

# **Chilled Water Cassette**



Topline Cassette Fan Coil Unit



## **Customer Services**

## Warranty, Commissioning & Maintenance

As standard, Airedale guarantees all non consumable parts only for a period of 12 months, variations tailored to suit product and application are also available; please contact Airedale for full terms and details.

To further protect your investment in Airedale products, Airedale can provide full commissioning services, comprehensive maintenance packages and service cover 24 hours a day, 365 days a year (UK mainland). For a free quotation contact Airedale or your local Sales Engineer.

All Airedale products are designed in accordance with EU Directives regarding prevention of build up of water, associated with the risk of contaminants such as legionella.

For effective prevention of such risk it is necessary that the equipment is maintained in accordance with Airedale recommendations.

#### SafeCool™

In addition to commissioning, a 24 hour, 7 days a week on-call service is available throughout the year to UK mainland sites. This service will enable customers to contact a duty engineer outside normal working hours and receive assistance over the telephone. The duty engineer can, if necessary, attend site, usually within 24 hours or less. Full details will be forwarded on acceptance of the maintenance agreement.

#### Spares

A spares list for 1, 3 and 5 years will be supplied with every unit and is also available from our Spares department on request.

#### Training

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As well as our comprehensive range of products, Airedale offers a modular range of Refrigeration and Air Conditioning Training courses, for further information please contact Airedale.

#### **Customer Services**

For further assistance, please e-mail: enquiries@airedale.com or telephone:

UK Sales Enquiries	+ 44 (0) 113 239 1000	enquiries@airedale.com
International Enquiries	+ 44 (0) 113 239 1000	enquiries@airedale.com
Spares Hot Line	+ 44 (0) 113 238 7878	spares@airedale.com
Airedale Service	+ 44 (0) 113 239 1000	service@airedale.com
Technical Support	+ 44 (0) 113 239 1000	tech.support@airedale.com
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## Health and Safety

## IMPORTANT

The information contained in this manual is critical to the correct operation and maintenance of the unit and should be read by all persons responsible for the installation, commissioning and maintenance of this Airedale unit.

### Safety

The equipment has been designed and manufactured to meet international safety standards but, like any mechanical/ electrical equipment, care must be taken if you are to obtain the best results.

## CAUTION

When working with any air conditioning units ensure that the electrical isolator is switched off prior to servicing or repair work and that there is no power to any part of the equipment.

Also ensure that there are no other power feeds to the unit such as fire alarm circuits, BMS circuits etc.

Electrical installation commissioning and maintenance work on this equipment should be undertaken by competent and trained personnel in accordance with local relevant standards and codes of practice.

A full hazard data sheet in accordance with COSHH regulations is available should this be required.

#### **Personal Protective Equipment**

Airedale recommends that personal protective equipment is used whilst installing, maintaining and commissioning equipment.

#### **Manual Handling**

Some operations when servicing or maintaining the unit may require additional assistance with regard to manual handling. This requirement is down to the discretion of the engineer.

Remember do not perform a lift that exceeds your ability.

## **Environmental Considerations**

#### Units with supply water temperatures below +5°C

• Glycol is recommended when a supply water temperature of +5°C or below is required or when static water can be exposed to freezing temperatures.

#### Units subject to ambient temperatures lower than 0°C

- Glycol of an appropriate concentration <sup>(1)</sup> must be used within the system to ensure adequate freeze protection. Please ensure that the concentration is capable of protection to at least 3°C lower than ambient.
- Water / glycol solution should be constantly circulated through all waterside pipework and coils to avoid static water from freezing.
- Ensure that pumps are started and running even during shut down periods, when the ambient is within 3°C of the solution freeze point <sup>(1)</sup> (i.e. if the solution freezes at 0°C, the pump must be operating at 3°C ambient).
- Additional trace heating is provided for interconnecting pipework.

<sup>(1)</sup> Refer to your glycol supplier for details.

## **Environmental Policy**

It is our policy to:

- Take a proactive approach to resolve environmental issues and ensure compliance with regulatory requirements.
- · Train personnel in sound environmental practices.
- Pursue opportunities to conserve resources, prevent pollution and eliminate waste.
- Manufacture products in a responsible manner with minimum impact on the environment.
- · Reduce our use of chemicals and minimise their release to the environment.
- · Measure, control and verify environmental performance through internal and external audits.
- Continually improve our environmental performance.

#### **CE Directive**

Airedale certify that the equipment detailed in this manual conforms with the following EC Directives:

Electromagnetic Compatibility Directive (EMC) Machinery Directive (MD) Pressure Equipment Directive (PED) 2014/30/EU 89/392/EEC version 2006/42/EC 2014/68/EU

To comply with these directives appropriate national & harmonised standards have been applied. These are listed on the Declaration of Conformity, supplied with each product.

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## Topline

## Introduction

Innovating and beautiful design, seven different sizes, high control flexibility, easy maintenance: the new TopLine chilled water cassette is the result of an extended technical and design development aimed at achieving the highest level in terms of performance, silent operation and control possibilities.

The air diffuser has an highly attractive aesthetical appearance, very innovative, and is also able to offer the best air distribution performance thanks to long computer studies and laboratory tests.

The standard colour is RAL 9003, other colours available on request.

The 4 smaller sizes are designed to fit into 600x600 mm false ceiling standard modules. The 3 bigger sizes have a dimension of 800x800 mm which allows the best outcome in terms of quietness and of price/performance ratio for these high capacity models.

Every unit can be supplied with 1 battery (2 pipe system) and a optional electric heater or with 2 batteries (4 pipe system). Each model can have fresh air intake and a remote air diffuser can be connected to the unit.

The condensate pump is integral with the unit, is very quiet and has a maximum head of 650 mm.

In addition to temperature and speed standard controls, automatic speed selection is also available. More than one unit can be connected to a single control.

All the TopLine units can be supplied in MB version. This version allows a wide range of controls, including the infra-red remote control, which can manage one single unit or several units by using the Modbus RTU – RS 485 communication protocol.

The units can be connected to the most common automatic building management systems via option.



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## Main components

## Intake Grid And Distribution Of The Air

 Intake grids, frame and adjustable air distribution louvers on each side, made from ABS.

 RSNA version
 :
 white ABS, RAL 9003

 RSNB version
 :
 with intake grid, frame and louvers, choice of one colour only

 RSNC version
 :
 with intake grid and louvers, choice of one colour, plus white ABS frame RAL 9003

 RSND version
 :
 with louvers, choice of one colour, while the grid and frame are made from ABS, RAL 9003

 MD-600 version
 :
 metal diffuser painted in RAL 9003 white colour with 600x600 dimension to perfectly fit into the false ceiling standard modules without overlapping parts (800x800 model is not available).

