Cassette fan coil
Climmy TopLine

Архангельск (8182)63-90-72
Астана (7172)727-132
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Тверь (4822)63-31-35
Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Ярославль (4852)69-52-93

Киргизия (996)312-96-26-47 Казахстан (772)734-952-31 Таджикистан (992)427-82-92-69

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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.

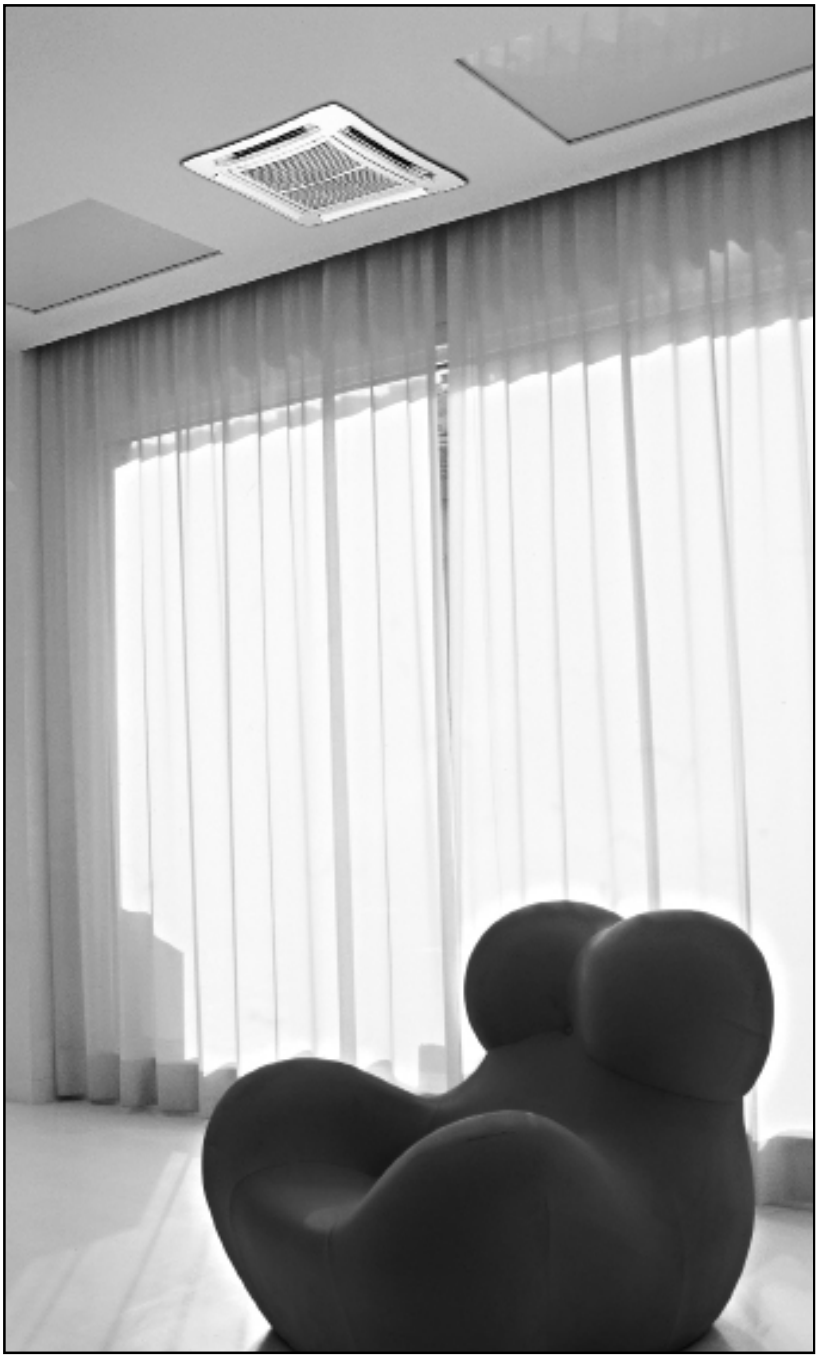
Every unit can be supplied with 1 battery (2 pipe system) and a possible electric resistance or with 2 batteries (4 pipe system). Each model can have fresh air intake and a remote air diffuser can be connected to the unit.

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

In addition to the temperature and speed standard controls, automatic speed selection is also available. More than one unit can be connected to a single control, and the unit control panel can be installed in a position that facilitates the maintenance operation. Every unit can also be operated by the means of an infra-red remote control. The TopLine cassettes can also be connected to the most common automatic building management systems.

It is also possible to use a completely wireless electronic control system based on radio communication called Free, with great advantages in terms of installation flexibility and maximum precision in measuring room temperature.

Finally, each unit can be equipped with a low energy consumption electric motor that is controlled by an inverter card that makes possible continuous air flow variations.



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 inside thermal insulation (closed cell polyethelene 10 mm thick) and outside anti-condensate lining.

CONTROL PANEL

Made of an external box with the control electronic board with an easily accessible terminal board.

FAN ASSEMBLY

The fan assembly, which is mounted on anti-vibrating supports, is extremely silent.
The radial fan has been designed to optimise performance, using wing profile blades with a shape that reduce 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.

HEAT EXCHANGER

Made of copper tubes with bonded aluminium fins for maximum transfer contact.
The batteries are with 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 battery).
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 emission;
TL 2.6T, TL 3.6T, TL 5.6T, TL 6.6T supply an higher cooling emission.
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 B2 to DIN 4102.

AIR FILTER

Synthetic washable filter, easily removable.

CONDENSATE PUMP

Float switch 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.

EUROVENT Certification

www.eurovent-certification.com
www.certiflash.com

Technical features

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

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

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

MODEL		TL 0.2T			TL 1.2T			TL 2.2T			TL3.2T			TL4.2T			TL5.2T			TL6.2T		
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 emission (E)	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 emission (E)	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 (E)	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 (E)	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 (E)	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 (E)	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 (E)	W	25	32	57	25	32	44	25	44	68	32	57	90	33	48	77	42	63	120	42	95	170
	A	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	l	0,8			1,4			2,1			2,1			3,0			4,0			4,0		
Dimensions	mm	575 x 575 x 275												820 x 820 x 303								

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

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

HEATING
Entering air temperature: + 20°C
Water temperature: + 70/60°C

MODEL		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 emission (E)	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 emission (E)	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 (E)	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 (E)	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 (E)	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 (E)	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 (E)	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	l	1,0			1,4			1,4			1,7			1,4			1,7		
Heating water content	l	0,6			0,7			0,7			0,5			0,7			0,5		
Dimensions	mm	575 x 575 x 275																	

MODEL		TL 4.4T			TL 5.4T			TL 5.6T			TL 6.4T			TL 6.6T		
Speed		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Air flow	m³/h	630	820	1140	710	970	1500	710	970	1500	710	1280	1820	710	1280	1820
Cooling total emission (E)	kW	4,14	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 emission (E)	kW	2,96	3,65	4,69	3,25	4,15	5,83	3,53	4,55	6,49	3,25	5,18	6,84	3,53	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 (E)	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 (E)	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 (E)	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 (E)	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
Fan (E)	W	33	48	77	42	63	120	42	63	120	42	95	170	42	95	170
	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	l	3,0			3,0			3,6			3,0			3,6		
Heating water content	l	1,4			1,4			1,1			1,4			1,1		
Dimensions	mm	820 x 820 x 303														

(E) = Eurovent certified performance.

(*) = The sound pressure levels are 9 dB(A) lower than the sound power levels and apply to the reverberant field of a 100 m³ room and a reverberation time of 0.5 sec.

Emission

Cooling emission of 1 battery units (2 pipe installation)

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

Model	Speed	Air flow	EWT 5 - LWT 10°C			EWT 7 - LWT 12°C			EWT 9 - LWT 14°C			EWT 12 - LWT 17°C		
			Water flow	Total emission	Sensible emission	Water flow	Total emission	Sensible emission	Water flow	Total emission	Sensible emission	Water flow	Total emission	Sensible emission
		m^3/h	l/h	kW	kW	l/h	kW	kW	l/h	kW	kW	l/h	kW	kW
TL 0.2T	High	610	421	2,45	1,83	340	1,98	1,64	254	1,47	1,45	199	1,16	1,16
	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
TL 1.2T	High	520	554	3,22	2,22	462	2,68	2,04	362	2,10	1,75	252	1,47	1,47
	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
TL 2.2T	High	710	926	5,38	3,64	745	4,33	3,18	617	3,59	2,87	420	2,44	2,44
	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
TL 3.2T	High	880	1049	6,10	4,17	863	5,02	3,74	694	4,03	3,29	479	2,79	2,79
	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
TL 4.2T	High	1140	1264	7,35	5,00	1060	6,16	4,59	840	4,88	3,95	573	3,33	3,33
	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
TL 5.2T	High	1500	1943	11,30	7,59	1635	9,51	6,48	1301	7,57	5,99	880	5,12	5,12
	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
TL 6.2T	High	1820	2277	13,24	9,01	1909	11,10	8,25	1511	8,78	7,11	1044	6,07	6,07
	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 emission of 1 battery units (2 pipe installation)

Entering air temperature: +20°C

Model	Speed	Air flow	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	
			Water flow	Emission	Water flow	Emission	Water flow	Emission	Water flow	Emission	Water flow	Emission
		m^3/h	l/h	kW	l/h	kW	l/h	kW	l/h	kW	l/h	kW
TL 0.2T	High	610	386	2,24	203	2,37	298	3,46	393	4,56	488	5,67
	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
TL 1.2T	High	520	482	2,80	266	3,10	377	4,39	488	5,68	599	6,97
	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
TL 2.2T	High	710	787	4,57	440	5,12	619	7,19	795	9,25	972	11,30
	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
TL 3.2T	High	880	903	5,25	504	5,86	709	8,25	914	10,63	1118	13,00
	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
TL 4.2T	High	1140	1118	6,50	624	7,26	878	10,21	1130	13,14	1383	16,08
	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
TL 5.2T	High	1500	1683	9,78	951	11,06	1327	15,43	1699	19,76	2071	24,08
	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
TL 6.2T	High	1820	2015	11,72	1132	13,17	1586	18,45	2037	23,68	2486	28,91
	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

Emission correction factors for different working conditions.
Multiply the factors by the emission figures in the 7-12°C table above.

Total emission				
Water (°C)	Air (°C)	25-18	26-18.5	28-20
7/12 °C	K	0,82	0,89	1,11
10/15 °C	K	0,56	0,63	0,82
14/18 °C	K	0,35	0,41	0,52

Sensible emission				
Water (°C)	Air (°C)	25-18	26-18.5	28-20
7/12 °C	K	0,9	0,94	1,06
10/15 °C	K	0,72	0,78	0,9
14/18 °C	K	0,5	0,58	0,72

Note:

the correction factors are indicative, as they are average values.

Emission of 4 pipe units with standard cooling battery

Cooling emission of 2 battery units (4 pipe installation)

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

Model	Speed	Air flow	EWT 5 - LWT 10°C			EWT 7 - LWT 12°C			EWT 9 - LWT 14°C			EWT 12 - LWT 17°C		
			Water flow	Total emission	Sensible emission	Water flow	Total emission	Sensible emission	Water flow	Total emission	Sensible emission	Water flow	Total emission	Sensible emission
		m³/h	l/h	kW	kW	l/h	kW	kW	l/h	kW	kW	l/h	kW	kW
TL 0.4T	High	610	490	2,85	2,12	401	2,33	1,90	307	1,78	1,69	239	1,39	1,39
	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
TL 1.4T	High	520	569	3,31	2,26	465	2,70	1,98	374	2,18	1,79	260	1,51	1,51
	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
TL 2.4T	High	710	718	4,18	2,91	574	3,34	2,56	467	2,72	2,30	330	1,92	1,92
	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
TL 3.4T	High	880	791	4,60	3,23	656	3,81	2,97	512	2,98	2,56	366	2,13	2,13
	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
TL 4.4T	High	1140	1299	7,55	5,12	1090	6,34	4,69	864	5,02	4,04	586	3,41	3,41
	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
TL 5.4T	High	1500	1588	9,23	6,35	1327	7,71	5,83	1046	6,08	5,02	7,26	4,22	4,22
	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
TL 6.4T	High	1820	1836	10,67	7,43	1529	8,89	6,84	1199	6,97	5,98	849	4,94	4,94
	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 emission of 2 battery units (4 pipe installation)

Entering air temperature: +20°C

Model	Speed	Air flow	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	
			Water flow	Emission	Water flow	Emission	Water flow	Emission	Water flow	Emission	Water flow	Emission
		m³/h	l/h	kW	l/h	kW	l/h	kW	l/h	kW	l/h	kW
TL 0.4T	High	610	256	1,49	134	1,56	197	2,29	261	3,03	325	3,78
	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
TL 1.4T	High	520	283	1,65	149	1,73	218	2,54	298	3,46	358	4,17
	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
TL 2.4T	High	710	351	2,04	184	2,14	270	3,14	378	4,40	444	5,17
	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
TL 3.4T	High	880	402	2,34	211	2,45	310	3,60	426	4,95	510	5,93
	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
TL 4.4T	High	1140	771	4,48	410	4,76	596	6,93	783	9,10	970	11,28
	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
TL 5.4T	High	1500	929	5,40	493	5,73	718	8,34	946	11,00	1170	13,60
	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
TL 6.4T	High	1820	1074	6,24	569	6,61	829	9,64	1092	12,70	1353	15,74
	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

Emission correction factors for different working conditions.
Multiply the factors by the emission figures in the 7-12°C table above.

Total emission				
Water (°C)	Air (°C)	25-18	26-18.5	28-20
7/12 °C	K	0,82	0,89	1,11
10/15 °C	K	0,56	0,63	0,82
14/18 °C	K	0,35	0,41	0,52

Sensible emission				
Water (°C)	Air (°C)	25-18	26-18.5	28-20
7/12 °C	K	0,9	0,94	1,06
10/15 °C	K	0,72	0,78	0,9
14/18 °C	K	0,5	0,58	0,72

Note:

the correction factors are indicative, as they are average values.

Emission of 4 pipe units with enhanced cooling battery

Cooling emission of 2 battery units (4 pipe installation)

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

Model	Speed	Air flow	EWT 5 - LWT 10°C			EWT 7 - LWT 12°C			EWT 9 - LWT 14°C			EWT 12 - LWT 17°C		
			Water flow	Total emission	Sensible emission	Water flow	Total emission	Sensible emission	Water flow	Total emission	Sensible emission	Water flow	Total emission	Sensible emission
		m^3/h	l/h	kW	kW	l/h	kW	kW	l/h	kW	kW	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

Heating emission of 2 battery units (4 pipe installation)

Entering air temperature: +20°C

Model	Speed	Air flow	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	
			Water flow	Emission	Water flow	Emission	Water flow	Emission	Water flow	Emission	Water flow	Emission
		m^3/h	l/h	kW	l/h	kW	l/h	kW	l/h	kW	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

Emission correction factors for different working conditions.
Multiply the factors by the emission figures in the 7-12°C table above.

Total emission				
Water (°C)	Air (°C)	25-18	26-18.5	28-20
7/12 °C	K	0,82	0,89	1,11
10/15 °C	K	0,56	0,63	0,82
14/18 °C	K	0,35	0,41	0,52

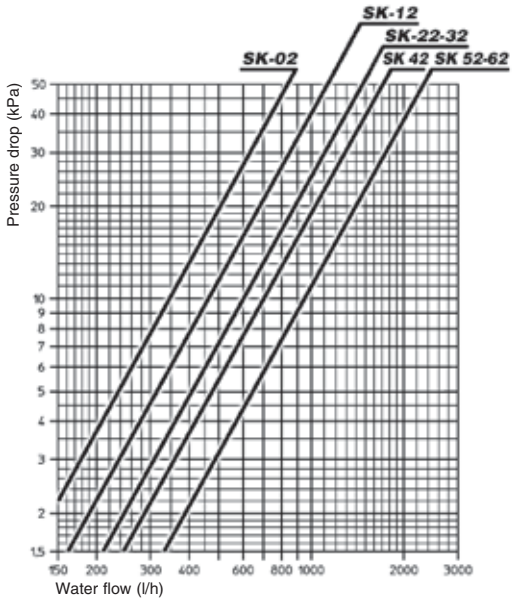
Sensible emission				
Water (°C)	Air (°C)	25-18	26-18.5	28-20
7/12 °C	K	0,9	0,94	1,06
10/15 °C	K	0,72	0,78	0,9
14/18 °C	K	0,5	0,58	0,72

Note:

the correction factors are indicative, as they are average values.

Water side pressure drop

2 pipe installation

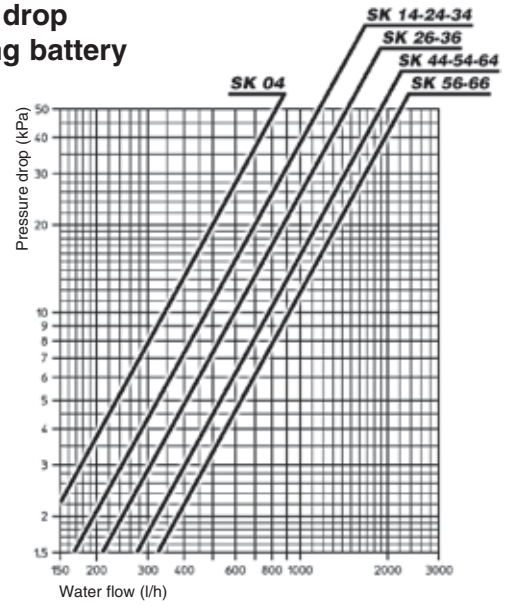


Pressure drop
for mean water temperature of 10°C,
for different temperatures multiply the pressure drop figure
by the K correction factors in the table.

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

4 pipe installation

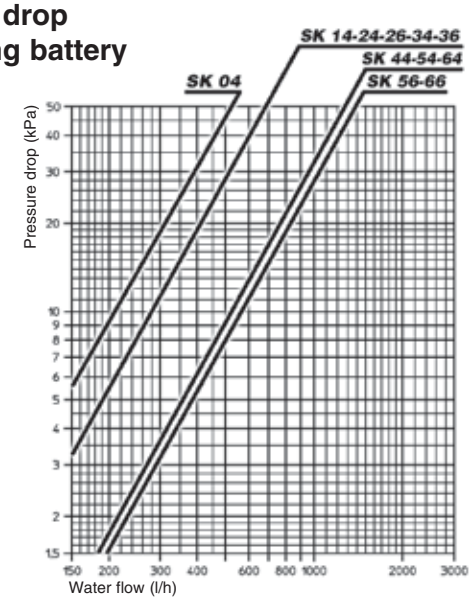
Pressure drop for cooling battery



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
K	0,94	0,90	0,86	0,82	0,78	0,74	0,70

Pressure drop for heating battery



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.

