



AIR CONDITIONING UNIT
UNIDAD DE CLIMATIZACIÓN

TA



GB

ES



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TA

INCORPORATION DECLARATION
in compliance with Directive
2006/42/EC enclosure II, letter B
Aermec S.p.A.
Via Roma 996
37040 Bevilacqua (VR) Italia
hereby DECLARES that the following product

Air conditioning unit
TA range

- must not be started up until the end machine has been declared to comply with the provisions of Machine Directive 2006/42/EC;
- conforms to the requisites of Machine Directive 2006/42/EC, enclosure I, points 1.3.2, 1.3.4 and 1.3.7;
- the technical documentation relating to the product supplied has been drawn up in compliance with enclosure VII B and is constituted in the premises of the main offices;
- in the event of a justified request from the appropriate authorities, the manufacturer will supply them with the necessary information, maintaining valid any rights relating to industrial property.

Montagnana, 5 May 2009

AERMEC AERMEC S.p.A.  BEVILACQUA (VERONA) - ITALY	
L.P. 9904772 - ????????????	
Mod.	TA33H6
Portata Air flow [m ³] Débit d'air Luftmenge [m ³ /h]	917
	3300
W	1660
A	8.2
V - pH - Hz	230-1-50/60
Riscaldamento Heat Chaud Heating [W]	62600
Raffreddamento Cold Froid Cooling [W]	26600

Example of a label

General standards



The present manual is an integral part of the documentation enclosed with the machine.

It must be conserved for future reference and must accompany the machine throughout its working life. The manual defines the purpose for which the machine was built and establishes the correct installation and use limits.

- All use, installation and maintenance instructions of the unit are described in this manual as well as the main accident prevention standards.
- Read carefully and fully all information contained in this manual before the installation, start-up, use, maintenance and cleaning of the unit. Pay particular attention to the use regulations accompanied by the words "DANGER" or "WARNING": failure to observe them could cause damage to the machine and/or persons and property.
- For irregularities not contemplated by this manual, consult the local After Sales Service.
- Aermec S.p.A. decline any responsibility for any damage due to the improper use of the machine, and to a partial or superficial reading of the information contained in this manual.
- Installation and maintenance must be carried out by trained and qualified personnel, having the requirements laid down by law 46/90 and/or DPR 380/2001 for electric/electronic and air conditioning installations, with consequent registration at the local CHAMBER of COMMERCE. Otherwise Aermec S.p.A. decline all responsibility regarding the safety of the product.

THE MANUFACTURER DECLINES ANY RESPONSIBILITY FOR DAMAGE TO PROPERTY, PERSONS OR ANIMALS CAUSED BY THE NON-OBSERVANCE OF THE

INDICATIONS AND REGULATIONS CONTAINED IN THIS MANUAL.

Even though a suitable risk analysis was carried out during the design of the TA unit, pay ATTENTION to the pictograms on the machine; these make it easier to read the manual, quickly drawing the reader's attention to risks that cannot be avoided or sufficiently limited with the adoption of protection means and measures.



GENERAL DANGER SIGNS

Carefully observe all indications at the side of the pictogram.

The non observance of the indications could cause hazardous conditions with possible injury to the operator and to the user in general.



VOLTAGE DANGER SIGN

Carefully observe all indications at the side of the pictogram.

The signs indicate components on the unit or, in the present manual, identify areas that could generate risks of an electrical nature.



GENERAL WARNING SIGNS

Carefully observe all indications to the side of the pictogram that

limit some actions in order to ensure greater safety for the operator.

MAIN GUARANTEE CONDITIONS

- The guarantee does not include payment for damages due to incorrect installation by the installer.
- The guarantee does not include payment for damages due to the improper use of the unit by the user.
- The manufacture is not responsible for injuries to the installer or user, caused by incorrect installation or improper use of the unit;
- The equipment must be installed in such a manner so as to permit maintenance and/or repair operations;
- The guarantee does not cover in any case costs due to turntable ladders, scaffolding or other similar elevating systems that are necessary to carry

out operations under guarantee.

The guarantee is not valid if:

- the services and repairs have been carried out by unauthorised personnel or companies;
- the unit has been previously repaired or modified with non-original parts;
- the unit has not been suitably maintained;
- the instructions given in this manual have not been observed;
- unauthorised modifications have been made.

NB:

the manufacturer reserves the right to carry out modifications at any time deemed necessary to improve its product, and is not obliged to apply the said modifications to previously manufactured machines that have already been delivered or are being constructed.

The general conditions are in any case subject to the general sale conditions foreseen on the stipulation of the contract.

Description of the unit

The air conditioning units in the TA range have been designed for civil, commercial and hotel use, for small and medium sized rooms. The units are designed to guarantee high head levels and can be

installed either vertically or horizontally, thereby offering greater versatility. Thanks to this type of unit, several rooms can be served via a distribution plenum. The units of this range are characterised

by their compact size, low noise levels, and the wide choice of accessories.



Description of components

STRUCTURE

The load-bearing structure is made of galvanised steel sandwich panels with polyurethane insulation (density 40kg/m³), 15 mm thick. The suction and supply panels are fitted with flanges for connecting any air pipes or accessories envisaged. Special brackets supplied with the unit make it easier to fix it to the wall.

The condensate drip tray, in galvanised steel, has a threaded drain connection on both sides and can be used whether the unit is installed horizontally or vertically.

ELECTRIC FAN UNIT

Consisting of high performance centrifugal fans with double intake and forward blades. The multispeed electric motor, for which three speeds can be selected from the control panel (optional), is directly connected to the fans.

HEAT EXCHANGE COIL

In copper piping and aluminium finning blocked by the mechanical expansion of the pipes.

Threaded pipe couplings for the hydraulic connections and air drain valve are supplied. One version is also available with a direct expansion coil in copper piping with aluminium finning blocked by the mechanical expansion of the pipes (4 rows).

FILTERING

The air is filtered through synthetic filters, 50mm thick, in efficiency class G4 (in compliance with standard EN 779), positioned at the suction point. The filters can be easily accessed for maintenance and cleaning. For the VRF accessory, the air is filtered through soft pocket filters with a filtering degree of F6. For higher filtering degrees, contact our Technical/Sales Office.

Identification of the unit

TA XX X X

Version

4 : 4-row water coil
6 : 6-row water coil
E : R410A direct expansion coil, 4 rows Left

Configuration

H : Horizontal
V : Vertical
X : Extractor

Size

- 09
- 11
- 15
- 19
- 24
- 33
- 40
- 50

Accessories

M2S 2-damper mixing chamber

Galvanised steel section complete with two air calibration dampers and fins in galvanised steel. Fin pitch 50mm; galvanised steel adjustment pin, 8mm, can be motor-driven.

M3S 3-damper mixing chamber

Galvanised steel section complete with three air calibration dampers and fins in galvanised steel. Fin pitch 50mm; galvanised steel adjustment pin, 8mm, can be motor-driven.

FTF Section of soft pocket filters

Galvanised steel section complete with soft pocket filters with a filtering degree of F6. For different filtering degrees, contact our Technical/Sales Office.

B1R 1-row water coil for 4-pipe systems

Positioned internally, downstream from the main coil, and made of copper piping and aluminium finning blocked by the mechanical expansion of the pipes. Threaded pipe couplings for the hydraulic connections and air drain valve are supplied.

B2R 2-row water coil for 4-pipe systems

Positioned internally, downstream from the main coil, and made of copper piping and aluminium finning blocked by the mechanical expansion of the pipes. Threaded pipe couplings for the hydraulic connections and air drain valve

are supplied.

PBE Section with electric post-heating coil

The electric coil consists of armoured heaters fitted with a double safety thermostat.

SSL Module with silencer baffles

Galvanised steel section complete with silencer baffles in rock wool covered with a polyethylene film to prevent scaling.

S2Z 2-area damper (70-30%)

Galvanised steel damper with opposed fins for mixing the flow of external air and the flow of fresh air. Fin pitch 50mm; galvanised steel adjustment pin, 8mm, can be motor-driven.

VRF Fan intake section with G4 filter

Fan unit to be positioned at the intake point, with the accessory M3S, contained in a galvanised steel section fitted with flat filters with an efficiency level of G4 (EN779)

PMM Plenum with multiple circular delivery points

PMC Closed supply plenum

SAP Suction damper

Air calibration damper with galvanised steel fins. Fin pitch 50mm; galvanised steel adjustment pin, 8mm, can be

motor-driven.

GMD Delivery grille with adjustable fins

Grille with double row of fins that can be adjusted when emitting air into the room. Can be installed directly on the equipment (removing the flanges) or on the wall.

GAP Suction grille

With fins fixed at an angle of 45°; can be installed directly on the equipment (removing the flanges) or on the wall.

FPI G4 filters for intake at base

PX Selector-only control panel

PCT2 Selector/thermostat/switch control panel

TABLE SHOWING ACCESSORY COMPATIBILITY:

	TA 09	TA 11	TA 15	TA 19	TA 24	TA 33	TA 40	TA 50
M2S	M2S1	M2S1	M2S2	M2S3	M2S4	M2S4	M2S5	M2S5
M3S	M3S1	M3S1	M3S2	M3S3	M3S4	M3S4	M3S5	M3S5
FTF	FTF1	FTF1	FTF2	FTF3	FTF4	FTF4	FTF5	FTF5
B1R	B1R1	B1R1	B1R2	B1R3	B1R4	B1R4	B1R5	B1R5
B2R	B2R1	B2R1	B2R2	B2R3	B2R4	B2R4	B2R5	B2R5
PBE	PBE1	PBE2	PBE3	PBE4	PBE5	PBE6	PBE7	PBE8
SSL	SSL1	SSL1	SSL2	SSL3	SSL4	SSL4	SSL5	SSL5
S2Z	S2Z1	S2Z1	S2Z2	S2Z3	S2Z4	S2Z4	S2Z5	S2Z5
VRF	VRF1	VRF2	VRF3	VRF4	VRF5	VRF6	VRF7	VRF8
PMM	PMM1	PMM1	PMM2	PMM3	PMM4	PMM4	PMM5	PMM5
PMC	PMC1	PMC1	PMC2	PMC3	PMC4	PMC4	PMC5	PMC5
SAP	SAP1	SAP1	SAP2	SAP3	SAP4	SAP4	SAP5	SAP5
GMD	GMD1	GMD1	GMD2	GMD3	GMD4	GMD4	GMD5	GMD5
GAP	GAP1	GAP1	GAP2	GAP3	GAP4	GAP4	GAP5	GAP5
FPI	FPI1	FPI1	FPI2	FPI3	FPI4	FPI4	FPI5	FPI5
PX	PX							
PCT2	PCT2(*)							

* ACTIVATION WITH RELAY (NOT SUPPLIED)

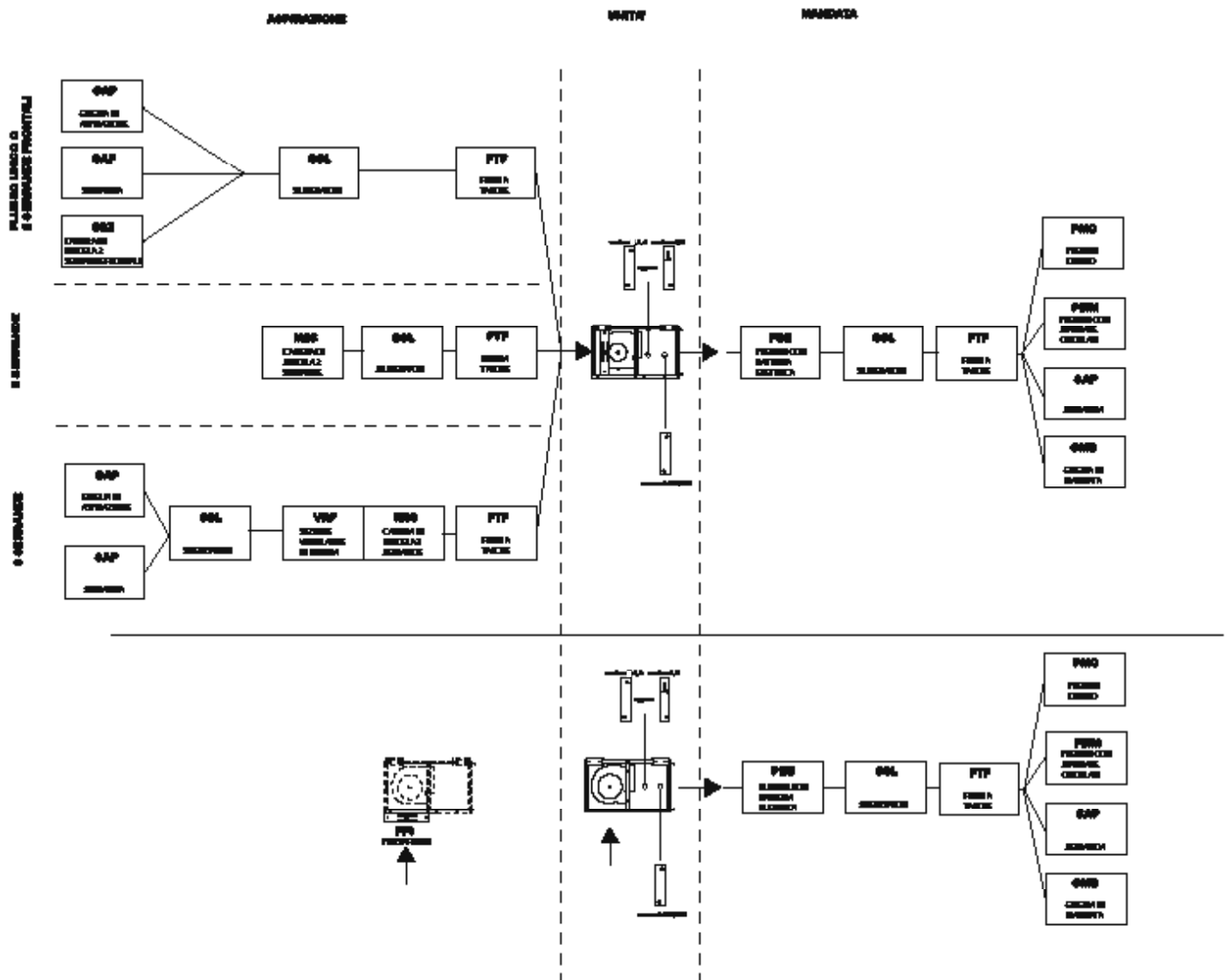
Compatibility of accessories

The diagrams showing the various ways of combining the accessories with the standard units can be found below. The selection of a suction/supply accessory module precludes the choice of other accessories in the vertical direction, but not in the horizontal direction. For

example: if the "SAP" accessory is used at the suction point, it is not compatible with accessory "S2Z" but can be used with accessory "SSL" or "FTP". The diagrams show a horizontal and vertical configuration of the unit respectively. The diagrams may not fully represent

all the available combinations: you are, however, advised to respect the rules laid out and to contact the Aermec Technical/Sales Office if necessary.

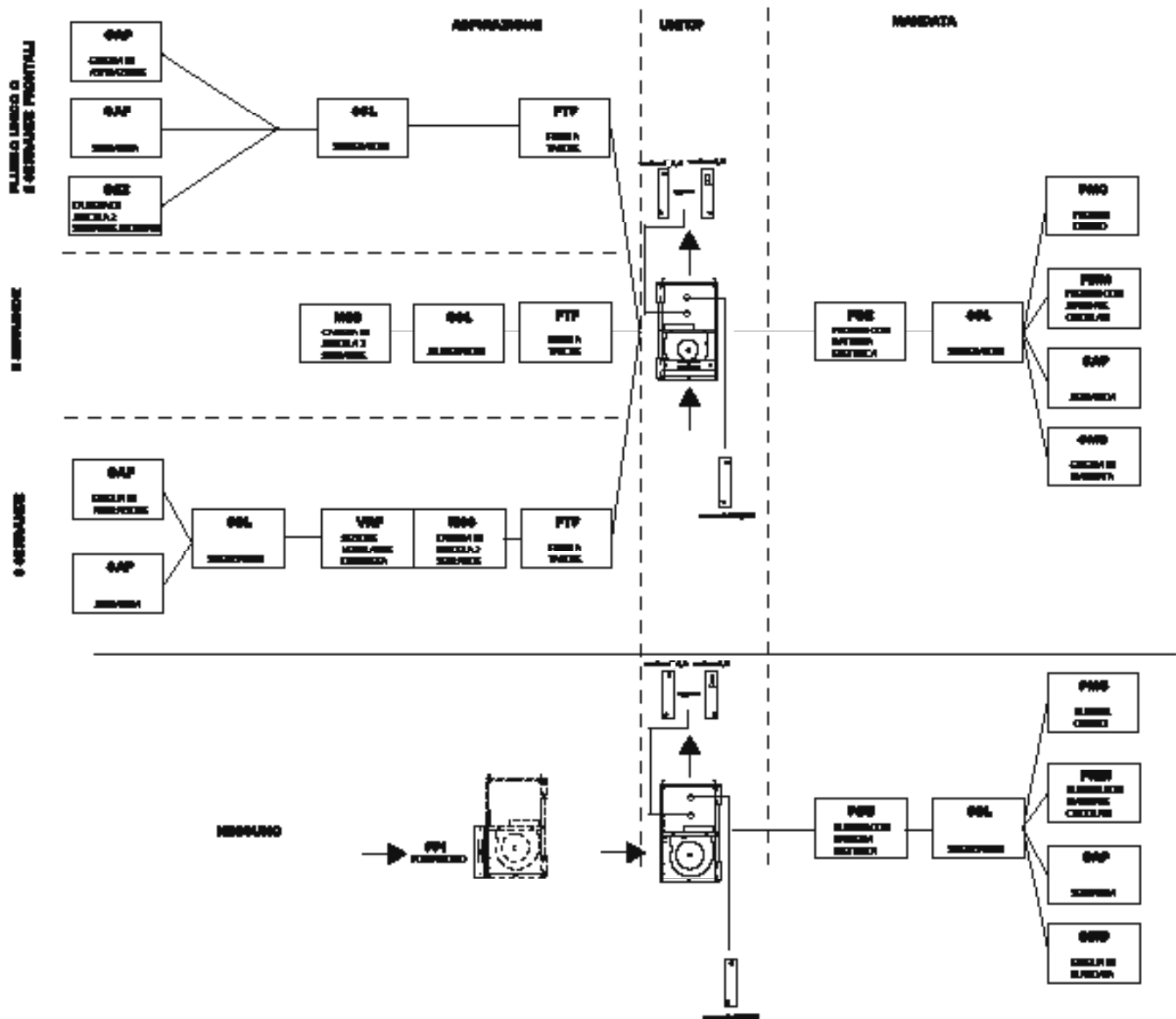
HORIZONTAL



NB:

- Warning: for safety reasons, you are advised to avoid positioning the FTP "Pocket filters" module near the PBE module.
- Warning: when using the PBE accessory, the unit delivery must not fall below 60% of normal envisaged delivery.
- The VRF accessory is fitted with an electronic rotation speed variator.
- The M3S accessory must be combined with the VRF accessory.
- The VRF accessory can be selected even if it is not combined with the M3S accessory.

VERTICAL



NB:

- Warning: for safety reasons, you are advised to avoid positioning the FTF "Pocket filters" module near the PBE module.
- Warning: when using the PBE accessory, the unit delivery must not fall below 60% of normal envisaged delivery.
- The VRF accessory is fitted with an electronic rotation speed variator.
- The M3S accessory must be combined with the VRF accessory.
- The VRF accessory can be selected even if it is not combined with the M3S accessory.

Nominal technical data

Model		TA 09	TA 11	TA 15	TA 19	TA 24	TA 33	TA 40	TA 50	
Nominal air flow rate	m ³ /h	900	1100	1500	1900	2400	3300	4000	5000	
	l/s	250	306	417	528	667	917	1111	1389	
Effective static pressure (1)		Pa	110	277	249	223	165	215	220	163
Cooling capacity with 4-row coil (2)	total	kW	4.7	5.7	8.7	12.4	17.3	21.7	27.2	31.8
	sensible	kW	3.5	4.2	6.2	8.3	11.2	14.3	18.0	21.3
Cooling capacity with 6-row coil (2)	total	kW	5.4	6.7	11.7	15.5	20.6	26.3	33.5	39.6
	sensible	kW	3.9	4.7	7.5	9.8	12.8	16.6	20.9	25.0
Cooling capacity with 4-row direct expansion coil R-410A (3)	total	kW	6.6	7.3	11.0	14.2	19.2	23.0	30.5	34.5
	sensible	kW	4.2	4.7	7.0	9.1	12.1	14.8	19.4	22.3
Heating capacity with 4-row coil (4)		kW	14.2	16.6	23.9	30.8	40.6	52.2	65.8	78.3
Heating capacity with 6-row coil (4)		kW	15.7	18.5	26.6	34.2	44.3	58.0	72.6	87.5
Heating capacity with 1-row water coil for 4-pipe system (8)		kW	5.2	5.7	9.2	11.4	15.9	18.3	25.2	27.7
Heating capacity with 2-row water coil for 4-pipe system (8)		kW	8.4	9.5	14.2	17.9	24.3	29.9	38.9	44.9
Heating capacity with 4-row coil (5)		kW	5.5	6.4	9.3	12.1	16.0	20.6	25.9	30.8
Heating capacity with 6-row coil (5)		kW	6.1	7.2	10.5	13.6	17.6	23.0	28.9	34.8
Heating capacity with 2-row water coil for 4-pipe system (5)		kW	2.2	2.4	4.0	4.9	6.9	7.9	10.9	12.0
Heating capacity with 1-row water coil for 4-pipe system (5)		kW	3.6	4.1	6.2	7.8	10.6	13.0	16.9	19.5
Electric coil capacity		kW	4	6	8	10	12	16	20	24
Number of stages of electric coil		no.	2	2	2	2	2	2	2	2
Electric coil power supply		Volt-Ph-Hz	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50
Fans		no.	1	2	2	1	1	2	2	2
Motors		no.	1	2	2	1	1	2	2	2
Total input power of fans		W	357	713	713	886	874	1771	1771	2852
Input current of fans		A	1.6	3.1	3.1	3.9	3.8	7.7	7.7	12.4
Fan power supply		V-Ph-Hz	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50
Poles		no.	2	2	2	4	4	4	4	4
Flat filter efficiency (6)			G4	G4	G4	G4	G4	G4	G4	G4
Pocket filter efficiency (6)			F6	F6	F6	F6	F6	F6	F6	F6
Sound power level (7)		dB(A)	63	66	67	72	74	75	76	79
Connections										
Coil manifolds		Ø inches	1"	1"	1"	1"	1"	1"	1"	1"
Direct expansion coil piping	in	Øi mm	16	16	16	16	16	16	22	22
	out	Øu mm	22	22	22	22	22	22	28	28
Condensate discharge		Ø inches	¾	¾	¾	¾	¾	¾	¾	¾
Dimensions and weight										
Height		mm	300	300	300	390	390	390	390	390
Width		mm	700	700	1050	1050	1475	1475	2100	2100
Length		mm	700	700	700	850	850	850	1000	1000
Net weight of standard unit	4-row coil	kg	28	33	45	60	78	86	135	140
	6-row coil	kg	30	35	47	62	81	89	139	144

note (1) at nominal flow rate with 4-row coil

note (2) Temperature of incoming air 27°C d.b. 19°C w.b.; water temperature (In-Out) 7°C 12°C

note (3) Temperature of incoming air 27°C d.b. 19°C w.b.; average evap. temp. 2°C

note (4) Temperature of incoming air 10°C; water temperature (In-Out) 70°C 60°C

note (5) Temperature of incoming air 20°C; water temperature (In-Out) 45°C 40°C

note (6) in compliance with EN 779

note (7) Sound power in compliance with UNI EN ISO 9614

note (8) Temperature of incoming air 15°C; water temperature (In-Out) 70°C 60°C

Weight of the accessories

The weights of the accessories for the TA units are shown below. For further information, contact the Aermec S.p.a. Technical/Sales Office.

DESCRIPTION		Sizes							
		9	11	15	19	24	33	40	50
Suction grille	GAP	2	2	2	3	3	3	4	4
Supply grille with double adjustable fins	GMD	3	3	4	4	4	4	6	6
Suction damper	SAP	5	5	7	9	13	13	18	18
Damper for 2 opposite areas 70/30	S2Z	5	5	8	10	14	14	19	19
2-damper mixing chamber	M2S	23	23	35	37	43	43	69	69
3-damper mixing chamber	M3S	27	27	31	40	50	50	99	99
Section of soft pocket filters	FTF	20	20	27	29	39	39	70	70
All closed supply plenum	PMC	15	15	20	22	28	28	54	54
Fan intake section with filter	VRF	19	22	27	36	43	55	61	62
Plenum with multiple circular delivery points	PMM	16	16	21	23	29	29	56	56
Section of silencers	SSL	25	25	33	37	47	47	80	80
Plenum with 2-stage post-heating electric coil	PBE	16	16	21	23	29	30	57	58
1-row post-heating water coil	B1R	12	12	15	16	21	21	27	27
2-row post-heating water coil	B2R	13	13	17	19	25	25	33	33
Section of flat filters with intake at base	FPI	3	3	5	5	6	6	7	7

The weight of the accessories is expressed in kg.

Characteristic ventilation curves

The following diagrams show the effective static supply/pressure curves (at the inlet) of the TA units.

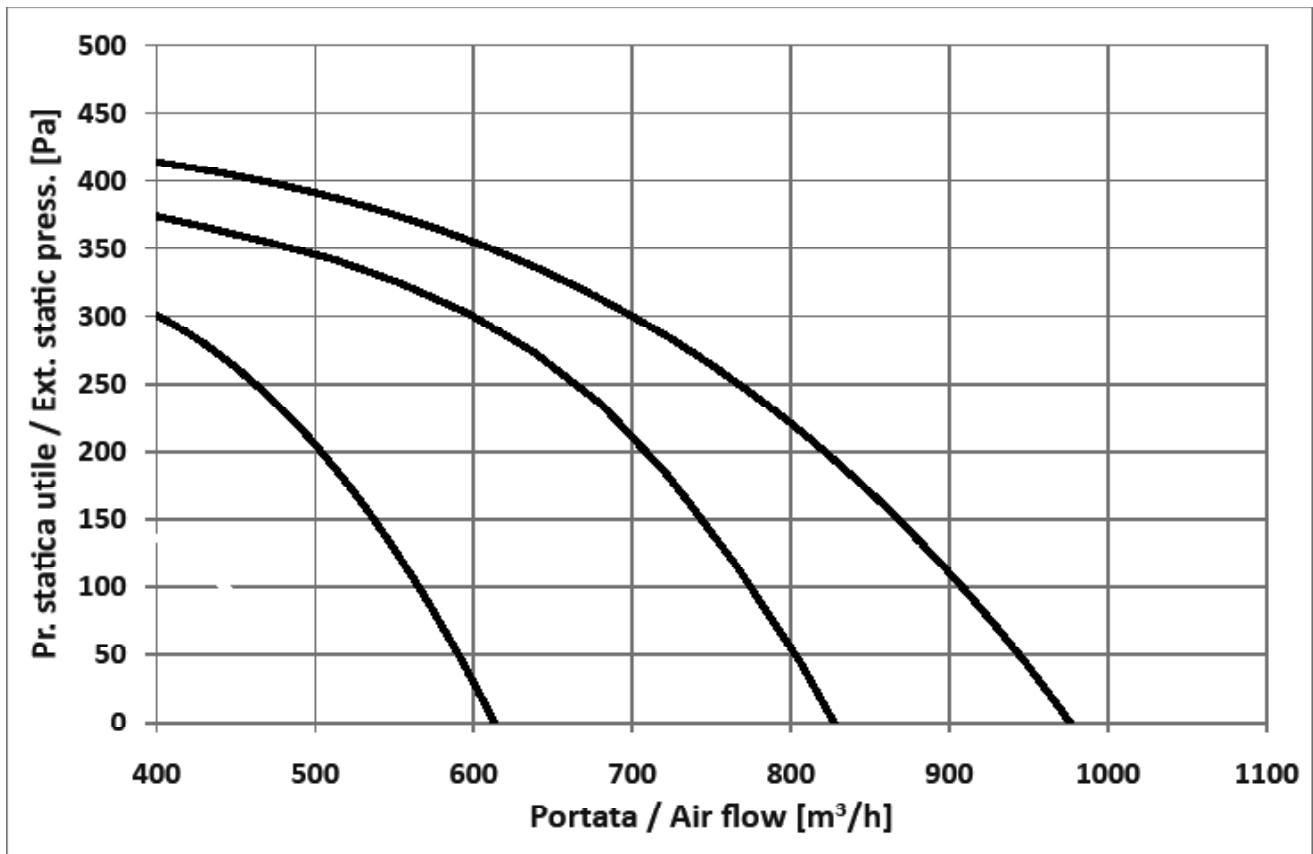
These curves refer to units with a 4-row coil and a 0% obstruction level of the G4 filter.

For units configured or differently, or with different accessories, it is necessary to reduce the effective static pressure with the values of the pressure drops of the added components.

The values of these pressure drops can

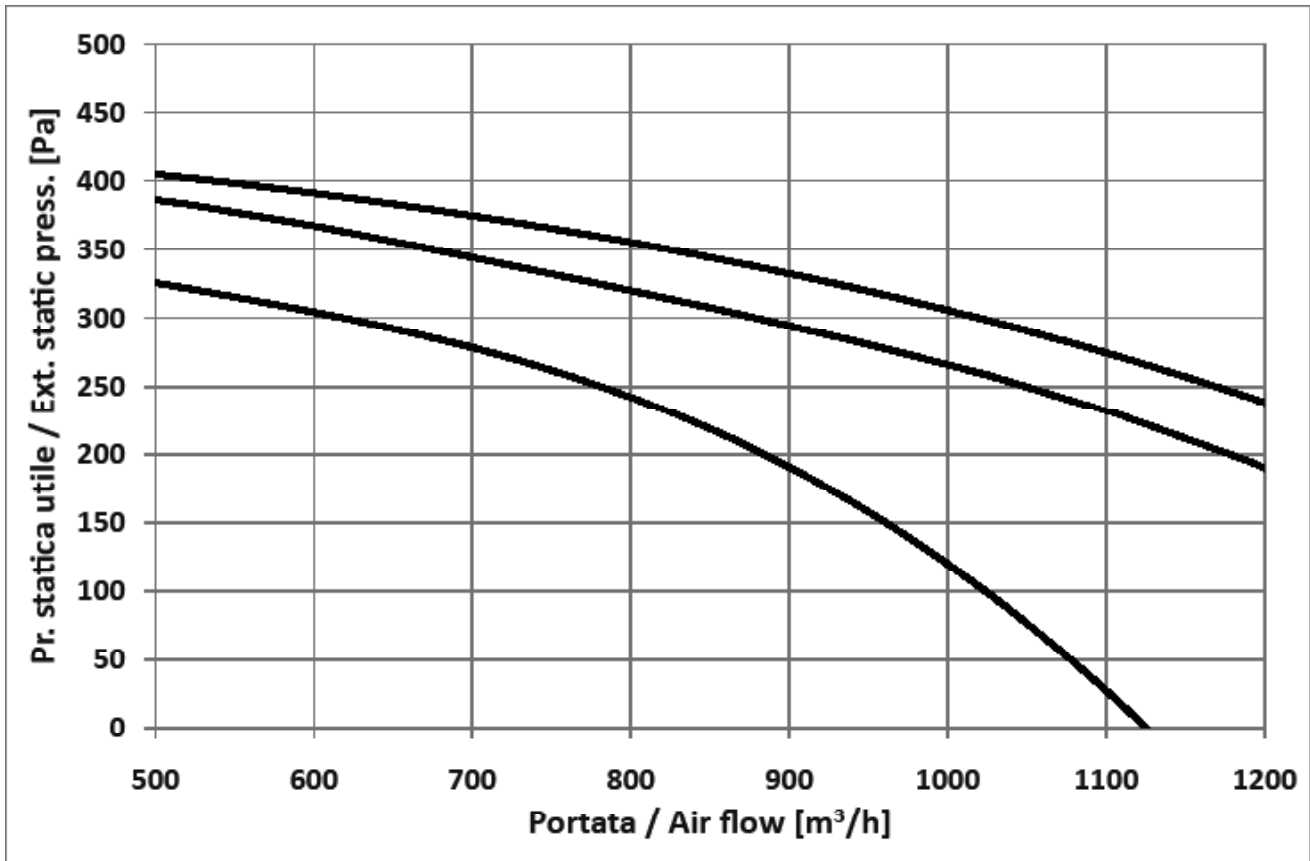
be obtained from the tables beneath the charts.