## Casing

Is made from galvanized steel with internal thermal insulation with polyolefin (PO) foam (class M1) and external anticondensate lining.

## **Control Panel**

Control box with the electronic board and easily accessible terminal board.

#### **Fan Assembly**

The fan assembly, which is mounted on anti-vibrating supports, is extremely low noise.

The radial fan has been designed to optimise performance, using wing profile blades with a shape that reduces turbulence, increasing efficiency and reducing noise.

The single air inlet radial fan is connected to a 6 speed electric motor with single phase 230V/50Hz supply, class B insulation and integrated Klixon thermal contact for motor protection.

The units are supplied with 3 standard speeds connected and it is possible to change them on site if necessary.

## Coil

Made of copper tubes with bonded aluminium fins for maximum transfer contact.

The coil has 1, 2 or 3 rows for 2 pipe models and 2+1 rows for 4 pipe models (the heating row is on the inside part of the coil). For 4 pipe systems two versions are available: TL 0.4T, TL 1.4T, TL 2.4T, TL 3.4T, TL 4.4T, TL 5.4T, TL 6.4T supply an higher heating Capacity; TL 2.6T, TL 3.6T, TL 5.6T, TL 6.6T supply an higher cooling Capacity.

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

## **Condensate Collection Tray**

High density ABS polystyrene foam condensate tray, shaped in order to optimize the air diffusion, fire retardant rating B1 to DIN 4102.

## Air Filter

Synthetic washable filter, easily removable.

## **Condensate Pump**

Float switch activated centrifugal pump with 650 mm of maximum head, integral to the unit and wired to the control panel on the outside of the casing.

#### Valve Set

Two or three way valves for ON/OFF operation, with pipe mounting kit and thermostatic actuator.

## **Technical features**

2 pipe units. The following standard rating conditions are used:

COOLING									HE	ATIN	G											
Entering air temperatu	ure: +	27°	C d.b	).,	+	19°C	w.b.		Ent	tering	g air t	temp	eratu	re: -	⊦ 20°	С						
Water temperature:	+	7/12	2°C						Wa	iter te	empe	ratur	e:	-	⊦ 50°	С						
									wa	ter flo	ow ra	te as	for t	he co	ooling	q con	ditio	ns				
MODEL		Т	L 0.2	Т	Т	Ľ 1.2	Г	Т	L 2.2	Т	Т	L 3.2	Т	Т	L 4.2	T	Т	L 5.2	Т	Т	L 6.2	Г
Speed		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Air flow	m³/h	310	420	610	310	420	520	320	500	710	430	610	880	630	820	1140	710	970	1500	710	1280	1820
Cooling total capacity	kW	1,27	1,63	1,98	1,84	2,34	2,68	2,25	3,34	4,33	2,94	3,88	5,02	4,21	4,91	6,16	5,31	6,78	9,51	5,31	8,45	11,10
Cooling sensible capacity	kW	1,01	1,32	1,64	1,35	1,75	2,04	1,57	2,39	3,18	2,08	2,81	3,74	3,03	3,58	4,59	3,46	4,48	6,48	3,71	6,09	8,25
Heating	kW	1,62	2,12	2,64	2,22	2,90	3,35	2,56	3,93	5,23	3,43	4,63	6,17	5,12	6,03	7,77	5,61	7,34	10,71	6,13	10,30	14,00
Water flow	l/h	219	280	340	316	402	461	387	574	745	506	667	863	724	845	1060	913	1166	1636	913	1453	1909
ΔP Cooling	kPa	4,5	7,0	10,0	4,9	7,6	9,7	4,6	9,4	15,1	7,5	12,4	19,7	10,9	14,3	21,6	9,4	14,7	26,9	9,4	21,8	35,6
ΔP Heating	kPa	4,0	6,0	9,0	4,1	6,3	8,2	3,5	7,3	11,4	6,7	11,2	17,7	6,7	9,9	15,1	7,9	12,4	23,0	7,9	18,6	30,6
Sound power Lw	dB(A)	33	40	49	33	40	45	33	45	53	41	49	59	33	40	48	34	40	53	34	48	58
Sound pressure Lp (*)	dB(A)	24	31	40	24	31	36	24	36	44	32	40	50	24	31	39	25	31	44	25	39	49
Fan	W	25	32	57	25	32	44	25	44	68	32	57	90	33	48	77	42	63	120	42	95	170
rdii	Α	0,11	0,15	0,27	0,11	0,15	0,20	0,11	0,20	0,32	0,15	0,27	0,45	0,15	0,23	0,36	0,18	0,28	0,53	0,18	0,42	0,74
Water content	1		0,8			1,4			2,1			2,1			3,0			4,0			4,0	
Dimensions	mm					5	75 x 57	′5 x 27	5								820 :	x 820 x	303			
4 pipe units. The for	ollowi	ng s	tand	ard	ratin	g co	nditio	ons	are ι	used	:											
COOLING		0				•			HE	ATIN	IG											
Entering air temperatu	ure: +	· 27°	C d.b	)	+	19°C	w.b.		En	terino	a air t	temp	eratu	ire: -	⊦ 20°	С						
/ater temperature: + 7/12°C																						
MODEL	L TL 0.4T TL 1.4T TL 2.4T TL 2.6T TL 3.4T TL 3.6T																					
Speed		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3			
Air flow	m³/h	310	420	610	310	420	520	320	500	710	320	500	710	430	610	880	430	610	880			
Cooling total capacity	kW	1,51	1,96	2,33	1,85	2,36	2,70	1,85	2,65	3,34	2,09	3,06	3,93	2,36	3,02	3,81	2,72	3,53	4,53			
Cooling sensible capacity	kW	1,15	1,55	1,90	1,34	1,71	1,98	1,34	1,98	2,56	1,49	2,24	2,95	1,75	2,29	2,97	1,97	2,62	3,46			
Water flow	l/h	260	337	401	318	406	464	318	456	574	359	526	676	406	519	655	468	607	779			
ΔP Cooling	kPa	6,0	10,0	13,5	4,6	6,9	8,8	4,6	8,8	13,4	4,0	7,0	10,5	7,2	11,2	17,0	6,0	9,0	14,0			
Heating	kW	1,96	2,54	3,03	2,43	3,02	3,46	2,43	3,46	4,40	1,98	2,71	3,35	3,10	3,97	4,95	2,46	3,06	3,79			
Water flow	l/h	169	219	261	209	260	298	209	298	378	170	233	288	267	341	426	212	263	326			
ΔP Heating	kPa	6,5	10,5	14,5	5,7	8,5	10,8	5,7	10,8	16,6	3,6	6,0	9,0	8,8	13,8	20,5	5,0	7,8	11,0			
Sound power Lw	dB(A)	33	40	49	33	40	45	33	45	53	33	45	53	41	49	59	41	49	59			
Sound pressure Lp (*)	dB(A)	24	31	40	24	31	36	24	36	44	24	36	44	32	40	50	32	40	50			
Fan	W	25	32	57	25	32	44	25	44	68	25	44	68	32	57	90	32	57	90			
	A	0,11	0,15	0,27	0,11	0,15	0,20	0,11	0,20	0,32	0,11	0,20	0,32	0,15	0,27	0,45	0,15	0,27	0,45			
Cooling water content			1,0			1,4			1,4			1,7			1,4			1,7				
Heating water content			0,6			0,7			0,7			0,5			0,7			0,5				
Dimensions	mm								5	75 x 5	75 x 27	'5										
MODEL		Т	144	т	Т	154	т	Т	156	т	Т	164	т	Т	166	т						
Sneed		1	2 1.1	3	1	2 2	3	1	2	3	1	2 0.1	3	1	2 0.0	3						
Air flow	m <sup>3</sup> /h	630	820	1140	710	970	1500	710	970	1500	710	1280	1820	710	1280	1820						
Cooling total capacity	kW	4 1 4	5.03	6 34	4 52	5.66	7 71	4 99	6 33	8 77	4 52	6.93	8.89	4 99	7.84	10.20						
Cooling sensible capacity	kW	2.96	3.65	4.69	3.25	4.15	5.83	3 5 3	4 55	6.49	3 25	5 18	6.84	3 5 3	5 73	7.68						
Water flow	l/h	712	865	1090	777	974	1326	858	1089	1508	777	1192	1529	858	1348	1754						
ΔP Cooling	kPa	8,8	12.5	18,9	10,3	15,4	26.9	9.0	14.0	25.0	10.3	22.1	34.7	9.0	20.0	32.0						
Heating	kW	5.91	7.19	9.10	6.45	8.10	11.00	5.23	6.42	8.56	6.45	9.98	12.70	5.23	7.74	9.80						
Water flow	l/h	508	618	783	555	697	946	450	552	736	555	858	1092	450	666	843						
ΔP Heating	kPa	9,8	14.0	21,4	11.5	17,4	29,9	6,5	9.2	15.3	11.5	25.3	38,8	6.5	13.0	19.5						
Sound power Lw	dB(A)	33	40	48	34	40	53	34	40	53	34	48	58	34	48	58						
Sound pressure Lp (*)	dB(A)	24	31	39	25	31	44	25	31	44	25	39	49	25	39	49						
	W	33	48	77	42	63	120	42	63	120	42	95	170	42	95	170						
Fan	A	0,15	0,23	0,36	0,18	0,28	0,53	0,18	0,28	0,53	0,18	0,42	0,74	0,18	0,42	0,74						
Cooling water content			3,0			3,0			3,6			3,0			3,6							
Heating water content I 1,4 1,4 1,1 1,4 1,1 1,4 1,1																						
Dimensions	mm							820	x 820 >	303												
Condensate pump ab	sorpti	on: 1	0 W																			
(*) – Tho	courre	1 nro	courr			0.0		low	or the	n th		ind n	0.000	lovo		dan	oly to	the	rovor	horo	nt fic	ld of