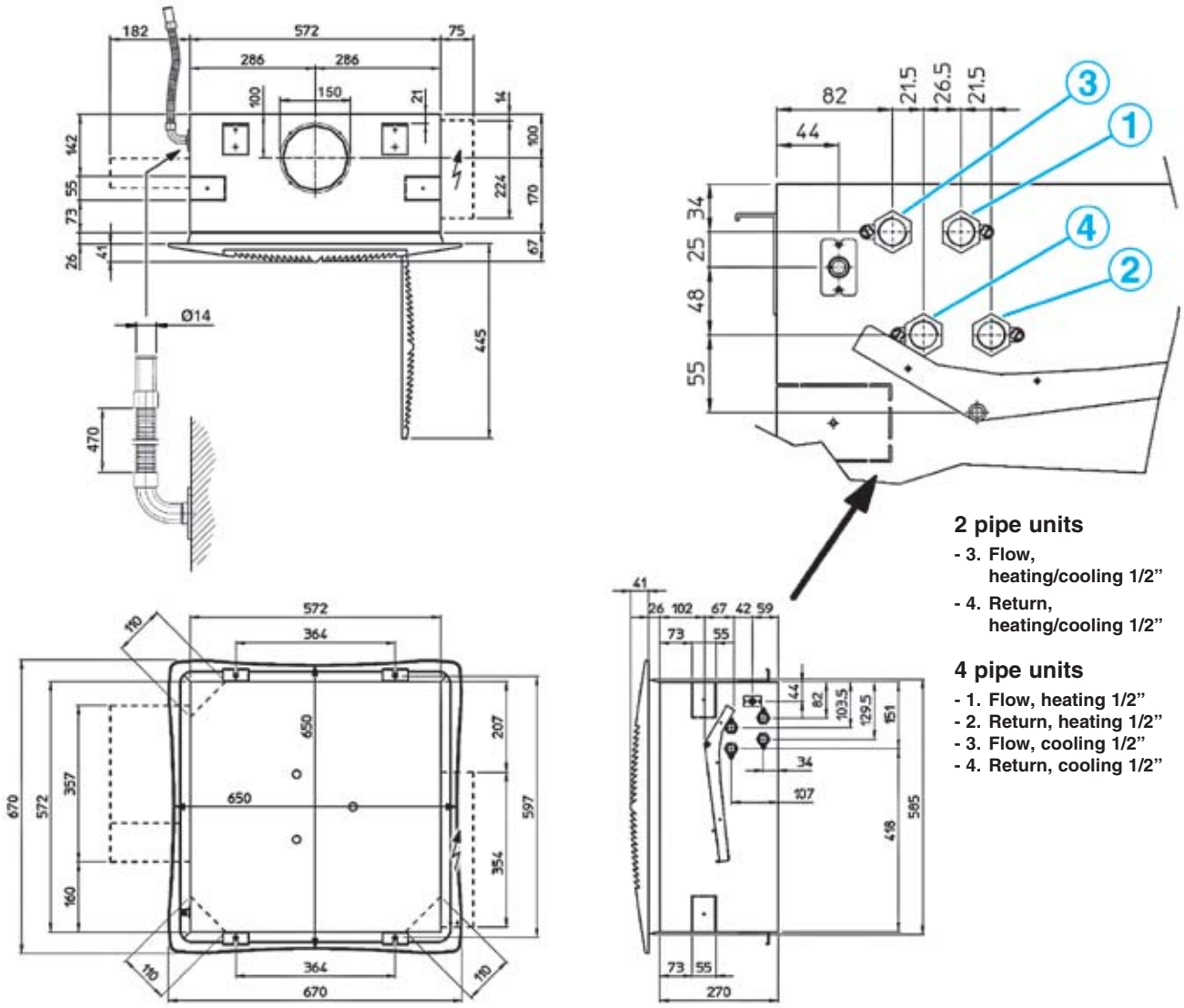
°C	40	50	60	70	80
K	1,14	1,08	1,02	0,96	0,90

Working conditions

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

Dimensions and weights

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



2 pipe units

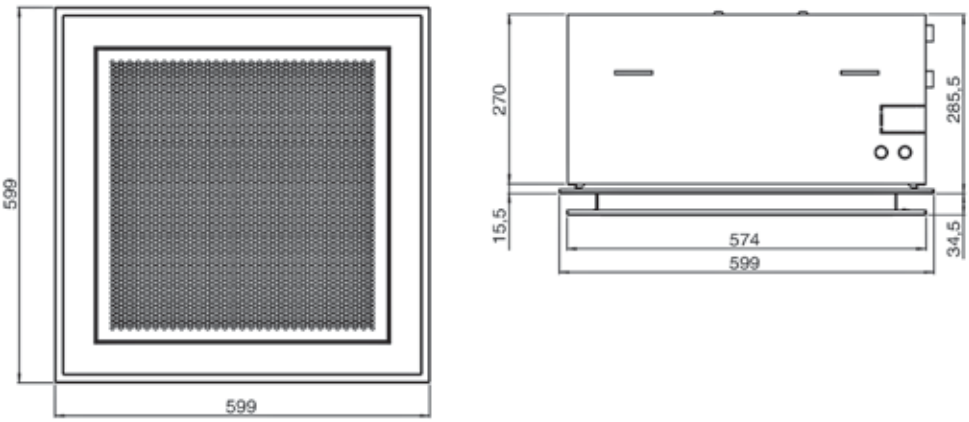
- 3. Flow, heating/cooling 1/2”
- 4. Return, heating/cooling 1/2”

4 pipe units

- 1. Flow, heating 1/2”
- 2. Return, heating 1/2”
- 3. Flow, cooling 1/2”
- 4. Return, cooling 1/2”

MD-600
METAL DIFFUSER

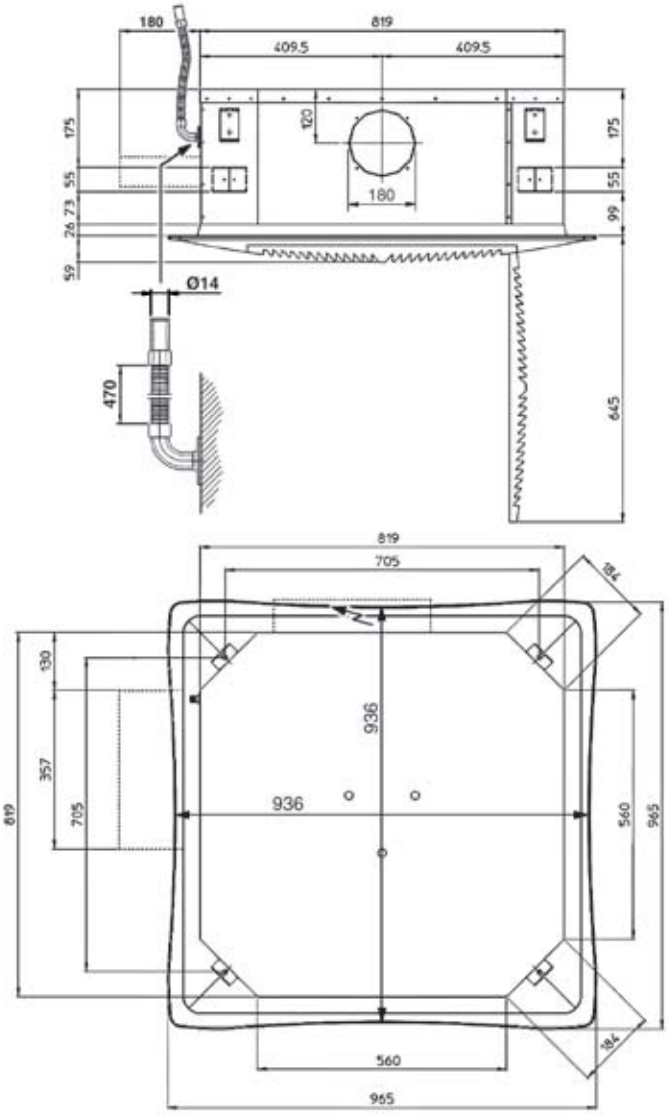
(receiver kit
IRC-MD code 9060178
for MD diffuser
for infra-red units)

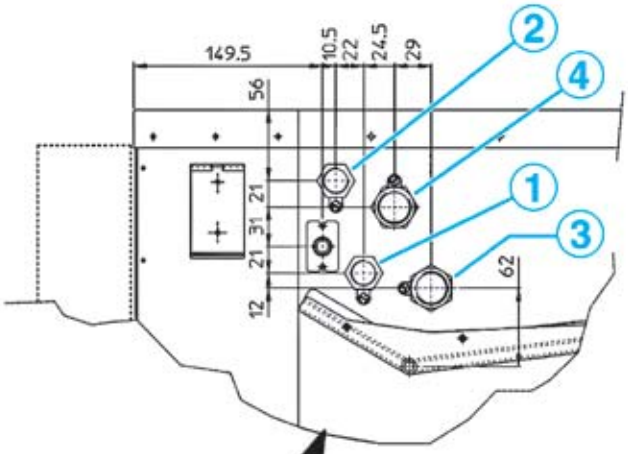


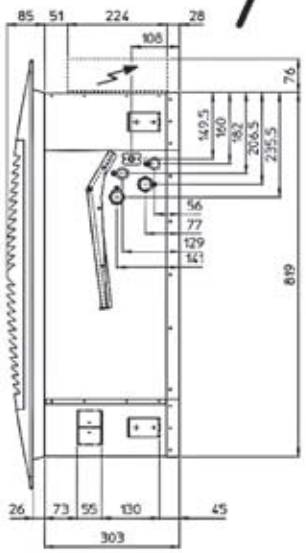
Model	UNIT		DIFFUSER		Packed unit Dimensions			
	Weights packed unit	Weights unpacked unit	Weights packed unit	Weights unpacked unit	A	B	C	D
	kg	kg	kg	kg	mm			
TL 02 - 12	28	22	6	3	790	350	750	150
TL 04 - 14	30	24						
TL 22 - 24 - 26								
TL 32 - 34 - 36								

Dimensions and weights

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







2 pipe units

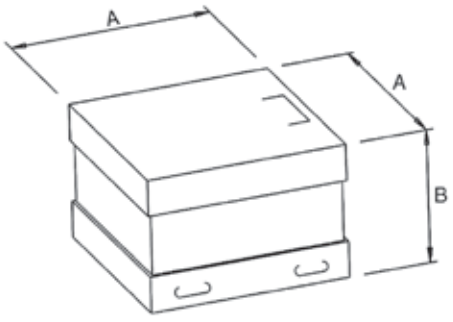
- 3. Flow, heating/cooling 3/4”
- 4. Return, heating/cooling 3/4”

4 pipe units

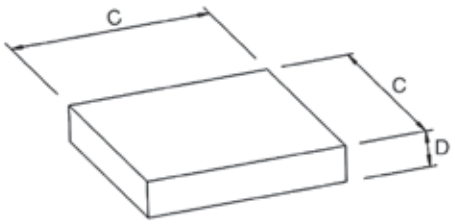
- 1. Flow, heating 1/2”
- 2. Return, heating 1/2”
- 3. Flow, cooling 3/4”
- 4. Return, cooling 3/4”

PACKED UNIT

UNIT



DIFFUSER



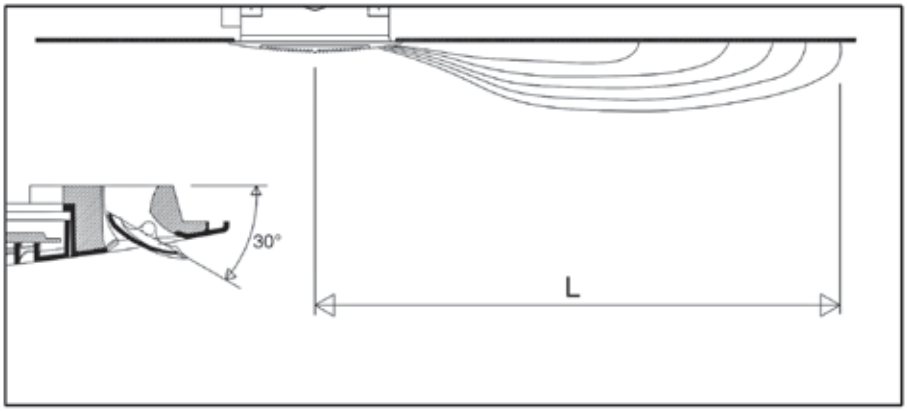
Model	*UNIT*		*DIFFUSER*		Packed unit Dimensions			
	Weights packed unit	Weights unpacked unit	Weights packed unit	Weights unpacked unit	*A*	*B*	*C*	*D*
	kg	kg	kg	kg	mm			
TL 4.2	44	36	10	6	1050	400	1000	200
TL 4.4	47	39						
TL 5.2 - 5.4 - 5.6								
TL 6.2 - 6.4 - 6.6								

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.

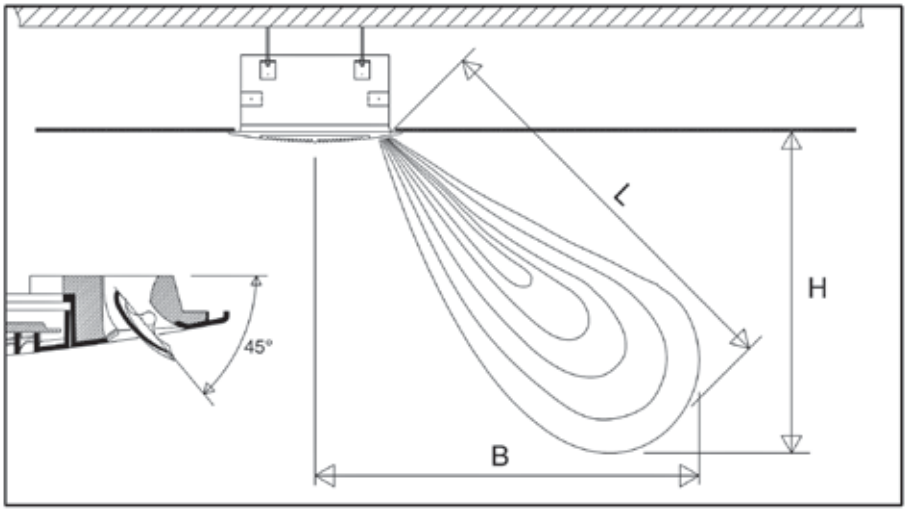
The useful throw **L** refers to the distance between the unit and the point where the air speed is 0.2 m/sec; if the louver has a gradient of 30° (recommended in cooling mode), the so-called “Coanda” effect will occur, illustrated in the first figure, while at a gradient of 45° (recommended in heating 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			TL 6		
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			TL 4			TL 5			TL 6		
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	H	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	B	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

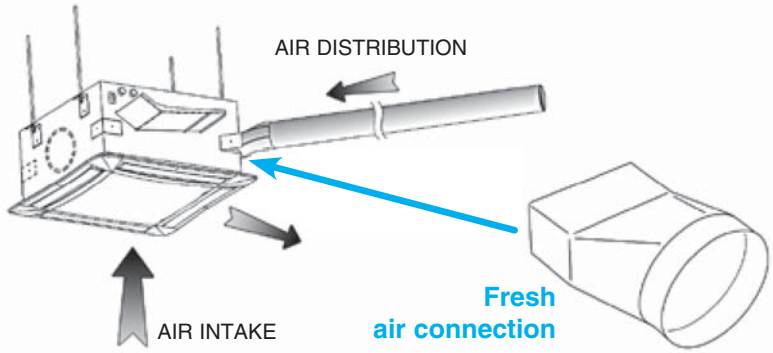
NOTE:
On heating it must be payed attention to rooms where the floor temperature is particularly low (for example less than 5°C).
In this situation the floor can cool the lower layer of air to a level that stop the uniform diffusion of the hot air coming from the unit, decreasing the throw figures shown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

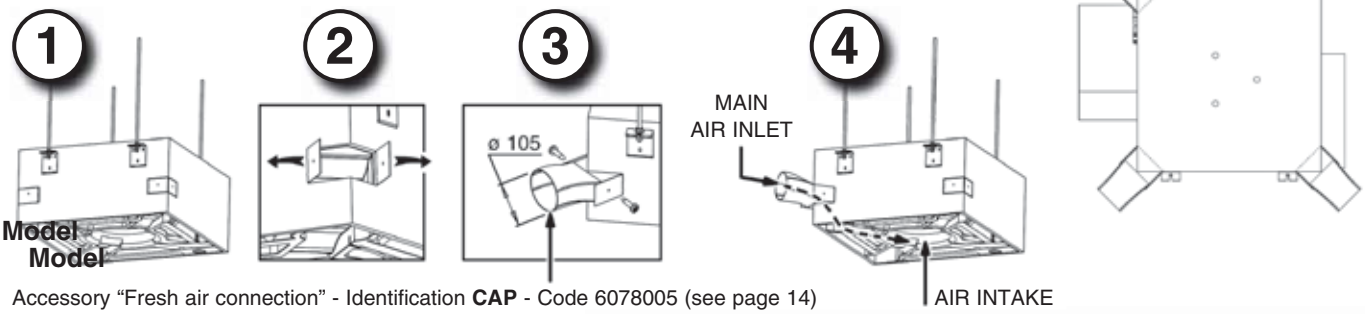
The units feature fresh air inlets
on three corners (no inlets on the fourth corner
because of the condensate pump inside the unit).



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 6078005 (see page 14)

Air distribution - Air distribution connection

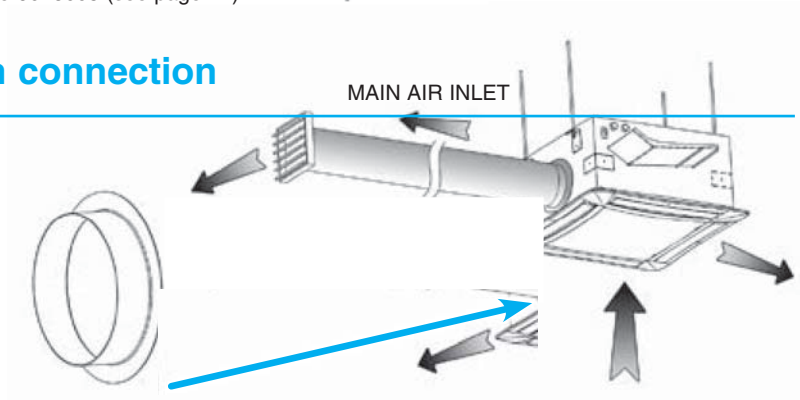
Two air outlets are provided
on the side of the unit for connection
to separate supply air outlets.

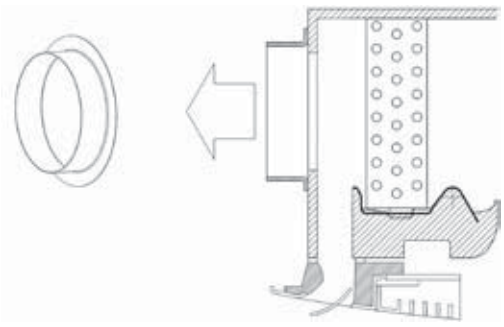
They can be used to supply air from
the fan coil unit to distant areas of a room
or even to a different room.

