



Product catalog

UNT-PRC017

CFAS fan coil cassettes

Sizes 16-26-36





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Introduction

Introduction

The CFAS cassette fan coil is specifically designed for applications in office buildings from 10 to 40 m². It is equipped with an innovative discharge and return air plenum casing capable to generate an air distribution throw with a perfect Coanda effect. The unit is a one-piece design perfectly suitable for installation in false ceilings.

The return air side enters into the unit vertically from the bottom through a linear grille designed to avoid seeing the filter through the openings and to maximize the air filtration efficiency which is a great progress versus conventional perforated grilles. The air diffusion goes parallel to the ceiling through an optimized number of adjustable round diffusers specifically designed to keep enough air velocity at the low speed and to avoid high velocity at higher speed.

The product is available for 2-pipe and 4-pipe applications with standard and high efficiency coils for both the cooling and the heating mode which is very beneficial to the efficiency of system working with heat pump chillers. Many factory-mounted options are available to save time during unit installation, such as electric heaters, water valves and actuators, G0 or EU3 filter, condensate water pump.

A raised version is available to increase the condensate drain outlet from 100 mm to 160 mm thus avoiding use of a condensate pump.

Several accessories are provided for field installation: water sensors, external drain pan for water valves, fresh air constant volume dampers with 100 mm and 125 mm round spigots.

There are 3 levels of control proposed, for standalone, group control and Building Management System applications. An infrared remote controller mounted on site is available for group control system for which up to 20 units can be connected together.

Main components

Intake grille

It is made of galvanized painted steel louvers which allow 100% air opening through the filter such providing the maximum efficiency to the filter. The louvers are oriented backwards avoiding any recycling with the supply air providing also a full white appearance of the fascia for occupant's sight.

Air supply diffusers

Made of polypropylene plastic, the innovative computer-made design ø170 mm and the quantity maximize the air diffusion horizontally to the ceiling with a perfect Coanda effect that make the air to follow along the ceiling tiles and come back to the return air grille through a large room volume.

Casing

Made of 1 mm galvanized steel with inside thermal insulation, expanded polyethylene closed cells 6 mm thickness with an outside anti-condensation lining.

Air filter

The return air plenum is designed to maximize the filtering capability of the unit with a large filter dimension and with a return air grille considered as being 100% open which frees up the full filter face area and therefore increases the time between maintenance checks. The filtering performance is greatly improved versus a perforated grille which has only 60% opening in general. Two filtering quality options are available from factory: G0 and EU3.

Fan assembly

Made of centrifugal fans with double suction side. The assembly is very quiet. The impellers are made of aluminum or of plastic and are statically and dynamically balanced and directly mounted onto the motor shaft.

Electrical motor

It is a single phase motor with 6 fan speeds of which 3 are connected. It is mounted on anti-vibration supports and works with

a permanent capacitor. It is protected with an auto reset overheat thermostat, and is classified IP20 and class B insulation.

Heat exchanger

The cooling and heating coils are made of copper tubes and aluminum fins which are bonded onto the tubes for maximum transfer contact. The water coil connections are ½" gas female and equipped with 1/8" vent air purge. The maximum operating pressure is 10 bar or 1000 kPa.

Drain pan

It is made of ABS plastic with 3 mm polyethylene foam external insulation such providing no risk of corrosion. It is easily washable. For units with an electric heater, the condensate tray is made of 1 mm-thick painted galvanized steel with 3 mm of polyethylene insulation.

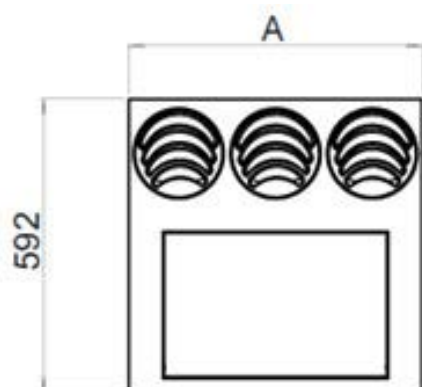
Model number

Table 1

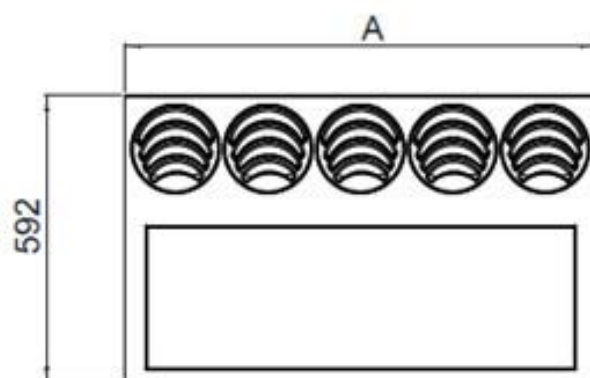
DIGIT		Description
1	Unit type	C = Cassette
2	Unit type	F = Fan Coil
3	Major Design Sequence	A = A
4	Motor type	S = AC fan motor E = EC fan motor
5 + 6	Unit size	16 = 1.6 kW at speed 5 total capacity 26 = 2.6 kW at speed 5 total capacity 36 = 3.6 kW at speed 5 total capacity
7	Application	A = 2-pipe cooling only B = 2-pipe heating only C = 2-pipe changeover D = 4-pipe
8	Coil size	3 = Standard 3 rows 4 = High efficiency 4 rows 5 = High efficiency heating 3 rows plus 2 rows
9	Minor Design Sequence	A
10	Water valves and controls access sides	G = Water valves on the left, controls on the right D = Water valves on the right, controls on the left
11	Raise	X = Standard / drain outlet height 100 mm from ceiling R = Raised / drain outlet height 160 mm from ceiling
12	Filter	X = Standard G0 3 = EU3
13	Electric heater	X = Without 2 = 550 W 4 = 1150 W 6 = 1400 W
14	Controls type	X = Without for wall mount thermostat interface A = Groupe control IRC-M or IRC-ETN-M B = ZN Zone for wall interface control C = ZN Cascade for wall interface control D = Free issued control
15	Free issued control factory-mounted	X = Large empty control box 1 = Free issued control factory-mounted (Price level 1) 2 = Free issued control factory-mounted (Price level 2) 3 = Free issued control factory-mounted (Price level 3)
16	Valve type	X = Without A = 2-way thermal On/Off B = 3-way thermal On/Off C = 2-way modulating 3 points D = 3-way modulating 3 points
17	Condensate pump	X = Without A = Mounted
18	Fan speed selection	1 = Standard 1-2-4 2 = Up 2-4-5
19	Special	X = Without S = With

Dimensions

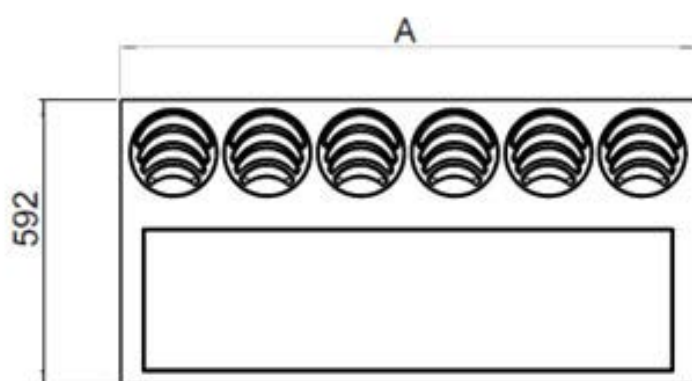
Dimensions



CFAS 16

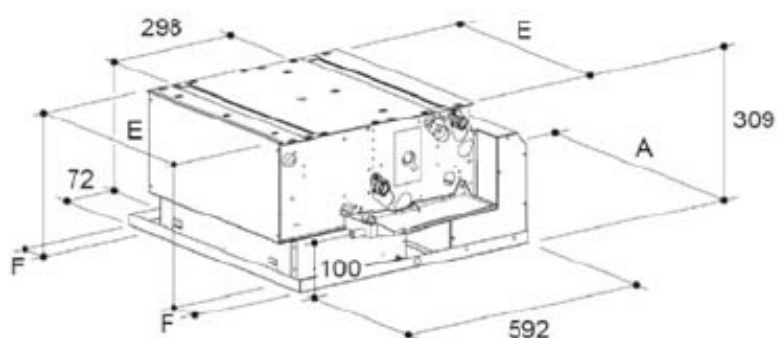


CFAS 26



CFAS 36

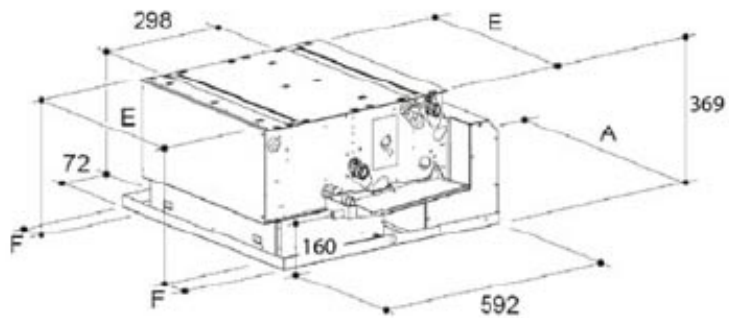
Standard height



Unit size	Dimensions (mm)		
	A	E	F
16	592	454	78
26	970	884	43
36	1192	1099	46.5

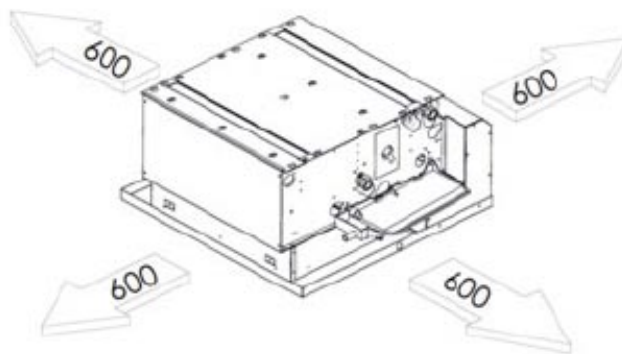
Dimensions

Raised height



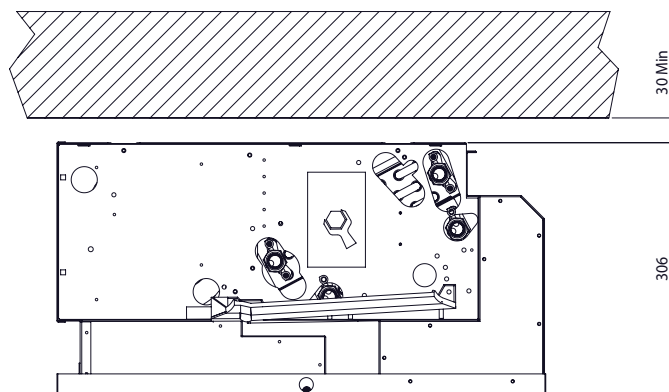
Unit size	Dimensions (mm)		
	A	E	F
16	592	454	78
26	970	884	43
36	1192	1099	46.5

Access clearances (mm)

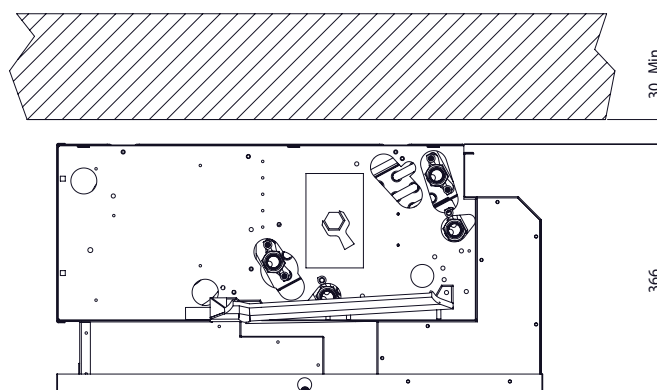


Dimensions

Standard version

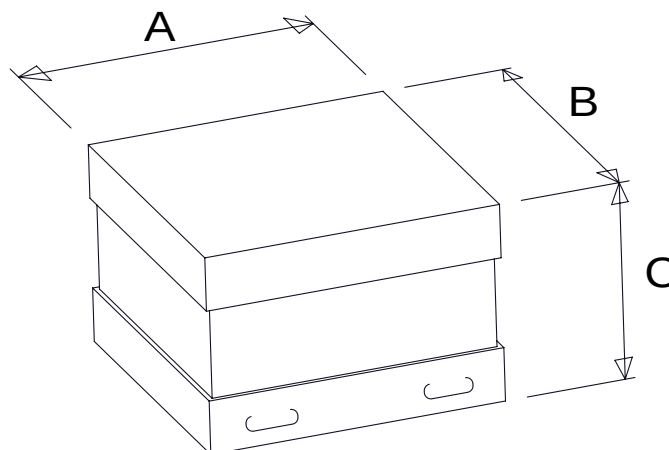


Raised version



Packaging

Standard height/raised version



Unit size	16 Std	16 Raised	26 Std	26 Raised	36 Std	36 Raised
A	720	720	1130	1130	1350	1350
B	640	640	640	640	640	640
C	350	410	350	410	350	410



Dimensions

Weights (kg)		Gross weight with packaging			Net weight	
Size	16	26	36	16	26	36
3 row 2 pipe	18	34	44	16	33	42
3+1 row 4 pipe	20	40	51	19	38	48
3+2 row 4 pipe	23	46	58	22	43	54
4 row 2 pipe	20	37	48	18	35	45
4+1 row 4 pipe	23	42	54	21	40	51

Water Volume (l)			
Size	16	26	36
3 row main coil	0.6	1.3	1.7
4 row main coil	0.8	1.7	2.4
+1 heating coil	0.2	0.4	0.5
+2 heating coil	0.4	0.8	1.0

Row			Coil quantity	
2 pipe	3	4	-	1
4 pipe	3+1	4+1	3+2	2*

* 4 pipe units have 2 coils. The main coil for cooling has the same cooling performance as the 2 pipe coil for the same number of rows. The additional coil (+1 or +2) is the heating coil with 1 or 2 rows.

Note: The 2 row heating coil provides higher heating performance and is designed to provide higher heating capacities for utilization with heat pump chillers, providing lower hot water temperatures than boilers.

General data

2-pipe units

The following standard rating conditions are used:

COOLING

Entering air temperature +27°C d.b. +19°C w.b.
 Water temperature +7/12°C

HEATING

Entering air temperature +20°C
 Entering water temperature +50°C
 water flow rate as for the cooling conditions

Table 2 – 3 row

CFAS standard efficiency		16						26						36					
Speed	Standard	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Speed	Up	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Air Flow	m³/h	140	180	220	245	280	310	190	230	290	360	445	530	275	335	420	505	600	650
Cooling total emission	kW	0.88	1.06	1.26	1.35	1.50	1.60	1.37	1.62	1.97	2.37	2.81	3.23	1.97	2.37	2.84	3.34	3.75	4.05
Cooling sensible emission	kW	0.66	0.81	0.98	1.06	1.18	1.27	1	1.19	1.47	1.77	2.13	2.47	1.44	1.74	2.11	2.51	2.83	3.07
Heating	kW	1.08	1.33	1.59	1.73	1.93	2.08	1.6	1.91	2.35	2.86	3.43	3.95	2.30	2.79	3.37	4.02	4.53	4.88
ΔP Cooling	kPa	2.4	3.3	4.5	5.1	6.1	6.8	2.9	3.9	5.5	7.6	10.3	13.1	6.4	8.8	12.1	16.2	19.8	22.7
ΔP Heating	kPa	1.8	2.6	3.5	4.0	4.9	5.6	2.3	3.1	4.5	6.3	8.4	10.8	5.2	7.3	9.8	13.4	16.3	18.6
Power consumption	W	16	22	32	38	49	66	24	27	34	44	57	71	38	46	57	69	78	88
Fan amps	A	0.07	0.10	0.14	0.17	0.22	0.30	0.11	0.12	0.15	0.20	0.26	0.32	0.12	0.15	0.19	0.27	0.33	0.38
Sound Power level	dB(A)	35	41	46	49	52	55	33	36	42	48	54	57	35	41	46	52	55	57
Sound Pressure level	dB(A)	26	32	37	40	43	46	24	27	33	39	45	48	26	32	37	43	46	48
NR level	dB(A)	22	27	31	34	38	41	17	18	25	33	40	43	17	24	30	37	40	42
NC level	dB(A)	20	25	30	33	36	39	15	16	23	31	38	41	15	22	28	35	38	41
Dimension (LxWxH)	mm	592x592x309						970x592x310						1192x592x311					
Coil water content	l	0.6						1.3						1.7					

Table 3 – 4 row

CFAS high efficiency		16						26						36					
Speed	Standard	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Speed	Up	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Air Flow	m³/h	140	180	220	245	280	310	190	230	290	360	445	530	275	335	420	505	600	650
Cooling total emission	kW	0.97	1.19	1.44	1.55	1.74	1.87	1.44	1.72	2.12	2.57	3.09	3.58	2.05	2.49	3.00	3.56	4.02	4.36
Cooling sensible emission	kW	0.71	0.88	1.07	1.17	1.31	1.42	1.04	1.24	1.54	1.88	2.28	2.67	1.48	1.81	2.20	2.63	2.98	3.25
Heating	kW	1.14	1.42	1.72	1.88	2.10	2.27	1.69	2.03	2.54	3.12	3.79	4.44	2.38	2.90	3.51	4.20	4.77	5.20
ΔP Cooling	kPa	4.7	6.7	9.2	10.6	12.9	14.6	4.4	6.0	8.6	12.1	16.8	21.7	4.7	6.7	9.3	12.6	15.5	17.9
ΔP Heating	kPa	3.7	5.4	7.6	8.8	10.7	12.3	3.5	4.8	7.1	10.2	13.6	17.9	3.9	5.5	7.3	10.0	12.6	14.6
Power consumption	W	16	22	32	38	49	66	24	27	34	44	57	71	38	46	57	69	78	88
Fan amps	A	0.07	0.10	0.14	0.17	0.22	0.30	0.11	0.12	0.15	0.20	0.26	0.32	0.12	0.15	0.19	0.27	0.33	0.38
Sound Power level	dB(A)	35	41	46	49	52	55	33	36	42	48	54	57	35	41	46	52	55	57
Sound Pressure level	dB(A)	26	32	37	40	43	46	24	27	33	39	45	48	26	32	37	43	46	48
NR level	dB(A)	22	27	31	34	38	41	17	18	25	33	40	43	17	24	30	37	40	42
NC level	dB(A)	20	25	30	33	36	39	15	16	23	31	38	41	15	22	28	35	38	41
Dimension (LxWxH)	mm	592x592x309						970x592x310						1192x592x311					
Coil water content	l	0.8						1.7						2.4					

General data

4-pipe units 3+1

The following standard rating conditions are used:

COOLING

Entering air temperature +27°C d.b. +19°C w.b.

