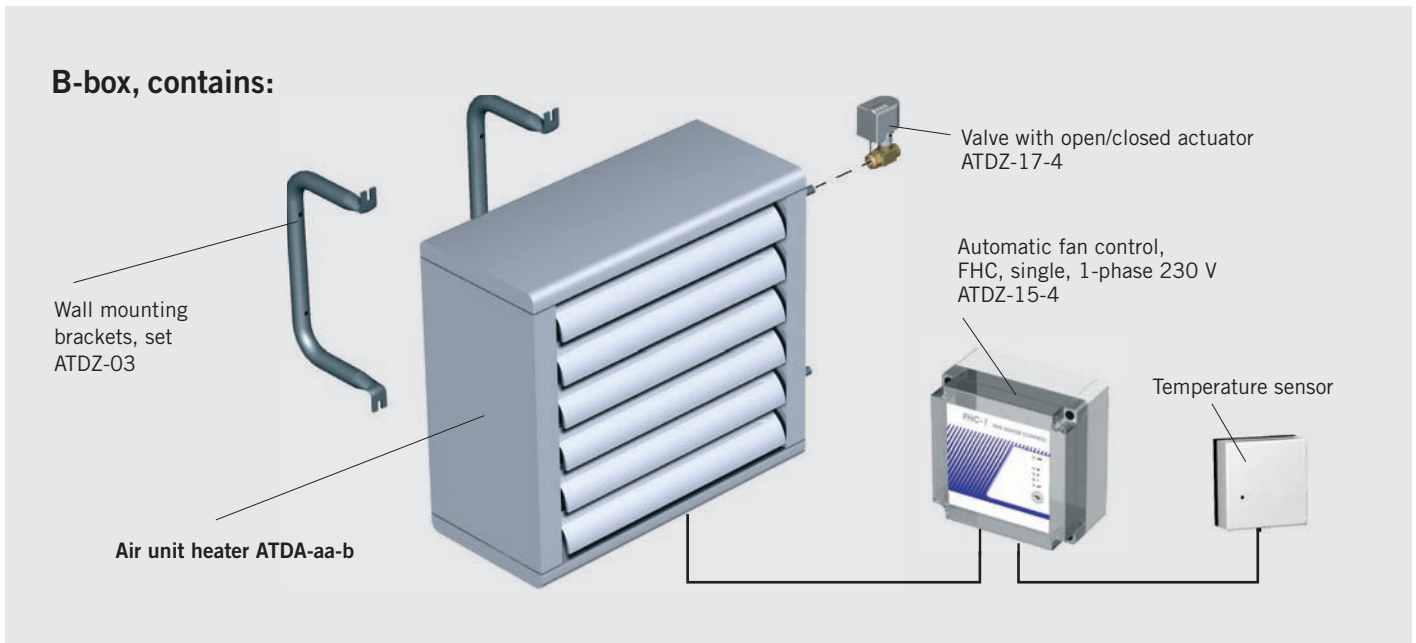
Motor (b) _____
 1 = 1 x 230 V, 50 Hz

Material (c) _____

Control (d) _____
 A = A-Box

Construction number (e) 3 = Internal code _____

Installation package B-box



Function

B-box is suitable for entrances, workshops, shopping centres and sports centres.

When heating is needed, the liquid valve and temperature sensor guide the fan up or down using the automatic fan control in three fixed steps to maintain the set temperature.

When no heating is needed, the liquid valve closes and the fan stops.

Fan speed can also be adjusted manually in three speeds or stopped. The control LED indicates when the valve is open and which function is selected.

For alternative speeds, see page 9.

Complete delivery of B-box contains:

Air unit heater **ATDA-aa-1**

aa = desired size: 31, 32, 33, 42, 43, 52, 53, 63

Automatic fan control, FHC, simple **ATDZ 15-4**

IP 54, 1-phase 230 V, 2 A.

Temperature sensor

IP 30

Valve with actuator, open/closed **ATDZ-17-4**

IP 54, 1-phase 230 V, temperature range 2-110 °C, kvs 4.0, on/off, time 10 seconds.

User Guide

Assembly, installation and maintenance instructions.

Ordering example

Air unit heater

ATDA-aa-1-c-B-e

Size (a_) _____
31, 32, 33, 42, 43, 52, 53, 63

Capacity variant (_a) _____
31, 32, 33, 42, 43, 52, 53, 63
 1 = high-temperature water, low Δt , 1rr
 2 = Low-temperature water, high Δt , 2rr
 3 = low-temperature water, high Δt , 3rr

Motor (b) _____
 1 = 1-phase 230 V, 50Hz.

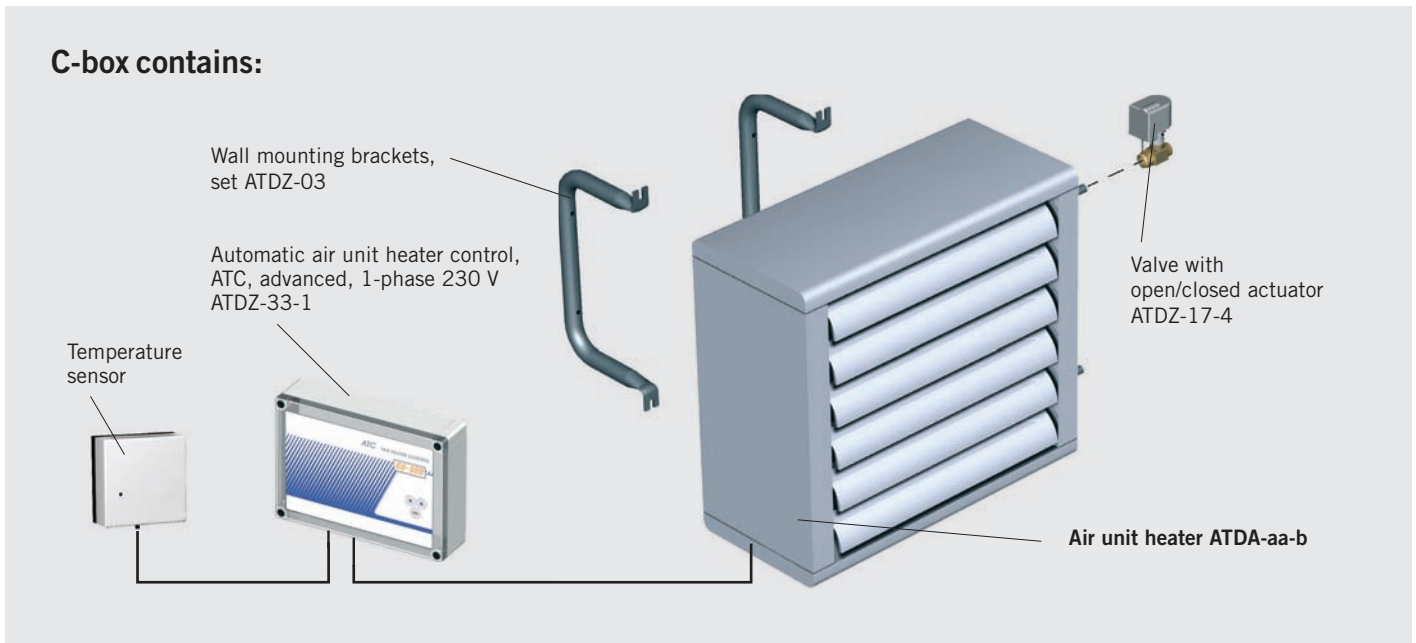
Material (c) _____

Control (d) _____
 A = B-Box

Design number (e) _____
 3 = Internal code



Installation package C-box



Function

C-box is suitable for entrances, garages, shopping malls, sports arenas with higher demands such as outdoor air section, night-time temperature reduction, alarms, network connection or micro-processor substation (0-10 V) control. When heating is needed, the liquid valve and temperature sensor guide the fan up or down using the automatic fan control in three fixed steps to maintain the set temperature. When no heating is needed, the liquid valve closes and the fan stops. Set temperature is shown on the display. Control unit is prepared for the following accessories: Alarm indicator for external alarm, timer for day/night operation, remote control via wire or infra-red light, damper motor, frost protection thermostat, network connection. Software for connection to computer is included, LAN, 0-10 V signal (DUC). *For alternative speeds, see page 9.*

Complete delivery of B-Cox contains:

Air unit heater **ATDA-aa-1**
aa = desired size: 31, 32, 33, 42, 43, 52, 53, 63

Automatic air unit heater control, ATC, advanced **ATDZ-33-1**
IP 54, 1-phase 230 V, 2 A.