(\*) = The sound pressure levels are 9 dB(A) lower than the sound power levels and apply to the reverberant field of a 100 m<sup>3</sup> room and a reverberation time of 0.5 sec.

## Capacity of 2 pipe units with standard cooling battery

## Cooling capacity of 1 battery units (2 pipe installation)

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

		Δir	EWT	5 - LWT	10°C	EWT	7 - LWT	12°C	EWT	9 - LWT	14°C	EWT	12 - LW1	17°C
Model	Speed	flow	Water	Total	Sensible									
			flow	capacity	capacity									
		m³/h	l/h	kW	kW									
	High	610	421	2,45	1,83	340	1,98	1,64	254	1,47	1,45	199	1,16	1,16
TL 0.2T	Med	420	346	2,01	1,48	280	1,63	1,32	210	1,22	1,16	160	0,93	0,93
	Low	310	269	1,57	1,14	219	1,27	1,01	165	0,96	0,89	123	0,71	0,71
	High	520	554	3,22	2,22	462	2,68	2,04	362	2,10	1,75	252	1,47	1,47
TL 1.2T	Med	420	482	2,80	1,91	403	2,34	1,75	317	1,84	1,50	220	1,28	1,28
	Low	310	417	2,42	1,64	317	1,84	1,35	276	1,61	1,29	188	1,09	1,09
	High	710	926	5,38	3,64	745	4,33	3,18	617	3,59	2,87	420	2,44	2,44
TL 2.2T	Med	500	715	4,15	2,77	575	3,34	2,39	483	2,81	2,18	319	1,86	1,86
	Low	320	508	2,95	1,94	387	2,25	1,57	349	2,03	1,53	225	1,31	1,31
	High	880	1049	6,10	4,17	863	5,02	3,74	694	4,03	3,29	479	2,79	2,79
TL 3.2T	Med	610	835	4,85	3,26	667	3,88	2,81	559	3,25	2,57	376	2,19	2,19
	Low	430	633	3,68	2,44	506	2,94	2,08	430	2,50	1,92	283	1,65	1,65
	High	1140	1264	7,35	5,00	1060	6,16	4,59	840	4,88	3,95	573	3,33	3,33
TL 4.2T	Med	820	1003	5,83	3,92	845	4,91	3,58	674	3,92	3,09	453	2,63	2,63
	Low	630	858	4,99	3,32	722	4,21	3,03	580	3,37	2,62	384	2,23	2,23
	High	1500	1943	11,30	7,59	1635	9,51	6,48	1301	7,57	5,99	880	5,12	5,12
TL 5.2T	Med	970	1374	7,99	5,27	1166	6,78	4,48	939	5,46	4,15	612	3,56	3,56
	Low	710	1070	6,22	4,06	913	5,31	3,46	740	4,30	3,20	434	2,52	2,52
	High	1820	2277	13,24	9,01	1909	11,10	8,25	1511	8,78	7,11	1044	6,07	6,07
TL 6.2T	Med	1280	1722	10,01	6,68	1454	8,45	6,09	1162	6,75	5,27	775	4,51	4,51
	Low	710	1070	6,22	4,06	913	5,31	3,71	740	4,30	3,20	434	2,52	2,52