TA 09-4R



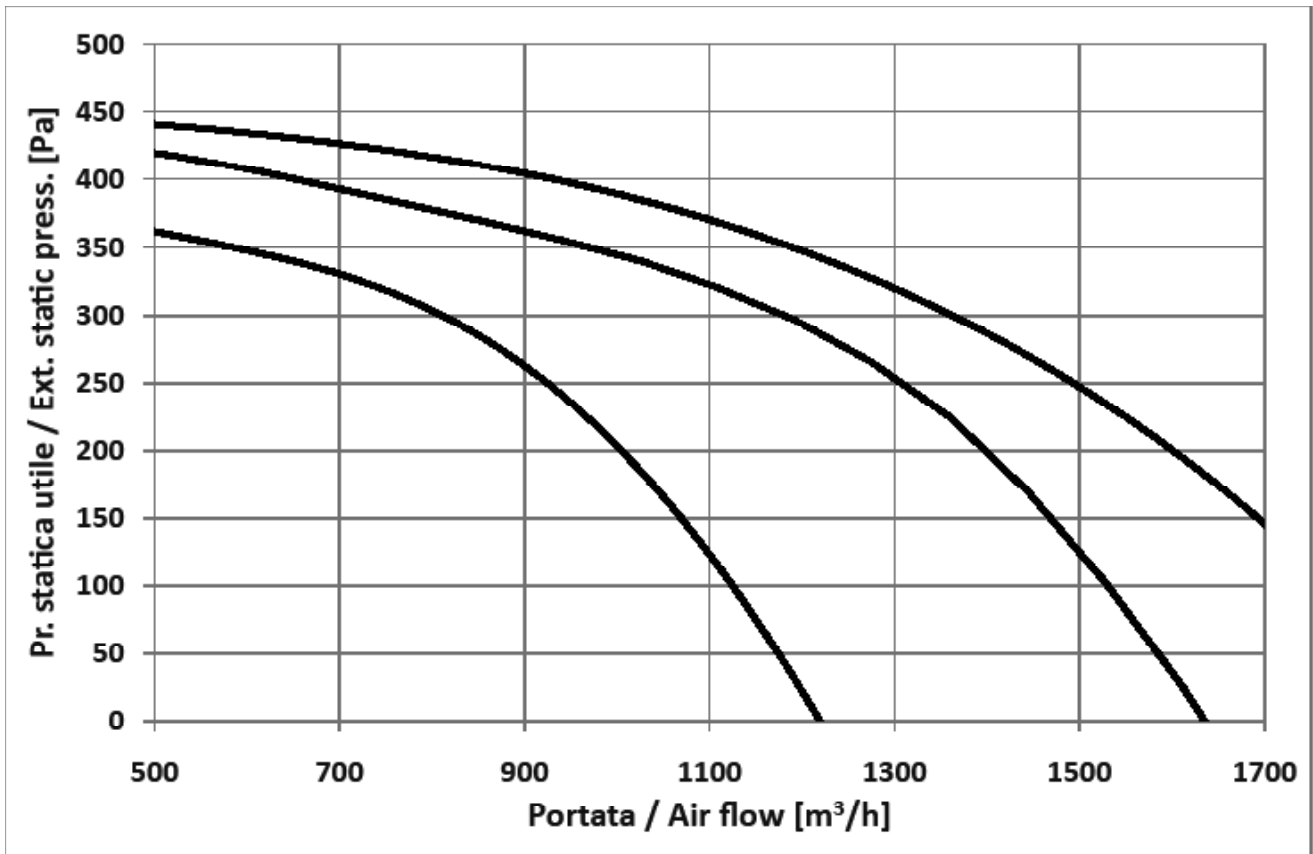
FLOW RATE	m ³ /h	400	500	600	700	800	900	1000
Suction grille - GAP	Pa	-4	-7	-9	-12	-15	-19	-23
Anti-freeze damper - SAP	Pa	0	0	-1	-1	-1	-1	-2
Intake silencers - SSL	Pa	-6	-10	-13	-18	-22	-28	-34
Intake fan - VRF	Pa	177	264	367	484	616	762	921
3-damper mixing chamber - M3S	Pa	-1	-1	-2	-3	-3	-4	-5
2-damper mixing chamber - M2S	Pa	0	0	-1	-1	-1	-1	-2
Mixing chamber with 2 front dampers - S2Z	Pa	-1	-1	-2	-2	-3	-3	-4
Soft pocket filters - FTF	Pa	-6	-9	-12	-16	-21	-25	-31
6-row coil compared with the 4-row coil	Pa	-4	-6	-9	-11	-12	-17	-21
2-row post-heating water coil - B2R	Pa	-11	-16	-23	-30	-38	-47	-57
1-row post-heating water coil - B1R	Pa	-3	-5	-7	-9	-11	-14	-17
Electric post-heating coil - PBE	Pa	-2	-3	-4	-5	-6	-8	-9
Silencers - SSL	Pa	-6	-10	-13	-18	-22	-28	-34
Soft pocket filters - FTF	Pa	-6	-9	-12	-16	-21	-25	-31
Closed supply plenum - PMC	Pa	0	0	0	0	0	0	0
Supply plenum with circular vents - PMM	Pa	0	0	0	-1	-1	-1	-1
Supply damper - SAP	Pa	0	0	-1	-1	-1	-1	-2
Supply grille - GMD	Pa	-1	-2	-3	-4	-5	-6	-7

TA 11-4R



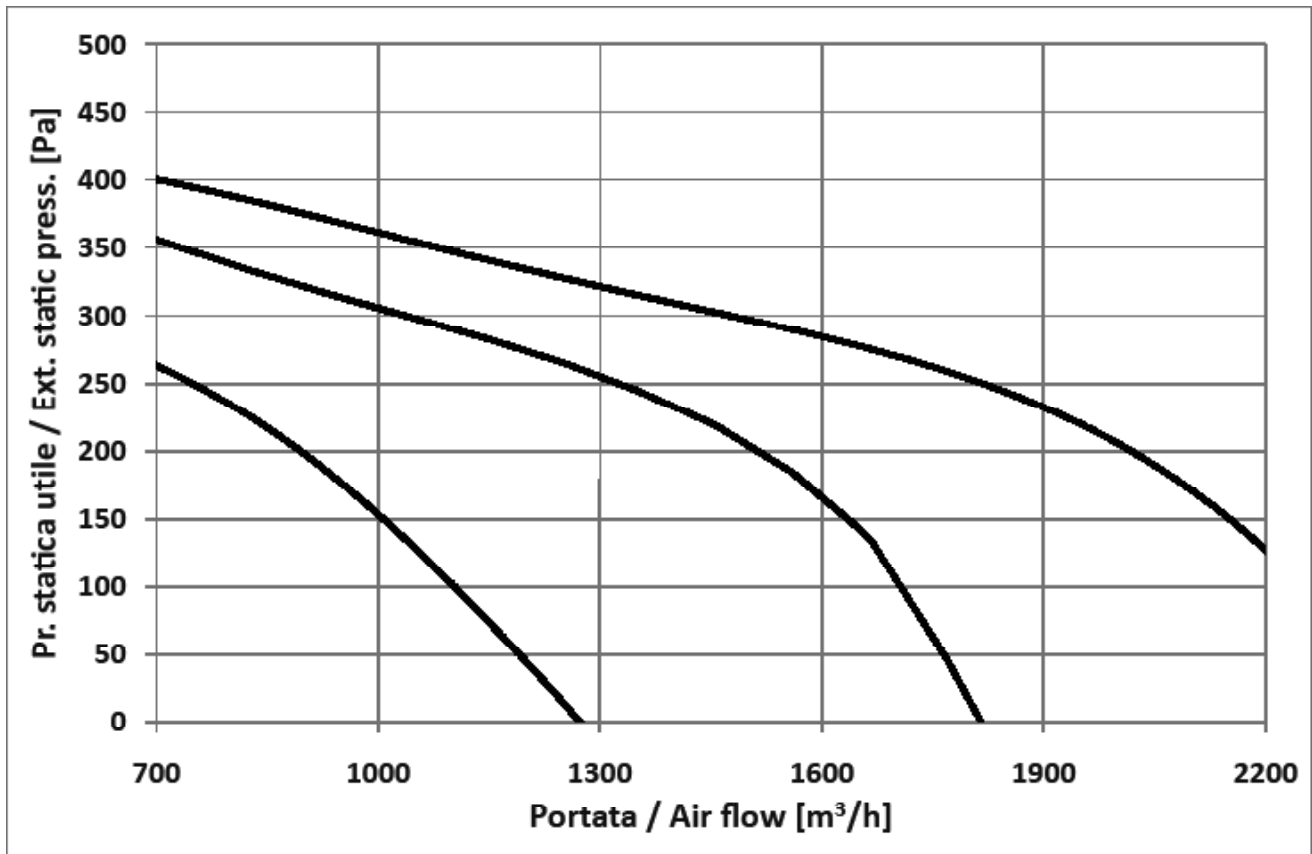
FLOW RATE	m³/h	500	600	700	800	900	1000	1100	1200
Suction grille - GAP	Pa	-7	-9	-12	-15	-19	-23	-27	-32
Anti-freeze damper - SAP	Pa	-2	-3	-4	-5	-6	-7	-9	-10
Intake silencers - SSL	Pa	-10	-14	-18	-23	-29	-35	-41	-48
Intake fan - VRF	Pa	71	99	131	166	205	248	295	345
3-damper mixing chamber - M3S	Pa	-1	-2	-3	-3	-4	-5	-6	-7
2-damper mixing chamber - M2S	Pa	-2	-3	-4	-5	-6	-7	-9	-10
Mixing chamber with 2 front dampers - S2Z	Pa	-6	-8	-11	-14	-17	-21	-25	-29
Soft pocket filters - FTF	Pa	-9	-12	-16	-21	-25	-31	-37	-43
6-row coil compared with the 4-row coil	Pa	-6	-9	-11	-14	-17	-21	-25	-29
2-row post-heating water coil - B2R	Pa	-16	-23	-30	-38	-47	-57	-67	-78
1-row post-heating water coil - B1R	Pa	-5	-7	-9	-11	-14	-17	-20	-23
Electric post-heating coil - PBE	Pa	-3	-4	-5	-6	-8	-9	-11	-13
Silencers - SSL	Pa	-10	-14	-18	-23	-29	-35	-41	-48
Soft pocket filters - FTF	Pa	-9	-12	-16	-21	-25	-31	-37	-43
Closed supply plenum - PMC	Pa	0	0	0	0	0	0	0	0
Supply plenum with circular vents - PMM	Pa	0	0	-1	-1	-1	-1	-1	-2
Supply damper - SAP	Pa	-2	-3	-4	-5	-6	-7	-9	-10
Supply grille - GMD	Pa	-2	-3	-4	-5	-6	-7	-9	-10

TA 15-4R



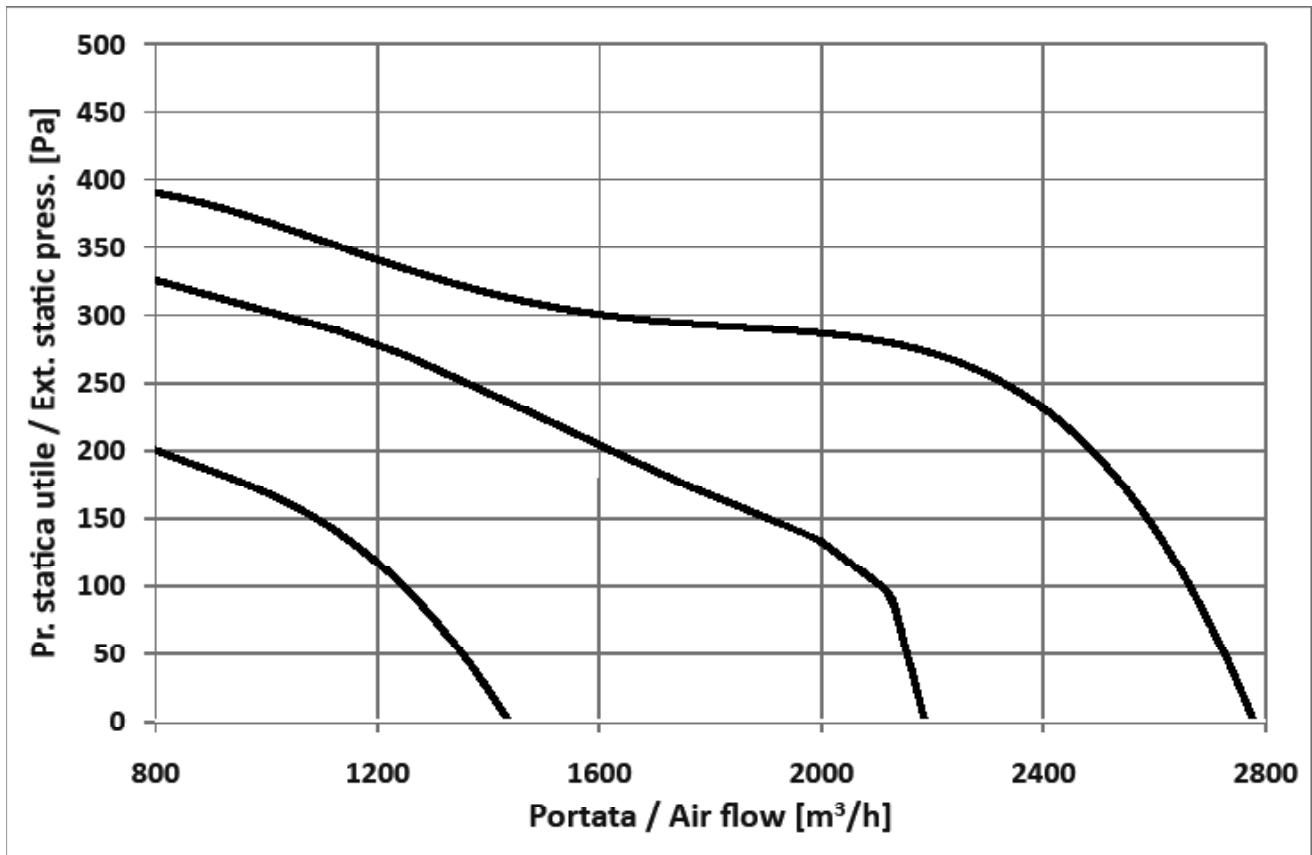
FLOW RATE	m ³ /h	500	700	900	1100	1300	1500	1700
Suction grille - GAP	Pa	-5	-8	-13	-19	-26	-33	-42
Anti-freeze damper - SAP	Pa	-1	-2	-3	-4	-5	-7	-9
Intake silencers - SSL	Pa	-3	-6	-10	-14	-19	-25	-31
Intake fan - VRF	Pa	75	137	215	309	417	540	676
3-damper mixing chamber - M3S	Pa	-1	-3	-4	-6	-8	-10	-13
2-damper mixing chamber - M2S	Pa	-1	-2	-3	-4	-5	-7	-9
Mixing chamber with 2 front dampers - S2Z	Pa	-3	-5	-8	-11	-15	-19	-24
Soft pocket filters - FTF	Pa	-9	-16	-25	-37	-49	-64	-80
6-row coil compared with the 4-row coil	Pa	-2	-5	-7	-10	-13	-18	-22
2-row post-heating water coil - B2R	Pa	-6	-12	-19	-27	-36	-46	-58
1-row post-heating water coil - B1R	Pa	-3	-6	-9	-13	-17	-22	-28
Electric post-heating coil - PBE	Pa	-1	-2	-3	-4	-6	-8	-10
Silencers - SSL	Pa	-3	-6	-10	-14	-19	-25	-31
Soft pocket filters - FTF	Pa	-9	-16	-25	-37	-49	-64	-80
Closed supply plenum - PMC	Pa	0	0	0	0	0	0	0
Supply plenum with circular vents - PMM	Pa	0	0	-1	-1	-1	-2	-2
Supply damper - SAP	Pa	-1	-2	-3	-4	-5	-7	-9
Supply grille - GMD	Pa	-1	-2	-3	-4	-5	-7	-9

TA 19-4R



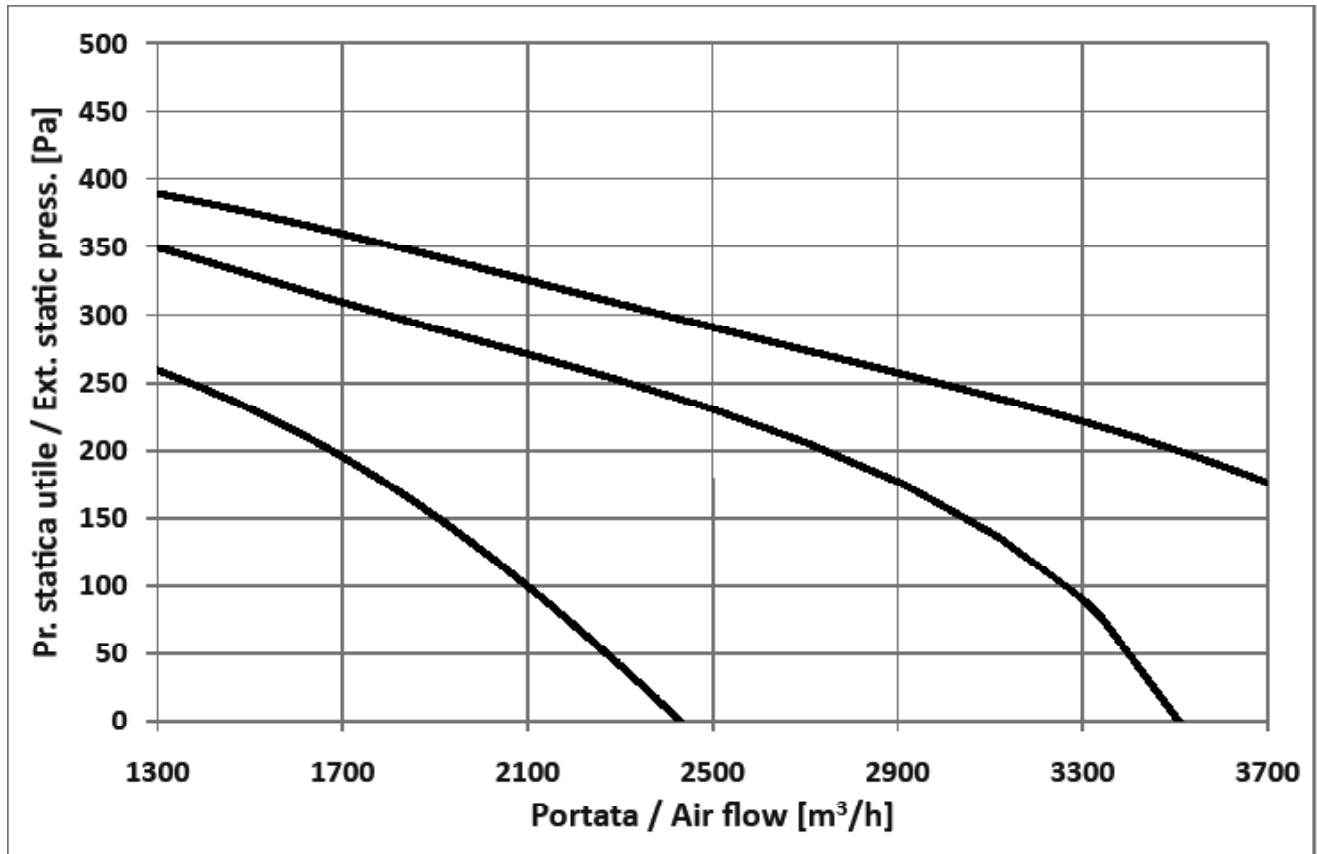
FLOW RATE	m³/h	700	1000	1300	1600	1900	2200
Suction grille - GAP	Pa	-5	-9	-15	-22	-30	-39
Anti-freeze damper - SAP	Pa	-1	-2	-3	-5	-6	-8
Intake silencers - SSL	Pa	-4	-7	-11	-16	-22	-28
Intake fan - VRF	Pa	41	78	125	182	248	322
3-damper mixing chamber - M3S	Pa	-1	-2	-3	-4	-5	-7
2-damper mixing chamber - M2S	Pa	-1	-2	-3	-5	-6	-8
Mixing chamber with 2 front dampers - S2Z	Pa	-3	-5	-8	-11	-15	-20
Soft pocket filters - FTF	Pa	-16	-31	-49	-72	-98	-127
6-row coil compared with the 4-row coil	Pa	-3	-5	-8	-11	-16	-21
2-row post-heating water coil - B2R	Pa	-8	-15	-24	-35	-48	-62
1-row post-heating water coil - B1R	Pa	-4	-7	-11	-17	-23	-29
Electric post-heating coil - PBE	Pa	-1	-2	-4	-5	-7	-9
Silencers - SSL	Pa	-4	-7	-11	-16	-22	-28
Soft pocket filters - FTF	Pa	-16	-31	-49	-72	-98	-127
Closed Supply plenum - PMC	Pa	0	0	0	0	0	0
Supply plenum with circular vents - PMM	Pa	-1	-1	-2	-2	-3	-4
Supply damper - SAP	Pa	-1	-2	-3	-5	-6	-8
Supply grille - GMD	Pa	-1	-2	-3	-5	-6	-8

TA 24-4R



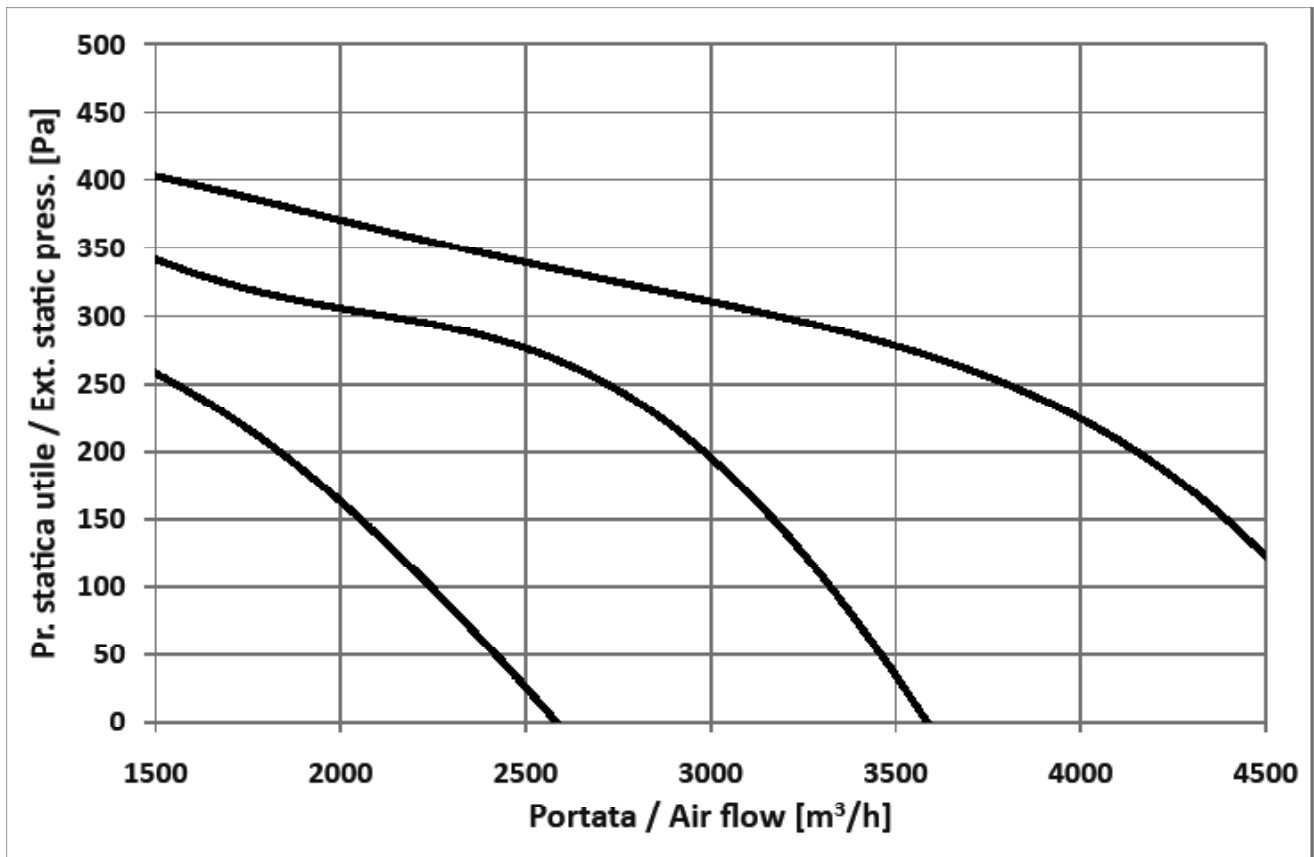
FLOW RATE	m³/h	800	1200	1600	2000	2400	2800
Suction grille - GAP	Pa	-3	-7	-11	-17	-24	-31
Anti-freeze damper - SAP	Pa	-1	-1	-2	-4	-5	-7
Intake silencers - SSL	Pa	-3	-6	-10	-16	-22	-28
Intake fan - VRF	Pa	42	87	145	217	301	398
3-damper mixing chamber - M3S	Pa	-1	-2	-4	-6	-8	-10
2-damper mixing chamber - M2S	Pa	-1	-1	-2	-4	-5	-7
Mixing chamber with 2 front dampers - S2Z	Pa	-2	-3	-6	-9	-12	-16
Soft pocket filters - FTF	Pa	-6	-12	-21	-31	-43	-56
6-row coil compared with the 4-row coil	Pa	-1	-3	-5	-9	-12	-16
2-row post-heating water coil - B2R	Pa	-5	-10	-17	-25	-35	-47
1-row post-heating water coil - B1R	Pa	-2	-5	-8	-12	-17	-22
Electric post-heating coil - PBE	Pa	-1	-2	-3	-4	-5	-7
Silencers - SSL	Pa	-3	-6	-10	-16	-22	-28
Soft pocket filters - FTF	Pa	-6	-12	-21	-31	-43	-56
Closed Supply plenum - PMC	Pa	0	0	0	0	0	0
Supply plenum with circular vents - PMM	Pa	0	-1	-2	-2	-3	-4
Supply damper - SAP	Pa	-1	-1	-2	-4	-5	-7
Supply grille - GMD	Pa	-1	-1	-2	-4	-5	-7

TA 33-4R



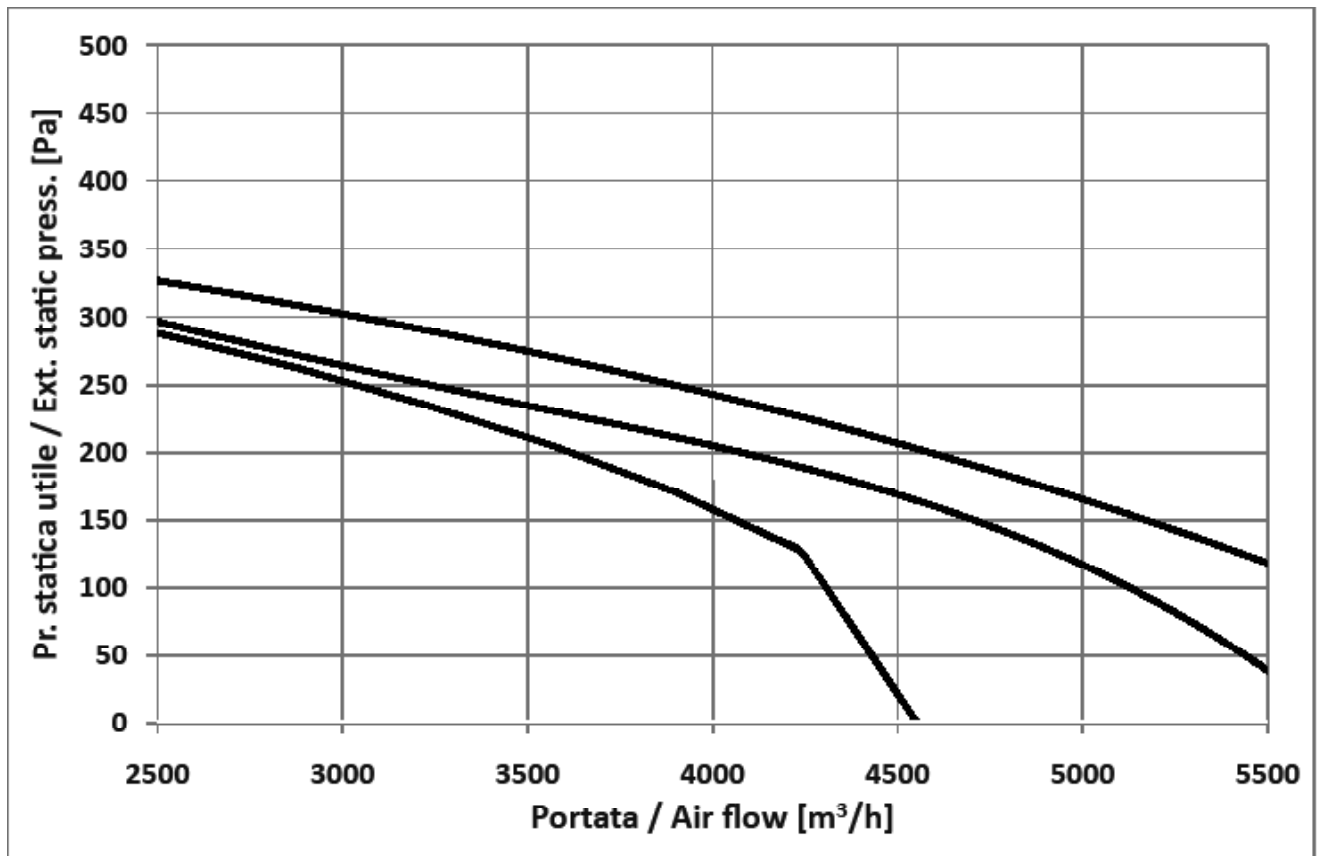
FLOW RATE	m³/h	1300	1700	2100	2500	2900	3300	3700
Suction grille - GAP	Pa	-8	-13	-19	-26	-33	-42	-52
Anti-freeze damper - SAP	Pa	0	-1	-1	-1	-1	-2	-2
Intake silencers - SSL	Pa	-8	-12	-18	-25	-32	-41	-50
Intake fan - VRF	Pa	34	54	80	109	143	180	221
3-damper mixing chamber - M3S	Pa	-3	-4	-6	-8	-11	-14	-17
2-damper mixing chamber - M2S	Pa	0	-1	-1	-1	-1	-2	-2
Mixing chamber with 2 front dampers - S2Z	Pa	-4	-7	-10	-13	-17	-21	-26
Soft pocket filters - FTF	Pa	-14	-23	-34	-46	-60	-76	-93
6-row coil compared with the 4-row coil	Pa	-4	-6	-9	-12	-18	-21	-25
2-row post-heating water coil - B2R	Pa	-12	-19	-28	-38	-50	-63	-77
1-row post-heating water coil - B1R	Pa	-6	-9	-13	-18	-24	-30	-37
Electric post-heating coil - PBE	Pa	-2	-3	-4	-6	-7	-9	-12
Silencers - SSL	Pa	-8	-12	-18	-25	-32	-41	-50
Soft pocket filters - FTF	Pa	-14	-23	-34	-46	-60	-76	-93
Closed Supply plenum - PMC	Pa	0	0	0	0	0	0	0
Supply plenum with circular vents - PMM	Pa	-1	-2	-3	-4	-5	-6	-8
Supply damper - SAP	Pa	0	-1	-1	-1	-1	-2	-2
Supply grille - GMD	Pa	-2	-3	-4	-5	-7	-9	-11