Temperature sensor IP 30

Valve with actuator, open/closed **ATDZ-17-4**
IP 54, 1-phase 230 V, temperature range 2-110 °C, kvs 4.0, on/off, time 10 seconds.

User Guide

Assembly, installation and maintenance instructions.

Ordering example

Air unit heater

ATDA-aa-1-c-C-e

Size (a_) _____
31, 32, 33, 42, 43, 52, 53, 63

Capacity variant (_a) _____
31, 32, 33, 42, 43, 52, 53, 63
1 = high-temperature water, low Δt , 1rr
2 = Low-temperature water, high Δt , 2rr
3 = low-temperature water, high Δt , 3rr

Motor (b) _____
1 = 1-phase 230 V, 50Hz.

Material (c) _____

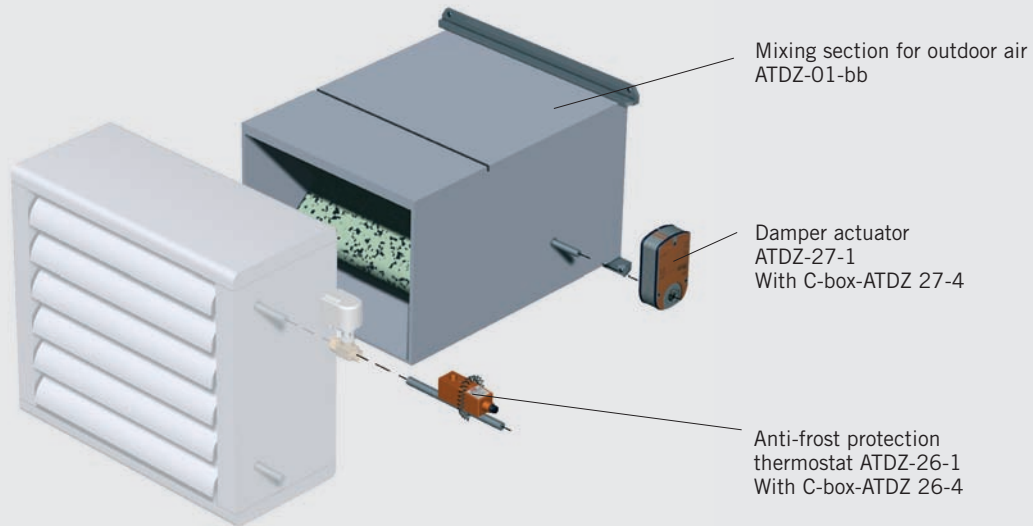
Control (d) _____
C = C-Box

Design number (e) _____
3 = Internal code



Installation package F-box

F-box contains:



Function

At startup, the liquid valve opens before the damper motor and the fan start. When the control unit detects excessively low temperature from the freeze protection thermostat, the outdoor air damper closes first. If the return temperature does not increase, the fan motor stops and the liquid valve opens while an alarm is emitted. The frost protection thermostat is mounted on the heater return line. The F-box is best combined with a C-box which has ready connections for a frost protection thermostat and damper motor. The F-box can also be combined with the A-box. To facilitate wiring, the ATDZ-30 connection device should then be used, see section: Accessories, control equipment. When the anti frost protection is triggered, the damper closes and the motor stops while the liquid valve opens.

Complete delivery of F-box contains:

Mixing section for outdoor air	ATDZ-01-bb
bb = desired size: 30, 40, 50	
Anti-frost protection thermostat	ATDZ-26-1
Damper actuator	ATDZ-27-1

User Guide

Assembly, installation and maintenance instructions.

Ordering example

Mixing section

ATDZ-aa-F-b-c

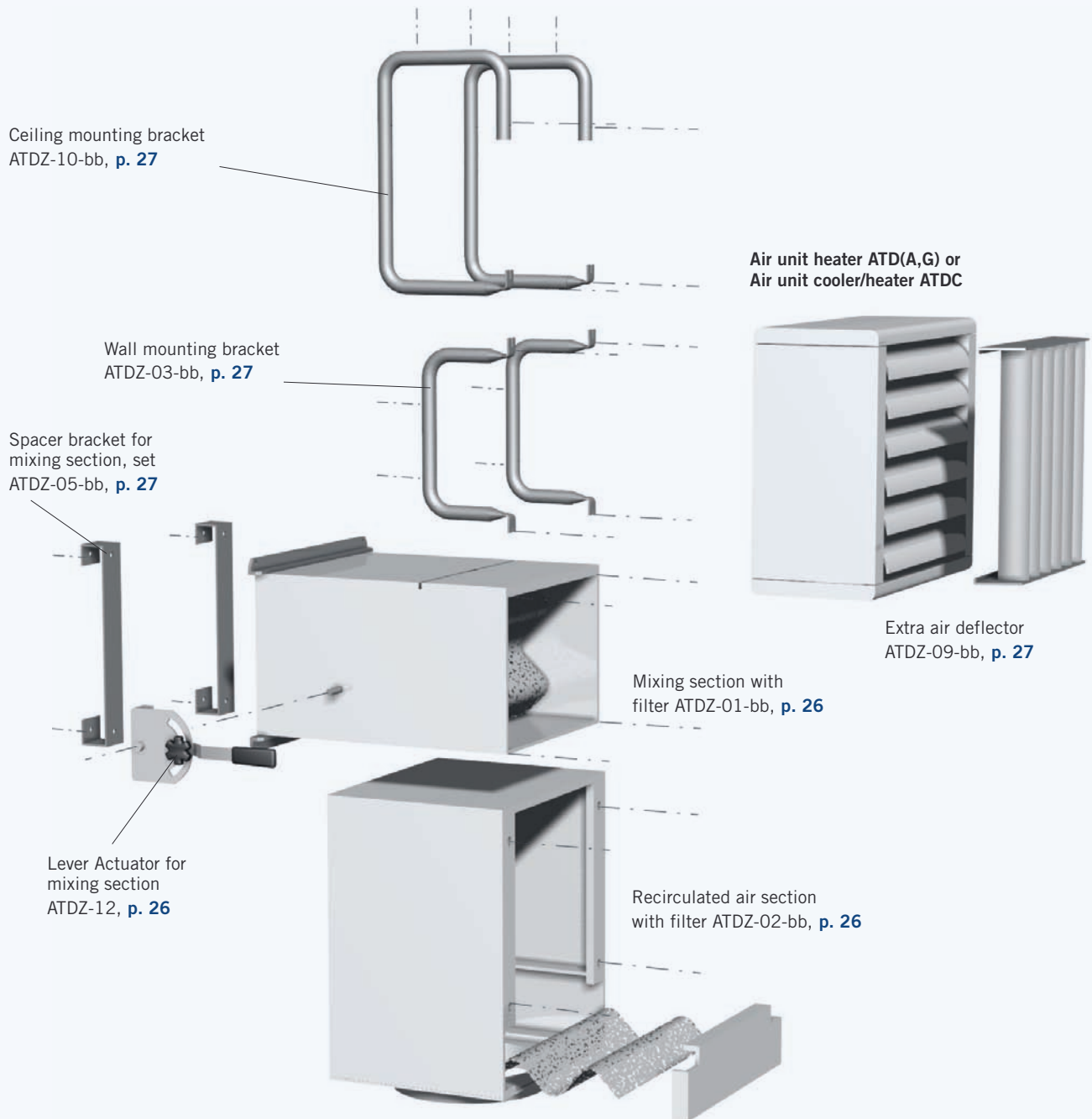
Size (aa) _____
30, 40, 50

Type (b) _____
A = for installation package A-box
C = for installation package C-box

