















## TUN

## Air handling unit



- Very quiet
- Available units with heat exchanger with 4-6 rows
- Ductable units



#### **DESCRIPTION**

The air-conditioning units of the TUN series are intended for civil, commercial and hotel systems in small to medium sized environments. They are distinguished by their compactness (a necessary requisite for false ceiling applications) and low noise. The wide range of accessories meets various system requirements.

#### **STRUCTURE**

#### Case

Structure made with 1.5 mm thick hot-dip galvanized sheet metal insulated internally with class V0 insulation. The unit is predisposed for connection with any delivery or intake channels.

Specific mounts help with the task of fixing the unit to the wall either horizontally or vertically.

#### **Ventilation group**

Double suction centrifugal fans with forward blades and directly coupled motor. The single-phase 230V 50Hz motor offers multiple speeds, three of which can be selected using a command.

#### Heat exchanger coil

The 4, 6 row coils, which can be fed with hot or refrigerated water, are made of copper tubing with aluminium fins blocked by the mechanical expansion of the tubes.

They are equipped with threaded sleeves for the plumbing connections and the air breather valve. The coils can be rotated at the work site. Also available, 2-row post-heating coils made of copper tubing with aluminium fins blocked by mechanical expansion of the tubes.

#### **Condensate drip**

Insulated internal condensation collection tub made of 1 mm thick hot-dip galvanised sheet metal.

#### **ACCESSORIES**

**AER503IR:** Flush-mounting thermostat with backlit display, capacitive keypad and infrared receiver, for controlling both brushless fan coils and those with an asynchronous motor. In 2-pipe systems, the thermostat can control standard fan coils or those equipped with an electric

heater, with air purifying devices (Cold Plasma and germicidal lamp), with radiant plate or with FCZ-D twin delivery (Dualjet). In addition, it can control systems with radiant panels or mixed (fan coil and radiant floor) systems. Being equipped with an infrared receiver, it can, in turn, be controlled by the VMF-IR remote control.

**SA5:** air probe kit (L = 15 m) with probe-locking cable grommet.

**SIT3:** Thermostat Interface Card allowing the creation of a network of fan coils (max. 10) commanded by a central control panel (selector or thermostat). Commands the 3 fan speeds and must be installed on each fan coil within the network; receives the commands from the selector or the SIT5 card.

**SW5:** water probe kit (L = 15m) with probe-holder connection point, fixing clip and probe-holder from heat exchanger.

**WMT05:** Electronic thermostat with thermostated ventilation.

**WMT10:** Electronic thermostat, white, with thermostated or continuous ventilation.

**VCT:** These are 3-way ball valves made of bronze, with female/female connections Ø 1/2". That can be servo-activated via servo commands. The valves do not have fittings and pipes for water connections, which are the installer's responsibility.

**VCT:** These are 3-way ball valves made of bronze, with female/female connections Ø 1/2". That can be servo-activated via servo commands. The valves do not have fittings and pipes for water connections, which are the installer's responsibility.

**VCTK:** The VCT series valves can be combined with the actuators On-Off 230V. The actuator must be selected according to the type of system/adjustment provided.

**VCTKM**: The VCT series valves can be combined with the actuators 24V modulating. The actuator must be selected according to the type of system/adjustment provided.

**M25:** Galvanised steel mixing chamber with two dampers for air calibration. Fin pitch 50 mm, the galvanised steel adjustment knob (diameter 8 mm) can be motorised.

**M3S:** Galvanised steel mixing chamber with three air calibration dampers and galvanised steel plates. Must necessarily be paired with the VRF accessory.

**FTF:** Soft bag filters. Section in galvanised steel sheet metal with F6 soft bag filters. Must necessarily be paired in the powered units.

**B2R:** Hot water coil with 2 rows for lines with 4 tubes. Positioned internally at the base of the equipment, downstream from the main coil.

**PBE:** Section with post heating coil composed of armoured heaters equipped with a double safety thermostat.

**SSL:** Module with seven galvanised steel sheet metal silencers and seven stone wool silencers covered by polyethylene film to prevent chipping.

**S2Z:** Galvanised steel opposed fin dampers for mixing outside air with recirculating air.

**VRF:** Recovery fan unit equipped with electronic variable speed control. The unit is contained in a galvanised steel sheet metal section equipped with flat filters, efficiency level G4 (EN779).

**PMM:** Plenum with circular multiple delivery, thickness 1.5 mm. The plenum is equipped with multi-diameter circular connections (200 mm, 180 mm, 150 mm) made of plastic to permit the connection of circular conduits.

**TPMC:** Delivery plenum to be used for connecting to circular channels. Made of galvanised sheet steel with insulating mattress and closed circular flanges with three sections. Can be used either as a delivery plenum or as an intake plenum with circular channels.

**PMC:** Closed delivery plenum in 1.5 mm thick hot-dip galvanised sheet metal. The plenum allows for flow to be rotated by 90°. Opening the delivery outlet is the installer's responsibility.

**SAS:** Air calibration damper with galvanised sheet metal fins to be positioned for intake. Fin pitch 50 mm; the galvanised steel adjustment knob can be motorised.

**GMD:** Air delivery grill with fins that can be positioned for the delivery of air in the room to be treated. May be installed directly on the device by removing the flanges or installed on the wall.

**GAP:** Intake grille with fins at a fixed 45° angle. May be installed directly on the device by removing the flanges or installed on the wall.

**FPI:** ISO COARSE 50% filter flange for intake at base.

FPF: Filter ISO COARSE 50%.

#### **ACCESSORIES COMPATIBILITY**

#### Control panels

Accessory	TUN104	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206	TUN254	TUN256	TUN404	TUN404P	TUN406	TUN406P
AER503IR	•	•	•	•	•	•	•	•	•	•	•	•	•	•
SA5	•	•	•	•	•	•	•	•	•	•	•	•	•	•
SIT3	•	•	•	•	•	•	•	•		•	•	•		•
SW5	•	•	•	•	•	•	•	•	•	•	•	•	•	•
WMT05	•	•	•	•	•	•	•	•	•	•	•	•	•	•
WMT10	•			•		•		•	•	•	•		•	•

**With WMT05 and WMT10 control panels:** when paired with units TUN154-156-254-256-404-404P-406P use of the SIT3 accessory is mandatory and the 2A fuse must be replaced by a 4A fuse.

#### 2 way valve kit

Accessory	TUN104	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206	TUN254	TUN256	TUN404	TUN404P	TUN406	TUN406P
VCT102	•	•	•	•										
VCT202					•		•	•						
VCT402									•					
VCT402P											•	•	•	•

#### 3 way valve kit

Accessory	TUN104	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206	TUN254	TUN256	TUN404	TUN404P	TUN406	TUN406P
VCT103	•	•	•	•										
VCT203							•							
VCT403									•					
VCT403P											•	•	•	•

#### **Actuator VCTK 230V**

Accessory	TUN104	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206	TUN254	TUN256	TUN404	TUN404P	TUN406	TUN406P
VCTK	•	•	•	•	•	•	•	•	•	•	•	•	•	•

#### Actuator 24V

Accessory	TUN104	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206	TUN254	TUN256	TUN404	TUN404P	TUN406	TUN406P
VCTKM	•	•	•	•	•	•	•	•	•	•	•	•	•	•

#### 2-damper mixing chamber

Accessory	1UN104	TUN104P	TUN106	TUN106P	1UN154	1UN156	1UN204	TUN206	1UN254	TUN256	1UN404	TUN404P	1UN406	TUN406P
M2S1	•	•	•	•										
M2S2					•	•								
M2S3							•							
M2S4									•	•	•		•	
M2S5												•		•

#### 3-damper mixing chamber

Accessory	TUN104	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206	TUN254	TUN256	TUN404	TUN404P	TUN406	TUN406P
M3S1	•	•	•	•										
M3S2					•	•								
M3S3							•	•						
M3S4									•		•		•	
M3S5												•		•

Soft bag filter section	TUN104	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206	TUN254	TUN256	TUN404	TUN404P	TUN406	TUN406F
Accessory FTF1	101104	10111041	1011100	10111001	1011134	1011100	1011/204	1011/200	1011/234	TUNZOO	1011404	10114047	1011400	10114001
FTF2	•				•	•								
FTF3					•	•	•		-					
FTF4							•	•	•	•	•			
FTF5		-							•	•	•		•	
LILO												<u> </u>		
2 row water coil														
Accessory	TUN104	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206	TUN254	TUN256	TUN404	TUN404P	TUN406	TUN406F
B2R11	•	•	•	•										
B2R21					•									
B2R31														
B2R41										•				
B2R51												•		
Section with post-he														
Accessory	TUN104	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206	TUN254	TUN256	TUN404	TUN404P	TUN406	TUN406F
PBE2	•	•	•	•										
PBE24M	•	•	•	•										
PBE24T	•	•	•	•										
PBE3		-			•	•								
PBE34M					•	•								
PBE36T					•	•							,	
PBE4		-					•	•						
PBE44M		-					•	•						
PBE46T							•	•						
PBE5									•	•				
PBE6											•		•	
PBE7												<u> </u>		•
Silencer baffles mod	ule													
Accessory	TUN104	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206	TUN254	TUN256	TUN404	TUN404P	TUN406	TUN406F
SSL1	•		•											
SSL2					•									
SSL3														
SSL4									•	•				
SSL5														
2 zone damper (70-3	80%)													
Accessory	TUN104	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206	TUN254	TUN256	TUN404	TUN404P	TUN406	TUN406P

2 zone damper (70-30%)														
Accessory	TUN104	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206	TUN254	TUN256	TUN404	TUN404P	TUN406	TUN406P
S2Z1	•	•	•	•										
S2Z2					•									
S2Z3							•	•						
S2Z4									•	•				
S2Z5												•		•
-														

Accessory	TUN104	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206	TUN254	TUN256	TUN404	TUN404P	TUN406	TUN406P
VRF1	•	•	•	•										
VRF3				-	•	•								
VRF4							•	•						
VRF5									•	•				
VRF6											•			
VRF7												•		

Plenum with multi	ple circular delive	ries												
Accessory	TUN104	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206	TUN254	TUN256	TUN404	TUN404P	TUN406	TUN406P
PMM1	•	•	•	•										
PMM2					•									
PMM3							•	•						
PMM4									•	•				
PMM5											•			•

Delivery plenum														
Accessory	TUN104	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206	TUN254	TUN256	TUN404	TUN404P	TUN406	TUN406P
TPMC1	•	•	•	•										
TPMC2					•	•								
TPMC3							•							
TPMC4									•	•	•		•	
TPMC5												•		

Closed delivery plenum													
Accessory	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206	TUN254	TUN256	TUN404	TUN404P	TUN406	TUN406P
PMC1	•	•	•										
PMC2				•	•								
PMC3							•						
PMC4													

PMC3								•						
PMC4									•	•	•		•	
PMC5												•		
Suction damper														
Accessory	TUN104	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206	TUN254	TUN256	TUN404	TUN404P	TUN406	TUN406P

SAS1		•	•	•	•								
SAS2						•	•						
SAS3													
SAS3									•	•	•		
SAS5												•	•

Outlet grille with adjustable	le fins													
Accessory	TUN104	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206	TUN254	TUN256	TUN404	TUN404P	TUN406	TUN406P
GMD1	•	•	•	•										
GMD2					•	•								
GMD3							•	•						
GMD4														

GMD3	•	•	•						
GMD4				•	•	•		•	
GMD5							•		•
Literature	,								

iiitake grias														
Accessory	TUN104	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206	TUN254	TUN256	TUN404	TUN404P	TUN406	TUN406P
GAP1	•	•	•	•										
GAP2					•	•								
GAP3							•	•						
GAP4									•	•	•		•	
GAP5														

Filter flange														
Accessory	TUN104	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206	TUN254	TUN256	TUN404	TUN404P	TUN406	TUN406P
FPI11	•	•	•	•										
FPI12														
FPI13							•	•						
FPI14														
FPI15														

Accessory	TUN104	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206	TUN254	TUN256	TUN404	TUN404P	TUN406	TUN406P
FPF1	•	•	•	•										
FPF2					•	•								
FPF3							•	•						
FPF4										•			•	-
FPF5												•		•