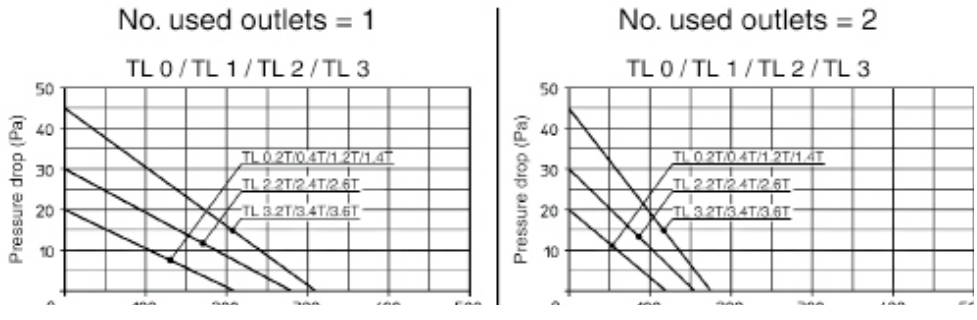
The total air flow does not change.

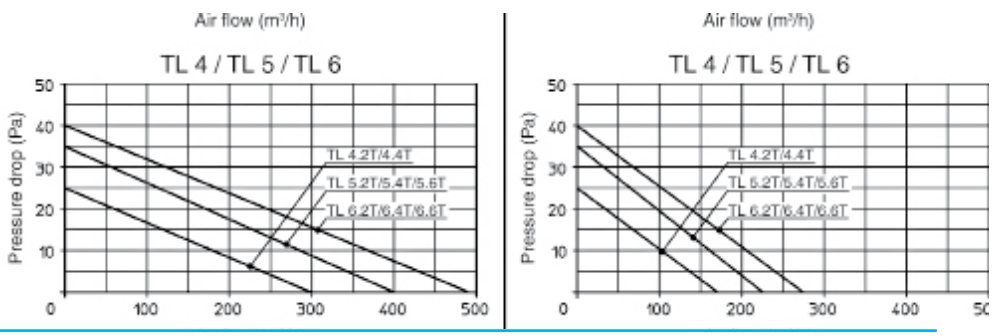
The air flow at high speed depending
on the air duct pressure drop is shown
in the tables below.

Note: all air ducts must be insulated
in order to avoid condensation.





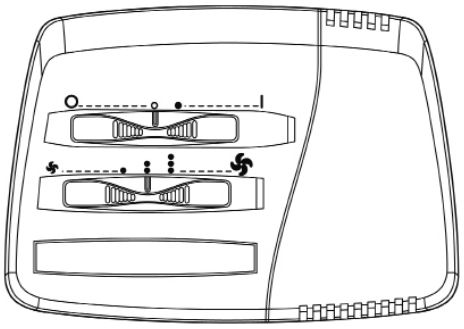


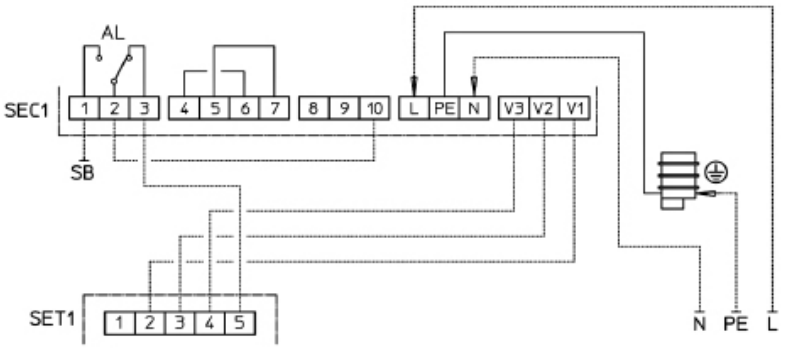


Electronic controls

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.

Identification	Code
MO - 3V	9060516



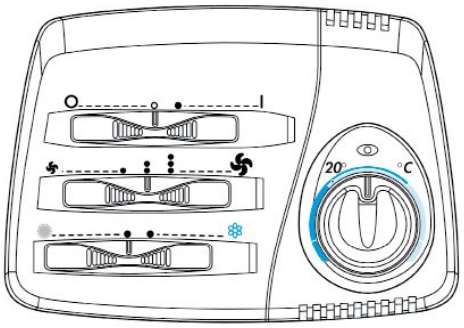


- Manual speed switch, without thermostatic control.
- It can not control the valves.

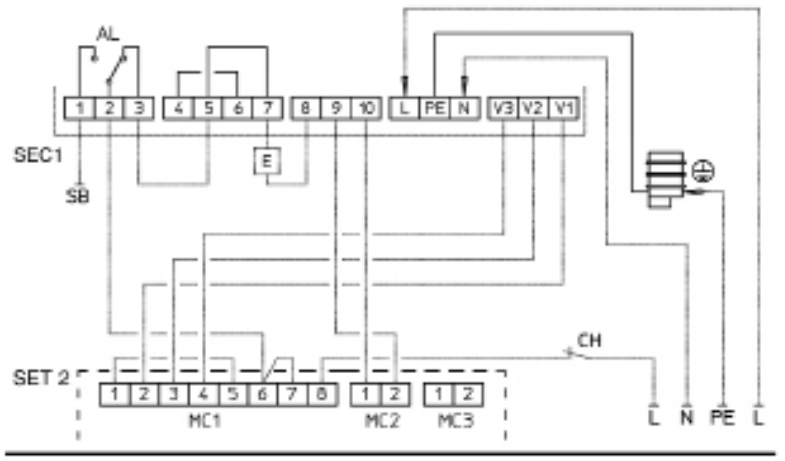
LEGEND

SEC1 = TopLine electrical board
SET1 = Control electrical board
SB = Alarm contacts
AL = Alarm condensate - float switch released

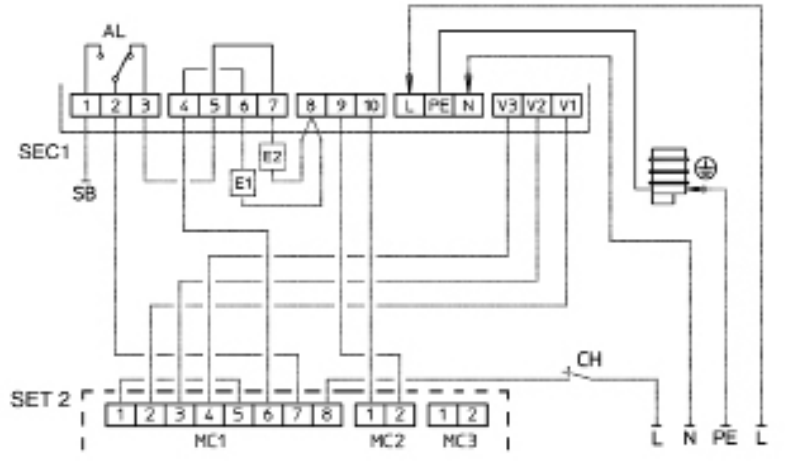
Identification	Code
TMO - T	9060517



Electric wiring with 1 valve



Electric wiring with 2 valves



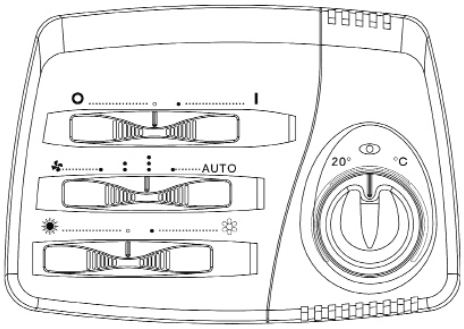
LEGEND

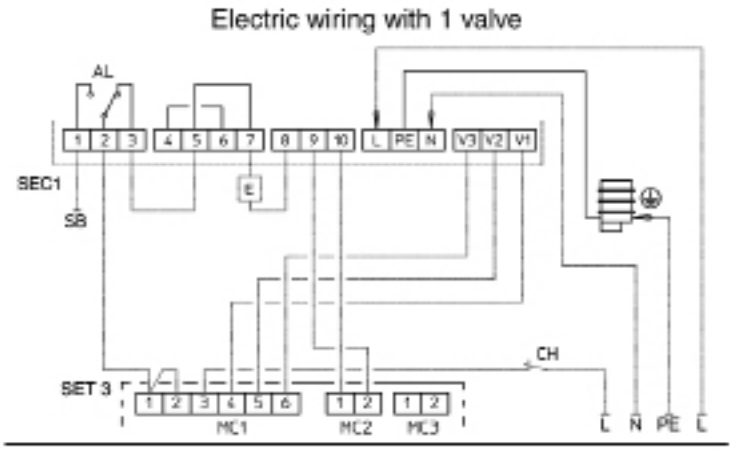
SEC1 = TopLine electrical board
SET2 = Control electrical board
CH = Remote Summer/Winter switch
SB = Alarm contacts
E = Valve set (2 pipe installation)
E1 = Hot water valve set
E2 = Chilled water valve set
AL = Alarm condensate - float switch released

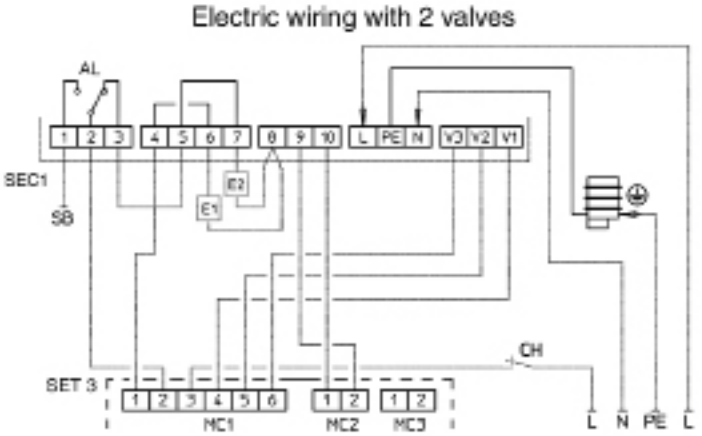
- Manual speed switch.
- Manual Summer/Winter switch.
- Electronic thermostat for fan control(ON-OFF).
- Electronic thermostat for valve(s) control(ON-OFF) (the fan keeps working).
- It allows to control the low temperature cut-out thermostat (TME).
- It allows to control the chilled water valve (ON-OFF) and the electric resistance in the TL-E version.
- It allows to install the Summer/Winter switch centralized and remote, or to control it with an automatic change-over fitted on the water pipe (for 2 pipe installations only). The latter case needs the adjustment of the jumper on the control board (see the instruction leaflet supplied with the control).

Electronic controls

Identification	Code
TMO - T - AU	9060520







LEGEND

SEC1 = TopLine electrical board
SET3 = Control electrical board
CH = Remote Summer/Winter switch
SB = Alarm contacts
E = Valve set (2 pipe installation)
E1 = Hot water valve set
E2 = Chilled water valve set
AL = Alarm condensate - float switch released

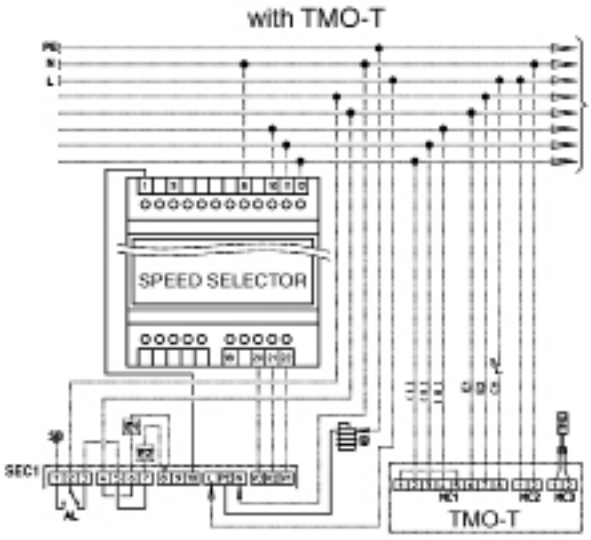
Same characteristics as TMO-T, adding:

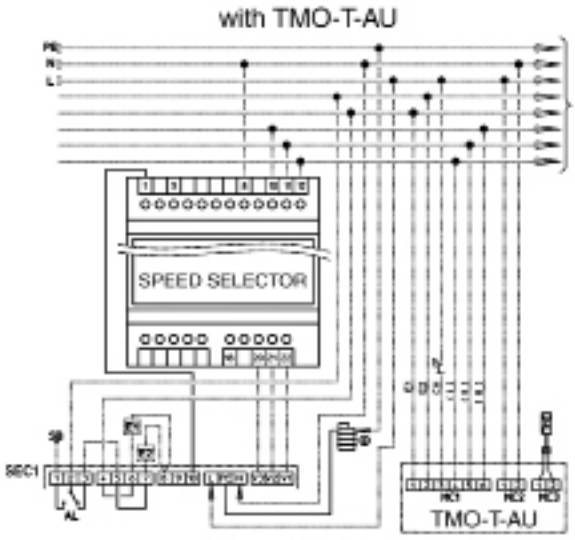
- Manual or automatic speed switch.
- Electronic thermostat for fan control (ON-OFF).
- Electronic thermostat for valve(s) control (ON-OFF).
- Simultaneus thermostatic control of the valves and fan (ON-OFF).
- It allows to install the Summer/Winter switch centralized and remote, or to control it with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

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

Identification	Code
SEL - S	9079110

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





TMO 503 - SV2

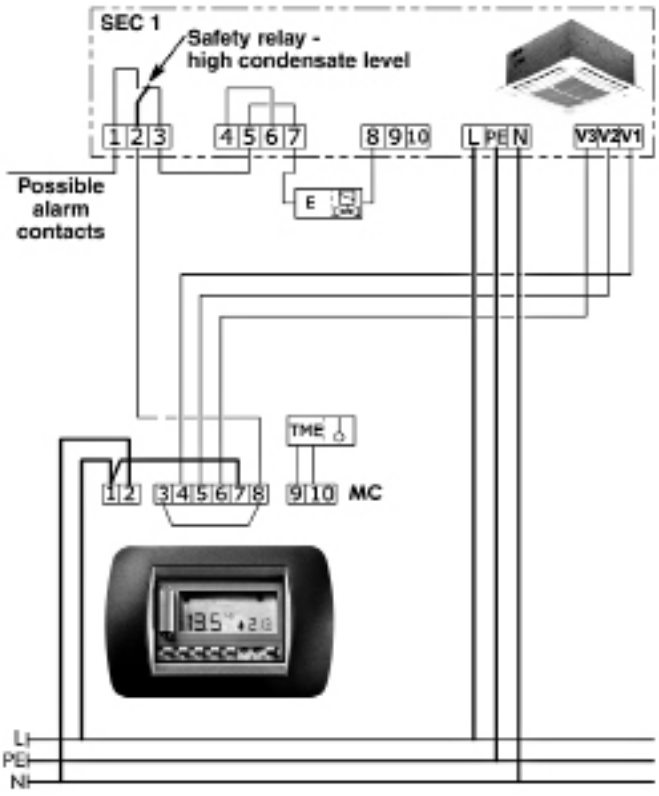
The TMO 503-SV2 control is designed to be installed in a series 503 wall box. It is easy to use, it has a big and clear display, and a great precision.
The control is supplied integral with the external frame, but it is possible to use frames of the most known brand on the market (BTicino, Vimar, AVE, Gewiss).
The highest working electric absorbtion is 200 W.
If the fan coil has an higher absorbtion or more units are connected to the same control, the speed switch SEL-S must be installed.

Identification	Code
TMO 503 - SV2	9060172

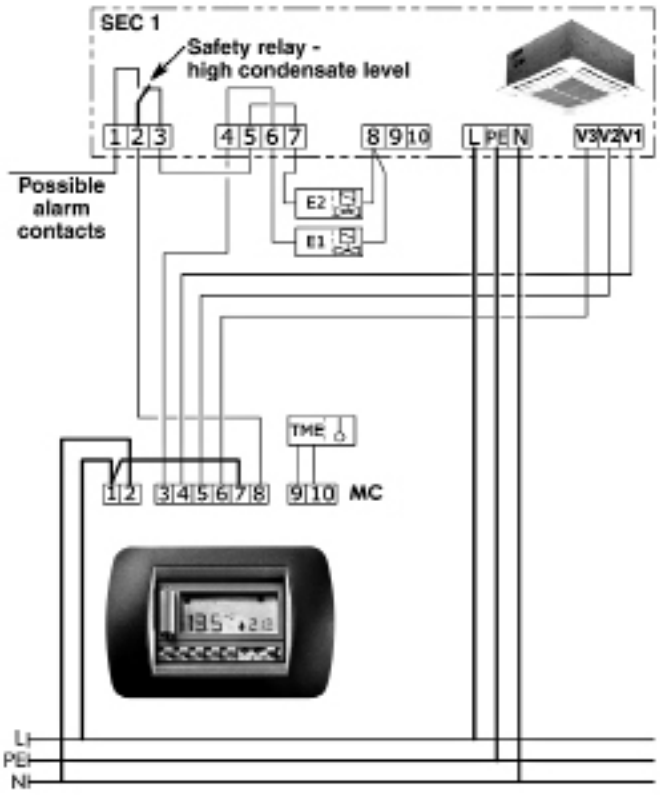
- Manual or automatic speed switch.
- Manual Summer/Winter switch.
- Electronic thermostat for valve(s) control (ON-OFF).
- Simultaneus thermostatic control of the valves and fan (ON-OFF).
- It allows to control the low temperature cut-out thermostat (TME), included with the control.