### Heating capacity of 1 battery units (2 pipe installation)

Entering air temperature: +20°C

		Air	EWT 45 -	LWT 40°C	EWT 50 -	LWT 40°C	EWT 60 -	LWT 50°C	EWT 70 -	LWT 60°C	EWT 80 -	LWT 70°C
Model	Speed	flow	Water flow	Capacity								
		m³/h	l/h	kW								
	High	610	386	2,24	203	2,37	298	3,46	393	4,56	488	5,67
TL0.2T	Med	420	310	1,80	164	1,91	239	2,78	315	3,66	391	4,55
	Low	310	237	1,38	126	1,46	183	2,13	240	2,80	298	3,47
	High	520	482	2,80	266	3,10	377	4,39	488	5,68	599	6,97
TL 1.2T	Med	420	417	2,42	232	2,69	327	3,80	422	4,91	513	5,96
	Low	310	356	2,07	198	2,31	279	3,25	360	4,19	441	5,12
	High	710	787	4,57	440	5,12	619	7,19	795	9,25	972	11,30
TL 2.2T	Med	500	593	3,45	334	3,89	467	5,43	598	6,96	730	8,48
	Low	320	412	2,39	235	2,73	326	3,79	415	4,83	505	5,87
	High	880	903	5,25	504	5,86	709	8,25	914	10,63	1118	13,00
TL 3.2T	Med	610	702	4,08	394	4,58	552	6,42	709	8,25	866	10,07
	Low	430	520	3,02	294	3,42	410	4,77	524	6,10	639	7,43
	High	1140	1118	6,50	624	7,26	878	10,21	1130	13,14	1383	16,08
TL 4.2T	Med	820	865	5,03	486	5,65	681	7,92	874	10,16	1067	12,41
	Low	630	734	4,27	415	4,82	578	6,72	741	8,61	903	10,50
	High	1500	1683	9,78	951	11,06	1327	15,43	1699	19,76	2071	24,08
TL 5.2T	Med	970	1146	6,67	655	7,62	906	10,54	1155	13,43	1403	16,32
	Low	710	876	5,09	505	5,87	694	8,07	882	10,25	1068	12,42
	High	1820	2015	11,72	1132	13,17	1586	18,45	2037	23,68	2486	28,91
TL 6.2T	Med	1280	1471	8,55	834	9,70	1161	13,50	1484	17,26	1807	21,01
	Low	710	876	5,09	505	5,87	694	8,07	882	10,25	1068	12,42

### Capacity correction factors for different working conditions.

Multiply the factors by the capacity figures in the 7-12°C table above.

	Total	capacity				Sensib	le capaci	ty		Note:
Water (°C)	Air (°C)	25-18	26-18.5	28-20	Water (°C)	Air (°C)	25-18	26-18.5	28-20	the correction
7/12 °C	K	0,82	0,89	1,11	7/12 °C	K	0,9	0,94	1,06	factors are indicative
10/15 °C	K	0,56	0,63	0,82	10/15 °C	K	0,72	0,78	0,9	as they are average
14/18 °C	K	0,35	0,41	0,52	14/18 °C	K	0,5	0,58	0,72	values.

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## Capacity of 4 pipe units with standard cooling battery

## Cooling capacity of 2 battery units (4 pipe installation)

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

		Δir	EWT	5 - LWT	10°C	EWT	7 - LWT	12°C	EWT	9 - LWT	14°C	EWT	12 - LW1	17°C
Model	Speed	flow	Water	Total	Sensible									
			TIOW	capacity	capacity									
		m³/h	l/h	kW	kW									
	High	610	490	2,85	2,12	401	2,33	1,90	307	1,78	1,69	239	1,39	1,39
TL 0.4T	Med	420	410	2,38	1,73	337	1,96	1,55	260	1,51	1,37	196	1,14	1,14
	Low	310	314	1,82	1,29	260	1,51	1,15	201	1,17	1,02	148	0,86	0,86
	High	520	569	3,31	2,26	465	2,70	1,98	374	2,18	1,79	260	1,51	1,51
TL 1.4T	Med	420	465	2,71	1,83	405	2,36	1,70	309	1,80	1,44	210	1,22	1,22
	Low	310	398	2,31	1,55	318	1,85	1,34	267	1,55	1,22	177	1,03	1,03
	High	710	718	4,18	2,91	574	3,34	2,56	467	2,72	2,30	330	1,92	1,92
TL 2.4T	Med	500	569	3,31	2,26	455	2,65	1,98	374	2,18	1,79	260	1,51	1,51
	Low	320	398	2,31	1,55	318	1,85	1,34	267	1,55	1,22	177	1,03	1,03
	High	880	791	4,60	3,23	656	3,81	2,97	512	2,98	2,56	366	2,13	2,13
TL 3.4T	Med	610	632	3,67	2,53	520	3,02	2,29	413	2,40	2,00	288	1,67	1,67
	Low	430	510	2,97	2,01	405	2,36	1,75	337	1,96	1,59	231	1,35	1,35
	High	1140	1299	7,55	5,12	1090	6,34	4,69	864	5,02	4,04	586	3,41	3,41
TL 4.4T	Med	820	1027	5,97	4,00	866	5,03	3,65	691	4,02	3,15	462	2,68	2,68
	Low	630	842	4,89	3,24	713	4,14	2,96	572	3,33	2,56	374	2,17	2,17
	High	1500	1588	9,23	6,35	1327	7,71	5,83	1046	6,08	5,02	7,26	4,22	4,22
TL 5.4T	Med	970	1158	6,73	4,53	974	5,66	4,15	775	4,50	3,57	524	3,05	3,05
	Low	710	920	5,35	3,56	778	4,52	3,25	623	3,62	2,81	411	2,39	2,39
	High	1820	1836	10,67	7,43	1529	8,89	6,84	1199	6,97	5,98	849	4,94	4,94
TL 6.4T	Med	1280	1423	8,27	5,64	1191	6,93	5,18	942	5,48	4,46	646	3,75	3,75
	Low	710	920	5,35	3,56	778	4,52	3,25	623	3,62	2,81	411	2,39	2,39