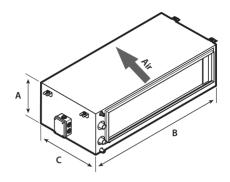
#### **PERFORMANCE SPECIFICATIONS**

		TUN104	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206
Cooling performance 7 °C / 12 °C (1)									
Cooling capacity	kW	4,16	4,16	5,60	5,60	9,30	11,10	12,50	14,10
Sensible cooling capacity	kW	3,30	3,30	4,00	4,00	6,60	7,60	8,70	9,80
Latent cooling capacity	kW	0,86	0,86	1,60	1,60	2,70	3,50	3,80	4,30
Water flow rate system side	l/h	715	715	963	963	1599	1910	2141	2420
Pressure drop system side	kPa	3	3	9	9	16	34	33	20
Heating performance 70 °C / 60 °C (2)									
Heating capacity	kW	10,20	10,20	11,30	11,30	19,00	21,10	24,90	27,50
Water flow rate system side	l/h	880	880	975	975	1663	1849	2183	2410
Pressure drop system side	kPa	3	3	6	6	13	24	25	15
Heating performance 45 °C / 40 °C (3)									
Heating capacity	kW	5,07	5,07	5,62	5,62	9,45	10,50	12,39	13,68
Electric heating coil - (accessory)									
Heating capacity	kW	4,00	6,00	4,00	6,00	8,00	8,00	10,00	10,00
Stages	no.	2	2	2	2	2	2	2	2
Power supply		400V~3 50Hz	400V~3 50Hz	400V~3 50Hz	400V~3 50Hz	400V~3 50Hz	400V~3 50Hz	400V~3 50Hz	400V~3 50Hz
Fan									
Туре	type	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
Fan motor	type	Asynchronous	Asynchronous	Asynchronous	Asynchronous	Asynchronous	Asynchronous	Asynchronous	Asynchronous
Number	no.	1	2	1	2	2	2	1	1
Air flow rate	m³/h	900	900	900	900	1500	1500	2000	2000
High static pressure	Pa	110	330	110	330	150	150	170	170
Diametre hydraulic ÿ ttings									
Main coil	Ø	1"	1″	1"	1″	1″	1″	1"	1″
Secondary coil	Ø	1/4"	1/4″	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Condensate discharge diameter	mm	1/4"	1/4"	1/4″	1/4″	1/4″	1/4"	1/4″	1/4"
		TUN254	TUN	1256	TUN404	TUN404P	TUN	1406	TUN406P
Cooling performance 7 °C / 12 °C (1)									
Cooling capacity	kW	16,50	18	,50	23,30	26,40	26	,60	29,40
Sensible cooling capacity	kW	11,40		,70	16,30	18,20	18	,50	20,10
Latent cooling capacity	kW	5,10	5,	80		0.20	0	10	9,30
					7,00	8,20	0,		
, , ,	I/h	2832	31	84	4002	8,20 4536		72	5051
Water flow rate system side Pressure drop system side							45		5051 28
Water flow rate system side Pressure drop system side	l/h	2832		84	4002	4536	45	72	
Water flow rate system side	l/h	2832	2	84	4002	4536	45	72 6	
Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2)	I/h kPa	2832 33	35	84	4002 60	4536 37	45	72 6 ,20	28
Water flow rate system side Pressure drop system side  Heating performance 70 °C / 60 °C (2)  Heating capacity	I/h kPa kW	2832 33 32,30	35 31	84 00 ,40	4002 60 46,70	4536 37 51,10	45 5 52 45	72 6 ,20	28 56,10
Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side	I/h kPa kW I/h	2832 33 32,30 2831	35 31	,40 01	4002 60 46,70 4089	4536 37 51,10 4475	45 5 52 45	72 6 ,20 73	56,10 4909
Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side	I/h kPa kW I/h	2832 33 32,30 2831	35 31 1	,40 01	4002 60 46,70 4089	4536 37 51,10 4475	45 5 52 45	72 6 ,20 ,73 8	56,10 4909
Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Heating performance 45 °C / 40 °C (3)	I/h kPa kW I/h kPa	2832 33 32,30 2831 24	35 31 1	,40 01 4	4002 60 46,70 4089 46	4536 37 51,10 4475 41	45 52 45 2	72 6 ,20 ,73 8	28 56,10 4909 20
Water flow rate system side Pressure drop system side Heating performance 70 °C/60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Heating performance 45 °C/40 °C (3) Heating capacity	I/h kPa kW I/h kPa	2832 33 32,30 2831 24	355 31 1 17	,40 01 4	4002 60 46,70 4089 46	4536 37 51,10 4475 41	45 52 45 2	72 66 ,20 73 8	28 56,10 4909 20
Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Heating performance 45 °C / 40 °C (3) Heating capacity Electric heating coil - (accessory)	I/h kPa kW I/h kPa	2832 33 32,30 2831 24 16,07	355 31 1 17	,40 01 4 01 4	4002 60 46,70 4089 46 23,23	4536 37 51,10 4475 41 25,42	45 5 52 45 2 25,	72 66 ,20 73 8	28 56,10 4909 20 27,91
Water flow rate system side Pressure drop system side Heating performance 70 °C/60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Heating performance 45 °C/40 °C (3) Heating capacity Electric heating coil - (accessory) Heating capacity	I/h kPa  kW I/h kPa  kW  kW	2832 33 32,30 2831 24 16,07	35 31 1 17	,40 ,01 ,40 ,61 ,61	4002 60 46,70 4089 46 23,23	4536 37 51,10 4475 41 25,42	45 5 52 45 2 25,	72 66 ,20 73 8 ,97	28 56,10 4909 20 27,91 20,00
Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Heating performance 45 °C / 40 °C (3) Heating capacity Electric heating coil - (accessory) Heating capacity Stages	I/h kPa  kW I/h kPa  kW  kW	2832 33 32,30 2831 24 16,07	35 31 1 17	,40 ,01 ,40 ,61 ,61	4002 60 46,70 4089 46 23,23 20,00 2	4536 37 51,10 4475 41 25,42 20,00 2	45 5 52 45 2 25,	72 66 ,20 ,73 8 ,97	28 56,10 4909 20 27,91 20,00 2
Water flow rate system side Pressure drop system side Heating performance 70 °C/60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Heating performance 45 °C/40 °C (3) Heating capacity Electric heating coil - (accessory) Heating capacity Stages Power supply	I/h kPa  kW I/h kPa  kW  kW	2832 33 32,30 2831 24 16,07	35 31 1 17 12 400V~	,40 ,01 ,40 ,61 ,61	4002 60 46,70 4089 46 23,23 20,00 2	4536 37 51,10 4475 41 25,42 20,00 2	45 52 45 2 25 20 400V~	72 66 ,20 ,73 8 ,97	28 56,10 4909 20 27,91 20,00 2
Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Heating performance 45 °C / 40 °C (3) Heating capacity Electric heating coil - (accessory) Heating capacity Stages Power supply Fan	I/h kPa  kW I/h kPa  kW  kW  kW	2832 33 32,30 2831 24 16,07 12,00 2 400V~3 50Hz	35 31 1 17 12 400V~	,40 ,01 ,40 ,01 ,4 ,61 ,00 2 2 3 50Hz	4002 60 46,70 4089 46 23,23 20,00 2 400V~3 50Hz	4536 37 51,10 4475 41 25,42 20,00 2 400V~3 50Hz	45 5 52 45 2 25, 20 400V~	772 66 ,20 ,73 8 ,97 ,00 2 3 50Hz	28 56,10 4909 20 27,91 20,00 2 400V~3 50Hz
Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Heating performance 45 °C / 40 °C (3) Heating capacity Electric heating coil - (accessory) Heating capacity Stages Power supply Fan Type	kW I/h kPa kW I/h kPa kW no.	2832 33 32,30 2831 24 16,07 12,00 2 400V~3 50Hz	35 31 17 17 12 400V~	,40 ,01 ,40 ,01 ,4 ,61 ,00 2 2 3 50Hz	4002 60 46,70 4089 46 23,23 20,00 2 400V~3 50Hz	4536 37 51,10 4475 41 25,42 20,00 2 400V~3 50Hz	45 5 52 45 2 25 20 20 400V~	72 66 ,20 ,73 8 ,97 ,00 2 3 50Hz	28 56,10 4909 20 27,91 20,00 2 400V~3 50Hz
Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Heating performance 45 °C / 40 °C (3) Heating capacity Electric heating coil - (accessory) Heating capacity Stages Power supply Fan Type Fan motor	l/h kPa  kW l/h kPa  kW  kW  no.	2832 33 32,30 2831 24 16,07 12,00 2 400V~3 50Hz Centrifugal	35 31 1 17 12 400V~	,40 ,01 ,40 ,61 ,00 2 -3 50Hz	4002 60 46,70 4089 46 23,23 20,00 2 400V~3 50Hz Centrifugal Asynchronous	4536 37 51,10 4475 41 25,42 20,00 2 400V~3 50Hz Centrifugal Asynchronous	45 52 45 2 25, 20, 400V~	72 66 ,20 ,73 8 ,97 ,00 2 3 50Hz	28 56,10 4909 20 27,91 20,00 2 400V~3 50Hz Centrifugal Asynchronous
Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Heating performance 45 °C / 40 °C (3) Heating capacity Electric heating coil - (accessory) Heating capacity Stages Power supply Fan Type Fan motor Number	kW I/h kPa kW I/h kPa kW no.	2832 33 32,30 2831 24 16,07 12,00 2 400V~3 50Hz Centrifugal Asynchronous	35 31 17 17 12 400V~ Centr Asynch	,40 ,40 ,01 ,4 ,61 ,00 2 -3 50Hz ifugal aronous	4002 60 46,70 4089 46 23,23 20,00 2 400V~3 50Hz Centrifugal Asynchronous 2	4536 37 51,10 4475 41 25,42 20,00 2 400V~3 50Hz Centrifugal Asynchronous	45 52 45 2 25, 20, 400V~ Centr Asynch	772 66 ,20 ,73 .8 .97 ,97 ,00 2 .3 50Hz ifugal erronous	28 56,10 4909 20 27,91 20,00 2 400V~3 50Hz Centrifugal Asynchronous 2
Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Heating performance 45 °C / 40 °C (3) Heating capacity Electric heating coil - (accessory) Heating capacity Stages Power supply Fan Type Fan motor Number Air flow rate	kW I/h kPa kW I/h kPa kW no.	2832 33 32,30 2831 24 16,07 12,00 2 400V~3 50Hz Centrifugal Asynchronous 1	35 31 17 17 12 400V~ Centr Asynch	,40 ,40 ,01 ,4 ,61 ,00 2 -3 50Hz ifugal aronous 1	4002 60 46,70 4089 46 23,23 20,00 2 400V~3 50Hz Centrifugal Asynchronous 2 4000	4536 37 51,10 4475 41 25,42 20,00 2 400V~3 50Hz Centrifugal Asynchronous 2 4000	45 52 45 2 25, 20, 400V~ Centr Asynch	772 66 ,20 ,73 .8 .97 ,00 2 .3 50Hz ifugal irronous 2	28 56,10 4909 20 27,91 20,00 2 400V~350Hz Centrifugal Asynchronous 2 4000
Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Heating performance 45 °C / 40 °C (3) Heating capacity Electric heating coil - (accessory) Heating capacity Stages Power supply Fan Type Fan motor Number Air flow rate High static pressure	kW I/h kPa kW I/h kPa kW no.	2832 33 32,30 2831 24 16,07 12,00 2 400V~3 50Hz Centrifugal Asynchronous 1	25 35 31 17 17 12 400V~ Centr Asynch	,40 ,40 ,01 ,4 ,61 ,00 2 -3 50Hz ifugal aronous 1	4002 60 46,70 4089 46 23,23 20,00 2 400V~3 50Hz Centrifugal Asynchronous 2 4000	4536 37 51,10 4475 41 25,42 20,00 2 400V~3 50Hz Centrifugal Asynchronous 2 4000	45 52 45 2 25, 400V~ Centr Asynch	772 66 ,20 ,73 .8 .97 ,00 2 .3 50Hz ifugal irronous 2	28 56,10 4909 20 27,91 20,00 2 400V~350Hz Centrifugal Asynchronous 2 4000
Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Heating performance 45 °C / 40 °C (3) Heating capacity Electric heating coil - (accessory) Heating capacity Stages Power supply Fan Type Fan motor Number Air flow rate High static pressure Diametre hydraulic ÿttings	kW I/h kPa kW I/h kPa kW no. type type no. m³/h Pa	2832 33 32,30 2831 24 16,07 12,00 2 400V~3 50Hz Centrifugal Asynchronous 1 2500 150	25 35 31 17 17 12 400V~ Centr Asynct	,40 ,40 ,01 ,4 ,61 ,00 2 -3 50Hz ifugal aronous 1	4002 60 46,70 4089 46 23,23 20,00 2 400V~3 50Hz Centrifugal Asynchronous 2 4000 120	4536 37 51,10 4475 41 25,42 20,00 2 400V~3 50Hz Centrifugal Asynchronous 2 4000 220	45 55 52 45 20 20 400V~ Centr Asynch	772 66 ,20 ,73 .8 .97 ,00 2 .3 50Hz ifugal erronous 2 .00	28  56,10  4909 20  27,91  20,00 2  400V~3 50Hz  Centrifugal Asynchronous 2  4000 220
Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Heating performance 45 °C / 40 °C (3) Heating capacity Electric heating coil - (accessory) Heating capacity Stages Power supply Fan Type Fan motor Number Air flow rate High static pressure Diametre hydraulic ÿttings Main coil	kW I/h kPa kW I/h kPa kW no. type type no. m³/h Pa	2832 33 32,30 2831 24 16,07 12,00 2 400V~3 50Hz Centrifugal Asynchronous 1 2500 150	25 35 31 17 17 12 400V~ Centr Asynct	,40 ,40 ,01 ,4 ,61 ,00 2 -3 50Hz ifugal aronous 1 1000 550	4002 60 46,70 4089 46 23,23 20,00 2 400V~3 50Hz Centrifugal Asynchronous 2 4000 120	4536 37 51,10 4475 41 25,42 20,00 2 400V~3 50Hz Centrifugal Asynchronous 2 4000 220	45 52 45 22 25, 400V~ Centr Asynch	772 66 ,20 ,73 8 8 ,97 ,00 2 3 50Hz ifugal erronous 2 00 20	28  56,10 4909 20  27,91  20,00 2 400V~3 50Hz  Centrifugal Asynchronous 2 4000 220

<sup>(1)</sup> Room air temperature 27 °C d.b./19 °C w.b.; Water (in/out) 7 °C/12 °C; (2) Room air temperature 10 °C d.b.; Water (in/out) 70 °C/60 °C (3) Room air temperature 10 °C d.b.; Water (in/out) 45 °C/40 °C;

Unit designed to operate with all recirculating air or maximum 10% of external air.

#### **DIMENSIONS**



		TUN104	TUN104P	TUN106	TUN106P	TUN154	TUN156	TUN204	TUN206	TUN254	TUN256	TUN404	TUN404P	TUN406	TUN406P
Dimensions and weights															
A	mm	300	300	300	300	300	300	390	390	390	390	390	390	390	390
В	mm	700	700	700	700	1050	1050	1050	1050	1475	1475	1475	2100	1475	2100
(	mm	700	700	700	700	700	700	850	850	850	850	850	1000	850	1000
D	mm	82	82	82	82	82	82	82	82	82	82	82	82	82	82
Net weight	kg	33	37	35	38	47	49	59	61	88	92	88	108	92	108













## Air handling unit



- Very quiet
- Available units with heat exchanger with 3-4-6 rows
- Ductable units



#### **DESCRIPTION**

The air-conditioning units of the TS series are intended for civil, commercial and hotel systems in small to medium sized environments. They are distinguished by their compactness (a necessary requisite for false ceiling applications) and low noise. The wide range of accessories meets various system requirements.

#### **STRUCTURE**

#### Case

Structure made of Galvanized steel 10/10 sheet steel and internally covered with sheets of polyethylene and polyester to obtain improved thermal and acoustic insulation.

#### **Ventilation group**

Statically and dynamically balanced centrifugal fans:

- Three-speed electrical motor with running capacitor permanently activated and internal thermal protection
- Transmission system relay card for each speed (excluding the models TS13 and TS16)
- Useful static pressure available for any canalisation

#### Heat exchanger coil

3, 4 or 6 row coils, powered with hot or cold water and made of copper piping with aluminium louvered fins blocked by mechanical expansion of the pipes. The threaded sleeves for the hydraulic connections and the air bleeding valve are supplied. The coils can be rotated on site.

The coil is not suitable for use in corrosive atmosphere or in environments where aluminium may be subject to corrosion.

#### **Condensate drip**

Condensate drip tray in stainless steel AISI 304 with insulation.