Water temperature +7/12°C

HEATING

Entering air temperature +20°C

Water temperature: +70/60°C

water flow rate as for the cooling conditions

Table 4

CFAS standard efficiency		16						26						36					
Speed		1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Selected speeds		6	5	4	3	2	1	6	5	4	3	2	1	6	5	4	3	2	1
Air Flow	m ³ /h	140	180	220	245	280	310	190	230	290	360	445	530	275	335	420	505	600	650
Cooling total emission	kW	0.88	1.06	1.26	1.35	1.50	1.60	1.37	1.62	1.97	2.37	2.81	3.23	1.97	2.37	2.84	3.34	3.75	4.05
Cooling sensible emission	kW	0.66	0.81	0.98	1.06	1.18	1.27	1	1.19	1.47	1.77	2.13	2.47	1.44	1.74	2.11	2.51	2.83	3.07
Heating	kW	0.92	1.08	1.25	1.34	1.47	1.56	1.49	1.71	2.02	2.35	2.73	3.07	2.12	2.47	2.87	3.30	3.64	3.89
ΔP Cooling	kPa	2.4	3.3	4.5	5.1	6.1	6.8	2.9	3.9	5.5	7.6	10.3	13.1	6.4	8.8	12.1	16.2	19.8	22.7
ΔP Heating	kPa	1.6	2.1	2.7	3.1	3.6	4.0	0.9	1.2	1.6	2	2.6	3.2	2.0	2.6	3.4	4.3	5.1	5.8
Power consumption	W	16	22	32	38	49	66	24	27	34	44	57	71	38	46	57	69	78	88
Fan amps	A	0.07	0.10	0.14	0.17	0.22	0.30	0.11	0.12	0.15	0.20	0.26	0.32	0.12	0.15	0.19	0.27	0.33	0.38
Sound Power level	dB(A)	35	41	46	49	52	55	33	36	42	48	54	57	35	41	46	52	55	57
Sound Pressure level	dB(A)	26	32	37	40	43	46	24	27	33	39	45	48	26	32	37	43	46	48
NR level	dB(A)	22	27	31	34	38	41	17	18	25	33	40	43	17	24	30	37	40	42
NC level	dB(A)	20	25	30	33	36	39	15	16	23	31	38	41	15	22	28	35	38	41
Dimension (LxWxH)	mm	592x592x309						970x592x310						1192x592x311					
Coil water content	l	0.6						1.3						1.7					
Coil water content heating	l	0.2						0.4						0.5					

General data

4 pipe units 3+2

The following standard rating conditions are used:

COOLING

Entering air temperature +27°C d.b. +19°C w.b.
 Water temperature +7/12°C

HEATING

Entering air temperature +20°C
 Water temperature: +60/50°C
 water flow rate as for the cooling conditions

Table 5

CFAS high efficiency heating coil		16						26						36					
Speed		1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Selected speeds		6	5	4	3	2	1	6	5	4	3	2	1	6	5	4	3	2	1
Air Flow	m³/h	140	180	220	245	280	310	190	230	290	360	445	530	275	335	420	505	600	650
Cooling total emission	kW	0.88	1.06	1.26	1.35	1.50	1.60	1.37	1.62	1.97	2.37	2.81	3.23	1.97	2.37	2.84	3.34	3.75	4.05
Cooling sensible emission	kW	0.66	0.81	0.98	1.06	1.18	1.27	1	1.19	1.47	1.77	2.13	2.47	1.44	1.74	2.11	2.51	2.83	3.07
Heating	kW	1.16	1.38	1.63	1.75	1.92	2.05	1.79	2.11	2.55	3	3.53	4.03	2.57	3.07	3.65	4.22	4.70	5.06
ΔP Cooling	kPa	2.4	3.3	4.5	5.1	6.1	6.8	2.9	3.9	5.5	7.6	10.3	13.1	6.4	8.8	12.1	16.2	19.8	22.7
ΔP Heating	kPa	4.5	6.0	8.1	9.1	10.8	12.2	2.4	3.2	4.5	6	8	10	5.4	7.4	10.0	12.9	15.6	17.8
Power consumption	W	16	22	32	38	49	66	24	27	34	44	57	71	38	46	57	69	78	88
Fan amps	A	0.07	0.10	0.14	0.17	0.22	0.30	0.11	0.12	0.15	0.20	0.26	0.32	0.12	0.15	0.19	0.27	0.33	0.38
Sound Power level	dB(A)	35	41	46	49	52	55	33	36	42	48	54	57	35	41	46	52	55	57
Sound Pressure level	dB(A)	26	32	37	40	43	46	24	27	33	39	45	48	26	32	37	43	46	48
NR level	dB(A)	22	27	31	34	38	41	17	18	25	33	40	43	17	24	30	37	40	42
NC level	dB(A)	20	25	30	33	36	39	15	16	23	31	38	41	15	22	28	35	38	41
Dimension (LxWxH)	mm	592x592x309						970x592x310						1192x592x311					
Coil water content cooling	l	0.6						1.3						1.7					
Coil water content heating	l	0.4						0.8						1.0					

Correction factor for cooling capacities and relative humidity

Total capacity				
Water (°C)	Air (°C)	25-18	26-18.5	28-20
7/12 °C	K	0.82	0.89	1.11
10/15 °C	K	0.56	0.63	0.82
14/18 °C	K	0.35	0.41	0.52
Sensible capacity				
Water (°C)	Air (°C)	25-18	26-18.5	28-20
7/12 °C	K	0.90	0.94	1.06
10/15 °C	K	0.72	0.78	0.90
14/18 °C	K	0.50	0.58	0.72

To be used based on Eurovent cooling rating conditions 27°C/19°C and 50% RH ambient temperature and 12/7°C cooling water temperatures.

General data

Operating limits

Maximum entering water temperature: +80°C.
 Minimum water temperature without glycol: +5°C.
 For lower water temperatures please contact your local sales office.
 Maximum water operating pressure: 1000 kPa (10 bars).

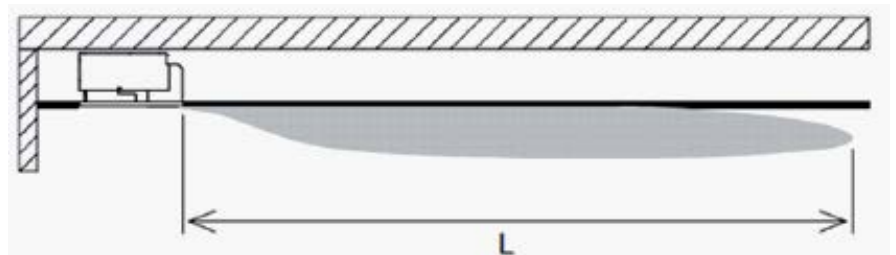
Water flow cooling coil				
Size		16	26	36
3-row	Minimum	100	150	150
	Maximum	500	1000	1500
4-row	Minimum	100	150	200
	Maximum	750	1000	2000

Water flow heating coil				
Size		16	26	36
+1	Minimum	50	100	100
	Maximum	250	450	650
+2	Minimum	50	100	100
	Maximum	250	450	650

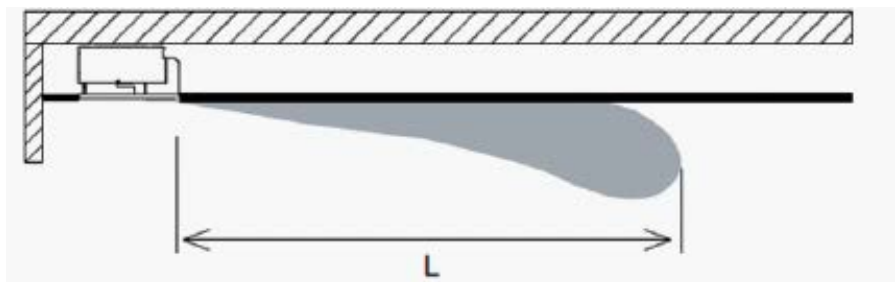
Electrical motor maximum power input				
		16	26	36
230/1/50	W	40	61	103
	A	0.18	0.27	0.47

Air throw distances

(A)



(B)



16										26					36				
Speed	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	
Throw (L) (m)	Heating	3.8	4.5	5.8	6.3	6.8	7.2	4.0	5.0	6.1	7.0	8.0	9.0	4.5	5.2	6.3	7.5	8.8	9.5
	Cooling	3.0	3.6	4.6	5.0	5.4	5.7	3.2	4.0	4.8	5.6	6.0	7.2	3.6	4.1	5.0	6.0	7.0	7.6

Performance data cooling

RAT = Return air temperature

EWT = Entering water temperature

LWT = Leaving water temperature

Table 6 - 3 row main coil

EWT/LWT		RAT 24 °C / 50% RH															
		5 / 10 °C				7 / 12 °C				9 / 14 °C				12 / 17 °C			
		Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)
		kW	kW	l/h	Kpa	kW	kW	l/h	Kpa	kW	kW	l/h	Kpa	kW	kW	l/h	Kpa
16	6	1.52	1.20	261	6.3	1.16	1.04	200	3.8	0.91	0.91	157	2.5	0.67	0.67	115	1.4
	5	1.42	1.11	244	5.6	1.08	0.97	186	3.4	0.85	0.85	146	2.2	0.62	0.62	107	1.2
	4	1.28	1.00	220	4.7	0.98	0.87	169	2.9	0.76	0.76	131	1.8	0.56	0.56	96	1
	3	1.19	0.92	205	4.1	0.91	0.80	157	2.5	0.70	0.70	120	1.6	0.52	0.52	89	0.9
	2	1.01	0.77	174	3.1	0.77	0.67	132	1.9	0.59	0.59	101	1.2	0.43	0.43	74	0.7
	1	0.83	0.63	143	2.2	0.64	0.54	110	1.4	0.48	0.48	83	0.8	0.35	0.35	60	0.5
26	6	3.06	2.33	526	12.1	2.37	2.03	408	7.6	1.79	1.79	308	4.6	1.32	1.32	227	2.6
	5	2.67	2.01	459	9.5	2.07	1.75	356	6	1.54	1.54	265	3.5	1.14	1.14	196	2
	4	2.24	1.68	385	7	1.75	1.46	301	4.4	1.29	1.29	222	2.6	0.96	0.96	165	1.5
	3	1.87	1.39	322	5.1	1.46	1.21	251	3.2	1.06	1.06	182	1.8	0.79	0.79	136	1.1
	2	1.53	1.13	263	3.6	1.20	0.98	206	2.3	0.83	0.83	143	1.2	0.64	0.64	110	0.7
	1	1.29	0.95	222	2.7	1.02	0.82	175	1.7	0.71	0.69	122	0.9	0.54	0.54	93	0.5
36	6	3.85	2.90	662	21	3.00	2.53	516	13.4	2.23	2.23	384	7.8	1.65	1.65	284	4.5
	5	3.56	2.67	612	18.3	2.78	2.33	478	11.7	2.05	2.05	353	6.8	1.52	1.52	261	3.9
	4	3.17	2.37	545	15	2.48	2.06	427	9.6	1.81	1.81	311	5.5	1.35	1.35	232	3.2
	3	2.69	1.99	463	11.2	2.11	1.74	363	7.2	1.53	1.53	263	4.1	1.14	1.14	196	2.4
	2	2.25	1.65	387	8.2	1.76	1.44	303	5.3	1.23	1.21	212	2.7	0.94	0.94	162	1.7
	1	1.87	1.36	322	5.9	1.47	1.19	253	3.8	1.03	1.00	177	2	0.78	0.78	134	1.2

Table 7 - 3 row main coil

EWT/LWT		RAT 25 °C / 50% RH															
		5 / 10 °C				7 / 12 °C				9 / 14 °C				12 / 17 °C			
		Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)
		kW	kW	l/h	Kpa	kW	kW	l/h	Kpa	kW	kW	l/h	Kpa	kW	kW	l/h	Kpa
16	6	1.70	1.27	292	7.7	1.34	1.12	230	5	1.00	1.00	172	2.9	0.75	0.75	129	1.7
	5	1.59	1.18	273	6.9	1.26	1.04	217	4.5	0.92	0.92	158	2.6	0.70	0.70	120	1.5
	4	1.44	1.06	248	5.7	1.14	0.93	196	3.7	0.81	0.80	139	2	0.63	0.63	108	1.3
	3	1.34	0.98	230	5	1.06	0.86	182	3.3	0.75	0.74	129	1.8	0.58	0.58	100	1.1
	2	1.13	0.81	194	3.7	0.89	0.71	153	2.4	0.64	0.61	110	1.3	0.48	0.48	83	0.8
	1	0.93	0.67	160	2.7	0.74	0.58	127	1.8	0.54	0.50	93	1	0.40	0.40	69	0.6
26	6	3.42	2.48	588	14.7	2.73	2.18	470	9.7	1.99	1.88	342	5.5	1.48	1.48	255	3.2
	5	2.97	2.14	511	11.5	2.38	1.88	409	7.7	1.74	1.62	299	4.4	1.27	1.27	218	2.5
	4	2.50	1.78	430	8.5	2.01	1.56	346	5.7	1.47	1.35	253	3.2	1.07	1.07	184	1.8
	3	2.08	1.47	358	6.1	1.68	1.29	289	4.1	1.24	1.11	213	2.4	0.88	0.88	151	1.3
	2	1.70	1.20	292	4.3	1.38	1.05	237	2.9	1.02	0.90	175	1.7	0.71	0.71	122	0.9
	1	1.44	1.00	248	3.2	1.16	0.88	200	2.2	0.86	0.76	148	1.3	0.60	0.60	103	0.7
36	6	4.28	3.08	736	25.4	3.44	2.71	592	17	2.53	2.34	435	9.8	1.84	1.84	316	5.5
	5	3.96	2.84	681	22.2	3.19	2.50	549	14.9	2.35	2.15	404	8.6	1.70	1.70	292	4.7
	4	3.53	2.51	607	18.1	2.84	2.21	488	12.2	2.10	1.91	361	7	1.50	1.50	258	3.8
	3	2.99	2.11	514	13.5	2.41	1.86	415	9.1	1.79	1.60	308	5.3	1.27	1.27	218	2.8
	2	2.50	1.75	430	9.8	2.02	1.54	347	6.7	1.50	1.32	258	3.9	1.05	1.05	181	2
	1	2.07	1.45	356	7.1	1.68	1.27	289	4.8	1.25	1.09	215	2.8	0.86	0.86	148	1.4

Pc = Total cooling capacity

Ps = Sensible capacity

Qw = Water flow

Dp(c) = Water pressure drop

Performance data cooling

Table 8 - 3 row main coil

EWT/LWT		RAT 26 °C / 50% RH															
		5 / 10 °C				7 / 12 °C				9 / 14 °C				12 / 17 °C			
		Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)
		kW	kW	l/h	Kpa	kW	kW	l/h	Kpa	kW	kW	l/h	Kpa	kW	kW	l/h	Kpa
16	6	1.90	1.35	327	9.3	1.53	1.19	263	6.3	1.15	1.04	198	3.7	0.83	0.83	143	2.1
	5	1.77	1.25	304	8.3	1.43	1.11	246	5.6	1.08	0.97	186	3.3	0.77	0.77	132	1.8
	4	1.60	1.12	275	6.9	1.30	0.99	224	4.7	0.98	0.86	169	2.8	0.69	0.69	119	1.5
	3	1.48	1.04	255	6.1	1.21	0.92	208	4.1	0.91	0.80	157	2.5	0.64	0.64	110	1.3
	2	1.25	0.86	215	4.5	1.02	0.76	175	3.1	0.77	0.66	132	1.9	0.54	0.54	93	1
	1	1.03	0.71	177	3.2	0.84	0.62	144	2.2	0.64	0.54	110	1.3	0.44	0.44	76	0.7
26	6	3.78	2.62	650	17.5	3.10	2.32	533	12.2	2.36	2.03	406	7.5	1.63	1.63	280	3.8
	5	3.29	2.26	566	13.7	2.70	2.00	464	9.5	2.07	1.74	356	5.9	1.40	1.40	241	2.9
	4	2.76	1.88	475	10.1	2.27	1.67	390	7.1	1.74	1.45	299	4.4	1.18	1.18	203	2.1
	3	2.30	1.56	396	7.3	1.90	1.38	327	5.1	1.46	1.20	251	3.2	0.97	0.97	167	1.5
	2	1.88	1.27	323	5.1	1.55	1.12	267	3.6	1.20	0.97	206	2.3	0.79	0.79	136	1
	1	1.59	1.06	273	3.8	1.31	0.94	225	2.7	1.02	0.82	175	1.7	0.66	0.66	114	0.8
36	6	4.73	3.25	814	30.3	3.89	2.89	669	21.2	2.99	2.52	514	13.1	2.03	2.03	349	6.5
	5	4.38	3.00	753	26.4	3.60	2.66	619	18.5	2.77	2.32	476	11.5	1.87	1.87	322	5.6
	4	3.90	2.66	671	21.5	3.21	2.36	552	15.1	2.48	2.05	427	9.4	1.65	1.65	284	4.5
	3	3.30	2.24	568	16.1	2.73	1.98	470	11.3	2.11	1.73	363	7.1	1.40	1.40	241	3.4
	2	2.75	1.85	473	11.7	2.28	1.64	392	8.3	1.77	1.43	304	5.2	1.15	1.15	198	2.4
	1	2.28	1.53	392	8.4	1.89	1.36	325	6	1.47	1.18	253	3.8	0.95	0.95	163	1.7