Construction number (C) _____
3 = Internal code

Accessories for ATD(A,G,C)

Accessories for Air unit heater ATDA
Air unit heater ATDG
Air unit heater/cooler ATDC



Accessories for ATD(A,G,C)

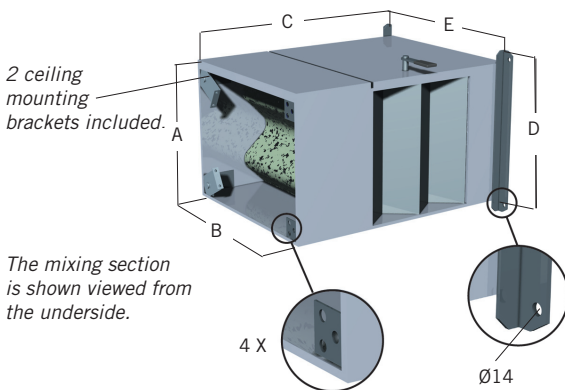
Mixing section with filter, ATDZ-01-bb

Consists of a white painting casing of the the same type as for the fan unit heater, internally insulated with non-combustible insulation. The damper is uninsulated. The mixing section has a short pleated disposable filter, easily replaceable through the inspection cover on the top or bottom.

The filter material is flame retardant polyester in filter class G85 according to VVS AMA 98 (EU3. according to EUROVENT 4/5). A sector valve regulates air flow through the inlet openings for outdoor and return air. The damper is not completely tight fitting. The damper shaft protrudes on both sides of the mixing section, so that the actuator can be placed on either side. Max. torque control of the damper is 0.5 Nm for all sizes.

The mixing section is normally mounted with a horizontal spindle. If there is no risk that the damper will become frozen in place, the mixing section can be fitted with vertical spindle. The mixing section is secured to the unit with the supplied screws. The inlet side features clearance holes in the brackets for the mixing section wall mounting. A mounting bracket of galvanised plate steel and screws for fitting to the front edge of the mixing section are supplied.

NOTE When the mixing section is combined with automatic fan control in a cold climate, anti-frost thermostat ATDZ-26-1 and damper actuator ATDZ-27-1 must be used.



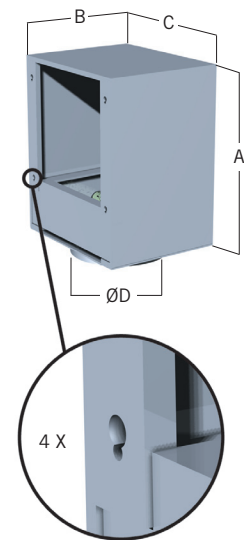
Size (bb)	Dimensions (mm)					Weight (kg)
	A	B	C	D	E	
30	428	428	790	456	456	23
40	608	608	980	636	636	40
50	708	708	1080	736	736	50
60	-	-	-	-	-	-

Recirculated air section with filter, ATDZ-02-bb

Consists of a white painted uninsulated casing, the same type as for the fan unit heater. Delivered fully assembled. The return air section has a short pleated filter, disposable, easily replaceable through the inspection cover on the front. The filter material is flame retardant polyester in filter class G85 in accordance with VVS AMA 98 (EU3. according to EUROVENT 4/5).

For connection on the air side, there is a spigot that fits to circular duct standard SIS 82 72 06.

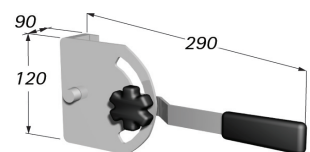
The return air section both provides a filter and gives increased air circulation when a duct is mounted, as the temperature gradient in the premises is utilized for maximum heating.



Size (bb)	Dimensions (mm)					Weight (kg)
	A	B	C	D	E	
30	550	370	390	315	350	12
40	710	550	570	500	520	21
50	810	550	670	500	610	26
60	-	-	-	-	-	-

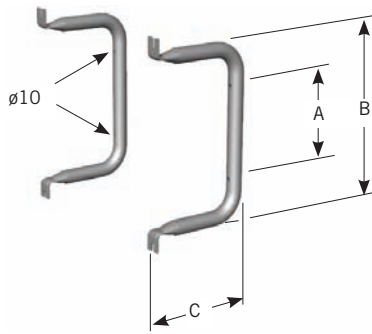
Lever actuator for mixing section, ATDZ-12

For mixing section ATDZ-01-bb. For manual control of airflow through the inlet openings for outdoor air and return air. Made of hot-galvanized sheet steel with locking knob for securing the desired position.



Wall mounting brackets, set, ATDZ-03-bb

For attachment to the wall of air unit heaters without mixing or return air section. The brackets are supplied as pairs, to be secured to the inlet side of the unit. Mounting screws are supplied. The bracket is made of tubular steel and is painted in light grey.

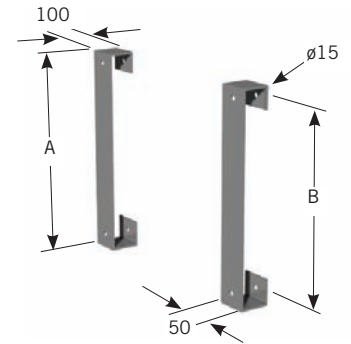


Size (bb)	Dimensions (mm)			Weight, kg per pair
	A	B	C	
30	180	340	200	1
40	340	500	250	2
50	440	600	300	3
60	540	700	300	4

Spacer mounting brackets for mixing section, set, ATDZ-05-bb

For hanging devices with mixing section at the return air inlet from the back side. The brackets are supplied as pairs. Bolts and nuts for mounting are supplied.

The bracket is made of flat bar and is painted in light grey.

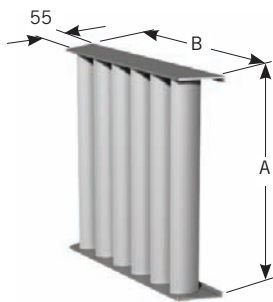


Size (bb)	Dimensions (mm)		Weight, kg per pair
	A	B	
30	516	456	3,5
40	696	636	4
50	796	736	4,5
60	-	-	-

Extra air deflector, ATDZ-09-bb

Consists of a frame and a number of adjustable blades. Frame and air deflector blades are made of anodised aluminium. Mounted on the air unit heater with supplied metal screw.

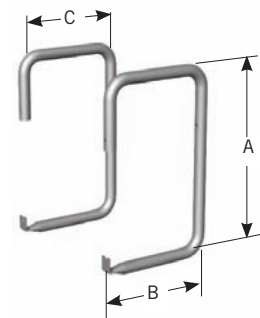
NOTE Horizontal air deflector is supplied with the fan unit heater ATD.



Size (bb)	Dimensions (mm)		Weight (kg)
	A	B	
30	404	436	1
40	554	586	2
50	654	686	3
60	742	686	3

Ceiling mounting brackets, sets, ATDZ-10-bb

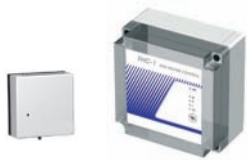
For attachment to the upper edge of fan unit heaters without mixing or return air section. The brackets are supplied in pairs, to be secured to the inlet side of the device. Mounting screws are supplied. The bracket is made of tubular steel and painted in light grey.



