

High wall fan coil units TECHNICAL MANUAL

GB



HIGH WALL FAN COIL UNITS



COMPANY
WITH QUALITY SYSTEM
CERTIFIED BY DNV
=ISO 9001/2000=

INDEX

1	CONSTRUCTIVE FEATURES	2
2	AVAILABLE ACCESSORIES	2
3	REMOTE CONTROL FUNCTION	3
4	RATED TECHNICAL DATA	3
5	SOUND LEVELS	4
6	COOLING CAPACITY	4
7	HEATING CAPACITY	5
8	OVERALL DIMENSIONS	6
9	WIRING DIAGRAMS	7

DECLARATION OF CONFORMITY **CE**


Galletti S.p.A. hereby declares, under its sole responsibility, that WH high wall fan coil units series have been designed, built and tested in conformity with the specifications of European Directives:

- 98/37/CE (Machinery Directive)
- 73/23/CEE (Low Voltage Directive)
- 89/336/CEE (Directive on Electromagnetic Compatibility)
- 97/23 CE (PED)

Bentivoglio, 29/03/2004

Galletti S.p.A.

Luigi Galletti



OPERATING LIMITS

- > thermal fluid: water
- > Water temperature: from 7°C to 75°C
- > maximum operating temperature: 10 bar
- > air temperature: from 5°C to 35°C
- > air temperature with moist bulb: max 24°C
- > power supply: +/- 10%

1 CONSTRUCTIVE FEATURES

WH high wall mounted fan coils, proposed in three models with cooling capacities ranging from 2 to 4.28 kW, make the ideal indoor unit for air conditioning systems in public buildings, shops and hotels.

Coupled with Galletti water chillers and heat pumps, they provide an environmentally friendly alternative to direct expansion systems.

WH fan coils are hallmarked by the quality of their components and their versatility of use:

- > High efficiency heat exchanger made with copper piping and aluminium fins, low pressure drop on the water side. The heat exchanger comes complete with manual air valves and hoses for connection to the system or to the rear valve-fitted panel (optional accessory).
- > Extremely quiet tangential fan connected to a 3-speed electric motor with a low number of revolutions.
- > Motorised air outlet baffle for adjusting the direction of the airflow from the fan coil.
- > The high quality plastics used allow operation with hot water up to a temperature of 75°.
- > Microprocessor controlled operation with control of air intake temperature and that of the water inside the heat exchanger that regulates the heating function according to the temperature of the water (from 38°C to 75°C). The auto restart function makes it possible to automatically restore unit management after blackouts.
- > Infra-red remote control that when combined with the microprocessor control allows simple, versatile management of the fan coil:
 - temperature setting
 - manual or automatic fan speed selection
 - manual or automatic operating mode selection
 - cooling
 - ventilation
 - heating
 - automatic air outlet baffle oscillation with position control
 - night mode setting
 - Automatic 24-hour on-off timer
 - Clock
 - LCD for displaying all fan coil functions



The remote control comes packed separately, complete with wall bracket.

- > Pilot lights on the front panel indicate unit operation.
- > Air filter easily extractable for cleaning.

2 AVAILABLE ACCESSORIES

BP

Rear panel complete that allow the installation of the 3way valve

VK

3-way ON/OFF valve for even more accurate regulation of room temperature. Electrothermal ON-OFF valve motor, suitable for 230 volt power supply and connection to the unit's terminal board.



3 REMOTE CONTROL FUNCTION

REMOTE CONTROL FUNCTIONS

- If the room temperature is lower than the setting temperature, the heating mode is activated. The motor driven valve is triggered. The internal fan works at the set speed.
- If the room temperature is equal to the setting temperature + 0.5°C, the heating mode is stopped. The motor driven valve and the internal fan are disconnected.
- The setting temperature range is 15° - 30°C. The internal fan speed can be set on Min, Med, Max and Auto.
- The motor driven valve will be activated/deactivated after a delay time of 30 sec
- If the water temperature is equal to 38°C, the motor driven valve is activated and the internal fan is deactivated.
- If the water temperature is >38°C the motor driven valve is activated. The internal fan will continue working at the set speed.
- If the water temperature is >75°C the motor driven valve is deactivated. The internal fan will continue working at the set speed.