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

2 pipe installation



4 pipe installation



LEGEND

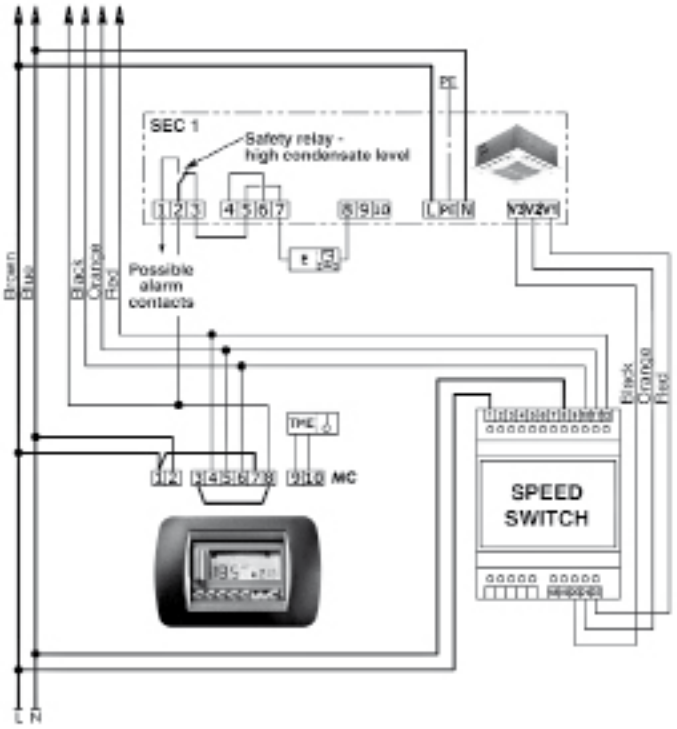
SEC 1	= TopLine electrical board	M	= Fan	E1	= Warm water valve
MC	= Control electrical board	E	= Water valve	E2	= Chilled water valve

TMO 503-SV2 with SEL-S

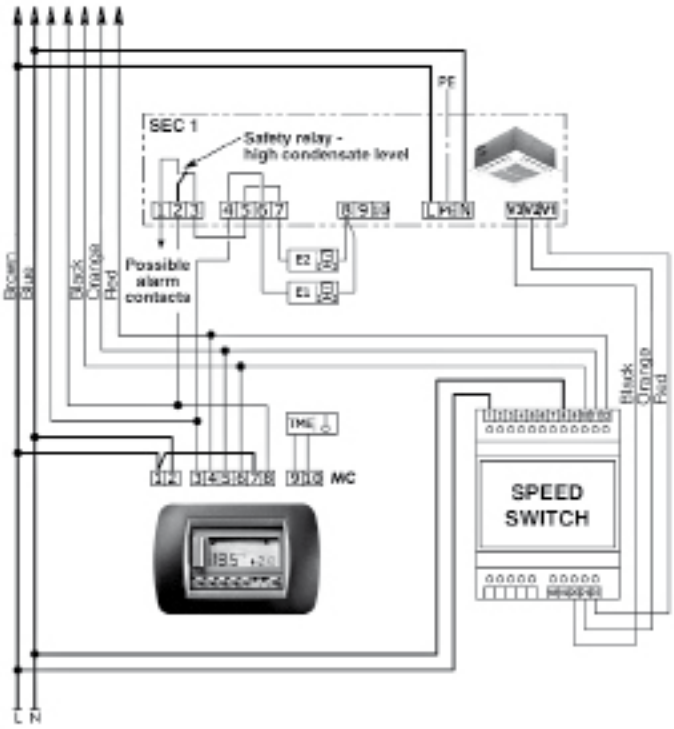
The TMO 503-SV2 control with the SEL-S speed switch can control up to 8 units with only one centralized thermostat (the SEL-S speed switch must be fitted on all the units).

TMO 503-SV2 with SEL-S diagram (Code 9060172 + Code 9079110)

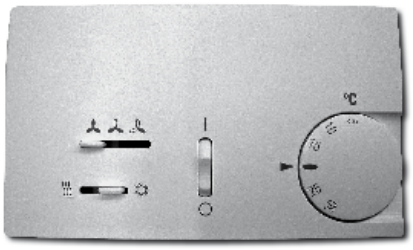
2 pipe installation



4 pipe installation

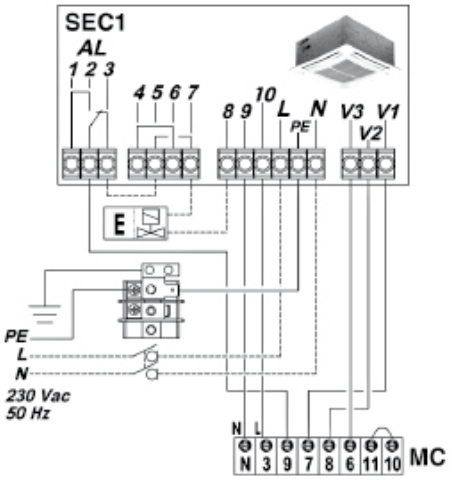


Identification	Code
T2T	9060174

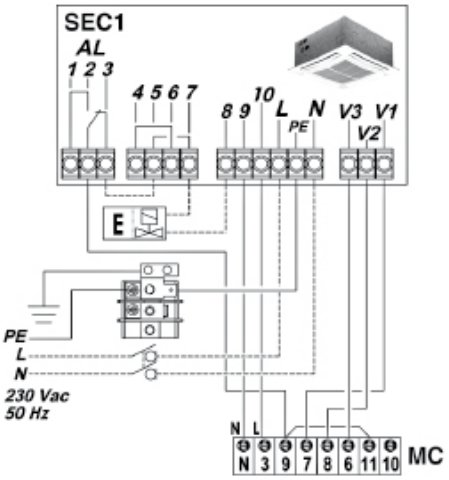


2 pipes units only.

Thermostatic control on the valve and continuous fan operation



Simultaneous thermostatic control of the valve and fan



- ON-OFF switch.
- 3 speed switch.
- Manual Summer/Winter switch.
- Thermostatic control on the fan.
- Thermostatic control on the valve and continuous fan operation.
- Simultaneous thermostatic control of the valve and fan.
- Cannot be used with speed switch (slave).

LEGEND

SEC 1	= TopLine electrical board	M	= Fan	E1	= Warm water valve	AL	= Safety relay - high condensate level
MC	= Control electrical board	E	= Water valve	E2	= Chilled water valve		

Electronic controls

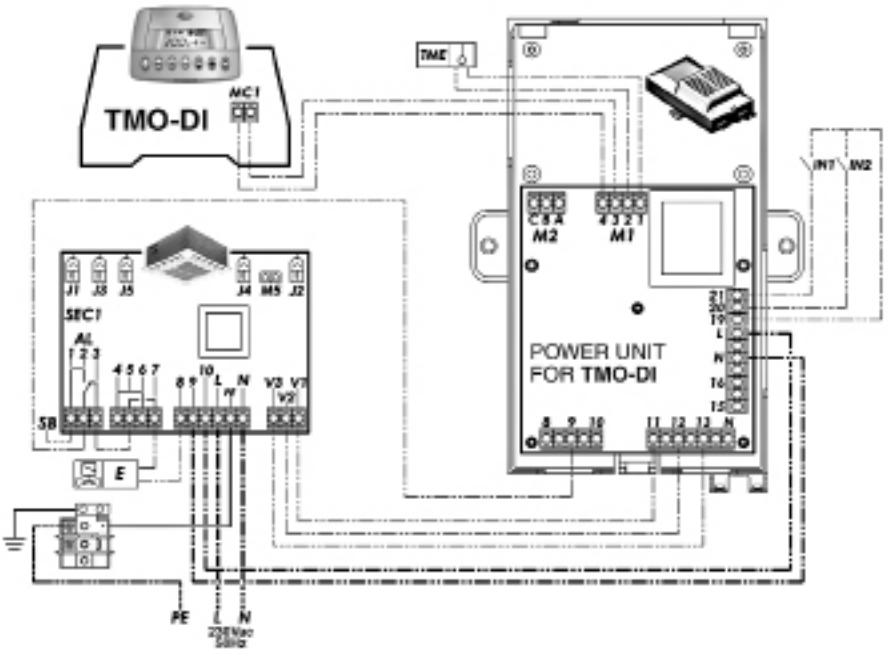
Identification	Code
TMO - DI	9060521

To be installed on the wall
or in the electric switch box.

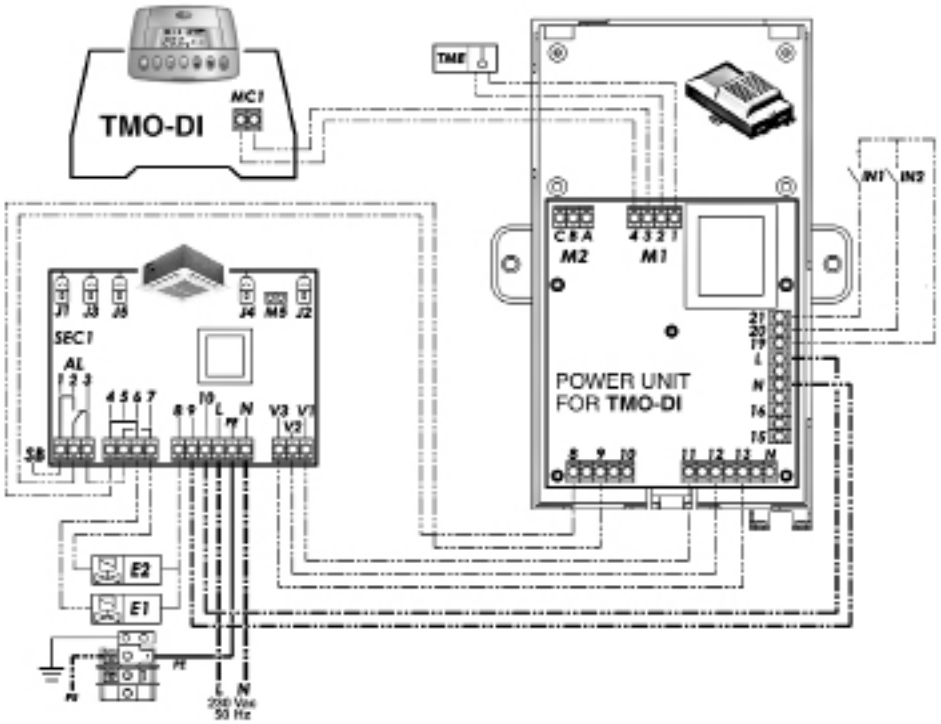
- Manual or automatic speed switch.
- Manual or automatic Summer/Winter switch.
- Electronic thermostat for fan control (ON-OFF).
- Electronic thermostat for valve(s) control (ON-OFF).
- Simultaneus thermostatic control on the valves and fan (ON-OFF).
- It allows to control the low temperature cut-out thermostat TME (not to be used with TL-E models).
- It allows to control the chilled water valve (ON-OFF) and the electric resistance in the TL-E version.
- It allows to control the fan and the heating electric resistance.
- It allows to control up to 10 units with SEL-DI speed switch.

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

TMO-DI connection with 1 valve



TMO-DI connection with 2 valves

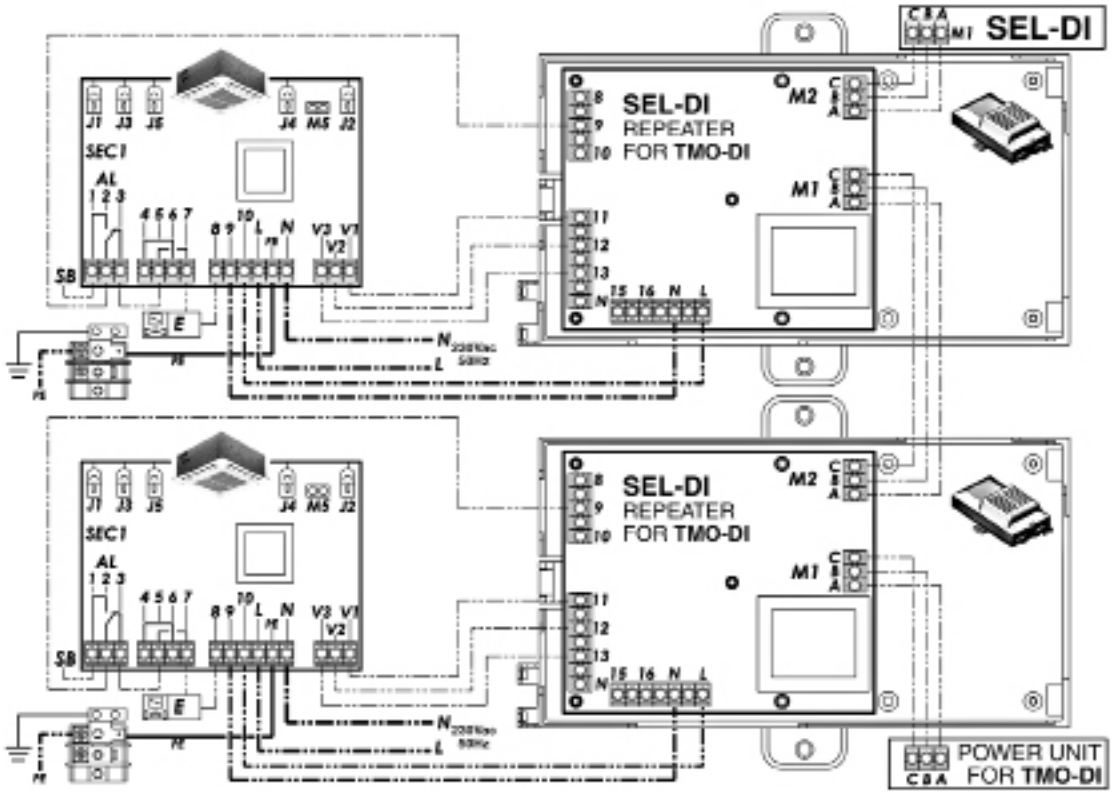


Identification	Code
SEL - DI	9060139

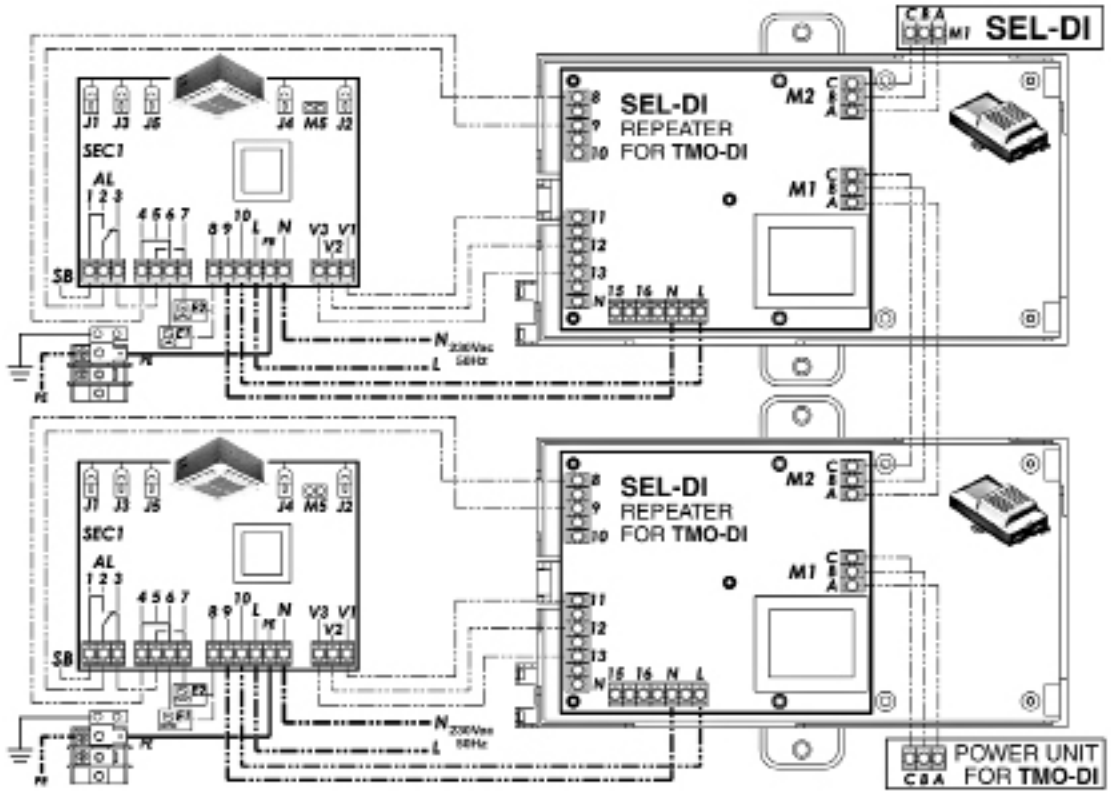
Repeater for TMO-DI

It allows to control up to 10 units
with only one TMO-DI centralized thermostat.

SEL-DI
connection
with 1 valve



SEL-DI
connection
with 2 valves



LEGEND

SEC1	= TopLine electrical board	R	= Slave board
TME	= L.T.C.O. sensor	SB	= Alarm contacts
E	= Valve set (2 pipe installation)	AL	= Alarm condensate - float switch released
E1	= Hot water valve set (4 pipe installation)	IN1	= Winter/Summer remote switch
E2	= Chilled water valve set (4 pipe installation)	IN2	= Set reduction (or remote OFF)

Accessories

TME low temperature cut-out thermostat

Suitable for wall controls only (not infra-red remote control). To be fitted between the coil fins;
when connecting the control, the TME probe cable must be separated from the power supply wires.
To be used with the following controls: TMO-T, TMO-T-AU, TMO-DI.

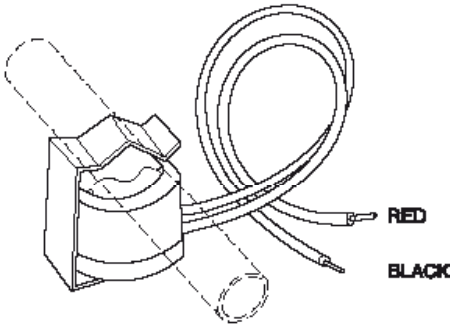
Identification	TME
Code	3021091

It stops the fan when the water temperature is lower than 38°C and it starts the fan when is higher than 42°C.

Change-Over CH 15-25

Suitable for wall controls only (not for infra-red remote control).
Automatic summer/winter switch to be installed
in contact with the water circuit (for 2-tube installations only).
To be used with the following controls:
TMO-T, TMO-T-AU, TMO-DI.

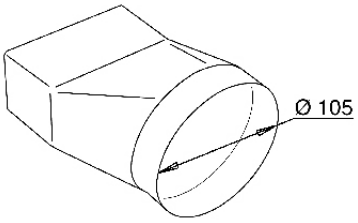
Identification	CH 15-25
	9053049



Fresh air connection

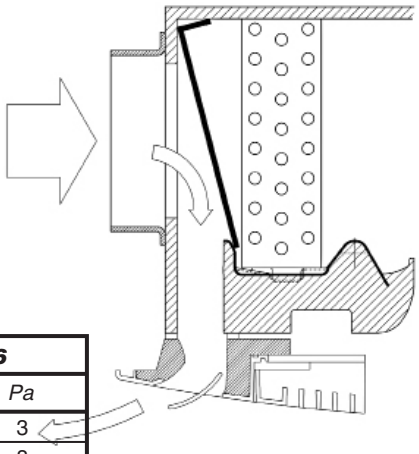
See page 13.

Identification	CAP
	6078005



Fresh air kit

This is used to introduce primary 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
	9079230	9079231

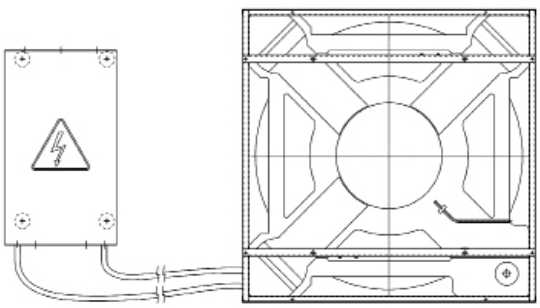
Correlation between flow-rate/static pressure

TL 0-1-2-3		TL 4-5-6	
m^3/h	Pa	m^3/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.