Size (bb)	Dimensions (mm)			Weight, kg per pair
	A	B	C	
30	590	360	200	3
40	750	450	290	4
50	850	500	340	5
60	-	-	-	-

Control & regulation equipment, overview

Control and regulation equipment



Automatic fan control,
simple, FHC.
ATDZ-15-4 p. 29



Automatic air unit heater control,
advanced, ATC.
ATDZ-33-1 p. 29



Automatic fan control,
FCC-1.
ATDZ-38-1 p. 30

Accessories, control and regulation equipment



Speed selector
ATDZ-13-1 p. 31



Valve with thermal actuator
ATDZ-17-3 p. 31



Valve with actuator
ATDZ-17-4 p. 31



Room thermostat for fan operation
ATDZ-18-3 p. 31



Room thermostat for fan operation
ATDZ-19-3 p. 31



Remote control for ATC
ATDZ-21-4 p. 32



Timer for ATC
ATDZ-22-3 p. 32



Speed selector
ATDZ-24-3 p. 32



Transformer
ATDZ-25-3 p. 32



Frost protection thermostat
ATDZ-26-1 p. 33



Damper actuator
ATDZ-27-1 p. 33



Connection unit
ATDZ-30-1 p. 33



Temperature sensor RG Moisture
ATDZ-35-1
ATDZ-35-2 p. 33

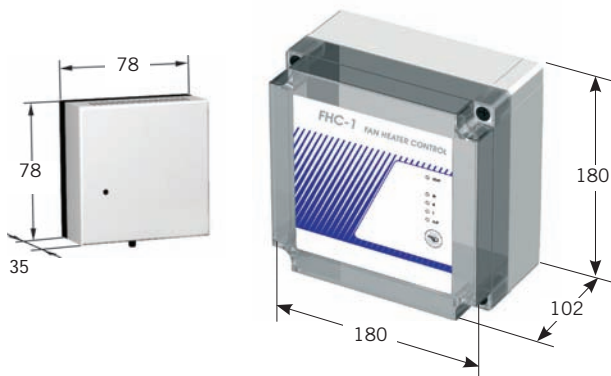
Control & regulation equipment

Automatic fan control FHC-1, simple, ATDZ-15-4

Included in the B-box installation package. Fan control (ATDZ-15-4) controls the fan speed automatically in three phases, depending on the heating requirement, and stops the fan when no heating is needed. Automatic fan control also controls the liquid valve (ATDZ-17-3, ATDZ-17-4) between the open and closed positions. The desired temperature is set on the internal potentiometer, the temperature sensor which is supplied separately is included. The fan speed can be set manually in three positions, or stopped with the touch buttons on the lid. An LED indicates when the valve is open.

Detailed technical description of regulation:
When the ambient air temperature is 0.4 °C below the set point value, the fan starts at the lowest preset speed. At 0.5 °C below the set point, the connected water valve opens. At 1.5 °C below the set point, the fan switches to intermediate speed. At 2.5 °C below the set point, the fan switches to the highest preset speed.

Automatic fan control is supplied as separate accessories, protection class IP 54.
Temperature sensor IP 30.
Voltage 1-phase 230 V.
Current max 2 A.



Automatic air unit heater control ATC, advanced, ATDZ-33-1

Included in the C-box installation package. Air unit heater control (ATDZ-33) controls the fan speed automatically in three phases, depending on the heating requirement, and stops the fan when no heating is needed. The control system also adjusts the liquid valve (17-3 ATDZ-or-ATDZ 17-4) between the open and closed positions. The desired temperature is set via the button on the cover, if the regulation is to regulate to an alternate temperature via a timer (ATDZ-22), this temperature is set as well.

The control system is compatible with the frost protection function, which means that it has an inlet for the frost protection thermostat (ATDZ-26-4). It also controls the damper (ATDZ-27-4) from the open to the closed position, adjustable 0 - 100% fresh air.

Detailed technical description of regulation:
When the ambient air temperature is 0.4°C below the set point value, the fan starts at the lowest preset speed. At 0.5°C below the set point, the connected water valve opens. At 1.5°C below the set point, the fan switches to intermediate speed. At 2.5°C below the set point, the fan switches to the highest preset speed. The corresponding values for the 0-10 V signal are: 1.5 V - 2 V - 5 V - 8 V. Accessories include remote control via a cable (ATDZ-21-4). The speed control system has provision for control by means of a 0-10 V signal (DUC). An external defect alarm signal inlet can be wired to the control system. Set temperature is shown on the display.

The automatic heater control ATC is supplied mounted on the air heater, protection class IP 54.

The temperature sensor is supplied separately, IP 30.
Voltage 1-phase 230 V.
Current max 2 A.



Control & regulation equipment

Automatic fan control FCC-1, ATDZ-38-1

Speed controller ATDZ-38-1 is a microprocessor-based controller that regulates the fan speed automatically in three phases, and a liquid valve (ATDZ-17-4) automatically adjusts based on the measured temperature with respect to the set point.

FCC-1 regulates both in cooling and heating mode.

The temperature of the liquid is measured by a contact sensor (fitted with hose clamp) and FCC-1 determines based on this temperature and the set point whether heating mode or cooling mode should be activated.

Temperature sensor and contact sensor are included in the delivery of ATDZ-38-1. Remote control (ATDZ-21-4) can be fitted together with ATDZ-38-1. Fan speed can be set manually in three positions, or stopped with the touch buttons on the lid. An LED indicates when the valve is open.

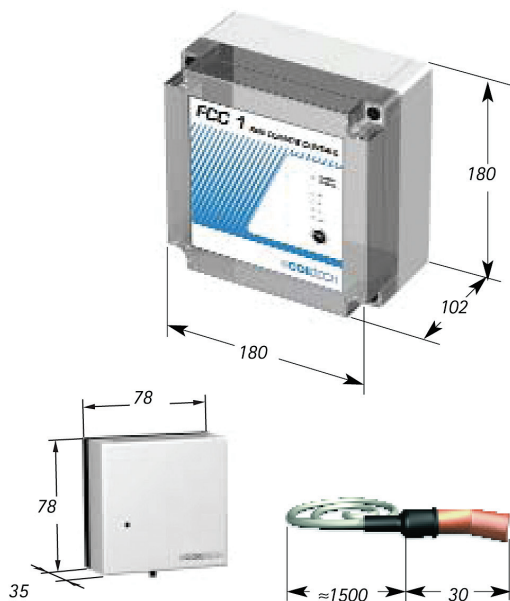
Automatic fan control is supplied as separate accessories, protection class IP 54.

Temperature sensor IP 30.

Temperature sensor IP 65.

Voltage 1-phase 230 V.

Current max 2A.



Accessories, control & regulation equipment

Speed switch, ATDZ-13-1

For manual switching between speeds and shut-off position on ATDA, size 30, 33 and 44. Plastic casing can be mounted on the wall.

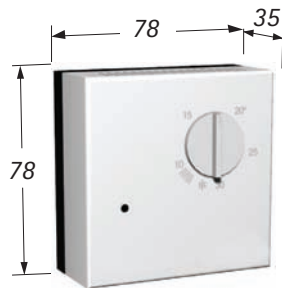
Protection class IP 42.
Voltage 1-phase 230 V.
Max 10 A.



Room thermostat for fan operation, ATDZ-18-3

For starting and stopping the air unit heater. The thermostat can also be wired to ATDZ-24-3 and ATDZ 25-3. Valve with motor ATDZ-17-3 or ATDZ-17-4 can be wired to the thermostat.