TA 40-4R



FLOW RATE	m³/h	1500	2000	2500	3000	3500	4000	4500
Suction grille - GAP	Pa	-5	-9	-13	-18	-24	-31	-38
Anti-freeze damper - SAP	Pa	0	0	-1	-1	-1	-1	-2
Intake silencers - SSL	Pa	-5	-8	-12	-17	-22	-28	-35
Intake fan - VRF	Pa	47	78	117	162	214	272	337
3-damper mixing chamber - M3S	Pa	-2	-3	-4	-5	-7	-9	-11
2-damper mixing chamber - M2S	Pa	0	0	-1	-1	-1	-1	-2
Mixing chamber with 2 front dampers - S2Z	Pa	-3	-4	-6	-9	-12	-15	-18
Soft pocket filters - FTF	Pa	-9	-15	-22	-31	-41	-52	-64
6-row coil compared with the 4-row coil	Pa	-3	-4	-6	-8	-12	-14	-17
2-row post-heating water coil - B2R	Pa	-7	-13	-19	-26	-34	-44	-54
1-row post-heating water coil - B1R	Pa	-4	-6	-9	-12	-16	-21	-26
Electric post-heating coil - PBE	Pa	-1	-2	-3	-4	-5	-7	-8
Silencers - SSL	Pa	-5	-8	-12	-17	-22	-28	-35
Soft pocket filters - FTF	Pa	-9	-15	-22	-31	-41	-52	-64
Closed Supply plenum - PMC	Pa	0	0	0	0	0	0	0
Supply plenum with circular vents - PMM	Pa	-2	-3	-4	-6	-8	-10	-12
Supply damper - SAP	Pa	0	0	-1	-1	-1	-1	-2
Supply grille - GMD	Pa	-1	-2	-3	-4	-5	-7	-8

TA 50-4R



FLOW RATE	m³/h	2500	3000	3500	4000	4500	5000	5500
Suction grille - GAP	Pa	-13	-18	-24	-31	-38	-46	-55
Anti-freeze damper - SAP	Pa	-1	-1	-1	-1	-2	-2	-2
Intake silencers - SSL	Pa	-13	-17	-23	-29	-36	-44	-52
Intake fan - VRF	Pa	42	58	76	97	120	145	172
3-damper mixing chamber - M3S	Pa	-4	-5	-7	-9	-11	-13	-16
2-damper mixing chamber - M2S	Pa	-1	-1	-1	-1	-2	-2	-2
Mixing chamber with 2 front dampers - S2Z	Pa	-6	-9	-12	-15	-18	-22	-27
Soft pocket filters - FTF	Pa	-22	-31	-41	-52	-64	-77	-92
6-row coil compared with the 4-row coil	Pa	-6	-8	-12	-14	-17	-22	-25
2-row post-heating water coil - B2R	Pa	-19	-26	-34	-44	-54	-65	-78
1-row post-heating water coil - B1R	Pa	-9	-12	-16	-21	-26	-31	-37
Electric post-heating coil - PBE	Pa	-3	-4	-5	-7	-8	-10	-12
Silencers - SSL	Pa	-13	-17	-23	-29	-36	-44	-52
Soft pocket filters - FTF	Pa	-22	-31	-41	-52	-64	-77	-92
Closed Supply plenum - PMC	Pa	0	0	0	0	0	0	0
Supply plenum with circular vents - PMM	Pa	-4	-6	-8	-10	-13	-15	-18
Supply damper - SAP	Pa	-1	-1	-1	-1	-2	-2	-2
Supply grille - GMD	Pa	-3	-4	-5	-7	-8	-10	-12

Pressure drops in the filters, due to dirt

The charts to determine the pressure drops with different filter dirt levels are shown below. From the left-hand chart (showing the air flow rate - m^3/h - on the x co-ordinate), locate the flow rate in question then go up until you intersect the straight line corresponding to the unit size. At this point, by tracing a straight line parallel to the x co-ordinate

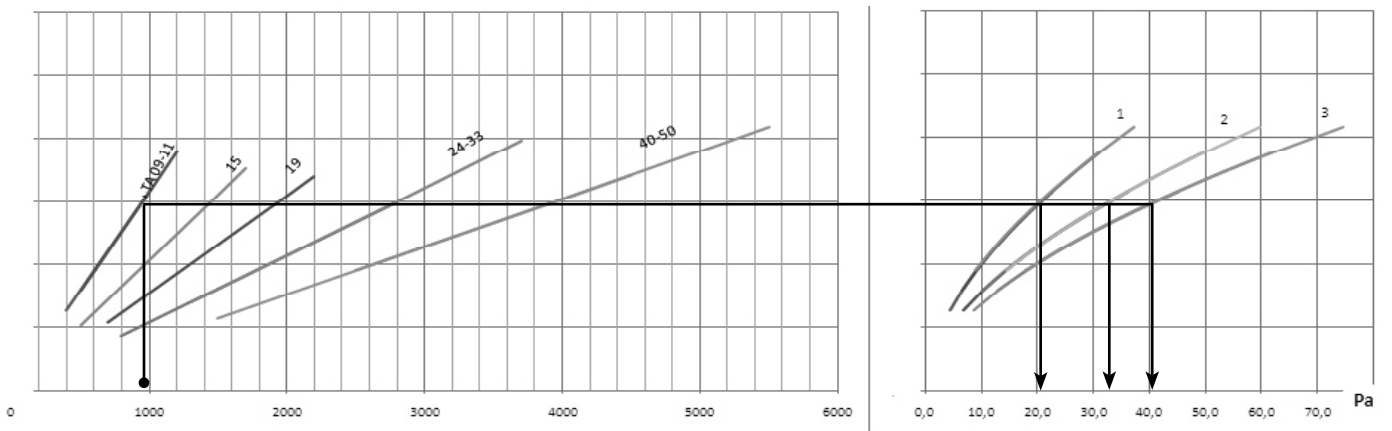
axis, you will intersect one of the three curves on the right-hand chart, each showing the degree of obstruction of the filter, as below:

- curve 1: clean filter
- curve 2: filter 25% clogged
- curve 3: filter 50% clogged

To determine the corresponding value of the filter pressure drop, trace a straight

line as far as the x co-ordinate axis.

PRESSURE DROP DUE TO DIRT ON THE FLAT FILTERS:



PRESSURE DROP DUE TO DIRT ON THE POCKET FILTERS:

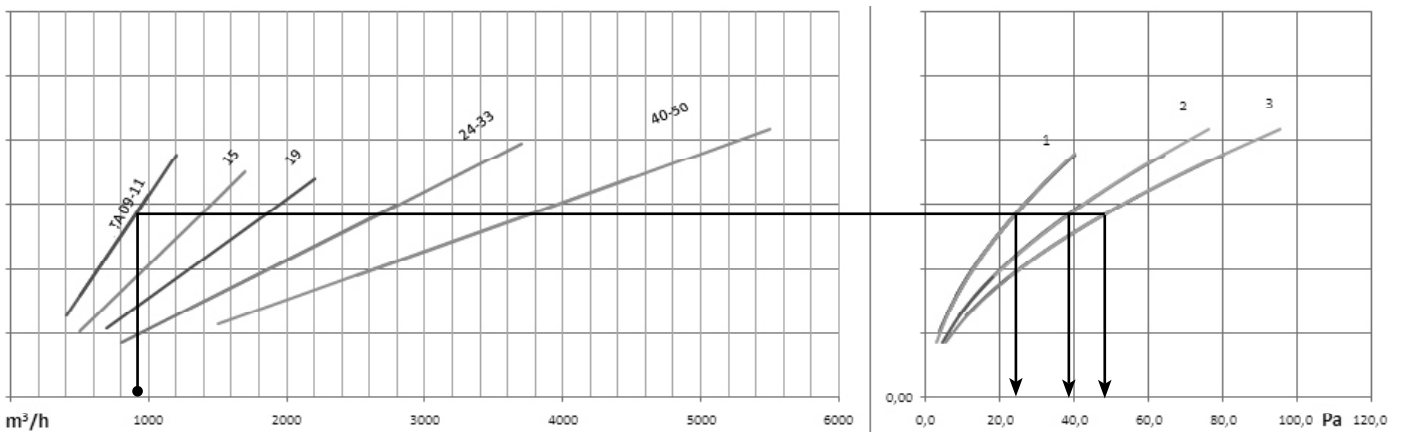


Table showing operating limits

Temperature of coil inlet air (summer)	min	21°C
	max	34°C
Temperature of coil inlet air (winter)	min	-5°C (*)
	max	24°C
Relative humidity (summer-winter)	min	20%
	max	90%
Temperature of coil inlet water (H ₂ O Cold)	min	4°C
	max	12°C
Thermal head H ₂ O	min	5°C
	max	8°C
Temperature of coil inlet water (H ₂ O Hot)	min	40°C
	max	80°C
Thermal head H ₂ O	min	5°C
	max	25°C
Evaporation temperature	min	2°C
	max	12°C

(*) envisage anti-freeze protection

Tables showing heat exchange coil output

On the following pages you will find the tables concerning the performance of the heat exchange coils for the typical

combinations of heat vector fluid temperature and hygrothermometric characteristics of the incoming air.

The values for the direct expansion coils refer to operation with R407C and R410A refrigerant.

Key:

P	Air flow rate [m ³ /h]
Tia	Temperature of incoming air [°C]
UmRel	Relative humidity (%)
Qtot	Total heating capacity [kW]
Qsen	Sensible heating capacity [kW]
WtrFlow	Water flow rate [l/h]
WtrDP	Water side pressure drops [kPa]
RefrDP	Refrigerant side pressure drops [kPa]

AIR CONDITIONING	TA 09 Temp. inlet water: 7 °C Temp. outlet water: 12 °C			4-row coil				6-row coil			
	P (m³/h)	Tia (°C)	UmRel (%)	Qtot (kW)	Qsen (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	Qsen (kW)	WtrFlow (l/s)	WtrDP (kPa)
	400	24	50	1.7	1.5	300	1	2.1	1.6	367	1
400	27	50	2.5	1.7	437	2	3.1	2.0	534	2	
400	30	50	3.9	2.2	671	3	4.1	2.3	710	3	
400	33	50	5.6	2.6	956	6	5.9	2.8	1022	5	
500	24	50	1.9	1.7	327	1	2.4	1.9	415	1	
500	27	50	2.8	2.0	487	2	3.5	2.3	607	2	
500	30	50	5.0	2.7	851	5	5.4	2.9	925	4	
500	33	50	6.8	3.2	1169	8	7.4	3.5	1266	7	
600	24	50	2.2	2.0	386	2	2.7	2.2	462	2	
600	27	50	3.1	2.3	530	2	3.9	2.6	671	2	
600	30	50	5.9	3.2	1010	7	6.5	3.5	1113	5	
600	33	50	7.8	3.7	1343	11	8.7	4.1	1497	9	
700	24	50	2.5	2.2	424	2	2.9	2.5	491	2	
700	27	50	4.1	2.8	713	4	4.5	3.1	779	3	
700	30	50	6.7	3.6	1157	8	7.5	4.0	1288	7	
700	33	50	8.8	4.2	1517	13	9.9	4.7	1705	11	
800	24	50	2.7	2.4	457	2	3.0	2.7	521	2	
800	27	50	4.8	3.2	827	5	5.4	3.5	933	4	
800	30	50	7.4	4.0	1278	10	8.5	4.5	1454	8	
800	33	50	9.8	4.7	1682	16	11.0	5.2	1893	13	
900	24	50	2.8	2.6	486	2	3.4	3.1	593	2	
900	27	50	5.4	3.6	930	6	6.2	4.0	1069	5	
900	30	50	8.1	4.4	1392	11	9.2	5.0	1590	10	
900	33	50	10.7	5.1	1838	18	12.1	5.7	2082	16	
1000	24	50	3.0	2.7	514	2	3.7	3.3	633	2	
1000	27	50	6.0	3.9	1030	7	6.9	4.4	1188	6	
1000	30	50	8.7	4.8	1498	13	10.1	5.4	1740	11	
1000	33	50	11.5	5.5	1982	21	13.2	6.2	2265	18	

AIR CONDITIONING	TA 11 Temp. inlet water: 7 °C Temp. outlet water: 12 °C			4-row coil				6-row coil			
	P (m³/h)	Tia (°C)	UmRel (%)	Qtot (kW)	Qsen (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	Qsen (kW)	WtrFlow (l/s)	WtrDP (kPa)
	500	24	50	1.9	1.7	327	1	2.4	1.9	415	1
500	27	50	2.8	2.0	487	2	3.5	2.3	607	2	
500	30	50	5.0	2.7	851	5	5.4	2.9	925	4	
500	33	50	6.8	3.2	1169	8	7.4	3.5	1266	7	
600	24	50	2.2	2.0	386	2	2.7	2.2	462	2	
600	27	50	3.1	2.3	530	2	3.9	2.6	671	2	
600	30	50	5.9	3.2	1010	7	6.5	3.5	1113	5	
600	33	50	7.8	3.7	1343	11	8.7	4.1	1497	9	
700	24	50	2.5	2.2	424	2	2.9	2.5	491	2	
700	27	50	4.1	2.8	713	4	4.5	3.1	779	3	
700	30	50	6.7	3.6	1157	8	7.5	4.0	1288	7	
700	33	50	8.8	4.2	1517	13	9.9	4.7	1705	11	
800	24	50	2.7	2.4	457	2	3.0	2.7	521	2	
800	27	50	4.8	3.2	827	5	5.4	3.5	933	4	
800	30	50	7.4	4.0	1278	10	8.5	4.5	1454	8	
800	33	50	9.8	4.7	1682	16	11.0	5.2	1893	13	
900	24	50	2.8	2.6	486	2	3.4	3.1	593	2	
900	27	50	5.4	3.6	930	6	6.2	4.0	1069	5	
900	30	50	8.1	4.4	1392	11	9.2	5.0	1590	10	
900	33	50	10.7	5.1	1838	18	12.1	5.7	2082	16	
1000	24	50	3.0	2.7	514	2	3.7	3.3	633	2	
1000	27	50	6.0	3.9	1030	7	6.9	4.4	1188	6	
1000	30	50	8.7	4.8	1498	13	10.1	5.4	1740	11	
1000	33	50	11.5	5.5	1982	21	13.2	6.2	2265	18	
1100	24	50	3.2	2.9	550	3	3.9	3.5	668	2	
1100	27	50	6.4	4.3	1109	8	7.5	4.8	1287	7	
1100	30	50	9.3	5.1	1602	15	10.9	5.8	1869	13	
1100	33	50	12.3	5.9	2123	24	14.2	6.7	2442	20	
1200	24	50	3.6	3.3	624	3	4.1	3.7	702	3	
1200	27	50	7.0	4.6	1199	9	8.2	5.2	1408	8	
1200	30	50	9.9	5.4	1704	16	11.6	6.2	1989	14	
1200	33	50	13.1	6.3	2258	27	15.2	7.2	2614	23	

AIR CONDITIONING	TA 15 Temp. inlet water: 7°C Temp. outlet water: 12 °C			4-row coil				6-row coil			
	P (m³/h)	Tia (°C)	UmRel (%)	Otot (kW)	Qsen (kW)	WtrFlow (l/s)	WtrDP (kPa)	Otot (kW)	Qsen (kW)	WtrFlow (l/s)	WtrDP (kPa)
	500	24	50	2.3	1.9	395	1	3.0	2.2	516	2
500	27	50	3.4	2.3	582	1	4.5	2.7	766	4	
500	30	50	4.6	2.6	788	2	6.5	3.4	1118	7	
500	33	50	7.2	3.4	1233	4	8.3	3.9	1428	10	
700	24	50	2.7	2.4	463	1	3.7	2.8	634	3	
700	27	50	4.0	2.9	693	2	6.3	3.8	1091	6	
700	30	50	7.3	4.0	1258	4	9.0	4.6	1540	12	
700	33	50	10.0	4.7	1719	7	11.3	5.3	1938	17	
900	24	50	3.4	3.0	576	1	4.7	3.6	807	4	
900	27	50	4.5	3.4	777	2	8.2	4.8	1406	10	
900	30	50	9.3	5.0	1606	6	11.1	5.8	1911	17	
900	33	50	12.2	5.8	2102	10	14.0	6.6	2416	25	
1100	24	50	3.8	3.4	648	2	6.3	4.6	1085	6	
1100	27	50	7.2	4.7	1239	4	9.9	5.8	1702	14	
1100	30	50	11.0	5.9	1896	8	13.1	6.8	2261	22	
1100	33	50	14.4	6.8	2470	13	16.6	7.8	2863	34	
1300	24	50	4.1	3.7	710	2	7.5	5.4	1287	8	
1300	27	50	8.6	5.5	1482	5	11.2	6.7	1932	17	
1300	30	50	12.5	6.7	2147	10	15.1	7.9	2599	29	
1300	33	50	16.4	7.8	2813	17	19.1	8.9	3291	44	
1500	24	50	4.4	4.0	763	2	8.5	6.1	1471	11	
1500	27	50	9.9	6.3	1695	7	12.6	7.5	2169	21	
1500	30	50	13.8	7.5	2382	12	17.0	8.8	2924	35	
1500	33	50	18.2	8.6	3124	20	21.7	10.1	3730	54	
1700	24	50	5.3	4.8	908	3	9.5	6.8	1629	13	
1700	27	50	10.8	6.9	1862	8	13.9	8.3	2398	25	
1700	30	50	15.2	8.2	2611	14	18.6	9.7	3204	41	
1700	33	50	19.9	9.5	3427	24	24.0	11.2	4134	65	

AIR CONDITIONING	TA 19 Temp. inlet water: 7°C Temp. outlet water: 12 °C			4-row coil				6-row coil			
	P (m³/h)	Tia (°C)	UmRel (%)	Otot (kW)	Qsen (kW)	WtrFlow (l/s)	WtrDP (kPa)	Otot (kW)	Qsen (kW)	WtrFlow (l/s)	WtrDP (kPa)
	700	24	50	3.3	2.7	567	1	4.2	3.0	725	3
700	27	50	4.8	3.2	822	2	7.0	4.0	1200	7	
700	30	50	8.0	4.3	1383	5	9.3	4.8	1608	12	
700	33	50	10.7	5.0	1836	8	11.7	5.5	2014	18	
1000	24	50	3.9	3.5	667	2	6.4	4.5	1095	6	
1000	27	50	7.5	4.7	1294	4	9.8	5.7	1686	13	
1000	30	50	11.3	5.9	1939	9	12.9	6.6	2212	21	
1000	33	50	14.4	6.8	2483	13	16.1	7.5	2775	31	
1300	24	50	4.8	4.4	825	2	8.3	5.8	1434	10	
1300	27	50	10.0	6.1	1712	7	12.2	7.1	2104	19	
1300	30	50	13.8	7.3	2376	12	16.1	8.3	2775	31	
1300	33	50	17.9	8.4	3081	19	20.3	9.5	3488	46	
1600	24	50	6.0	5.4	1026	3	10.1	7.0	1736	14	
1600	27	50	11.9	7.3	2044	9	14.5	8.5	2489	25	
1600	30	50	16.3	8.6	2797	16	19.1	9.9	3291	42	
1600	33	50	21.1	9.9	3638	25	24.2	11.3	4161	63	
1900	24	50	7.3	6.2	1256	4	11.5	8.0	1980	17	
1900	27	50	13.4	8.3	2313	12	16.7	9.8	2869	33	
1900	30	50	18.5	9.8	3180	20	22.2	11.5	3824	54	
1900	33	50	24.0	11.3	4127	32	-	-	-	-	
2200	24	50	8.8	7.2	1520	6	12.8	9.0	2207	21	
2200	27	50	14.9	9.3	2560	14	18.6	11.0	3196	39	
2200	30	50	20.6	11.0	3539	24	24.7	12.8	4255	65	
2200	33	50	26.8	12.6	4607	39	-	-	-	-	

AIR CONDITIONING	TA 24 Temp. inlet water: 7 °C Temp. outlet water: 12 °C			4-row coil				6-row coil			
	P (m³/h)	Tia (°C)	UmRel (%)	Otot (kW)	Osen (kW)	WtrFlow (l/s)	WtrDP (kPa)	Otot (kW)	Osen (kW)	WtrFlow (l/s)	WtrDP (kPa)
	800	24	50	4.1	3.2	702	1	5.1	3.6	878	3
800	27	50	5.9	3.8	1021	2	8.1	4.7	1398	6	
800	30	50	9.9	5.2	1707	5	10.9	5.6	1882	9	
800	33	50	12.9	6.0	2214	8	13.7	6.4	2358	13	
1200	24	50	5.0	4.3	865	2	7.9	5.5	1351	5	
1200	27	50	10.4	6.2	1795	6	12.2	7.0	2098	11	
1200	30	50	14.5	7.5	2493	10	16.0	8.2	2746	17	
1200	33	50	18.4	8.6	3158	15	19.9	9.3	3427	26	
1600	24	50	6.3	5.7	1081	3	10.8	7.4	1861	9	
1600	27	50	13.4	8.1	2313	9	15.7	9.1	2706	17	
1600	30	50	18.3	9.6	3150	15	20.6	10.6	3538	27	
1600	33	50	23.4	10.9	4019	23	25.7	12.0	4430	40	
2000	24	50	10.0	7.6	1727	5	13.4	9.1	2297	13	
2000	27	50	16.3	9.8	2796	12	18.9	11.0	3255	23	
2000	30	50	22.0	11.5	3779	21	24.9	12.8	4276	38	
2000	33	50	28.2	13.2	4849	32	31.3	14.6	5378	56	
2400	24	50	11.9	8.9	2046	7	15.4	10.6	2654	16	
2400	27	50	18.6	11.2	3201	16	22.1	12.8	3797	31	
2400	30	50	25.2	13.2	4335	26	28.9	14.9	4978	49	
2400	33	50	32.7	15.3	5619	42	-	-	-	-	
2800	24	50	14.0	10.3	2400	9	17.4	12.0	2984	20	
2800	27	50	20.9	12.7	3589	19	25.1	14.6	4315	38	
2800	30	50	28.3	14.9	4871	32	33.2	17.1	5716	63	
2800	33	50	36.5	17.1	6272	51	-	-	-	-	

AIR CONDITIONING	TA 33 Temp. inlet water: 7 °C Temp. outlet water: 12 °C			4-row coil				6-row coil			
	P (m³/h)	Tia (°C)	UmRel (%)	Otot (kW)	Osen (kW)	WtrFlow (l/s)	WtrDP (kPa)	Otot (kW)	Osen (kW)	WtrFlow (l/s)	WtrDP (kPa)
	1300	24	50	5.2	4.6	895	2	8.7	6.0	1494	6
1300	27	50	11.3	6.7	1943	7	13.1	7.6	2262	12	
1300	30	50	15.5	8.1	2663	11	17.1	8.8	2947	20	
1300	33	50	19.7	9.2	3383	17	21.4	10.0	3682	29	
1700	24	50	7.1	6.3	1229	3	11.5	7.8	1975	10	
1700	27	50	14.1	8.5	2432	10	16.6	9.6	2847	18	
1700	30	50	19.2	10.1	3311	16	21.6	11.1	3724	30	
1700	33	50	24.6	11.5	4224	25	27.2	12.7	4672	44	
2100	24	50	10.6	8.0	1827	6	13.9	9.5	2394	14	
2100	27	50	16.9	10.1	2902	13	19.7	11.5	3394	25	
2100	30	50	22.8	12.0	3929	22	25.9	13.4	4454	40	
2100	33	50	29.3	13.7	5046	35	32.6	15.2	5608	61	
2500	24	50	12.7	9.4	2179	8	15.9	10.9	2739	17	
2500	27	50	19.2	11.6	3302	16	22.8	13.3	3929	32	
2500	30	50	26.0	13.7	4473	28	29.9	15.5	5148	52	
2500	33	50	33.4	15.6	5746	44	-	-	-	-	
2900	24	50	14.3	10.6	2460	10	17.8	12.3	3065	21	
2900	27	50	21.4	13.0	3682	20	25.5	14.9	4390	39	
2900	30	50	29.1	15.3	5001	34	34.2	17.6	5885	66	
2900	33	50	37.5	17.5	6443	53	-	-	-	-	
3300	24	50	15.6	11.7	2684	11	19.6	13.7	3380	25	
3300	27	50	23.5	14.3	4037	23	28.2	16.6	4855	47	
3300	30	50	32.0	16.9	5502	40	-	-	-	-	
3300	33	50	41.3	19.3	7105	64	-	-	-	-	
3700	24	50	16.8	12.7	2897	13	21.3	14.9	3669	29	
3700	27	50	25.4	15.6	4376	27	30.8	18.1	5300	55	
3700	30	50	34.8	18.3	5980	47	-	-	-	-	
3700	33	50	-	-	-	-	-	-	-	-	

AIR CONDITIONING	TA 40 Temp. inlet water: 7 °C Temp. outlet water: 12 °C			4-row coil				6-row coil			
	P (m³/h)	Tia (°C)	UmRel (%)	Qtot (kW)	Qsen (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	Qsen (kW)	WtrFlow (l/s)	WtrDP (kPa)
	1500	24	50	6.2	5.4	1060	1	7.9	6.1	1359	3
1500	27	50	9.2	6.5	1580	2	15.3	8.8	2624	7	
1500	30	50	17.5	9.2	3011	5	20.3	10.4	3490	11	
1500	33	50	23.3	10.9	4006	8	25.3	11.8	4345	17	
2000	24	50	7.8	7.1	1345	1	13.1	9.1	2253	5	
2000	27	50	15.8	9.8	2718	4	20.1	11.6	3463	11	
2000	30	50	23.3	12.2	4012	8	26.2	13.5	4511	18	
2000	33	50	29.7	13.9	5107	11	32.8	15.3	5640	26	
2500	24	50	8.9	8.1	1535	2	16.7	11.4	2879	8	
2500	27	50	20.3	12.3	3485	6	24.3	14.1	4188	16	
2500	30	50	27.8	14.6	4781	10	31.8	16.4	5478	25	
2500	33	50	35.8	16.8	6158	16	40.0	18.6	6873	37	
3000	24	50	9.9	9.0	1696	2	19.9	13.5	3427	11	
3000	27	50	23.8	14.4	4089	8	28.3	16.4	4866	20	
3000	30	50	32.2	17.0	5540	13	37.2	19.2	6395	33	
3000	33	50	41.6	19.5	7149	21	46.8	21.8	8049	49	
3500	24	50	13.8	12.5	2365	3	22.5	15.4	3879	14	
3500	27	50	26.6	16.2	4584	10	32.2	18.8	5543	26	
3500	30	50	36.4	19.2	6258	16	42.3	21.8	7273	41	
3500	33	50	47.0	22.0	8091	26	53.3	24.9	9176	62	
4000	24	50	17.6	14.0	3031	5	25.0	17.2	4294	16	
4000	27	50	29.4	18.0	5050	11	36.0	21.0	6194	31	
4000	30	50	40.1	21.2	6896	20	47.7	24.6	8205	51	
4000	33	50	51.8	24.3	8908	31	-	-	-	-	
4500	24	50	20.3	15.7	3491	6	27.3	18.9	4689	19	
4500	27	50	32.0	19.6	5498	13	39.2	23.0	6736	36	
4500	30	50	43.7	23.2	7524	23	52.6	27.1	9049	61	
4500	33	50	56.6	26.6	9743	36	-	-	-	-	

AIR CONDITIONING	TA 50 Temp. inlet water: 7 °C Temp. outlet water: 12 °C			4-row coil				6-row coil			
	P (m³/h)	Tia (°C)	UmRel (%)	Qtot (kW)	Qsen (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	Qsen (kW)	WtrFlow (l/s)	WtrDP (kPa)
	2500	24	50	8.9	8.1	1535	2	16.7	11.4	2879	8
2500	27	50	20.3	12.3	3485	6	24.3	14.1	4188	16	
2500	30	50	27.8	14.6	4781	10	31.8	16.4	5478	25	
2500	33	50	35.8	16.8	6158	16	40.0	18.6	6873	37	
3000	24	50	9.9	9.0	1696	2	19.9	13.5	3427	11	
3000	27	50	23.8	14.4	4089	8	28.3	16.4	4866	20	
3000	30	50	32.2	17.0	5540	13	37.2	19.2	6395	33	
3000	33	50	41.6	19.5	7149	21	46.8	21.8	8049	49	
3500	24	50	13.8	12.5	2365	3	22.5	15.4	3879	14	
3500	27	50	26.6	16.2	4584	10	32.2	18.8	5543	26	
3500	30	50	36.4	19.2	6258	16	42.3	21.8	7273	41	
3500	33	50	47.0	22.0	8091	26	53.3	24.9	9176	62	
4000	24	50	17.6	14.0	3031	5	25.0	17.2	4294	16	
4000	27	50	29.4	18.0	5050	11	36.0	21.0	6194	31	
4000	30	50	40.1	21.2	6896	20	47.7	24.6	8205	51	
4000	33	50	51.8	24.3	8908	31	-	-	-	-	
4500	24	50	20.3	15.7	3491	6	27.3	18.9	4689	19	
4500	27	50	32.0	19.6	5498	13	39.2	23.0	6736	36	
4500	30	50	43.7	23.2	7524	23	52.6	27.1	9049	61	
4500	33	50	56.6	26.6	9743	36	-	-	-	-	
5000	24	50	22.5	17.3	3879	7	29.5	20.6	5082	22	
5000	27	50	34.5	21.3	5931	15	42.5	25.0	7308	42	
5000	30	50	47.2	25.1	8126	26	56.4	29.2	9708	69	
5000	33	50	61.3	28.8	10542	42	-	-	-	-	
5500	24	50	24.1	18.5	4138	8	31.6	22.2	5438	25	
5500	27	50	36.8	22.8	6326	17	45.7	26.9	7861	47	
5500	30	50	50.6	26.9	8703	29	-	-	-	-	
5500	33	50	65.7	30.8	11310	47	-	-	-	-	