COOLING

- If the room temperature is higher than the set temperature, the cooling mode is activated. The motor driven valve is activated. The internal fan works at the set speed.
- If the room temperature is equal to the setting temperature -0.5°C, the cooling mode is stopped. The motor driven valve is deactivated. The internal fan works at the set speed.
- The setting temperature range is 15° - 30°C.
- The internal fan speed can be set on Min, Med, Max and Auto.
- The motor driven valve will be activated/deactivated after a delay time of 30 sec.
- If the water temperature is equal to or lower than 2°C, the motor driven valve is deactivated and the internal fan continues working at the set speed.

TIMER

- The switch off timer can be set only when the system is ON.
- The switch on timer can be set only when the system is OFF.
- The maximum setting time is 24 hours.
- Switching the unit on/off will cancel the timer mode.

4 RATED TECHNICAL DATA

	Fan speed		WH10	WH20	WH30
Total cooling capacity	High	kW	2,27	3,06	4,28
Sensible cooling capacity	High	kW	1,72	2,41	3,15
Water flow		l/h	389	524	734
Water pressure drop		kPa	15	13	18
Heating capacity	High	kW	5,34	7,87	9,96
Water flow		l/h	468	685	873
Water pressure drop		kPa	15	18	19
Water connection		"	1/2	1/2	1/2
Drain connection		mm	22	22	22
Water content		dm ³	0,5	1,1	1,8
Air flow	High	m ³ /h	415	515	750
	Med	m ³ /h	360	460	630
	Low	m ³ /h	335	420	570
Power supply		V / f / Hz	230 / 1 / 50	230 / 1 / 50	230 / 1 / 50
Current absorption	High	A	0,15	0,17	0,24
Power input		W	34	39	51
Sound power level	High	dB(A)	54	54	60
	Med	dB(A)	50	51	55
	Low	dB(A)	48	49	51
Sound pressure level	High	dB(A)	46	46	52
	Med	dB(A)	42	43	47
	Low	dB(A)	40	41	43
Overall dimension: height		mm	276	320	330
Overall dimension: lenght		mm	870	1020	1160
Overall dimension: depth		mm	183	185	213
Approx. weight		kg	12	15	18

- Cooling mode: water temperature 7/12°C, air temperature 27°C dry bulb, 19°C wet bulb
- Heating mode: water temperature 70-60°C, air temperature 20°C
- Sound pressure calculated for 1 meter distance, under the unit

5 SOUND LEVELS

- Vr** Fan speed
Lw Octave band sound power level
Lw_A A - weighted sound power level
Lp_A A - weighted sound pressure level (1,5 m distance, 2 directional factor)

		Lw							LwA	LpA
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
	Vr	dB	dB	dB	dB	dB	dB	dB	dB/A	dB/A
WH 10	high	48,0	50,6	51,7	51,3	46,2	35,3	22,3	54,5	46,5
	med	45,3	47,2	48,8	46,8	41,5	29,8	18,4	50,5	42,5
	low	44,1	45,5	47,3	44,7	39,3	27,4	17,2	48,6	40,6
WH 20	high	47,3	50,6	51,2	51,4	47,5	39,2	28,9	54,8	46,8
	med	44,5	47,4	48,3	47,6	43,2	34,8	22,8	51,1	43,1
	low	42,8	45,5	46,7	46,2	41,0	32,3	20,8	49,5	41,5
WH 30	high	48,3	52,6	56,0	57,3	52,2	45,3	37,3	60,1	52,1
	med	45,2	50,1	52,1	51,9	46,7	38,5	29,1	55,0	47,0
	low	42,8	48,2	48,4	48,7	42,3	34,0	23,3	51,5	43,5

6 COOLING CAPACITY

- Δpw** Pressure drop on water side
PFT Total cooling capacity
PFS Sensible cooling capacity
Qw Water flow rate
Tbs₁ Inlet air temperature dry bulb
Tbu₁ Inlet air temperature wet bulb
- Tw₁** Inlet water temperature
Tw₂ Outlet water temperature
Vr Fan speed:
3 high
2 medium
1 low