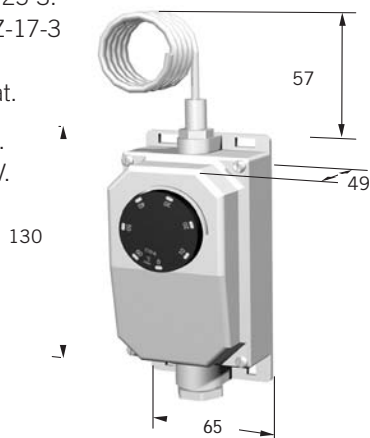
Protection class IP 30.
Voltage 1-phase 230 V.
Current max 16 A.



Room thermostat for fan operation, ATDZ-19-3

For starting and stopping of the air unit heater. The thermostat can also be wired to ATDZ-24-3 and ATDZ 25-3. Valve with motor ATDZ-17-3 or ATDZ-17-4 can be wired to the thermostat.

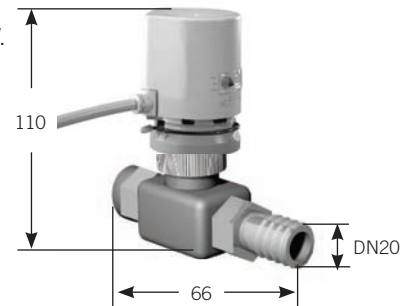
Protection class IP 65.
Voltage 1-phase 230 V.
Current max 10 A.



Valve with thermal actuator, open/closed ATDZ-17-3

For use with ATDZ-15-4, ATDZ-18-3, ATDZ-19-3, ATDZ-24-3, ATDZ-25-3, ATDZ-29-1, ATDZ-33 or ATDZ-34. The valve works in the open/closed position. Valve housing made of red brass. Temperature range 2 – 110 °C, kvs 4.0. Thermal actuator. Opening time 4 minutes. Non-energised valve is open. Max. ambient temperature of 50 °C. Adapters for fitting to relevant water connection are supplied. Threaded pipe connection for further pipe routing.

Cable length 1.5 m.
Protection class IP 40.
Voltage 1-phase 230 V.

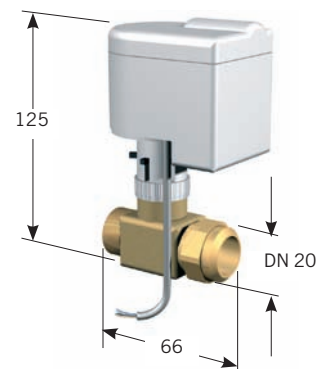


Valve with actuator, open/closed, ATDZ-17-4

For use with ATDZ-15-4, ATDZ 18-3, ATDZ-19-3, ATDZ-33, or ATDZ-34 the valve works in the open/closed position. Valve housing made of red brass. Temperature range. 2 – 110 °C, kvs 4.0. Motor valve with built-in frost protection, opens 10% in the event of power failure. Opening time: 10 seconds. Non-energised valve is open. Max. ambient temperature 50 °C.

Adapters for fitting to relevant water connection are supplied. Threaded pipe connection for further pipe routing.

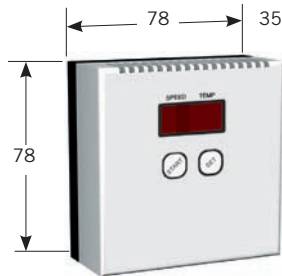
Cable length 1.5 m.
Protection class IP 54.
Voltage 1-phase 230 V.



Accessories, control & regulation equipment

Remote control for Automatic temperature control ATDZ-21-4 to ATDZ-33

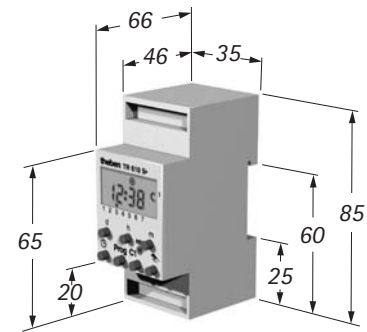
For remote control of automatic unit heater ATDZ-33. The desired set point temperature is set on the control unit. Automatic or manual operation and shutoff mode are selected with the use of a button. For manual operation, preset speeds of low, medium or high can be selected. Set point, fan speed and temperature are shown on the display. Connection cable length 5 m with connector to supplied heater. The connection cable can be extended to 100 m. Protection class IP 30.



Timer for Automatic temperature control ATDZ-22-3

For switching between preset day and night temperatures in ATDZ-33 (Automatic unit heater). The timer enables a connection to a second preset temperature in the automatic unit heater control. This allows for lower temperatures on the premises during nights and weekends to conserve energy. The timer can also be wired to ATDZ-24-3 and ATDZ 25-3.

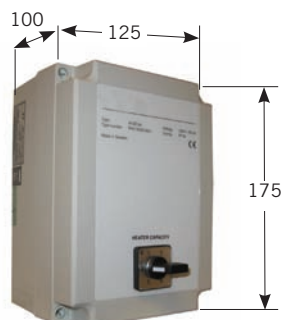
Current max 10 A.



Speed switch, ATDZ-24-3

For manual switching between five preset speeds and shutdown. The switch has a plastic casing and can be mounted in various locations, including the wall. Valve ATDZ-17-3 and room thermostat ATDZ 18-3 or 19-3 ATDZ and timer ATDZ-22-3 can be connected to the switch. For connection options, see installation examples.

Protection class IP 54.
Voltage 1-phase 230 V.
Max 2 A.



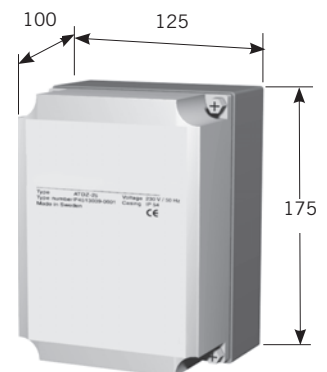
Transformer, ATDZ-25-3

For obtaining a lower fixed speed than the design speed. Transformer ATDZ-25-3 max capacity: 3 ATDA 3x, 4x; 2 ATDA 4x; 1 ATDA 5x, 63.

The transformer has a plastic casing. The transformer has provision for connecting an ATDZ-17-3 or ATDZ-17-4 valve, ATDZ-18-3 or ATDZ-19-3 room thermostat and an ATDZ-22-3 timer.

For connection options, see installation examples.

Protection class IP 54.
Voltage 1 x 230 V.
Max 2 A.



Accessories, control & regulation equipment

Frost protection thermostat, ATDZ-26-1

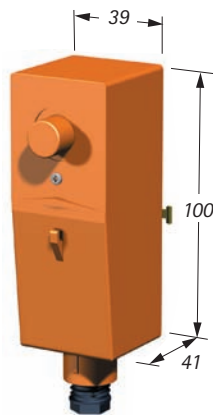
For use with mixing section ATDZ-01-bb the thermostat shuts down a connected device in the event of frost risk. Temperature setting takes place under the hood. The thermostat is fitted directly to the return pipe. The attached spring clip is used to affix the thermostat against the pipe.

Temperature range. +10/+90 °C.

Protection class IP 20.

Voltage 1-phase 230 V.

Current max 15 A.



Damper actuator, ATDZ-27-1

For use with mixing section ATDZ-01-bb Spring return actuators used to control the damper to the open or closed position, 0-100%. When electric power is connected to the actuator, the actuator sets itself to the service position and tensions the return spring.

If the power supply is opened, this trips the stored spring energy that returns the damper actuator to its safety position. The actuator is designed for mounting on the damper shaft by means of the universal locking clamp.

The actuator is supplied with pivotal circuit breaker. The actuator is overload-resistant and stops automatically at preset stops.