HEATING	TA 09 Temp. inlet water: 70°C Temp. outlet water: 60°C			4-row coil			6-row coil		
	P (m³/h)	Tia (°C)	UmRel (%)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)
	400	-5	50	9.7	849	5	10.3	899	3
400	2	50	8.6	750	4	9.1	795	3	
400	10	50	7.3	642	3	7.8	680	2	
400	18	50	6.1	538	2	6.5	571	2	
500	-5	50	11.7	1025	6	12.5	1098	5	
500	2	50	10.3	906	5	11.1	970	4	
500	10	50	8.9	775	4	9.5	830	3	
500	18	50	7.4	650	3	8.0	697	2	
600	-5	50	13.6	1192	8	14.7	1288	6	
600	2	50	12.0	1054	6	13.0	1138	5	
600	10	50	10.3	902	5	11.1	974	4	
600	18	50	8.6	756	4	9.3	817	3	
700	-5	50	15.4	1349	10	16.8	1469	8	
700	2	50	13.6	1193	8	14.8	1299	6	
700	10	50	11.7	1021	6	12.7	1112	5	
700	18	50	9.8	856	5	10.7	933	4	
800	-5	50	17.1	1500	12	18.8	1644	9	
800	2	50	15.1	1327	10	16.6	1454	8	
800	10	50	13.0	1136	7	14.2	1245	6	
800	18	50	10.9	951	5	11.9	1044	4	
900	-5	50	18.8	1644	14	20.7	1813	11	
900	2	50	16.6	1454	11	18.3	1604	9	
900	10	50	14.2	1245	9	15.7	1373	7	
900	18	50	11.9	1043	6	13.1	1151	5	
1000	-5	50	20.3	1782	16	22.6	1976	13	
1000	2	50	18.0	1577	13	20.0	1748	10	
1000	10	50	15.4	1350	10	17.1	1497	8	
1000	18	50	12.9	1131	7	14.3	1255	6	

HEATING	TA 11 Temp. inlet water: 70°C Temp. outlet water: 60°C			4-row coil			6-row coil		
	P (m³/h)	Tia (°C)	UmRel (%)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)
	500	-5	50	11.7	1025	6	12.5	1098	5
500	2	50	10.3	906	5	11.1	970	4	
500	10	50	8.9	775	4	9.5	830	3	
500	18	50	7.4	650	3	8.0	697	2	
600	-5	50	13.6	1192	8	14.7	1288	6	
600	2	50	12.0	1054	6	13.0	1138	5	
600	10	50	10.3	902	5	11.1	974	4	
600	18	50	8.6	756	4	9.3	817	3	
700	-5	50	15.4	1349	10	16.8	1469	8	
700	2	50	13.6	1193	8	14.8	1299	6	
700	10	50	11.7	1021	6	12.7	1112	5	
700	18	50	9.8	856	5	10.7	933	4	
800	-5	50	17.1	1500	12	18.8	1644	9	
800	2	50	15.1	1327	10	16.6	1454	8	
800	10	50	13.0	1136	7	14.2	1245	6	
800	18	50	10.9	951	5	11.9	1044	4	
900	-5	50	18.8	1644	14	20.7	1813	11	
900	2	50	16.6	1454	11	18.3	1604	9	
900	10	50	14.2	1245	9	15.7	1373	7	
900	18	50	11.9	1043	6	13.1	1151	5	
1000	-5	50	20.3	1782	16	22.6	1976	13	
1000	2	50	18.0	1577	13	20.0	1748	10	
1000	10	50	15.4	1350	10	17.1	1497	8	
1000	18	50	12.9	1131	7	14.3	1255	6	
1100	-5	50	21.9	1915	18	24.4	2134	15	
1100	2	50	19.4	1695	15	21.6	1888	12	
1100	10	50	16.6	1452	11	18.5	1617	9	
1100	18	50	13.9	1216	8	15.5	1356	7	
1200	-5	50	23.3	2043	20	26.1	2287	17	
1200	2	50	20.7	1809	16	23.1	2024	13	
1200	10	50	17.7	1549	13	19.8	1734	10	
1200	18	50	14.8	1297	9	16.6	1453	8	

HEATING	TA 15 Temp. inlet water: 70°C Temp. outlet water: 60°C			4-row coil			6-row coil		
	P (m³/h)	Tia (°C)	UmRel (%)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)
	500	-5	50	12.6	1104	3	13.2	1160	6
500	2	50	11.1	976	3	11.7	1026	5	
500	10	50	9.5	835	2	10.0	879	4	
500	18	50	8.0	701	2	8.4	740	3	
700	-5	50	16.9	1481	5	18.1	1582	11	
700	2	50	14.9	1309	4	16.0	1399	9	
700	10	50	12.8	1121	3	13.7	1199	7	
700	18	50	10.7	940	2	11.5	1009	5	
900	-5	50	20.9	1830	7	22.6	1982	16	
900	2	50	18.5	1619	6	20.0	1753	13	
900	10	50	15.8	1386	5	17.2	1503	10	
900	18	50	13.3	1162	3	14.4	1264	7	
1100	-5	50	24.6	2156	10	27.0	2361	22	
1100	2	50	21.8	1908	8	23.9	2089	18	
1100	10	50	18.7	1634	6	20.5	1792	13	
1100	18	50	15.6	1370	4	17.2	1507	10	
1300	-5	50	28.1	2464	12	31.1	2723	28	
1300	2	50	24.9	2181	10	27.5	2411	23	
1300	10	50	21.3	1868	7	23.6	2068	17	
1300	18	50	17.9	1566	6	19.9	1739	13	
1500	-5	50	31.5	2755	15	35.1	3070	35	
1500	2	50	27.8	2439	12	31.0	2719	28	
1500	10	50	23.9	2090	9	26.6	2332	21	
1500	18	50	20.0	1752	7	22.4	1961	16	
1700	-5	50	34.6	3033	17	38.9	3403	42	
1700	2	50	30.7	2686	14	34.4	3015	34	
1700	10	50	26.3	2301	11	29.5	2587	26	
1700	18	50	22.0	1929	8	24.8	2175	19	

HEATING	TA 19 Temp. inlet water: 70°C Temp. outlet water: 60°C			4-row coil			6-row coil		
	P (m³/h)	Tia (°C)	UmRel (%)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)
	700	-5	50	17.6	1545	5	18.5	1622	11
700	2	50	15.6	1366	4	16.4	1434	9	
700	10	50	13.4	1170	3	14.0	1230	7	
700	18	50	11.2	982	3	11.8	1035	5	
1000	-5	50	24.0	2106	9	25.7	2251	19	
1000	2	50	21.3	1863	7	22.7	1991	15	
1000	10	50	18.2	1596	6	19.5	1707	12	
1000	18	50	15.3	1340	4	16.4	1437	9	
1300	-5	50	29.9	2623	13	32.5	2843	29	
1300	2	50	26.5	2321	11	28.7	2516	23	
1300	10	50	22.7	1989	8	24.6	2158	18	
1300	18	50	19.1	1670	6	20.7	1816	13	
1600	-5	50	35.4	3104	18	38.9	3403	39	
1600	2	50	31.4	2748	14	34.4	3013	32	
1600	10	50	26.9	2356	11	29.5	2585	24	
1600	18	50	22.6	1977	8	24.8	2175	18	
1900	-5	50	40.6	3556	22	44.9	3936	51	
1900	2	50	36.0	3149	18	39.8	3487	41	
1900	10	50	30.8	2700	14	34.2	2992	31	
1900	18	50	25.9	2267	10	28.7	2517	23	
2200	-5	50	45.5	3983	27	50.8	4446	63	
2200	2	50	40.3	3529	22	45.0	3939	51	
2200	10	50	34.6	3026	17	38.6	3381	39	
2200	18	50	29.0	2540	12	32.5	2845	29	

HEATING	TA 24 Temp. inlet water: 70°C Temp. outlet water: 60°C			4-row coil			6-row coil		
	P (m³/h)	Tia (°C)	UmRel (%)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)
	800	-5	50	20.8	1820	5	21.5	1884	8
800	2	50	18.4	1609	4	19.0	1665	7	
800	10	50	15.7	1379	3	16.3	1428	5	
800	18	50	13.2	1159	3	13.7	1202	4	
1200	-5	50	29.9	2616	10	31.5	2756	16	
1200	2	50	26.4	2314	8	27.8	2438	13	
1200	10	50	22.6	1984	6	23.9	2090	10	
1200	18	50	19.0	1667	5	20.1	1759	7	
1600	-5	50	38.3	3351	15	40.9	3581	25	
1600	2	50	33.9	2966	12	36.2	3168	20	
1600	10	50	29.0	2543	9	31.0	2718	15	
1600	18	50	24.4	2137	7	26.1	2287	11	
2000	-5	50	46.1	4036	21	49.8	4364	35	
2000	2	50	40.8	3574	17	44.1	3863	28	
2000	10	50	35.0	3065	13	37.8	3314	21	
2000	18	50	29.4	2576	10	31.8	2789	16	
2400	-5	50	53.4	4680	28	58.3	5109	46	
2400	2	50	47.3	4146	22	51.7	4525	37	
2400	10	50	40.6	3557	17	44.3	3883	28	
2400	18	50	34.1	2989	13	37.3	3268	21	
2800	-5	50	60.4	5289	34	66.5	5822	58	
2800	2	50	53.5	4688	28	58.9	5158	47	
2800	10	50	45.9	4023	21	50.6	4428	36	
2800	18	50	38.6	3380	16	42.5	3726	26	

HEATING	TA 33 Temp. inlet water: 70°C Temp. outlet water: 60°C			4-row coil			6-row coil		
	P (m³/h)	Tia (°C)	UmRel (%)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)
	1300	-5	50	32.0	2805	11	33.9	2967	18
1300	2	50	28.3	2482	9	30.0	2624	14	
1300	10	50	24.3	2127	7	25.7	2250	11	
1300	18	50	20.4	1788	5	21.6	1894	8	
1700	-5	50	40.3	3526	17	43.2	3780	27	
1700	2	50	35.6	3122	13	38.2	3345	22	
1700	10	50	30.6	2677	10	32.8	2869	17	
1700	18	50	25.7	2250	8	27.6	2415	12	
2100	-5	50	48.0	4200	23	52.0	4553	38	
2100	2	50	42.5	3720	18	46.0	4031	30	
2100	10	50	36.4	3191	14	39.5	3459	23	
2100	18	50	30.6	2682	10	33.2	2911	17	
2500	-5	50	55.2	4836	29	60.4	5290	49	
2500	2	50	48.9	4284	24	53.5	4685	40	
2500	10	50	42.0	3675	18	45.9	4021	30	
2500	18	50	35.3	3089	13	38.6	3384	22	
2900	-5	50	62.1	5437	36	68.5	5996	61	
2900	2	50	55.0	4819	29	60.7	5313	50	
2900	10	50	47.2	4135	22	52.1	4561	38	
2900	18	50	39.7	3475	16	43.8	3838	28	
3300	-5	50	68.6	6009	43	-	-	-	
3300	2	50	60.8	5328	35	67.5	5915	60	
3300	10	50	52.2	4573	27	58.0	5079	46	
3300	18	50	43.9	3844	19	48.8	4275	34	
3700	-5	50	74.9	6556	51	-	-	-	
3700	2	50	66.4	5814	41	-	-	-	
3700	10	50	57.0	4992	31	63.7	5579	54	
3700	18	50	47.9	4196	23	53.6	4696	40	

HEATING	TA 40 Temp. inlet water: 70°C Temp. outlet water: 60°C			4-row coil			6-row coil		
	P (m³/h)	Tia (°C)	UmRel (%)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)
	1500	-5	50	38.0	3328	5	39.8	3487	10
1500	2	50	33.6	2942	4	35.2	3083	8	
1500	10	50	28.8	2521	3	30.2	2643	6	
1500	18	50	24.2	2118	3	25.4	2225	5	
2000	-5	50	48.9	4282	8	51.9	4549	16	
2000	2	50	43.2	3788	6	45.9	4024	13	
2000	10	50	37.1	3246	5	39.4	3450	10	
2000	18	50	31.1	2727	4	33.2	2904	7	
2500	-5	50	59.1	5177	11	63.5	5564	23	
2500	2	50	52.3	4582	9	56.2	4923	19	
2500	10	50	44.8	3927	7	48.2	4222	14	
2500	18	50	37.7	3299	5	40.6	3553	11	
3000	-5	50	68.8	6022	14	74.6	6535	31	
3000	2	50	60.9	5331	11	66.0	5785	25	
3000	10	50	52.2	4571	9	56.7	4963	19	
3000	18	50	43.8	3839	6	47.7	4176	14	
3500	-5	50	77.9	6823	18	85.3	7467	39	
3500	2	50	69.0	6043	14	75.5	6612	31	
3500	10	50	59.2	5182	11	64.8	5674	24	
3500	18	50	49.7	4352	8	54.5	4775	18	
4000	-5	50	86.6	7588	21	95.5	8365	48	
4000	2	50	76.7	6722	17	84.6	7410	38	
4000	10	50	65.8	5765	13	72.6	6360	29	
4000	18	50	55.3	4843	10	61.1	5352	22	
4500	-5	50	95.0	8320	25	105.4	9232	57	
4500	2	50	84.2	7372	20	93.4	8180	46	
4500	10	50	72.2	6325	15	80.2	7023	35	
4500	18	50	60.6	5312	11	67.5	5910	26	

HEATING	TA 50 Temp. inlet water: 70°C Temp. outlet water: 60°C			4-row coil			6-row coil		
	P (m³/h)	Tia (°C)	UmRel (%)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)
	2500	-5	50	59.1	5177	11	63.5	5564	23
2500	2	50	52.3	4582	9	56.2	4923	19	
2500	10	50	44.8	3927	7	48.2	4222	14	
2500	18	50	37.7	3299	5	40.6	3553	11	
3000	-5	50	68.8	6022	14	74.6	6535	31	
3000	2	50	60.9	5331	11	66.0	5785	25	
3000	10	50	52.2	4571	9	56.7	4963	19	
3000	18	50	43.8	3839	6	47.7	4176	14	
3500	-5	50	77.9	6823	18	85.3	7467	39	
3500	2	50	69.0	6043	14	75.5	6612	31	
3500	10	50	59.2	5182	11	64.8	5674	24	
3500	18	50	49.7	4352	8	54.5	4775	18	
4000	-5	50	86.6	7588	21	95.5	8365	48	
4000	2	50	76.7	6722	17	84.6	7410	38	
4000	10	50	65.8	5765	13	72.6	6360	29	
4000	18	50	55.3	4843	10	61.1	5352	22	
4500	-5	50	95.0	8320	25	105.4	9232	57	
4500	2	50	84.2	7372	20	93.4	8180	46	
4500	10	50	72.2	6325	15	80.2	7023	35	
4500	18	50	60.6	5312	11	67.5	5910	26	
5000	-5	50	103.0	9023	29	115.0	10070	66	
5000	2	50	91.3	7997	24	101.9	8925	54	
5000	10	50	78.3	6862	18	87.5	7664	41	
5000	18	50	65.8	5763	13	73.6	6450	30	
5500	-5	50	110.7	9700	33	-	-	-	
5500	2	50	98.2	8599	27	110.2	9648	62	
5500	10	50	84.3	7379	20	94.6	8286	47	
5500	18	50	70.8	6198	15	79.6	6974	34	

HEATING	TA 09 Temp. inlet water: 45°C Temp. outlet water: 40°C			4-row coil			6-row coil		
	P (m³/h)	Tia (°C)	UmRel (%)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)
	400	-5	50	6.9	1191	6	6.9	1191	6
400	2	50	5.8	997	4	5.8	997	4	
400	10	50	4.5	784	3	4.5	784	3	
400	18	50	3.3	579	2	3.3	579	2	
500	-5	50	8.4	1456	8	8.4	1456	8	
500	2	50	7.0	1218	6	7.0	1218	6	
500	10	50	5.5	957	4	5.5	957	4	
500	18	50	4.1	708	3	4.1	708	3	
600	-5	50	9.9	1708	11	9.9	1708	11	
600	2	50	8.2	1429	8	8.2	1429	8	
600	10	50	6.5	1123	5	6.5	1123	5	
600	18	50	4.8	830	3	4.8	830	3	
700	-5	50	11.3	1951	14	11.3	1951	14	
700	2	50	9.4	1632	10	9.4	1632	10	
700	10	50	7.4	1282	7	7.4	1282	7	
700	18	50	5.5	946	4	5.5	946	4	
800	-5	50	12.6	2184	17	12.6	2184	17	
800	2	50	10.5	1827	12	10.5	1827	12	
800	10	50	8.3	1435	8	8.3	1435	8	
800	18	50	6.1	1058	5	6.1	1058	5	
900	-5	50	13.9	2409	20	13.9	2409	20	
900	2	50	11.6	2016	15	11.6	2016	15	
900	10	50	9.1	1583	10	9.1	1583	10	
900	18	50	6.7	1166	6	6.7	1166	6	
1000	-5	50	15.2	2627	23	15.2	2627	23	
1000	2	50	12.7	2198	17	12.7	2198	17	
1000	10	50	10.0	1726	11	10.0	1726	11	
1000	18	50	7.3	1271	7	7.3	1271	7	

HEATING	TA 11 Temp. inlet water: 45°C Temp. outlet water: 40°C			4-row coil			6-row coil		
	P (m³/h)	Tia (°C)	UmRel (%)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)
	500	-5	50	8.4	1456	8	8.4	1456	8
500	2	50	7.0	1218	6	7.0	1218	6	
500	10	50	5.5	957	4	5.5	957	4	
500	18	50	4.1	708	3	4.1	708	3	
600	-5	50	9.9	1708	11	9.9	1708	11	
600	2	50	8.2	1429	8	8.2	1429	8	
600	10	50	6.5	1123	5	6.5	1123	5	
600	18	50	4.8	830	3	4.8	830	3	
700	-5	50	11.3	1951	14	11.3	1951	14	
700	2	50	9.4	1632	10	9.4	1632	10	
700	10	50	7.4	1282	7	7.4	1282	7	
700	18	50	5.5	946	4	5.5	946	4	
800	-5	50	12.6	2184	17	12.6	2184	17	
800	2	50	10.5	1827	12	10.5	1827	12	
800	10	50	8.3	1435	8	8.3	1435	8	
800	18	50	6.1	1058	5	6.1	1058	5	
900	-5	50	13.9	2409	20	13.9	2409	20	
900	2	50	11.6	2016	15	11.6	2016	15	
900	10	50	9.1	1583	10	9.1	1583	10	
900	18	50	6.7	1166	6	6.7	1166	6	
1000	-5	50	15.2	2627	23	15.2	2627	23	
1000	2	50	12.7	2198	17	12.7	2198	17	
1000	10	50	10.0	1726	11	10.0	1726	11	
1000	18	50	7.3	1271	7	7.3	1271	7	
1100	-5	50	16.4	2838	27	16.4	2838	27	
1100	2	50	13.7	2375	20	13.7	2375	20	
1100	10	50	10.8	1864	13	10.8	1864	13	
1100	18	50	7.9	1372	8	7.9	1372	8	
1200	-5	50	17.6	3043	30	17.6	3043	30	
1200	2	50	14.7	2546	22	14.7	2546	22	
1200	10	50	11.5	1998	14	11.5	1998	14	
1200	18	50	8.5	1470	8	8.5	1470	8	

HEATING	TA 15 Temp. inlet water: 45°C Temp. outlet water: 40°C			4-row coil			6-row coil		
	P (m³/h)	Tia (°C)	UmRel (%)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)
	500	-5	50	8.9	1536	11	8.9	1536	11
500	2	50	7.4	1286	8	7.4	1286	8	
500	10	50	5.9	1015	6	5.9	1015	6	
500	18	50	4.4	757	4	4.4	757	4	
700	-5	50	12.1	2096	20	12.1	2096	20	
700	2	50	10.1	1756	14	10.1	1756	14	
700	10	50	8.0	1385	10	8.0	1385	10	
700	18	50	5.9	1031	6	5.9	1031	6	
900	-5	50	15.2	2628	29	15.2	2628	29	
900	2	50	12.7	2201	21	12.7	2201	21	
900	10	50	10.0	1736	14	10.0	1736	14	
900	18	50	7.4	1290	8	7.4	1290	8	
1100	-5	50	18.1	3134	40	18.1	3134	40	
1100	2	50	15.2	2626	29	15.2	2626	29	
1100	10	50	11.9	2070	19	11.9	2070	19	
1100	18	50	8.9	1537	11	8.9	1537	11	
1300	-5	50	20.9	3617	51	20.9	3617	51	
1300	2	50	17.5	3031	37	17.5	3031	37	
1300	10	50	13.8	2389	25	13.8	2389	25	
1300	18	50	10.2	1772	15	10.2	1772	15	
1500	-5	50	23.5	4079	64	23.5	4079	64	
1500	2	50	19.7	3420	46	19.7	3420	46	
1500	10	50	15.6	2695	30	15.6	2695	30	
1500	18	50	11.5	1998	18	11.5	1998	18	
1700	-5	50	-	-	-	-	-	-	
1700	2	50	21.9	3793	56	21.9	3793	56	
1700	10	50	17.3	2989	37	17.3	2989	37	
1700	18	50	12.8	2215	22	12.8	2215	22	

HEATING	TA 19 Temp. inlet water: 45°C Temp. outlet water: 40°C			4-row coil			6-row coil		
	P (m³/h)	Tia (°C)	UmRel (%)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)
	700	-5	50	12.4	2147	19	12.4	2147	19
700	2	50	10.4	1799	14	10.4	1799	14	
700	10	50	8.2	1420	10	8.2	1420	10	
700	18	50	6.1	1059	6	6.1	1059	6	
1000	-5	50	17.2	2983	35	17.2	2983	35	
1000	2	50	14.4	2500	25	14.4	2500	25	
1000	10	50	11.4	1973	17	11.4	1973	17	
1000	18	50	8.5	1469	10	8.5	1469	10	
1300	-5	50	21.8	3771	52	21.8	3771	52	
1300	2	50	18.2	3161	38	18.2	3161	38	
1300	10	50	14.4	2494	25	14.4	2494	25	
1300	18	50	10.7	1855	15	10.7	1855	15	
1600	-5	50	-	-	-	-	-	-	
1600	2	50	21.9	3789	53	21.9	3789	53	
1600	10	50	17.2	2988	35	17.2	2988	35	
1600	18	50	12.8	2221	21	12.8	2221	21	
1900	-5	50	-	-	-	-	-	-	
1900	2	50	25.3	4386	68	25.3	4386	68	
1900	10	50	20.0	3459	45	20.0	3459	45	
1900	18	50	14.8	2569	27	14.8	2569	27	
2200	-5	50	-	-	-	-	-	-	
2200	2	50	-	-	-	-	-	-	
2200	10	50	22.6	3909	56	22.6	3909	56	
2200	18	50	16.7	2901	33	16.7	2901	33	

HEATING	TA 24 Temp. inlet water: 45°C Temp. outlet water: 40°C			4-row coil			6-row coil		
	P (m³/h)	Tia (°C)	UmRel (%)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)
	800	-5	50	14.4	2491	14	14.4	2491	14
800	2	50	12.0	2087	11	12.0	2087	11	
800	10	50	9.5	1649	7	9.5	1649	7	
800	18	50	7.1	1231	4	7.1	1231	4	
1200	-5	50	21.1	3649	28	21.1	3649	28	
1200	2	50	17.6	3058	21	17.6	3058	21	
1200	10	50	13.9	2415	14	13.9	2415	14	
1200	18	50	10.4	1801	8	10.4	1801	8	
1600	-5	50	27.4	4746	45	27.4	4746	45	
1600	2	50	23.0	3979	33	23.0	3979	33	
1600	10	50	18.1	3140	22	18.1	3140	22	
1600	18	50	13.5	2339	13	13.5	2339	13	
2000	-5	50	33.4	5789	64	33.4	5789	64	
2000	2	50	28.0	4854	47	28.0	4854	47	
2000	10	50	22.1	3830	31	22.1	3830	31	
2000	18	50	16.4	2851	18	16.4	2851	18	
2400	-5	50	-	-	-	-	-	-	
2400	2	50	32.8	5689	62	32.8	5689	62	
2400	10	50	25.9	4489	41	25.9	4489	41	
2400	18	50	19.3	3338	24	19.3	3338	24	
2800	-5	50	-	-	-	-	-	-	
2800	2	50	-	-	-	-	-	-	
2800	10	50	29.5	5120	51	29.5	5120	51	
2800	18	50	22.0	3805	30	22.0	3805	30	

HEATING	TA 33 Temp. inlet water: 45°C Temp. outlet water: 40°C			4-row coil			6-row coil		
	P (m³/h)	Tia (°C)	UmRel (%)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)
	1300	-5	50	22.7	3928	32	22.7	3928	32
1300	2	50	19.0	3293	24	19.0	3293	24	
1300	10	50	15.0	2600	16	15.0	2600	16	
1300	18	50	11.2	1938	9	11.2	1938	9	
1700	-5	50	28.9	5012	49	28.9	5012	49	
1700	2	50	24.2	4202	36	24.2	4202	36	
1700	10	50	19.1	3315	24	19.1	3315	24	
1700	18	50	14.2	2469	14	14.2	2469	14	
2100	-5	50	34.9	6042	69	34.9	6042	69	
2100	2	50	29.2	5066	50	29.2	5066	50	
2100	10	50	23.1	3998	33	23.1	3998	33	
2100	18	50	17.2	2975	20	17.2	2975	20	
2500	-5	50	-	-	-	-	-	-	
2500	2	50	34.0	5892	66	34.0	5892	66	
2500	10	50	26.8	4649	43	26.8	4649	43	
2500	18	50	19.9	3457	26	19.9	3457	26	
2900	-5	50	-	-	-	-	-	-	
2900	2	50	-	-	-	-	-	-	
2900	10	50	30.4	5273	54	30.4	5273	54	
2900	18	50	22.6	3919	32	22.6	3919	32	
3300	-5	50	-	-	-	-	-	-	
3300	2	50	-	-	-	-	-	-	
3300	10	50	33.9	5873	66	33.9	5873	66	
3300	18	50	25.2	4363	39	25.2	4363	39	
3700	-5	50	-	-	-	-	-	-	
3700	2	50	-	-	-	-	-	-	
3700	10	50	-	-	-	-	-	-	
3700	18	50	27.7	4791	46	27.7	4791	46	

HEATING	TA 40 Temp. inlet water: 45°C Temp. outlet water: 40°C			4-row coil			6-row coil		
	P (m³/h)	Tia (°C)	UmRel (%)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)
	1500	-5	50	26.6	4613	18	26.6	4613	18
1500	2	50	22.3	3866	14	22.3	3866	14	
1500	10	50	17.6	3052	9	17.6	3052	9	
1500	18	50	13.1	2278	6	13.1	2278	6	
2000	-5	50	34.8	6024	29	34.8	6024	29	
2000	2	50	29.1	5050	22	29.1	5050	22	
2000	10	50	23.0	3986	14	23.0	3986	14	
2000	18	50	17.1	2971	9	17.1	2971	9	
2500	-5	50	42.6	7375	42	42.6	7375	42	
2500	2	50	35.7	6183	31	35.7	6183	31	
2500	10	50	28.2	4879	20	28.2	4879	20	
2500	18	50	21.0	3633	12	21.0	3633	12	
3000	-5	50	50.0	8669	56	50.0	8669	56	
3000	2	50	42.0	7269	41	42.0	7269	41	
3000	10	50	33.1	5736	27	33.1	5736	27	
3000	18	50	24.6	4268	16	24.6	4268	16	
3500	-5	50	-	-	-	-	-	-	
3500	2	50	48.0	8314	52	48.0	8314	52	
3500	10	50	37.9	6560	34	37.9	6560	34	
3500	18	50	28.2	4878	20	28.2	4878	20	
4000	-5	50	-	-	-	-	-	-	
4000	2	50	53.8	9320	64	53.8	9320	64	
4000	10	50	42.4	7353	42	42.4	7353	42	
4000	18	50	31.5	5466	25	31.5	5466	25	
4500	-5	50	-	-	-	-	-	-	
4500	2	50	-	-	-	-	-	-	
4500	10	50	46.9	8120	50	46.9	8120	50	
4500	18	50	34.8	6033	29	34.8	6033	29	

HEATING	TA 50 Temp. inlet water: 45°C Temp. outlet water: 40°C			4-row coil			6-row coil		
	P (m³/h)	Tia (°C)	UmRel (%)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)
	2500	-5	50	42.6	7375	42	42.6	7375	42
2500	2	50	35.7	6183	31	35.7	6183	31	
2500	10	50	28.2	4879	20	28.2	4879	20	
2500	18	50	21.0	3633	12	21.0	3633	12	
3000	-5	50	50.0	8669	56	50.0	8669	56	
3000	2	50	42.0	7269	41	42.0	7269	41	
3000	10	50	33.1	5736	27	33.1	5736	27	
3000	18	50	24.6	4268	16	24.6	4268	16	
3500	-5	50	57.2	9913	71	-	-	-	
3500	2	50	48.0	8314	52	48.0	8314	52	
3500	10	50	37.9	6560	34	37.9	6560	34	
3500	18	50	28.2	4878	20	28.2	4878	20	
4000	-5	50	-	-	-	-	-	-	
4000	2	50	53.8	9320	64	53.8	9320	64	
4000	10	50	42.4	7353	42	42.4	7353	42	
4000	18	50	31.5	5466	25	31.5	5466	25	
4500	-5	50	-	-	-	-	-	-	
4500	2	50	-	-	-	-	-	-	
4500	10	50	46.9	8120	50	46.9	8120	50	
4500	18	50	34.8	6033	29	34.8	6033	29	
5000	-5	50	-	-	-	-	-	-	
5000	2	50	-	-	-	-	-	-	
5000	10	50	51.2	8864	58	51.2	8864	58	
5000	18	50	38.0	6583	34	38.0	6583	34	
5500	-5	50	-	-	-	-	-	-	
5500	2	50	-	-	-	-	-	-	
5500	10	50	55.3	9585	67	55.3	9585	67	
5500	18	50	41.1	7116	39	41.1	7116	39	

	TA 09 Evaporation temperature: 5°C			4-row coil R410A		
	P (m³/h)	Tia (°C)	UmRel %	Qtot (kW)	Qsen (kW)	RefrDp (kPa)
EVAPORATION	400	24	50	2.8	1.9	4
	400	27	50	3.5	2.1	6
	400	30	50	4.3	2.4	9
	400	33	50	5.1	2.6	12
	500	24	50	3.2	2.2	6
	500	27	50	4.1	2.5	8
	500	30	50	5.0	2.8	12
	500	33	50	6.0	3.1	16
	600	24	50	3.7	2.5	7
	600	27	50	4.6	2.9	10
	600	30	50	5.7	3.2	15
	600	33	50	6.8	3.5	20
	700	24	50	4.0	2.8	8
	700	27	50	5.1	3.2	12
	700	30	50	6.2	3.5	17
	700	33	50	7.5	3.9	24
	800	24	50	4.4	3.1	9
	800	27	50	5.5	3.5	14
	800	30	50	6.8	3.9	20
	800	33	50	8.2	4.2	27
900	24	50	4.7	3.3	10	
900	27	50	5.9	3.7	16	
900	30	50	7.2	4.1	22	
900	33	50	8.7	4.5	31	
1000	24	50	4.9	3.6	12	
1000	27	50	6.2	4.0	17	
1000	30	50	7.7	4.4	25	
1000	33	50	9.2	4.8	34	