Table 9 - 3 row main coil

EWT/LWT		RAT 27 °C / 50% RH															
		5 / 10 °C				7 / 12 °C				9 / 14 °C				12 / 17 °C			
		Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)
		kW	kW	l/h	Kpa	kW	kW	l/h	Kpa	kW	kW	l/h	Kpa	kW	kW	l/h	Kpa
16	6	2.09	1.42	359	11.1	1.73	1.27	298	7.8	1.34	1.12	230	5	0.91	0.91	157	2.5
	5	1.95	1.32	335	9.8	1.62	1.18	279	7	1.26	1.04	217	4.4	0.85	0.85	146	2.2
	4	1.76	1.18	303	8.2	1.46	1.06	251	5.8	1.14	0.93	196	3.7	0.76	0.76	131	1.8
	3	1.64	1.09	282	7.2	1.36	0.97	234	5.1	1.06	0.86	182	3.3	0.70	0.70	120	1.5
	2	1.37	0.91	236	5.3	1.14	0.81	196	3.8	0.90	0.71	155	2.4	0.59	0.59	101	1.1
	1	1.14	0.75	196	3.8	0.95	0.66	163	2.7	0.75	0.58	129	1.8	0.48	0.48	83	0.8
26	6	4.16	2.76	716	20.7	3.47	2.46	597	14.9	2.74	2.17	471	9.7	1.78	1.78	306	4.4
	5	3.61	2.38	621	16.2	3.03	2.13	521	11.7	2.39	1.87	411	7.6	1.54	1.54	265	3.4
	4	3.03	1.99	521	11.9	2.54	1.77	437	8.6	2.02	1.56	347	5.7	1.28	1.28	220	2.5
	3	2.52	1.64	433	8.6	2.12	1.46	365	6.3	1.69	1.28	291	4.1	1.06	1.06	182	1.8
	2	2.06	1.33	354	6	1.74	1.19	299	4.4	1.39	1.04	239	2.9	0.86	0.86	148	1.2
	1	1.74	1.12	299	4.5	1.47	1.00	253	3.3	1.17	0.88	201	2.2	0.72	0.72	124	0.9
36	6	5.20	3.43	894	35.7	4.36	3.06	750	25.8	3.46	2.70	595	16.9	2.22	2.22	382	7.6
	5	4.81	3.16	827	31.1	4.03	2.82	693	22.5	3.20	2.49	550	14.8	2.04	2.04	351	6.6
	4	4.28	2.80	736	25.3	3.59	2.50	617	18.4	2.86	2.20	492	12.1	1.81	1.81	311	5.3
	3	3.62	2.36	623	18.9	3.05	2.10	525	13.8	2.43	1.85	418	9.1	1.52	1.52	261	3.9
	2	3.02	1.95	519	13.7	2.55	1.74	439	10	2.04	1.53	351	6.7	1.26	1.26	217	2.8
	1	2.50	1.61	430	9.9	2.11	1.44	363	7.2	1.69	1.26	291	4.8	1.04	1.04	179	2

Pc = Total cooling capacity
Ps = Sensible capacity
Qw = Water flow
Dp(c) = Water pressure drop

Performance data cooling

Table 10 - 3 row main coil

EWT/LWT		RAT 28 °C / 50% RH															
		5 / 10 °C				7 / 12 °C				9 / 14 °C				12 / 17 °C			
		Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)
		kW	kW	l/h	Kpa	kW	kW	l/h	Kpa	kW	kW	l/h	Kpa	kW	kW	l/h	Kpa
16	6	2.29	1.49	394	13	1.93	1.34	332	9.5	1.55	1.19	267	6.3	0.99	0.99	170	2.9
	5	2.14	1.39	368	11.5	1.81	1.25	311	8.4	1.45	1.11	249	5.6	0.92	0.92	158	2.5
	4	1.93	1.24	332	9.6	1.63	1.12	280	7.1	1.31	0.99	225	4.7	0.83	0.83	143	2.1
	3	1.79	1.15	308	8.4	1.51	1.03	260	6.2	1.22	0.91	210	4.2	0.76	0.76	131	1.8
	2	1.50	0.96	258	6.2	1.28	0.86	220	4.6	1.03	0.76	177	3.1	0.62	0.61	107	1.2
	1	1.24	0.78	213	4.4	1.05	0.70	181	3.3	0.85	0.62	146	2.2	0.52	0.50	89	0.9
26	6	4.54	2.90	781	24.2	3.86	2.60	664	17.9	3.13	2.31	538	12.2	1.91	1.86	329	5
	5	3.95	2.50	679	18.9	3.36	2.25	578	14	2.73	1.99	470	9.6	1.68	1.60	289	4
	4	3.31	2.09	569	13.9	2.82	1.87	485	10.3	2.30	1.66	396	7.1	1.43	1.33	246	3
	3	2.75	1.73	473	10	2.35	1.55	404	7.5	1.92	1.37	330	5.2	1.20	1.10	206	2.2
	2	2.25	1.40	387	7	1.92	1.26	330	5.3	1.58	1.11	272	3.7	0.99	0.89	170	1.6
	1	1.89	1.18	325	5.2	1.62	1.06	279	3.9	1.33	0.93	229	2.7	0.85	0.75	146	1.2
36	6	5.67	3.60	975	41.6	4.83	3.24	831	31	3.94	2.87	678	21.3	2.44	2.32	420	9
	5	5.24	3.32	901	36.3	4.47	2.98	769	27	3.65	2.65	628	18.6	2.27	2.13	390	7.9
	4	4.67	2.94	803	29.5	3.98	2.64	685	22.1	3.26	2.34	561	15.2	2.03	1.88	349	6.5
	3	3.95	2.47	679	22	3.38	2.22	581	16.5	2.77	1.97	476	11.4	1.74	1.58	299	5
	2	3.29	2.05	566	16	2.82	1.84	485	12	2.31	1.63	397	8.3	1.47	1.31	253	3.7
	1	2.72	1.69	468	11.5	2.34	1.52	402	8.6	1.92	1.35	330	6	1.23	1.08	212	2.7

Table 11 - 4 row main coil

EWT/LWT		RAT 24 °C / 50% RH															
		5 / 10 °C				7 / 12 °C				9 / 14 °C				12 / 17 °C			
		Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)
		kW	kW	l/h	Kpa	kW	kW	l/h	Kpa	kW	kW	l/h	Kpa	kW	kW	l/h	Kpa
16	6	1.77	1.34	304	13.5	1.37	1.17	236	8.5	1.03	1.03	177	5.1	0.76	0.76	131	2.9
	5	1.65	1.24	284	11.9	1.28	1.08	220	7.5	0.95	0.95	163	4.4	0.70	0.70	120	2.5
	4	1.47	1.10	253	9.8	1.15	0.96	198	6.2	0.85	0.85	146	3.6	0.63	0.63	108	2.1
	3	1.36	1.01	234	8.5	1.06	0.88	182	5.4	0.78	0.78	134	3.1	0.58	0.58	100	1.8
	2	1.13	0.83	194	6.1	0.88	0.73	151	3.9	0.64	0.64	110	2.2	0.48	0.48	83	1.3
	1	0.92	0.68	158	4.3	0.72	0.59	124	2.8	0.50	0.49	86	1.4	0.39	0.39	67	0.9
26	6	3.40	2.52	585	20.1	2.66	2.20	458	12.9	1.94	1.94	334	7.3	1.44	1.44	248	4.2
	5	2.93	2.16	504	15.5	2.30	1.88	396	10	1.60	1.59	275	5.2	1.23	1.23	212	3.2
	4	2.44	1.78	420	11.2	1.92	1.55	330	7.2	1.34	1.31	230	3.8	1.02	1.02	175	2.3
	3	2.01	1.46	346	8	1.59	1.27	273	5.2	1.12	1.08	193	2.8	0.84	0.84	144	1.6
	2	1.63	1.18	280	5.5	1.29	1.03	222	3.6	0.91	0.87	157	1.9	0.67	0.67	115	1.1
	1	1.36	0.98	234	4	1.08	0.86	186	2.6	0.77	0.73	132	1.4	0.56	0.56	96	0.8
36	6	4.14	3.07	712	16.6	3.24	2.68	557	10.6	2.36	2.36	406	6	1.75	1.75	301	3.5
	5	3.81	2.82	655	14.4	2.99	2.46	514	9.2	2.16	2.16	372	5.1	1.61	1.61	277	3
	4	3.38	2.49	581	11.6	2.65	2.17	456	7.5	1.84	1.83	316	3.9	1.42	1.42	244	2.4
	3	2.84	2.08	488	8.6	2.24	1.81	385	5.5	1.56	1.53	268	2.9	1.19	1.19	205	1.8
	2	2.36	1.71	406	6.2	1.86	1.49	320	4	1.31	1.26	225	2.1	0.98	0.98	169	1.2
	1	1.94	1.41	334	4.4	1.54	1.22	265	2.9	1.09	1.04	187	1.5	0.80	0.80	138	0.9

Pc = Total cooling capacity
Ps = Sensible capacity
Qw = Water flow
Dp(c) = Water pressure drop

Performance data cooling

Table 12 - 4 row main coil

EWT/LWT		RAT 25 °C / 50% RH															
		5 / 10 °C				7 / 12 °C				9 / 14 °C				12 / 17 °C			
		Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)
		kW	kW	l/h	Kpa	kW	kW	l/h	Kpa	kW	kW	l/h	Kpa	kW	kW	l/h	Kpa
16	6	1.98	1.42	341	16.4	1.58	1.25	272	10.9	1.15	1.08	198	6.1	0.85	0.85	146	3.5
	5	1.84	1.32	316	14.4	1.47	1.16	253	9.6	1.07	0.99	184	5.4	0.78	0.78	134	3.1
	4	1.64	1.17	282	11.9	1.32	1.03	227	7.9	0.96	0.88	165	4.5	0.70	0.70	120	2.5
	3	1.52	1.08	261	10.3	1.22	0.94	210	6.9	0.89	0.81	153	3.9	0.64	0.64	110	2.2
	2	1.26	0.89	217	7.4	1.01	0.78	174	5	0.75	0.67	129	2.9	0.53	0.53	91	1.5
	1	1.03	0.72	177	5.2	0.83	0.63	143	3.5	0.61	0.54	105	2	0.43	0.43	74	1.1
26	6	3.78	2.68	650	24.2	3.05	2.36	525	16.4	2.25	2.03	387	9.5	1.60	1.60	275	5.1
	5	3.26	2.29	561	18.7	2.63	2.02	452	12.6	1.95	1.73	335	7.4	1.37	1.37	236	3.9
	4	2.71	1.89	466	13.5	2.19	1.66	377	9.2	1.63	1.43	280	5.4	1.14	1.14	196	2.8
	3	2.23	1.55	384	9.6	1.81	1.36	311	6.6	1.35	1.17	232	3.9	0.93	0.93	160	2
	2	1.81	1.25	311	6.6	1.47	1.10	253	4.5	1.10	0.94	189	2.7	0.75	0.75	129	1.3
	1	1.51	1.04	260	4.8	1.23	0.92	212	3.3	0.93	0.79	160	2	0.62	0.62	107	1
36	6	4.60	3.26	791	20	3.71	2.87	638	13.5	2.74	2.47	471	7.8	1.95	1.95	335	4.2
	5	4.24	3.00	729	17.3	3.42	2.63	588	11.7	2.53	2.27	435	6.8	1.79	1.79	308	3.6
	4	3.76	2.64	647	14	3.03	2.32	521	9.5	2.25	2.00	387	5.5	1.58	1.58	272	2.9
	3	3.16	2.21	544	10.3	2.56	1.94	440	7	1.90	1.67	327	4.1	1.32	1.32	227	2.1
	2	2.62	1.82	451	7.4	2.12	1.60	365	5	1.58	1.37	272	3	1.09	1.09	187	1.5
	1	2.15	1.49	370	5.3	1.75	1.31	301	3.6	1.31	1.13	225	2.1	0.89	0.89	153	1.1

Table 13 - 4 row main coil

EWT/LWT		RAT 26 °C / 50% RH															
		5 / 10 °C				7 / 12 °C				9 / 14 °C				12 / 17 °C			
		Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)
		kW	kW	l/h	Kpa	kW	kW	l/h	Kpa	kW	kW	l/h	Kpa	kW	kW	l/h	Kpa
16	6	2.19	1.51	377	19.6	1.79	1.33	308	13.6	1.37	1.16	236	8.3	0.94	0.94	162	4.2
	5	2.03	1.39	349	17.2	1.67	1.23	287	12	1.27	1.07	218	7.3	0.87	0.87	150	3.7
	4	1.82	1.24	313	14.2	1.49	1.10	256	9.9	1.14	0.95	196	6.1	0.77	0.77	132	3
	3	1.68	1.14	289	12.3	1.38	1.01	237	8.6	1.06	0.88	182	5.3	0.71	0.71	122	2.6
	2	1.39	0.94	239	8.8	1.15	0.83	198	6.2	0.88	0.72	151	3.9	0.58	0.58	100	1.8
	1	1.13	0.76	194	6.2	0.94	0.67	162	4.3	0.72	0.58	124	2.7	0.47	0.47	81	1.3
26	6	4.17	2.83	717	28.8	3.44	2.51	592	20.3	2.66	2.19	458	12.7	1.76	1.76	303	6
	5	3.59	2.42	617	22.2	2.97	2.15	511	15.6	2.30	1.87	396	9.8	1.51	1.51	260	4.6
	4	2.98	2.00	513	16	2.47	1.77	425	11.3	1.92	1.54	330	7.2	1.25	1.25	215	3.3
	3	2.46	1.64	423	11.4	2.04	1.45	351	8.1	1.59	1.26	273	5.1	1.02	1.02	175	2.3
	2	1.99	1.32	342	7.8	1.65	1.17	284	5.6	1.29	1.02	222	3.6	0.82	0.82	141	1.6
	1	1.66	1.10	286	5.7	1.39	0.98	239	4.1	1.08	0.85	186	2.6	0.68	0.68	117	1.1
36	6	5.08	3.45	874	23.8	4.19	3.06	721	16.7	3.23	2.66	556	10.4	2.15	2.15	370	5
	5	4.68	3.17	805	20.6	3.87	2.81	666	14.5	2.99	2.44	514	9.1	1.97	1.97	339	4.3
	4	4.14	2.79	712	16.6	3.43	2.47	590	11.7	2.65	2.15	456	7.4	1.74	1.74	299	3.5
	3	3.48	2.33	599	12.2	2.88	2.07	495	8.7	2.24	1.80	385	5.5	1.45	1.45	249	2.5
	2	2.88	1.92	495	8.8	2.39	1.70	411	6.2	1.86	1.48	320	4	1.19	1.19	205	1.8
	1	2.37	1.58	408	6.2	1.97	1.40	339	4.4	1.54	1.22	265	2.8	0.98	0.98	169	1.3

Pc = Total cooling capacity
Ps = Sensible capacity
Qw = Water flow
Dp(c) = Water pressure drop

Performance data cooling

Table 14 - 4 row main coil

EWT/LWT		RAT 27 °C / 50% RH															
		5 / 10 °C				7 / 12 °C				9 / 14 °C				12 / 17 °C			
		Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)
		kW	kW	l/h	Kpa	kW	kW	l/h	Kpa	kW	kW	l/h	Kpa	kW	kW	l/h	Kpa
16	6	2.40	1.59	413	23.2	2.01	1.42	346	16.7	1.59	1.24	273	10.8	1.02	1.02	175	4.9
	5	2.23	1.47	384	20.3	1.87	1.31	322	14.6	1.48	1.15	255	9.6	0.95	0.95	163	4.3
	4	2.00	1.31	344	16.7	1.67	1.16	287	12.1	1.33	1.02	229	7.9	0.84	0.84	144	3.5
	3	1.84	1.20	316	14.5	1.54	1.07	265	10.5	1.23	0.94	212	6.9	0.77	0.77	132	3
	2	1.53	0.99	263	10.4	1.28	0.88	220	7.6	1.02	0.77	175	5	0.64	0.64	110	2.1
	1	1.24	0.80	213	7.2	1.05	0.71	181	5.3	0.84	0.63	144	3.5	0.52	0.52	89	1.5
26	6	4.57	2.98	786	33.9	3.32	2.66	571	24.7	3.07	2.34	528	16.3	1.93	1.93	332	7
	5	3.94	2.55	678	26	2.76	2.28	475	19	2.65	2.00	456	12.6	1.65	1.65	284	5.4
	4	3.27	2.11	562	18.8	2.28	1.88	392	13.7	2.21	1.65	380	9.2	1.36	1.36	234	3.8
	3	2.69	1.73	463	13.3	1.84	1.54	316	9.8	1.83	1.36	315	6.6	1.11	1.11	191	2.7
	2	2.18	1.39	375	9.2	1.54	1.24	265	6.8	1.48	1.09	255	4.5	0.85	0.85	146	1.7
	1	1.82	1.16	313	6.7	1.35	1.04	220	4.9	1.25	0.91	215	3.3	0.72	0.71	124	1.2
36	6	5.57	3.63	958	28	4.69	3.24	807	20.3	3.73	2.85	642	13.5	2.34	2.34	402	5.8
	5	5.13	3.34	882	24.2	4.32	2.98	743	17.6	3.45	2.62	593	11.7	2.15	2.15	370	5
	4	4.54	2.94	781	19.5	3.83	2.62	659	14.2	3.06	2.31	526	9.5	1.90	1.90	327	4
	3	3.81	2.46	655	14.4	3.22	2.19	554	10.5	2.58	1.93	444	7	1.59	1.59	273	2.9
	2	3.15	2.03	542	10.3	2.67	1.81	459	7.5	2.14	1.59	368	5.1	1.30	1.30	224	2.1
	1	2.59	1.66	445	7.3	2.20	1.48	378	5.4	1.77	1.30	304	3.6	1.01	1.01	174	1.3