#### **ACCESSORIES**

**AER503IR:** Flush-mounting thermostat with backlit display, capacitive keypad and infrared receiver, for controlling both brushless fan coils and those with an asynchronous motor. In 2-pipe systems, the thermostat can control standard fan coils or those equipped with an electric heater, with air purifying devices (Cold Plasma and germicidal lamp),

with radiant plate or with FCZ-D twin delivery (Dualjet). In addition, it can control systems with radiant panels or mixed (fan coil and radiant floor) systems. Being equipped with an infrared receiver, it can, in turn, be controlled by the VMF-IR remote control.

**FMT10:** Electronic thermostat for fan coil in to 2/4 pipe systems.

**PXAE:** Electronic thermostat with thermostated or continuous ventilation

**SA5:** air probe kit (L = 15 m) with probe-locking cable grommet.

**SW5:** water probe kit (L = 15m) with probe-holder connection point, fixing clip and probe-holder from heat exchanger.

**TX:** Wall-mounting thermostat for controlling either brushless fan coils or those with asynchronous motors. In 2-pipe systems, the thermostat can control standard fan coils or those equipped with an electric heater, with air purifying devices, radiant plate or FCZ-D twin delivery (Dualjet).

WMT05: Electronic thermostat with thermostated ventilation.

WMT06: Electronic thermostat with continuous ventilation.

**WMT10:** Electronic thermostat, white, with thermostated or continuous ventilation.

**TSBA:** 2-row coil for post-heating, contained in a delivery installation plenum.

TSFA: Air filter class Coarse 50%

**TSGA:** Horizontal suction grille with fixed fins to produce suction from below together with the TSPA accessory.

**TSMX:** Section that mixes the recirculating air and the external air. Calibration of the mix via the damper, motorisation is possible.

**TSPA:** Plenum with suction from below, to which the TSGA grille can be applied.

**TSPM:** Delivery plenum to be connected to the circular channels (with 2, 3 or 4 circular, 200 mm flanges).

**VCT:** These are 3-way ball valves made of bronze, with female/female connections Ø 1/2". That can be servo-activated via servo commands. The valves do not have fittings and pipes for water connections, which are the installer's responsibility.

**VCT:** These are 3-way ball valves made of bronze, with female/female connections Ø 1/2". That can be servo-activated via servo commands.

The valves do not have fittings and pipes for water connections, which are the installer's responsibility.

**VCTK:** The VCT series valves can be combined with the actuators On-Off 230V. The actuator must be selected according to the type of system/adjustment provided.

**TSFM:** Delivery flange with rectangular section.

**VCTKM:** The VCT series valves can be combined with the actuators 24V modulating. The actuator must be selected according to the type of system/adjustment provided.

#### **ACCESSORIES COMPATIBILITY**

correror parrers												
Model	13	16	23	34	36	43	46	53	56	63	74	76
AER503IR (1)	•	•	•	•	•	•	•	•	•	•	•	•
FMT10	•	•	•	•	•	•	•	•	•	•	•	•
PXAE	•				•				•			
SA5 (2)	•	•	•	•	•	•	•	•	•	•	•	•
SW5 (2)	•	•			•				•	•	•	
TX (1)	•	•	•	•	•	•	•	•	•	•	•	•
WMT05	•	•	•	•	•	•	•	•	•	•	•	•
WMT06	•			•			•			•		
WMT10	•	•		•	•	•	•	•	•	•	•	

WMT06		•	•	•	•	•	•	•	•		•
/MT10		•	•	•	•	•	•	•	•		
1) Wall-mount in: 2) Probe for AER5	stallation. 03IR-TX thermost	ats, if fitted.									
?-row coil fo	r post-hea	ting									
13	16	23	34	36	43	46	53	56	63	74	76
TSBA10	TSBA10	TSBA20/30	TSBA20/30	TSBA20/30	TSBA40	TSBA40	TSBA50	TSBA50	TSBA60/70	TSBA60/70	TSBA60/70
Air filter											
13	16	23	34	36	43	46	53	56	63	74	76
TSFA10	TSFA10	TSFA20/30	TSFA20/30	TSFA20/30	TSFA40	TSFA40	TSFA50	TSFA50	TSFA60/70	TSFA60/70	TSFA60/70
Section that	mixes										
13	16	23	34	36	43	46	53	56	63	74	76
TSMX10	TSMX10	TSMX20/30	TSMX20/30	TSMX20/30	TSMX40	TSMX40	TSMX50	TSMX50	TSMX60/70	TSMX60/70	TSMX60/70
Plenum with	n suction										
13	16	23	34	36	43	46	53	56	63	74	76
TSPA10	TSPA10	TSPA20/30	TSPA20/30	TSPA20/30	TSPA40	TSPA40	TSPA50	TSPA50	TSPA60/70	TSPA60/70	TSPA60/70
		TSPA20/30	TSPA20/30	TSPA20/30	TSPA40	TSPA40	TSPA50	TSPA50	TSPA60/70	TSPA60/70	TSPA60/70
		TSPA20/30	TSPA20/30 <b>34</b>	TSPA20/30 36	TSPA40 43	TSPA40 46	TSPA50 53	TSPA50 <b>56</b>	TSPA60/70 63	TSPA60/70 <b>74</b>	TSPA60/70 <b>76</b>
Delivery ple	num										
Delivery ple 13 TSPM10	<b>num</b> <b>16</b> TSPM10	23	34	36	43	46	53	56	63	74	76
Delivery ple 13 TSPM10	<b>num</b> <b>16</b> TSPM10	23	34	36	43	46	53	56	63	74	76
Delivery ple 13 TSPM10 2 way valve	<b>num</b> 16  TSPM10	<b>23</b> TSPM20/30	<b>34</b> TSPM20/30	<b>36</b> TSPM20/30	<b>43</b> TSPM40	<b>46</b> TSPM40	<b>53</b> TSPM50	<b>56</b> TSPM50	<b>63</b> TSPM60/70	<b>74</b> TSPM60/70	<b>76</b> TSPM60/70
Delivery ple  13  TSPM10  P. way valve  13  VCT102	16 TSPM10 kit 16 VCT102	23 TSPM20/30	34 TSPM20/30	36 TSPM20/30	43 TSPM40	<b>46</b> TSPM40	53 TSPM50	56 TSPM50	63 TSPM60/70	74 TSPM60/70	76 TSPM60/70
Delivery ple 13 TSPM10 P way valve 13 VCT102	16 TSPM10 kit 16 VCT102	23 TSPM20/30	34 TSPM20/30	36 TSPM20/30	43 TSPM40	<b>46</b> TSPM40	53 TSPM50	56 TSPM50	63 TSPM60/70	74 TSPM60/70	76 TSPM60/70
Delivery ple  13 TSPM10 P way valve  13 VCT102 B way valve	num  16 TSPM10  kit  16 VCT102  kit	23 TSPM20/30 23 VCT102	34 TSPM20/30 34 VCT102	36 TSPM20/30 36 VCT102	43 TSPM40 43 VCT402	46 TSPM40 46 VCT402	53 TSPM50 53 VCT402	56 TSPM50 56 VCT402	63 TSPM60/70 63 VCT402	74 TSPM60/70 74 VCT402P	76 TSPM60/70 76 VCT402P
Delivery ple  13 TSPM10 2 way valve 13 VCT102 8 way valve 13 VCT103	16 TSPM10 kit 16 VCT102  kit 16 VCT103	23 TSPM20/30 23 VCT102	34 TSPM20/30 34 VCT102	36 TSPM20/30 36 VCT102	43 TSPM40 43 VCT402	46 TSPM40 46 VCT402	53 TSPM50 53 VCT402	56 TSPM50 56 VCT402	63 TSPM60/70 63 VCT402	74 TSPM60/70 74 VCT402P	76 TSPM60/70 76 VCT402P
Delivery ple  13 TSPM10 2 way valve 13 VCT102 8 way valve 13 VCT103	16 TSPM10 kit 16 VCT102  kit 16 VCT103	23 TSPM20/30 23 VCT102	34 TSPM20/30 34 VCT102	36 TSPM20/30 36 VCT102	43 TSPM40 43 VCT402	46 TSPM40 46 VCT402	53 TSPM50 53 VCT402	56 TSPM50 56 VCT402	63 TSPM60/70 63 VCT402	74 TSPM60/70 74 VCT402P	76 TSPM60/70 76 VCT402P
Delivery ple  13 TSPM10  way valve  13 VCT102  way valve  13 VCT103	num  16 TSPM10  kit  16 VCT102  kit  16 VCT103	23 TSPM20/30 23 VCT102 23 VCT103	34 TSPM20/30 34 VCT102 34 VCT103	36 TSPM20/30 36 VCT102 36 VCT103	43 TSPM40 43 VCT402 43 VCT203	46 TSPM40 46 VCT402 46 VCT203	53 TSPM50 53 VCT402 53 VCT203	56 TSPM50 56 VCT402 56 VCT403	63 TSPM60/70 63 VCT402 63 VCT403	74 TSPM60/70 74 VCT402P 74 VCT403P	76 TSPM60/70 76 VCT402P 76 VCT403P
Delivery ple  13 TSPM10 P way valve  13 VCT102 B way valve  13 VCT103 Actuator VC  13 VCTK	16 TSPM10  kit 16 VCT102  kit 16 VCT103  TK 230V 16 VCTK	23 TSPM20/30 23 VCT102 23 VCT103	34 TSPM20/30 34 VCT102 34 VCT103	36 TSPM20/30 36 VCT102 36 VCT103	43 TSPM40 43 VCT402 43 VCT203	46 TSPM40 46 VCT402 46 VCT203	53 TSPM50 53 VCT402 53 VCT203	56 TSPM50 56 VCT402 56 VCT403	63 TSPM60/70 63 VCT402 63 VCT403	74 TSPM60/70 74 VCT402P 74 VCT403P	76 TSPM60/70 76 VCT402P 76 VCT403P
Delivery ple  13 TSPM10 2 way valve 13 VCT102 3 way valve 13 VCT103 Actuator VC	16 TSPM10  kit 16 VCT102  kit 16 VCT103  TK 230V 16 VCTK	23 TSPM20/30 23 VCT102 23 VCT103	34 TSPM20/30 34 VCT102 34 VCT103	36 TSPM20/30 36 VCT102 36 VCT103	43 TSPM40 43 VCT402 43 VCT203	46 TSPM40 46 VCT402 46 VCT203	53 TSPM50 53 VCT402 53 VCT203	56 TSPM50 56 VCT402 56 VCT403	63 TSPM60/70 63 VCT402 63 VCT403	74 TSPM60/70 74 VCT402P 74 VCT403P	76 TSPM60/70 76 VCT402P 76 VCT403P