	TA 11 Evaporation temperature: 5°C			4-row coil R410A		
	P (m³/h)	Tia (°C)	UmRel %	Qtot (kW)	Qsen (kW)	RefrDp (kPa)
EVAPORATION	500	24	50	3.2	2.2	6
	500	27	50	4.1	2.5	8
	500	30	50	5.0	2.8	12
	500	33	50	6.0	3.1	16
	600	24	50	3.7	2.5	7
	600	27	50	4.6	2.9	10
	600	30	50	5.7	3.2	15
	600	33	50	6.8	3.5	20
	700	24	50	4.0	2.8	8
	700	27	50	5.1	3.2	12
	700	30	50	6.2	3.5	17
	700	33	50	7.5	3.9	24
	800	24	50	4.4	3.1	9
	800	27	50	5.5	3.5	14
	800	30	50	6.8	3.9	20
	800	33	50	8.2	4.2	27
	900	24	50	4.7	3.3	10
	900	27	50	5.9	3.7	16
	900	30	50	7.2	4.1	22
	900	33	50	8.7	4.5	31
	1000	24	50	4.9	3.6	12
	1000	27	50	6.2	4.0	17
	1000	30	50	7.7	4.4	25
	1000	33	50	9.2	4.8	34
	1100	24	50	5.2	3.8	13
	1100	27	50	6.6	4.2	19
	1100	30	50	8.1	4.7	27
	1100	33	50	9.7	5.1	37
1200	24	50	5.4	4.0	14	
1200	27	50	6.8	4.5	20	
1200	30	50	8.4	4.9	29	
1200	33	50	10.2	5.4	40	

	TA 15 Evaporation temperature: 5°C			4-row coil R410A		
	P (m³/h)	Tia (°C)	UmRel %	Qtot (kW)	Osen (kW)	RefrDp (kPa)
EVAPORATION	500	24	50	3.7	2.5	5
	500	27	50	4.6	2.8	7
	500	30	50	5.7	3.1	10
	500	33	50	6.8	3.5	13
	700	24	50	4.8	3.2	7
	700	27	50	6.0	3.7	11
	700	30	50	7.4	4.1	15
	700	33	50	8.9	4.5	21
	900	24	50	5.7	3.9	10
	900	27	50	7.2	4.4	14
	900	30	50	8.8	4.9	20
	900	33	50	10.6	5.4	28
	1100	24	50	6.5	4.5	12
	1100	27	50	8.2	5.1	18
	1100	30	50	10.0	5.7	26
	1100	33	50	12.1	6.2	35
	1300	24	50	7.2	5.1	14
	1300	27	50	9.1	5.7	21
	1300	30	50	11.1	6.3	31
	1300	33	50	13.4	6.9	42
1500	24	50	7.8	5.6	16	
1500	27	50	9.8	6.3	25	
1500	30	50	12.1	6.9	35	
1500	33	50	-	-	-	
1700	24	50	8.3	6.0	18	
1700	27	50	10.5	6.8	28	
1700	30	50	12.9	7.5	40	
1700	33	50	-	-	-	

	TA 19 Evaporation temperature: 5°C			4-row coil R410A		
	P (m³/h)	Tia (°C)	UmRel %	Qtot (kW)	Osen (kW)	RefrDp (kPa)
EVAPORATION	700	24	50	5.1	3.4	6
	700	27	50	6.4	3.9	9
	700	30	50	7.9	4.4	12
	700	33	50	9.5	4.8	17
	1000	24	50	6.7	4.5	9
	1000	27	50	8.4	5.2	14
	1000	30	50	10.3	5.8	19
	1000	33	50	12.4	6.3	27
	1300	24	50	8.0	5.5	12
	1300	27	50	10.1	6.2	19
	1300	30	50	12.4	7.0	27
	1300	33	50	14.9	7.6	37
	1600	24	50	9.1	6.4	16
	1600	27	50	11.5	7.2	23
	1600	30	50	14.1	8.0	34
	1600	33	50	-	-	-
	1900	24	50	10.1	7.2	19
	1900	27	50	12.7	8.1	28
	1900	30	50	15.6	8.9	40
	1900	33	50	18.9	9.8	56
2200	24	50	11.0	7.9	21	
2200	27	50	13.8	8.9	32	
2200	30	50	-	-	-	
2200	33	50	-	-	-	

	TA 24 Evaporation temperature: 5°C			4-row coil R410A		
	P (m³/h)	Tia (°C)	UmRel %	Qtot (kW)	Osen (kW)	RefrDp (kPa)
EVAPORATION	800	24	50	6.1	4.1	3
	800	27	50	7.7	4.6	5
	800	30	50	9.4	5.2	6
	800	33	50	11.3	5.8	9
	1200	24	50	8.5	5.7	5
	1200	27	50	10.7	6.5	8
	1200	30	50	13.1	7.3	11
	1200	33	50	15.7	8.0	15
	1600	24	50	10.5	7.1	8
	1600	27	50	13.2	8.1	11
	1600	30	50	16.2	9.0	16
	1600	33	50	19.5	9.9	22
	2000	24	50	12.2	8.4	10
	2000	27	50	15.4	9.5	15
	2000	30	50	18.8	10.6	21
	2000	33	50	22.7	11.6	29
	2400	24	50	13.7	9.5	12
	2400	27	50	17.2	10.8	18
	2400	30	50	21.1	12.0	25
	2400	33	50	25.5	13.1	35
2800	24	50	15.0	10.6	14	
2800	27	50	18.9	11.9	21	
2800	30	50	23.2	13.2	30	
2800	33	50	27.9	14.4	42	

	TA 33 Evaporation temperature: 5°C			4-row coil R410A		
	P (m³/h)	Tia (°C)	UmRel %	Qtot (kW)	Osen (kW)	RefrDp (kPa)
EVAPORATION	1300	24	50	9.0	6.1	6
	1300	27	50	11.4	6.9	9
	1300	30	50	13.9	7.7	12
	1300	33	50	16.7	8.5	17
	1700	24	50	10.9	7.5	8
	1700	27	50	13.8	8.5	12
	1700	30	50	16.9	9.4	17
	1700	33	50	20.3	10.4	24
	2100	24	50	12.6	8.7	10
	2100	27	50	15.9	9.8	15
	2100	30	50	19.5	10.9	22
	2100	33	50	23.4	12.0	30
	2500	24	50	14.0	9.8	12
	2500	27	50	17.7	11.1	19
	2500	30	50	21.7	12.3	27
	2500	33	50	26.1	13.4	37
	2900	24	50	15.3	10.8	14
	2900	27	50	19.2	12.2	22
	2900	30	50	23.6	13.5	31
	2900	33	50	28.5	14.8	43
	3300	24	50	16.4	11.8	16
	3300	27	50	20.6	13.2	24
	3300	30	50	25.4	14.6	35
	3300	33	50	-	-	-
	3700	24	50	17.4	12.6	18
	3700	27	50	21.9	14.2	27
3700	30	50	26.9	15.7	39	
3700	33	50	-	-	-	

	TA 40 Evaporation temperature: 5°C			4-row coil R410A		
	P (m³/h)	Tia (°C)	UmRel %	Qtot (kW)	Qsen (kW)	RefrDp (kPa)
EVAPORATION	1500	24	50	11.0	7.4	6
	1500	27	50	13.9	8.4	9
	1500	30	50	17.0	9.4	13
	1500	33	50	20.4	10.4	18
	2000	24	50	13.8	9.3	9
	2000	27	50	17.3	10.6	14
	2000	30	50	21.2	11.8	19
	2000	33	50	25.5	13.0	27
	2500	24	50	16.1	11.0	12
	2500	27	50	20.3	12.5	18
	2500	30	50	24.9	13.9	26
	2500	33	50	30.0	15.3	35
	3000	24	50	18.2	12.6	15
	3000	27	50	23.0	14.2	22
	3000	30	50	28.2	15.8	32
	3000	33	50	33.9	17.3	44
	3500	24	50	20.1	14.0	17
	3500	27	50	25.3	15.8	26
	3500	30	50	31.0	17.6	38
	3500	33	50	-	-	-
	4000	24	50	21.7	15.3	20
	4000	27	50	27.4	17.3	30
	4000	30	50	33.6	19.1	43
	4000	33	50	-	-	-
4500	24	50	23.2	16.5	23	
4500	27	50	29.3	18.6	34	
4500	30	50	-	-	-	
4500	33	50	-	-	-	

	TA 50 Evaporation temperature: 5°C			4-row coil R410A		
	P (m³/h)	Tia (°C)	UmRel %	Qtot (kW)	Qsen (kW)	RefrDp (kPa)
EVAPORATION	2500	24	50	16.1	11.0	12
	2500	27	50	20.3	12.5	18
	2500	30	50	24.9	13.9	26
	2500	33	50	30.0	15.3	35
	3000	24	50	18.2	12.6	15
	3000	27	50	23.0	14.2	22
	3000	30	50	28.2	15.8	32
	3000	33	50	33.9	17.3	44
	3500	24	50	20.1	14.0	17
	3500	27	50	25.3	15.8	26
	3500	30	50	31.0	17.6	38
	3500	33	50	-	-	-
	4000	24	50	21.7	15.3	20
	4000	27	50	27.4	17.3	30
	4000	30	50	33.6	19.1	43
	4000	33	50	-	-	-
	4500	24	50	23.2	16.5	23
	4500	27	50	29.3	18.6	34
	4500	30	50	-	-	-
	4500	33	50	-	-	-
	5000	24	50	24.5	17.7	25
	5000	27	50	31.0	19.9	37
	5000	30	50	-	-	-
	5000	33	50	-	-	-
5500	24	50	25.8	18.8	27	
5500	27	50	32.5	21.1	41	
5500	30	50	-	-	-	
5500	33	50	-	-	-	

4-PIPE SYSTEM HEATING	TA 15			2-row coil Temp. of inlet water: 70°C Temp. of outlet water: 60°C			1-row coil Temp. of inlet water: 70°C Temp. of outlet water: 60°C			2-row coil Temp. of inlet water: 45°C Temp. of outlet water: 40°C			1-row coil Temp. of inlet water: 45°C Temp. of outlet water: 40°C		
	P(m³/h)	Tia (°C)	UmRel %	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)
	500	-5	50	9.7	852	8	7.8	683	18	6.6	1136	14	5.3	912	33
500	2	50	8.6	755	6	6.9	606	14	5.5	952	10	4.4	765	24	
500	10	50	7.4	648	5	5.9	521	11	4.3	748	7	3.5	601	16	
500	18	50	6.2	544	4	5.0	437	8	3.2	550	4	2.5	441	9	
700	-5	50	12.4	1087	12	9.3	817	25	8.4	1450	22	6.3	1093	46	
700	2	50	11.0	965	10	8.3	727	20	7.0	1216	16	5.3	917	33	
700	10	50	9.5	828	7	7.1	625	15	5.5	955	10	4.2	721	22	
700	18	50	7.9	695	6	6.0	524	11	4.0	702	6	3.0	528	12	
900	-5	50	14.8	1295	16	10.6	926	31	10.0	1729	30	7.2	1239	57	
900	2	50	13.1	1149	13	9.4	824	25	8.4	1450	22	6.0	1040	42	
900	10	50	11.3	987	10	8.1	708	19	6.6	1139	14	4.7	818	27	
900	18	50	9.5	828	7	6.8	595	14	4.8	836	8	3.5	599	16	
1100	-5	50	16.9	1483	21	11.6	1018	37	11.4	1980	38	7.9	1362	68	
1100	2	50	15.0	1316	17	10.3	905	30	9.6	1661	28	6.6	1144	49	
1100	10	50	12.9	1131	13	8.9	779	23	7.5	1305	18	5.2	899	32	
1100	18	50	10.8	949	9	7.5	655	17	5.5	957	10	3.8	658	18	
1300	-5	50	18.9	1655	25	12.5	1097	42	12.8	2212	47	-	-	-	
1300	2	50	16.8	1470	20	11.1	976	34	10.7	1856	34	7.1	1234	57	
1300	10	50	14.4	1263	16	9.6	840	26	8.4	1457	22	5.6	970	37	
1300	18	50	12.1	1060	11	8.1	706	19	6.2	1068	13	4.1	710	21	
1500	-5	50	20.7	1816	30	13.3	1167	47	14.0	2427	55	-	-	-	
1500	2	50	18.4	1613	24	11.9	1039	38	11.8	2036	40	7.6	1314	64	
1500	10	50	15.8	1386	18	10.2	895	29	9.2	1599	26	6.0	1033	41	
1500	18	50	13.3	1163	13	8.6	752	21	6.8	1171	15	4.4	756	23	
1700	-5	50	22.4	1966	34	14.1	1231	52	15.2	2629	64	-	-	-	
1700	2	50	19.9	1747	28	12.5	1096	42	12.7	2206	46	8.0	1386	70	
1700	10	50	17.1	1501	21	10.8	944	32	10.0	1732	30	6.3	1089	45	
1700	18	50	14.4	1260	16	9.1	793	23	7.3	1268	17	4.6	797	26	

4-PIPE SYSTEM HEATING	TA 19			2-row coil Temp. of inlet water: 70°C Temp. of outlet water: 60°C			1-row coil Temp. of inlet water: 70°C Temp. of outlet water: 60°C			2-row coil Temp. of inlet water: 45°C Temp. of outlet water: 40°C			1-row coil Temp. of inlet water: 45°C Temp. of outlet water: 40°C		
	P(m³/h)	Tia (°C)	UmRel %	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)
	700	-5	50	13.2	1158	9	10.3	899	12	8.9	1544	16	6.9	1202	22
700	2	50	11.7	1027	7	9.1	798	10	7.5	1294	12	5.8	1007	16	
700	10	50	10.1	881	6	7.8	685	8	5.9	1017	8	4.6	789	11	
700	18	50	8.4	739	4	6.6	574	6	4.3	747	5	3.3	577	6	
1000	-5	50	17.0	1493	14	12.3	1081	17	11.5	1992	26	8.3	1446	31	
1000	2	50	15.1	1324	11	11.0	960	14	9.6	1670	19	7.0	1212	23	
1000	10	50	13.0	1137	9	9.4	825	10	7.6	1312	12	5.5	950	15	
1000	18	50	10.9	954	6	7.9	692	8	5.6	963	7	4.0	694	8	
1300	-5	50	20.4	1785	19	14.0	1226	21	13.8	2384	36	9.5	1640	39	
1300	2	50	18.1	1585	16	12.4	1089	17	11.5	2000	26	7.9	1376	29	
1300	10	50	15.5	1361	12	10.7	936	13	9.1	1571	17	6.2	1078	18	
1300	18	50	13.0	1143	9	9.0	785	10	6.6	1152	10	4.5	786	11	
1600	-5	50	23.4	2048	25	15.4	1346	25	15.8	2737	46	10.4	1802	47	
1600	2	50	20.8	1819	20	13.7	1197	20	13.3	2296	33	8.7	1512	34	
1600	10	50	17.8	1563	15	11.7	1029	16	10.4	1803	22	6.8	1186	22	
1600	18	50	15.0	1312	11	9.9	863	11	7.6	1321	12	5.0	864	12	
1900	-5	50	26.1	2289	30	16.6	1451	29	17.7	3060	56	11.2	1942	53	
1900	2	50	23.2	2033	24	14.7	1290	23	14.8	2567	41	9.4	1630	39	
1900	10	50	19.9	1747	19	12.7	1109	18	11.6	2016	26	7.4	1278	25	
1900	18	50	16.7	1467	14	10.6	930	13	8.5	1477	15	5.4	931	14	
2200	-5	50	28.7	2512	36	17.6	1542	32	19.4	3359	66	11.9	2066	60	
2200	2	50	25.5	2232	29	15.7	1372	26	16.3	2818	48	10.0	1734	43	
2200	10	50	21.9	1918	22	13.5	1180	20	12.8	2213	31	7.8	1359	28	
2200	18	50	18.4	1610	16	11.3	990	14	9.4	1620	18	5.7	990	16	

4-PIPE SYSTEM HEATING	TA 24			2-row coil Temp. of inlet water: 70°C Temp. of outlet water: 60°C			1-row coil Temp. of inlet water: 70°C Temp. of outlet water: 60°C			2-row coil Temp. of inlet water: 45°C Temp. of outlet water: 40°C			1-row coil Temp. of inlet water: 45°C Temp. of outlet water: 40°C		
	P(m ³ /h)	Tia (°C)	UmRel %	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)
800	-5	50	16.3	1428	10	13.3	1161	11	11.0	1902	18	8.9	1550	20	
800	2	50	14.5	1266	8	11.8	1030	9	9.2	1595	13	7.5	1299	15	
800	10	50	12.4	1087	6	10.1	884	7	7.2	1256	9	5.9	1020	10	
800	18	50	10.4	913	5	8.5	742	5	5.3	927	5	4.3	748	6	
1200	-5	50	22.0	1926	17	16.6	1453	16	14.8	2568	31	11.2	1942	30	
1200	2	50	19.5	1709	14	14.7	1290	13	12.4	2155	22	9.4	1629	22	
1200	10	50	16.8	1468	10	12.7	1109	10	9.8	1697	15	7.4	1279	14	
1200	18	50	14.1	1234	8	10.6	930	7	7.2	1251	9	5.4	936	8	
1600	-5	50	26.9	2358	24	19.2	1679	21	18.2	3147	44	13.0	2246	39	
1600	2	50	23.9	2094	19	17.0	1493	17	15.3	2643	32	10.9	1885	29	
1600	10	50	20.5	1800	15	14.7	1283	13	12.0	2080	21	8.5	1480	19	
1600	18	50	17.3	1513	11	12.3	1077	10	8.8	1532	12	6.2	1083	11	
2000	-5	50	31.3	2744	32	21.3	1866	26	21.2	3665	58	14.4	2498	48	
2000	2	50	27.8	2438	25	19.0	1660	21	17.8	3078	42	12.1	2097	35	
2000	10	50	23.9	2097	19	16.3	1427	16	14.0	2423	28	9.5	1646	22	
2000	18	50	20.1	1763	14	13.7	1198	12	10.3	1784	16	6.9	1204	13	
2400	-5	50	35.3	3096	39	23.1	2026	30	-	-	-	15.7	2712	56	
2400	2	50	31.4	2752	32	20.6	1803	24	20.1	3476	53	13.1	2278	40	
2400	10	50	27.0	2367	24	17.7	1551	19	15.8	2736	34	10.3	1789	26	
2400	18	50	22.7	1991	18	14.9	1302	14	11.6	2013	20	7.5	1307	15	
2800	-5	50	39.1	3421	47	24.7	2166	34	-	-	-	16.7	2901	63	
2800	2	50	34.7	3043	38	22.0	1928	28	22.2	3843	63	14.1	2437	46	
2800	10	50	29.9	2618	29	18.9	1659	21	17.5	3025	41	11.0	1914	29	
2800	18	50	25.1	2202	21	15.9	1393	15	12.8	2225	24	8.1	1398	17	

4-PIPE SYSTEM HEATING	TA 33			2-row coil Temp. of inlet water: 70°C Temp. of outlet water: 60°C			1-row coil Temp. of inlet water: 70°C Temp. of outlet water: 60°C			2-row coil Temp. of inlet water: 45°C Temp. of outlet water: 40°C			1-row coil Temp. of inlet water: 45°C Temp. of outlet water: 40°C		
	P(m ³ /h)	Tia (°C)	UmRel %	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)
1300	-5	50	23.3	2039	19	17.3	1514	18	15.7	2720	34	11.7	2024	33	
1300	2	50	20.7	1810	15	15.4	1345	14	13.2	2283	25	9.8	1698	24	
1300	10	50	17.8	1555	11	13.2	1156	11	10.4	1797	16	7.7	1333	15	
1300	18	50	14.9	1307	8	11.1	970	8	7.6	1325	10	5.6	976	9	
1700	-5	50	28.1	2458	26	19.7	1729	23	18.9	3282	48	13.4	2313	42	
1700	2	50	24.9	2183	21	17.6	1537	18	15.9	2756	35	11.2	1942	30	
1700	10	50	21.4	1877	16	15.1	1321	14	12.5	2169	23	8.8	1524	20	
1700	18	50	18.0	1578	12	12.7	1109	10	9.2	1597	13	6.4	1115	11	
2100	-5	50	32.4	2835	33	21.8	1908	27	21.9	3787	62	14.7	2554	50	
2100	2	50	28.8	2519	27	19.4	1697	22	18.4	3181	45	12.4	2145	36	
2100	10	50	24.7	2166	21	16.7	1460	17	14.5	2504	29	9.7	1684	23	
2100	18	50	20.8	1822	15	14.0	1226	12	10.6	1843	17	7.1	1231	13	
2500	-5	50	36.3	3179	41	23.6	2063	31	-	-	-	15.9	2762	57	
2500	2	50	32.3	2827	33	21.0	1835	25	20.6	3570	55	13.4	2319	42	
2500	10	50	27.8	2432	25	18.0	1579	19	16.2	2810	36	10.5	1822	27	
2500	18	50	23.3	2045	19	15.1	1326	14	11.9	2068	21	7.7	1331	15	
2900	-5	50	40.0	3499	49	25.1	2199	35	-	-	-	17.0	2945	65	
2900	2	50	35.5	3112	40	22.3	1957	28	22.7	3931	66	14.3	2474	47	
2900	10	50	30.6	2678	30	19.2	1684	22	17.9	3095	43	11.2	1943	30	
2900	18	50	25.7	2252	22	16.1	1414	16	13.1	2276	25	8.2	1419	17	
3300	-5	50	43.4	3798	57	26.5	2321	39	-	-	-	-	-	-	
3300	2	50	38.6	3379	46	23.6	2066	31	-	-	-	15.1	2612	52	
3300	10	50	33.2	2908	35	20.3	1778	24	19.4	3360	50	11.8	2052	33	
3300	18	50	27.9	2446	26	17.1	1494	17	14.3	2471	29	8.6	1498	19	
3700	-5	50	46.6	4080	65	27.8	2432	42	-	-	-	-	-	-	
3700	2	50	41.4	3630	52	24.7	2166	34	-	-	-	15.8	2738	57	
3700	10	50	35.7	3125	40	21.3	1864	26	20.8	3612	57	12.4	2150	36	
3700	18	50	30.0	2628	29	17.9	1566	19	15.3	2655	32	9.1	1570	21	

4-PIPE SYSTEM HEATING	TA 40			2-row coil Temp. of inlet water: 70°C Temp. of outlet water: 60°C			1-row coil Temp. of inlet water: 70°C Temp. of outlet water: 60°C			2-row coil Temp. of inlet water: 45°C Temp. of outlet water: 40°C			1-row coil Temp. of inlet water: 45°C Temp. of outlet water: 40°C		
	P(m ³ /h)	Tia (°C)	UmRel %	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)
	1500	-5	50	28.8	2521	12	22.6	1982	20	19.4	3361	21	15.3	2648	37
1500	2	50	25.5	2237	9	20.1	1761	16	16.3	2820	16	12.8	2223	27	
1500	10	50	21.9	1921	7	17.3	1514	12	12.8	2220	10	10.1	1749	17	
1500	18	50	18.4	1614	5	14.5	1272	9	9.4	1637	6	7.4	1285	10	
2000	-5	50	35.4	3101	17	26.3	2307	26	23.9	4138	31	17.8	3085	48	
2000	2	50	31.4	2753	14	23.4	2052	21	20.0	3474	23	15.0	2592	35	
2000	10	50	27.0	2366	10	20.2	1765	16	15.8	2733	15	11.8	2039	23	
2000	18	50	22.7	1989	8	16.9	1484	12	11.6	2015	9	8.6	1497	13	
2500	-5	50	41.4	3622	22	29.4	2577	32	27.9	4836	41	19.9	3447	59	
2500	2	50	36.7	3217	18	26.2	2292	26	23.4	4061	30	16.7	2897	43	
2500	10	50	31.6	2766	14	22.5	1973	20	18.4	3196	19	13.2	2279	28	
2500	18	50	26.5	2325	10	18.9	1659	15	13.6	2353	11	9.7	1673	16	
3000	-5	50	46.8	4098	28	32.1	2807	38	31.6	5474	51	21.7	3757	69	
3000	2	50	41.6	3641	23	28.5	2499	30	26.5	4597	37	18.2	3159	51	
3000	10	50	35.7	3131	17	24.6	2151	23	20.9	3619	24	14.3	2486	33	
3000	18	50	30.1	2633	13	20.7	1809	17	15.4	2663	14	10.5	1824	19	
3500	-5	50	51.8	4538	34	34.4	3010	43	35.0	6064	62	-	-	-	
3500	2	50	46.1	4034	27	30.6	2680	35	29.4	5094	45	19.6	3388	57	
3500	10	50	39.6	3470	21	26.4	2308	26	23.1	4010	29	15.4	2667	37	
3500	18	50	33.3	2917	15	22.2	1941	19	17.0	2950	17	11.3	1956	21	
4000	-5	50	56.5	4950	39	36.4	3191	47	-	-	-	-	-	-	
4000	2	50	50.3	4401	32	32.4	2842	38	32.1	5559	53	20.7	3595	64	
4000	10	50	43.2	3787	24	28.0	2448	29	25.3	4376	34	16.3	2829	41	
4000	18	50	36.4	3184	18	23.5	2060	21	18.6	3218	20	12.0	2075	24	
4500	-5	50	61.0	5338	45	38.3	3355	52	-	-	-	-	-	-	
4500	2	50	54.2	4748	36	34.1	2989	42	34.6	5997	61	21.8	3781	70	
4500	10	50	46.6	4085	28	29.4	2575	32	27.2	4721	39	17.2	2976	45	
4500	18	50	39.2	3435	20	24.7	2167	23	20.0	3471	23	12.6	2182	26	

4-PIPE SYSTEM HEATING	TA 50			2-row coil Temp. of inlet water: 70°C Temp. of outlet water: 60°C			1-row coil Temp. of inlet water: 70°C Temp. of outlet water: 60°C			2-row coil Temp. of inlet water: 45°C Temp. of outlet water: 40°C			1-row coil Temp. of inlet water: 45°C Temp. of outlet water: 40°C		
	P(m ³ /h)	Tia (°C)	UmRel %	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)	Qtot (kW)	WtrFlow (l/s)	WtrDP (kPa)
	2500	-5	50	41.4	3622	22	29.4	2577	32	27.9	4836	41	19.9	3447	59
2500	2	50	36.7	3217	18	26.2	2292	26	23.4	4061	30	16.7	2897	43	
2500	10	50	31.6	2766	14	22.5	1973	20	18.4	3196	19	13.2	2279	28	
2500	18	50	26.5	2325	10	18.9	1659	15	13.6	2353	11	9.7	1673	16	
3000	-5	50	46.8	4098	28	32.1	2807	38	31.6	5474	51	21.7	3757	69	
3000	2	50	41.6	3641	23	28.5	2499	30	26.5	4597	37	18.2	3159	51	
3000	10	50	35.7	3131	17	24.6	2151	23	20.9	3619	24	14.3	2486	33	
3000	18	50	30.1	2633	13	20.7	1809	17	15.4	2663	14	10.5	1824	19	
3500	-5	50	51.8	4538	34	34.4	3010	43	35.0	6064	62	-	-	-	
3500	2	50	46.1	4034	27	30.6	2680	35	29.4	5094	45	19.6	3388	57	
3500	10	50	39.6	3470	21	26.4	2308	26	23.1	4010	29	15.4	2667	37	
3500	18	50	33.3	2917	15	22.2	1941	19	17.0	2950	17	11.3	1956	21	
4000	-5	50	56.5	4950	39	36.4	3191	47	-	-	-	-	-	-	
4000	2	50	50.3	4401	32	32.4	2842	38	32.1	5559	53	20.7	3595	64	
4000	10	50	43.2	3787	24	28.0	2448	29	25.3	4376	34	16.3	2829	41	
4000	18	50	36.4	3184	18	23.5	2060	21	18.6	3218	20	12.0	2075	24	
4500	-5	50	61.0	5338	45	38.3	3355	52	-	-	-	-	-	-	
4500	2	50	54.2	4748	36	34.1	2989	42	34.6	5997	61	21.8	3781	70	
4500	10	50	46.6	4085	28	29.4	2575	32	27.2	4721	39	17.2	2976	45	
4500	18	50	39.2	3435	20	24.7	2167	23	20.0	3471	23	12.6	2182	26	
5000	-5	50	65.1	5706	51	40.0	3506	56	-	-	-	-	-	-	
5000	2	50	57.9	5076	41	35.7	3124	46	37.0	6413	69	-	-	-	
5000	10	50	49.9	4368	31	30.7	2692	35	29.1	5047	44	18.0	3111	49	
5000	18	50	41.9	3673	23	25.9	2265	25	21.4	3710	25	13.2	2281	28	
5500	-5	50	69.1	6056	57	41.6	3645	61	-	-	-	-	-	-	
5500	2	50	61.5	5388	46	37.1	3248	49	-	-	-	-	-	-	
5500	10	50	52.9	4637	35	32.0	2799	37	30.9	5360	49	18.7	3235	53	
5500	18	50	44.5	3900	26	26.9	2356	27	22.7	3938	28	13.7	2371	30	

INSTALLATION, USE AND MAINTENANCE MANUAL

General safety requirements



WARNING!

The units of the TA range are designed for the public and service sectors: any other use (in highly corrosive environments, in the presence of potentially explosive surroundings, etc.) is not permitted.

Installation and maintenance

Before installation, make sure that the unit has not been damaged during transportation: the use of a damaged machine may be hazardous.

Installation and supplementary maintenance must be carried out by trained personnel in accordance with the present laws.

The unit must not be used as recovery of equipment or spare parts. Any other use other than that indicated in the present manual may be hazardous and is therefore prohibited.

Before starting any maintenance or cleaning operations, make sure the units is disconnected from the power supply and that it cannot be reconnected without the knowledge of the maintenance engineer.

During maintenance and cleaning, take care of possible scalding from heating coils.

Before starting the unit, make sure that the electrical parts have been connected to the

building's earth system.

During installation, maintenance and cleaning, Personal Protective Equipment (PPE) must be worn and the correct tools used.



Access to the unit

Access to the unit once it has been installed must only be permitted to qualified operators and technicians. The operator is a person who has been authorised by the owner of the machine to carry out operations on the said machine (according to the indications given in this manual). The technician is a person authorised by Aermec, or subordinate under their own responsibility by a Aermec distributor, to carry out operations on the machine. The owner of the machine is the legal representative of the company, entity or individual owner of the system in which the Aermec machine is installed. These persons are responsible for the observance of all safety standards indicated in this manual and the existing law. As these units are usually installed in suspended ceilings, it is important to ensure the lower panelling

can be accessed in order to inspect the filters and fans.

