Regulation Manual
Manuel de régulation
Regelungshandbuch
Manuale di regolazione
Manual de regulación

PAC+R
08 ÷ 12

English | Français | Deutsch | Italiano | Español

5.6 ↓ 7.1kW

7.7 ↓ 13.6kW

HFC 407C

Air-water Heat Pump
Pompe à Chaleur air-eau
Wärmepumpe Luft-Wasser
Pompa di Calore aria-acqua
Bomba de Calor aire-agua

UM PAC+ 01-N-3GB
Part number / Code / Teil Nummer / Codice / Código : **3990497GB**
Supersedes / Annule et remplace / Annulliert und ersetzt /
Annulla e sostituisce / Anula y sustituye : **UM PAC+ 01-N-2GB**

CE AFAQ ISO 9001 VERSION 2000

REGULATION MANUAL English

MANUEL DE RÉGULATION Français

REGELUNGSHANDBUCH Deutsch

MANUALE DI REGOLAZIONE Italiano

MANUAL DE REGULACIÓN Español

English

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POWER SUPPLY MUST BE SWITCHED OFF

BEFORE STARTING WORK IN THE ELECTRIC CONTROL BOX

GENERAL RECOMMENDATIONS

Please read the following safety precautions very carefully before installing the unit.

SAFETY DIRECTIONS

Follow the safety rules in forces when you are working on your appliance.

The installation, commissioning and maintenance of these units should be performed by qualified personnel having a good knowledge of standards and local regulations, as well as experience of this type of equipment.

The unit should be handled using lifting and handling equipment appropriate to the unit's size and weight.

Any wiring produced on site must comply with the corresponding national electrical regulations.

Make sure that the power supply and its frequency are adapted to the required electric current of operation, taking into account specific conditions of the location and the current required for any other appliance connected with the same circuit.

The unit must be EARTHED to avoid any risks caused by insulation defects.

It is forbidden to start any work on the electrical components if water or high humidity is present on the installation site.

WARNING

Cutoff power supply before starting to work on the appliance.

When making the hydraulic connections, ensure that no impurities are introduced into the pipe work.

The manufacturer declines any responsibility and the warrantly becomes void if these instructions are not respected.

If you meet a problem, please call the Technical Department of your area.

If possible, assemble the compulsory or optional accessories before placing the appliance on its final location. (see instructions provided with each accessory).

In order to become fully familiar with the appliance, we suggest to read also our Technical Instructions.

-The informations contained in these Instructions are subject to modification without advance notice.

REGULATION

The **PAC+R** is designed for heating premises via two different systems:

- Radiators
- Under-floor heating

The electronic regulation parameters are set at the factory in relation to the requested heating system. Programming kits are available to change these parameters as required.

PRINCIPLE

Regulation will ensure optimal operation of the **PAC+R** in accordance with user comfort requirements.

Generally, on its own, the **PAC+R** is not capable of meeting all heating needs for extremely low outdoor temperatures, either due to a lack of capacity or due to systems shut-downs caused by excessively high inlet (return) water temperatures (e.g.: 47° C max. for radiator circuits). The lowest temperature at which the **PAC+R** can heat the building without back-up heating is known as the balance point. This balance point depends of the building's heat losses and the **PAC+R**'s capacity. This outdoor temperature value is vital for managing the installation and is used as the set temperature point on the adjustable outdoor thermostat.

Accordingly, the regulation has to manage three different regimes, i.e.:

A Outdoor temperature above the balance point.

B Outdoor temperature below the balance point and radiator return water temperature below 48°C.

C Outdoor temperature below the balance point and radiator return water temperature above 47°C.

A) OUTDOOR TEMPERATURE ABOVE THE BALANCE POINT

In this case, the **PAC+R** operates on its own:

- The existing circulation pump is switched to continuous operation.
- In order not to supply the boiler, the zone valve, if it exists, must be placed in the 100% open position on the by-pass.
- If possible, the boiler will be switched to "no heating" or "hot water only" depending on the type of boiler. The system is then regulated via the ambience thermostat (open position), the summer/winter changeover switch (in forced "summer" mode) or another contact device.

COMMENTS: The zone valve placed in the 100% by-pass position prohibits any despatch of hot water from the boiler to the radiators. In this way, the boiler burner is restricted to simply maintaining the temperature of the boiler casing and possibly to producing hot water for cooking and washing purposes.