## Heating capacity of 2 battery units (4 pipe installation)

Entering air temperature: +20°C

		Air	EWT 45 -	LWT 40°C	EWT 50 -	LWT 40°C	EWT 60 -	LWT 50°C	EWT 70 -	LWT 60°C	EWT 80 -	LWT 70°C
Model	Speed	flow	Water flow	Capacity								
		m³/h	l/h	kW								
	High	610	256	1,49	134	1,56	197	2,29	261	3,03	325	3,78
TL 0.4T	Med	420	215	1,25	113	1,31	166	1,93	219	2,54	272	3,17
	Low	310	166	0,96	87	1,01	128	1,49	169	1,96	210	2,44
	High	520	283	1,65	149	1,73	218	2,54	298	3,46	358	4,17
TL 1.4T	Med	420	247	1,44	130	1,51	191	2,22	260	3,02	312	3,63
	Low	310	196	1,14	103	1,20	151	1,76	209	2,43	247	2,87
	High	710	351	2,04	184	2,14	270	3,14	378	4,40	444	5,17
TL 2.4T	Med	500	277	1,61	146	1,69	214	2,48	298	3,46	350	4,07
	Low	320	196	1,14	103	1,20	151	1,76	209	2,43	247	2,87
	High	880	402	2,34	211	2,45	310	3,60	426	4,95	510	5,93
TL 3.4T	Med	610	317	1,84	166	1,94	244	2,84	341	3,97	401	4,67
	Low	430	247	1,44	130	1,51	191	2,22	267	3,10	312	3,63
	High	1140	771	4,48	410	4,76	596	6,93	783	9,10	970	11,28
TL 4.4T	Med	820	609	3,54	324	3,77	471	5,48	618	7,19	766	8,90
	Low	630	501	2,91	267	3,11	388	4,51	508	5,91	629	7,31
	High	1500	929	5,40	493	5,73	718	8,34	946	11,00	1170	13,60
TL 5.4T	Med	970	686	3,99	365	4,25	531	6,17	697	8,10	864	10,04
	Low	710	547	3,18	291	3,39	423	4,92	555	6,45	686	7,98
	High	1820	1074	6,24	569	6,61	829	9,64	1092	12,70	1353	15,74
TL 6.4T	Med	1280	845	4,91	449	5,22	653	7,60	858	9,98	1064	12,37
	Low	710	547	3,18	291	3,39	423	4,92	555	6,45	686	7,98

## Capacity correction factors for different working conditions.

Multiply the factors by the Capacity figures in the 7-12°C table above.

Multiply the	factors by the	ne Capac	ity figures	in the 7-	-1	2°C table ab	ove.				Note:
	Total	capacity			]		Sensibl	e capaci	ty		the correction
Water (°C)	Air (°C)	25-18	26-18.5	28-20		Water (°C)	Air (°C)	25-18	26-18.5	28-20	factors are indicative,
7/12 ℃	K	0,82	0,89	1,11		7/12 °C	K	0,9	0,94	1,06	as they are average
10/15 °C	K	0,56	0,63	0,82		10/15 °C	K	0,72	0,78	0,9	values.
14/18 °C	K	0,35	0,41	0,52	1	14/18 °C	K	0,5	0,58	0,72	

## Capacity of 4 pipe units with enhanced cooling coil

## Cooling capacity of 2 battery units (4 pipe installation)

		Δir	EWT	5 - LWT	10°C	EWT	7 - LWT	12°C	EWT	9 - LWT	14°C	EWT	12 - LW1	⊺17°C
Model	Speed	flow	Water	Total	Sensible									
			flow	capacity	capacity									
		m³/h	l/h	kW	kW									
	High	710	812	4,72	3,29	676	3,93	2,95	528	3,07	2,60	378	2,20	2,20
TL 2.6T	Med	500	629	3,66	2,51	526	3,06	2,24	415	2,41	1,97	288	1,67	1,67
	Low	320	425	2,47	1,66	359	2,09	1,49	287	1,67	1,31	192	1,12	1,12
	High	880	940	5,46	3,86	779	4,53	3,46	606	3,52	3,05	442	2,57	2,57
TL 3.6T	Med	610	729	4,24	2,93	607	3,53	2,62	477	2,77	2,31	337	1,96	1,96
	Low	430	557	3,24	2,21	468	2,72	1,97	370	2,15	1,73	256	1,49	1,49
	High	1500	1804	10,49	7,25	1508	8,77	6,49	1189	6,91	5,72	836	4,86	4,86
TL 5.6T	Med	970	1291	7,50	5,08	1089	6,33	4,55	867	5,04	4,00	587	3,41	3,41
	Low	710	1012	5,89	3,94	858	4,99	3,53	689	4,00	3,10	459	2,67	2,67
	High	1820	2105	12,24	8,57	1754	10,20	7,68	1375	7,99	6,77	987	5,74	5,74
TL 6.6T	Med	1280	1607	9,34	6,41	1348	7,84	5,73	1066	6,20	5,05	739	4,30	4,30
	Low	710	1012	5,89	3,94	858	4,99	3,53	689	4,00	3,10	459	2,67	2,67

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

### Heating Capacity of 2 battery units (4 pipe installation)

Entering air temperature: +20°C

		Air	EWT 45 -	LWT 40°C	EWT 50 -	LWT 40°C	EWT 60 -	LWT 50°C	EWT 70 -	LWT 60°C	EWT 80 -	LWT 70°C
Model	Speed	flow	Water flow	Capacity								
		m³/h	l/h	kW								
	High	710	279	1,62	139	1,61	213	2,48	288	3,35	363	4,22
TL 2.6T	Med	500	226	1,32	113	1,32	173	2,01	233	2,71	294	3,42
	Low	320	165	0,96	83	0,97	127	1,47	170	1,98	214	2,49
	High	880	315	1,83	156	1,82	241	2,80	326	3,79	411	4,78
TL 3.6T	Med	610	255	1,48	127	1,48	195	2,27	263	3,06	332	3,86
	Low	430	205	1,19	103	1,20	157	1,83	212	2,46	266	3,10
	High	1500	720	4,18	493	4,33	554	6,44	736	8,56	919	10,69
TL 5.6T	Med	970	541	3,14	365	3,27	416	4,84	552	6,42	689	8,01
	Low	710	441	2,56	291	2,67	340	3,95	450	5,23	561	6,52
	High	1820	824	4,79	569	6,61	633	7,36	843	9,80	1053	12,24
TL 6.6T	Med	1280	651	3,79	449	5,22	501	5,83	666	7,74	831	9,66
	Low	710	441	2,56	291	3,39	340	3,95	450	5,23	561	6,52

## Capacity correction factors for different working conditions.

Multiply the factors by the Capacity figures in the 7-12°C table above.