Table 15 - 4 row main coil

EWT/LWT		RAT 28 °C / 50% RH															
		5 / 10 °C				7 / 12 °C				9 / 14 °C				12 / 17 °C			
		Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)	Pc	Ps	Qw	Dp(c)
		kW	kW	l/h	Kpa	kW	kW	l/h	Kpa	kW	kW	l/h	Kpa	kW	kW	l/h	Kpa
16	6	2.63	1.67	452	27.1	2.23	1.50	384	20.1	1.81	1.33	311	13.7	1.11	1.06	191	5.6
	5	2.44	1.54	420	23.8	2.07	1.38	356	17.6	1.69	1.23	291	12.1	1.03	0.98	177	5
	4	2.18	1.37	375	19.5	1.86	1.23	320	14.5	1.51	1.09	260	10	0.93	0.87	160	4.2
	3	2.01	1.26	346	16.9	1.71	1.13	294	12.6	1.40	1.00	241	8.7	0.86	0.80	148	3.7
	2	1.66	1.04	286	12.1	1.42	0.93	244	9.1	1.16	0.83	200	6.3	0.73	0.66	126	2.7
	1	1.35	0.84	232	8.4	1.16	0.75	200	6.3	0.95	0.67	163	4.4	0.60	0.53	103	1.9
26	6	4.99	3.13	858	39.5	4.26	2.81	733	29.5	3.49	2.49	600	20.5	2.19	2.01	377	8.8
	5	4.29	2.68	738	30.3	3.67	2.41	631	22.7	3.01	2.14	518	15.8	1.91	1.72	329	6.9
	4	3.56	2.22	612	21.8	3.05	1.99	525	16.4	2.51	1.76	432	11.5	1.60	1.42	275	5.1
	3	2.93	1.82	504	15.5	2.52	1.63	433	11.7	2.07	1.45	356	8.2	1.33	1.16	229	3.7
	2	2.37	1.46	408	10.6	2.04	1.31	351	8.1	1.68	1.16	289	5.7	1.08	0.93	186	2.6
	1	1.98	1.22	341	7.8	1.71	1.10	294	5.9	1.41	0.97	243	4.2	0.91	0.78	157	1.9
36	6	6.07	6.07	1044	32.6	5.19	3.43	893	24.4	4.25	3.04	731	16.9	2.66	2.44	458	7.3
	5	5.59	3.51	961	28.2	4.78	3.15	822	21.1	3.92	2.79	674	14.6	2.47	2.24	425	6.4
	4	4.95	3.09	851	22.7	4.24	2.78	729	17	3.47	2.46	597	11.9	2.20	1.98	378	5.2
	3	4.15	2.58	714	16.7	3.56	2.32	612	12.6	2.93	2.05	504	8.8	1.86	1.65	320	3.9
	2	3.43	2.13	590	11.9	2.95	1.91	507	9	2.43	1.69	418	6.3	1.55	1.60	267	2.8
	1	2.82	1.75	485	8.5	2.43	1.57	418	6.4	2.00	1.39	344	4.5	1.29	1.11	222	2

Pc = Total cooling capacity
 Ps = Sensible capacity
 Qw = Water flow
 Dp(c) = Water pressure drop

Performance data cooling

Table 16 - 3 row main coil

		18 °C																	
		70 / 60 °C			60 / 50 °C			55 / 45 °C			50 / 40 °C			50 / 45 °C			45 / 40 °C		
		Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)
		kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa
16	6	3.73	321	6.9	2.88	248	4.6	2.46	212	3.5	2.04	175	2.6	2.34	402	10.9	1.92	330	7.9
	5	3.46	298	6.1	2.68	230	4	2.29	197	3.1	1.90	163	2.3	2.17	373	9.6	1.79	308	6.9
	4	3.09	266	5	2.40	206	3.3	2.05	176	2.5	1.70	146	1.9	1.94	334	7.9	1.60	275	5.7
	3	2.85	245	4.3	2.21	190	2.9	1.89	163	2.2	1.57	135	1.6	1.79	308	6.8	1.47	253	4.9
	2	2.38	205	3.1	1.85	159	2.1	1.58	136	1.6	1.31	113	1.2	1.49	256	5	1.23	212	3.6
	1	1.94	167	2.2	1.50	129	1.4	1.29	111	1.1	1.07	92	0.8	1.22	210	3.5	1.00	172	2.5
26	6	6.99	601	11.7	5.43	467	7.7	4.65	400	6	3.87	333	4.4	4.38	753	18.4	3.61	621	13.3
	5	6.07	522	9.1	4.72	406	6	4.05	348	4.7	3.37	290	3.5	3.81	655	14.4	3.14	540	10.4
	4	5.04	433	6.6	3.92	337	4.4	3.36	289	3.4	2.81	242	2.5	3.16	544	10.4	2.61	449	7.5
	3	4.15	357	4.7	3.23	278	3.1	2.78	239	2.4	2.32	200	1.8	2.61	449	7.4	2.15	370	5.4
	2	3.36	289	3.2	2.62	225	2.1	2.25	194	1.7	1.88	162	1.2	2.11	363	5.1	1.74	299	3.7
	1	2.82	243	2.4	2.20	189	1.6	1.89	163	1.2	1.58	136	0.9	1.77	304	3.7	1.46	251	2.7
36	6	8.62	741	19.7	6.71	577	13.1	5.76	495	10.1	4.80	413	7.5	5.41	931	31.1	4.46	767	22.5
	5	8.00	688	17.2	6.23	536	11.5	5.35	460	8.9	4.46	384	6.6	5.02	863	27.2	4.14	712	19.8
	4	7.08	609	13.9	5.52	475	9.2	4.73	407	7.2	3.95	340	5.3	4.44	764	21.9	3.67	631	15.9
	3	5.94	511	10.2	4.63	398	6.8	3.98	342	5.3	3.32	286	3.9	3.73	642	16.1	3.08	530	11.7
	2	4.91	422	7.3	3.83	329	4.9	3.29	283	3.8	2.75	237	2.8	3.08	530	11.5	2.55	439	8.4
	1	4.04	347	5.2	3.16	272	3.5	2.71	233	2.7	2.27	195	2	2.54	437	8.2	2.10	361	6

Pc = Total cooling capacity

Ps = Sensible capacity

Qw = Water flow

Dp(c) = Water pressure drap

Performance data heating

Table 17 - 3 row main coil

		20 °C																	
		70 / 60 °C			60 / 50 °C			55 / 45 °C			50 / 40 °C			50 / 45 °C			45 / 40 °C		
		Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)
		kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa
16	6	3.54	304	6.3	2.71	233	4.1	2.29	197	3.1	1.87	161	2.2	2.16	372	9.5	1.75	301	6.7
	5	3.29	283	5.6	2.51	216	3.6	2.12	182	2.7	1.74	150	1.9	2.01	346	8.4	1.62	279	5.9
	4	2.94	253	4.6	2.25	194	2.9	1.90	163	2.2	1.56	134	1.6	1.80	310	6.9	1.45	249	4.8
	3	2.71	233	4	2.07	178	2.5	1.76	151	1.9	1.44	124	1.4	1.66	286	6	1.34	230	4.2
	2	2.26	194	2.9	1.73	149	1.9	1.47	126	1.4	1.20	103	1	1.38	237	4.3	1.12	193	3
	1	1.84	158	2	1.41	121	1.3	1.20	103	1	0.98	84	0.7	1.12	193	3	0.91	157	2.1
26	6	6.64	571	10.7	5.10	439	6.9	4.32	372	5.3	3.55	305	3.8	4.06	698	16.1	3.29	566	11.3
	5	5.77	496	8.3	4.43	381	5.4	3.76	323	4.1	3.09	266	3	3.52	605	12.5	2.86	492	8.8
	4	4.79	412	6	3.68	316	3.9	3.13	269	3	2.57	221	2.1	2.93	504	9	2.38	409	6.4
	3	3.95	340	4.3	3.03	261	2.8	2.58	222	2.1	2.12	182	1.5	2.41	415	6.4	1.96	337	4.5
	2	3.20	275	2.9	2.46	212	1.9	2.09	180	1.5	1.72	148	1.1	1.95	335	4.4	1.59	273	3.1
	1	2.68	230	2.2	2.07	178	1.4	1.76	151	1.1	1.45	125	0.8	1.64	282	3.3	1.33	229	2.3
36	6	8.20	705	18	6.30	542	11.7	5.35	460	8.9	4.40	378	6.4	5.01	862	27.1	4.07	700	19.1
	5	7.61	654	15.8	5.85	503	10.3	4.97	427	7.8	4.09	352	5.6	4.65	800	23.8	3.77	648	16.8
	4	6.73	579	12.7	5.18	445	8.3	4.40	378	6.3	3.62	311	4.6	4.11	707	19.2	3.34	574	13.5
	3	5.65	486	9.4	4.35	374	6.1	3.70	318	4.6	3.04	261	3.4	3.45	593	14.1	2.80	482	9.9
	2	4.67	402	6.7	3.60	310	4.4	3.06	263	3.3	2.52	217	2.4	2.85	490	10.1	2.32	399	7.1
	1	3.85	331	4.8	2.96	255	3.1	2.52	217	2.4	2.08	179	1.7	2.35	404	7.2	1.91	329	5.1

Table 18 - 3 row main coil

		22 °C																	
		70 / 60 °C			60 / 50 °C			55 / 45 °C			50 / 40 °C			50 / 45 °C			45 / 40 °C		
		Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)
		kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa
16	6	3.36	289	5.8	2.53	218	3.6	2.11	181	2.7	1.70	146	1.8	1.99	342	8.2	1.58	272	5.6
	5	3.12	268	5.1	2.35	202	3.2	1.96	169	2.3	1.58	136	1.6	1.85	318	7.2	1.47	253	4.9
	4	2.79	240	4.2	2.10	181	2.6	1.76	151	1.9	1.41	121	1.3	1.65	284	5.9	1.31	225	4
	3	2.57	221	3.6	1.94	167	2.3	1.62	139	1.7	1.30	112	1.2	1.52	261	5.1	1.21	208	3.5
	2	2.15	185	2.6	1.62	139	1.6	1.36	117	1.2	1.09	94	0.9	1.27	218	3.7	1.01	174	2.5
	1	1.75	151	1.8	1.32	114	1.1	1.11	95	0.9	0.89	77	0.6	1.03	177	2.6	0.82	141	1.8
26	6	6.31	543	9.8	4.77	410	6.1	4.00	344	4.6	3.23	278	3.2	3.73	642	13.9	2.97	511	9.5
	5	5.47	470	7.6	4.14	356	4.8	3.48	299	3.6	2.81	242	2.5	3.24	557	10.8	2.58	444	7.4
	4	4.55	391	5.5	3.44	296	3.5	2.89	249	2.6	2.34	201	1.8	2.69	463	7.8	2.15	370	5.3
	3	3.74	322	3.9	2.84	244	2.5	2.39	206	1.8	1.93	166	1.3	2.22	382	5.6	1.77	304	3.8
	2	3.03	261	2.7	2.30	198	1.7	1.94	167	1.3	1.57	135	0.9	1.80	310	3.8	1.43	246	2.6
	1	2.54	218	2	1.93	166	1.3	1.63	140	0.9	1.32	114	0.7	1.51	260	2.8	1.20	206	1.9
36	6	7.79	670	16.5	5.90	507	10.4	4.95	426	7.8	4.01	345	5.4	4.61	793	23.4	3.68	633	16
	5	7.22	621	14.4	5.47	470	9.1	4.60	396	6.8	3.72	320	4.8	4.28	736	20.5	3.41	587	14
	4	6.39	550	11.6	4.84	416	7.4	4.07	350	5.5	3.30	284	3.9	3.79	652	16.6	3.02	519	11.3
	3	5.36	461	8.5	4.07	350	5.4	3.42	294	4.1	2.77	238	2.8	3.18	547	12.2	2.53	435	8.3
	2	4.43	381	6.1	3.36	289	3.9	2.83	243	2.9	2.29	197	2	2.63	452	8.7	2.10	361	6
	1	3.65	314	4.3	2.77	238	2.8	2.33	200	2.1	1.89	163	1.5	2.16	372	6.2	1.73	298	4.2

Pc = Total cooling capacity
Ps = Sensible capacity
Qw = Water flow
Dp(c) = Water pressure drop

Performance data heating

Table 19 - 4 row main coil

		18 °C																	
		70 / 60 °C			60 / 50 °C			55 / 45 °C			50 / 40 °C			50 / 45 °C			45 / 40 °C		
		Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)
		kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa
16	6	4.00	344	12.8	3.11	267	8.5	2.66	229	6.6	2.22	191	4.9	2.51	432	20.3	2.07	356	14.7
	5	3.70	318	11.2	2.88	248	7.4	2.46	212	5.7	2.05	176	4.2	2.32	399	17.6	1.91	329	12.8
	4	3.31	285	9.2	2.57	221	6.1	2.21	190	4.7	1.84	158	3.5	2.08	358	14.5	1.71	294	10.5
	3	3.04	261	7.9	2.37	204	5.3	2.03	175	4.1	1.69	145	3	1.91	329	12.5	1.57	270	9.1
	2	2.50	215	5.6	1.95	168	3.7	1.67	144	2.9	1.39	120	2.1	1.57	270	8.8	1.29	222	6.4
	1	2.02	174	3.8	1.57	135	2.6	1.35	116	2	1.13	97	1.5	1.27	218	6.1	1.05	181	4.4
26	6	7.85	675	19.8	6.13	527	13.2	5.27	453	10.3	4.40	378	7.6	4.93	848	31.3	4.07	700	22.8
	5	6.70	576	15	5.24	451	10	4.50	387	7.8	3.77	324	5.8	4.21	724	23.7	3.48	599	17.3
	4	5.49	472	10.6	4.30	370	7.1	3.70	318	5.5	3.09	266	4.1	3.45	593	16.7	2.85	490	12.2
	3	4.47	384	7.4	3.50	301	4.9	3.01	259	3.8	2.52	217	2.9	2.81	483	11.6	2.32	399	8.5
	2	3.57	307	5	2.80	241	3.3	2.41	207	2.6	2.02	174	1.9	2.25	387	7.9	1.86	320	5.7
	1	2.97	255	3.6	2.33	200	2.4	2.00	172	1.9	1.68	144	1.4	1.87	322	5.7	1.55	267	4.1
36	6	9.17	789	15.2	7.15	615	10.1	6.14	528	7.9	5.12	440	5.8	5.75	989	24	4.75	817	17.4
	5	8.41	723	13.1	6.56	564	8.7	5.63	484	6.8	4.70	404	5	5.28	908	20.6	4.36	750	15
	4	7.40	636	10.4	5.77	496	7	4.96	427	5.4	4.14	356	4	4.64	798	16.5	3.84	660	12
	3	6.17	531	7.6	4.82	415	5.1	4.14	356	3.9	3.46	298	2.9	3.88	667	12	3.20	550	8.7
	2	5.08	437	5.4	3.97	341	3.6	3.41	293	2.8	2.85	245	2.1	3.19	549	8.5	2.64	454	6.2
	1	4.16	358	3.8	3.26	280	2.5	2.80	241	2	2.34	201	1.5	2.61	449	6	2.16	372	4.4

Table 20 - 4 row main coil

		20 °C																	
		70 / 60 °C			60 / 50 °C			55 / 45 °C			50 / 40 °C			50 / 45 °C			45 / 40 °C		
		Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)
		kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa
16	6	3.80	327	11.7	2.92	251	7.6	2.47	212	5.8	2.03	175	4.2	2.32	399	17.7	1.88	323	12.4
	5	3.52	303	10.2	2.70	232	6.6	2.29	197	5	1.88	162	3.6	2.15	370	15.4	1.74	299	10.8
	4	3.14	270	8.4	2.42	208	5.5	2.05	176	4.2	1.69	145	3	1.92	330	12.7	1.56	268	8.9
	3	2.89	249	7.2	2.22	191	4.7	1.89	163	3.6	1.55	133	2.6	1.77	304	10.9	1.43	246	7.7
	2	2.37	204	5.1	1.83	157	3.3	1.55	133	2.5	1.28	110	1.8	1.45	249	7.7	1.18	203	5.4
	1	1.92	165	3.5	1.48	127	2.3	1.26	108	1.8	1.03	89	1.3	1.17	201	5.3	0.95	163	3.7
26	6	7.46	642	18.2	5.75	495	11.8	4.90	421	9.1	4.04	347	6.6	4.56	784	27.3	3.71	638	19.4
	5	6.37	548	13.8	4.92	423	9	4.19	360	6.9	3.46	298	5	3.90	671	20.7	3.17	545	14.7
	4	5.22	449	9.7	4.03	347	6.3	3.44	296	4.9	2.84	244	3.5	3.19	549	14.6	2.60	447	10.4
	3	4.25	366	6.7	3.28	282	4.4	2.80	241	3.4	2.31	199	2.5	2.60	447	10.1	2.12	365	7.2
	2	3.40	292	4.5	2.63	226	3	2.24	193	2.3	1.85	159	1.7	2.08	358	6.9	1.69	291	4.9
	1	2.82	243	3.3	2.18	187	2.2	1.86	160	1.7	1.54	132	1.2	1.73	298	4.9	1.41	243	3.5
36	6	8.72	750	13.9	6.71	577	9.1	5.70	490	6.9	4.70	404	5	5.33	917	20.9	4.33	745	14.8
	5	8.00	688	12	6.16	530	7.8	5.24	451	5.9	4.31	371	4.3	4.89	841	18	3.97	683	12.7
	4	7.04	605	9.6	5.42	466	6.2	4.61	396	4.8	3.80	327	3.4	4.30	740	14.4	3.40	585	10.2
	3	5.87	505	6.9	4.52	389	4.5	3.85	331	3.5	3.18	273	2.5	3.59	617	10.4	2.92	502	7.4
	2	4.83	415	4.9	3.72	320	3.2	3.17	273	2.5	2.62	225	1.8	2.95	507	7.4	2.40	413	5.3
	1	3.96	341	3.5	3.06	263	2.3	2.60	224	1.7	2.15	185	1.3	2.42	416	5.2	1.97	339	3.7