Units with remote electric board

On request the TopLine cassettes are available with electric control panel reachable from below and with the electric board that can be placed in a remote position. In this case the units are supplied with an electronic connecting control panel, fitted to the bottom side on the 4 smallest sizes and to the lateral side on the 3 biggest sizes.
The electronic control panel is connected to the fan motor, to the condensate pump and to the condensate level control. A 6 m wire is also supplied with integral plug-in connections to connect the unit with the remote electric board that can be installed in a suitable and comfortable position, where the power and system connections can be made easily.
This feature is not available for units with electric resistance or infra-red remote control.



Accessories

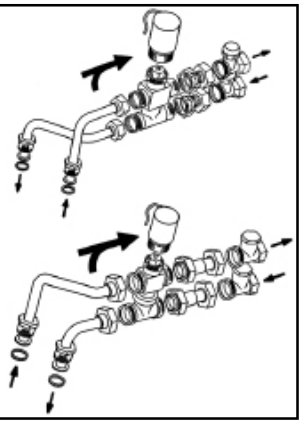
ON-OFF valves with thermoelectric actuator

Valve with Micrometric Lockshield Valve

3 ways

TL 0.2-0.4
TL 1.2-1.4
TL 2.2-2.4-2.6
TL 3.2-3.4-3.6

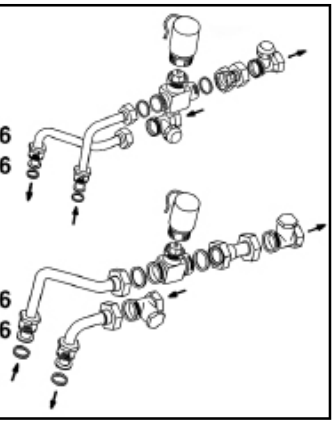
TL 4.2-4.4
TL 5.2-5.4-5.6
TL 6.2-6.4-6.6



2 ways

TL 0.2-0.4
TL 1.2-1.4
TL 2.2-2.4-2.6
TL 3.2-3.4-3.6

TL 4.2-4.4
TL 5.2-5.4-5.6
TL 6.2-6.4-6.6

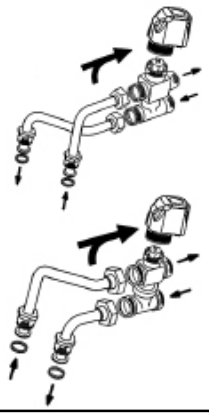


Valve with Simplified Kit

3 ways

TL 0.2-0.4
TL 1.2-1.4
TL 2.2-2.4-2.6
TL 3.2-3.4-3.6

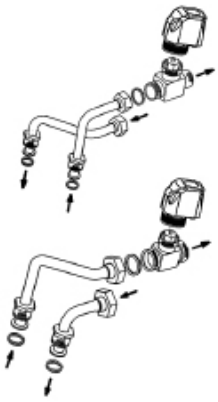
TL 4.2-4.4
TL 5.2-5.4-5.6
TL 6.2-6.4-6.6



2 ways

TL 0.2-0.4
TL 1.2-1.4
TL 2.2-2.4-2.6
TL 3.2-3.4-3.6

TL 4.2-4.4
TL 5.2-5.4-5.6
TL 6.2-6.4-6.6



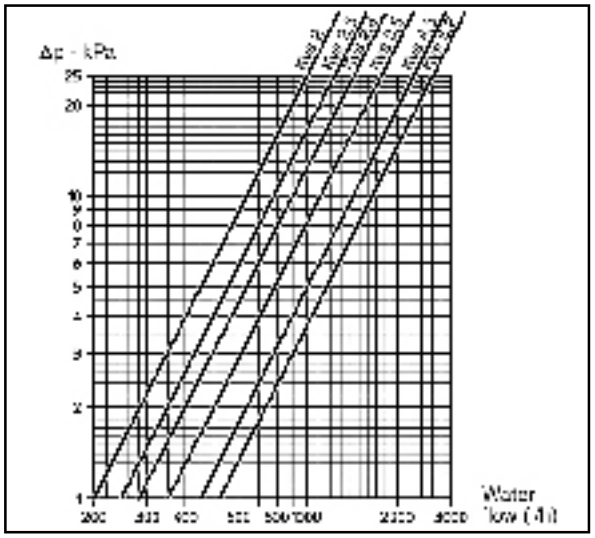
Technical data:

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

Valves characteristics

Battery type	Model	2 way valves			3		
Main	0.2/1.2/2.2/3.2	2,8	50	3/4"	2,5	50	3/4"
	0.4/1.4/2.4/2.6/3.4/3.6						
	4.2/5.2/6.2	5,2	60	1"	4,5	50	1"
	4.4/5.4/5.6/6.4/6.6						
Auxilliary	0.4/1.4/2.4/2.6/3.4/3.6	2,8	50	3/4"	2,5	50	3/4"
	4.4/5.4/5.6/6.4/6.6						

Valves pressure drop



Note: The main battery valve connection

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

Note: The main battery valve connection
is 1/2" (Kvs 2) for TL0 - TL2 - TL3 sizes
and 3/4" (3,5 4 5 6 s.
the auxiliary battery valve connection is 1/2" (Kvs 2).

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

Electric resistance TL-E

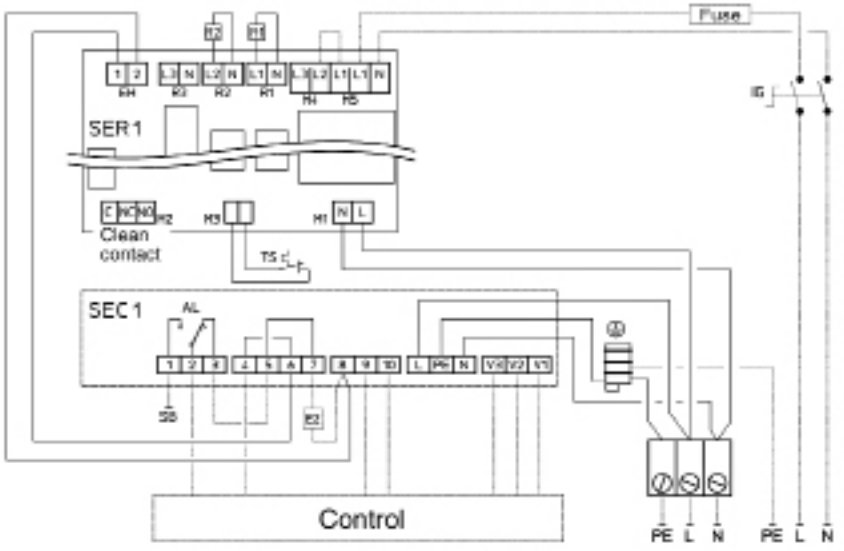
The TopLine 2 pipe models are available with electric resistance that is controlled in place of the heating battery valve. The electric resistance is controlled in place of the hot water valve and not as integration to it.
The resistance is hermetically sealed and supplied inside the battery pipes and therefore can be only factory mounted.
The electric resistances of the TL 1.2T/2.2T/3.2T units are for single phase 230V supply.
The electric resistances of the TL 4.2T/5.2T/6.2T units are for three phase 400V supply.
A specific electronic board is fitted in the unit control panel and it is connected to the resistance and to the safety thermostat.
When the safety thermostat operates, it keeps open the resistance supply relays on the electronic board.
The rearmement is by electric means, cutting off the supply to the unit.

Model	TL 1.2T-E	TL 1.2T-E/2.2T-E/3.2T-E	TL 1.2T-E/2.2T-E/3.2T-E
Emission	1500 Watt	2500 Watt	3000 Watt
Supply	230V ~	230V ~	400V ~
Number and Dia. of connecting wires	3 x 1,5 mm	3 x 2,5 mm	5 x 1,5 mm

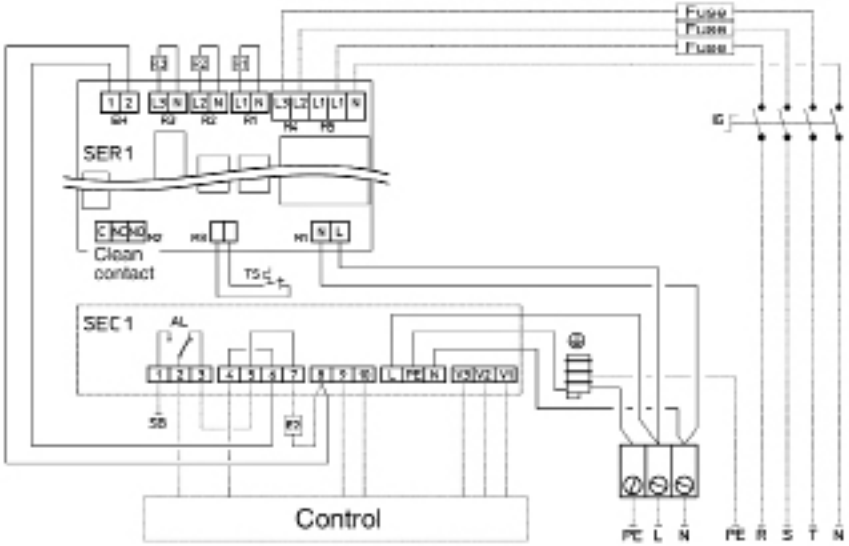
Note: the cooling emission of the units
is 95% of the emission in the tables of page 6.

Electric diagrams

MODELS
TL 1.2T
TL 2.2T
TL 2.2T



MODELS
TL 4.2T
TL 5.2T
TL 6.2T



LEGEND

IG = Main switch
TS = Safety thermostat
R1 = Resistance 1
R2 = Resistance 2
R3 = Resistance 3

Cassette unit operating limits with electric coil

Max. ambient temperature for Cassette unit with electric coil in heating mode: 25°C

TopLine ECM

Introduction

The TopLine ECM series uses an innovative brushless synchronous permanent magnet electric motor controlled by an inverter card that is directly installed on the unit.

The air flow can be varied continuously by means of a 1-10 V signal generated by Hidria controls or by independent contollers (programmable with a 1-10V output).

The extreme efficiency, also at a low speed, makes possible a great reduction in electric consumption (more than 75% less in comparison to a traditional motor) with absorption values, under normal operating conditions, that are no greater than 10 Watt in the entire range.

The brushless motor is characterised by a constant synchronous speed, independently of the applied load, that depends only on the motor power supply frequency, which is modulated by the inverter. It consumes less because:

-The motor always works at its point of maximum efficiency.

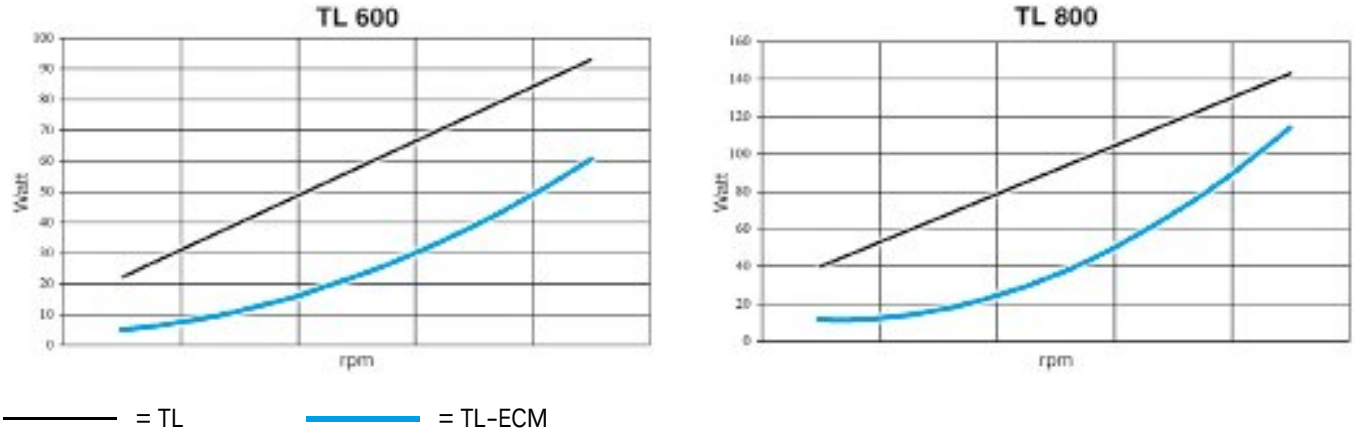
In the brushless motor, the rotors's permanent magnets generate in battery the magnetising power autonomously.

-The motor always operates at the synchronous speed, as a result there are no induced currents that reduce efficiency.

The main advantages are:

- Large reduction in energy consumption, thanks to an optimal response to the thermal load of the environment during every moment of the day.
- Operating silence at all rotation speeds.
- Ability to operate at any rotation speed.

MOTOR ABSORPTION



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 inside thermal insulation (closed cell polyethelene 10 mm thick) and outside anti-condensate lining.

CONTROL EQUIPMENT
TL-ECM version
It consists of the pump control circuit board and the inverter circuit board.

TL-ECM-MB version
It consists of the MB electronic board (that integrates pump control) and the inverter board.

FAN ASSEMBLY
The fan assembly, which is mounted on anti-vibrating supports, is extremely silent.
The radial fan has been designed to optimise performance, using wing profile blades with a shape that reduce turbulence, increasing efficiency and reducing noise.
The fans are connected to a BLAC three phase permanent magnet DC brushless electronic motor that is controlled with current reconstructed according to a sinusoidal wave.
The inverter board that controls the motor operation is powered by 230 Volt, single-phase and, with a switching system, it generates a three-phase frequency modulated, wave form power supply.
The electric power supply required for the machine is therefore single-phase with voltage of 220 - 240 V and frequency of 50 - 60 Hz.

HEAT EXCHANGER
Made of copper tubes with bonded aluminium fins for maximum transfer contact.
The batteries are with 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 battery).
For 4 pipe systems two versions are available:
TL 1.4T and TL 4.4T supply an higher heating emission;
TL 2.6T, TL 3.6T, TL 5.6T supply an higher cooling emission.
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 B2 to DIN 4102.

AIR FILTER
Synthetic washable filter, easily removable.

CONDENSATE PUMP
Float switch 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.

EUROVENT Certification

www.eurovent-certification.com
www.certiflash.com

Technical features

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

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

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

MODEL		TL -ECM 1.2			TL-ECM 2.2			TL-ECM 3.2			TL-ECM 4.2			TL-ECM 5.2		
Speed		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Air flow	m³/h	310	380	535	310	445	710	360	610	880	630	870	1165	710	1130	1770
Cooling total emission (E)	kW	1,84	2,17	2,75	2,24	3,05	4,33	2,56	3,87	5,02	4,21	5,15	6,33	5,29	7,72	10,75
Cooling sensible emission (E)	kW	1,35	1,61	2,09	1,57	2,17	3,18	1,81	2,81	3,74	3,03	3,77	4,72	3,69	5,53	7,94
Heating (E)	kW	2,22	2,67	3,44	2,55	3,58	5,24	2,96	4,63	6,2	5,11	6,35	8,01	5,89	8,83	12,73
Water flow	l/h	317	373	473	385	524	744	441	666	864	723	885	1089	909	1328	1848
ΔP Cooling (E)	kPa	4,9	6,6	10,1	4,6	9,4	15,1	5,9	12,4	19,7	10,9	15,6	22,7	9,4	18,5	33,6
ΔP Heating (E)	kPa	4	5,5	8,7	3,6	6,6	13,1	4,7	10,5	17,7	8,7	12,8	19,5	7,2	14,9	28,8
Sound power Lw (E)	dB(A)	33	39	47	33	43	54	37	50	60	33	39	48	34	47	57
Sound pressure Lp **(*)**	dB(A)	24	30	38	24	34	45	28	41	51	24	30	39	25	38	48
Fan (E)	W	5	8	16	5	11	31	7	21	62	10	17	33	10	32	108
Water content	l	1,4			2,1			2,1			3,0			4,0		
Dimensions	mm	575 x 575 x 275									820 x 820 x 303					

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

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

HEATING
Entering air temperature: + 20°C
Water temperature: + 70/60°C

MODEL		TL -ECM 1.4			TL-ECM 2.6			TL-ECM 3.6			TL-ECM 4.4			TL-ECM 5.6		
Speed		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Air flow	m³/h	310	380	535	310	445	710	360	610	880	630	870	1165	710	1130	1770
Cooling total emission (E)	kW	1,85	2,18	2,77	2,09	2,81	3,93	2,38	3,53	4,53	4,3	5,28	6,51	4,98	7,17	9,87
Cooling sensible emission (E)	kW	1,34	1,6	2,08	1,49	2,04	2,95	1,71	2,62	3,46	3,08	3,84	4,83	3,52	5,2	7,4
Water flow	l/h	318	375	476	359	483	676	409	608	779	740	908	1120	856	1233	1697
ΔP Cooling (E)	kPa	4,6	6,2	9,5	3,5	5,7	10,5	4,1	8,4	13,1	9,4	13,6	19,8	8,8	17	30,1
Heating (E)	kW	2,43	2,85	3,62	1,98	2,53	3,35	2,2	3,06	3,79	6,14	7,54	9,36	5,22	7,16	9,51
Water flow	l/h	209	245	311	170	217	288	189	263	326	528	649	805	449	616	818
ΔP Heating (E)	kPa	5,7	7,6	11,7	3,5	5,5	9	4,5	7,5	11	10,5	15,5	22,5	6,5	11	18
Sound power Lw (E)	dB(A)	33	39	47	33	43	54	37	50	60	33	39	48	34	47	57
Sound pressure Lp **(*)**	dB(A)	24	30	38	24	34	45	28	41	51	24	30	39	25	38	48
Fan (E)	W	5	8	16	5	11	31	7	21	62	10	17	33	10	32	108
Cooling water content	l	1,4			1,7			1,7			3,0			3,6		
Heating water content	l	0,7			0,5			0,5			1,4			1,1		
Dimensions	mm	575 x 575 x 275									820 x 820 x 303					

Condensate pump absorption: 8 W

(E) = Eurovent certified performance.

***** = The sound pressure levels are 9 dB(A) lower than the sound power levels and apply to the reverberant field of a 100 m³ room and a reverberation time of 0.5 sec.