#### **PERFORMANCE SPECIFICATIONS**

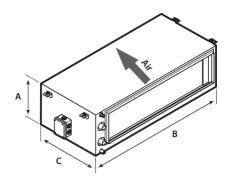
#### 2-pipe

2-ріре			TS13			TS16			TS23			TS34			TS36			TS43	
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
		i	M	H	- <u>i</u> -	M	H	- <u>†</u>	 M	H	Ė	M	H	Ė	M	Н	Ĺ	M	H
Cooling performance 7 °C / 12 °C (1)						IVI				- "			"-						
Cooling capacity	kW	4,39	4,65	4,85	4,44	5,21	5,81	7,18	7,65	7,98	8,59	9,20	9,61	9,40	10,08	10,52	7,14	9,35	11,11
Sensible cooling capacity	kW	3,39	3,60	3,75	3,41	3,99	4,45	5,82	6,20	6,46	6,80	7,28	7,61	7,43	7,96	8,31	5,75	7,54	8,96
Water flow rate system side	I/h	754	800	835	764	896	999	1235	1315	1372	1478	1583	1653	1617	1733	1809	1227	1608	1912
Pressure drop system side	kPa	17	19	21	6	7	9	20	23	24	20	22	24	13	15	16	10	17	23
Heating performance 70 °C / 60 °C (2)	Ki u	- 17	17	21	0		,	20		27	20		<u> </u>	13	13	10	10	- 17	23
Heating capacity	kW	8,89	9,43	9,83	9,75	11,34	12,61	14,14	15,04	15,67	17,71	18,92	19,76	19,36	20,71	21,60	14,24	18,33	21,67
Water flow rate system side	I/h	780	827	862	856	995	1106	1240	1319	1375	1553	1660	1733	1698	1816	1894	1249	1068	1900
Pressure drop system side	kPa	10	12	13	5	7	8	10	12	12	17	19	21	11	13	14	8	13	18
Fan	Ki u	10	12	13			0	10	12	12		- 17			- 13	- ' '		13	10
Air flow rate	m³/h	810	877	930	656	803	930	1316	1432	1518	1376	1507	1600	1376	1510	1601	1170	1631	2050
High static pressure	Pa	68	80	90	27	41	55	77	91	102	62	75	85	33	40	45	37	72	114
Input power	kW	0,1	0,1	0,2	0,1	0,1	0,2	0,2	0,3	0,3	0,2	0,3	0,3	0,2	0,3	0,3	0,3	0,3	0,4
Туре	type	,.	.,.	.,.	.,.	.,.	- /-				ifugal	- 1-	,-	,-	- /-	-,-	, ,-	-,-	-,-
Fan motor	type										-Off								
Number	no.		1			1			2			2			2			2	
Diametre hydraulic fittings																			
Туре	type									G	as								
Main coil	Ø	-	3/4"			1"			3/4"			3/4"			1″			3/4"	
Power supply																			
Power supply										230V	~50Hz								
			TS46				TS53			TS	63			TS74				TS76	
		1	2	3		1	2	3	1		2	3	1	2	3		1	2	3
		1 L	2 M	3 H		1 L	2 M	3 H	1 L			3 H	1 L		3 H	_	1 L	2 M	3 H
Cooling performance 7 °C / 12 °C (1)						<u> </u>					2			2	_	_			
Cooling performance 7 °C / 12 °C (1) Cooling capacity	kW					<u> </u>				1	<u>Σ</u>			2	_		L		
	kW kW	L	М	Н	44	Ĺ	М	Н	L	12	2 Λ ,84 1	Н	L	2 M	Н	2 19	,79	М	Н
Cooling capacity		L 8,57	M 11,27	H 13,4	44 81	L 8,05	M 11,06	H 13,86	8,11	12	,84 1 ,12 1	H 16,62	L 17,47	2 M 20,65	H 21,9	2 19	,79 .79 ,04	M 23,38	H 24,93
Cooling capacity Sensible cooling capacity	kW	8,57 6,90	M 11,27 9,06	13,4 10,8	44 81	8,05 5,68	M 11,06 7,80	H 13,86 9,77	8,11 6,40	12 10 5 22	,84 1 ,12 1	H 16,62 13,11	17,47 14,20	2 M 20,65 16,78	21,92 17,8	2 19 2 16 1 34	,79 .79 ,04	M 23,38 18,95	H 24,93 20,21
Cooling capacity Sensible cooling capacity Water flow rate system side	kW I/h	8,57 6,90 1474	M 11,27 9,06 1938	13, <sup>2</sup> 10,8 231	44 81	8,05 5,68 1385	M 11,06 7,80 1902	H 13,86 9,77 2384	8,11 6,40 1395	12 10 5 22	2 // /84 1 /12 1 08 2	H 16,62 13,11 2858	17,47 14,20 3006	2 M 20,65 16,78 3551	21,9 17,8 377	2 19 2 16 1 34	,79 ,04 105	M 23,38 18,95 4022	H 24,93 20,21 4289
Cooling capacity Sensible cooling capacity Water flow rate system side Pressure drop system side	kW I/h	8,57 6,90 1474	M 11,27 9,06 1938	13, <sup>2</sup> 10,8 231	44 81 11	8,05 5,68 1385	M 11,06 7,80 1902	H 13,86 9,77 2384	8,11 6,40 1395	12 10 10 5 22 1	2 A 1,84 1 1,12 1 08 2	H 16,62 13,11 2858	17,47 14,20 3006	2 M 20,65 16,78 3551	21,9 17,8 377	2 19 2 16 1 34	,79 ,04 105	M 23,38 18,95 4022	H 24,93 20,21 4289
Cooling capacity Sensible cooling capacity Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2)	kW I/h kPa	8,57 6,90 1474 8	M 11,27 9,06 1938 13	13,4 10,8 231	44 81 11 77 83 83 83 83 83 84 84 84 84 84 84 84 84 84 84 84 84 84	8,05 5,68 1385	M 11,06 7,80 1902 21	H 13,86 9,77 2384 32	8,11 6,40 1395 7	12 12 10 100 100 1 1 1 1 1 1 1 1 1 1 1 1	2 AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	H 16,62 13,11 2858 26	17,47 14,20 3006 19	2 M 20,65 16,78 3551 25	H 21,9. 17,8. 377	2 192 2 162 1 34 1 1	L ,79,04,04	M 23,38 18,95 4022 23	H 24,93 20,21 4289 26
Cooling capacity Sensible cooling capacity Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity	kW I/h kPa kW	8,57 6,90 1474 8	M 11,27 9,06 1938 13	13,4 10,8 231 17	44 81 11 7 83 40	8,05 5,68 1385 12	M 11,06 7,80 1902 21	H 13,86 9,77 2384 32 25,89	8,11 6,40 1399 7	12 10 10 5 22 1 1 2 2 2 7	2 AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	H 16,62 13,11 2858 26 35,61	17,47 14,20 3006 19	2 M 20,65 16,78 3551 25	H 21,92 17,88 3777 28 46,4.	2 19 2 16 1 34 1 1 5 42 3 36	L ,79,04,04	M 23,38 18,95 4022 23	H 24,93 20,21 4289 26 52,44
Cooling capacity Sensible cooling capacity Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side	kW I/h kPa kW I/h	8,57 6,90 1474 8 18,17 1593	M 11,27 9,06 1938 13 23,45 2056	13,4 10,8 231 17 27,8	44 81 11 7 83 40	8,05 5,68 1385 12	M 11,06 7,80 1902 21 20,82 1826	H 13,86 9,77 2384 32 25,89 2270	8,11 6,40 1395 7	12 10 10 5 22 1 1 2 2 2 7	2 / A / A / A / A / A / A / A / A / A /	H 16,62 13,11 2858 26 35,61 3123	17,47 14,20 3006 19 37,33 3274	2 M 20,65 16,78 3551 25 43,80 3841	H 21,9.2 17,8.3777 28 46,4.4073	2 19 2 16 1 34 1 1 5 42 3 36	L 7,79 : ,04 : ,04 : ,05 : ,7 : ,00 : ,00 : ,683	M 23,38 18,95 4022 23 49,25 4319	H 24,93 20,21 4289 26 52,44 4599
Cooling capacity Sensible cooling capacity Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side	kW I/h kPa kW I/h	8,57 6,90 1474 8 18,17 1593	M 11,27 9,06 1938 13 23,45 2056	13,4 10,8 231 17 27,8	44 81 11 77 83 40 44	8,05 5,68 1385 12	M 11,06 7,80 1902 21 20,82 1826	H 13,86 9,77 2384 32 25,89 2270	8,11 6,40 1395 7	12 10 10 5 22 27 27 24	2 / A / 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1	H 16,62 13,11 2858 26 35,61 3123	17,47 14,20 3006 19 37,33 3274	2 M 20,65 16,78 3551 25 43,80 3841	H 21,9.2 17,8.3777 28 46,4.4073	2 199 2 160 341 34 1 1 5 42 3 36 1	L ,79 ,04 ,04 ,05 ,77 ,00 ,683 ,5	M 23,38 18,95 4022 23 49,25 4319	H 24,93 20,21 4289 26 52,44 4599
Cooling capacity Sensible cooling capacity Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Fan	kW I/h kPa kW I/h kPa	8,57 6,90 1474 8 18,17 1593 6	M 11,27 9,06 1938 13 23,45 2056	H 13,4 10,8 231 17 27,8 244 14	44 81 11 77 883 440 44 4 76	8,05 5,68 1385 12 15,55 1364 9	M 11,06 7,80 1902 21 20,82 1826 15	H 13,86 9,77 2384 32 25,89 2270 22	8,11 6,40 1395 7 18,33 1607 6	12 12 10 10 10 10 10 10 10 10 10 10 10 10 10	2 A 1,12 1,12 1,12 1,12 1,12 1,12 1,13	H 16,62 13,11 2858 26 85,61 3123 21	17,47 14,20 3006 19 37,33 3274 16	2 M 20,65 16,78 3551 25 43,80 3841 22	H 21,92 17,8. 3777 28 46,4. 4073 24	2 199 2 166 1 34 1 1 5 422 1 1 1 1	L ,,79,04,04,005,77,00,683,5	M 23,38 18,95 4022 23 49,25 4319 20	H 24,93 20,21 4289 26 52,44 4599 22
Cooling capacity Sensible cooling capacity Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Fan Air flow rate	kW I/h kPa kW I/h kPa	8,57 6,90 1474 8 18,17 1593 6	M 11,27 9,06 1938 13 23,45 2056 10 1642	H 13,4 10,8 231 17 27,8 244 14	44 81 11 77 883 440 44 876 6	8,05 5,68 1385 12 15,55 1364 9	M 11,06 7,80 1902 21 20,82 1826 15	H 13,86 9,77 2384 32 25,89 2270 22	8,11 6,40 1395 7 18,33 1607 6	12 12 10 100 100 125 22 277 244 11 133 259 6	2 M ,84 1 ,12 1 008 2 6 6 336 3 70 2 11	H 16,62 13,11 2858 26 35,61 3123 21 3599	17,47 14,20 3006 19 37,33 3274 16	2 M 20,65 16,78 3551 25 43,80 3841 22	H 21,9.2 17,8. 3777 28 46,4. 4073 24 4200	2 19 2 16 2 16 34 1 34 1 1 5 42 8 36 1 1	L ,79 ,04 ,04 ,00 ,00 ,00 ,19	M 23,38 18,95 4022 23 49,25 4319 20	H 24,93 20,21 4289 26 52,44 4599 22
Cooling capacity Sensible cooling capacity Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Fan Air flow rate High static pressure	kW I/h kPa kW I/h kPa m³/h Pa	8,57 6,90 1474 8 18,17 1593 6	M 11,27 9,06 1938 13 23,45 2056 10	H 13,4 10,8 231 17 27,8 244 14 207	44 81 11 77 883 440 44 876 6	8,05 5,68 1385 12 15,55 1364 9	M 11,06 7,80 1902 21 20,82 1826 15 1775 57	H 13,86 9,77 2384 32 25,89 2270 22 2387 104	8,11 6,40 1395 7 18,3 1607 6	12 10 10 10 10 10 10 10 10 10 10 10 10 10	2 M ,84 1 ,12 1 008 2 6 6 336 3 70 2 11	H 16,62 13,11 2858 26 35,61 3123 21 3599 120	17,47 14,20 3006 19 37,33 3274 16 3117 63	2 M 20,65 16,78 3551 25 43,80 3841 22 3869 97	H 21,9. 17,8. 3777 28 46,4. 4073 24 4200 115	2 19 2 16 2 16 34 1 34 1 1 5 42 8 36 1 1	,79,04,00,00,00,00,00,00,19,1	M 23,38 18,95 4022 23 49,25 4319 20 3869 63	H 24,93 20,21 4289 26 52,44 4599 22 4225 75
Cooling capacity Sensible cooling capacity Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Fan Air flow rate High static pressure Input power	kW I/h kPa kW I/h kPa m³/h Pa kW	8,57 6,90 1474 8 18,17 1593 6	M 11,27 9,06 1938 13 23,45 2056 10	H 13,4 10,8 231 17 27,8 244 14 207	44 81 11 77 883 440 44 876 6	8,05 5,68 1385 12 15,55 1364 9	M 11,06 7,80 1902 21 20,82 1826 15 1775 57	H 13,86 9,77 2384 32 25,89 2270 22 2387 104	8,11 6,40 1395 7 18,3 1607 6	12 12 10 10 10 10 10 10 10 10 10 10 10 10 10	2	H 16,62 13,11 2858 26 35,61 3123 21 3599 120	17,47 14,20 3006 19 37,33 3274 16 3117 63	2 M 20,65 16,78 3551 25 43,80 3841 22 3869 97	H 21,9. 17,8. 3777 28 46,4. 4073 24 4200 115	2 19 2 16 2 16 34 1 34 1 1 5 42 8 36 1 1	,79,04,00,00,00,00,00,00,19,1	M 23,38 18,95 4022 23 49,25 4319 20 3869 63	H 24,93 20,21 4289 26 52,44 4599 22 4225 75
Cooling capacity Sensible cooling capacity Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Fan Air flow rate High static pressure Input power Type	kW I/h kPa kW I/h kPa m³/h Pa kW type	8,57 6,90 1474 8 18,17 1593 6	M 11,27 9,06 1938 13 23,45 2056 10	H 13,4 10,8 231 17 27,8 244 14 207	44 81 11 77 883 440 44 876 6	8,05 5,68 1385 12 15,55 1364 9	M 11,06 7,80 1902 21 20,82 1826 15 1775 57	H 13,86 9,77 2384 32 25,89 2270 22 2387 104	8,11 6,40 1395 7 18,3 1607 6	122 122 100 100 122 122 122 123 124 124 125 125 125 125 125 125 125 125 125 125	2	H 16,62 13,11 2858 26 35,61 3123 21 3599 120	17,47 14,20 3006 19 37,33 3274 16 3117 63	2 M 20,65 16,78 3551 25 43,80 3841 22 3869 97	H 21,9. 17,8. 3777 28 46,4. 4073 24 4200 115	2 19 2 16 2 16 34 1 34 1 1 5 42 8 36 1 1	,79,04,00,00,00,00,00,00,19,1	M 23,38 18,95 4022 23 49,25 4319 20 3869 63	H 24,93 20,21 4289 26 52,44 4599 22 4225 75
Cooling capacity Sensible cooling capacity Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Fan Air flow rate High static pressure Input power Type Fan motor	kW I/h kPa kW I/h kPa m³/h Pa kW type type	8,57 6,90 1474 8 18,17 1593 6	M 11,27 9,06 1938 13 23,45 2056 10 1642 48 0,3	H 13,4 10,8 231 17 27,8 244 14 207	44 81 11 77 883 440 44 876 6	8,05 5,68 1385 12 15,55 1364 9	M 11,06 7,80 1902 21 20,82 1826 15 1775 57 0,4	H 13,86 9,77 2384 32 25,89 2270 22 2387 104	8,11 6,40 1395 7 18,3 1607 6	122 122 100 100 122 122 122 123 124 124 125 125 125 125 125 125 125 125 125 125	2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	H 16,62 13,11 2858 26 35,61 3123 21 3599 120	17,47 14,20 3006 19 37,33 3274 16 3117 63	2 M 20,65 16,78 3551 25 43,80 3841 22 3869 97 0,8	H 21,9. 17,8. 3777 28 46,4. 4073 24 4200 115	2 19 2 16 2 16 34 1 34 1 1 5 42 8 36 1 1	,79,04,00,00,00,00,00,00,19,1	M 23,38 18,95 4022 23 49,25 4319 20 3869 63 0,8	H 24,93 20,21 4289 26 52,44 4599 22 4225 75
Cooling capacity Sensible cooling capacity Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Fan Air flow rate High static pressure Input power Type Fan motor Number	kW I/h kPa kW I/h kPa m³/h Pa kW type type	8,57 6,90 1474 8 18,17 1593 6	M 11,27 9,06 1938 13 23,45 2056 10 1642 48 0,3	H 13,4 10,8 231 17 27,8 244 14 207	44 81 11 77 883 440 44 876 6	8,05 5,68 1385 12 15,55 1364 9	M 11,06 7,80 1902 21 20,82 1826 15 1775 57 0,4	H 13,86 9,77 2384 32 25,89 2270 22 2387 104	8,11 6,40 1395 7 18,3 1607 6	12 12 100 11 100 11 12 12 12 12 12 12 12 12 12 12 12 12	2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	H 16,62 13,11 2858 26 35,61 3123 21 3599 120	17,47 14,20 3006 19 37,33 3274 16 3117 63	2 M 20,65 16,78 3551 25 43,80 3841 22 3869 97 0,8	H 21,9. 17,8. 3777 28 46,4. 4073 24 4200 115	2 19 2 16 2 16 34 1 34 1 1 5 42 8 36 1 1	,79,04,00,00,00,00,00,00,19,1	M 23,38 18,95 4022 23 49,25 4319 20 3869 63 0,8	H 24,93 20,21 4289 26 52,44 4599 22 4225 75
Cooling capacity Sensible cooling capacity Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Fan Air flow rate High static pressure Input power Type Fan motor Number Diametre hydraulic fittings	kW I/h kPa kW I/h kPa m³/h Pa kW type type no.	8,57 6,90 1474 8 18,17 1593 6	M 11,27 9,06 1938 13 23,45 2056 10 1642 48 0,3	H 13,4 10,8 231 17 27,8 244 14 207	44 81 11 77 883 440 44 876 6	8,05 5,68 1385 12 15,55 1364 9	M 11,06 7,80 1902 21 20,82 1826 15 1775 57 0,4	H 13,86 9,77 2384 32 25,89 2270 22 2387 104	8,11 6,40 1395 7 18,3 1607 6	1 122 1 100 1 100 1 1 1 1 1 1 1 1 1 1 1	2	H 16,62 13,11 2858 26 35,61 3123 21 3599 120	17,47 14,20 3006 19 37,33 3274 16 3117 63	2 M 20,65 16,78 3551 25 43,80 3841 22 3869 97 0,8	H 21,9. 17,8. 3777 28 46,4. 4073 24 4200 115	2 19 2 16 2 16 34 1 34 1 1 5 42 8 36 1 1	L	M 23,38 18,95 4022 23 49,25 4319 20 3869 63 0,8	H 24,93 20,21 4289 26 52,44 4599 22 4225 75
Cooling capacity Sensible cooling capacity Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Fan Air flow rate High static pressure Input power Type Fan motor Number Diametre hydraulic fittings Type	kW I/h kPa kW I/h kPa m³/h Pa kW type type no.	8,57 6,90 1474 8 18,17 1593 6	M 11,27 9,06 1938 13 23,45 2056 10 1642 48 0,3	H 13,4 10,8 231 17 27,8 244 14 207	44 81 11 77 883 440 44 876 6	8,05 5,68 1385 12 15,55 1364 9	M 11,06 7,80 1902 21 20,82 1826 15 1775 57 0,4	H 13,86 9,77 2384 32 25,89 2270 22 2387 104	8,11 6,40 1395 7 18,3 1607 6	1 122 100 100 100 100 100 100 100 100 10	2	H 16,62 13,11 2858 26 35,61 3123 21 3599 120	17,47 14,20 3006 19 37,33 3274 16 3117 63	2 M 20,65 16,78 3551 25 43,80 3841 22 3869 97 0,8	H 21,9. 17,8. 3777 28 46,4. 4073 24 4200 115	2 19 2 16 2 16 34 1 34 1 1 5 42 8 36 1 1	L	M M 23,38 18,95 44022 23 24319 20 20 33869 63 0,8	H 24,93 20,21 4289 26 52,44 4599 22 4225 75
Cooling capacity Sensible cooling capacity Water flow rate system side Pressure drop system side Heating performance 70 °C / 60 °C (2) Heating capacity Water flow rate system side Pressure drop system side Fan Air flow rate High static pressure Input power Type Fan motor Number Diametre hydraulic fittings Type Main coil	kW I/h kPa kW I/h kPa m³/h Pa kW type type no.	8,57 6,90 1474 8 18,17 1593 6	M 11,27 9,06 1938 13 23,45 2056 10 1642 48 0,3	H 13,4 10,8 231 17 27,8 244 14 207	44 81 11 77 883 440 44 876 6	8,05 5,68 1385 12 15,55 1364 9	M 11,06 7,80 1902 21 20,82 1826 15 1775 57 0,4	H 13,86 9,77 2384 32 25,89 2270 22 2387 104	8,11 6,40 1395 7 18,3 1607 6	1 122 100 100 100 100 100 100 100 100 10	2	H 16,62 13,11 2858 26 35,61 3123 21 3599 120	17,47 14,20 3006 19 37,33 3274 16 3117 63	2 M 20,65 16,78 3551 25 43,80 3841 22 3869 97 0,8	H 21,9. 17,8. 3777 28 46,4. 4073 24 4200 115	2 19 2 16 2 16 34 1 34 1 1 5 42 8 36 1 1	L	M M 23,38 18,95 44022 23 24319 20 20 33869 63 0,8	H 24,93 20,21 4289 26 52,44 4599 22 4225 75