Tbs ₁ / Tbu ₁ (UR ₁)		27°C / 19°C (51%)																
Tw ₁ / Tw ₂		6 / 11°C				7°C / 12°C				8°C / 13°C				9°C / 14°C				
		Vr	PFT	PFS	Qw	Δpw	PFT	PFS	Qw	Δpw	PFT	PFS	Qw	Δpw	PFT	PFS	Qw	Δpw
		W	W	l/h	kPa	W	W	l/h	kPa	W	W	l/h	kPa	W	W	l/h	kPa	
WH 10	3	2150	1590	369	14	1780	1450	305	10	1380	1380	237	6	1240	1240	212	5	
	2	1910	1420	328	11	1540	1280	265	8	1220	1220	210	5	1130	1130	195	5	
	1	1790	1340	308	10	1410	1190	242	7	1170	1170	202	5	1090	1090	187	4	
WH 20	3	2800	2190	480	11	2050	1900	351	6	2060	2060	353	6	1920	1920	330	6	
	2	2350	1900	404	8	1970	1750	339	6	1920	1920	330	6	1800	1800	309	5	
	1	2140	1730	367	7	1910	1650	328	6	1680	1560	289	4	1700	1700	292	5	
WH 30	3	4090	2940	701	17	3520	2710	603	13	2860	2460	490	9	2390	2390	410	7	
	2	3540	2550	608	13	3020	2340	519	10	2400	2100	411	7	2060	2060	354	5	
	1	3250	2350	558	11	2760	2150	474	8	2130	1910	366	5	1940	1940	334	5	
Tbs ₁ / Tbu ₁ (UR ₁)		25°C / 18°C (51%)																
Tw ₁ / Tw ₂		6 / 11°C				7°C / 12°C				8°C / 13°C				9°C / 14°C				
		Vr	PFT	PFS	Qw	Δpw	PFT	PFS	Qw	Δpw	PFT	PFS	Qw	Δpw	PFT	PFS	Qw	Δpw
		W	W	l/h	kPa	W	W	l/h	kPa	W	W	l/h	kPa	W	W	l/h	kPa	
WH 10	3	2590	1850	444	19	2270	1720	389	15	1900	1580	327	11	1540	1540	264	8	
	2	2320	1660	398	16	2020	1540	347	13	1680	1410	288	9	1370	1370	235	6	
	1	2190	1570	376	15	1900	1450	327	11	1560	1320	268	8	1280	1280	220	6	
WH 20	3	3670	2670	630	18	3050	2410	524	13	2500	2500	429	9	2300	2300	395	8	
	2	3270	2380	561	14	2660	2130	456	10	2000	1880	343	6	2040	2040	351	6	
	1	2960	2160	507	12	2310	1900	397	8	1940	1760	333	6	1930	1930	331	6	
WH 30	3	4810	3370	825	23	4280	3150	734	18	3700	2930	634	14	3040	2690	522	10	
	2	4180	2930	718	18	3710	2740	637	14	3190	2540	548	11	2590	2310	444	7	
	1	3850	2700	661	15	3410	2520	585	12	2920	2330	501	9	2330	2110	400	6	

7 HEATING CAPACITY

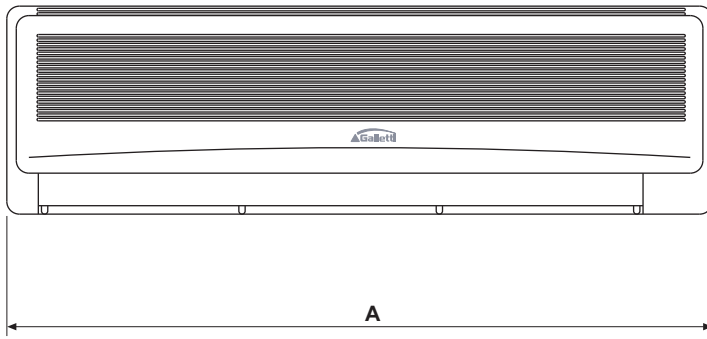
Legend:

Δpw Pressure drop on water side
PT Heating capacity
Qw Water flow rate

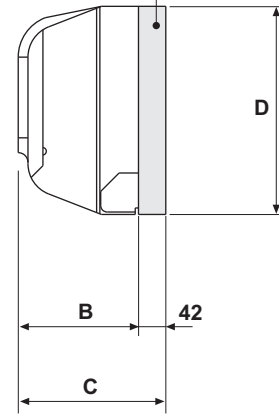
Tbs₁ Inlet air temperature dry bulb
Tw₁ Inlet water temperature
Tw₂ Outlet water temperature
Vr Fan speed:
3 high
2 medium
1 low