Protection class IP 54.

Voltage 1-phase 230 V.



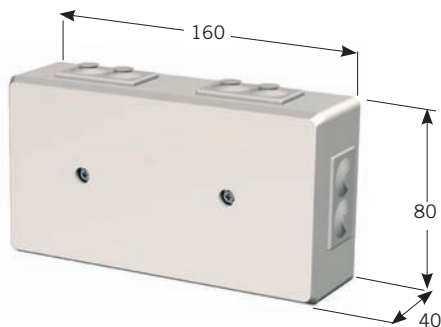
Connection device, ATDZ-30-1

Connection device for connecting the unit heater together with an ATDZ-18-3 or ATDZ-19-3 room thermostat, ATDZ-17-3 or ATDZ-17-4 valve with actuator, ATDZ-01-bb mixing section, ATDZ-27 damper actuator and an ATDZ-26 anti-frost protection thermostat.

Protection class IP 44.

Voltage 1 x 230 V.

Current max 2 A.

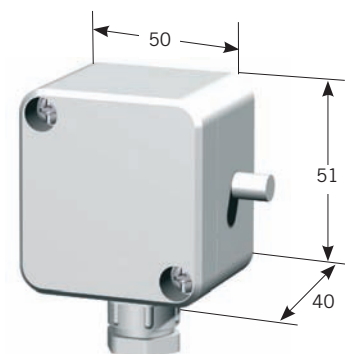


Temperature sensor RG Humidity, ATDZ-35-2

Temperature sensor for humid environment. Used as necessary instead of supplied temperature sensor for the following control conditions:

The ATDZ-35-2 should be used for the ATDZ-15-4 and ATDZ-33-1 Automatic unit heater control, ATC.

Protection class IP 54.



Installation example



Mixing section with filter

ATDZ-01-bb



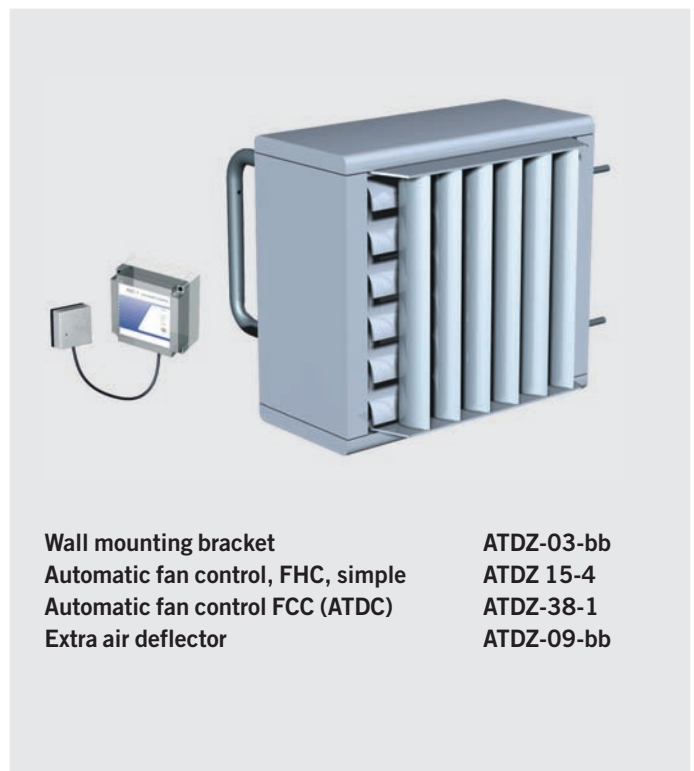
Recirculated air section with filter

ATDZ-02-bb



Wall mounting bracket
Extra air deflector
Manual 3-phase speed selector

ATDZ-03-bb
ATDZ-09-bb
ATDZ-24-3



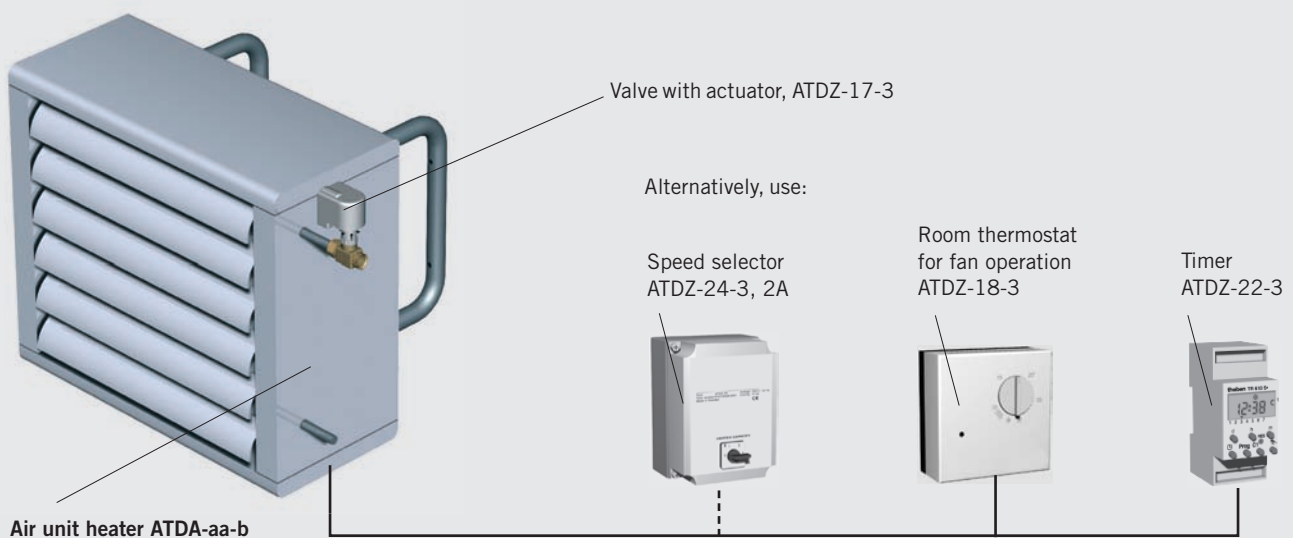
Wall mounting bracket
Automatic fan control, FHC, simple
Automatic fan control FCC (ATDC)
Extra air deflector

ATDZ-03-bb
ATDZ 15-4
ATDZ-38-1
ATDZ-09-bb



Installation example

Connection options for speed selector ATDZ-24-3



Temperature-controlled airflow control, on/off, fixed speeds with night-time temperature reduction and on/off valve.

Function

The speed switch is used when manually output (speed) setting is desired. Switching takes place between three preset speeds: low, medium, high, and shutdown.

The switch has provision for connecting an ATDZ-17-3 or ATDZ-17-4 valve, ATDZ-18-3 or ATDZ-19-3 room thermostat and an ATDZ-22-3 timer. Simple and cost-effective control equipment for the unit heater can be obtained using the switch and one or several accessories shown above. Several unit heaters can be wired to one and the same speed selector, however the total capacity must not exceed 2A and 9A respectively. See motor data for the relevant sizes.

Voltage 1 x 230 V.

For alternative speeds, see pages 9, 14.