(1) Room air temperature 27 °C d.b./19 °C w.b.; Water (in/out) 7 °C/12 °C;
(2) Room air temperature 20 °C d.b.; Water (in/out) 70 °C/60 °C;

Unit designed to operate with all recirculating air or maximum 10% of external air.

#### **DIMENSIONS**



Size		13	16	23	34	36	43	46	53	56	63	74	76
Dimensions and weights													
A	mm	295	295	295	295	295	325	325	325	325	375	375	375
В	mm	645	645	1000	1000	1000	1100	1100	1345	1345	1345	1345	1345
(	mm	520	520	520	520	520	600	600	600	600	600	600	600
Empty weight	kg	25	27	35	38	42	42	46	48	52	56	61	67













## TDA

## Air handling units

Air flow rate 800 ÷ 3500 m<sup>3</sup>/h



- Horizontal or vertical installation
- Version with 3-4 row water-type coil
- Version with 2-row direct expansion coil
- · Version with extractor



#### DESCRIPTION

The conditioning units in the TDA range have been designed for small and medium sized rooms in civil, commercial and hotel type systems.

The units are designed to guarantee high head levels and are suitable for both vertical and horizontal installation, to ensure greater versatility of use. The outstanding aesthetic finish of the product makes it perfect for installation in box rooms, bathrooms, suspended ceilings or in the room itself.

The wide range of sizes and accessories available means it's easy to choose the best model for the specific requirements.

#### Structure

Structure with hot galvanised steel sandwich panels, 15mm thick, with interposed polyurethane foam (density 40kg/m3). The delivery and suction panels are equipped with flanges for the collets to any air channels and can be moved to create different air flow configurations. The horizontal or vertical fixing to the walls of the unit is made possible by the appropriate brackets.

#### **New centrifugal fans**

New centrifugal fans with high head levels, double suction, forward blades and directly coupled motor. The single-phase 230V-50Hz motor is multi-speed (of which three speeds can be selected).

#### Condensated collection basin

Condensated collection basin in galvanised steel, suitable for both vertical and horizontal installation.

#### Coils with 3-4 rows

Coils with 3-4 rows, that can be fed with hot or refrigerated water. Made of copper pipes with aluminium finning held in place by the mechanical expansion of the pipes. They are equipped with threaded sleeves for the plumbing connections and the air breather valve. The coils can be rotated on site.

A 2-row, direct expansion coil **is also available.** It is made of copper pipes with aluminium finning held in place by the mechanical expansion of the pipes.

#### ACCESSORIES

**FAF filter G4 on intake:** Contained in the special housing, it is made of synthetic fibre and pleated geometry; the U-shaped frame is in galvanised sheet metal with two galvanised wire support nets

**SM Mixing chamber with G4 filter and dampers:** Galvanised steel housing complete with two air adjustment dampers with opposed fins in galvanised steel. The housing comes complete with a synthetic fibre filter (efficiency class G4. in accordance with standard EN779).

**SR Intake damper:** Consisting of a frame with galvanised steel ribbed fins. The fins are moved by nylon toothed wheels.

**GM Delivery grille:** Grille with double row of adjustable fins to introduce air into the room.

**GA Suction grille:** With tilted fins fixed at 45°; can be installed directly on the device (by removing the flange) or on the wall.

CMA: Outer casing for grille

**BP One-row water-type post-heating coil applied outside the unit:** Contained in a special, thermally-insulated housing, it is installed on the air delivery flange only and consists of a 1-row turbo-type coil.

**BR Electric post-heating coil applied outside the unit:** The machines can be fitted with the electric coil accessory of suitable capacity. It is installed downstream of the finned coil only.

VCT 2-way or 3-way valve: These are 2-way and 3-way ball valves made of bronze, with female/female connections that can be servo-activated via servo commands. The VCT valves do not have fittings and pipes for water connections, which are the installer's responsibility. These can be commanded via control panels (accessories) which are enabled for the valve control function. Consult the control panel characteristics before selecting a panel.

VCTA Two or three-way valve actuator: The VCT series valves can be combined with one of the two actuators, VCTA230 on/off 230V or 24V modulating VCTA24M. The actuator must be selected according to the type of system/adjustment provided.

**PM Delivery plenum with circular start-up:** Sandwich panel in hot galvanised steel, with interposed polyurethane foam (40kg/m3). The panel is 15mm thick. It is installed in place of the delivery panel with rectangular flange, using the same 4 self-threading screws.

#### CONTROL PANELS

PX: with selector only

WMT05 Electromechanical thermostat WMT10 control panel

#### **ACCESSORIES COMPATIBILITY**

Size	09	15	21	28	37
FAF	FAF1	FAF2	FAF3	FAF4	FAF4
SM	SM1	SM2	SM3	SM4	SM5
SR	SR1	SR2	SR3	SR4	SR4
GM	GM5	GM6	GM7	GM8	GM8
GA	GA5	GA6	GA7	GA8	GA8
CMA	CMA5	CMA6	CMA7	CMA8	CMA8
BP	BP1	BP2	BP3	BP4	BP5
BR	BR1	BR2	BR3	BR4	BR5
VCT (2 way)	VCT102	VCT202	VCT402	VCT402P	VCT402P
VCT (3 way)	VCT103	VCT203	VCT403	VCT403P	VCT403P
VCTA230	•	•	•	•	•
VCTA24M	•	•	•	•	•
PM	PM1	PM2	PM3	PM4	PM4
PX	•	•	•	•	•(2)
WMT05	•	•(1)	•(1)	•(1)	•(2)
WMT10	•	•(1)	•(1)	•(1)	•(2)

## (1) Envision the use of SIT3 and the replacement of the 2A fuse with one 4A fuse (2) Envisions return relay, one per speed

## **CONFIGURATOR**

Field	Description
	TDA
	Size
	09, 15, 21, 28, 37
	Version
3	3-row water coil
4	4-row water coil
E	2-row direct expansion coil
Х	Extractor (without coil)

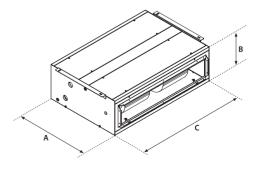
### **TECHNICAL DATA**

Size			9	15	21	28	37
Nominal air flow rate		m³/h	800	1400	2000	2700	3500
Notifilial all flow face		I/s	222	389	556	750	972
Useful static pressure (1)		Pa	277	330	227	150	240
Cooling capacity with 3-row coil (2)	total	kW	4,90	7,40	11,10	14,70	17,90
Cooling Capacity with 3-10w coil (2)	sensible	kW	3,50	5,60	8,20	10,90	13,70
Cooling capacity with 4-row coil (2)	total	kW	6,10	9,70	13,10	18,40	22,30
Cooling Capacity with 4-10w coil (2)	sensible	kW	4,30	6,90	9,40	12,50	15,20
Cooling capacity with R-407C coil (3)	total	kW	5,10	7,50	10,70	14,10	16,70
Cooling Capacity with N-407C coll (3)	sensible	kW	3,50	5,20	7,40	9,90	12,40
Heating capacity with 3-row coil (4)		kW	10,40	16,60	24,20	32,10	41,20
Heating capacity with 4-row coil (4)		kW	12,10	19,90	27,30	36,80	45,40
Heating coil capacity for 4-pipe systems (4)		kW	5,20	8,80	12,60	16,40	20,90
Heating capacity with 3-row coil (5)		KW	5,10	8,10	11,90	15,70	20,10
Heating capacity with 4-row coil (5)		KW	6,00	9,80	13,40	18,20	22,30
Heating capacity with coil for 4-pipe systems (5)		KW	2,50	4,30	6,00	7,80	10,00
Electric coil capacity		KW	4	6	8	10	12
Electric coil power supply			230/1	400V/3	400V/3	400V/3	400V/3
Fnas		n°	1	2	2	1	2
Motors			1	2	2	1	2
Total fan input power		kW	0,357	0,713	0,736	0,874	1,771
Fan input current		A	1,6	3,1	3,2	3,8	7,7
Fan power supply					230V~/50Hz		
Filter efficiency (6)			G4	G4	G4	G4	G4
Sound power level (7)		dB(A)	62	63	70	72	73
Connections							
Water battery collectors		Ø mm	1"	1"	1″	1"	1″

# Condensate discharge Unit designed to operate with all recirculating air or maximum 10% of external air (1) At nominal flow rate with 3-row coil (2) Incoming air temperature 27°C d.b. 19°C w.b.; water temperature (In-Out) 7°C-12°C (3) Incoming air temperature 27°C d.b. 19°C w.b.; average evap. temp. 7°C (4) Incoming air temperature 20°C; water temperature (In-Out) 70°C-60°C (5) Incoming air temperature 20°C; water temperature (In-Out) 45°C-40°C (6) In accordance with standard EN 779 (7) In accordance with standard UNI EN ISO 9614

Direct expansion liquid coil pipes
Direct expansion gas coil pipes

#### **DIMENSIONS**



Aermec reserves the right to make any modifications deemed necessary. All data is subject to change without notice. Aermec does not assume responsibility or liability for errors or omissions.

Size			9	15	21	28	37
Dimensions and we	ights						
Height	В	mm	300	320	320	380	380
Width	C	mm	920	1000	1400	1400	1400
Lenght	A	mm	630	670	670	790	790
Net weight *		kg	42	53,00	71,00	88,00	91,00

12

22

16

28

10

18

3/8

Ø mm

Ø mm

Ø mm

10

22

3/8'

#### Aermec S.p.A.

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<sup>(\*)</sup> with 4-row coil

















## TA

## Air handling unit

Cooling capacity (with 4 row coil 4,2÷31,8 kW, with 6 row coil 5,1÷39,6 kW) Heating efficiency (with 4 row coil 10,4÷62,8 kW, with 6 row coil 11,4÷72,8 kW)



- Horizontal or vertical configuration
- Version with 4-6 rows water coil
- Version with 4 row expansion coil using R410A
- Version with extractor



#### **DESCRIPTION**

The air conditioning units in the TA range are destined to civil, commercial and hotel systems, for applications in small to medium sized environments. The units in the TA range are characterised for their compactness (indispensable requisite for typical suspended-ceiling applications), the low noise and high useful static pressure.

The great availability of accessories (e.g. bag filters and the mixing chambers with 3 dampers) allows to satisfy the most varied plant requirements

#### **FEATURES**

#### Structure

Structure realised with sandwich panels with thickness of 15 mm with polyurethane (density  $40 \text{ kg/m}^3$ ). The intake panel is equipped with a flange for fitting to any air channels.

Horizontal or vertical fixing to a wall is made easy by the brackets.

#### Filtration

Filtration of the air entrusted to class G4 filters in compliance with EN779 (thickness 50mm) as per standard positioned at intake.

#### Fans

Fans double intake centrifugal with forward blades and directly coupled motor. The 230V-50Hz single-phase motor has many speeds, of which three can be selected via the control panel.

#### **Condensate drip tray**

Condensate drip tray interior isolated in aluminium alloy.

#### Coils

Coils with 4, 6 rows that can be fed with hot or cooled water realised in coil in copper piping with aluminium louvers blocked via mechanical expansion of the pipes. Threaded sleeves are supplied for the hydraulic attachments and the air vent valve. The possibility to rotate the coils on site is envisioned.