Emission

Cooling emission of 1 battery units (2 pipe installation)

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

ECM Model	Speed	Air flow	EWT 5 - LWT 10°C			EWT 7 - LWT 12°C			EWT 9 - LWT 14°C			EWT 12 - LWT 17°C		
			Water flow	Total emission	Sensible emission	Water flow	Total emission	Sensible emission	Water flow	Total emission	Sensible emission	Water flow	Total emission	Sensible emission
		m³/h	l/h	kW	kW	l/h	kW	kW	l/h	kW	kW	l/h	kW	kW
TL 1.2T	High	535	570	3,32	2,33	473	2,75	2,09	368	2,14	1,84	266	1,54	1,54
	Med	380	448	2,60	1,80	373	2,17	1,61	293	1,70	1,42	207	1,21	1,21
	Low	310	379	2,2	1,51	317	1,84	1,35	250	1,45	1,18	174	1,01	1,01
TL 2.2T	High	710	888	5,17	3,55	744	4,33	3,18	588	3,42	2,80	410	2,38	2,38
	Med	445	621	3,61	2,43	524	3,05	2,17	419	2,43	1,91	281	1,63	1,63
	Low	310	453	2,63	1,75	385	2,24	1,57	311	1,81	1,38	204	1,18	1,18
TL 3.2T	High	880	1035	6,02	4,18	864	5,02	3,74	678	3,94	3,30	482	2,80	2,80
	Med	610	793	4,61	3,15	666	3,87	2,81	528	3,07	2,48	363	2,11	2,11
	Low	360	520	3,02	2,02	441	2,56	1,81	354	2,06	1,59	235	1,37	1,37
TL 4.2T	High	1165	1304	7,58	5,27	1089	6,33	4,72	857	4,98	4,17	604	3,51	3,51
	Med	870	1055	6,13	4,21	885	5,15	3,77	701	4,07	3,32	483	2,81	2,81
	Low	630	859	4,99	3,39	723	4,21	3,03	576	3,35	2,67	392	2,28	2,28
TL 5.2T	High	1770	2210	12,85	8,88	1848	10,75	7,94	1456	8,47	7,00	1031	5,99	5,99
	Med	1130	1574	9,15	6,18	1328	7,72	5,53	1059	6,16	4,86	718	4,18	4,18
	Low	710	1068	6,21	4,12	909	5,29	3,69	734	4,27	3,24	482	2,80	2,80

Heating emission of 1 battery units (2 pipe installation)

Entering air temperature: +20°C

ECM Model	Speed	Air flow	EWT 45 - LWT 40°C		EWT 50 - LWT 40°C		EWT 55 - LWT 45°C		EWT 60 - LWT 50°C		EWT 70 - LWT 60°C	
			Water flow	Emission	Water flow	Emission	Water flow	Emission	Water flow	Emission	Water flow	Emission
		m³/h	l/h	kW	l/h	kW	l/h	kW	l/h	kW	l/h	kW
TL 1.2T	High	535	493	2,87	272	3,17	330	3,83	387	4,49	500	5,82
	Med	380	383	2,22	213	2,48	257	2,99	300	3,49	387	4,51
	Low	310	318	1,85	178	2,07	214	2,49	250	2,91	322	3,75
TL 2.2T	High	710	749	4,36	420	4,89	505	5,87	589	6,85	758	8,81
	Med	445	512	2,98	290	3,38	347	4,04	404	4,70	517	6,01
	Low	310	365	2,12	209	2,43	249	2,90	289	3,36	368	4,28
TL 3.2T	High	880	886	5,15	494	5,75	595	6,92	696	8,09	896	10,42
	Med	610	663	3,85	373	4,34	448	5,20	522	6,07	670	7,79
	Low	360	423	2,46	241	2,81	288	3,35	335	3,89	427	4,96
TL 4.2T	High	1165	1152	6,70	642	7,47	774	9,00	904	10,51	1165	13,54
	Med	870	912	5,30	512	5,95	615	7,15	717	8,34	922	10,72
	Low	630	734	4,27	415	4,82	497	5,78	578	6,72	741	8,61
TL 5.2T	High	1770	1817	10,56	1015	11,81	1222	14,21	1428	16,60	1837	21,37
	Med	1130	1262	7,34	713	8,29	854	9,93	994	11,56	1274	14,82
	Low	710	842	4,90	481	5,60	574	6,67	666	7,74	849	9,87

Emission correction factors for different working conditions.
Multiply the factors by the emission figures in the 7-12°C table above.

Total emission				
Water (°C)	Air (°C)	25-18	26-18.5	28-20
7/12 °C	K	0,82	0,89	1,11
10/15 °C	K	0,56	0,63	0,82
14/18 °C	K	0,35	0,41	0,52

Sensible emission				
Water (°C)	Air (°C)	25-18	26-18.5	28-20
7/12 °C	K	0,9	0,94	1,06
10/15 °C	K	0,72	0,78	0,9
14/18 °C	K	0,5	0,58	0,72

Note:

the correction factors are indicative, as they are average values.

Emission of 4 pipe units with standard and enhanced cooling battery

Cooling emission of 2 battery units (4 pipe installation)

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

ECM Model	Speed	Air flow	EWT 5 - LWT 10°C			EWT 7 - LWT 12°C			EWT 9 - LWT 14°C			EWT 12 - LWT 17°C		
			Water flow	Total emission	Sensible emission	Water flow	Total emission	Sensible emission	Water flow	Total emission	Sensible emission	Water flow	Total emission	Sensible emission
		m³/h	l/h	kW	kW	l/h	kW	kW	l/h	kW	kW	l/h	kW	kW
TL 1.4T	High	535	572	3,32	2,32	476	2,77	2,08	372	2,17	1,83	264	1,54	1,54
	Med	380	448	2,61	1,79	375	2,18	1,60	296	1,72	1,41	206	1,20	1,20
	Low	310	378	2,20	1,50	318	1,85	1,34	252	1,46	1,18	172	1,00	1,00
TL 2.6T	High	710	812	4,72	3,29	676	3,93	2,95	528	3,07	2,60	378	2,20	2,20
	Med	445	576	3,35	2,28	483	2,81	2,04	382	2,22	1,79	262	1,53	1,53
	Low	310	425	2,47	1,66	359	2,09	1,49	287	1,67	1,31	192	1,12	1,12
TL 3.6T	High	880	940	5,46	3,86	779	4,53	3,46	606	3,52	3,05	442	2,57	2,57
	Med	610	729	4,24	2,93	608	3,53	2,62	477	2,77	2,31	337	1,96	1,96
	Low	360	486	2,82	1,91	409	2,38	1,71	325	1,89	1,50	221	1,29	1,29
TL 4.4T	High	1165	1341	7,79	5,40	1120	6,51	4,83	882	5,13	4,26	619	3,6	3,6
	Med	870	1081	6,29	4,30	908	5,28	3,84	719	4,18	3,38	497	2,89	2,89
	Low	630	877	5,10	3,45	740	4,30	3,08	590	3,43	2,71	398	2,32	2,32
TL 5.6T	High	1770	2035	11,83	8,26	1697	9,87	7,40	1332	7,74	6,53	951	5,53	5,53
	Med	1130	1467	8,53	5,82	1233	7,17	5,20	979	5,69	4,58	672	3,90	3,90
	Low	710	1010	5,87	3,93	856	4,98	3,52	687	3,99	3,09	457	2,66	2,66

Heating emission of 2 battery units (4 pipe installation)

Entering air temperature: +20°C

ECM Model	Speed	Air flow	EWT 45 - LWT 40°C		EWT 50 - LWT 40°C		EWT 55 - LWT 45°C		EWT 60 - LWT 50°C		EWT 70 - LWT 60°C	
			Water flow	Emission	Water flow	Emission	Water flow	Emission	Water flow	Emission	Water flow	Emission
		m³/h	l/h	kW	l/h	kW	l/h	kW	l/h	kW	l/h	kW
TL 1.4T	High	535	305	1,78	161	1,87	198	2,30	236	2,74	311	3,62
	Med	380	241	1,40	127	1,48	156	1,82	186	2,16	245	2,85
	Low	310	205	1,19	108	1,26	133	1,55	158	1,84	209	2,43
TL 2.6T	High	710	279	1,62	139	1,61	176	2,04	213	2,48	288	3,35
	Med	445	211	1,23	106	1,23	133	1,55	161	1,87	217	2,53
	Low	310	165	0,96	83	0,97	105	1,22	127	1,47	170	1,98
TL 3.6T	High	880	315	1,83	156	1,82	198	2,31	241	2,80	326	3,79
	Med	610	255	1,48	127	1,48	161	1,87	195	2,27	263	3,06
	Low	360	184	1,07	93	1,08	117	1,36	141	1,64	189	2,20
TL 4.4T	High	1165	793	4,61	421	4,90	517	6,01	613	7,13	805	9,36
	Med	870	639	3,72	340	3,96	417	4,85	494	5,75	649	7,54
	Low	630	521	3,03	278	3,23	340	3,96	403	4,68	528	6,14
TL 5.6T	High	1770	800	4,65	413	4,80	514	5,97	615	7,15	818	9,51
	Med	1130	603	3,50	312	3,63	388	4,51	464	5,39	616	7,16
	Low	710	440	2,56	229	2,67	284	3,30	339	3,94	449	5,22

Emission correction factors for different working conditions.
Multiply the factors by the emission figures in the 7-12°C table above.

Total emission				
Water (°C)	Air (°C)	25-18	26-18.5	28-20
7/12 °C	K	0,82	0,89	1,11
10/15 °C	K	0,56	0,63	0,82
14/18 °C	K	0,35	0,41	0,52

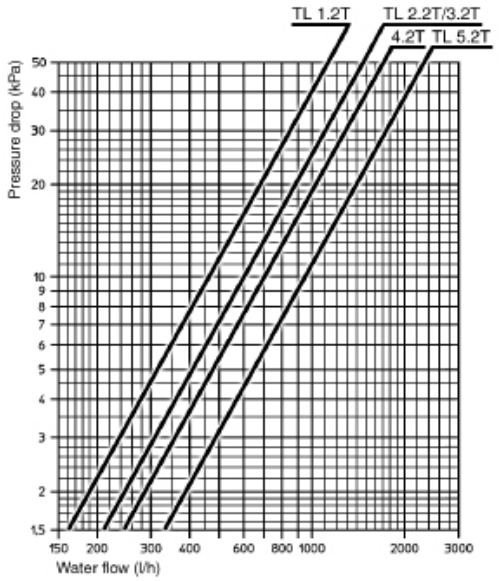
Sensible emission				
Water (°C)	Air (°C)	25-18	26-18.5	28-20
7/12 °C	K	0,9	0,94	1,06
10/15 °C	K	0,72	0,78	0,9
14/18 °C	K	0,5	0,58	0,72

Note:

the correction factors are indicative, as they are average values.

Water side pressure drop

2 pipe installation

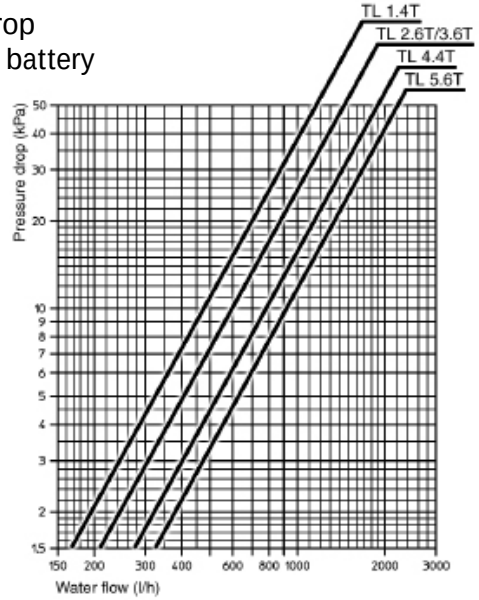


Pressure drop
for mean water temperature of 10°C,
for different temperatures multiply the pressure drop figure
by the K correction factors in the table.

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

4 pipe installation

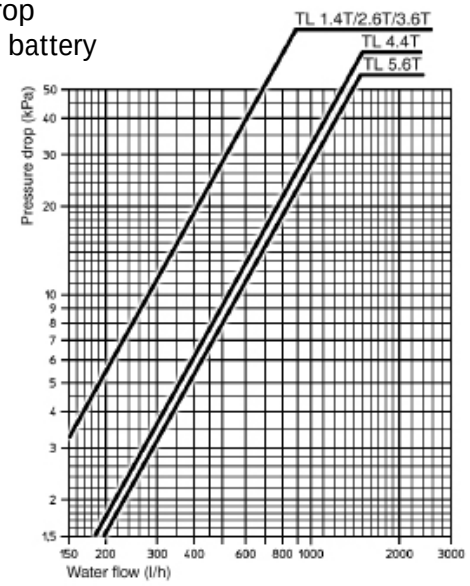
Pressure drop
for cooling battery



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
K	0,94	0,90	0,86	0,82	0,78	0,74	0,70

Pressure drop
for heating battery



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.

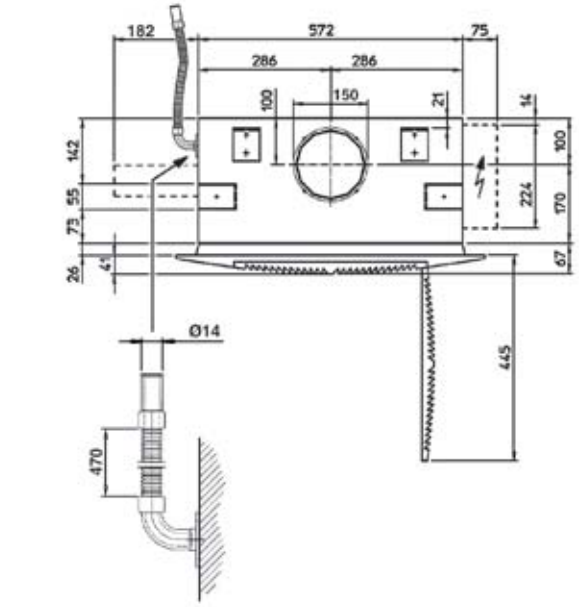
°C	40	50	60	70	80
K	1,14	1,08	1,02	0,96	0,90

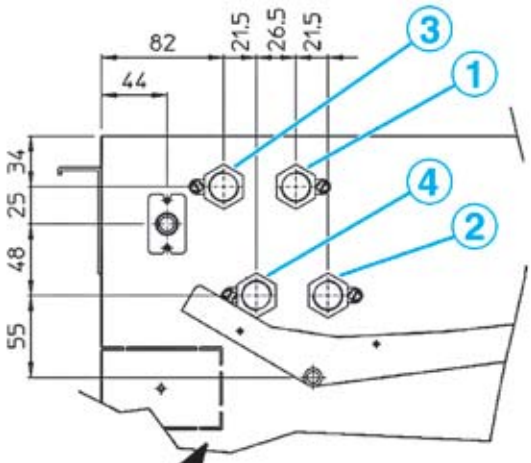
Working conditions

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

Dimensions and weights

TL 1.2T-1.4T / TL 2.2T-2.6T / TL 3.2T-3.6T (Version 600 x 600)



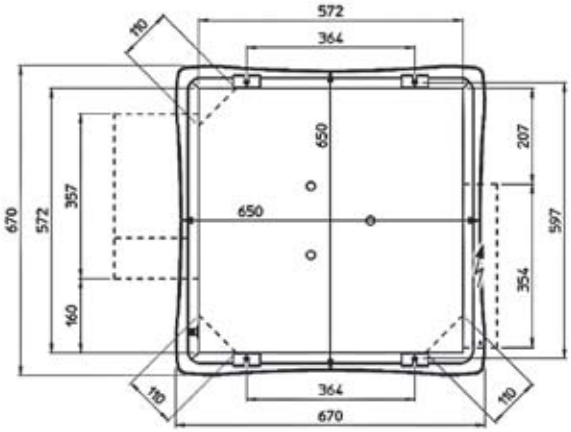


2 pipe units

- 3. Flow, heating/cooling 1/2”
- 4. Return, heating/cooling 1/2”

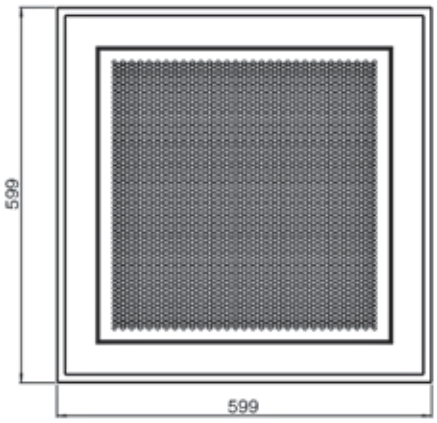
4 pipe units

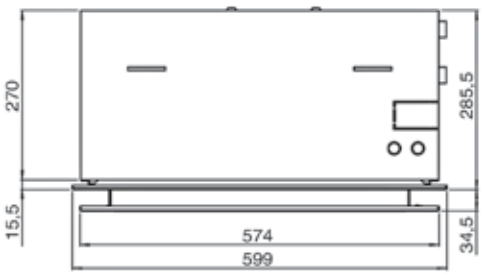
- 1. Flow, heating 1/2”
- 2. Return, heating 1/2”
- 3. Flow, cooling 1/2”
- 4. Return, cooling 1/2”



MD-600
METAL DIFFUSER

(receiver kit
IRC-MD code 9060178
for MD diffuser
for infra-red units)