Installation example



Speed control



Air unit heater
ATDA-aa-b

Air unit heater/cooler
ATDC-aa-b

Speed switch,
ATDZ-13-1



Function

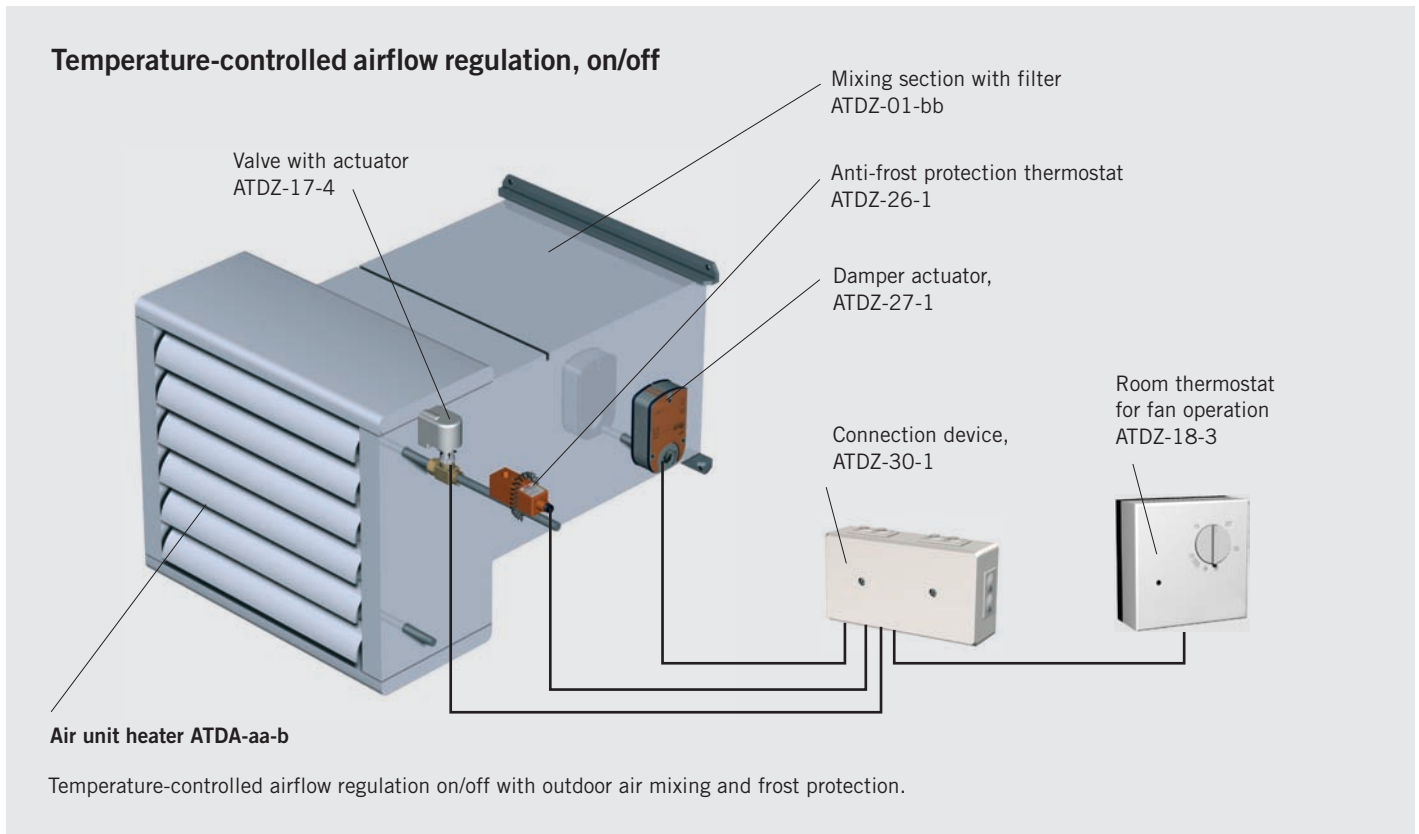
Using the manual speed switch (ATDZ-13-1) speed can be switched between high and medium, or turned off.

Voltage 1 x 230 V.

Current max 10 A.



Installation example



Function

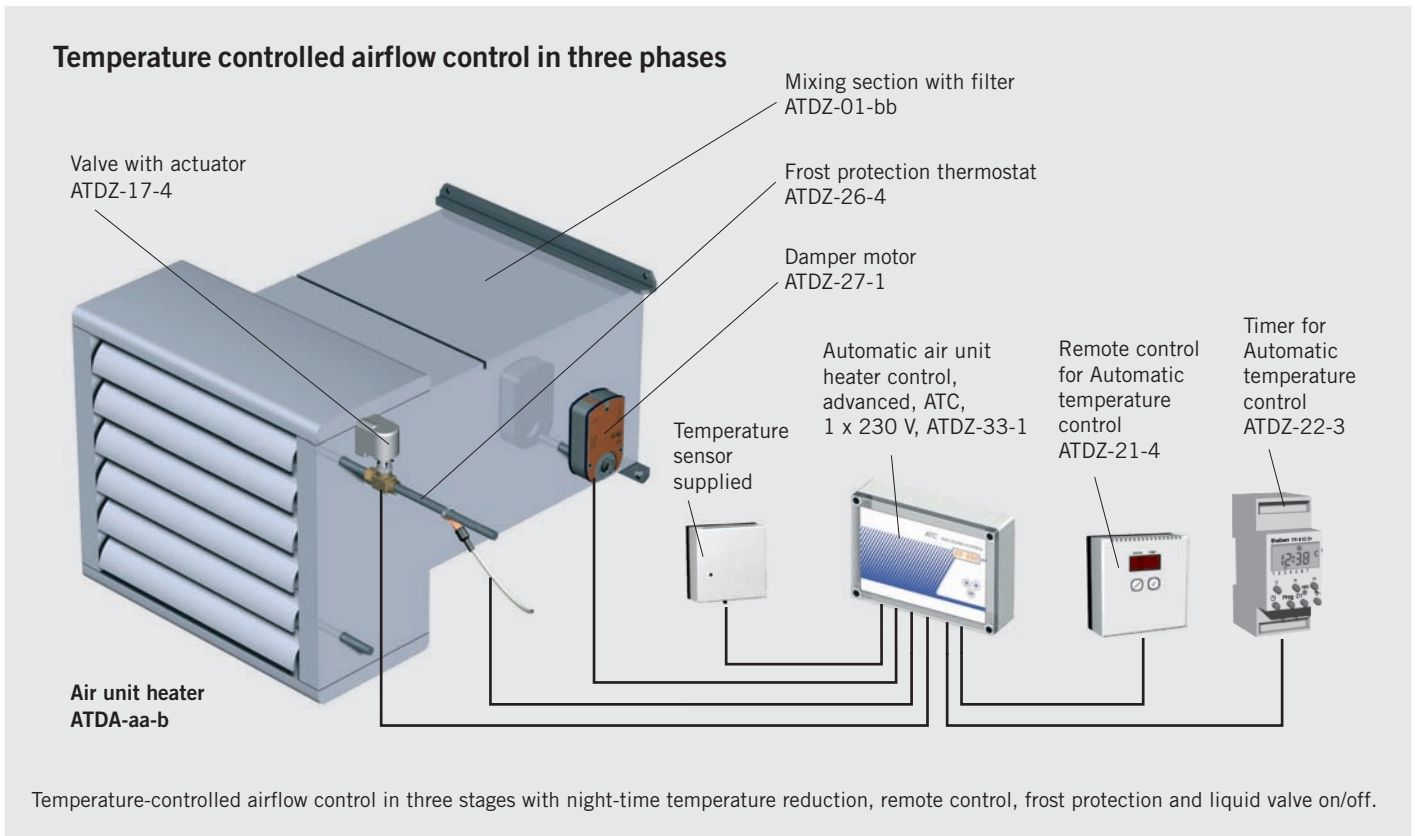
When heating is required, the room thermostat (ATDZ 18-3, ATDZ-19) starts, and the damper motor (ATDZ-27-1) and liquid valve (ATDZ-17-4) open, when heating is not needed, the fan stops and the valve and damper close.

If the frost protection thermostat (ATDZ-26-1) identifies an excessively low return temperature, the fan stops and the damper closes and the liquid valve opens, the connection device (ATDZ-30-1) is used to obtain the correct function and simplify wiring.