Pc = Total cooling capacity
 Ps = Sensible capacity
 Qw = Water flow
 Dp(c) = Water pressure drop

Performance data heating

Table 21 - 4 row main coil

		22 °C																	
		70 / 60 °C			60 / 50 °C			55 / 45 °C			50 / 40 °C			50 / 45 °C			45 / 40 °C		
		Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)
		kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa
16	6	3.61	310	10.7	2.73	235	6.8	2.29	197	5	1.85	159	3.5	2.14	368	15.3	1.70	292	10.4
	5	3.34	287	9.3	2.52	217	5.9	2.12	182	4.4	1.71	147	3.1	1.98	341	13.3	1.57	270	9.1
	4	2.98	256	7.7	2.26	194	4.8	1.90	163	3.6	1.53	132	2.5	1.77	304	10.9	1.41	243	7.5
	3	2.74	236	6.6	2.08	179	4.2	1.74	150	3.1	1.41	121	2.2	1.62	279	9.4	1.29	222	6.4
	2	2.25	194	4.7	1.71	147	3	1.43	123	2.2	1.16	100	1.6	1.33	229	6.7	1.06	182	4.6
	1	1.82	157	3.2	1.38	119	2	1.16	100	1.5	0.94	81	1.1	1.08	186	4.6	0.86	148	3.1
26	6	7.08	609	16.6	5.38	463	10.5	4.53	390	7.9	3.67	316	5.6	4.20	722	23.6	3.35	576	16.2
	5	6.05	520	12.5	4.60	396	8	3.87	333	6	3.15	271	4.2	3.59	617	17.9	2.87	494	12.3
	4	4.96	427	8.8	3.77	324	5.6	3.18	273	4.2	2.58	222	3	2.94	506	12.6	2.35	404	8.7
	3	4.03	347	6.1	3.07	264	3.9	2.59	223	3	2.11	181	2.1	2.39	411	8.8	1.91	329	6
	2	3.22	277	4.1	2.46	212	2.7	2.07	178	2	1.69	145	1.4	1.91	329	5.9	1.53	263	4.1
	1	2.68	230	3	2.04	175	1.9	1.72	148	1.4	1.40	120	1	1.59	273	4.3	1.27	218	2.9
36	6	8.28	712	12.7	6.28	540	8.1	5.28	454	6	4.27	367	4.2	4.90	843	18.1	3.91	673	12.4
	5	7.59	653	10.9	5.76	495	6.9	4.84	416	5.2	3.92	337	3.6	4.50	774	15.6	3.59	617	10.6
	4	6.68	574	8.7	5.07	436	5.5	4.26	366	4.1	3.46	298	2.9	3.96	681	12.4	3.16	544	8.5
	3	5.57	479	6.3	4.23	364	4	3.56	306	3	2.89	249	2.1	3.30	568	9	2.64	454	6.2
	2	4.58	394	4.5	3.48	299	2.9	2.93	252	2.1	2.38	205	1.5	2.72	468	6.4	2.17	373	4.4
	1	3.76	323	3.2	2.86	246	2	2.41	207	1.5	1.96	169	1.1	2.23	384	4.5	1.78	306	3.1

Table 22 - 1 row additional heating coil

		18 °C																	
		80 / 70 °C			75 / 65 °C			70 / 60 °C			65 / 55 °C			60 / 50 °C			55 / 45 °C		
		Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)
		kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa
16	6	2.03	175	6.2	1.84	158	5.3	1.64	141	4.4	1.44	124	3.5	1.25	108	2.8	1.05	90	2.1
	5	1.91	164	5.6	1.73	149	4.7	1.54	132	3.9	1.36	117	3.2	1.17	101	2.5	0.99	85	1.9
	4	1.75	151	4.7	1.58	136	4	1.41	121	3.3	1.24	107	2.7	1.07	92	2.1	0.90	77	1.6
	3	1.64	141	4.2	1.48	127	3.6	1.32	114	3	1.16	100	2.4	1.00	86	1.9	0.85	73	1.4
	2	1.41	121	3.2	1.27	109	2.8	1.14	98	2.3	1.00	86	1.9	0.87	75	1.5	0.73	63	1.1
	1	1.20	103	2.4	1.08	93	2.1	0.97	83	1.7	0.85	73	1.4	0.74	64	1.1	0.62	53	0.8
26	6	4.01	345	5	3.62	311	4.3	3.23	278	3.6	2.85	245	2.9	2.46	212	2.3	2.08	179	1.7
	5	3.55	305	4.1	3.21	276	3.5	2.87	247	2.9	2.53	218	2.3	2.19	188	1.8	1.85	159	1.4
	4	3.06	263	3.1	2.77	238	2.7	2.48	213	2.2	2.18	187	1.8	1.89	163	1.4	1.60	138	1.1
	3	2.63	226	2.4	2.38	205	2	2.13	183	1.7	1.88	162	1.4	1.63	140	1.1	1.38	119	0.8
	2	2.23	192	1.8	2.02	174	1.5	1.80	155	1.3	1.59	137	1	1.38	119	0.8	1.17	101	0.6
	1	1.94	167	1.4	1.75	151	1.2	1.57	135	1	1.39	120	0.8	1.20	103	0.6	1.02	88	0.5
36	6	5.05	434	8.9	4.57	393	7.5	4.09	352	6.3	3.61	310	5.1	3.13	269	4.1	2.66	229	3.1
	5	4.72	406	7.9	4.27	367	6.7	3.82	329	5.6	3.38	291	4.6	2.93	252	3.6	2.49	214	2.8
	4	4.28	368	6.6	3.87	333	5.6	3.47	298	4.7	3.06	263	3.8	2.66	229	3	2.26	194	2.3
	3	3.72	320	5.2	3.37	290	4.4	3.02	260	3.7	2.67	230	3	2.32	200	2.4	1.97	169	1.8
	2	3.20	275	4	2.90	249	3.4	2.60	224	2.8	2.30	198	2.3	2.00	172	1.8	1.69	145	1.4
	1	2.75	237	3	2.49	214	2.6	2.23	192	2.2	1.97	169	1.8	1.71	147	1.4	1.46	126	1.1

Pc = Total cooling capacity
 Ps = Sensible capacity
 Qw = Water flow
 Dp(c) = Water pressure drop

Performance data heating

Table 23 - 1 row additional heating coil

		20 °C																	
		80 / 70 °C			75 / 65 °C			70 / 60 °C			65 / 55 °C			60 / 50 °C			55 / 45 °C		
		Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)
		kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa
16+1	6	1.95	168	5.8	1.75	151	4.9	1.56	134	4	1.36	117	3.2	1.17	101	2.5	0.97	83	1.8
	5	1.83	157	5.2	1.65	142	4.4	1.47	126	3.6	1.28	110	2.9	1.10	95	2.2	0.92	79	1.6
	4	1.67	144	4.4	1.51	130	3.7	1.34	115	3.1	1.17	101	2.5	1.00	86	1.9	0.84	72	1.4
	3	1.57	135	3.9	1.41	121	3.3	1.25	108	2.7	1.10	95	2.2	0.94	81	1.7	0.78	67	1.3
	2	1.35	116	3	1.22	105	2.5	1.08	93	2.1	0.95	82	1.7	0.81	70	1.3	0.68	58	1
	1	1.15	99	2.3	1.03	89	1.9	0.92	79	1.6	0.81	70	1.3	0.69	59	1	0.58	50	0.7
26+1	6	3.84	330	4.7	3.46	298	3.9	3.07	264	3.2	2.37	204	1	2.31	199	2	1.93	166	1.5
	5	3.41	293	3.8	3.07	264	3.2	2.73	235	2.6	2.10	181	0.8	2.05	176	1.6	1.71	147	1.2
	4	2.94	253	2.9	2.65	228	2.5	2.35	202	2	1.82	157	0.6	1.77	152	1.3	1.48	127	0.9
	3	2.52	217	2.2	2.27	195	1.9	2.02	174	1.6	1.57	135	0.5	1.52	131	1	1.27	109	0.7
	2	2.14	184	1.7	1.93	166	1.4	1.71	147	1.2	1.33	114	0.4	1.29	111	0.7	1.08	93	0.5
	1	1.86	160	1.3	1.68	144	1.1	1.49	128	0.9	1.16	100	0.3	1.13	97	0.6	0.94	81	0.4
36+1	6	4.84	416	8.2	4.36	375	7	3.89	335	5.8	3.41	293	4.7	2.94	253	3.6	2.46	212	2.7
	5	4.53	390	7.3	4.08	351	6.2	3.64	313	5.1	3.19	274	4.1	2.75	237	3.2	2.31	199	2.4
	4	4.10	353	6.2	3.70	318	5.2	3.30	284	4.3	2.89	249	3.5	2.49	214	2.7	2.09	180	2
	3	3.57	307	4.8	3.22	277	4.1	2.87	247	3.4	2.52	217	2.7	2.17	187	2.1	1.82	157	1.6
	2	3.07	264	3.7	2.77	238	3.1	2.47	212	2.6	2.17	187	2.1	1.87	161	1.6	1.57	135	1.2
	1	2.64	227	2.8	2.38	205	2.4	2.12	182	2	1.86	160	1.6	1.61	138	1.3	1.35	116	0.9

Table 24 - 1 row additional heating coil

		22 °C																	
		80 / 70 °C			75 / 65 °C			70 / 60 °C			65 / 55 °C			60 / 50 °C			55 / 45 °C		
		Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)
		kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa
16+1	6	1.87	161	5.3	1.67	144	4.5	1.48	127	3.6	1.28	110	2.9	1.09	94	2.2	0.89	77	1.6
	5	1.76	151	4.8	1.57	135	4	1.39	120	3.3	1.21	104	2.6	1.02	88	2	0.84	72	1.4
	4	1.60	138	4.1	1.44	124	3.4	1.27	109	2.8	1.10	95	2.2	0.94	81	1.7	0.77	66	1.2
	3	1.50	129	3.6	1.35	116	3	1.19	102	2.5	1.03	89	2	0.88	76	1.5	0.72	62	1.1
	2	1.29	111	2.8	1.16	100	2.3	1.02	88	1.9	0.89	77	1.5	0.76	65	1.2	0.62	53	0.8
	1	1.10	95	2.1	0.99	85	1.8	0.87	75	1.4	0.76	65	1.1	0.65	56	0.9	0.53	46	0.6
26+1	6	3.68	316	4.3	3.30	284	3.6	2.92	251	3	2.53	218	2.3	2.15	185	1.8	1.77	152	1.3
	5	3.26	280	3.5	2.92	251	2.9	2.59	223	2.4	2.25	194	1.9	1.91	164	1.5	1.58	136	1.1
	4	2.82	243	2.7	2.52	217	2.3	2.23	192	1.9	1.94	167	1.5	1.65	142	1.1	1.36	117	0.8
	3	2.42	208	2.1	2.17	187	1.7	1.92	165	1.4	1.67	144	1.1	1.42	122	0.9	1.17	101	0.6
	2	2.05	176	1.5	1.84	158	1.3	1.63	140	1.1	1.42	122	0.8	1.21	104	0.6	1.00	86	0.5
	1	1.78	153	1.2	1.60	138	1	1.42	122	0.8	1.23	106	0.7	1.05	90	0.5	0.87	75	0.4
36+1	6	4.64	399	7.6	4.16	358	6.4	3.69	317	5.3	3.22	277	4.2	2.74	236	3.2	2.27	195	2.4
	5	4.34	373	6.8	3.90	335	5.7	3.45	297	4.7	3.01	259	3.7	2.57	221	2.9	2.13	183	2.1
	4	3.93	338	5.7	3.53	304	4.8	3.13	269	3.9	2.73	235	3.1	2.33	200	2.4	1.93	166	1.8
	3	3.42	294	4.5	3.07	264	3.8	2.72	234	3.1	2.38	205	2.5	2.03	175	1.9	1.68	144	1.4
	2	2.94	253	3.4	2.64	227	2.9	2.34	201	2.4	2.05	176	1.9	1.75	151	1.5	1.45	125	1.1
	1	2.53	218	2.6	2.27	195	2.2	2.01	173	1.8	1.76	151	1.4	1.50	129	1.1	1.25	108	0.8

Pc = Total cooling capacity
 Ps = Sensible capacity
 Qw = Water flow
 Dp(c) = Water pressure drop

Performance data heating

Table 25 - 2 row additional heating coil

		18 °C																				
		65 / 55 °C			60 / 50 °C			55 / 45 °C			50 / 40 °C			50 / 45 °C			45 / 40 °C			45 / 35 °C		
		Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)
		kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa
16+2	6	2.51	216	17.1	2.19	188	13.6	1.87	161	10.4	1.54	132	7.6	1.78	306	32.9	1.46	251	23.7	1.22	105	5.1
	5	2.36	203	15.2	2.05	176	12.1	1.75	151	9.3	1.44	124	6.8	1.67	287	29.3	1.37	236	21.1	1.14	98	4.6
	4	2.14	184	12.8	1.86	160	10.2	1.59	137	7.8	1.31	113	5.7	1.51	260	24.7	1.24	213	17.7	1.04	89	3.8
	3	1.99	171	11.3	1.73	149	9	1.48	127	6.9	1.22	105	5	1.41	243	21.8	1.16	200	15.7	0.97	83	3.4
	2	1.69	145	8.5	1.47	126	6.8	1.25	108	5.2	1.04	89	3.8	1.20	206	16.3	0.98	169	11.7	0.82	71	2.6
	1	1.42	122	6.3	1.24	107	5	1.06	91	3.9	0.88	76	2.8	1.01	174	12.1	0.83	143	8.7	0.70	60	1.9
26+2	6	4.92	423	14	4.29	369	11.2	3.66	315	8.6	3.04	261	6.3	3.49	600	27	2.86	492	19.4	2.41	207	4.3
	5	4.32	372	11.1	3.77	324	8.9	3.22	277	6.8	2.66	229	5	3.06	526	21.4	2.51	432	15.4	2.11	181	3.4
	4	3.66	315	8.4	3.20	275	6.7	2.73	235	5.1	2.27	195	3.8	2.59	445	16	2.13	366	11.6	1.80	155	2.6
	3	3.12	268	6.3	2.72	234	5	2.33	200	3.9	1.93	166	2.8	2.20	378	12	1.81	311	8.7	1.53	132	1.9
	2	2.57	221	4.5	2.25	194	3.6	1.92	165	2.8	1.60	138	2	1.82	313	8.6	1.50	258	6.2	1.27	109	1.4
	1	2.19	188	3.4	1.91	164	2.7	1.64	141	2.1	1.36	117	1.5	1.55	267	6.5	1.27	218	4.7	1.08	93	1
36+2	6	6.16	530	24.8	5.38	463	19.8	4.60	396	15.3	3.82	329	11.2	4.36	750	47.5	3.59	617	34.3	3.04	261	7.7
	5	5.73	493	21.8	5.01	431	17.4	4.28	368	13.5	3.56	306	9.9	4.05	697	41.7	3.33	573	30.1	2.83	243	6.7
	4	5.14	442	18	4.49	386	14.4	3.84	330	11.1	3.19	274	8.2	3.63	624	34.4	2.99	514	24.9	2.54	218	5.6
	3	4.45	383	13.9	3.89	335	11.2	3.33	286	8.6	2.77	238	6.4	3.14	540	26.7	2.59	445	19.3	2.21	190	4.3
	2	3.74	322	10.3	3.27	281	8.2	2.80	241	6.4	2.33	200	4.7	2.64	454	19.7	2.18	375	14.2	1.86	160	3.2
	1	3.13	269	7.5	2.74	236	6	2.35	202	4.7	1.95	168	3.4	2.21	380	14.4	1.82	313	10.4	1.56	134	2.4