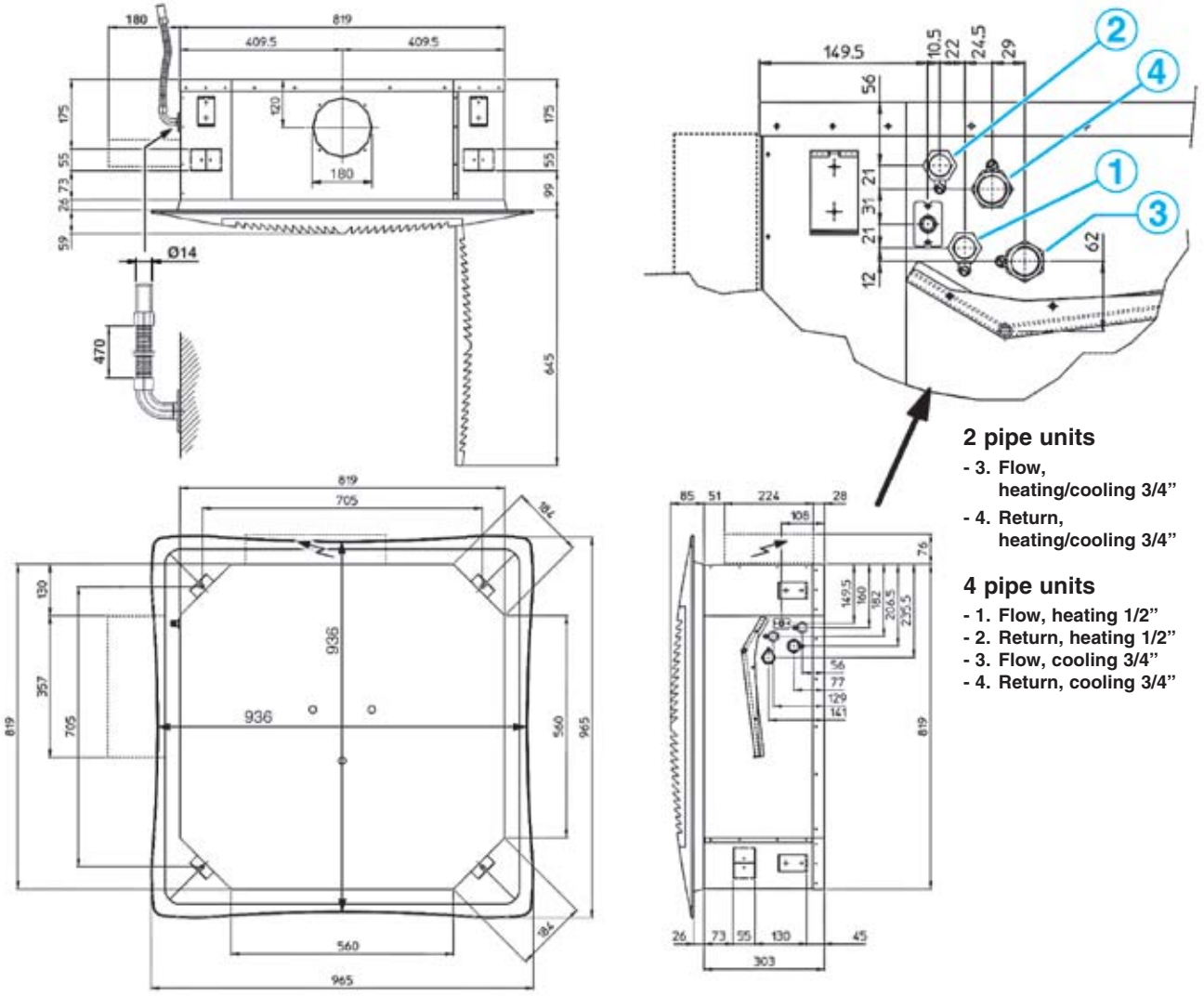




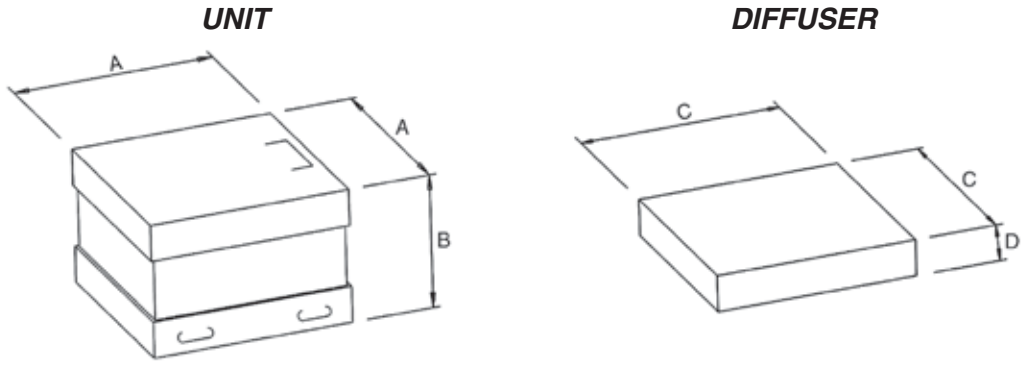
ECM Model	UNIT		DIFFUSER		Packed unit Dimensions			
	Weights packed unit	Weights unpacked unit	Weights packed unit	Weights unpacked unit	A	B	C	D
	kg	kg	kg	kg	mm			
TL 1.2	28	22	6	3	790	350	750	150
TL 1.4	30	24						
TL 2.2 - 2.6								
TL 3.2 - 3.6								

Dimensions and weights

TL 4.2T-4.4T / TL 5.2T-5.6T (Version 800 x 800)



PACKED UNIT



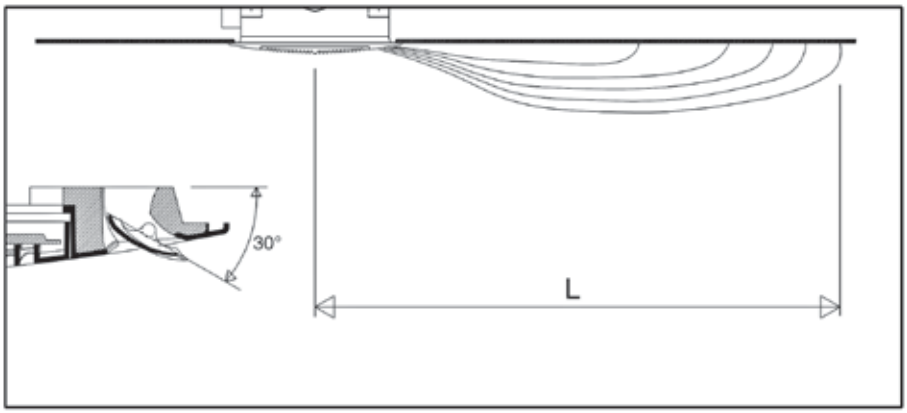
ECM Model	*UNIT*		*DIFFUSER*		Packed unit Dimensions			
	Weights packed unit	Weights unpacked unit	Weights packed unit	Weights unpacked unit	*A*	*B*	*C*	*D*
	kg	kg	kg	kg	mm			
TL 4.2	44	36	10	6	1050	400	1000	200
TL 4.4	47	39						
TL 5.2 - 5.6								

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.

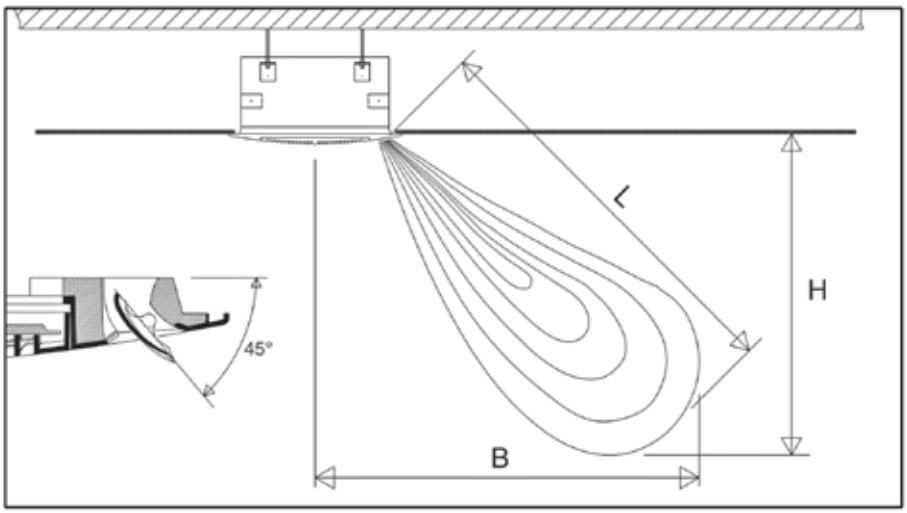
The useful throw **L** refers to the distance between the unit and the point where the air speed is 0.2 m/sec; if the louver has a gradient of 30° (recommended in cooling mode), the so-called “Coanda” effect will occur, illustrated in the first figure, while at a gradient of 45° (recommended in heating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

With adjustable air diffusion louvers at 30°



ECM Model			***TL 1***			***TL 2***			***TL 3***			***TL 4***			***TL 5***		
Speed			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

With adjustable air diffusion louvers at 45°



ECM Model			***TL 1***			***TL 2***			***TL 3***			***TL 4***			***TL 5***		
Speed			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
Height	**H**	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
Distance	**B**	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

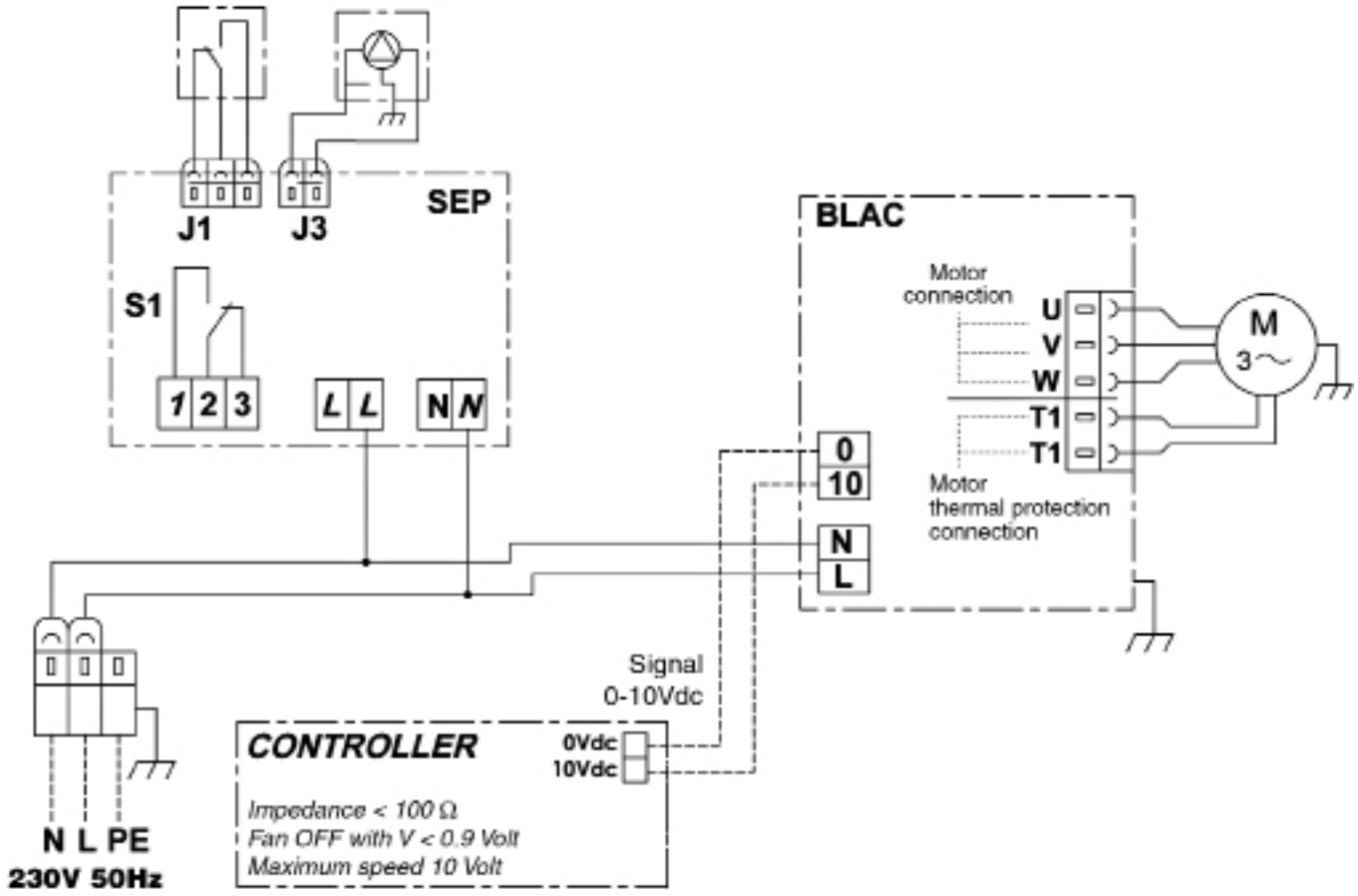
NOTE: On heating it must be payed attention to rooms where the floor temperature is particularly low (for example less than 5°C).
In this situation the floor can cool the lower layer of air to a level that stop the uniform diffusion of the hot air coming from the unit, decreasing the throw figures shown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

TL-ECM configuration

For this cassette configuration, the 1-10 Vdc signal, which controls the inverter, must be supplied by a controller with the following signal specifications:

- Impedance < 100 Ω;
- Maximum speed 10Vdc;
- Fan OFF with V < 0.9Vdc.

TL-ECM electric diagram



LEGEND

SEP = Pump control board
BLAC = Inverter board
M = Electronic motor
CONTROLLER = Controller

Accessories

Change-Over T2 accessory

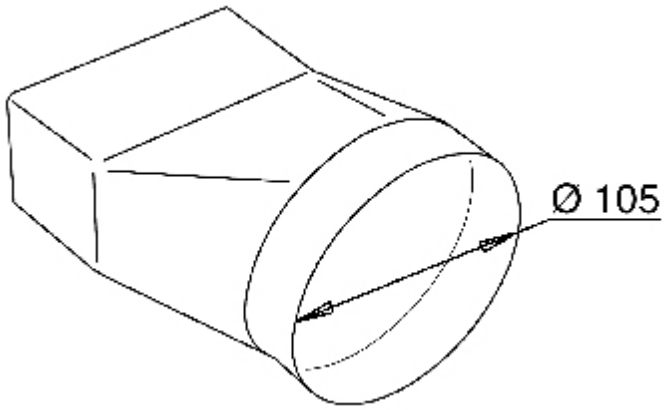
Suitable for TL–ECM–IR units only.

The NTC sensor, if connected to the T2 contact of the board, works like a change-over: fitted in contact to the supply pipe it controls automatically the winter/summer switch in accordance to the water temperature.

IDENTIFICATION	CODE
T2	9025310

Fresh air connection

See page 13.



IDENTIFICATION	CODE
CAP	6078005

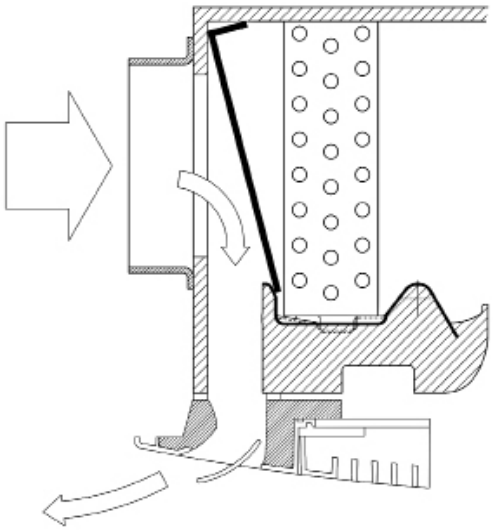
Fresh air kit

This is used to introduce primary 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 1-2-3		TL 4-5	
m /h	Pa	/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 1 - 2 - 3 and 180 mm for TL 4 - 5.

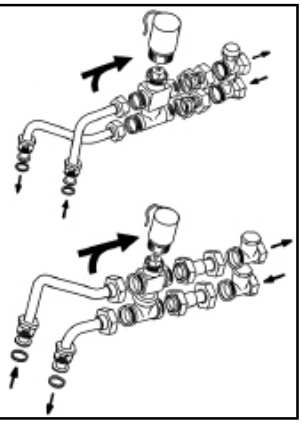
ON-OFF valves with thermoelectric actuator

Valve with Micrometric Lockshield Valve

3 ways

TL 1.2-1.4
TL 2.2-2.6
TL 3.2-3.6

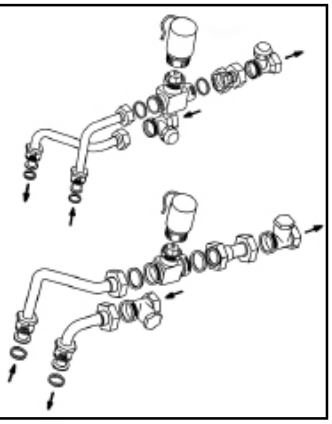
TL 4.2-4.4
TL 5.2-5.6



2 ways

TL 1.2-1.4
TL 2.2-2.6
TL 3.2-3.6

TL 4.2-4.4
TL 5.2-5.6

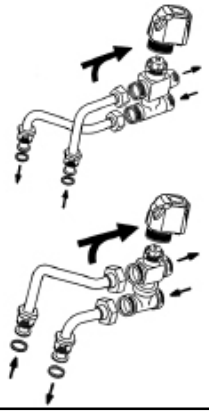


Valve with Simplified Kit

3 ways

TL 1.2-1.4
TL 2.2-2.6
TL 3.2-3.6

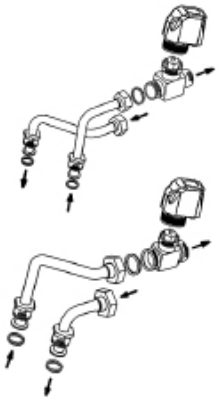
TL 4.2-4.4
TL 5.2-5.6



2 ways

TL 1.2-1.4
TL 2.2-2.6
TL 3.2-3.6

TL 4.2-4.4
TL 5.2-5.6



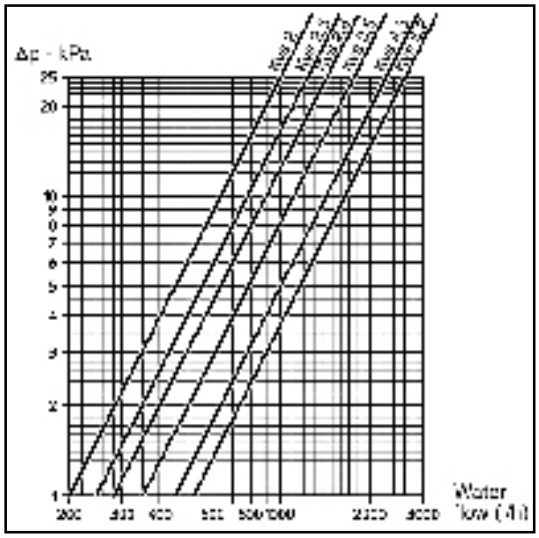
Technical data:

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

Battery type	ECM Model	2 way valves			3 way valves		
		K_{vs} m /h		Valve ** connection	K_{vs} m /h		Valve ** connection
Main	1.2 - 2.2 - 3.2 1.4 - 2.6 - 3.6	2,8	50	3/4"	2,5	50	3/4"
	4.2 - 5.2 4.4 - 5.6	5,2	60	1"	4,5	50	1"
Auxiliary	1.4 - 2.6 - 3.6 4.4 - 5.6	2,8	50	3/4"	2,5	50	3/4"

Valves pressure drop



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

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

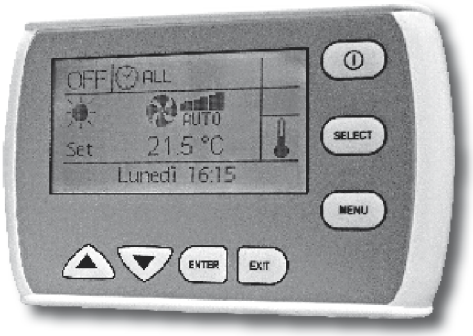
Controls for Climmy TopLine /Climmy TopLine ECM-MB versions

All the Climmy TopLine /TopLine ECM 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 of a MB power board (mounted on models TL-MB and TL-ECM-MB) and a series of devices, such as the T-MB wall mounted control, the RT03 infra-red remote control, the PSM-DI multifunction control and a supervisory program.

T-MB wall mounted control



PSM-DI multifunction control

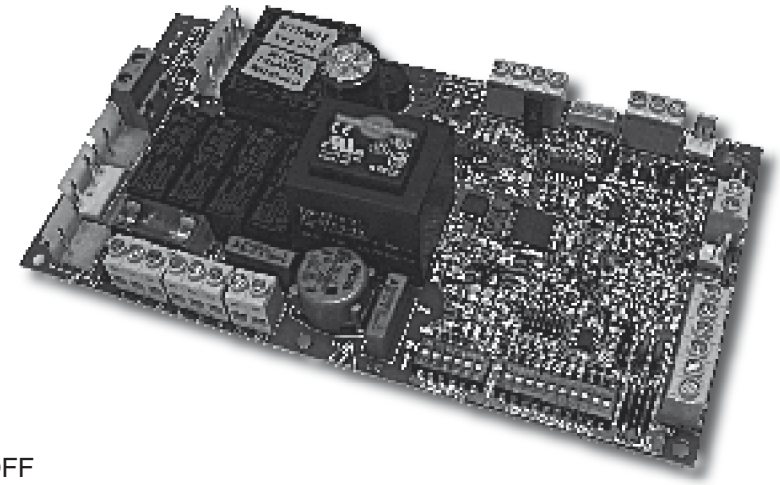
RT03 infra-red remote control

MB controls

MB power electronic board

The MB power 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 mounted control.
- RS 485 serial connection to manage several fan coils in Master/Slave configuration or to create a supervisory network.