- The **PAC+R** starts and stops to maintain its inlet (return) water temperature at the value required by the water logic relative to the factory-set outdoor temperature. This logic is adapted to operation with a radiator circuit. In the event of using low temperature emitters such as convector fans or an under-floor circuit, the **PAC+R**'s regulation must be reconfigured with a suitable programme. This programme is supplied on a memory stick and is available as an accessory.
- An ambience thermostat supplied as an option, or integrated in the regulation management kit, stops **PAC+R** operation in the event of an abnormal rise in the ambient temperature due to external heat contributions (e.g. from sunshine or an open fire, etc.)

B) OUTDOOR TEMPERATURE BELOW THE BALANCE POINT AND RADIATOR RETURN WATER TEMPERATURE BELOW 48°C

In this case, the **PAC+R** and the boiler operate at the same time:

- ➢ The zone valve will be in the 100% open position on the boiler.
- ➢ Boiler operation will be authorised.
- ➢ The **PAC+R** operates in exactly the same manner as described in the preceding paragraph for as long as the radiator return temperature remains lower than 48° C.

IMPORTANT: The regulator integrated in the **PAC+R** prohibits the **PAC+R** operating at outdoor temperatures below -5°C for a radiator application and below -15°C for an under-floor application. These values are increased to -10°C and -20°C when the **PAC+R** is equipped with a ZH compressor (option).

C) OUTDOOR TEMPERATURE BELOW THE BALANCE POINT AND RADIATOR RETURN WATER TEMPERATURE ABOVE 47°C

In this case, only the boiler operates and the **PAC+R** is shut down by the integrated regulator. In this configuration, the **PAC+R** can support return water temperatures up to 90°C without its safety systems being triggered.

HEATING SLOPE SETTING.

This appliance can be set at the factory for 2 different types of applications:

- ➢ Use with a radiator heating system.
- ➢ Use with an under-floor heating system.

The factory settings correspond to the majority of applications.

You should refer to a heating curve showing the change in outlet water temperature in relation to the outdoor temperature in order to optimise energy consumption with the **PAC+R**.

The **PAC+R** regulation system acts in relation to INLET (RETURN) water temperature.

REGULATION PARAMETERS

R13 **PAC+R** stopping temperature

R14 **PAC+R** restarting hysteresis

PAC+R restarting temperature = R13+R14

On water inlet (return water temperature)

HEA	Dynamic set temperature point in heating mode
	Compressor stop
H33	Maximum HEA difference
C04	Thermo-regulator hysteresis (non adjustable)
	Compressor restart temperature = HEA-C04