**Also available are** coils with 4 rows with direct expansion operating with R410A fluid and post-heating coils with 1 and 2 rows realised in copper piping with aluminium louvers blocked via mechanical expansion of the pipes.

#### **ACCESSORIES**

**M25 Mixing chamber 2 dampers:** Section made of galvanised steel sheet with two air calibration dampers and louvers made of galvanised sheet steel. 50 mm louver pitch; 8 mm motorised regulation pin made of galvanised steel.

M3S Mixing chamber 3 dampers: Section made of galvanised steel sheet with three air calibration dampers and louvers made of galvanised sheet steel. 50 mm louver pitch; 8 mm motorised regulation pins made of galvanised steel. It must be coupled with the VRF accessory

**FTF Soft bag filter section:** Section made of galvanised steel sheet with F6 degree of filtration soft bag filters. For different filtering degrees, please contact the Aermec Sales Technical Dept.

**B2R 2 row water coil:** For 4-pipe systems, positioned internally, downstream of the main coil. The threaded sleeves for the hydraulic connections and the air vent valve are supplied.

**VCT Two or three-way valve (actuator excluded):** They are 2 and 3-way globe bronze valves with female/female connections that can be servo-activated by servo controls. The VCT valves do not have fittings and pipes for hydraulic connections, which must be provided by the installer. They can be controlled from the control panels (accessories), enabled at the valves control function. Before selection, consult the features of the control panels.

**VCTA Two or three-way valve actuator:** The VCT series valves can be combined with one of the two actuators, VCTA230 on/off 230V or 24V modulating VCTA24M. The actuator must be selected according to the type of system/adjustment provided.

**PBE Section with post-heating coil:** The electric coil consists of armoured resistances fitted with a twin safety thermostat.

**SSL Module with silencer baffles:** Section made of galvanised steel sheet with mineral wool silencer baffles covered in a polyethylene film in order to prevent flaking.

**S2Z 2-area damper:** Damper made of galvanised steel sheet with opposite louvers for the external air flow to blend with the recirculating air flow. 50 mm louver pitch; 8 mm motorised regulation pin made of galvanised steel.

**VRF Return ventilating section with a G4 filter:** entilation unit equipped with an electronic rev shifter, contained in a galvanised steel sheet section with flat filters having a G4 efficiency (EN779).

**PMM Plenum with multiple circular flow attachments:** Plenum with 15 mm thick galvanised steel sandwich panel with polyurethane insulation. The plenum has multi-diameter circular plastic fittings (200 mm, 180 mm and 150 mm) for circular pipes to be connected.

**PMC Closed flow plenum:** Closed plenum with 15 mm thick galvanised steel sandwich panel with polyurethane insulation. The plenum allows the flow to turn by 90°. The installer must make the flow aperture.

**SAS Intake damper:** Air calibration damper with louvers made of galvanised sheet steel. 50 mm louver pitch; 8 mm motorised regulation pin made of galvanised steel.

**GMD Flow grid with adjustable louvers:** Grid with double row adjustable louvers for air to be introduced in the relative room. It can be installed directly on the appliance by removing the flanges or on the wall.

**GAP Intake grid:** With louvers tilted at 45°; it can be installed directly on the appliance by removing the flanges or on the wall.

#### FPI G4 filter flange for lower intake

#### PX Control panel with only the switch-over

**WMT 05 Electro-mechanical thermostat:** For fan coils installed in 2-pipe systems. The panel must be installed on the wall and protected electrically with an internal fuse. It has the following functions:

- on / off switch;
- cursor to select the heating / cooling modes (manual season change);
- cursor to select the fan speed (high, medium and low);
- temperature selector (+5°C÷30°C)

**WMT10 Control panel:** For fan coils installed on the wall. Controls the fan coil operation according to the set mode. The panel must be wall mounted; it is to be used in 4-pipe and 2-pipe systems and 2-pipe systems with resistance, with the possibility of connecting two ON - OFF type valves to cut off the coil supply water. The panel is protected electrically by an internal fuse. The control has the following functions:

- cursor to select cooling or heating functioning mode;
- manual season change;
- manual selection of the fan speed;
- selection of the desired room temperature (+10°C÷30°C);
- 2-pipe system management;
- 4-pipe system management;
- 2-pipe system management (cooling) + electrical resistance (heating);
- thermostated ventilation;
- continuous ventilation;
- continuous ventilation in cooling mode and thermostatic in heating mode.

#### **ACCESSORIES COMPATIBILITY**

Size	9	11	15	19	24	33	40	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
B2R	B2R1	B2R1	B2R2	B2R3	B2R4	B2R4	B2R5	B2R5
VCT (2 way)	VCT 102	VCT 102	VCT 202	VCT 202	VCT 202 o 402	VCT 402 o402P	VCT 402P	VCT 402P
VCT (3 way)	VCT 103	VCT 103	VCT 203	VCT 403 o403P	VCT 403 o 403P	-	-	-
VCTA230	•	•	•	•	•	•	•	•
VCTA24M	•	•	•	•	•	•	•	•
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
SAS	SAS1	SAS1	SAS2	SAS3	SAS4	SAS4	SAS5	SAS5
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	•	•	•	•	•	•(2)	•(2)	•(2)
WMT 05	•	•(1)	•(1)	•(2)	•(2)	•(2)	•(2)	•(2)
WMT 06	•	•(1)	•(1)	•(2)	•(2)	•(2)	•(2)	•(2)
WMT 10	•	•(1)	•(1)	•(2)	•(2)	•(2)	•(2)	•(2)

<sup>(1)</sup> SIT3 is to be used and the 2A fuse is to be replaced with a 4A fuse

#### **CONFIGURATOR**

Field	Description
1,2	TA
3,4	Size
	09-11-15-19-24-33-40-50
5	Conÿguration
Н	Horizontal

<sup>(1)</sup> For information on this version, contact establishment

Field		Description
V	'	Vertical
χ		Extractor
6		Version
4		Coil with 4 rows
6		Coil with 6 rows
Е		4 Left ROWS direct expansion R410A coil (1)

<sup>(2)</sup> Provide time delay relays, one for each speed

<sup>-</sup> Not available

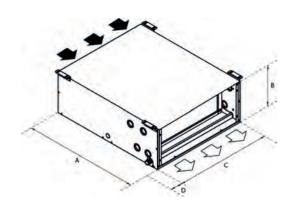
#### **TECHNICAL DATA**

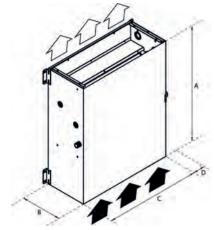
Size		ver.			9	1	1	1	5	1	9	2	4	3	3	40		50	
Main coil rows				4	6	4	6	4	6	4	6	4	6	4	6	4	6	4	6
Nominal air flow rate (1)		H/V	m³/h	800	800	1100	1100	1500	1500	1900	1900	2400	2400	3300	3300	4000	4000	5000	5000
Nothinal all flow rate (1)		H/V	I/s	222	222	306	306	417	417	528	528	667	667	917	917	1111	1111	1389	1389
Useful static pressure	eful static pressure		Pa	145	131	290	265	176	158	240	224	211	199	245	224	248	234	153	131
Number of electric fans		H/V	n		1		2		2		1		1		2		2		2
Input power		H/V	W	2	49	3	10	3	30	6	10	8.	35	8	15	98	30	12	280
2-Pipe system yields																			
Cooling capacity (2)	total	H/V	kW	4,2	5,1	5,7	6,7	8,7	11,7	12,4	15,5	17,3	20,6	21,7	26,3	27,2	33,5	31,8	39,6
Cooling capacity (2)	sensitive	H/V	kW	3,5	3,4	4,2	4,7	6,2	7,5	8,3	9,8	11,2	12,8	14,3	16,6	18,0	20,9	21,3	25,0
Water flow rate		H/V	l/h	722	868	980	1152	1496	2012	2132	2666	2975	3543	3732	4523	4678	5761	5469	6810
Pressure drops		H/V	kPa	6	4	6	6	7	15	12	28,5	16	27	23	41	11	31	15	42
Heating capacity	70°/60° C	H/V	kW	10,4	11,4	13,3	14,8	19,1	21,4	24,7	27,4	34,1	35,6	41,9	46,6	52,8	58,3	62,8	72,8
Water flow rate	70°/60° C	H/V	l/h	894	976	1139	1273	1642	1838	2124	2356	2932	3058	3603	4005	4538	5013	5400	6260
Pressure drops	70°/60° C	H/V	kPa	5	4	8	7	7	16	10	23	13	21	19	34	10	22	13	30
1 Row water coil 4-pipe system yiel	ds																		
Heating capacity	70°/60° C	H/V	kW	4	,4	5	,1	8	,2	10	0,6	14	1,2	16	5,3	22	.,4	24	4,7
Water flow rate	70°/60° C	H/V	l/h	3	78	4:	35	7	)5	91	07	12	21	14	103	19	26	21	124
Pressure drops	70°/60° C	H/V	kPa	9	9		7	2	1	1	3	1	4	1	7	2	1	2	25
2 Rows water coil 4-pipe system yie	elds																		
Heating capacity	70°/60° C	H/V	kW	3	,9	8	,5	12	.,7	16	5,0	21	1,7	26	5,7	34	,8	40	0,0
Water flow rate	70°/60° C	H/V	l/h	3:	33	7:	31	10	92	13	371	18	66	22	91	29	88	34	139
Pressure drops	70°/60° C	H/V	kPa	- 1	8	1	1	1	3	1	4	1	8	2	16	1	8	2	23
Electric coil																			
Electric coil capacity		H/V	kW		4	(	5		3	1	0	1	2	1	6	2	0	2	24
Electric coil stages		H/V	n°		2	7	2	١	V		2		2		2		2		2
Electric power supply		H/V	V/Ph/Hz								400 V -3	3 - 50 Hz							
Filters available		H/V		(	i4	G	4	(	4	G	4	(	i4	(	i4	G	4	G	4
riileis avallable		H/V		F	6	F	6	F	6	F	6	F	6	F	6	F	6	F	6
Sound data																			
Sound power level		H/V	dB(A)	6	2	6	6	6	7	7	2	7	4	7	'5	7	6	7	79

(1) At maximum fan speed (2) Air temperature (in)  $27^{\circ}$ C d.b. 47% R.H.; Water temperature (in/out)  $7^{\circ}$ C /  $12^{\circ}$ C This unit is designed for a maximum amount of outdoor air of 10% of the total declared air  $^{\circ}$  ow

#### **DIMENSIONS**

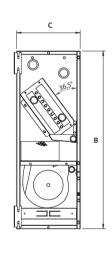
#### TA HORIZONTAL AND VERTICAL INSTALLATION WITH EXTRACTOR

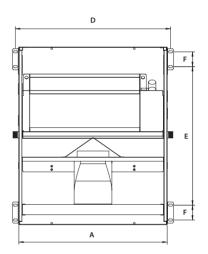




Size		9	11	15	19	24	33	40	50
Horizontal conÿgurat	ion dimensions and '	'extractor" conÿ guı	ation						
A	mm	700	700	700	850	850	850	1000	1000
В	mm	300	300	300	390	390	390	390	390
C	mm	700	700	1050	1050	1475	1475	2100	2100
D	mm	82	82	82	82	82	82	82	82
Number of fans	n°	1	2	2	1	1	2	2	2

#### TA VERTICAL INSTALLATION





Size		9	11	15	19	24	33	40	50
Vertical configuration dime	nsions								
A	mm	700	700	1050	1050	1475	1475	2099	2099
В	mm	840	840	840	1090	1090	1090	1090	1090
C	mm	300	300	300	390	390	390	390	390
Fixing points									
D	mm	732	732	732	1082	1507	1507	2131	2131
E	mm	655	655	655	905	905	905	905	905
F	mm	70	70	70	70	70	70	70	70
Number of fans	n°	1	2	2	1	1	2	2	2
Size		9	11	15	19	24	33	40	50
Unit net weights	,								
4 row coil	kg	28	33	45	60	78	86	135	140
6 row coil	kg	30	35	47	62	81	89	139	144

Aermec reserves the right to make any modifications deemed necessary. All data is subject to change without notice. Aermec does not assume responsibility or liability for errors or omissions.

TA\_Y\_UN50\_04

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## TN

## Air handling unit



- Maximum installation flexibility
- EC fan Plug-fan
- Wide choice of accessories.
- Large range of capacities and static pressures.
- Versions available with water coil or with direct expansion.



#### **DESCRIPTION**

The TN range offers an alternative to the air treatment unit for flow rates from 2300 to 23000m<sup>3</sup>/h when the only treatment required is filtering, cooling and/or heating. Designed for domestic, commercial, industrial or hotel systems in small or medium sized contexts.

The units can be installed horizontally or vertically for greater flexibility of use

All the units are always supplied and shipped in the vertical configuration. The customer is responsible for any possible modification from vertical to horizontal.

TN series are characterised by their compact size, low noise levels, and the wide choice of accessories.

The units are available with a plug fan unit with EC motor, or with a transmission centrifugal fan unit with AC motor (the latter comes in both the standard version and the boosted high head version).

#### **FEATURES**

#### **Structure**

The structure is made of aluminium profiles with sandwich cover paneling made of galvanised steel on the inside and pre-coated RAL 9003 galvanised steel on the outside with polyurethane insulation (density 40 kg/m³) with 25 mm thickness.

Both the panels of the base unit as well as the panels of the plenum have pre-shearing that render them compatible with the insertion of the accessories.

The fixing of the paneling using a panel block profile ensures a perfect seal between the panel and the frame and makes it extremely easy to mount and remove the panels.

The 3-way corner joint is made of glass-fibre reinforced nylon.

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.

#### Water heat exchanger coils

With copper pipes. Aluminium fins blocked via the mechanical expansion of the pipes. With 4 or 6 rows for the main one (heating or cooling) and 2,3 or 4 rows for the secondary one (heating only).

#### **Evaporative heat exchanger coils**

#### An alternative to the main water coil.

Suitable for R410A refrigerant. With copper pipes. Aluminium fins blocked via the mechanical expansion of the pipes. With 4 or 6 rows and both RH and LH versions.

#### **Electric heating coil**

Electric heating coil with finned, armoured elements. With twin safety thermostat (automatic and manual reset). Includes the implementation contactors (commanded with 24Volt AC voltage).

Can be used both for summer post-heating and winter heating. The coil has two asymmetric levels (1/3, 2/3 of the total power) so it can be commanded at up to 3 levels.