MB controls

T-MB wall mounted control

DESCRIPTION	IDENTIFICATION	CODE
Wall mounted control (to be used only with TL-MB and TL-ECM-MB version)	T-MB	9066331E

Wall mounted 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 the supervisory program).
- 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.

MB controls

RT03 infra-red remote control

Description	Identification	Code
RT03 infra-red remote control with receiver supplied with separate packaging (to be used only with TL-MB and TL-ECM-MB version)	RCS-RT03	9079117
Receiver for RT03 infra-red remote control supplied with separate packaging (to be used only with TL- MB and TL- ECM- MB version)	RCS	9079116
Receiver for RT03 infra-red remote control and MDA metal diffuser supplied with separate packaging (to be used only with TL- MB and TL- ECM- MB version)	RS	9066338
RT03 infra-red remote control supplied with separate packaging (to be used only with TL- MB and TL- ECM- MB version)	RT03	3021203

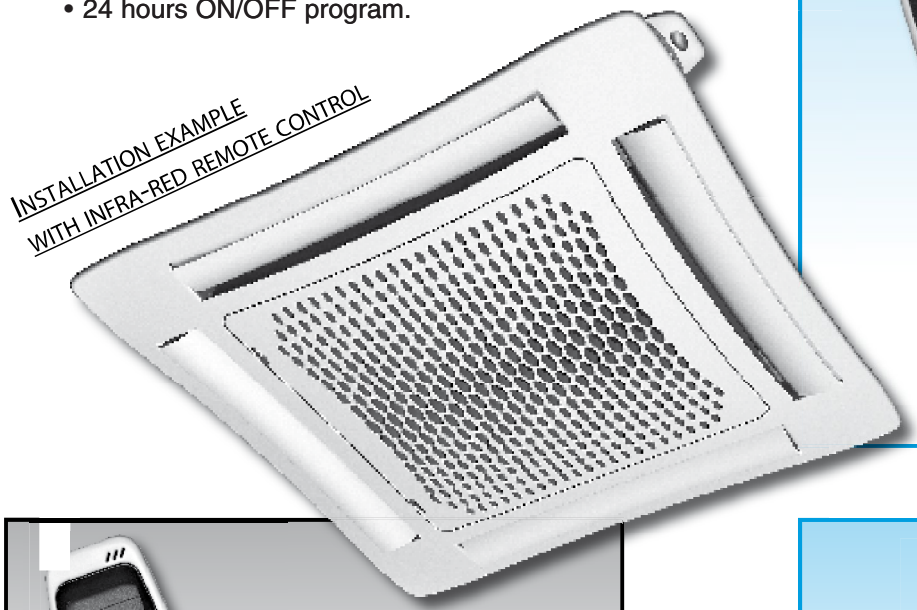
The infra-red remote control allows setting by a remote position the fan coil operation parameters.

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.
- 24 hours ON/OFF program.

Identification	Code
RT03	3021203

Installation example with infra-red remote control



Identification	Code
RCS-RT03	9079117

Identification	Code
RCS	9079116

MB controls

A group of Climmy TopLine MB can be connected via a serial link and can consequently be managed at the same time by just one T-MB wall mounted 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.

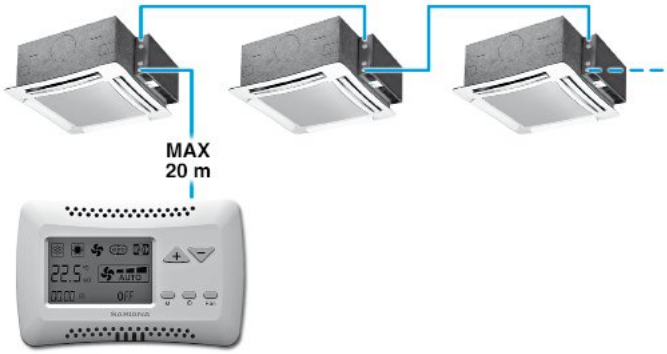
With T-MB wall mounted control

One control for each cassette

(MAXIMUM LENGTH OF THE CONNECTION CABLE = 20 m)

One control for more cassettes (20 units max.)

(MAXIMUM TOTAL LENGTH OF THE CONNECTION CABLE = 800 m)



With RT03 infra-red remote control

One control for each cassette

One control for more cassettes (20 units max.)

(MAXIMUM TOTAL LENGTH OF THE CONNECTION CABLE = 800 m)

T2 accessory for units with MB electronic board

IDENTIFICATION	CODE
T2	9025310

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.

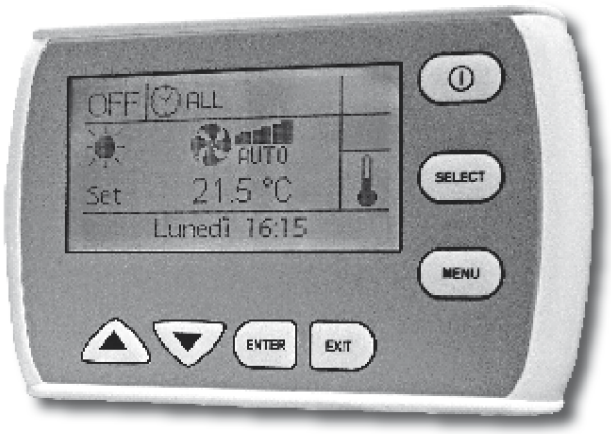
  If water temperature is lower than 20°C, cooling mode is set; on the other hand, if water temperature exceeds 30°C, heating mode is set.

- It can be used on units with electric heater and hot water supply. The T2 priority probe activates the electric heater or water valve, depending on the water temperature detected. If water temperature exceeds 34°C, the water valve ON-OFF control is activated; on the other hand, if water temperature is lower than 30°C, the electric heater is activated.

MB controls

PSM-DI multifunction control

DESCRIPTION	IDENTIFICATION	CODE
Multifunction control (to be used only with TL-MB and TL-ECM-MB version)	PSM-DI	3021293



Another option available for the serial communication between the units is the possibility to connect up to 60 Cassette units in series and manage them with just one wall mounted PSM-DI controller. The wall mounted controller can be used to set the operating mode for each individual unit connected, display the operating conditions of each individual unit, and set the ON/OFF time sets for each day of the week (the program can be set for all the units and for a maximum of two groups of units).
If more than 60 units need to be connected, two or more controllers must be used. Each wall mounted controller only manages the units it is connected to.
The PSM-DI control is used to manage a series of fan coils, up to a maximum of 60 units (the maximum length of the RS 485 connection cable must not exceed 800 m), from one single control point.

The PSM-DI control communicates via a serial line with all the units connected, with the possibility of controlling them all together or individually. In fact, the unique address of each individual fan coil means that all the units can be called at the same time, or the individual unit called, to perform the following functions:

- display the current operating mode, the fan speed, the set point;
- display the room temperature measured on the individual unit;
- turn all the units ON and OFF at the same time or alternatively each unit individually;
- change the operating mode (fan only, heating, cooling, automatic changeover);
- change the set point;
- modify the values and operation parameters of the fan speed.

Each function can then be sent to all the units connected, or alternatively to each individual unit.

Different set points or operating modes can be set for each individual unit.

The PSM-DI panel can also be used for the time management of the units over the week. Four ON times and four OFF times can be set on the units for each day of the week. A different Temperature set that will be considered as Operation set for all connected appliances, can be set for each event. If the Temperature set is not entered for the individual event, it must be set during programming for each individual unit or for the entire network.

Units without receiver or with receiver can be connected within the network: the former can receive instructions only from the PSM-DI wall mounted panel; while the latter can receive information from both the wall mounted panel (PSM-DI) and infra-red remote control. Use the infra-red remote control to force ON mode of the individual unit, if ON/OFF daily time programming has been set. The unit will regain the settings from the PSM-DI panel during execution of successive start-up program.

The PSM-DI panel cannot be used
together with the building management system (see next page).

Note: set the configuration Dip Switches of each fan coil as illustrated in the remote control use manual, based on the required solutions.

Note: the RS 485 network's overall length must not exceed 700/800 metres.

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 design 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 resistance

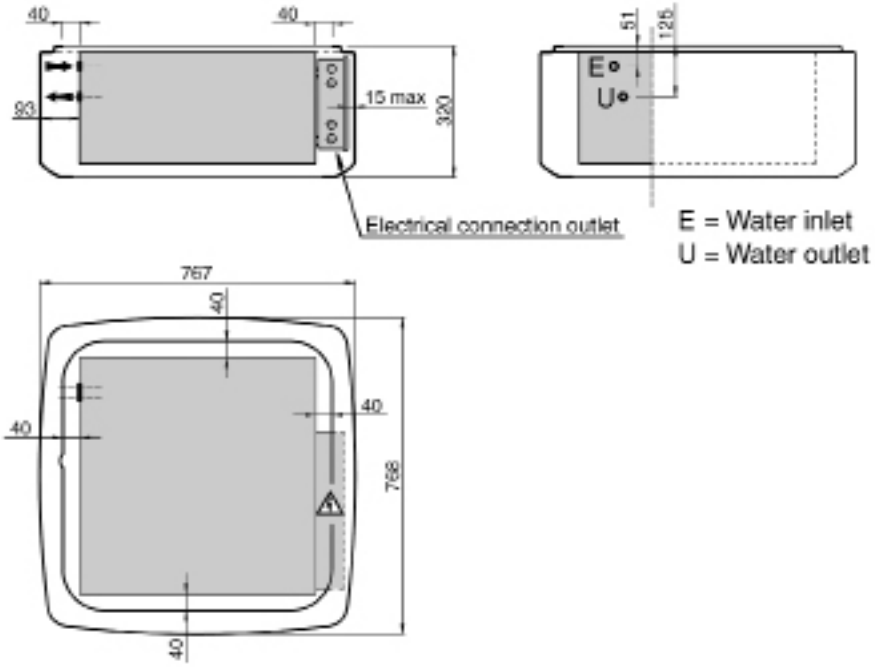
The MCT version features a special casing delivered in separate packaging; this must only be fitted after having installed the TopLine unit and completed the water and electrical connections.

Dimensions and Weights

TL 0.2T-MCT / TL 1.2T-MCT / TL 2.2T-MCT / TL 3.2T-MCT

Casing code: 9079240

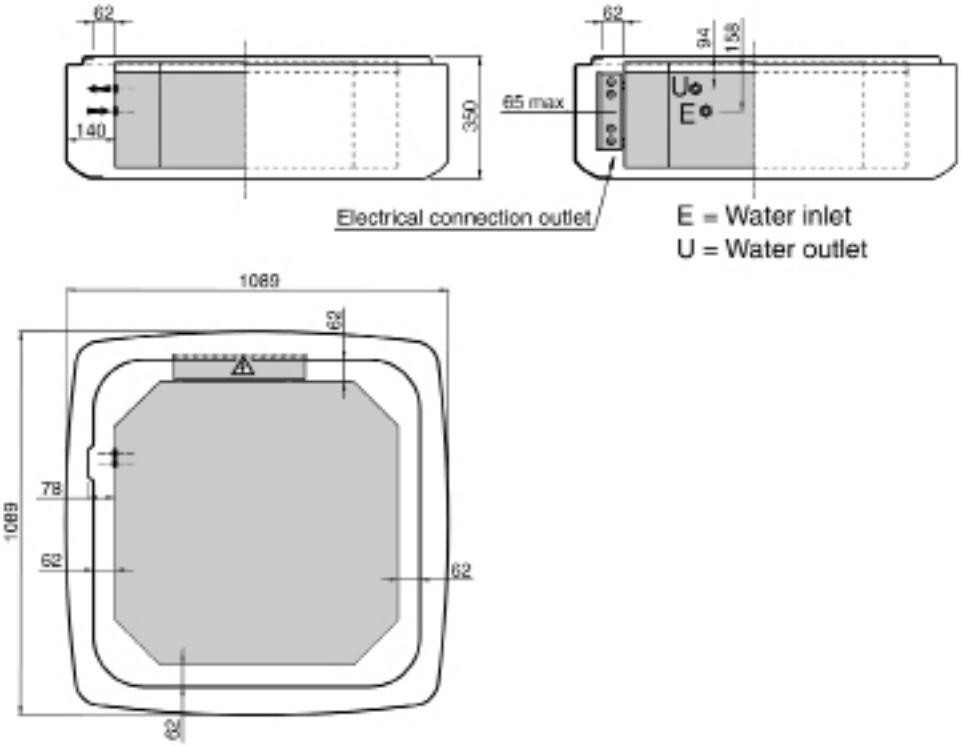
Casing weight: 5 kg (7,5 kg with the packaging)



TL 4.2T-MCT / TL 5.2T-MCT / TL 6.2T-MCT

Casing code: 9079250

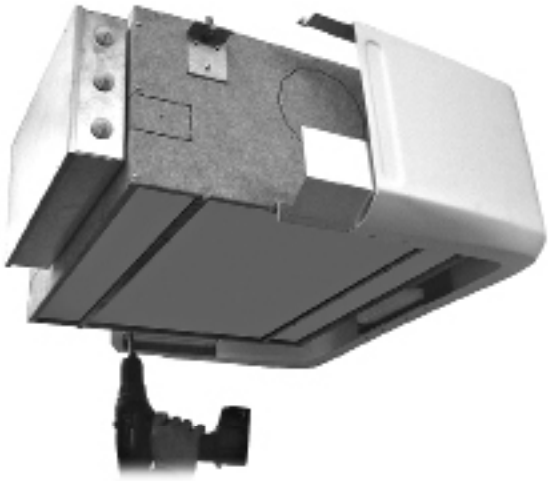
Casing weight: 10,5 kg (13,5 kg with the packaging)



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

Assembly diagram

TL 0.2T-MCT / TL 1.2T-MCT
TL 2.2T-MCT / TL 3.2T-MCT

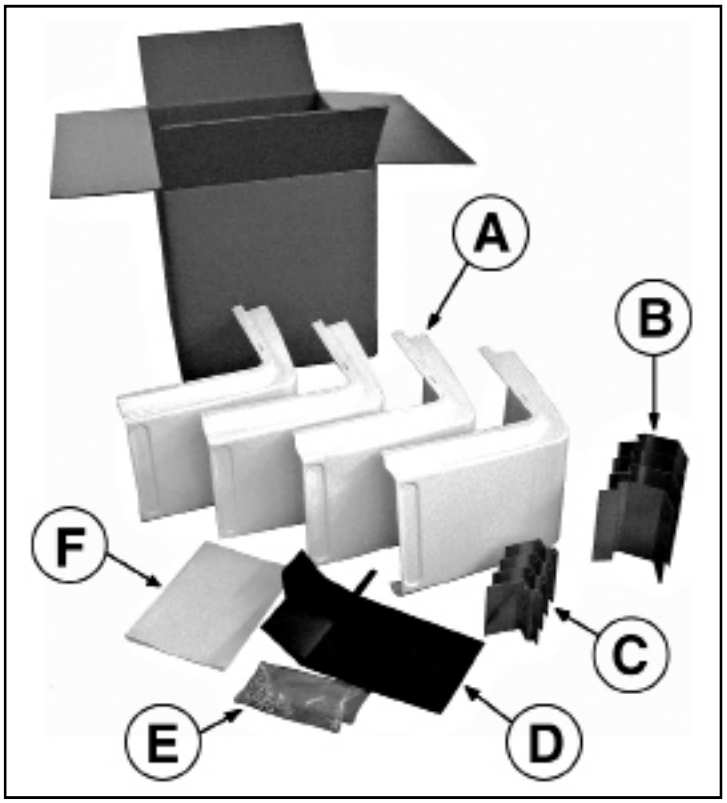


TL 4.2T-MCT
TL 5.2T-MCT / TL 6.2T-MCT

Components of the casing:

The casing includes:

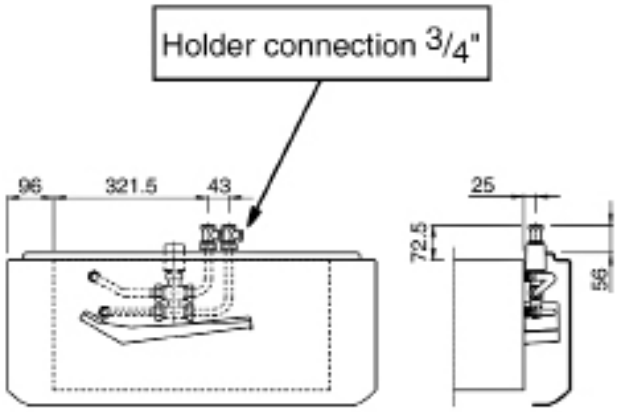
A – 4 corner covers
B – 4 bottom brackets
C – 4 top brackets
D – Condensate collection tray
Hardware (45 3.9x9.5mm TCX screws)
F – Instruction sheet



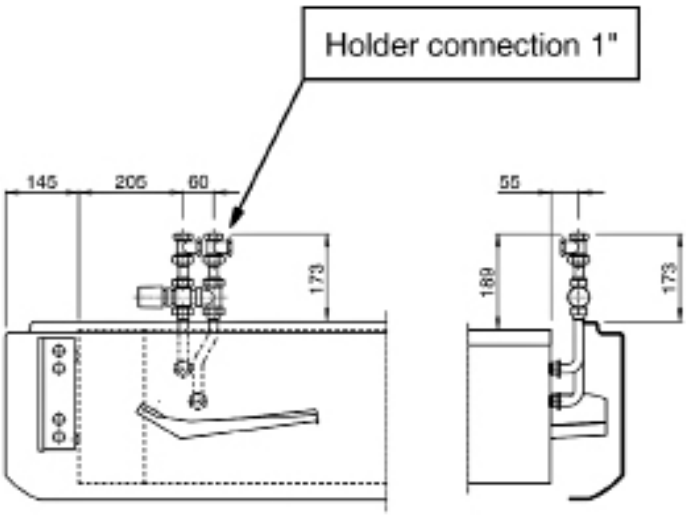
Valve kit

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

TL 0.2T-MCT / TL 1.2T-MCT
TL 2.2T-MCT / TL 3.2T-MCT
Code 9079155



TL 4.2T-MCT
TL 5.2T-MCT / TL 6.2T-MCT
Code 9079156



For the specifications of the valves, see page 20.

Архангельск (8182)63-90-72
Астана (7172)727-132
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Тверь (4822)63-31-35
Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Ярославль (4852)69-52-93

Киргизия (996)312-96-26-47 Казахстан (772)734-952-31 Таджикистан (992)427-82-92-69

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