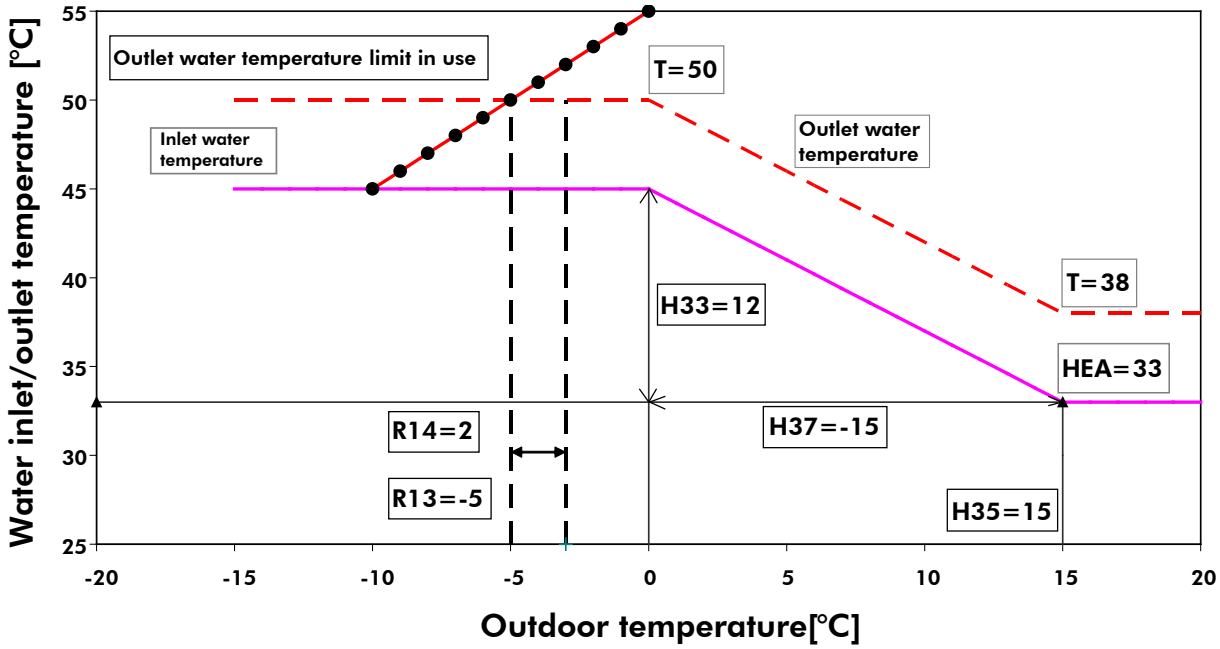
On air

H35	Outdoor air set temperature point in heating mode
	Reference outdoor air temperature
H37	Maximum H35 difference

WATER LOGIC - COMPENSATION FOR RADIATOR OPERATION

FACTORY SETTINGS

R13= -5°C
R14= 2°C
HEA = 33°C
H33 = 12°C
C04 = 2.5°C
H35 = 15°C
H37 = -15°C



The HEA dynamic set temperature point is equal to 33°C. The maximum HEA value is 35°C (password protected).

With this regulation setting, if the water flow through the **PAC+R** is adjusted correctly, the outlet water temperature (T) is at the maximum of 50°C and the inlet water temperature is 45°C.

If the HEA is set at 35°C, the outlet water temperature (T) is at the maximum of 52°C, and the inlet water temperature is 47°C, being the maximum operating limit for the **PAC+R** for this application.

The **PAC+R** must be sized to have a balance point within 4°C and 0°C of the outdoor temperature.

With our balance point regulation kit it is possible to programme boiler start-up conditions. Factory setting T= 4°C.

Comment on the parameter value setting: HEA = 33

The water set temperature point (HEA) corresponds to the temperature at which the compressor stops. It is restarted when a non-adjustable temperature difference of 2.5°K is present. This value can only be altered by an approved technician.

Comment on the parameter value: R13

The automatic shut-down temperature (R13) for the **PAC+R** depends on the type of compressor fitted to the appliance:

- With standard compressor
- With ZH compressor (option)