	Total	capacity			Sensible capacity							
Water (°C)	Air (°C)	25-18	26-18.5	28-20	Water (°C)	Air (°C)	25-18	26-18.5	28-20			
7/12 °C	K	0,82	0,89	1,11	7/12 °C	К	0,9	0,94	1,06			
10/15 °C	К	0,56	0,63	0,82	10/15 °C	К	0,72	0,78	0,9			
14/18 °C	К	0,35	0,41	0,52	14/18 °C	К	0,5	0,58	0,72			

Note: the correction factors are ndicative, as they are average values.

## Water side pressure drop

## 2 pipe installation



4 pipe installation

## Pressure drop



Pressure drop

for mean water temperature of 10°C,

for different temperatures multiply the pressure drop figure by the K correction factors in the table.



Pressure drop for mean water temperature of 10°C, for different temperatures multiply the pressure drop figure by the K correction factors in the table.

°C	20	30	40	50	60	70	80
Κ	0,94	0,90	0,86	0,82	0,78	0,74	0,70



Pressure drop

for mean water temperature of 65°C,

for different temperatures multiply the pressure drop figure by the K correction factors in the table.



#### Working conditions

Water flow	MAX. working pressure	MIN. entering water temperature: + 5°C
	8 bars	MAX. entering water temperature: + 80°C
Air flow	Suitable relative humidity	MIN. entering air temperature: 6°C
	15 - 75%	MAX. entering air temperature: 40°C
Supply	Single phase 230V 50Hz	
Installation	MAX. height: See table on page 12	

## Dimensions and weights

TL 0.2T-0.4T / TL 1.2T-1.4T / TL 2.2T-2.4T-2.6T / TL 3.2T-3.4T-3.6T (Version 600 x 600)



	UN	VIT	DIFF	USER	Packed unit					
Madal	Weights	Weights	Weights	Weights	Dimensions					
woder	packed unit	unpacked unit	packed unit	unpacked unit	Α	В	С	D		
	kg	kg	kg	kg	mm					
TL 0.2T/1.2T	28	22								
TL 0.4T/1.4T			e	2	700	250	750	150		
TL 2.2T/2.4T/2.6T	30	24	0	3	790	350	750	150		
TL 3.2T/3.4T/3.6T										

## **Dimensions and weights**

TL 4.2T-4.4T/TL 5.2T-5.4T-5.6T/TL 6.2T-6.4T-6.6T (Version 800 x 800)



PACKED UNIT



DIFFUSER



	UI	NIT	DIFF	USER	Packed unit				
Madal	Weights	Weights	Weights	Weights	Dimensions				
woder	packed unit	unpacked unit	packed unit	unpacked unit	Α	В	С	D	
	kg kg		kg	kg	mm				
TL 4.2T	44	36							
TL 4.4T			10	6	1050	100	1000	200	
TL 5.2T/5.4T/5.6T	47	39	10	Ö	1050	400	1000	200	
TL 6.2T/6.4T/6.6T									

## Air throw

The air throw indicated in the tables must only be considered the maximum value, as it may change significantly in relation to the dimensions of the room in which the appliance is installed and the positioning of the furniture in the room.

The useful throw L refers to the distance between the unit and the point where the air speed is 0.2 m/sec; if the louver has a gradient of 30° (recommended in cooling mode), the so-called "Coanda" effect will occur, illustrated in the first figure, while at a gradient of 45° (recommended in heating mode), there will be a downwards throw, as illustrated in the second figure.

## With adjustable

air diffusion louvers at 30°



Model			TL 0 - 1		TL 2		TL 3		TL 4		TL 5		<b>TL 6</b>							
Speed			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Air throw	L	m	3,0	3,5	3,8	3,0	3,8	4,5	3,5	4,2	5,0	3,2	3,7	4,3	3,4	4,0	5,0	3,4	4,6	5,5

## With adjustable

air diffusion louvers at 45°



Model			TL 0 - 1		TL 2		TL 3		<b>TL 4</b>		TL 5			<b>TL 6</b>						
Speed			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Air throw	L	m	3,3	3,9	4,2	3,3	4,2	4,8	3,9	4,5	5,2	3,5	4,1	4,8	3,8	4,6	5,4	3,8	5,1	5,8
Height	Η	m	2,2	2,6	2,8	2,2	2,8	3,2	2,6	3,0	3,4	2,2	2,6	3,0	2,4	2,8	3,4	2,4	3,1	3,6
Distance	В	m	2,5	2,9	3,1	2,5	3,1	3,6	2,9	3,4	3,9	2,7	3,2	3,8	3,0	3,6	4,2	3,0	4,0	4,6

## NOTE:

On heating it must be payed attention to rooms where the floor temperature is particularly low (for example less than 5°C). In this situation the floor can cool the lower layer of air to a level that stop the uniform diffusion of the hot air coming from the unit, decreasing the throw figures shown in the table.

## Fresh air supply - Fresh air connection

The cassette is fitted with inlets for fresh air to be mixed with return air inside the unit (Fig. 3).

The fresh air flow is limited to 20% of the total fan coil air flow at medium speed and 100 m3/h for each treated air inlet.

The units feature fresh air inlets on three corners (no inlets on the fourth corner because of the condensate pump inside the unit).

The fresh air inlets are designed for the insertion of standard 110 x 55 mm rectangular ducts.



The air duct is connected quickly and easily. After removing the blank and the insulation inside the unit, the mounting plate is rolled back and the air duct with its V-shaped section

must be pushed into the unit (see Figures below). The duct is then fixed to the mounting plate. Note: the fresh air must be filtered.



Accessory "Fresh air connection" - Identification CAP - Code 6792626 (see page 18) AIR INTAKE

## Air distribution - Air distribution connection



# **Chilled Water Cassette**

# Comfort

Accessories			
Fresh air conne	ection		
See page 17.			Q 105
			0 105
Identification	Code	_	
CAP	6792626		
	•		
Air distribution cor	nnection		
See page 17			
Identification	Code	The diameter of the fitting is 150	
CDA 600	9511965	mm for TL 0 - 1 -	
CDA 800	9511957	2 -3 and 180 mm	
		tor 1L 4 - 5 - 6.	

## Fresh air kit

This is used to introduce fresh air into the environment directly through the diffuser. The kit includes a flow separator to be fitted inside the cassette, and a circular fitting for connection to the flexible system ducting. The flow of air is sent directly to just one of the outlet louvers, without passing through the coil. The air flow of fresh air introduced into the environment depend on the inlet static pressure.

Model	TL 0-1-2-3	TL 4-5-6
Identification	PRT 600	PRT 800
Code	9079230	9079231

Correlation between flow-rate / static pressure

TL 0-	-1-2-3	TL 4	1-5-6
m³/h	Pa	m³/h	Pa
80	3	160	3
120	8	200	8
160	15	300	15
200	25	400	25
240	36	500	36

The diameter of the fitting is 150 mm for TL 0 - 1 - 2 - 3 and 180 mm for TL 4 - 5 - 6.