Table 26 - 2 row additional heating coil

		20 °C																				
		65 / 55 °C			60 / 50 °C			55 / 45 °C			50 / 40 °C			50 / 45 °C			45 / 40 °C			45 / 35 °C		
		Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)
		kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa
16+2	6	2.38	205	15.5	2.05	176	12.2	1.73	149	9.2	1.41	121	6.5	1.65	284	28.7	1.33	229	20	1.09	94	4.2
	5	2.23	192	13.8	1.92	165	10.8	1.62	139	8.2	1.32	114	5.8	1.55	267	25.6	1.25	215	17.8	1.02	88	3.7
	4	2.02	174	11.6	1.75	151	9.1	1.47	126	6.9	1.20	103	4.9	1.40	241	21.5	1.13	194	15	0.92	79	3.1
	3	1.88	162	10.3	1.63	140	8.1	1.37	118	6.1	1.12	96	4.3	1.30	224	19	1.05	181	13.3	0.86	74	2.8
	2	1.60	138	7.7	1.38	119	6	1.16	100	4.6	0.95	82	3.2	1.11	191	14.2	0.89	153	9.9	0.73	63	2.1
	1	1.35	116	5.7	1.16	100	4.5	0.98	84	3.4	0.80	69	2.4	0.93	160	10.5	0.75	129	7.4	0.62	53	1.6
26+2	6	4.66	401	12.7	4.03	347	10	3.40	292	7.6	2.78	239	5.4	3.23	556	23.5	2.61	449	16.5	2.15	185	3.5
	5	4.08	351	10.1	3.53	304	8	2.99	257	6	2.44	210	4.3	2.83	487	18.7	2.29	394	13.1	1.89	163	2.8
	4	3.47	298	7.6	3.00	258	6	2.54	218	4.5	2.09	180	3.3	2.40	413	14	1.96	337	10	1.62	139	2.1
	3	2.95	254	5.7	2.55	219	4.5	2.16	186	3.4	1.77	152	2.4	2.04	351	10.5	1.65	284	7.4	1.37	118	1.6
	2	2.43	209	4.1	2.11	181	3.2	1.78	153	2.4	1.46	126	1.7	1.68	289	7.5	1.36	234	5.3	1.14	98	1.1
	1	2.07	178	3.1	1.79	154	2.4	1.52	131	1.8	1.25	108	1.3	1.43	246	5.6	1.16	200	4	0.97	83	0.9
36+2	6	5.83	501	22.5	5.06	435	17.8	4.28	368	13.5	3.50	301	9.6	4.04	695	41.5	3.27	562	29.1	2.73	235	6.3
	5	5.42	466	19.8	4.70	404	15.6	3.98	342	11.8	3.26	280	8.5	3.75	645	36.4	3.04	523	25.6	2.54	218	5.6
	4	4.86	418	16.3	4.22	363	12.9	3.57	307	9.8	2.92	251	7	3.36	578	30.1	2.72	468	21.1	2.28	196	4.6
	3	4.20	361	12.6	3.65	314	10	3.09	266	7.6	2.53	218	5.4	2.91	501	23.3	2.36	406	16.4	1.98	170	3.6
	2	3.54	304	9.3	3.07	264	7.4	2.60	224	5.6	2.14	184	4	2.45	421	17.2	1.98	341	12.1	1.67	144	2.7
	1	2.96	255	6.8	2.57	221	5.4	2.18	187	4.1	1.79	154	3	2.05	353	12.5	1.66	286	8.8	1.40	120	1.9

Pc = Total cooling capacity
 Ps = Sensible capacity
 Qw = Water flow
 Dp(c) = Water pressure drop

Performance data heating

Table 27 - 2 row additional heating coil

		22 °C																				
		65 / 55 °C			60 / 50 °C			55 / 45 °C			50 / 40 °C			50 / 45 °C			45 / 40 °C			45 / 35 °C		
		Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)	Ph	Qw	Dp(c)
		kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa	kW	l/h	Kpa
16+2	6	2.24	193	14	1.92	165	10.8	1.60	138	8	1.28	110	5.5	1.52	261	24.8	1.20	206	16.7	0.95	82	3.3
	5	2.10	181	12.5	1.80	155	9.6	1.50	129	7.1	1.20	103	4.9	1.42	244	22.1	1.12	193	14.9	0.90	77	3
	4	1.90	163	10.5	1.63	140	8.1	1.36	117	6	1.09	94	4.1	1.29	222	18.6	1.02	175	12.5	0.81	70	2.5
	3	1.77	152	9.2	1.52	131	7.2	1.27	109	5.3	1.01	87	3.6	1.20	206	16.4	0.95	163	11.1	0.76	65	2.2
	2	1.50	129	6.9	1.29	111	5.4	1.08	93	4	0.86	74	2.7	1.02	175	12.3	0.81	139	8.3	0.65	56	1.7
	1	1.27	109	5.1	1.09	94	4	0.91	78	2.9	0.73	63	2	0.86	148	9.1	0.68	117	6.1	0.55	47	1.3
26+2	6	4.39	378	11.5	3.77	324	8.9	3.14	270	6.6	2.52	217	4.5	2.97	511	20.3	2.35	404	13.7	1.90	163	2.8
	5	3.85	331	9.1	3.30	284	7.1	2.76	237	5.2	2.21	190	3.6	2.60	447	16.1	2.06	354	10.9	1.67	144	2.2
	4	3.27	281	6.8	2.81	242	5.3	2.37	204	4	1.90	163	2.8	2.23	384	12.3	1.77	304	8.3	1.43	123	1.7
	3	2.78	239	5.1	2.39	206	4	2.00	172	3	1.60	138	2.1	1.88	323	9.1	1.49	256	6.1	1.21	104	1.3
	2	2.29	197	3.7	1.97	169	2.8	1.65	142	2.1	1.33	114	1.5	1.55	267	6.5	1.23	212	4.4	1.00	86	0.9
	1	1.95	168	2.8	1.68	144	2.1	1.40	120	1.6	1.13	97	1.1	1.32	227	4.9	1.05	181	3.3	0.86	74	0.7
36+2	6	5.50	473	20.3	4.73	407	15.8	3.96	341	11.7	3.18	273	8.1	3.72	640	35.8	2.95	507	24.3	2.41	207	5.1
	5	5.11	439	17.8	4.40	378	13.9	3.68	316	10.3	2.96	255	7.2	3.45	593	31.5	2.74	471	21.4	2.24	193	4.5
	4	4.59	395	14.7	3.94	339	11.5	3.30	284	8.5	2.66	229	5.9	3.10	533	26	2.46	423	17.7	2.01	173	3.7
	3	3.97	341	11.4	3.41	293	8.9	2.86	246	6.6	2.30	198	4.6	2.68	461	20.1	2.13	366	13.7	1.75	151	2.9
	2	3.34	287	8.4	2.87	247	6.6	2.41	207	4.9	1.94	167	3.4	2.25	387	14.8	1.79	308	10.1	1.47	126	2.1
	1	2.79	240	6.1	2.40	206	4.8	2.02	174	3.6	1.63	140	2.5	1.88	323	10.8	1.50	258	7.4	1.24	107	1.6

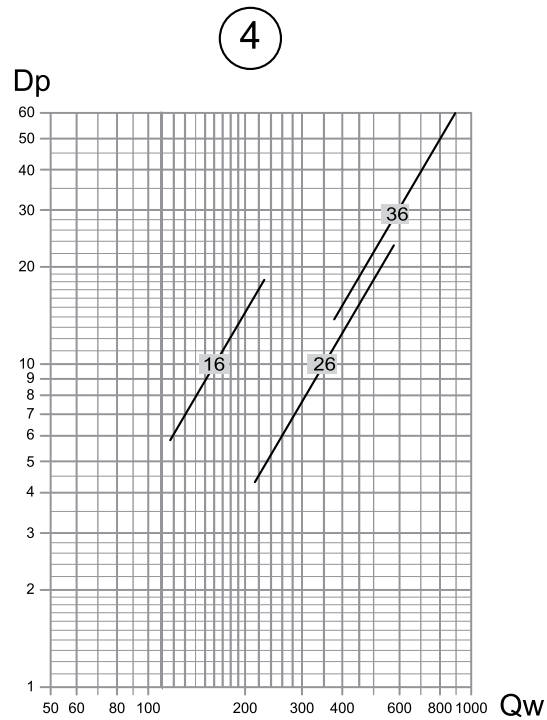
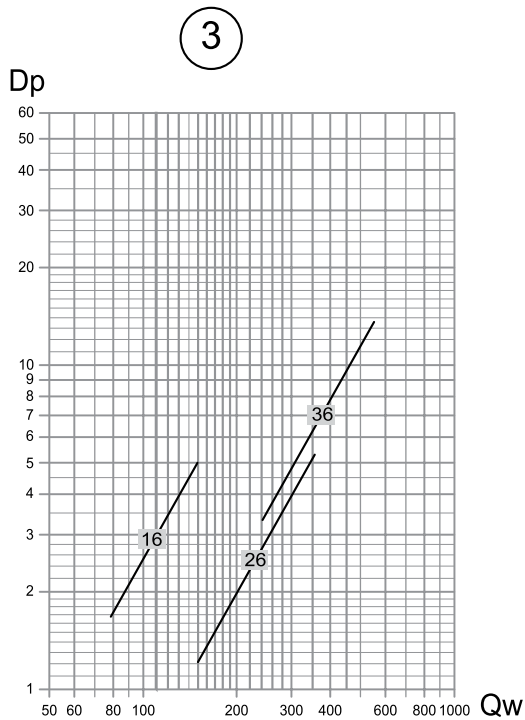
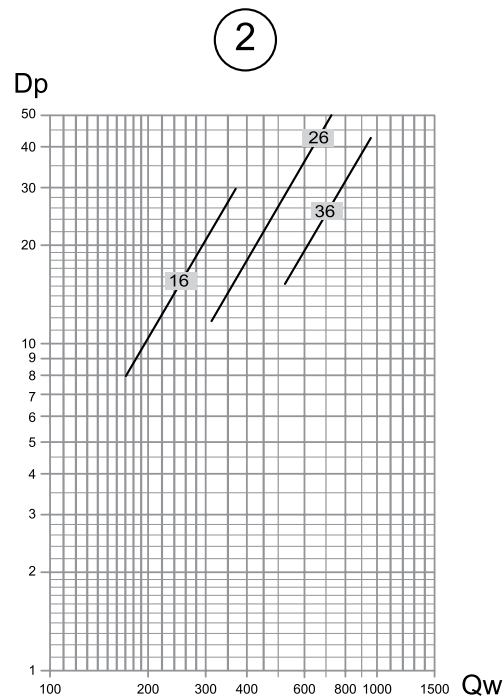
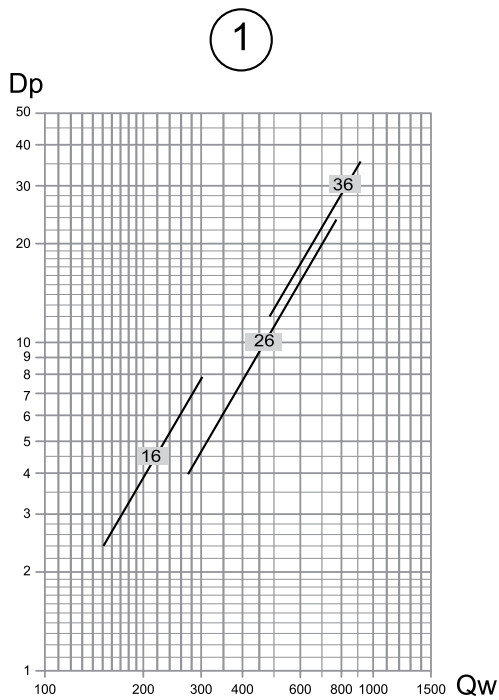
Sound levels

Table 28

		Sound Power level Frequency octave band LWA								Sound Pressure				
	Speed	m ³ /h	125	250	500	1000	2000	4000	8000	Glob	(*) Lp	(*) NC	NR	NC
16	1	105	18.3	29.1	28.2	31	24.3	18.1	15.1	35.0	26	22	22	20
	2	125	24.5	34.3	36.6	35.8	29.5	22.4	16.5	41.0	32	28	27	25
	3	150	29.1	38.8	42	40.4	35.8	28.7	19.5	46.0	37	33	31	30
	4	175	31.8	41.4	44.9	43.5	39.4	32.3	22.2	49.0	40	36	34	33
	5	195	34.7	44	47.7	46.6	43.3	36.9	26.8	52.0	43	39	38	36
	6	220	37.7	46.9	50.4	49.7	46.8	40.7	31	55.0	46	42	41	39
26	1	145	27.2	27.6	25.2	21.1	21.8	19.9	18.5	32.7	24	20	17	15
	2	170	30.3	30.1	29.5	25	23.4	20.8	19.2	35.7	27	23	18	16
	3	220	28.1	36.7	37.4	34.1	30.6	24.8	19.5	41.7	33	29	25	23
	4	250	33.3	40.9	43.6	41.3	38.5	29.2	21.6	47.7	39	35	33	31
	5	295	38.6	46.9	49.2	48.5	45.6	36.8	25.9	54.0	45	41	40	38
	6	340	41.5	48.9	52.2	51.8	49.2	41.3	29.6	57.0	48	44	43	41
36	1	185	24	31.3	30	24.1	20	15.2	18.3	34.9	26	22	17	15
	2	235	28.9	36.5	36.7	32.9	26.3	18	18.6	40.9	32	28	24	22
	3	270	32.2	40.2	41.9	39	33.1	22.8	19.2	45.8	37	33	30	28
	4	325	37.6	45.1	47.9	45.6	40.9	31.1	22.3	51.8	43	39	37	35
	5	385	40.2	47.7	50.6	48.9	45.3	36.4	26.5	54.8	46	42	40	38
	6	440	41.6	49.1	52.3	51.2	47.8	39.6	29.7	56.7	48	44	42	41

Water pressure drop

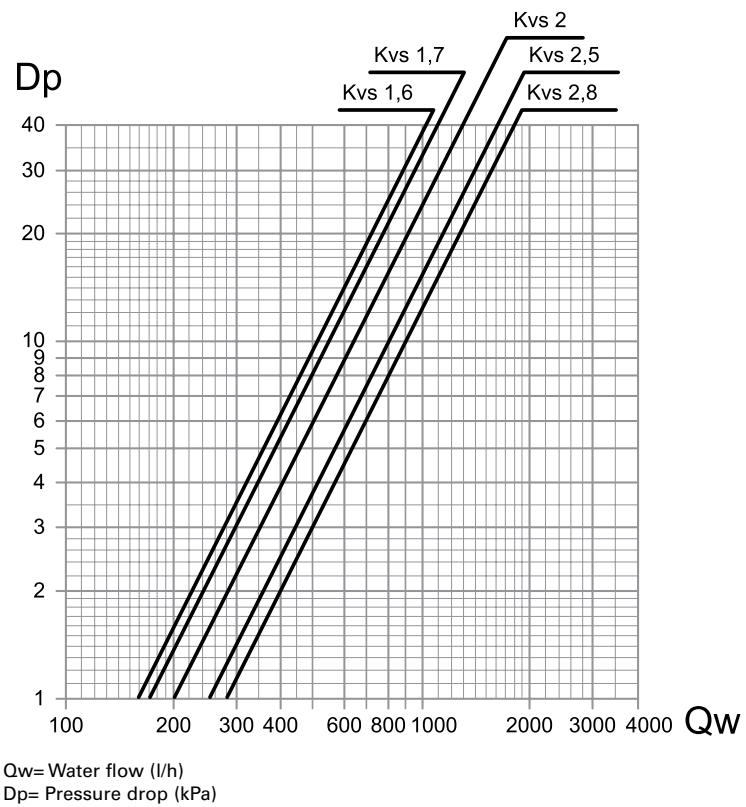
Water pressure drop - coils



- 1 = 3-row coil
- 2 = 4-row coil
- 3 = Additional row +1
- 4 = Additional row +2

Water pressure drop

Water pressure drop - valves



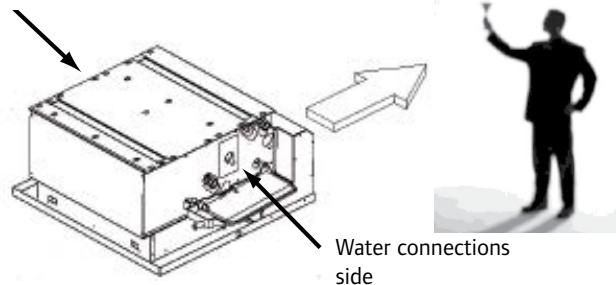
Options

Options

Access side configuration

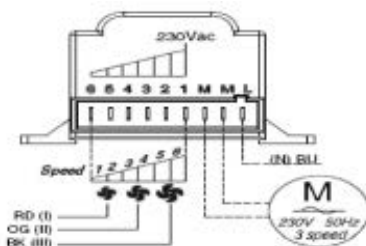
The unit can be delivered with the water valve package on the right or left hand side. The control box is always mounted on the opposite side of the water valve package. There are 2 precut circles in the sheet metal for fresh air intake, one each side of the unit. The one to be used is opposite side of the control box, same side as the water valve package.

Electrical
connections side



Raised version

These models are specifically designed for installation where gravity condensate drainage is a priority. The unit plenum height is increased by 60 mm such the drain outlet connection is 160 mm above the false ceiling structure.



Fan speed

All unit models have a 6 fan speed motor, 3 of which are connected in the factory. There are 2 possibilities for factory default speed setting (standard and "up 2-4-5"). The fan speed selection can be changed on site by moving the speed wire from the quick connect terminal strip to the ones on the motor auto-transformer. The access is completed easily through the return air access door.