Residual risks

The installation, start-up, shutdown and maintenance of the machine must be carried out in accordance with that stipulated in the technical documentation of the product and in such a manner that no hazardous situations are generated. The machine has been designed so as to reduce to a minimum the risks for the safety of those persons interacting with it. During the design phase, it was not technically possible to completely eliminate the risk causes. Therefore it is imperative to refer to the following instructions.

CONSIDERED PART	RESIDUAL RISK	METHOD	PRECAUTION
Inside the unit: finned heat exchanger coil	small cuts	contact	avoid contact, use protective gloves
Electric heating coil	burns, injuries	contact	avoid contact
Inside the unit: metal parts and electrical cables	intoxication, electrocution, severe burns	insulation defect of the power supply cables upstream of the unit's electric panel; live metal parts	suitable electrical protection of the power supply line; maximum care when earthing the metal parts
Outside the unit: area around the unit	serious burns	fire due to short circuit or overheating of the power supply line upstream of the unit's electric panel	cable section and power supply line safety system conforming with existing laws

Minimum operating spaces

All the necessary operating spaces must be checked before beginning the installation:

- the positioning of the canalisation of the intake and expulsion air;
- the passage of the electrical power supply cables;
- the correct maintenance and cleaning operations.

In particular:

- there must be a space of at least 200 mm in correspondence with the condensate discharge point, for the drain-trap (more detailed instructions can be found on the label attached to the discharge point itself);
- a space of at least 400 mm is required in correspondence with the water coil collectors, to install the valve;

- for routine maintenance operations (visual inspections, filter replacement and cleaning), there must be a space of at least 1000 mm.

Handling

PACKAGING

The air conditioning units of the TA range are supplied on pallets and packaged in cardboard boxes.

ON-SITE STORAGE

The units of the TA range must be stored under cover.

TRANSPORT

Transportation must be carried out with the following precautions:

- the load must be well blocked on the lorry;
- the load must be suitably protected.

CHECKS UPON RECEIPT

Upon receipt of the unit, an initial visual check must be made for any damage resulting from transportation. If damage is discovered, this must be highlighted on the accompanying travel document.

Unit installation

The essential indications for the correct installation of the equipment are given below. The fine details of all the operations depend on the specific requirements however, and are therefore left to the installer's experience.

The unit is supplied complete with support brackets for wall or ceiling assembly.

The brackets can be assembled with the bend pointing inwards or outwards.

For other types of assembly, the indications below should be modified according to the specific on-site requirements.

In any case, you are advised to fix the brackets to the ceiling first of all (using wall plugs or threaded tie-rods), then fix the units to the

brackets.

In the case of vertical installation, the screws for fixing the unit to the brackets will rest in the shorter part of the slots.

To fix the unit to the wall, proceed as follows:

- mark the four holes for the wall plugs;
- prepare the fixing means (wall plugs or tie-rods);
- fix the brackets to the wall or ceiling, using nuts, washers and locknuts;
- attach the unit to the brackets, using the 4 side screws;
- in the case of horizontal installation, before tightening the screws, nuts and locknuts

check the condensate is correctly discharged. Finally, you are advised to apply a slight inclination towards the discharge point, to aid the flow.

Installation - Connections

Aeraulic connections



WARNING!

It is prohibited to start the machine if the fan inlets are not ducted or are not protected by an accident-prevention system

For installation, proceed as follows:

- arrange suitable brackets to support the channelling, so it does not weigh on the recovery unit;
- connect the supply and intake ports to the channels with vibration-damping joints in between (canvas). The vibration-damping joint must be secured to the panel with self-tapping screws making sure that the canvas joints are taught when running;
- arrange an earth cable that acts as a bridge on the anti-vibration joint to guarantee the equipotential connection between the

channels and the recovery unit;

- before connecting any bends or branches, etc., set out the supply channel with a straight section with a length of at least 2.5 times the shorter side of the channel A, avoiding an inclination of more than 7° for the channelling (to avoid any possible reduction in fan performance levels).

Hydraulic connections: condensate discharge

The condensate drip tray has a threaded outlet with a diameter of 1/2" -G UNI 338. A discharge system must foresee a suitable drain-trap to:

- allow the free discharge of the condensate;
- prevent the undesired entry of air in vacuum systems;
- prevent the infiltration of odours or in-

sects.

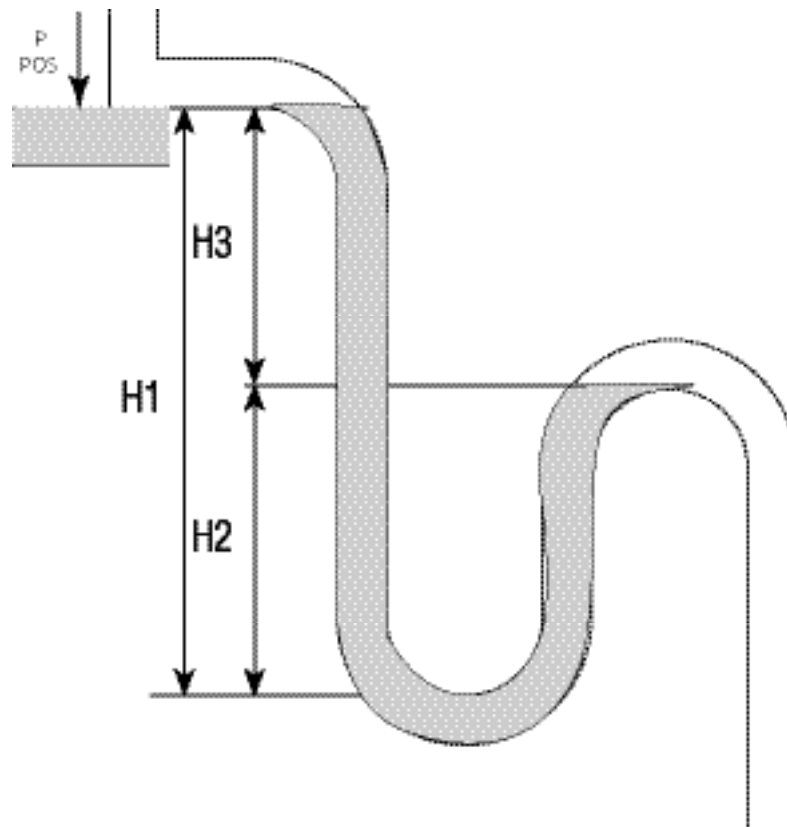
The lower part of the trap should have a discharge plug or should in any case allow easy dismantling for cleaning.

The instructions for the dimensioning and execution of the trap are as follows (see figure 21):

$$H1 = 2P$$

$$H2 = H1 / 2$$

where P is the pressure of the water column expressed in mm (1mm w.c. = 9.81 Pa).



Drain-trap measurements diagram

Water coil connection

All water coil manifolds have threaded male connectors for the entrance and exit of water.

For correct installation follow the simple indications below:

- anti-freeze devices should be present in the event of adverse weather conditions;
- the course of the piping must be such so as not to create obstacles in the event the coil must be removed and so as not to compromise inspection and maintenance of the unit and possible accessories;
- when screwing together the manifolds and hydraulic circuit, avoid stresses that could damage the coil manifolds;
- provide a stop valve to isolate the coil from the rest of the circuit in the event it must be disconnected from the hydraulic circuit;
- firmly clamp the pipes outside the unit, to prevent them weighing on the coil;
- for the connection of water feed pipes, follow the indications on the "WATER INLET" and "WATER OUTLET" plate on the outside paneling ;
- fit an air bleed valve on the highest section of the circuit and a water discharge valve on the lowest section of the circuit;
- once the connections have been made, position the external rubber seal flush with the panelling to avoid air seepage.



WARNING!

To avoid burns during the heating function, the piping must be carefully insulated with suitable material as far as the panelling.

Connection of the direct expansion coils

The coils are supplied with connections hermetically sealed and pressurised with inert gas.

For correct installation follow the simple indications below:

- the course of the piping must be such so as not to create obstacles if the coil needs to be removed, and not to compromise the inspection and maintenance of the unit and any accessories;
- arrange suitable brackets to support the piping so as to avoid that their weight overloads the recovery unit;
- once the connections have been made, position the external rubber seal flush with the panelling to avoid air seepage;

- the performance of the coil declared in the present manual could undergo changes in the event that the connection pipes to a condensing only unit cause excessive pressure drops of the refrigerant.

WARNING!

To avoid burns, the piping must be suitably insulated with suitable material up to the panelling.

Electrical connections: earth system



WARNING!

The electrical connections and wiring must be carried out by qualified personnel in accordance with the present laws.



WARNING!

Each electrical appliance must be connected to the earth of the system.

Use the connectors with the earth symbol to connect the earth of the unit and possible accessories to the earth of the building.

Mains power supply connection



WARNING!

Make sure that the characteristics of the mains power supply are compatible with the electrical characteristics indicated on the machine's rating plate.

Electrical connections: electric coils



WARNING!

Make sure that the characteristics of the mains power supply are compatible with the electrical characteristics indicated on the part's rating plates.

Carry out the following instructions for the connection of the electric coil:

- prepare suitable protection upstream, with a residual current circuit breaker with over-current protection;
- always connect a safety thermostat to guarantee the disconnection of the electric coil power supply in the event of overheating;
- the safety thermostat must be in series with the regulating thermostat (not supplied);
- the power supply of the coil must be slaved to the function of the fans;
- always connect the earth wire of the elec-

tric heating coil to the terminal inside the electric box.

The wiring diagrams are supplied along with the machine.

Electrical connections: electric motors

The correct connection of the electric motors is made on the control boards assembled inside the unit (for TA sizes 9-11-15), or on the Archimedean screw of one of the fans (for TA units 19-24-33-40-50).

For units with two motors, the power supply and earth cables are on one control board for each fan.

Repositioning the internal components

All TA units have been designed to facilitate both the set-up and the personalisation requested by the customer.

In particular, it is possible to invert the position of the water coil connections.

Heating or cooling water coil

If the position of the water coil connections is not as you require, follow the indications below :

- disassemble the upper panel and the air delivery panel (coil side);
- disassemble the closure panel;
- take out the coil;
- rotate the coil by 180°;
- insert the coil again, and fix it in place;
- reassemble the closure panel;

- reassemble the panels.

With regards the water connections, proceed as follows:

- connect the discharge conduit to the threaded stump of the tray, and plug the other stump (not used);
- cut the two plastic plugs;
- tighten the threaded pipe couplings on the coil collectors;
- tighten the air drain point on the pipe coupling; this must be positioned higher than the other, and the drain point must be near the top.

Make the connections to the system, then insulate the piping and check the condensate is correctly discharged.

If water is used as a heat vector fluid, any risk of freezing must be avoided at all costs.

First start-up



WARNING!

Make sure that all the indications in the present manual have been carried out before carrying out the controls on the first start-up.

Before starting up the unit, check:

- with a tester that the voltage on the terminals is $230V \pm 5\%$: if the voltage is subject to frequent changes, contact our Technical department for the choice of suitable protections;
- that the unit is correctly secured;
- the connection of the unit to the building's earth;

- the channel connections;
- the connection of the condensate discharge with the trap;
- the insulation of the coil's supply pipes;
- the absence of air in the water and direct expansion coils;
- the closure of the examinable panels;
- the presence of voltage.

PCT2 control panel

Description

Main characteristics of the control panel:

- electronic room thermostat with knob for setting the set-point;
- manual selection of the operating mode;
- 3 fan speeds;
- Hot Start function with digital input or temperature probe;
- limitation of set-point by means of special pegs;
- room air temperature probe.

Technical data

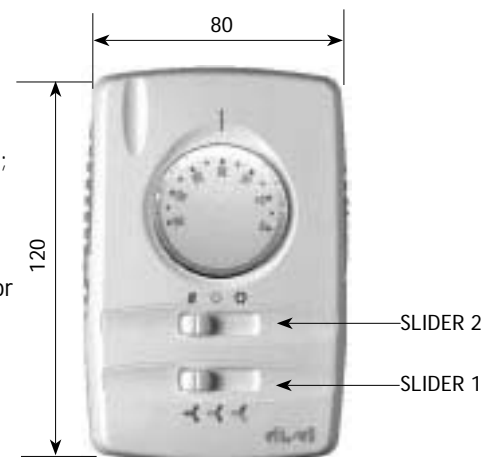
- Power supply: 230V - 50 Hz;
- Maximum input power: 12W;
- Maximum allowed current: 1A;
- Electrical data of the 230C output: max 0.5A for the valve output and max 1 for the fan outputs;
- Insulation class: II;
- Degree of protection: IP30;
- Analogue inputs:
 - 1 (+1) NTC probes 103 AT-2
 - air probe (see connection diagram)
 - water probe (see connection diagram)
- presence of built-in air temperature probe;
- Outputs: 2 outputs on relay;
- Unit dimensions: 120 x 80 x 40mm;
- Assembly: wall;
- Connections of screwed control board for wires:
 - max diameter 2.5mm² for rigid cable;
 - max diameter 1.5mm² for flexible cable;
- Room temperature: 0...55°C;
- Storage temperature: -20...85°C;
- Storage humidity: 10...90°C.

User instructions

SLIDER 1 (at the bottom) allows you to vary the required fan speed settings (max-av-min).

SLIDER 2 (in the middle) allows you to vary the unit operating mode (OFF-Heat-Cool).

The knob is used to set the required room temperature.




Unit maintenance

WARNING!

Use suitable personal protective equipment (PPE) during maintenance operations



WARNING!

 Before accessing the unit for maintenance or cleaning operations, make sure the unit is disconnected from the power supply, that the supply can not be switched on again without the maintenance engineer's knowledge and that the heat exchange coils are off.



WARNING!

Take particular care when working close to finned coils because the fins are particularly sharp.

WARNING!



After finishing the maintenance operations, make sure that the panelling is correctly closed by means of fixing screws.

The units of the TA range have been desi-

gned to require less maintenance, and to make each operation easier. Below are some simple instructions for correct maintenance of the unit.

The maintenance program must in any case be carried out by a qualified technician.

Routine maintenance

Routine maintenance consists of simple operations that should be carried out monthly, as follows:

- check the tightness of the fans fixing screws to the panels;
- check that the machine's power supply cable has not undergone any alterations that could compromise its insulation;
- make sure that the screws that fix the wires to the electrical components inside the electric panel are tight so as to guarantee an electrical connection; the same also goes for the earth connections.

Maintenance of the filters (if present)

The cleaning of the filters is fundamental in order to maintain a high qualitative standard of air in the room. The synthetic filters fitted to the TA unit can be regenerated using compressed air or by washing them in cold water. To disassemble the filters, observe the following indications (see the figure below):

- remove the inspection panel with knobs;
- remove the filters;
- clean the filters;
- reassemble all the components in the reverse order.

Fan maintenance

It is essential to check and clean the fans, to maintain the low noise level of the unit. Check annually:

- the clean state of the impeller;
- the noise level of the bearings.

Coil maintenance

It is essential to check and clean the coils, to maintain the high standard of quality and renewal of fresh air in the room.

Check annually:

- the clean state of the finned unit.

TA	FLAT FILTER 665 x 265	FLAT FILTER 1015 x 265	FLAT FILTER 1440 x 355	FLAT FILTER 2065 x 355
09	1			
11	1			
15		1		
19			1	
24			1	
33			1	
40				1
50				1

TA	POCKET FILTER 287 x 592
09	1
11	1
15	1
19	1
24	2
33	2
40	3
50	3

Unit disposal

The components of the TA range have been designed to guarantee continual operations. The duration of some main parts depends on the maintenance to which it has undergone.

At the end of their useful life, the TA range units must be disposed of in accordance with the current laws in force.

If the unit is to be disposed of, the operation must be carried out by specialised personnel.

The main materials that make up the units of the TA range are:

- galvanised steel (panels, fans, condensate drip tray);
- aluminium sheet or aluminium alloy (coil fins, grilles, electric motor frame);
- copper (coil pipes, winding of the electric motors);
- polyurethane foam (sandwich panels insulation).

Diagnosis and fault solving

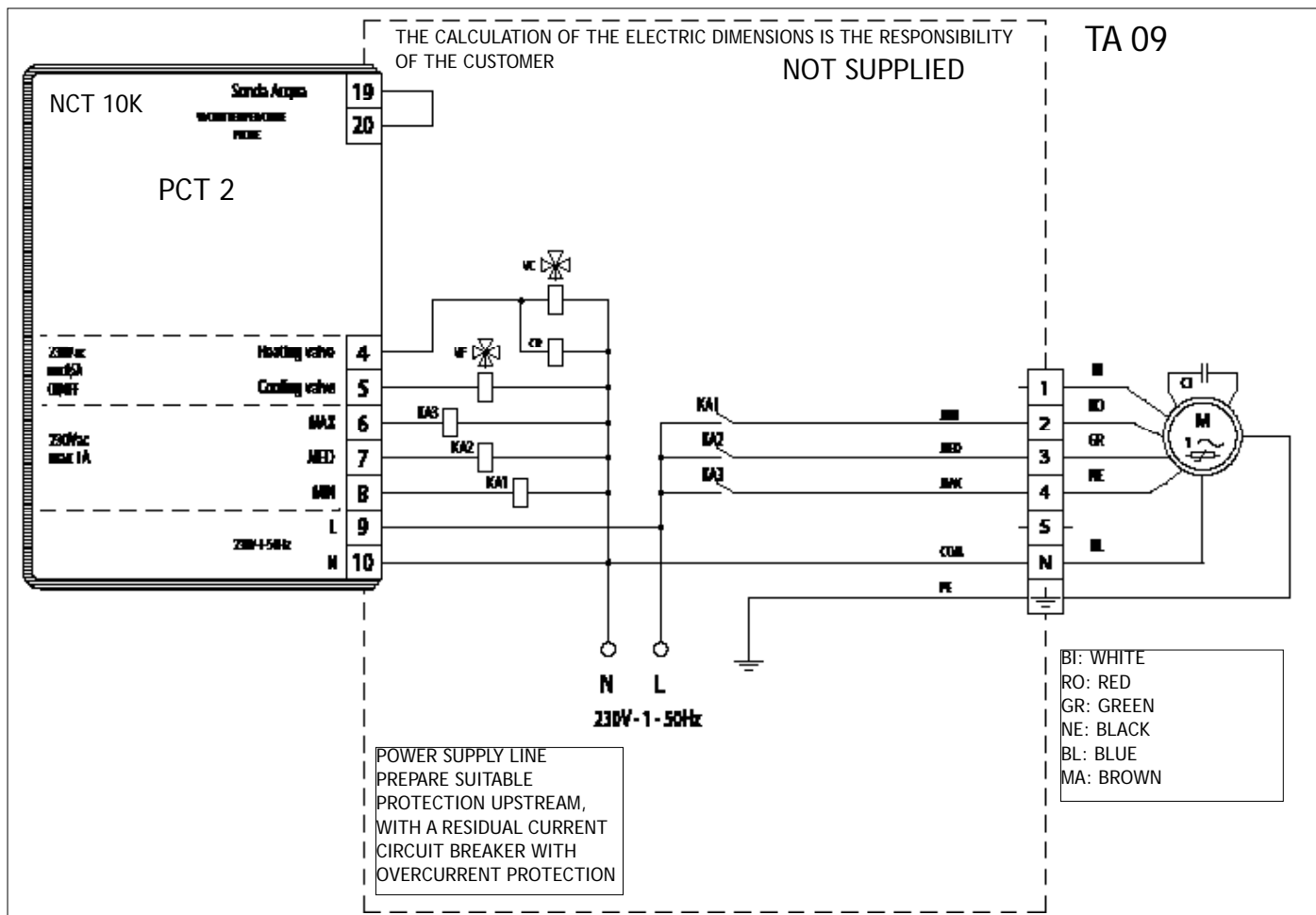
PROBLEM	CAUSE	REMEDY
1. INSUFFICIENT AIR FLOW RATE	1. Blocked filters	- Clean the filters
	2. Blocked coils	- Clean the coils
3. NO AIR FLOW RATE	1. Power supply off	- Check the presence of power
	2. Electric motor burnt out	- Replace the electric motor
4. ABNORMAL NOISE	1. Excessive flow rate	- Reduce the flow rate
	2. Fan bearings worn or defective	- Replace bearings
	3. Foreign bodies on the fans' impellers	- Clean the impellers
4. MOISTURE CARRYOVER	1. Drain-trap blocked	- Clean drain-trap
	2. No drain-trap or incorrectly made	- Correctly prepare a drain-trap as indicated in this manual
5. REQUIRED TEMPERATURE NOT ACHIEVED	1. Temperature of the inlet air on coil outside the envisaged limits	- Check the water temperature
	2. Air in the water coils	- Bleed the coils
	3. Insufficient water flow rate in the water coils	- Increase the water flow rate
	4. Insufficient coil inlet water temperature	- Check the water temperature
	5. Dirty coil unit surface	- Clean the surface of the pack

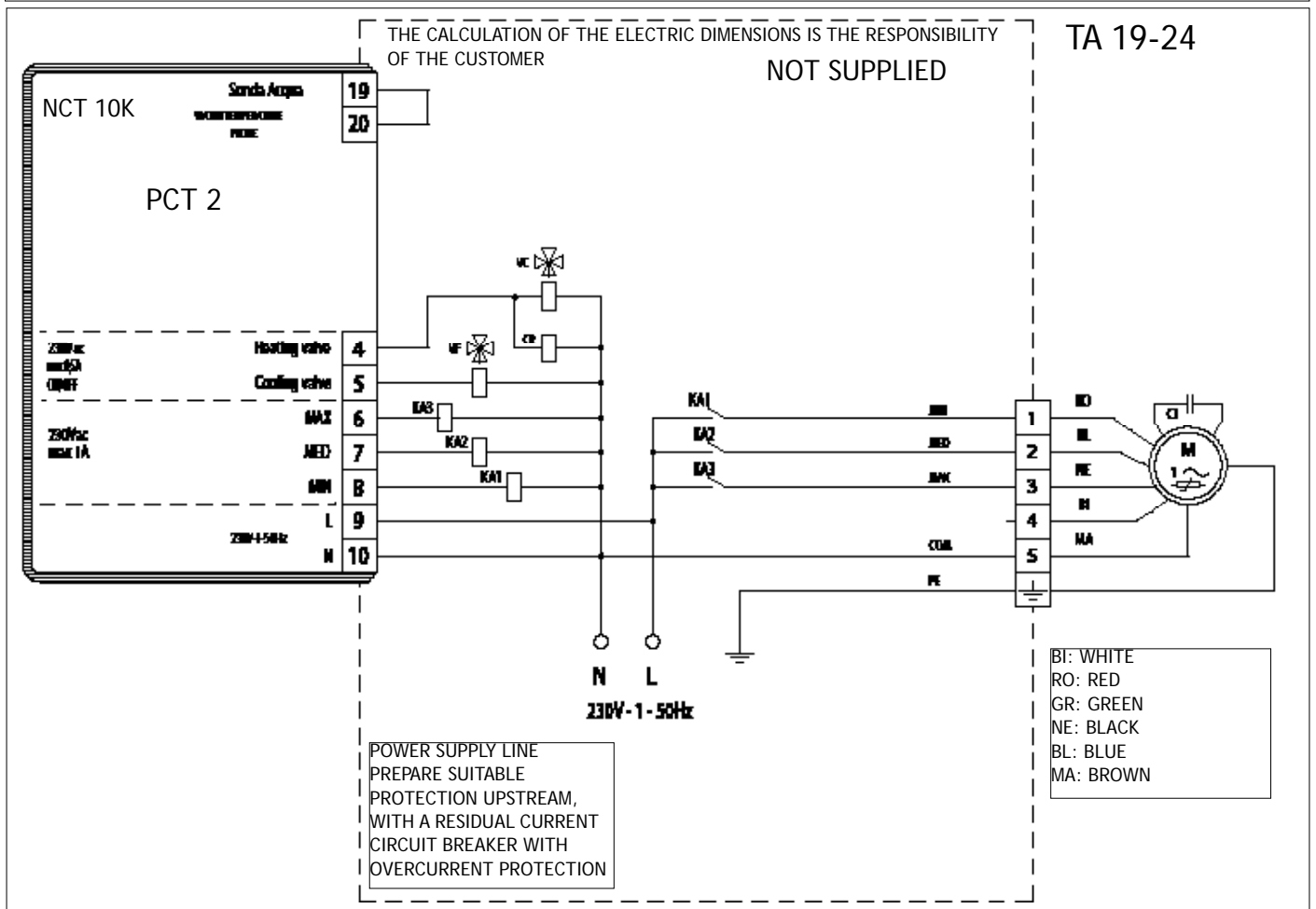
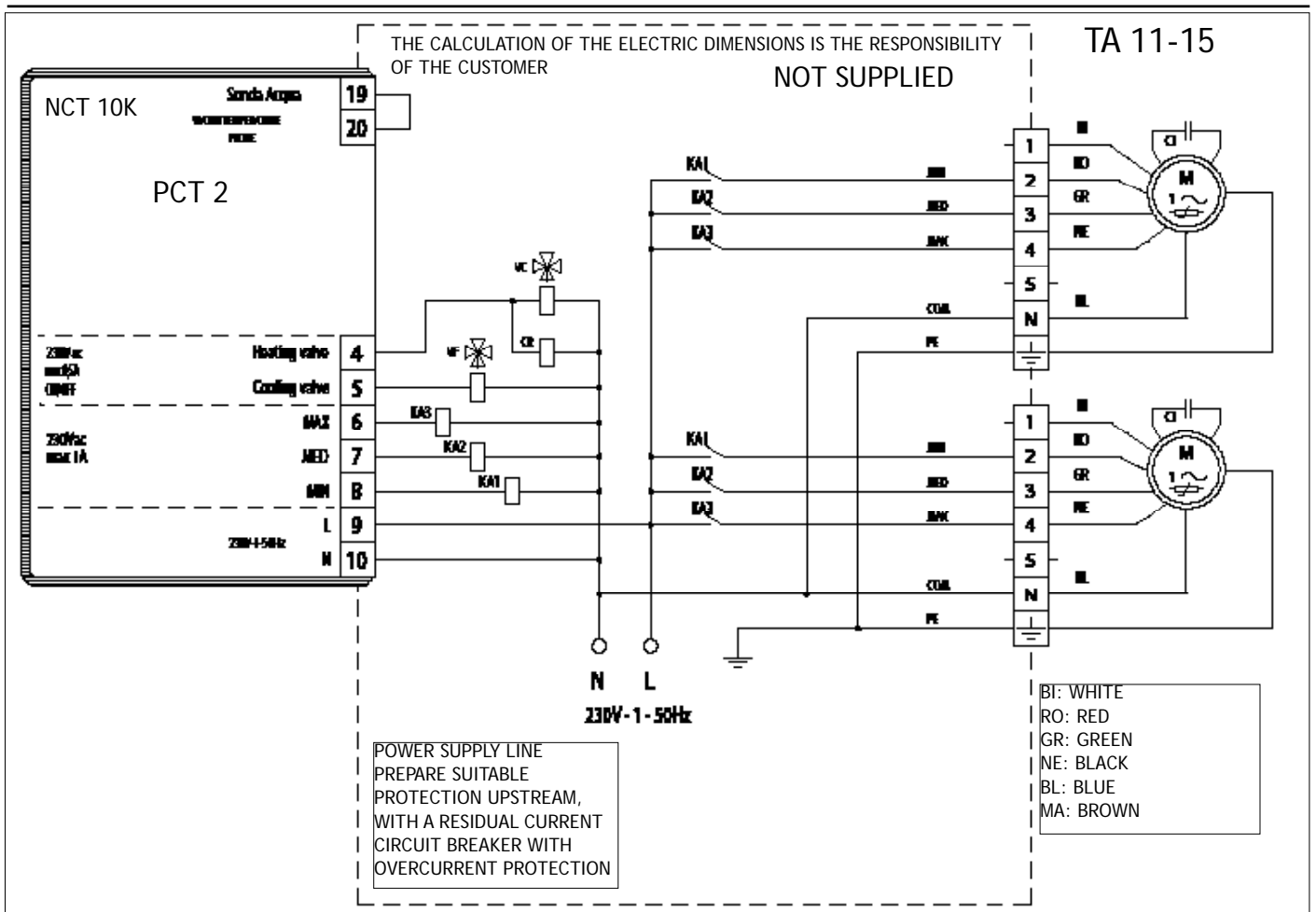
Wiring diagrams