## Accessories

# ON-OFF valves with thermoelectric actuator Valve with Micrometric Lockshield Valve



## Valve with Simplified Kit



## Technical data:

Rated pressure:	16 bar
Max. ambient temperature:	50 °C
Max. water flow temperature:	110 °C
Power:	230 V - 50/60 Hz
Rating:	3 VA
Protection:	IP 43
Travel time:	approx. 3 min.
Max. glycol content of water:	50%

## Valves characteristics

Batterv		2	way v	alves	3 way valves				
type	Model	K <sub>vs</sub> m³/h	∆p <sub>max</sub> kPa *	Valve ** connection	K <sub>vs</sub> m³/h	∆p <sub>max</sub> kPa *	Valve ** connection		
Main	0.2/1.2/2.2/3.2	28	50	3///"	25	50	3///"		
	0.4/1.4/2.4/2.6/3.4/3.6	2,0	00	5/4	2,5	50	0,4		
Iviani	4.2/5.2/6.2	52	60	1"	15	50	1"		
	4.4/5.4/5.6/6.4/6.6	5,2	00		ч,5	50			
Auxiliary	0.4/1.4/2.4/2.6/3.4/3.6	28	50	3///"	25	50	3///"		
	4.4/5.4/5.6/6.4/6.6	2,0	50	5/4	2,5	50	3/4		

## Valves pressure drop



* maximum pressure difference for valve to close	** external thread, flat sea
Note: 3 way valves with simplified kit and 1" connection	on have conical seal.

Valve set, 2 or 3 ways, ON-OFF, with thermoelectric actuator. The set includes connection pipes.

Note: The main battery lockshield valve connection is 1/2" female (Kvs 2) for TL0 - TL1 - TL2 - TL3 sizes and 3/4" female (Kvs 3,5) for TL4 - TL5 - TL6 sizes, the auxiliary battery valve connection is 1/2" female (Kvs 2).

Note: The maximum pressure drop accross the fully open valve should not exceed 25 kPa for cooling operation and 15 kPa for heating operation.

## Electric Heat TL-E

The Cassette 2 pipe models are available with electric heater that is controlled in place of the heating battery valve. The electric heat is controlled in place of the hot water valve and not as integration to it.

The heater is hermetically sealed and supplied inside the battery pipes and therefore can be only factory mounted. The electric heat of the units are for <u>single phase 230V</u> supply.

The Cassette includes 2 safety thermostats which intervene in case of internal over- heating, opening an auxiliary power relay (included in the shunt box) which stops the power supply to the heaters.

Model	TL 1.2T-E	TL 2.2T-E / TL 3.2T-E	TL 4.2T-E / TL 5.2T-E / TL 6.2T-E
Emission	1500 Watt	2500 Watt	3000 Watt
Supply	230V ~	230V ~	230V ~
Number and Dia. of connecting wires	3 x 1,5 mm <sup>2</sup>	3 x 2,5 mm <sup>2</sup>	3 x 2,5 mm <sup>2</sup>

Note: the cooling emission of the units

is 95% of the emission in the tables of page 9

## Basic Unit Electric diagram



## **Basic Unit Wall Mounted Controls**



If using the TopLine Cassette fan coils with electronic controllers, the voltage values at the autotransformer terminals must be kept in consideration (transformer return voltages).

These values may reach 500 Vac.





- ON-OFF switch.
- · Manual 3 speed switch.
- Manual Summer/Winter switch.
- · Electronic room thermostat for fan control (ON-OFF).
- · Electronic room thermostat for valve control (ON-OFF) (the fan keeps working).
- It allows to control the low temperature cut-out thermostat (TMM).
  It allows to control the chilled water valve (ON-OFF) and the electric heater in the SK-E version.

## Controls for TL-MB versions

All the TopLine units can be supplied in MB version. This version includes a wide range of controls, including the infra-red remote control, which allows managing one single unit or several units by using the Modbus RTU - RS 485 communication protocol.

Units can be managed according to the Master/Slave logic (up to 20 units) or by supervisory components.

The system consists in a MB board (mounted on models TL–MB and TL–ECM–MB) and a series of controls, such as the T-MB wall control, the RT03 infra-red remote control, the PSM-DI multifunction control and the NET supervisory program.



T-MB wall control



RT03 infra-red remote control

## 2 Pipe Electric Diagram



## Legend

- M = Fan
- MB = Infra-red electronic board
- AT = Autotransformer
- C1 = Capacitor
- EH = Electrical heater
- E = Hot and cold water valve (2-pipe system)
- E1 = Hot water valve (4-pipe system)
- E2 = Cold water valve (4-pipe system)
- T1 = Air probe
- T2 = CHANGE-OVER
- T3 = Low temperature cut-out thermostat
- CONNECTIONS: GNYE = Yellow/Green RD = Red = Low OG = Orange = Medium BK = Black = High BN = Brown BU = Dark blue WH = White CONNECTION DIAGRAMS
- 1) Connection diagram of a 2-pipe system
- 2) Connection diagram of a 4-pipe system
- 3) Connection diagram with electric resistance coil

## 2 Pipe + Electric Heat Electric Diagram



## Legend

M = Fan MB = Infra-red electronic board AT = Autotransformer C1 = Capacitor EH = Electrical heater E = Hot and cold water valve (2-pipe system) E1 = Hot water valve (4-pipe system) E2 = Cold water valve (4-pipe system) T1 = Air probe T2 = CHANGE-OVER T3 = Low temperature cut-out thermostat CONNECTIONS: GNYE = Yellow/Green RD = Red = Low

- OG = Orange = Medium
- BK = Black = High
- BN = Brown
- BU = Dark blue
- WH = White
- CONNECTION DIAGRAMS
- 1) Connection diagram of a 2-pipe system
- 2) Connection diagram of a 4-pipe system
- 3) Connection diagram with electric resistance coil

## 4 Pipe Electric Diagram



## Legend

M = Fan

- MB = Infra-red electronic board
- AT = Autotransformer
- C1 = Capacitor
- EH = Electrical heater
- E = Hot and cold water valve (2-pipe system)
- E1 = Hot water valve (4-pipe system)
- E2 = Cold water valve (4-pipe system)
- T1 = Air probe
- T2 = CHANGE-OVER
- T3 = Low temperature cut-out thermostat

CONNECTIONS: GNYE = Yellow/Green RD = Red = Low OG = Orange = Medium BK = Black = High BN = Brown BU = Dark blue WH = White CONNECTION DIAGRAMS

- 1) Connection diagram of a 2-pipe system
- 2) Connection diagram of a 4-pipe system
- 3) Connection diagram with electric resistance coil

## MB electronic board

The MB electronic board, mounted as per standard on the TL–MB and TL–ECM–MB versions, is set to carry out different functions and adjustment modes, in order to meet the installation requirements.