Voltage 1 x 230 V.

Current max 2 A.

Installation example



Function

When heat is needed, the liquid valve (ATDZ-17-4) and temperature sensor guide the fan up or down using the automatic fan control in three fixed steps to maintain the set temperature. When no heating is needed, the liquid valve closes and the fan stops. When the automatic unit heater control detects excessively low temperature from the frost protection thermostat (ATDZ-26-1), the damper motor (ATDZ-27-1) closes first; if the return temperature does not increase, the fan stops and the fluid valve opens while an alarm signal is emitted.

The temperature is set under the cover with potentiometer A; if the system is equipped with a timer for an alternative temperature, it is set with potentiometer B.

The control system can be supplemented with remote control via a cable (ATDZ-21-4). Then the fan can operate in automatic mode or three fixed speeds 1,2,3, or stop in position 0.

The control system is designed for regulation via 0-10 V DUC. An external defect alarm signal can be connected to the controller.

For alternative speed, see page 9, 14.



Product code

Air unit heater ATDA

ATDA – aa-b-c-d-e

a_ = Size: 31, 32, 33, 42, 43, 52, 53, 63

_a = Capacity variant: 31, 32, 33, 42, 43, 52, 53, 63

1 = high temp. water, low Δt 1rr

2 = high temp. water, low Δt 2rr

3 = low temp. water, high Δt 3rr

b = Motor:

1 = 1x230 V, 50 Hz

3 = 3x400 V, 50 Hz (without regulation d=0)

5 = 500 V, size 42, 43, 52, 53

6 = EEx e* (increased safety), size 42, 43, 52, 53

c = Material fin/casing:

1 = Al/painted steel, white (std)

2 = Cu/painted steel, white (std)

3 = Al + Heresite painted/painted steel, white (std)

4 = Al/Stainless steel

5 = Al/Stainless steel

6 = Al + Heresite painted/Stainless steel

d = Control:

0 = no control

A = A-box (only b=1)

B = B-box (only b=1)

C = C-box (only b=1)

e = Design number:

3 = Internal code

* When b = 6, c must be 2 or 5

Air unit heater/cooler ATDC

ATDC – aa-b-c-d-e

a_ = Size: 33, 43, 53, 63

_a = Capacity variant: 33, 43, 53, 63

3 = low temp. water, high Δt 3rr

b = Motor:

1 = 1x230 V, 50 Hz

3 = 3x400 V, 50 Hz (without control d=0)

5 = 500 V, size 43, 53

c = Material fin/casing:

1 = Al/painted steel, white (std)

4 = Al/Stainless steel

d = Control:

0 = no control

e = Design number:

3 = Internal code

Air unit heater ATDG

ATDG – aa-b-c-0-e

aa = Size: 31, 41, 51

b = Motor:

1 = 1x230 V, 50 Hz

3 = 3x400 V, 50 Hz (without regulation d = 0)

5 = 500 V, size 42, 41, 51, 53

6 = EEx e* (increased safety), size 41, 51

c = Material fin/casing:

1 = Al/painted steel, white (std)

2 = Cu/painted steel, white (std)

3 = Al + Heresite painted/painted steel, white (std)

4 = Al/Stainless steel

5 = Al/Stainless steel

6 = Al + Heresite painted/Stainless steel

0 = Control: 0 = no control

e = Design number:

3 = Internal code

* When b = 6, c must be 2 or 5

Mixing section ATDZ

Mixing section ATDZ – aa-F-b-c

aa = Size: 30, 40, 50

b = Type:

A = Installation package A-Box

C = Installation package C-Box

c = Design number:

3 = Internal code

Installation package for Air unit heaters

Installation package for unit heaters ATDZ-a-1

a = Type:

A = A-box

B = B box

C = C-box

Accessories for mixing section ATDZ-F-b-1

b = Type:

A = installation package A-Box

C = installation package C-Box

Product code

Accessories

Recirculated air section with filter	ATDZ-01-bb*)
Recirculated air section with filter	ATDZ-02-bb*)
Wall bracket, set	ATDZ-03-bb
Spacer bracket for mixing section, set,	ATDZ-05-bb*)
Extra air deflector	ATDZ-09-bb
Ceiling bracket, set	ATDZ-10-bb*)
bb = size 30, 40, 50 *) not size 63	
Lever actuator for mixing section	ATDZ-12-1

Control and regulation equipment

Automatic fan control, FHC-1, simple	ATDZ-15-4
Including sensor IP30 for wall mounting. Supplied separately. 1 x 230 V. Max 2 A.	
Automatic air unit heater controller, ATC, advanced	ATDZ-33-1
Including sensor IP30 for wall mounting supplied separately. 1 x 230 V. Max 2 A.	
Automatic fan control, FCC 1	ATDZ-38-1
Including sensor IP30 for wall mounting supplied separately. 1 x 230 V. Max 2 A.	

Accessories, control and regulation equipment

Speed switch	ATDZ-13-1
Speed switch	ATDZ-24-3
Manual 5-speed. Motor 1 x 230 V. 2 A.	
Valve with thermal actuator	ATDZ-17-3
Open/closed. 1 x 230 V.	
Valve with actuator	ATDZ-17-4
Open/closed. 1 x 230 V.	
Room thermostat	ATDZ 18-3
On/off, 1 x 230 V. IP 30.	
Room thermostat	ATDZ 18-3
On/off, 1 x 230 V. IP 65.	
Remote control	ATDZ-21-4
to automatic unit heater controller ATDZ-33.	
Timer	ATDZ-22-3
Temperature control day/night, for Automatic unit heater control.	

Transformer	ATDZ-25-3
Lower speeds. Motor 1 x 230 V.	
Frost protection thermostat	ATDZ-26-1
Cuts off power in event of freeze risk.	
Actuator	ATDZ-27-1
With spring return, steers damper to open/closed position.	
Connection device	ATDZ-30-1
Temperature sensor	ATDZ-35-1
to automatic unit heater controller ATDZ-29-1, IP 54.	
Temperature sensor	ATDZ-35-2
to automatic fan, unit heater controller ATDZ-15-4,-33-1, IP 54.	

Spare parts

Battery pack	ATDA-99-3-cc-3
	ATDG-99-3-31
	ATDG-99-3-41
	ATDG-99-3-51
	ATDC-99-3-33-3
	ATDC-99-3-43-3
	ATDC-99-3-53-3
	ATDC-99-3-63-3

cc = Size: 30 (only ATDA), 3x, 4x, 5x, 63
d = Design number (ATDA, ATDC)

Fan and motor assembly With protective grid	ATDA-99-2-cc-d
cc = Size: 3x, 4x, 5x, 63 d = motor: 1 = 1 x 230 V, 3 = 3 x 400 V (only size 4x, 5x, 63)	
Temperature sensor	ATDA-99-16-3
to automatic unit heater controller ATDZ-29-1	
Temperature sensor	ATDA-99-16-4
to automatic fan, unit heater controller ATDZ-15-4, -33-1, -38-1	
Temperature sensor	ATDA-99-16-5
to automatic fan, unit heater controller ATDZ-33-4	
Replacement filter	ATDZ-99-01 cc
for Mixing/recirculated air section cc = Size: 3x, 4x, 5x, 63	



About Luvata

Luvata is a world leader in metal solutions manufacturing and related engineering services. Luvata's solutions are used in industries such as renewable energy, power generation, automotive, medicine, air-conditioning, industrial refrigeration, and consumer products. The company's continued success is attributed to its longevity, technological excellence and strategy of building partnerships beyond metals. Employing over 6,300 staff in 18 countries, Luvata works in partnership with customers such as Siemens, Toyota, CERN and Carrier.



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