#### Air filter

The air is filtered through synthetic 50mm filters with an efficiency level of Coarse 55% (as per the ISO 16890 standard) on the intake points. The filters are housed on guides in the main coil section, and can be easily removed for cleaning and maintenance; just remove the panel on the side of the water connections and then take out the filters. With the FT7MxT accessory, filtering takes place via compact filters with an EPM1 55% efficiency level (as per the ISO 16890 standard).

#### **VENTILATION GROUP**

The configurator allows you to choose between two different types of fan unit, to meet every possible system request.

#### Ventilation group with inverter EC fan plug fun

#### Fan

The fans are of the plug-fan type with reversed blades for excellent performance with single intake.

#### Motor

The electric motors with extremely high efficiency, directly coupled to the fans, have an external EC rotor with integrated electronic control. They can be controlled continuously by a 0-10V signal. IP55 Protection rating. The motors can be powered with 380-480V / 3ph / 50-60Hz (the range is however reduced to the power supply required by the ByyExT

or ByyExTZ electric battery accessory, if required immediately or if installed at a later date).

A standard control option via the ModBus protocol.

#### Fan unit with transmission

#### Fan

The fans are of the centrifugal type with twin intake, with the blades facing forwards for optimum performance.

#### Motor

The single-speed (4-pole) electric motors are of the three-phase asynchronous type, with a closed construction and external ventilation,

#### **ACCESSORIES**

**PLxT:** Plenum composed of pre-sheared panels that can be opened on 3 sides, it can be mounted as an inlet or as an outlet; it is compatible with the accessories GAXT, GMxT, SAXT and TPPLxT. It includes mounting brackets and feet (for horizontal and vertical configurations).

**FT7MxT:** Compact filters with filtering degree ePM1 55% (according to ISO 16890), composed of a plenum that can be opened on two sides, which can be positioned on the outlet of the machine; it is compatible with the accessories GMxT, SAxT and TPPxT. It includes fixing plates and feet (for horizontal and vertical configurations).

**B2RxT:** Hot water coil with 2 rows for lines with 4 tubes. Positioned internally at the base of the equipment, downstream from the main coil, and made of copper piping and aluminium finning blocked by the mechanical expansion of the pipes.

**B3RxT:** Hot water coil with 3 rows for lines with 4 tubes. Positioned internally at the base of the equipment, downstream from the main coil, and made of copper piping and aluminium finning blocked by the mechanical expansion of the pipes.

**BR4xT:** Hot water coil with 4 rows for lines with 4 tubes. Positioned internally at the base of the equipment, downstream from the main coil, and made of copper piping and aluminium finning blocked by the mechanical expansion of the pipes.

**SAXT:** Air calibration damper with galvanised steel fins. Fin pitch 50mm; galvanised steel adjusting pin: can be installed on the equipment base or the plenum.

**GMxT:** Outlet grille with double row of fins that can be adjusted when emitting air into the room. Can be installed on the plenum.

**GAXT:** Suction grille with fins fixed at an angle of 45°; Can be installed directly on the equipment base or on the plenum accessories.

**TPVSxT:** Protective roof for Vertical installation with top outlet. Composed of a pre-coated metal sheet, fastened to the side of the unit. To be installled on the unit base. The accessory is not compatible with units equipped with EC plug fans.

**TPVFxT:** Protective roof for Vertical installation with front delivery. Composed of pre-coated diamond sheet, fastened to the side of the unit. To be installed on: PLxT, FT7MxT and vertical unit base with front outlet

**TPLxT:** Protective roof for horizontal installation with Front outlet. Composed of pre-coated diamond sheet, fastened to the side of the unit. To be installed on unit base.

caged rotor and B3 configuration with horizontal shaft, complying with the IEC, CEI and UNEL standards. IP55 protection rating. They are powered at 400V-3ph-50Hz (standard) or 460V-3ph-60Hz (units with "Z" power supply).

#### Transmission

The pulleys (supplied with a Taperlock-type conical shrink disk) are statically and dynamically balanced, with a variable diameter for improved fan calibration.

The transmission belts may be of the SPA or SPB type.

**TPPLxT:** Protective roof for the plenum, for horizontal installation with front delivery. Made of pre-painted diamond sheet metal fixed to the sides of the unit (to be installed on PLxT and FT7MxT, from size 3 to size 8).

**TPFTLxT:** Protective roof for the bag filters, for line installation with front delivery. Made of pre-painted diamond sheet metal fixed to the sides of the unit (to be installed on FT7MxT, on sizes 1 and 2).

**P50MBT:** Corner support feet for both the horizontal and vertical version. Made of galvanised sheet: they can be fixed directly to the unit with the screws supplied. The accessory has 4 corner feet and 2 side feet.

**P50ACT:** Lateral support feet for the horizontal version. Made of galvanised sheet: they come with the accessories unit together with the bolts and screws.

**ByyExT:** Electric coil 400V/3ph/50Hz. Can be positioned inside the standard device, downstream from the main coil. Consists of a sheet metal frame, heating elements (armoured and finned), command contactors (24V AC) and two thermostats (one with automatic reset and the other manual). The electrical heating power (yy in kW) is divided over two sets of heaters 1/3+2/3 that can be controlled up to max. 3 levels. WARNING: To avoid the risk of overheating, make sure the fan is working at the correct flow rate when the coil is activated, and that there is a minimum post-ventilation time when the coil is deactivated.

**BYYExTZ:** Electric coil 460V/3ph/60Hz. Can be positioned inside the standard device, downstream from the main coil. Consists of a sheet metal frame, heating elements (armoured and finned), command contactors (24V AC) and two thermostats (one with automatic reset and the other manual). The electrical heating power (yy in kW) is divided over two sets of heaters 1/3+2/3 that can be controlled up to max. 3 levels. WARNING: To avoid the risk of overheating, make sure the fan is working at the correct flow rate when the coil is activated, and that there is a minimum post-ventilation time when the coil is deactivated.

**CPxT:** Adjustment module with sensor for volumetric flow rate (accessory for TNxxE version only).

**CPxTP:** Adjustment module with sensor for differential pressure (accessory for TNxxE version only).

**CPxTV:** Speed regulatory (accessory only for TNxxE versions).

#### **ACCESSORIES COMPATIBILITY**

1	2	3	4	5	6	7	8
PL1T (1)	PL2T (1)	PL3T (1)	PL4T (1)	PL5T (1)	PL6T (1)	PL7T (1)	PL8T (1)
) For horizontal and vertice	cal configurations.						
Compact ePM1 559	% filters on the fan a	lelivery					
1	2	3	4	5	6	7	8
FT7M1T (1)	FT7M2T (1)	FT7M3T (1)	FT7M4T (1)	FT7M5T (1)	FT7M6T (1)	FT7M7T (1)	FT7M8T (1)
I) For horizontal and vertic	cal configurations.						
lot water coil with	2 rows for lines with	n 4 pipes					
1	2	3	4	5	6	7	8
B2R1T	B2R2T	B2R3T	B2R4T	B2R5T	B2R6T	B2R7T	B2R8T
ot water coil with	3 rows for lines witl	h 4 nines					
1	2	3	4	5	6	7	8
B3R1T	B3R2T	B3R3T	B3R4T	B3R5T	B3R6T	B3R7T	B3R8T
	4 rows for lines with						
<b>1</b> B4R1T	<b>2</b> B4R2T	B4R3T	<b>4</b> B4R4T	<b>5</b> B4R5T	<b>6</b> B4R6T	<b>7</b> B4R7T	<b>8</b> B4R8T
DHNII	DAUT	וכחויט	DAUAI	ונחויט	וטאאט	ו /חצט	101140
Suction damper							
1	2	3	4	5	6	7	8
SA1T	SA2T	SA3T	SA4T	SA5T	SA6T	SA7T	SA8T
Outlet grille with ac	diustable fins						
1	2	3	4	5	6	7	8
GM1T	GM2T	GM3T	GM4T	GM5T	GM6T	GM7T	GM8T
atala citi							
ntake grids			4	-			•
<b>1</b> GA1T	<b>2</b> GA2T	GA3T	<b>4</b> GA4T	<b>5</b> GA5T	<b>6</b> GA6T	<b>7</b> GA7T	8 GA8T
TPVS1T (1)  The accessory is not com	TPVS2T (1) npatible with units equipped	TPVS3T (1) with EC plug fans.	4 TPVS4T (1)	5 TPVSST (1)	6 TPVS6T (1)	<b>7</b> TPVS7T (1)	<b>8</b> TPVS8T (1)
Protective roof for	Vertical installation	with front outlet					
1	2	3	4	5	6	7	8
TPVF1T	TPVF2T	TPVF3T	TPVF4T	TPVF5T	TPVF6T	TPVF7T	TPVF8T
Protective roof for	horizontal installati	on with front outlet					
1	2	3	4	5	6	7	8
TPL1T	TPL2T	TPL3T	TPL4T	TPL5T	TPL6T	TPL7T	TPL8T
				·			
		on with Front outlet					
TPPL1T (1)	TPPL2T (1)	TPPL3T (1)	<b>4</b> TPPL4T (1)	<b>5</b> TPPL5T (1)	<b>6</b> TPPL6T (1)	7 TPPL7T (1)	7PPL8T (1)
	and FT7MxT from size 3 to siz		117141(1)	111171(1)	IFFLOT(1)	IFFL/I(I)	IFFLOI (I)
17 TO be installed on PLXI a							
•	madrat Cli	tallation 1 ' · · ·	th Frant tl · ·				
,				r		7	0
Roof for protecting  1	2	tallation on Line wi	th Front outlet  4	5	6	7	8 -
Roof for protecting  1  TPFTL1T (1)  11) To be installed on ET7M:	TPFTL2T (1)	3	4				8 -
Roof for protecting  1  TPFTL1T (1)  1) To be installed on ET7M:	2 TPFTL2T (1)	3	4				8 -
1 TPFTL1T (1) 1) To be installed on FT7M: the accessory cannot be fitt	TPFTL2T (1)  xT on sizes 1 and 2. sed on the configurations ind	3	4				8 -
Roof for protecting  1  TPFTL1T (1)  1) To be installed on FT7M: the accessory cannot be fitt  Corner support feel  1	2 TPFTL2T (1) xT on sizes 1 and 2. ed on the configurations ind f	3	4 -	5	6	7	8
Roof for protecting  1  TPFTL1T (1)  1) To be installed on FT7M: he accessory cannot be fitt  Corner support feet	2 TPFTL2T (1) xT on sizes 1 and 2. ed on the configurations ind	3 -	-	•	-	-	-
Roof for protecting  1 TPFTL1T (1)  1) To be installed on FT7M: he accessory cannot be fitt  Corner support feet  1 PS0MBT	2 TPFTL2T (1) xT on sizes 1 and 2. red on the configurations ind t 2 P50MBT	3	4 -	5	6	7	8
Roof for protecting  1 TPFTL1T (1)  1) To be installed on FT7M: he accessory cannot be fitt  Corner support feet  1 PS0MBT	2 TPFTL2T (1) xT on sizes 1 and 2. red on the configurations ind t 2 P50MBT	3	4 -	5	6	7	- <b>8</b> P50MBT
Roof for protecting  1 TPFTL1T (1)  1) To be installed on FT7M: the accessory cannot be fitt Corner support feel  1 PS0MBT  Lateral support feel	2 TPFTL2T (1)  xT on sizes 1 and 2. ed on the configurations ind t 2 P50MBT	3 icated with - 3 P50MBT	4 - 4 PSOMBT	<b>.</b> <b>5</b> PSOMBT	- <b>6</b> P50MBT	- <b>7</b> P50MBT	8
Roof for protecting  1 TPFILIT (1)  1) To be installed on FI7M: he accessory cannot be fitt Corner support feet  1 PSOMBT  Lateral support feet  1 PSOACT	2 TPFTL2T (1) xT on sizes 1 and 2. ed on the configurations ind f 2 P50MBT et 2 P50ACT	3 icated with -  3 P50MBT	4 - 4 PSOMBT	- <b>5</b> P50MBT	- 6 P50MBT	- 7 P50MBT 7	- 8 P50MBT
Roof for protecting  1  TPFTL1T (1)  To be installed on FT7M: the accessory cannot be fitt  Corner support feet  1  PSOMBT  Lateral support feet  1  PSOACT	2 TPFTL2T (1)  xT on sizes 1 and 2. ed on the configurations ind  t 2 P50MBT  et 2 P50ACT	3 - sicated with -  3 P50MBT  3 P50ACT	4 P50MBT 4 P50ACT	5 P50MBT 5 P50ACT	6 P50MBT 6 P50ACT	7 P50MBT 7 P50ACT	- 8 P50MBT 8 P50ACT
Roof for protecting  1 TPFTL1T (1)  1) To be installed on FT7M: he accessory cannot be fitt  Corner support feel  1 P50MBT  Lateral support feel  1 P50ACT	2 TPFTL2T (1) xT on sizes 1 and 2. ed on the configurations ind f 2 P50MBT et 2 P50ACT 3 50Hz	3 - sicated with -  3 P50MBT  3 P50ACT	4 PSOMBT 4 PSOACT	5 P50MBT 5 P50ACT	6 P50MBT 6 P50ACT	7 P50MBT 7 P50ACT	- 8 P50MBT 8 P50ACT
Roof for protecting  1  TPFTL1T (1)  To be installed on FT7M: the accessory cannot be fitt  Corner support feet  1  PSOMBT  Lateral support feet  1  PSOACT	2 TPFTL2T (1)  xT on sizes 1 and 2. ed on the configurations ind  t 2 P50MBT  et 2 P50ACT	3 - sicated with -  3 P50MBT  3 P50ACT	4 P50MBT 4 P50ACT	5 P50MBT 5 P50ACT	6 P50MBT 6 P50ACT	7 P50MBT 7 P50ACT	- 8 P50MBT 8 P50ACT
Roof for protecting  1 TPFILIT (1)  1) To be installed on FI7M: he accessory cannot be fitt Corner support feet  1 P50MBT  Lateral support feet  1 P50ACT  Electric coil 400V~3 B07EIT	2 TPFTL2T (1) xT on sizes 1 and 2. ed on the configurations ind t 2 P50MBT et 2 P50ACT 3 50Hz B10E2T	3 - sicated with -  3 P50MBT  3 P50ACT	4 PSOMBT 4 PSOACT	5 P50MBT 5 P50ACT	6 P50MBT 6 P50ACT	7 P50MBT 7 P50ACT	- 8 P50MBT 8 P50ACT
Roof for protecting  1 TPFTL1T (1)  1) To be installed on F17M. The accessory cannot be fitt  Corner support feel  1 P50MBT  Lateral support feel  1 P50ACT  Electric coil 400V~3	2 TPFTL2T (1) xT on sizes 1 and 2. ed on the configurations ind t 2 P50MBT et 2 P50ACT 3 50Hz B10E2T	3 - sicated with -  3 P50MBT  3 P50ACT	4 PSOMBT 4 PSOACT	5 P50MBT 5 P50ACT	6 P50MBT 6 P50ACT	7 P50MBT 7 P50ACT	- 8 P50MBT 8 P50ACT

#### Adjustment module with sensor for volumetric flow rate

1	2	3	4	5	6	7	8
CP1T (1)	CP1T (1)	CP2T (1)	CP2T (1)	CP2T (1)	CP2T (1)	CP2T (1)	CP2T (1)
(1) Accessory only available	for TNxxE versions.						
Adjustment module	e with sensor for dif	ferential pressure					
1	2	3	4	5	6	7	8
CP1TP (1)	CP1TP (1)	CP1TP (1)	CP1TP (1)	CP1TP (1)	CP1TP (1)	CP1TP (1)	CP1TP (1)
(1) Accessory only available	for TNxxE versions.						
Speed regulatory							
1	2	3	4	5	6	7	8
CP1TV (1)	CP1TV (1)	CP1TV (1)	CP1TV (1)	CP1TV (1)	CP1TV (1)	CP1TV (1)	CP1TV (1)

<sup>(1)</sup> Accessory only available for TNxxE versions.