Tbs₁		20°C								
Tw₁ / Tw₂		45 / 40°C			60°C / 50°C			70°C / 60°C		
	Vr	PT	Qw	Δpw	PT	Qw	Δpw	PT	Qw	Δpw
		W	l/h	kPa	W	l/h	kPa	W	l/h	kPa
WH 10	3	2640	459	16	4130	361	10	5340	468	15
	2	2380	413	13	3720	326	8	4820	423	13
	1	2250	392	12	3530	309	8	4570	401	12
WH 20	3	3850	669	19	6050	529	12	7820	685	18
	2	3490	607	16	5500	480	10	7090	622	15
	1	3220	560	14	5070	443	9	6550	575	13
WH 30	3	4920	856	20	7720	674	12	9960	873	19
	2	4290	746	16	6730	588	10	8670	760	15
	1	3960	688	14	6220	543	8	7990	701	13
Tbs₁		22°C								
Tw₁ / Tw₂		45 / 40°C			60°C / 50°C			70°C / 60°C		
	Vr	PT	Qw	Δpw	PT	Qw	Δpw	PT	Qw	Δpw
		W	l/h	kPa	W	l/h	kPa	W	l/h	kPa
WH 10	3	2390	415	13	3870	338	9	5080	446	14
	2	2150	374	11	3490	305	7	4590	402	12
	1	2040	355	10	3310	289	7	4350	382	11
WH 20	3	3480	605	16	5670	495	10	7430	652	16
	2	3160	549	13	5140	450	9	6750	592	14
	1	2910	507	11	4750	415	8	6230	547	12
WH 30	3	4470	777	17	7250	633	11	9480	831	17
	2	3890	677	13	6320	552	9	8250	724	14
	1	3590	624	11	5830	510	8	7610	668	12

8 OVERALL DIMENSIONS

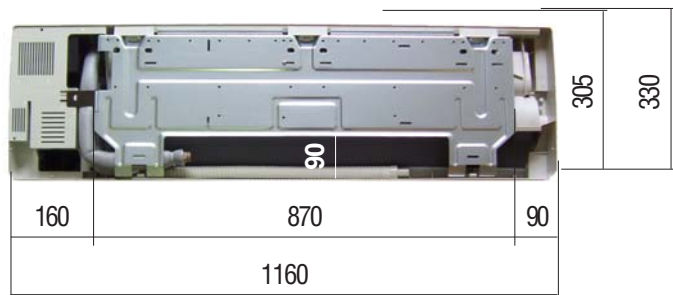
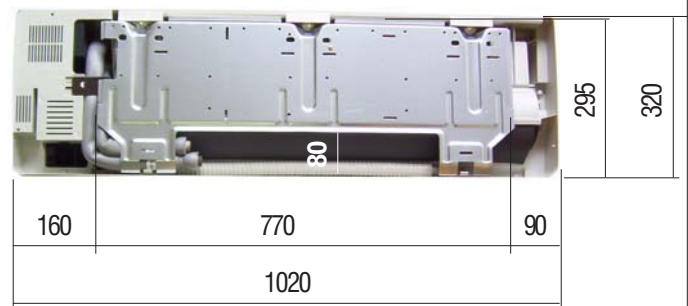
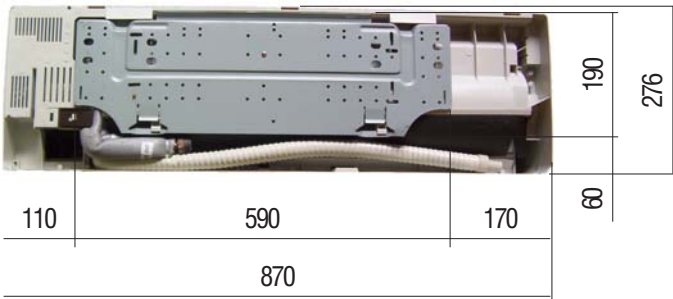


Rear panel with water valve (optional)