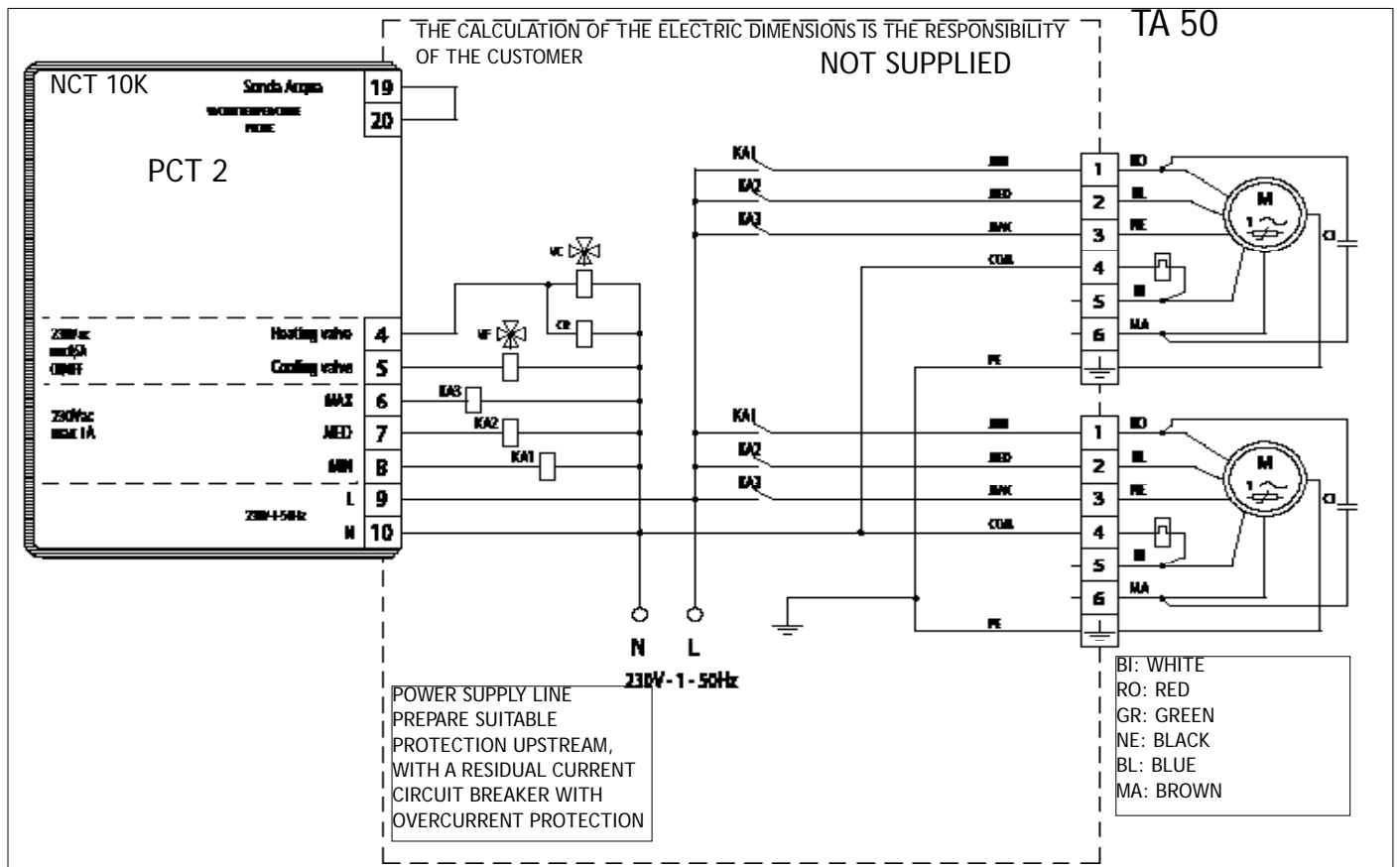
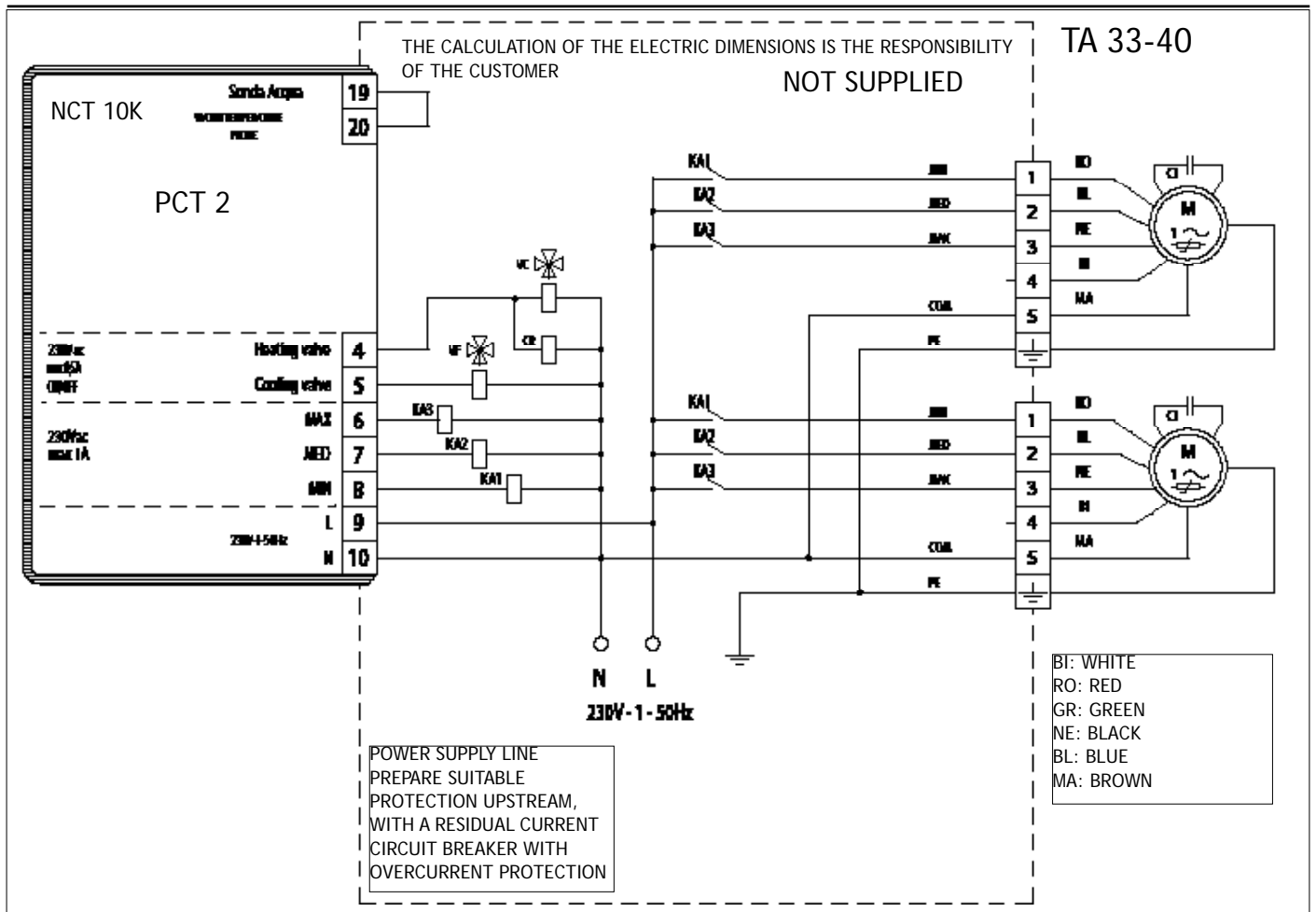
• CONNECTION DIAGRAM FOR THE PCT2 REMOTE PANEL

KEY TO PCT 2 DIAGRAMS

VC: HOT VALVE
 VF: COLD VALVE
 CR: ELECTRIC HEATER COUNTER
 KA1: MINIMUM SPEED RELAY
 KA2: AVERAGE SPEED RELAY
 KA3: MAXIMUM SPEED RELAY

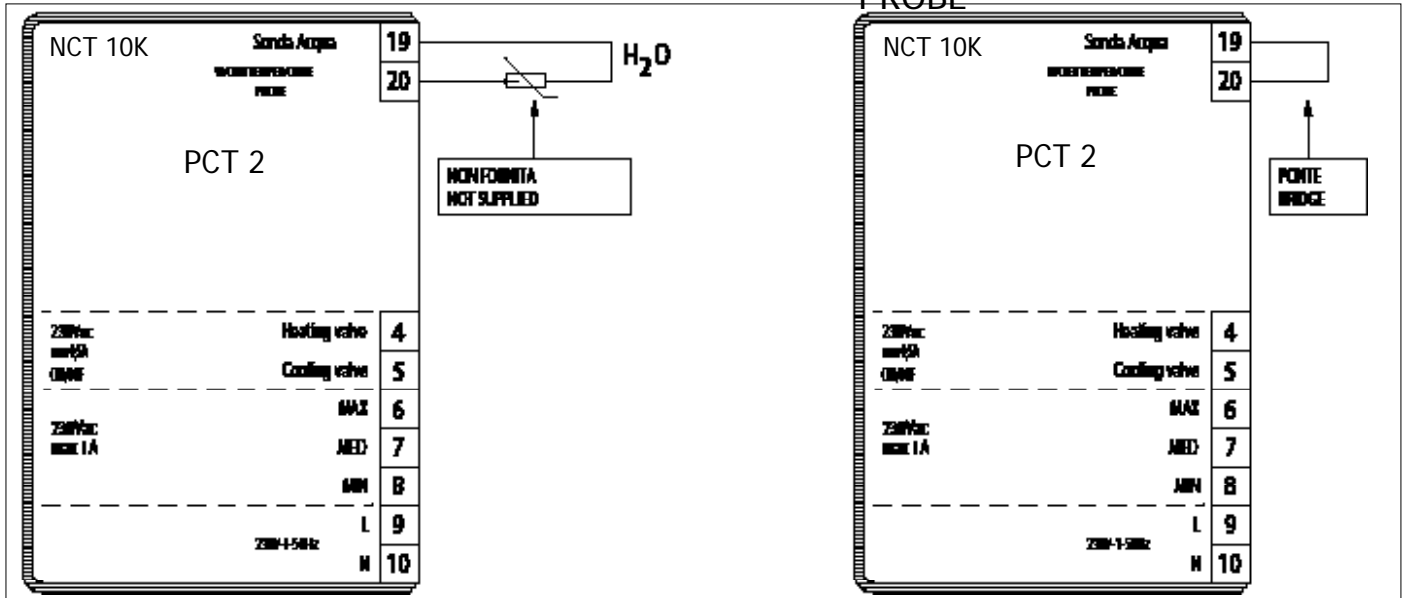




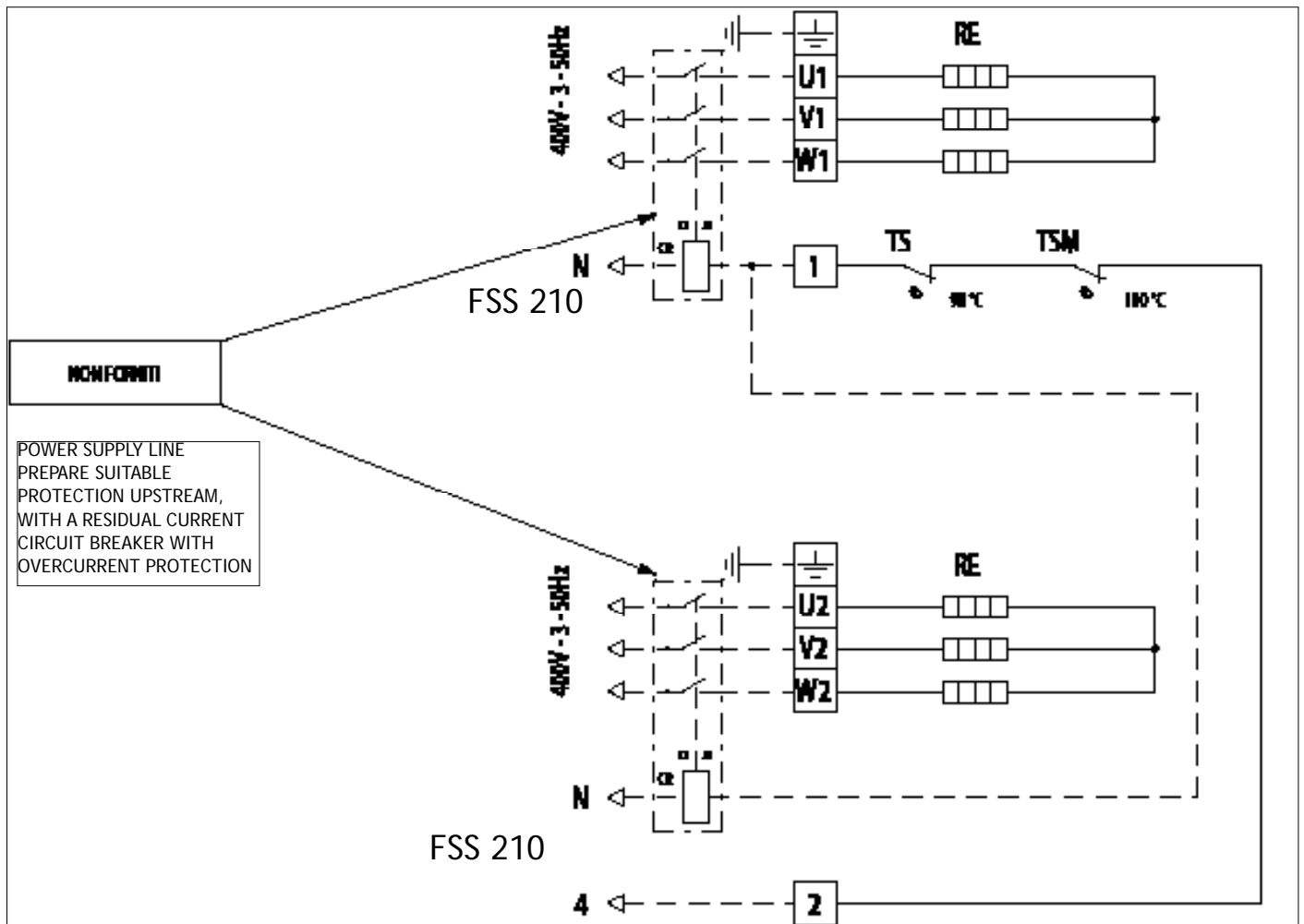


WITH WATER PROBE

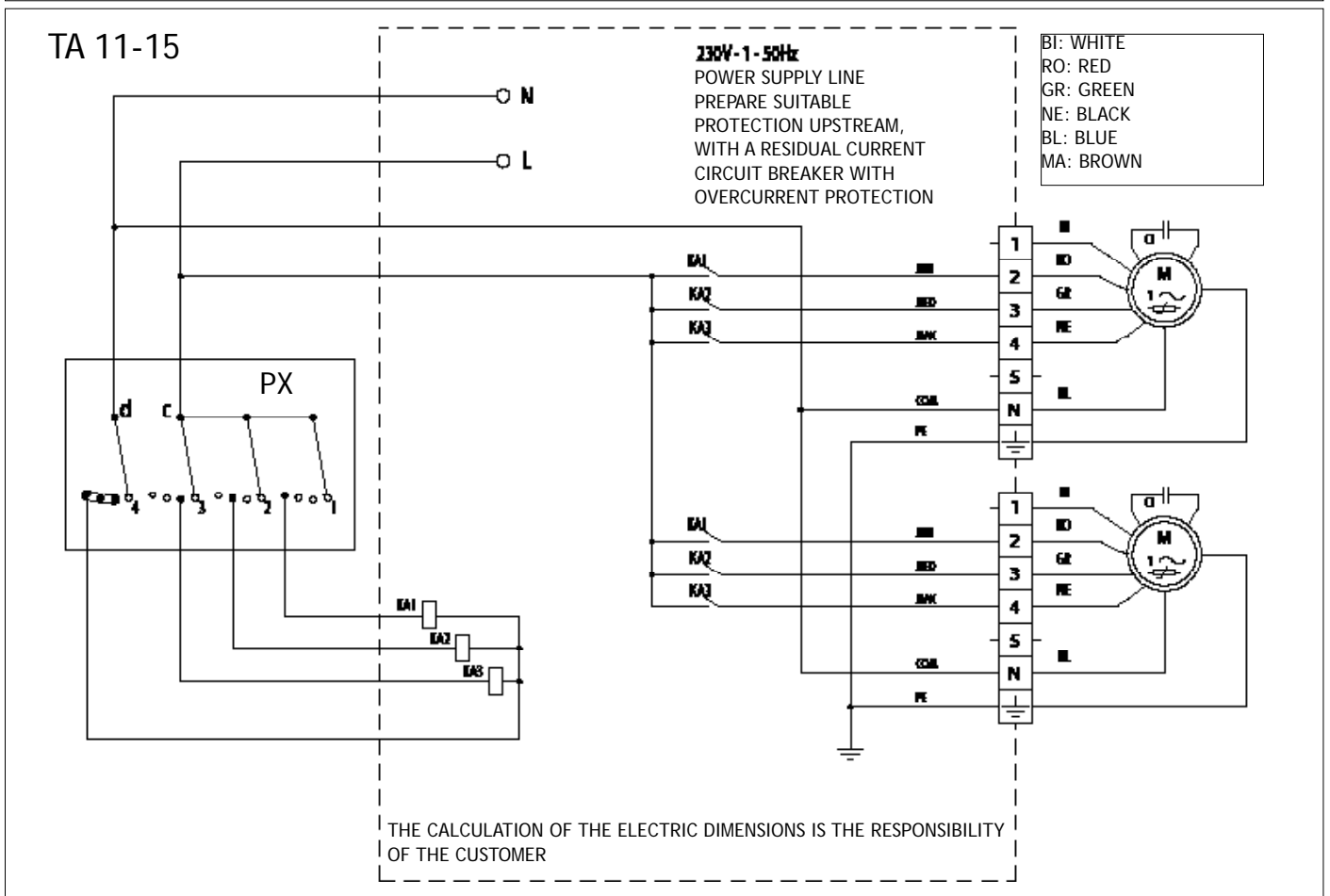
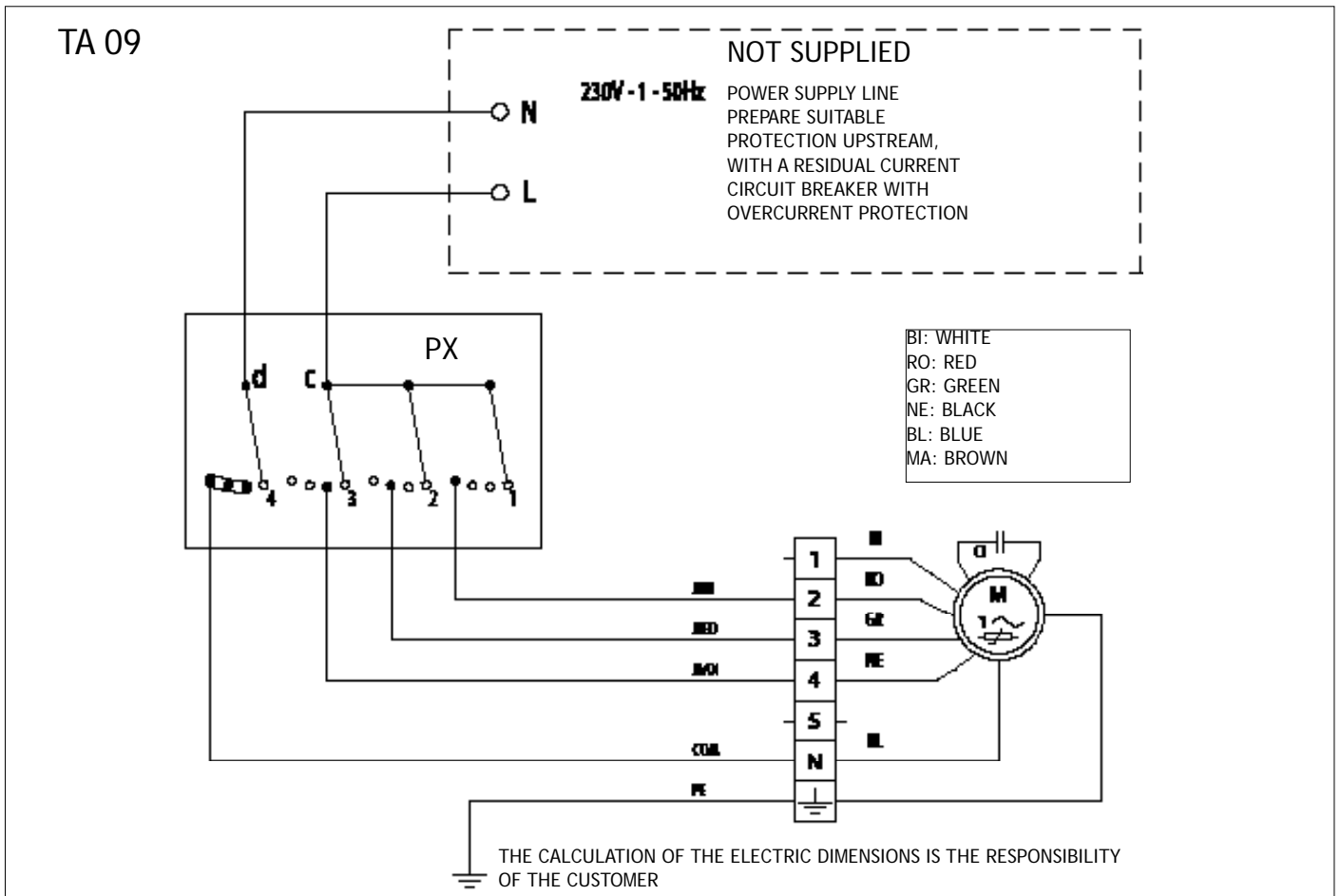
WITHOUT WATER PROBE



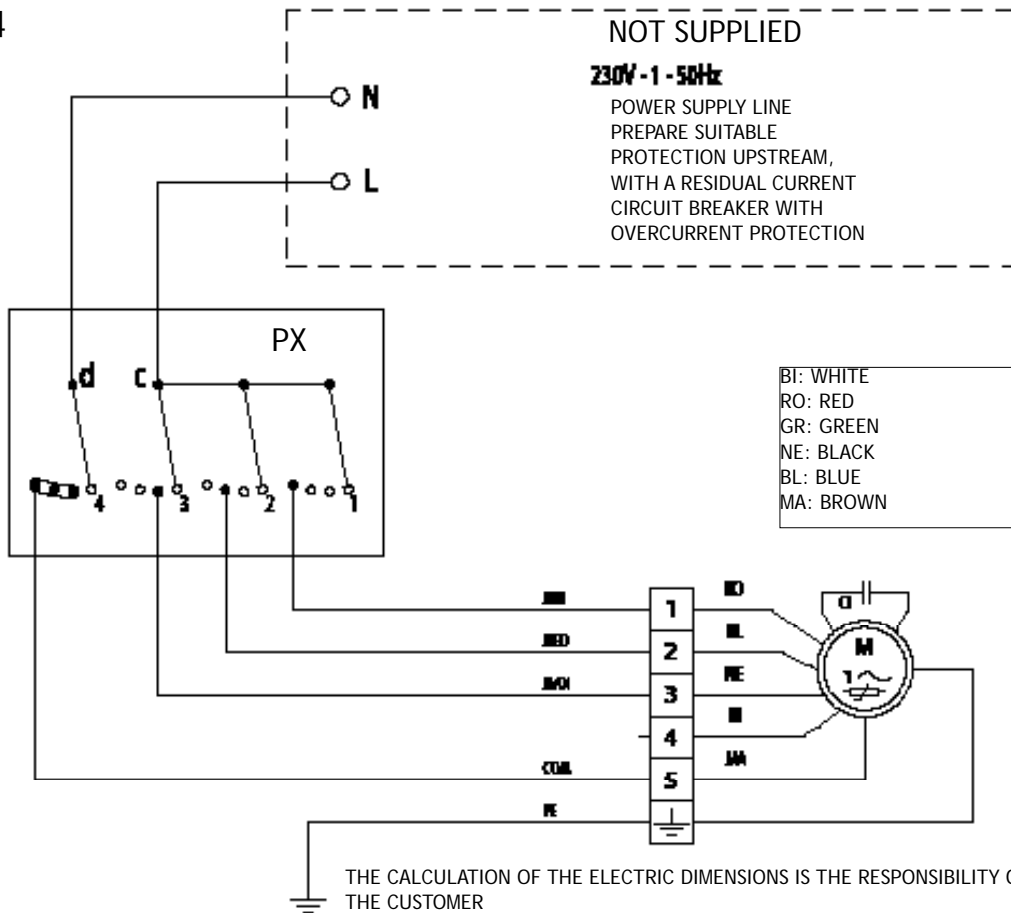
• CONNECTION DIAGRAM FOR THE ELECTRIC COILS



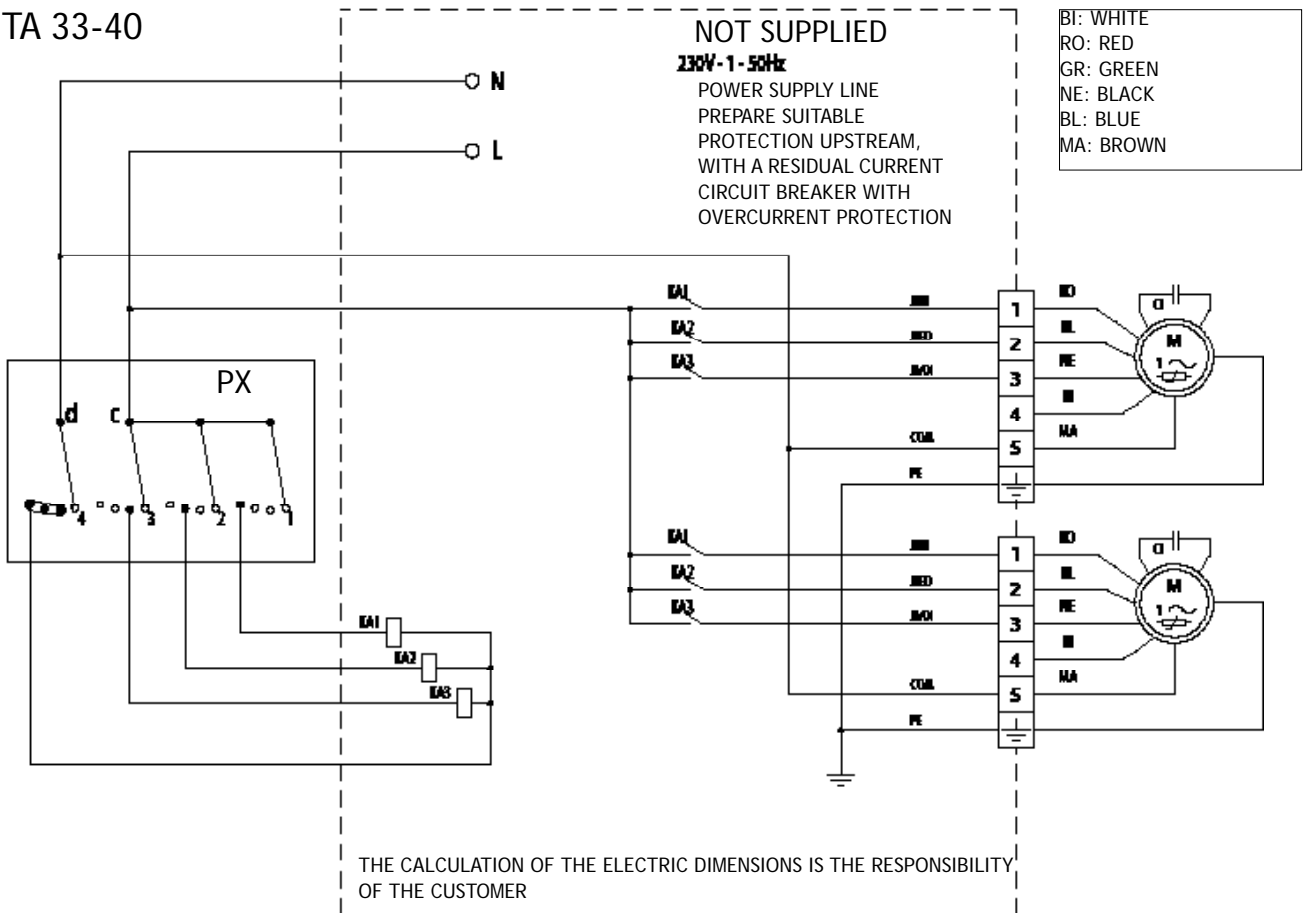
• CONNECTION DIAGRAM FOR THE PX REMOTE PANEL

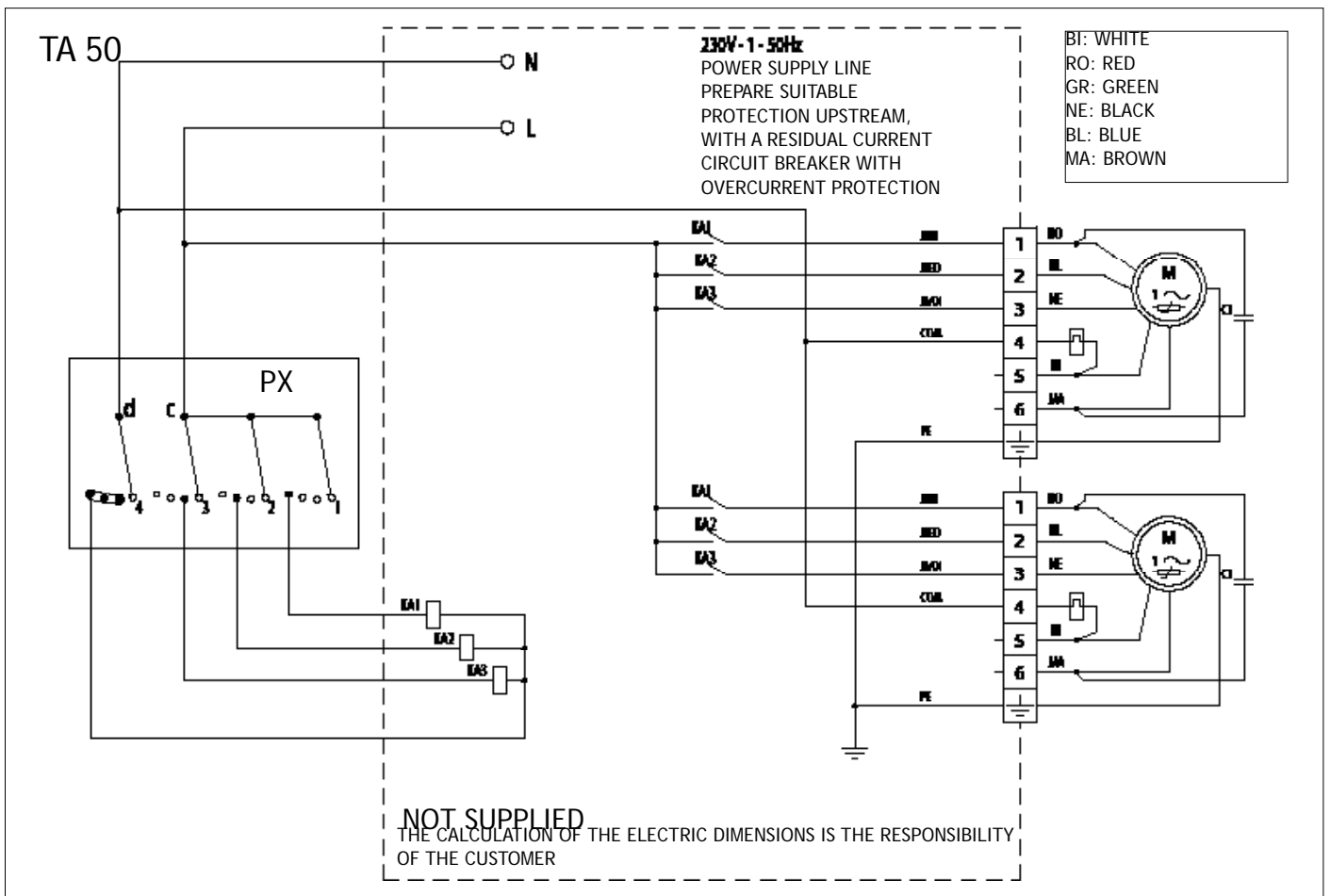


TA 19-24



TA 33-40

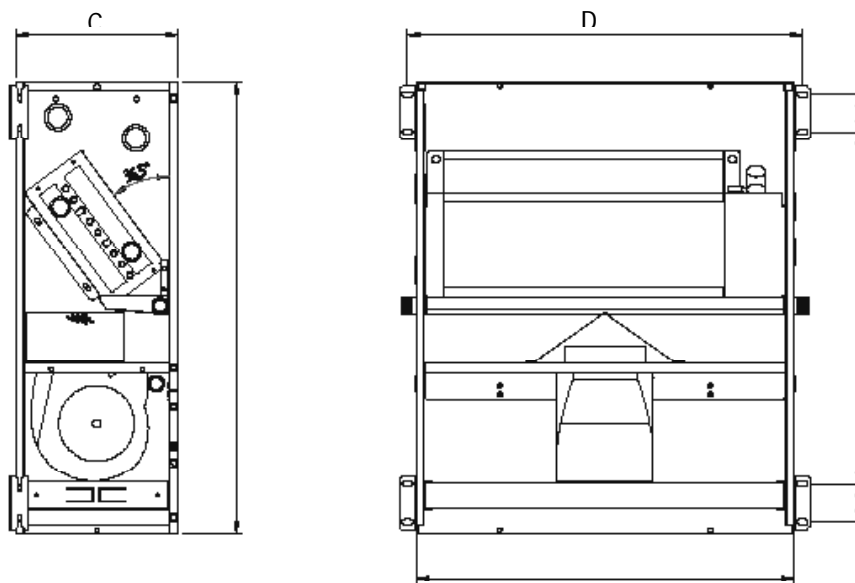
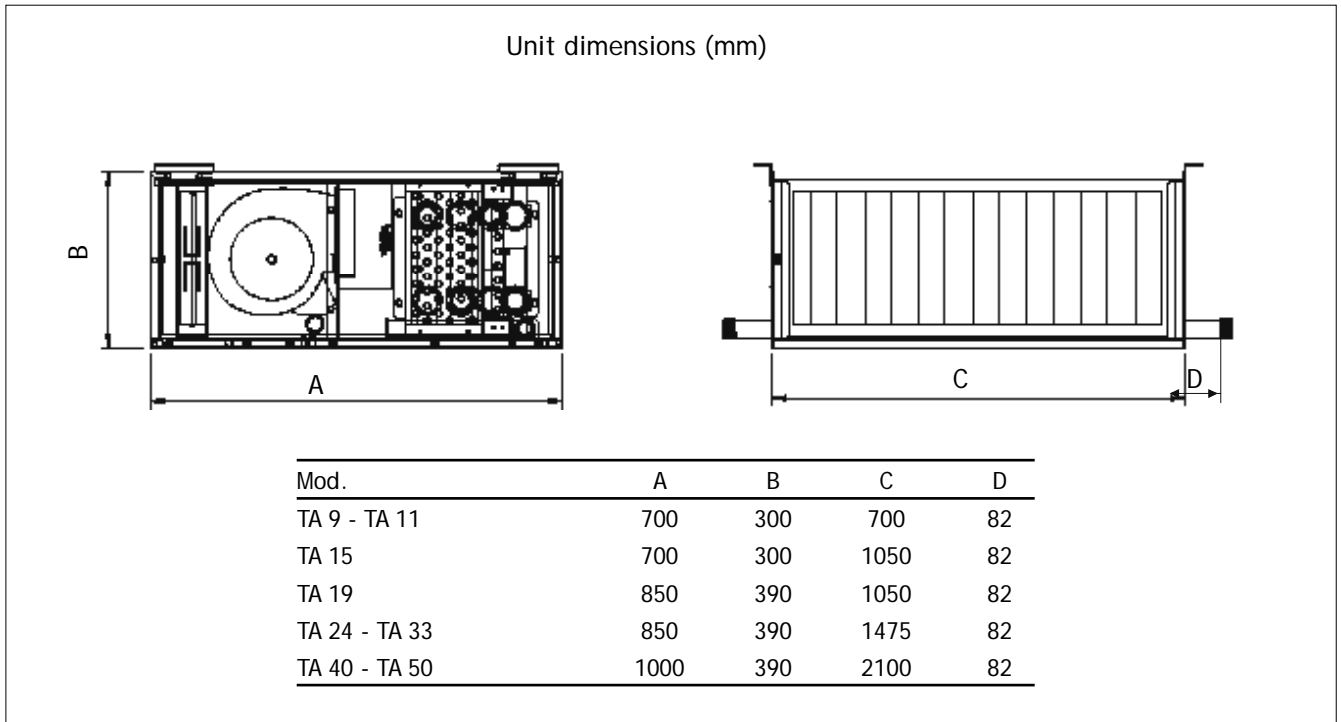