These modes are selected by setting the configuration dip switches on the board.

- 2/4 pipe system.
- Fan ON/OFF thermostatic control.
- Valve ON/OFF thermostatic control and continuous ventilation.
- Valve and simultaneous ventilation ON/OFF thermostatic control.
- Fan operation control depending on the coil temperature (cut-out T3 probe fitted), which can be activated only in heating mode or heating and cooling mode.
- Automatic switch of the operating mode by means of T2 water probe (optional) applied on the 2 pipe system.
- Seasonal switch by means of remote contact.
- ON/OFF of the fan coil by means of the remote contact (window or clock contact).
- Electric heater control.

By activating the cut-out T3 probe function, the fan is stopped in winter when the coil temperature is lower than 32°C and started when the temperature reaches 36°C. In summer mode, the fan stops when the temperature inside the coil exceeds 22°C and starts when it drops below 18°C.

The following connections are located on the power board:

- Receiver for infra-red remote control.
- T-MB wall control.
- RS 485 serial connection to manage several fan coils in Master/Slave configuration or to create a supervisory network.



## T-MB wall control

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Description	Identification	Code
Wall control (to be used with TL–MB and TL–ECM–MB version only)	T-MB	9379256

Wall control with display that allows controlling one or more units in Master/Slave mode. The control is equipped with internal sensor to detect the room temperature, which can be defined as a priority compared to the return air sensor on the fan coil.

The T-MB control features the following functions:

- Switch the appliance ON and OFF.
- Temperature set.
- Modify the set point (when used as a +/- 3° variation of the set point configured from NET supervisory program or PSM-DI).
- Set the fan speed (low, medium, high or autofan).
- Set the operation mode (fan only, cooling, heating; auto for 4 pipe systems with mode selection depending on the air temperature).
- Time setting.
- Weekly ON/OFF program.
- Display and change of the fan coil operation parameters.



Dimensions: 110x72x25 mm

## **RT03 infra-red remote control**

Description	Identification	Code
RT03 infra-red remote control with receiver supplied with separate packaging (to be used with TL–MB and TL–ECM–MB version)	RCS-RT03	9436569
Receiver for RT03 infra-red remote control supplied with separate packaging (to be used with TL–MB and TL–ECM–MB version)	RCS	7763717
Receiver for RT03 infra-red remote control and MD-600 metal diffuser supplied with separate packaging (to be used with TL–MB and TL–ECM–MB version only)	RS	9512021
RT03 infra-red remote control supplied with separate packaging (to be used with TL–MB and TL–ECM–MB version)	RT03	6854368

The infra-red remote control allows setting by a remote position the fan coil operation parameters.

The RT03 infra-red remote control features the following functions:

- Switch the appliance ON and OFF.
- Temperature set.
- Set the fan speed (low, medium, high or autofan).
- Set the operation mode (fan only, cooling, heating; auto for 4 pipe systems with mode selection depending on the air temperature).
- Time setting.

Installation example with infra-red remote control

24 hours ON/OFF program.



Identification	Code
RT03	6854368



A group of TopLine MB can be connected via a serial link and can consequently be managed at the same time by just one T-MB wall control or RT03 infra-red remote control. Using the special jumper present on the MB board, one unit must be configured as the master, and all the others as slaves. It is clear that the remote control must be pointed at the receiver on the master unit. To avoid problems, it is recommended to install and connect the receiver only on the master unit.



### T2 accessory for units with MB electronic board



The T2 sensor can be combined with MB boards to be placed on the water supply pipe upstream 3 way valves (not to be used with 2 way valve).

The T2 sensor must be used as described below:

- Change-Over for 2-pipe system for the automatic switch of the operating mode. If water temperature is lower than 20°C, cooling mode is set; on the other hand, if water temperature exceeds 30°C, heating mode is set.

## Topline MCT

## Introduction

The MCT version has been designed for all environments where false ceilings are not featured or cannot be constructed. The cover cabinet fits perfectly to the air intake and outlet diffuser, maintaining the appealing esign that defines the TopLine series. The water fittings can be turned to point upwards.

The MCT series includes 7 models, with an installation height of up to 5 m, thanks to the highly flexible adjustment of the air distribution louvers.

All the technical specifications described on the previous pages remain the same, while keeping in mind that:

- the MCT series features one coil only (two pipe systems)
- there is no possibility of fresh air intake
- there is no possibility of additional electric heater

The MCT version features a special casing delivered in separate packaging; this must only be fitted after having installed the TopLine unit and completed the water and electrical connections.



## **Dimensions and Weights**

TL 0.2-MCT / TL 1.2-MCT / TL 2.2-MCT / TL 3.2-MCT Casing code: 9511981 Casing weight: 5 kg (7,5 kg with the packaging)



TL 4.2-MCT / TL 5.2-MCT / TL 6.2-MCT Casing code: 9511973 Casing weight: 10,5 kg (13,5 kg with the packaging)



Warning: the electrical and water connections must enter the unit from above and must not interfere with the casing.

Assembly diagram



## Components of the casing:

The ca	asing inclu	udes:
A	-	4 corner covers
В	_	4 bottom brackets
С	-	4 top brackets
D	-	Condensate collection tray
Е	-	Hardware (45 3.9x9.5mm TCX screws)
F	-	Instruction sheet



## Valve kit

The valve fittings allow the water pipes to be connected from above.

TL 0.2-MCT / TL 1.2-MCT

TL 2.2-MCT / TL 3.2-MCT

Code 9079155





For the specifications of the valves, see page 19.

The descriptions and illustrations provided in this publication are not binding: the society reserves the right, whilst maintaining the essential characteristics of the types described and illustrated, to make, at any time, without the requirement to promptly update this piece of literature, any changes that it considers useful for the purpose of improvement or for any other manufacturing or commercial requirements.

TL 4.2-MCT

TL 5.2-MCT / TL 6.2-MCT



Head Office Airedale International Air Conditioning Ltd Leeds Road Rawdon Leeds LS19 6JY Tel: +44 (0) 113 2391000 Fax:+44 (0) 113 2507219 E-mail enquiries@airedale.com Web www.airedale.com