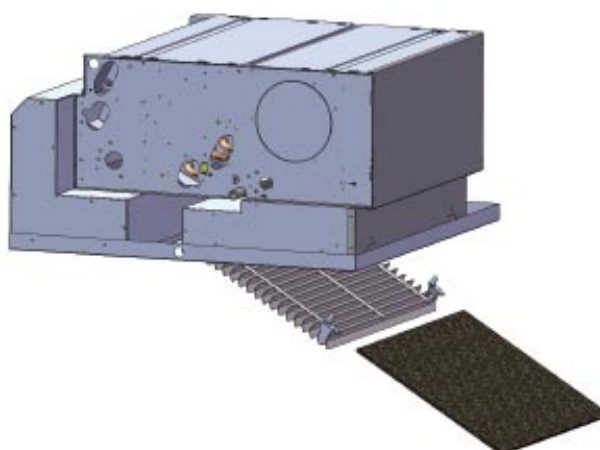
Selection table

Unit size		16						26						36					
Row	Speed	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
3	Standard 1-2-4	x	x			x		x	x		x			x		x	x		
	Up 2-4-5		x		x	x			x		x	x			x		x	x	
4	Standard 1-2-4	x	x			x		x	x		x				x		x	x	
	Up 2-4-5		x		x	x			x		x	x				x	x		x
3+1	Standard 1-2-4	x	x			x		x	x		x			x		x	x		
	Up 2-4-5		x		x	x			x		x	x			x		x	x	
4+1	Standard 1-2-4	x	x			x		x	x		x				x		x	x	
	Up 2-4-5		x		x	x			x		x	x				x	x		x
3+2	Standard 1-2-4	x	x			x		x	x		x			x		x	x		
	Up 2-4-5		x		x	x			x		x	x			x		x	x	

Options

Filter

Two options available easy removable without any tool, the standard version is classified G0 made of polypropylene honeycomb design. It is washable. A factory-mounted optional filter class EU3 made of 8 mm thick polyester media mounted on a metallic frame is also available



Water valve cooling and heating

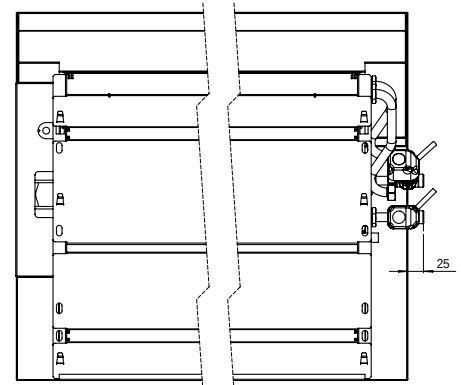
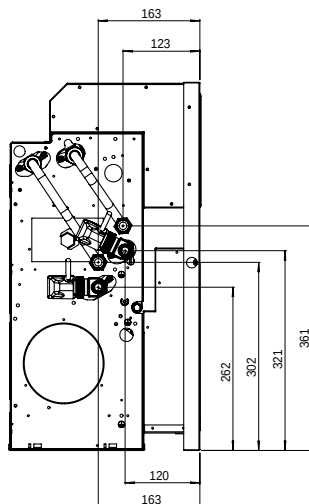
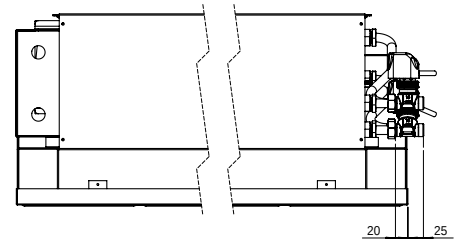
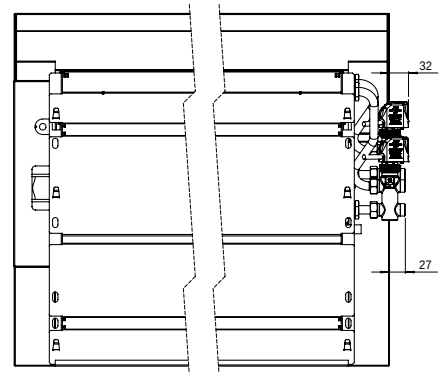
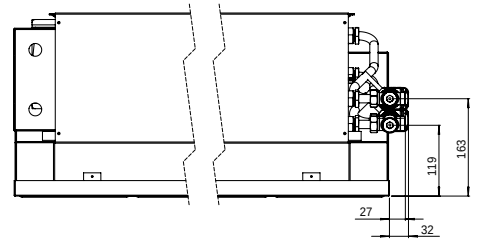
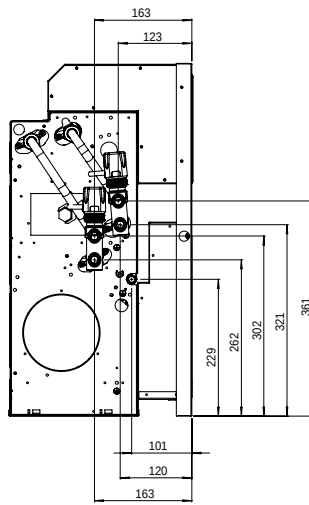
2-way and 3-way water valves for the cooling and heating coil are available factory-mounted with all control options. Water valves are delivered with thermal actuator using hot wax motor. There is also a modulating water valve actuator available with the Trane Tracer ZN controller for 2-pipe applications. When configured in cascade control it will limit in cooling mode the discharge air temperature to avoid cold air drafts for a better ambient control and improved comfort.

Water valve pressure drop data

		Valve		
	Unit size	DN	Diameter (inches)	Kvs
Cooling coil	16-26	15	1/2"	1.6
	36	20	3/4"	2.5
Heating coil	all	15	1/2"	1.6

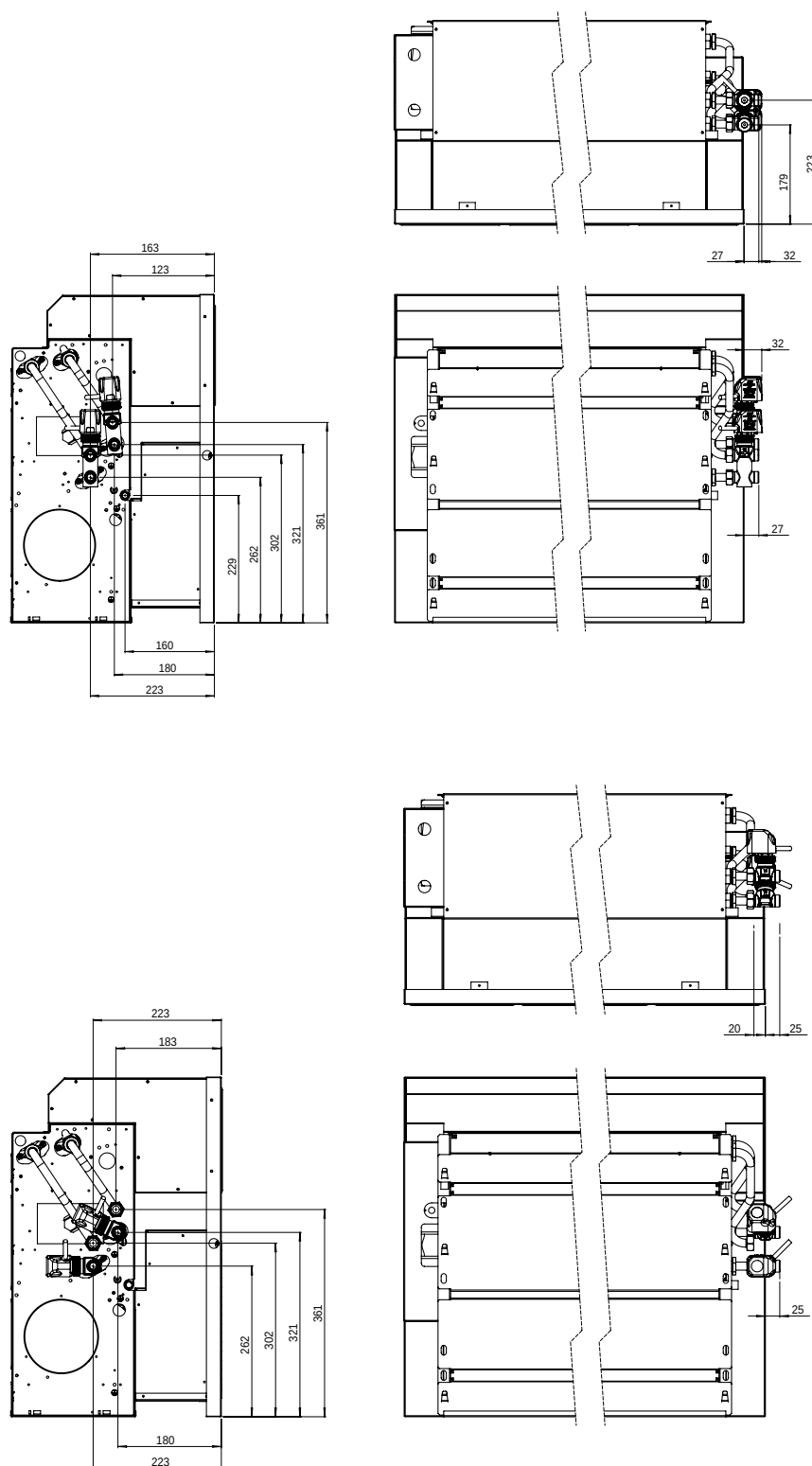
Options

Water valve location - standard height



Options

Water valve location - raised version



Options

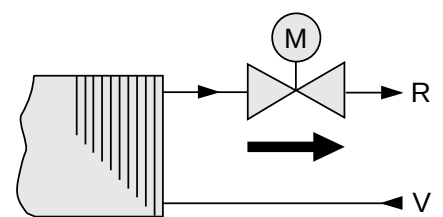
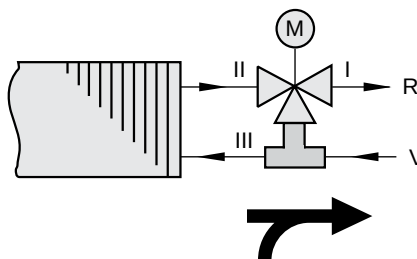
On/off valves with hot wax actuator

In order to save time on the job site, on/off 2 way and 3 way valves are available as a pre-assembled kits including pipes and connections.

3 Way / 4 ports



2 Way / 2 ports



Options

Electric heater

The electric heater is made of a sealed bar heater inserted into an aluminum louvered radiator to deliver an optimum homogeneous temperature. Models CFAS 16 and 26 have an automatic reset cut-out thermostat setting to 190°C and size 36 setting at 160°C directly fixed on the electric heater element. In addition there is a manual reset cut-out thermostat with a temperature setting of 80°C.

All units with electric heater have a galvanized painted drain pan such avoiding damage to the unit in case of partial or complete loss of airflow before the thermostat tripping is completed.

Factory-mounted controls

Three types of controls are available:

1. Standalone applications where one thermostat interface is used for each individual unit. The unit is equipped with a terminal strip in the control box to which the remote wall mounted thermostat need to be connected. There is the possibility to connect another unit using the relay card for the fan speed control: model RELO1 for thermostat models N, P, R, T and RELO2 for thermostat model U.
2. Group control where one user interface is used for several units installed and connected together through a serial link RS485; up to 20 units can be connected to each other. Please refer to the installation manual for this. The ambient air temperature can be controlled via the indoor sensor installed on the ETN wall mount thermostat interface or through the return air sensor of each individual unit. There is also the possibility to install an infrared receiver with a handset transmitter field installed. The ambient temperature is then controlled via the return air sensor of each individual unit.
3. Building Management System for office building where all equipment shall be supervised by a main control system. The air ambient temperature can be controlled via communicating wall mounted thermostat, or equipment return air sensor.

Unit size		16	26	36
Emission	W	550	1150	1400
Supply	V/Ph/Hz	230/1/50	230/1/50	230/1/50
Amperage	A	2.4	3.9	6.1
Wire gage	mm ²	3 x 1.5	3 x 1.5	3 x 1.5

Condensate pump

The reciprocating condensate pump can be factory mounted. It is very quiet and doesn't affect the unit's sound performance. The water drainage performance depends upon elevation and pipe horizontal length.

Elevation (m)	Water flow function of horizontal length and vertical elevation	
	5 m	10 m
1	6.80	6.30
2	5.50	5.00
3	4.20	3.80
4	3.00	2.60

Note: the drain pan is delivered with the factory-mounted condensate pump.



Options

Type	Unit control	Thermostat / Interface	Electronic	Change over	2-pipe cooling	2-pipe heating	2-pipe change over	2-pipe + electric heat	2-pipe change over + electric heat	4-pipe	Automatic fan speed	Digital display	Economy mode	Master/slave configuration	Window sensor	Supply air temperature limitation	Modulating water valve actuator
Stand alone	None	N	-	Manual	x	x	x	x		x	Manual			REL1			
Stand alone	None	P	-	Auto	x	x	x	x	x	x	Manual			REL1			
Stand alone	None	R	x	Manual/auto	x	x	x	x		x	Manual			REL1		x	
Stand alone	None	T	x	Manual/auto							Manual/auto	x		REL1		x	
Stand alone	None	U	x	Manual							Manual/auto			REL2		x	
Group control	IRM	ETN	x	Manual/auto	x	x	x	x		x	Manual/auto	x		RS485		x	
Group control	IRM	RT03-IR	x	Manual/auto	x	x	x	x		x	Manual/auto	x		RS485		x	
BMS	ZN523	ZSM10	x	Auto	x	x	x	x	x	x	Manual/auto		x	RS485	x	Cascade	2-pipe only
BMS	ZN524	ZSM11	x	Auto	x	x	x	x	x	x	Manual/auto	x	x	RS485	x	Cascade	2-pipe only
BMS	ZN525	ZSM31	x	Auto	x	x	x	x	x	x	Manual/auto	x	x	RS485	x	Cascade	2-pipe only

Controls

Controls

Standalone controls

Thermostat N - AC fan motor

CONTROL WITH ELECTROMECHANIC THERMOSTAT

Figure 1 - Thermostat N



Main characteristics:

- On/off switch.
- Manual speed switch.
- Manual Summer/Winter switch.
- Electromechanic thermostat for valve(s) control (ON-OFF) (the fan is running continuously).

- It allows control of the chilled water valve (ON-OFF) and the electric resistance.

SEC1 = CWS technical sheet

"N" type = Control technical sheet

SB = Alarm contacts

Y1 = Chilled water valve set

Y2 = Hot water valve set

AL = Alarm condensate - float switch released

Example: "N" thermostat with two valves

Controls

Thermostat P - AC fan motor

CONTROL WITH ELECTROMECHANIC THERMOSTAT

Figure 2 - Thermostat P



Main characteristics:

- On/off switch.
- Manual speed switch.
- Automatic Summer/Winter change-over.

- Electromechanic thermostat for valve(s) control (ON-OFF) (the fan is running continuously).
- It allows control of the chilled water valve (ON-OFF) and the electric heater.

SEC1 = CWS technical sheet

“P” type = Control technical sheet

SB = Alarm contacts

Y1 = Chilled water valve set

Y2 = Hot water valve set

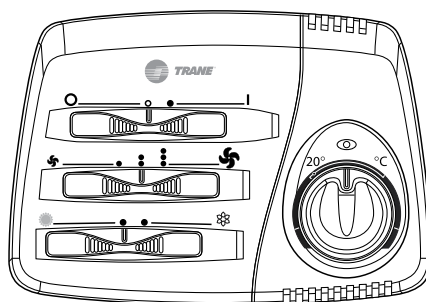
CO = Automatic changeover pipe thermostat

AL = Alarm condensate - float switch released

Controls

Thermostat R - AC fan motor

CONTROL WITH ELECTRONIC THERMOSTAT



Main characteristics:

- Manual speed switch.
- Manual Summer/Winter switch.
- Electronic thermostat for fan control (on/off).
- Electronic thermostat for valve(s) control (on/off) (the fan is running continuously).
- It allows control of the minimum water temperature sensor (MWT).
- It allows control of the chilled water valve (on/off) and the electric resistance in the CWS-E version.
- It allows installation of the Summer/Winter switch centralized and remote, or to control it with an automatic change-over fitted on the water pipe (for 2 pipe installations only). The latter case needs the adjustment of the jumper on the control board (see the instruction leaflet supplied with the control).

SEC1 = CWS technical sheet

SET2 = Control technical sheet

S1 = Alarm contacts

Y = Valve set (2 pipe installation)

Y1 = Chilled water valve set

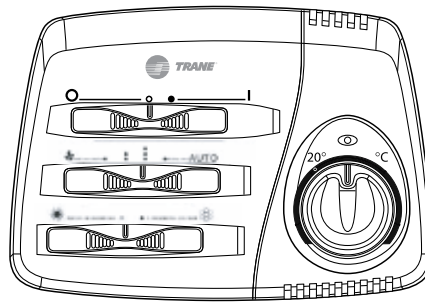
Y2 = Hot water valve set

AL = Alarm condensate - float switch released

Controls

Thermostat T - AC fan motor

CONTROL WITH ELECTRONIC THERMOSTAT



Main characteristics:

Same characteristics as the R control, adding:

- Manual or automatic speed switch.
- Electronic thermostat for fan control (on/off).
- Electronic thermostat for valve(s) control (on/off).
- Simultaneous thermostatic control on the valves and fan (on/off).
- It allows installation of the Summer/Winter switch centralized and remote, or to control it with an automatic change-over fitted on the water pipe (for 2 pipe installations only). The last case needs the adjustment of the jumper on the control board (see the instruction leaflet supplied with the control).

Note: With 4 pipe installations and continuous chilled and hot water supply, it allows the automatic summer/winter change-over in accordance to the room temperature (-1 °C = Winter, +1 °C = Summer, Dead Zone 2 °C).

SEC1 = CWS technical sheet

S1 = Alarm contacts

Y = Valve set (2 pipe installation)

Y1 = Chilled water valve set

Y2 = Hot water valve set

AL = Alarm condensate - float switch released

Controls

Thermostat U - AC fan motor

CONTROL WITH ELECTRONIC THERMOSTAT

Main characteristics:



- Manual or automatic speed switch.
- Manual or automatic Summer/Winter switch.
- Electronic thermostat for fan control (on/off).
- Electronic thermostat for valve(s) control (on/off).
- It allows to control the minimum water temperature sensor (MWT).
- It allows to control the chilled water valve (on/off) and the electric resistance in the CWS-E version.
- It allows to control the fan and the heating electric resistance.
- It allows to control up to 10 units with the REL2 relay board.

Note: with 4 pipe installations and continuous chilled and hot water supply, it allows the automatic summer/winter change-over in accordance to the room temperature (-1,6°C = Winter, +1,6°C = Summer, Dead Zone 3,2°C).