KEY TO PX DIAGRAMS

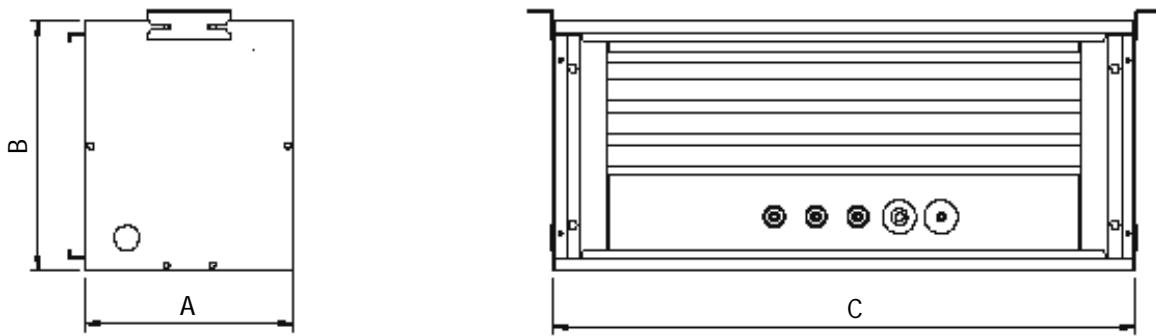
KA1: MINIMUM SPEED RELAY
 KA2: AVERAGE SPEED RELAY
 KA3: MAXIMUM SPEED RELAY

Size data



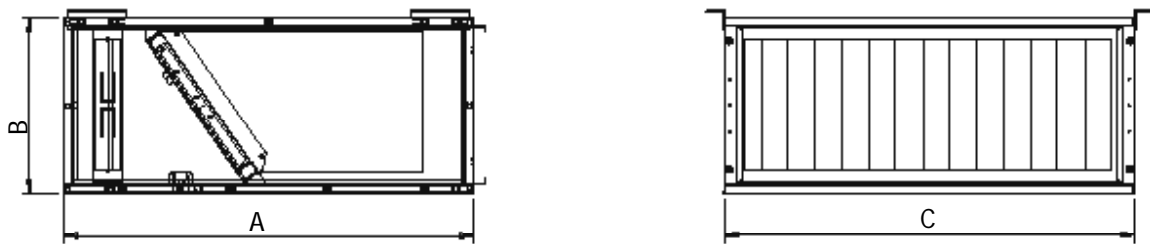
Mod.	A	B	C	D	E	G	N. Ventilatori
TA 9	700	840	300	732	655	70	1
TA 11	700	840	300	732	655	70	2
TA 15	1050	840	300	1082	655	70	2
TA 19	1050	1090	390	1082	905	70	1
TA 24	1475	1090	390	1507	905	70	1
TA 33	1475	1090	390	1507	905	70	2
TA 40	2099	1090	390	2131	905	70	2
TA 50	2099	1090	390	2131	905	70	2

Plenum with 2-stage post-heating electric coil « PBE »



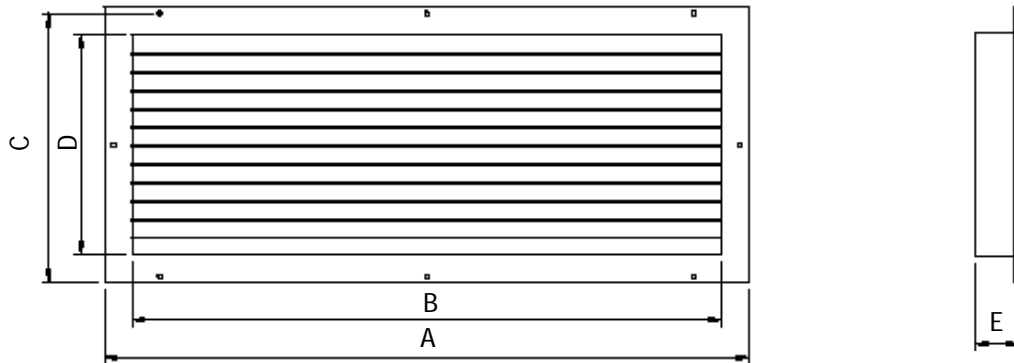
Mod.	A	B	C
PBE 1 for TA 9	250	300	700
PBE 2 for TA 11	250	300	700
PBE 3 for TA 15	250	300	1050
PBE 4 for TA 19	250	390	1050
PBE 5 for TA 24	250	390	1475
PBE 6 for TA 33	250	390	1475
PBE 7 for TA 40	250	390	2100
PBE 8 for TA 50	250	390	2100

Section of soft pocket filters « FTF »



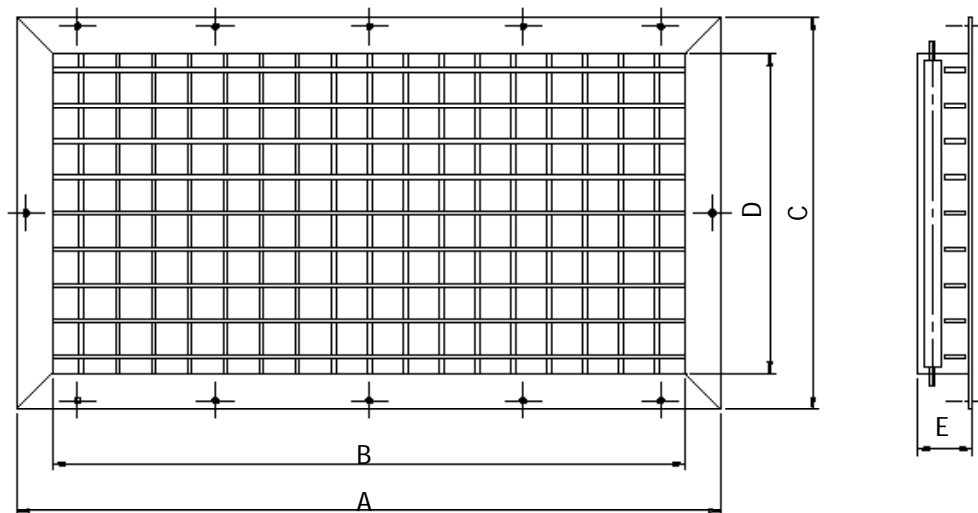
Mod.	A	B	C
FTF 1 for TA 9 - TA 11	700	300	700
FTF 2 for TA 15	700	300	1050
FTF 3 for TA 19	700	390	1050
FTF 4 for TA 24 - TA 33	700	390	1475
FTF 5 for TA 40 - TA 50	700	390	2100

Intake grille « GAP »



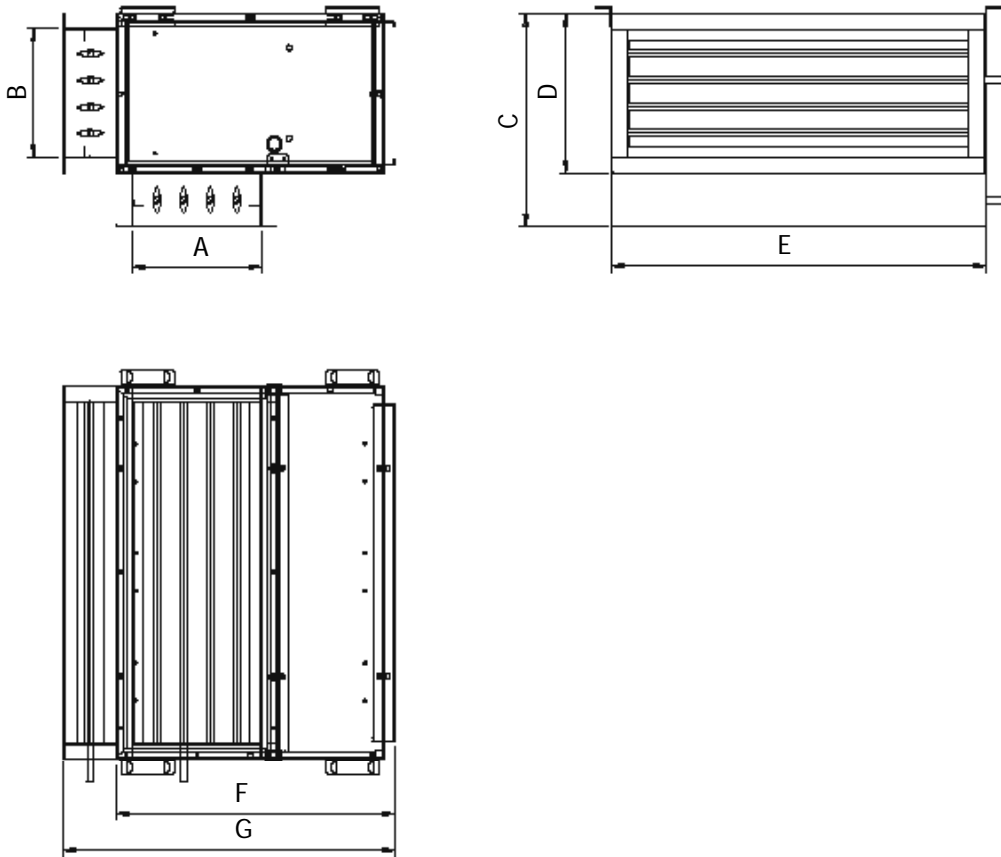
Mod.	A	B	C	D	E
GAP 1 for TA 9 - TA 11	700	640	293	240	48
GAP 2 for TA 15	1050	990	300	240	45
GAP 3 for TA 19	1050	990	390	330	45
GAP 4 for TA 24 - TA 33	1475	1415	390	330	45
GAP 5 for TA 40 - TA 50	2100	2040	390	330	45

Supply grille « GMD »



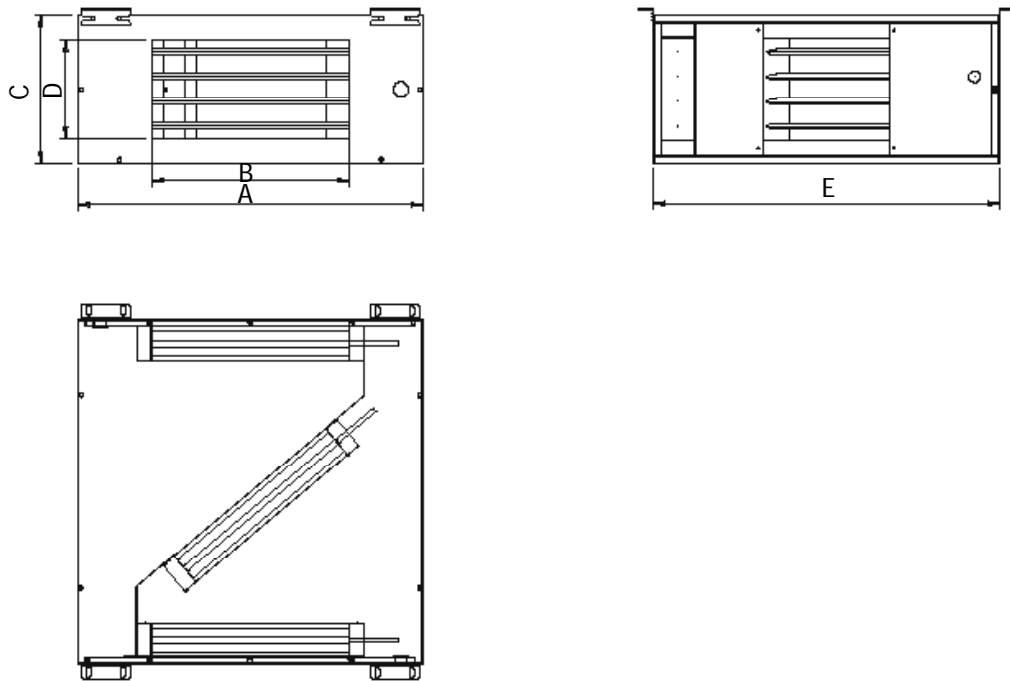
Mod.	A	B	C	D	E
GMD 1 for TA 9 - TA 11	700	640	300	240	45
GMD 2 for TA 15	1050	990	300	240	45
GMD 3 for TA 19	1050	990	390	330	45
GMD 4 for TA 24 - TA 33	1475	1415	390	330	45
GMD 5 for TA 40 - TA 50	2100	2040	390	330	45

2-damper mixing chamber « M2S »



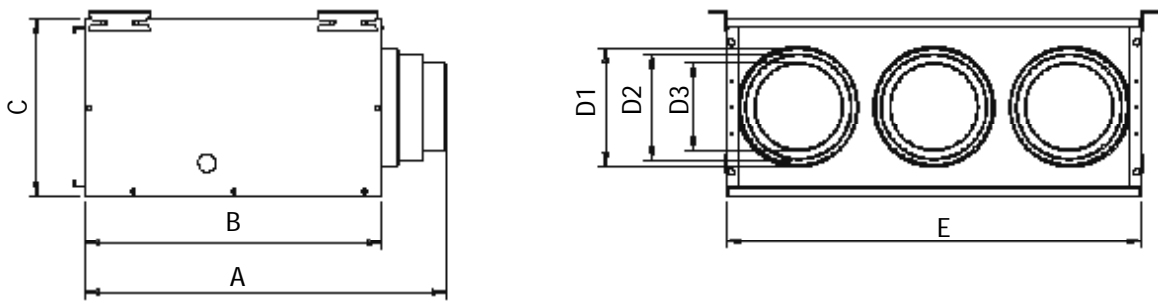
Mod.	A	B	C	D	E	F	G
M2S 1 for TA 9 - TA 11	242	242	400	300	700	521	620
M2S 2 for TA 15	242	242	400	300	1050	501	600
M2S 3 for TA 19	332	332	490	390	1050	591	690
M2S 4 for TA 24 - TA 33	332	332	490	390	1475	591	690
M2S 5 for TA 40 - TA 50	332	332	490	390	2100	591	690

3-damper mixing chamber « M3S »



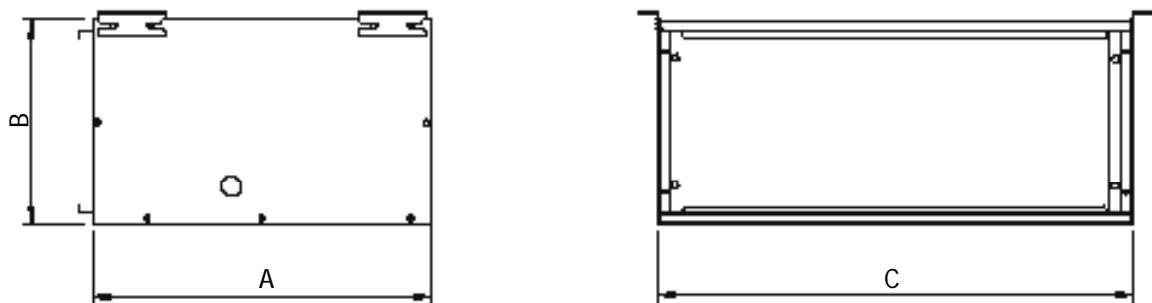
Mod.	A	B	C	D	E
M3S 1 for TA 9 - TA 11	700	400	300	200	700
M3S 2 for TA 15	700	400	300	200	1050
M3S 3 for TA 19	850	500	390	300	1050
M3S 4 for TA 24 - TA 33	1142	770	390	300	2100
M3S 5 for TA 40 - TA 50	1142	770	390	300	2100

Plenum with multiple circular delivery points « PMM »



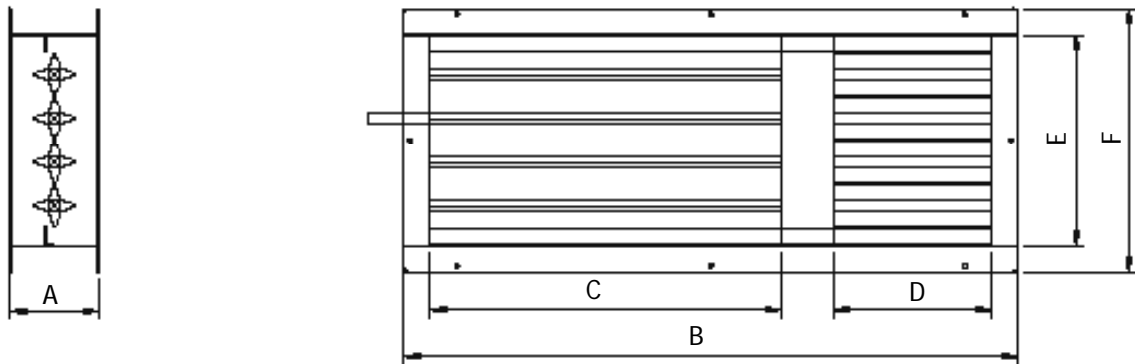
D2Mod.	A	B	C	E	D1	D2	D3	No. of flanges
PMM 1 for TA 9 - TA 11	607	500	300	700	200	180	150	3
PMM 2 for TA 15	607	500	300	1050	200	180	150	4
PMM 3 for TA 19	697,5	590	390	1050	200	180	150	4
PMM 4 for TA 24 - TA 33	697,5	590	390	1475	200	180	150	5
PMM 5 for TA 40 - TA 50	697,5	590	390	2100	200	180	150	5

Closed supply plenum « PMC »



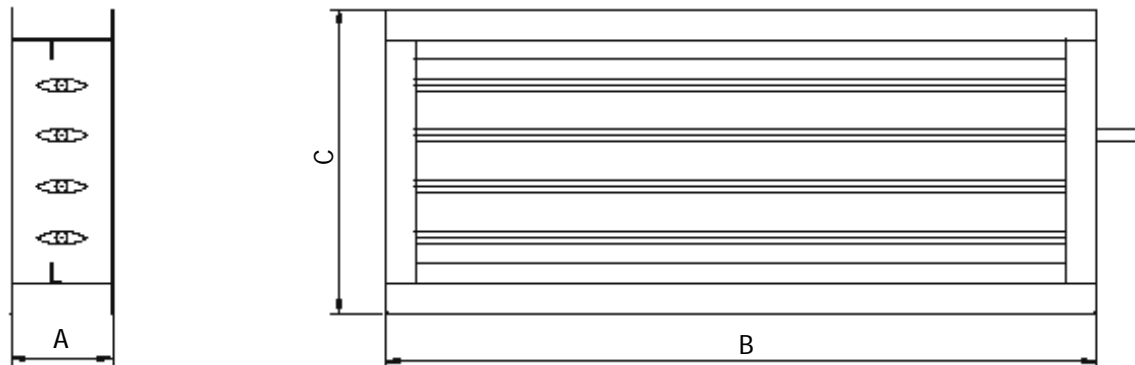
Mod.	A	B	C
PMC 1 for TA 9 - TA 11	500	300	700
PMC 2 for TA 15	500	300	1050
PMC 3 for TA 19	590	390	1050
PMC 4 for TA 24 - TA 33	590	390	1475
PMC 5 for TA 40 - TA 50	590	390	2100

2-area damper « S2Z »



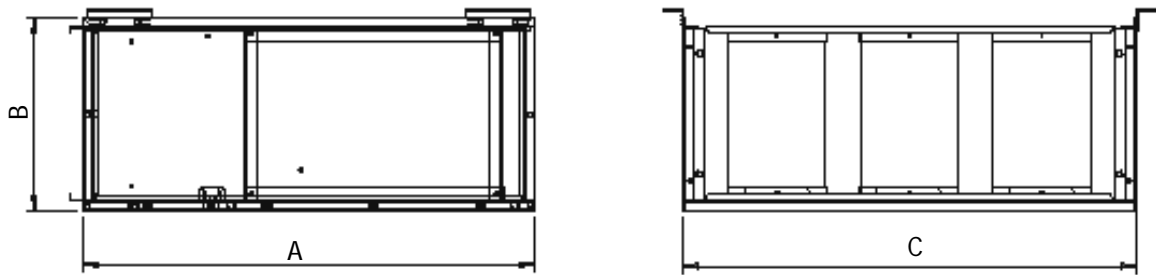
Mod.	A	B	C	D	E	F
S2Z 1 for TA 9 - TA 11	100	700	400	180	240	300
S2Z 2 for TA 15	100	1050	650	280	240	300
S2Z 3 for TA 19	100	1050	650	280	300	390
S2Z 4 for TA 24 - TA 33	100	1475	950	405	300	390
S2Z 5 for TA 40 - TA 50	100	2100	1380	600	330	390

Suction damper « SAP »



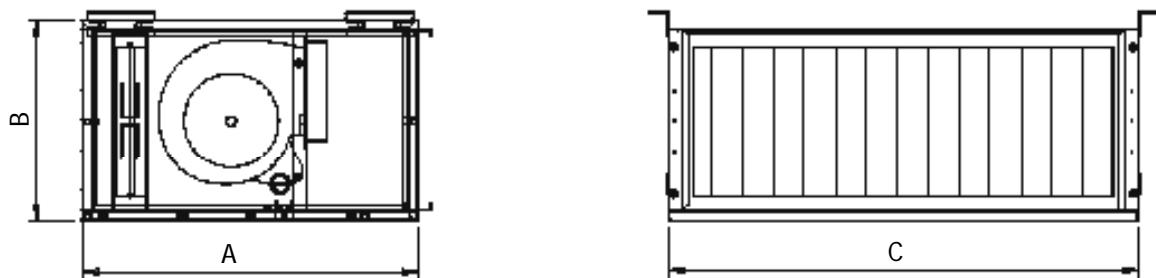
Mod.	A	B	C
SAP 1 for TA 9 - TA 11	100	700	300
SAP 2 for TA 15	100	1050	300
SAP 3 for TA 19	100	1050	390
SAP 4 for TA 24 - TA 33	100	1475	390
SAP 5 for TA 40 - TA 50	100	2100	390

Silencers « SSL »

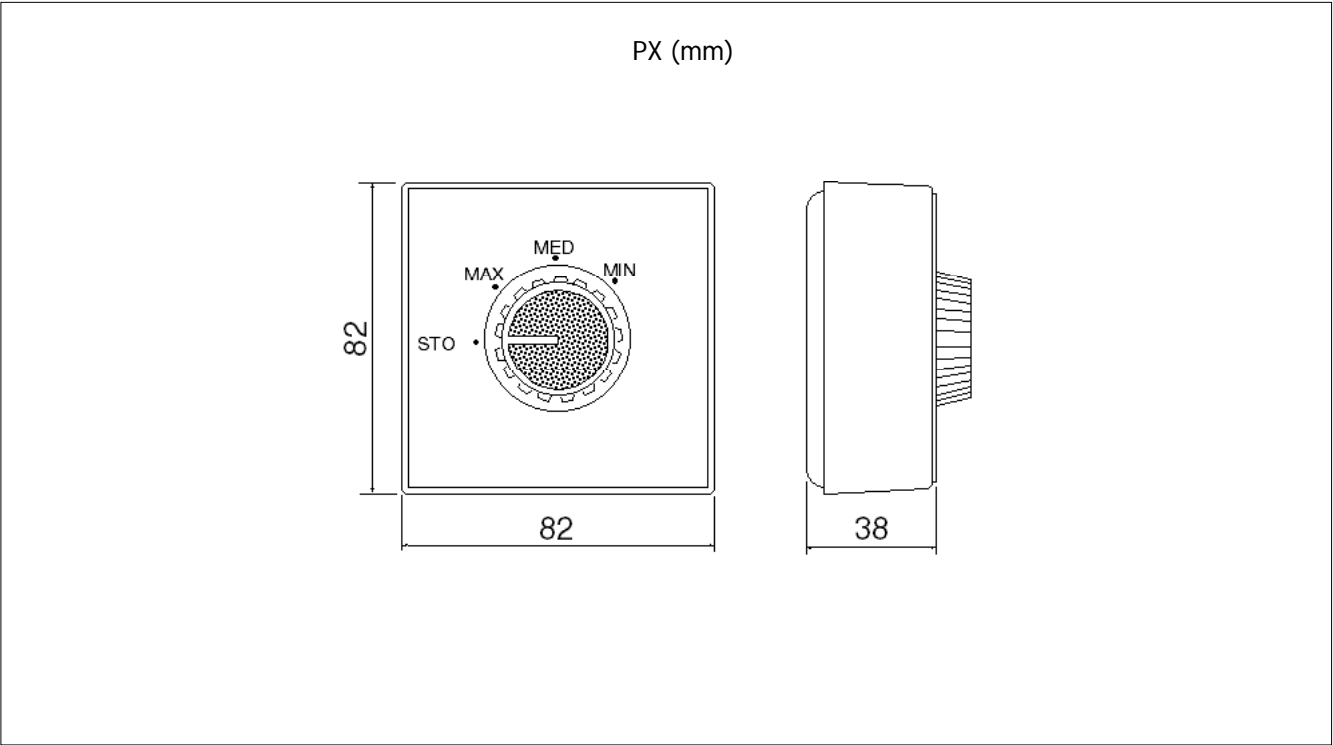
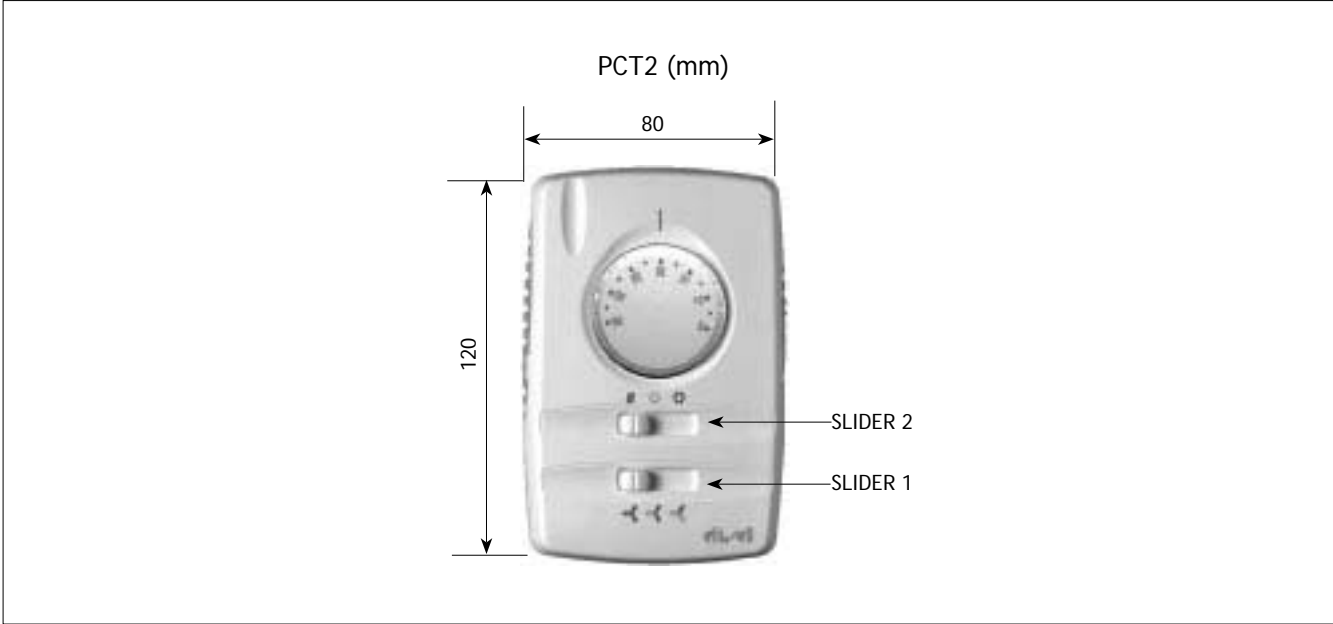


Mod.	A	B	C	No. of Silencers
SSL 1 for TA 9 - TA 11	700	300	700	3
SSL 2 for TA 15	700	300	1050	4
SSL 3 for TA 19	700	390	1050	4
SSL 4 for TA 24 - TA 33	700	390	1475	5
SSL 5 for TA 40 - TA 50	700	390	2100	7

Fan intake section « VRF »



Mod.	A	B	C	No. of Fans
VRF 1 for TA 9	500	300	700	1
VRF 2 for TA 11	500	300	700	2
VRF 3 for TA 15	500	300	1050	2
VRF 4 for TA 19	590	390	1050	1
VRF 5 for TA 24	590	390	1475	1
VRF 6 for TA 33	590	390	1475	2
VRF 7 for TA 40	720	390	2100	2
VRF 8 for TA 50	720	390	2100	2



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