#### CONFIGURATOR

Field	Description
1,2	TN
3	<b>Size</b> 1, 2, 3, 4, 5, 6, 7, 8
4	Version
4	Water coil, 4 rows (LH side for connections - the connections side can be altered on site)
6	Water coil, 6 rows (LH side for connections - the connections side can be altered on site)
Α	R410A direct expansion coil, 4 rows (RH side for connections - the connections side cannot be altered on site) (1)
В	R410A direct expansion coil, 4 rows (LH side for connections - the connections side cannot be altered on site) (2)
С	R410A direct expansion coil, 6 rows (RH side for connections - the connections side cannot be altered on site) (1)
D	R410A direct expansion coil, 6 rows (LH side for connections - the connections side cannot be altered on site) (2)
5	Fans (3)
В	Centrifugal with AC motor (low head)
E	Plug fans with EC motor
Р	Centrifugal with AC motor (high head)
6	Power supply (4)
0	400V ~ 3 50Hz
Z	460V ~ 3 60Hz

<sup>(1)</sup> With vertical configuration, the coil connections are on the opposite side to motor inspection. When transformed to horizontal configuration, the coil connections may be on the same side as motor inspection or on the opposite side, depending on the type of conversion.

(2) With vertical configuration, the coil connections and motor inspection are on the same side. When transformed to horizontal configuration, the coil connections may be on the same side as motor inspection or "VERSION: the definition of "RH connections side" or "LH connections side" refers to the position of the coil connections in relation to the air flow direction (convection: air flow from behind a hypothetical operator inserted in the flow).

the flow).

\*\* All the units are always supplied and shipped in the vertical configuration. The customer is responsible for any possible modification from vertical to horizontal.

#### **PERFORMANCE SPECIFICATIONS**

#### TN 1-8 with 4-row water coil

Size		1	2	3	4	5	6	7	8
Cooling performance 7 °C / 12 °C (1)									
Cooling capacity	kW	15,6	21,3	29,1	38,1	44,8	56,7	74,7	96,4
Sensible cooling capacity	kW	10,7	14,7	20,1	26,2	33,3	41,7	55,1	70,9
Heating performance 70 °C / 60 °C (2)									
Heating capacity	kW	40,0	54,5	74,9	97,6	131,1	162,9	216,1	277,3
Performance in heating mode with additional coil f	or 4-pipe systems								
Heating capacity with 2 row water coil	kW	25,2	34,0	46,8	61,5	84,4	103,8	138,0	178,5
Heating capacity with 3 row water coil	kW	33,5	45,6	62,7	82,0	110,8	137,3	182,5	234,4
Heating capacity with 4 row water coil	kW	40,0	54,5	74,9	97,6	131,1	162,9	216,1	277,3
Heating performance 45 °C / 40 °C (3)									
Heating capacity	kW	23,4	31,9	43,7	57,0	76,3	94,8	125,8	161,4
Performance in heating mode with additional coil for	or 4-pipe systems								
Heating capacity with 2 row water coil	kW	14,7	19,8	27,3	36,0	49,0	60,3	80,1	103,8
Heating capacity with 3 row water coil	kW	19,6	26,6	36,6	47,9	64,4	79,8	106,1	136,3
Heating capacity with 4 row water coil	kW	23,4	31,9	43,7	57,0	76,3	94,8	125,8	161,4

<sup>(1)</sup> Room air temperature 27 °C d.b./19 °C w.b.; Water (in/out) 7 °C/12 °C; (2) Room air temperature 10 °C d.b.; Water (in/out) 70 °C/60 °C (3) Room air temperature 10 °C d.b.; Water (in/out) 45 °C/40 °C;

#### TN 1-8 with 4-row direct expansion coil

Size		1	2	3	4	5	6	7	8
Performance in cooling mode with incomin	g air at 27°C / 50% R.H. (1)								
Cooling capacity	kW	12,6	17,1	23,5	30,2	38,5	47,7	63,7	81,5
Sensible cooling capacity	kW	9,9	13,5	18,5	24,1	30,4	38,0	50,7	65,2

<sup>(1)</sup> Incoming air temperature 27°C D.B. 50% R.H.; R410A refrigerant, t.at. EVAP. 10°C, up to 8K, lower transformation at 0K, vapour - liquid vapour from 0 to 1; refer to the selection software.

#### TN 1-8 with 6-row water coil

Size	'	1	2	3	4	5	6	7	8
Cooling performance 7 °C / 12 °C (1)									
Cooling capacity	kW	20,0	27,4	37,7	49,2	58,3	74,5	98,9	127,8
Sensible cooling capacity	kW	13,4	18,3	25,2	32,8	41,1	51,8	68,8	88,5
Heating performance 70 °C / 60 °C (2)									
Heating capacity	kW	48,7	66,6	91,5	119,2	157,5	196,8	260,4	334,1
Performance in heating mode with additional coil	for 4-pipe systems								
Heating capacity with 2 row water coil	kW	25,2	34,0	46,8	61,5	84,4	103,8	138,0	178,5
Heating capacity with 3 row water coil	kW	33,5	45,6	62,7	82,0	110,8	137,3	182,5	234,4
Heating capacity with 4 row water coil	kW	40,0	54,5	74,9	97,6	131,1	162,9	216,1	277,3
Heating performance 45 °C / 40 °C (3)									
Heating capacity	kW	28,5	38,9	53,5	69,6	91,7	114,3	151,7	194,6
Performance in heating mode with additional coil	for 4-pipe systems								
Heating capacity with 2 row water coil	kW	14,7	19,8	27,3	36,0	49,0	60,3	80,1	103,8
Heating capacity with 3 row water coil	kW	19,6	26,6	36,6	47,9	64,4	79,8	106,1	136,3
Heating capacity with 4 row water coil	kW	23,4	31,9	43,7	57,0	76,3	94,8	125,8	161,4

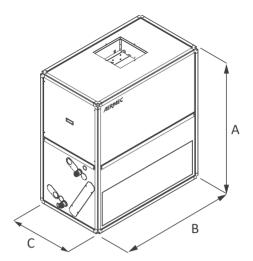
<sup>(1)</sup> Room air temperature 27 °C d.b./19 °C w.b.; Water (in/out) 7 °C/12 °C; (2) Room air temperature 10 °C d.b.; Water (in/out) 70 °C/60 °C (3) Room air temperature 10 °C d.b.; Water (in/out) 45 °C/40 °C;

#### **GENERAL TECHNICAL DATA**

Fans

rans Ciar										
Size			1	2	3	4	5	6	7	8
Fans: B										
Fan										
Number	4,6,A,B,C,D	no.	1	1	1	1	1	1	1	1
Nr. poles	4,6,A,B,C,D	no.	4	4	4	4	4	4	4	4
Maximum air flow rate with cooling coil	4,6,A,B,C,D	m³/h	3000	4100	5650	7350	9400	11700	15500	20000
Maximum air flow rate with heating coil	4,6,A,B,C,D	m³/h	3500	4700	6400	8000	9750	13400	17800	20000
High static pressure - maximum	4,6,A,B,C,D	Pa	425	455	452	440	383	425	436	400
Total fan input power	4,6,A,B,C,D	kW	0,8	1,1	1,5	2,2	2,2	4,0	4,0	5,5
Version without resistance										
Rated current input	4,6,A,B,C,D	A	1,8	2,4	3,2	4,7	4,7	8,2	8,2	11,1
Peak current	4,6,A,B,C,D	A	5,3	6,2	6,8	6,4	6,4	7,0	7,0	5,9
Version with electric heater										
Rated current input	4,6,A,B,C,D	A	11,9	16,9	15,0	23,4	30,7	40,8	51,6	83,4
Peak current	4,6,A,B,C,D	Α	11,9	16,9	23,4	30,7	40,8	51,6	66,0	83,4
Fan										
Power supply	4,6,A,B,C,D		400~3 50Hz	400~3 50Hz	400~3 50Hz	400~3 50Hz	400~3 50Hz	400~3 50Hz	400~3 50Hz	400~3 50Hz
Fans: E										
Fan										
Number	4,6,A,B,C,D	no.	1	1	1	1	1	1	2	2
Nr. poles	4,6,A,B,C,D	no.	-	-	-	<u> </u>	-	-	-	
Maximum air flow rate with cooling coil	4,6,A,B,C,D	m³/h	3000	4100	5650	7350	9400	11700	15500	20000
Maximum air flow rate with heating coil	4,6,A,B,C,D	m³/h	3500	4700	6400	8400	10500	13400	17800	23000
High static pressure - maximum	4,6,A,B,C,D	Pa	700	660	700	700	660	640	700	580
Total fan input power	4,6,A,B,C,D	kW	1,5	1,5	2,5	3,4	3,4	3,4	3,4	3,4
Version without resistance	4,0,0,0,0,0	N.VV	ر,۱	ל,ו	2,3	7,4	3,4	3,4	3,4	J,4
Rated current input	4 6 A D C D	Α.	2.4	2.4	4.0	F 4	E 4	E 4	DVE 4	2vE 4
	4,6,A,B,C,D 4,6,A,B,C,D	A A	2,4	2,4	4,0	5,4	5,4	5,4	2x5,4	2x5,4
Peak current	4,0,A,D,C,D	А		<del>-</del>	-	<del>-</del>	<del>-</del>	<del>-</del>	-	
Version with electric heater	464060		12.5	160	24.2	21.4	41.5	40.0	(0.6	02.1
Rated current input	4,6,A,B,C,D	A	12,5	16,9	24,2	31,4	41,5	48,8	68,6	83,1
Peak current	4,6,A,B,C,D	A	-	-	-	-	-	-	-	-
Fan			100 2 5011		100 2 5011			100 2 5011	100 2 5011	
Power supply	4,6,A,B,C,D		400~3 50Hz	400~3 50Hz	400~3 50Hz	400~3 50Hz	400~3 50Hz	400~3 50Hz	400~3 50Hz	400~3 50Hz
Fans: P										
Fan										
Number	4,6,A,B,C,D	no.	1	1	1	1	1	1	1	1
Nr. poles	4,6,A,B,C,D	no.	4	4	4	4	4	4	4	4
Maximum air flow rate with cooling coil	4,6,A,B,C,D	m³/h	3000	4100	5650	7350	9400	11700	15500	20000
Maximum air flow rate with heating coil	4,6,A,B,C,D	m³/h	3500	4700	6400	8400	10500	13400	17800	23000
High static pressure - maximum	4,6,A,B,C,D	Pa	600	627	674	672	567	670	625	610
Total fan input power	4,6,A,B,C,D	kW	1,1	1,5	2,2	3,0	3,0	5,5	5,5	7,5
Version without resistance										
Rated current input	4,6,A,B,C,D	A	2,4	3,2	4,7	6,3	6,3	11,1	11,1	14,9
Peak current	4,6,A,B,C,D	A	6,2	6,8	6,4	7,7	7,7	5,9	5,9	5,6
Version with electric heater			,	r-	,			r-	r-	
Rated current input	4,6,A,B,C,D	A	12,5	17,7	24,9	32,3	42,4	54,5	68,9	87,2
Peak current	4,6,A,B,C,D	A	12,5	17,7	24,9	32,3	42,4	54,5	68,9	87,2
Fan	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		.2/3	.,,,	- 1/2	22/3	· <del>-</del> / '	در، د	55/7	01,12
Power supply	4,6,A,B,C,D		400~3 50Hz	400~3 50Hz	400~3 50Hz	400~3 50Hz	400~3 50Hz	400~3 50Hz	400~3 50Hz	400~3 50H
,							100 J JUIL	700 J JUIL	100 J JUIL	-100 - 2 2011
It is the maximum static pressure that can be	e supplied by the fa	an; it is equal to	o the internal press	ure drops + the us	etul static pressure					
<u>_</u>										
Size			1	2	3	4	5	6	7	8
<u>_</u>			<b>1</b> 475	<b>2</b> 475	3	4	<b>5</b> 720	6	7	8

#### **DIMENSIONS**



Size			1	2	3	4	5	6	7	8
Dimensions and weights										
A	4,6,A,B,C,D	mm	1334	1334	1497	1497	1822	1822	2309	2309
В	4,6,A,B,C,D	mm	928	1172	1334	1659	1659	1984	1984	2472
C	4,6,A,B,C,D	mm	684	684	765	765	928	928	1172	1172
Size			1	2	3	4	5	6	7	8
Fans: B										
Dimensions and weights										
Empty weight	4	kg	187	216	270	314	408	466	619	793
	6	kg	190	220	275	320	415	475	630	807
	A,B	kg	191	220	274	318	412	470	623	797
	C,D	kg	195	225	280	325	420	480	635	812
Fans: E										
Dimensions and weights										
	4	kg	175	199	249	304	388	466	611	769
Farantina	6	kg	178	203	254	310	395	475	622	783
Empty weight	A,B	kg	179	203	253	308	392	470	615	773
	C,D	kg	183	208	259	315	400	480	627	788
Fans: P										
Dimensions and weights										
	4	kg	197	219	279	316	410	493	646	799
Emptywaight	6	kg	200	223	283	321	417	502	657	813
Empty weight	A,B	kg	201	223	283	320	414	497	650	803
	C,D	kg	205	228	289	327	422	507	662	818

Add 50mm to the height of the unit (A), to allow for the feet. The vertical configuration (B/D), the connections and motor inspection are on the same side.