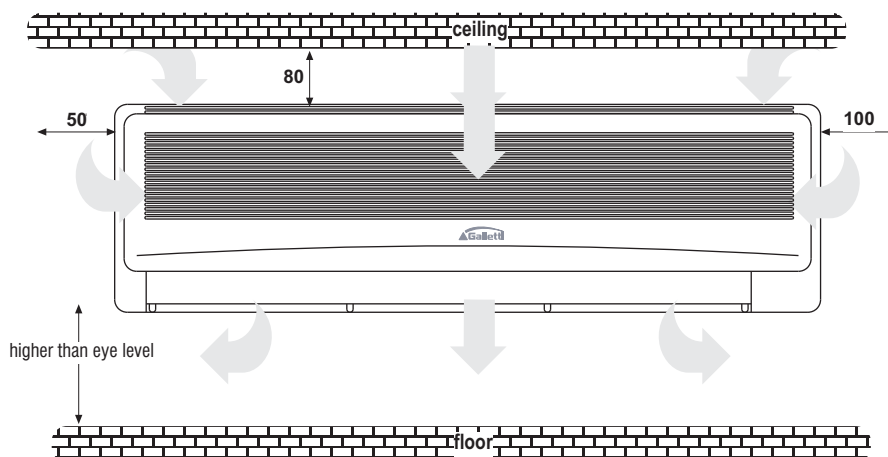


WH	A	B	C	D
10	870	183	225	276
20	1020	185	227	320
30	1160	213	255	330

BACK VIEW



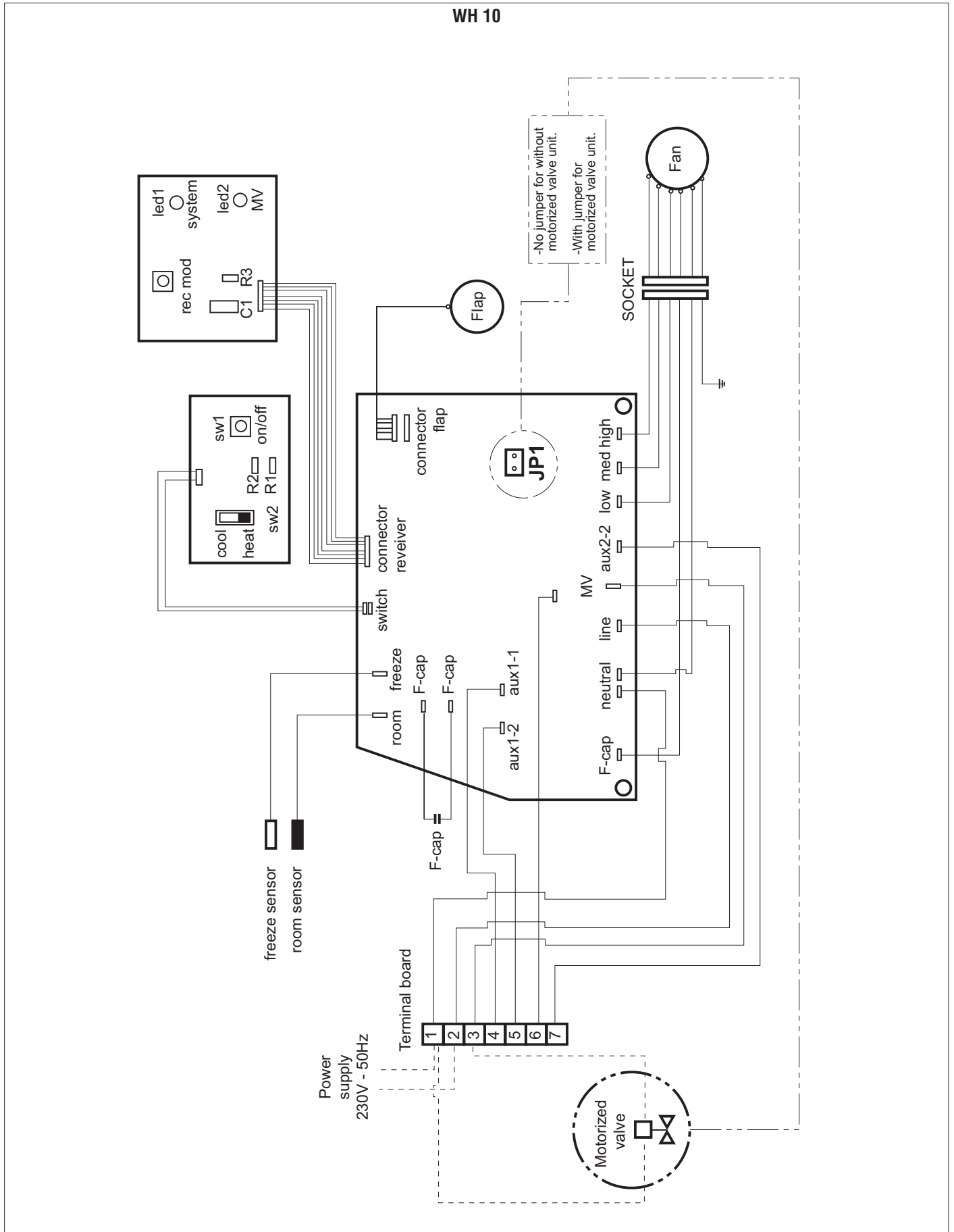
INSTALLATION CLEARANCE REQUIREMENTS



9 WIRING DIAGRAMS

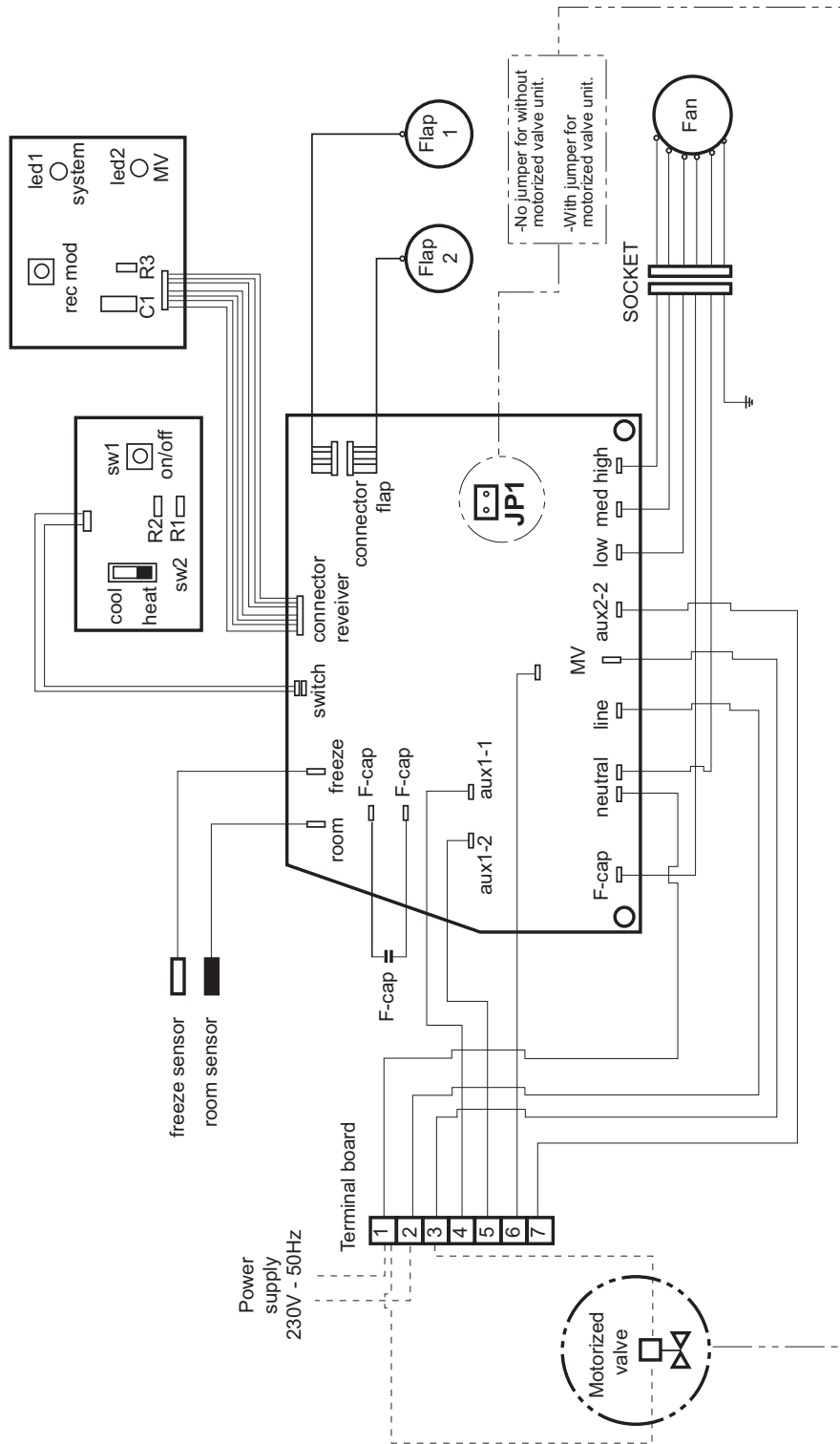
LEGEND:

- JP1: NO JUMPER FOR UNIT WITHOUT MOTORIZED VALVE
- JP1: JUMPER FOR UNIT WITH MOTORIZED VALVE
- REC MOD (RECEIVER)



9 WIRING DIAGRAMS

WH 20 - 30



40010 Bentivoglio (BO)
 Via Romagnoli, 12/a
 Tel. 051/8908111
 Fax 051/8908122
 www.galletti.it