SEC1 = CWS technical sheet

MWT = Minimum Water Temperature sensor

TR = Transformer

Y = Valve set (2 pipe installation)

Y1 = Chilled water valve set

(4 pipe installation)

Y2 = Hot water valve set

(4 pipe installation)

R = Slave board

SB = Alarm contacts

IN1 = Winter/Summer remote switch

IN2 = Set reduction

Led DL1 Red = Shows incorrect data transmission

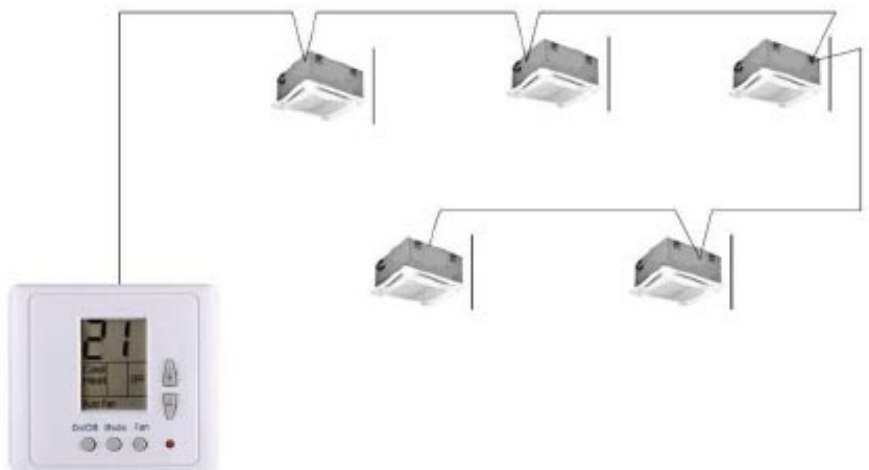
Led DL2 Green = Shows correct data transmission

Controls

Group control

The IRM controller is suitable for utilization with the ETN wall mount thermostat interface or the RT03-IR infrared remote controller accessories. It is necessary to change the unit controller dip switch n°3, Off for RT03-IR and ON for ETN. The default factory configuration is ON for ETN wall mount thermostat. Up to 20 units can be linked via RS485 serial link. Please refer to the Installation / operation manual UNT-SVU006-XX for installation. It can be used as a standalone application as well. For auto changeover applications, the changeover T2 water sensor shall be connected to the water pipe on site.

The supply air sensor for limitation of the air temperature is standard and need to be validated with dip switch N°2 on "ON" position on site.



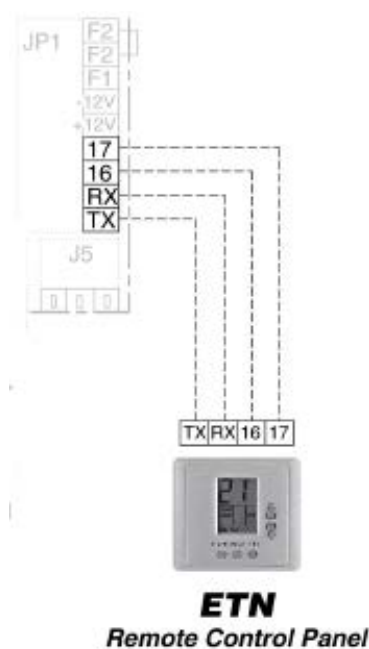
Controls

With the ETN wall-mounted user interface, the cassettes can be controlled as stand-alone, or as master/slave in serial connection. With the dip switches on the IRC board, it is possible to choose the following working modes:

- 2 pipe / 4 pipe system: dip switch N.ro 1 = ON/OFF
- Continuous ventilation: dip switch N.ro 4 = ON
- Close valve and stop fan in cooling (autofan function):
dip switch N.ro 4 = OFF
N.ro 5 = ON
N.ro 6 = OFF
- Close valve and stop fan in heating mode (autofan function):
dip switch N.ro 4 = OFF
N.ro 5 = OFF
N.ro 6 = OFF
- Close valve and stop fan in both cooling and heating mode (autofan function):
dip switch
N.ro 4 = OFF N.ro 5 = ON
N.ro 6 = ON

The autofan function allows the simultaneous on/off control of the water valve and the fan, while at the same time optimising the operation of the unit. When reaching the set point, the controller closes the water valve (valve off) and only 3 minutes later stops the fan, so as to correctly compensate for the valve closing time. The autofan function can be activated in cooling only mode, in heating only mode or in both operating modes. In two pipe systems, a water probe can be installed on the supply pipe to the unit upstream of the water valve. Based on the temperature read in this section of the pipe, the device will select either cooling or heating operation. The electronic board also features a contact for connection to a window switch or remote enabling signal. When the contact is closed, the unit can operate, when the contact is open, the unit stops. The same contact can be used for starting and stopping the unit from an external timer or any other remote switching device. In addition, a series of units can be switched on or off at the same time, by using a flip-flop switch connected to the terminals present on the board (F1 - 12V).

Sensors that require a 12 volt power supply, for example occupancy sensors, can be connected to other terminals on the electronic board and then to the on/off contacts. The board is able to power external sensors with a maximum current of 60mA.

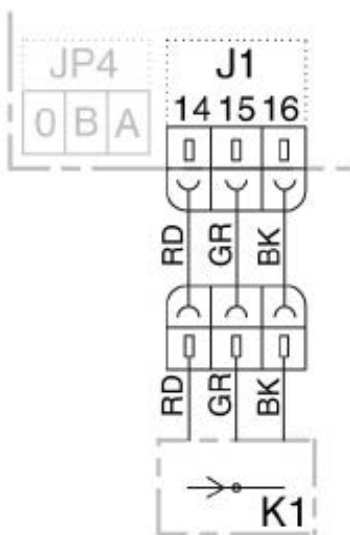


Controls

RT03 remote control (accessory 35169832-001)

The RT03 is a remote controller handset that can be fitted with the IRC electronic board as an accessory. There is a remote sensor to install on site and some configuration dipswitches to turn on. It is possible to connect up to 20 units with a serial link RS485 for a master/slave configuration. It is recommended to install the infra-red receiver on the master unit.

Figure 3 - Infra-red remote control/field-installed receiver/installation in a ceiling tile



K 1 = Infra-red receiver



Note

For more details, please refer to the infra-red remote control manual.

Control operations

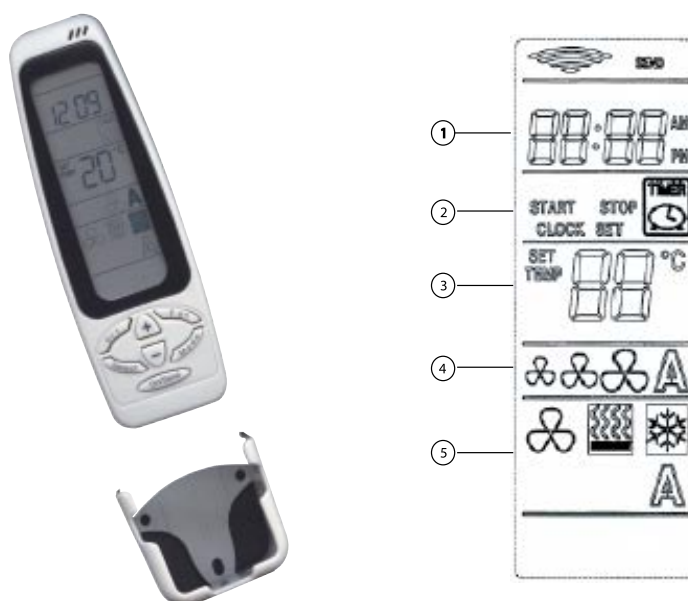
- Temperature set.
- Fan speed switch with possible automatic speed selection.
- 24 hours on/off program.
- on/off cooling valve control.
- on/off heating valve control.
- Control of the valves only or of the valves and the fan together.
- Valve control of 2 or 4 pipe systems with winter/summer switch on the infra-red control.
- Valve control of 4 pipe systems with automatic heating/cooling mode selection with 2°C dead zone.
- Activating the COE sensor connected to the T2 contact of the board (non active in the standard configuration), it works like a minimum water temperature sensor: fitted between the coil fins it stops the fan when the water temperature is lower than 38°C and it starts the fan when the water temperature reaches 42°C



Controls

Main functions of the remote control

Figure 4 - Remote control display



1. Clock : 24 hours
2. Timer : the program switches the device on and off
3. Displays the temperature setpoint
4. Fan speed setting: 3 speed plus automatic selection
5. Operating mode: heat, cool, fan only plus and automatic mode selection.

Timer function:

Used to start or stop the unit over a 12 hour period.

Set display:

Used to display the temperature set point.

Fan speed setting:

Used to select the 3 operating speeds of the fan, or alternatively select automatic control. In the latter case, the fan speed will change automatically based on the ambient temperature reading and the set point. The temperature difference to switch from one speed to the next is 0.7 °K.

Operating mode:

Used to select the desired operating mode, that is, fan only, cooling, heating or automatic mode selection.

Automatic selection allows, in 4 pipe systems, the unit to switch automatically from heating to cooling and vice-versa based on the ambient temperature reading and the set point, with a dead zone of 2°K inside which the unit remains in fan only mode.



Controls

Intelligent LonTalk® ZN523 control for AC fan motor

The Tracer® ZN unit controller is a micro-processor based direct digital controller that is dedicated to the control and the optimization of the units. It is designed to provide improved comfort with minimum energy consumption through the use of custom proportional integral derivative (PID) control algorithms as well as intelligent fan speed and set point control strategies. It is factory installed, pre-commissioned and tested, resulting in a highly integrated product, reduced installation and commissioning time.

The following configurations are supported by the controller:

- 2-pipe cooling;
- 2-pipe heating;
- 2-pipe cooling + electric heater;
- 2-pipe changeover (manual or automatic);
- 2-pipe changeover + electric heater;
- 4-pipe.

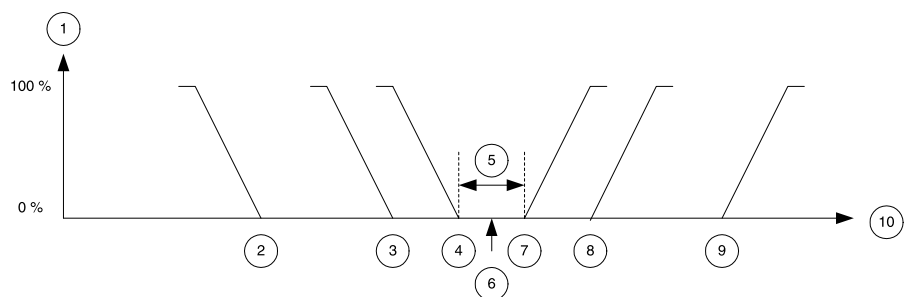
Figure 5 - LonTalk® ZN523 control



The intelligent control offers the following benefits:

- Intelligent management of valve position and fan speeds. Valve is fully open before changing the fan speed (acoustic comfort optimization).
- Control algorithms based on ambient and discharge air temperatures.
- Discharge air temperature (low and high limit control).
- Automatic intelligent changeover based on ambient air - entering water temperatures differential (+/-%2.5K).
- Automatic intelligent changeover with sampling function for 2-way valves use.
- Filter timer for preventive maintenance
- Adjustable local set point max - min limits.
- Built-in electrical protection.
- 2 operating modes in stand-alone application: comfort and reduce.
- After a power up in the building, units automatically staggered from 5 to 32 seconds.
- Built-in adjustable timed override function.
- Built-in condensate overflow protection.
- Built-in output test capability.
- Built-in diagnostic indicator.

Figure 6 - Normal operating mode



1. Control output
2. Unoccupied heating setpoint
3. Occupied standby heating setpoint
4. Occupied heating setpoint
5. Dead band
6. Local setpoint
7. Occupied cooling setpoint
8. Occupied standby cooling setpoint
9. Unoccupied cooling setpoint
10. Temperature

For more details about the LonTalk® ZN control, please refer to the controller's manual.

Accessories

Accessories

Fresh air spigot

2 fresh air spigots with diameter 99 mm and 124 mm can be field installed on the opposite side of the control box on the return air side of the unit between the filter and the fan assembly. They are suitable for use with constant volume damper that can be fitted directly inside the spigot. It is necessary to remove the precut circular sheet metal on site and the spigot can be directly screwed to the unit using the free holes for this. The sheet metal screw size 4 mm shall be used.

Constant volume damper

The constant volume damper accurately controls the air volume within a pressure range of 50 to 200 Pa. Two fixed models for 30 and 45 m³/h for spigot diameter 99 mm are available. One adjustable fresh air volume model from 70 to 180 m³/h is available for spigot diameter 124 mm. It shall be field installed.

Auxiliary drain pan

There is one model for left hand and one for right hand unit configurations. It shall be installed below the water valve package on the opposite side of the control box. It is made of plastic material ABS UL 94-HB

Condensate pump

A condensate pump kit is available for field installation, it has the same performances than the factory-mounted version, see page 31.

Water valve kits

Several water valves kits are available for field installation. They are the same as the factory-mounted ones. The kit includes the valve, the actuator and the copper piping for connection to valve body. Leak tightness is ensured with synthetic flat joints delivered with the kit. The diameter is DN 15 for size 16 and 26 and DN20 for size 36 for the cooling coil, and DN15 for all unit sizes for the heating coil.

They are available in 2 and 3-way models and for thermal hot wax actuator only.

Copper connection

This kit is used for field-installed water valves in order to have the inlet and outlet connections distant from 40 mm suitable for any water valve type. It is delivered with synthetic flat joints.

Filter

EU3 spare filters are available for field installation, made of 8 mm synthetic thick material class M1.

Accessories

Control accessories

MWT Minimum Water temperature sensor (accessory 35169838-001)

Suitable for wall thermostats R, T, and U only (not for infra-red remote control). To be fitted between the coil fins, it is measuring the water temperature in the coil.

In heating mode, it stops the fan when the water temperature is lower than 38°C and it starts the fan when it is higher than 42°C.

It is a standard feature on unit equipped with the group control.

Automatic change over pipe thermostat (accessory 35169820-001)

Suitable for wall thermostats N, P, R, T and U only (not for infra-red remote control). Automatic summer/winter switch to be installed in contact with the entering water circuit and before the control valve (for 2-pipe installations only). The cooling mode is allowed if the water temperature is below 15°C and the heating mode is allowed if the water temperature is above 25°C.

ETN control (wall-mounted control) (accessory 35169840-001)



The ETN is a wall-mounted control that can be connected to cassettes fitted with the IRC electronic board. The ETN control features the following functions:

- Switch the unit on and off.
- Temperature set.
- Fan speed switch with possible automatic speed selection.
- Setting the operating mode.

It can be installed one control per cassette, or one control for up to 20 cassettes (master/slave configuration) through RS485 serial link.

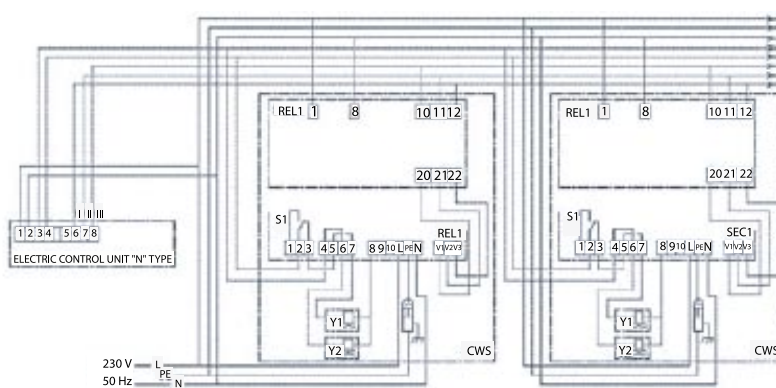
It is recommended to install the wall-mounted control on the master unit.

See Installation-Operation-Maintenance manual for wiring information.

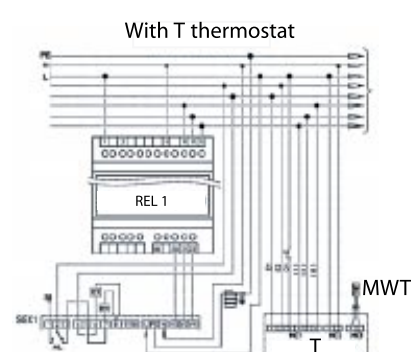
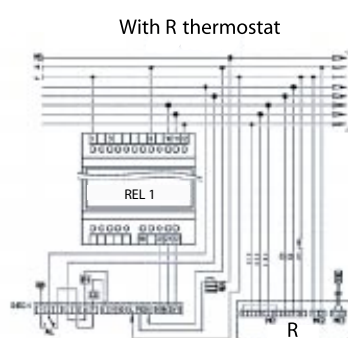
Accessories

REL1 Relay card for master/slave configuration - AC fan motor (accessory 35169837-001)

Fitted in the control panel of the (master) cassette, this enables up to eight units to be controlled by the signal from a single remote control unit.



- Speed switch (slave).
- It allows control of up to 8 units with only one centralized thermostat using one speed switch for each unit.
- For controls N, P, R and T.



SEC1: CWS technical sheet

SB: Alarm contacts

Y1: Chilled water valve set

Y2: Hot water valve set

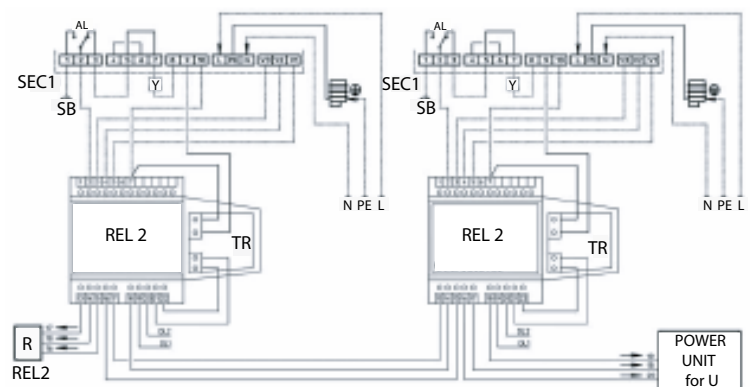
AL: Alarm condensate - float switch released

Accessories

REL2 for U-type - AC fan motor (accessory 35169836-001)

It allows to control up to 10 units with only one U centralized thermostat.

Figure 8 - REL2 connection with 1 valve



Notes



Notes

Notes



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