TO BENEFIT FROM ALL THESE CONTROL FUNCTIONS WE RECOMMEND THE USE OF OUR REGULATION KIT

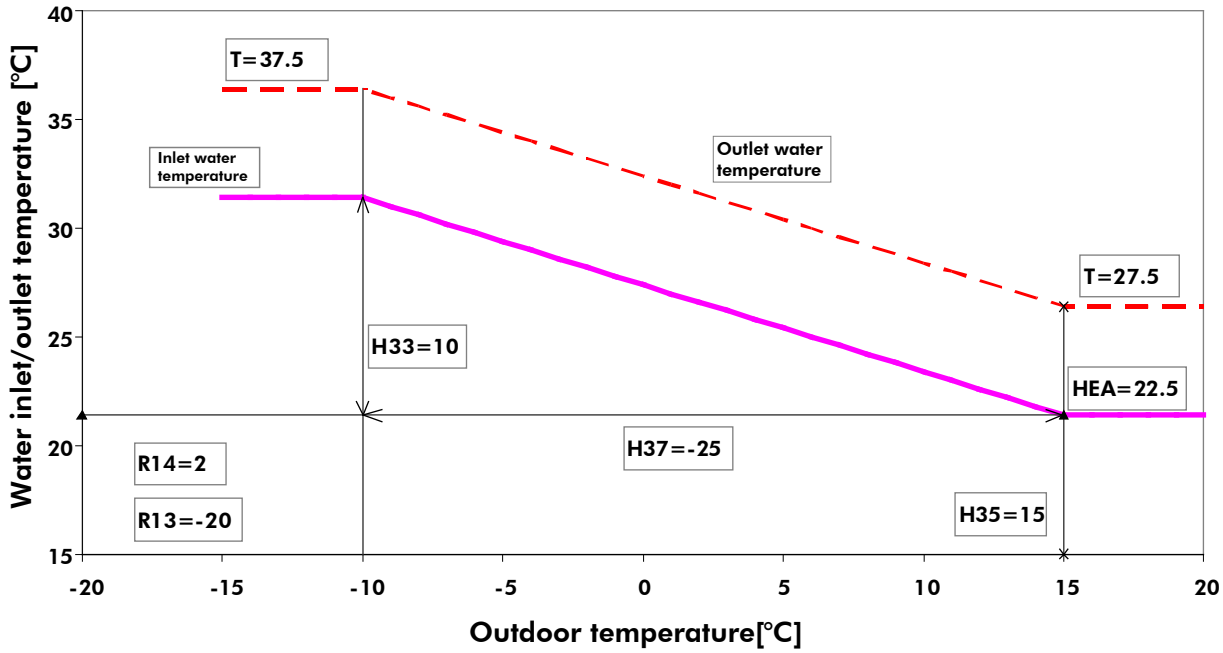
WATER LOGIC - COMPENSATION FOR UNDER-FLOOR HEATING OPERATION

FACTORY SETTINGS

R13= -20°C
R14= 3°C
HEA = 22.5°C

H33 = 10°C
C04 = 2.5°C
H35 = 15°C

H37 = -25°C



The minimum operating temperature for the **PAC+R** for this application is limited by the parameter R 13 to -20°C. The outlet water temperature is always below the limit and the appliance can operate with the boiler down to temperatures of -20°C. The boiler start-up temperature is determined by **PAC+R**'s capacity (balance point).

Comment on the parameter value setting: HEA = 22.5

The water set temperature point (HEA) corresponds to the temperature at which the compressor stops. It is restarted when a non-adjustable temperature difference of 2.5°K is present. This value can only be altered by an approved technician.

TO BENEFIT FROM ALL THESE CONTROL FUNCTIONS WE RECOMMEND THE USE OF OUR REGULATION KIT

REGULATION BOX

The regulation box is supplied with the "regulation management kit" accessory.

REGULATION PRINCIPLES

The standard **PAC+R** regulator controls the following functions:

1. Complete regulation of the **PAC+R** with water temperature management in accordance with the water logic and the safety alarms.
2. Stoppage of the appliance below the temperature limits of -5° C or -15° C (compressor function).
3. Remote ON/OFF control of the **PAC+R** via dry contact switch.

The regulation box (accessory) controls the following functions:

1. Between the balance point and the minimum operating temperature of the **PAC+R**, only second stage heating is authorised by the boiler.
2. Stoppage of the **PAC+R** and start-up of the boiler below the **PAC+R** minimum operating temperature (R13).
3. Stoppage of the **PAC+R** during "EJP" or "TEMPO" days (French special electricity tariff days for high energy consumers).
4. Zone valve management.
5. The boiler can be controlled by the **PAC+R** ambience thermostat if required.

REGULATION BOX AND ZONE VALVE

The boiler is placed on by-pass in the standard operating mode. The regulation box switches the zone valve (the boiler is no longer on by-pass) as soon as one of three conditions is fulfilled:

- Outdoor air temperature below the balance point.
- "Tempo" or "EJP" contact closed.
- Emergency heating button in the "I" position.

The zone valve must be connected to the regulation box:

- Terminal 1 on 4 (regulation box)
- Terminal 2 on 2 (regulation box)
- Terminal 3 on 12 (for boiler on the right) or 18 (for boiler on the left)

REGULATION BOX AND AMBIENCE THERMOSTAT

There are two ways of fitting the thermostat depending on the existing installation and the type of boiler.

1 THERMOSTAT FOR THE PAC+R AND 1 THERMOSTAT FOR THE BOILER

Ambience temperature regulation is independent between the **PAC+R** and the boiler.

The ambience thermostat on the boiler must be programmed with a set temperature point below the set temperature point of the **PAC+R** thermostat (Δ = 1° C).

The regulation box manages the operation of the **PAC+R** and the zone valve in relation to the outdoor and indoor temperatures. The boiler is managed by its own ambience thermostat when it is no longer by-passed.

1 THERMOSTAT FOR THE PAC+R AND THE BOILER

The **PAC+R** and the boiler are managed by the same thermostat.

This configuration is only possible if the boiler thermostat is of the dry contact type.

The boiler ambience thermostat is deleted. The boiler is connected to terminals 15 and 14 on the regulation box.

The regulation box manages all the heating appliances:

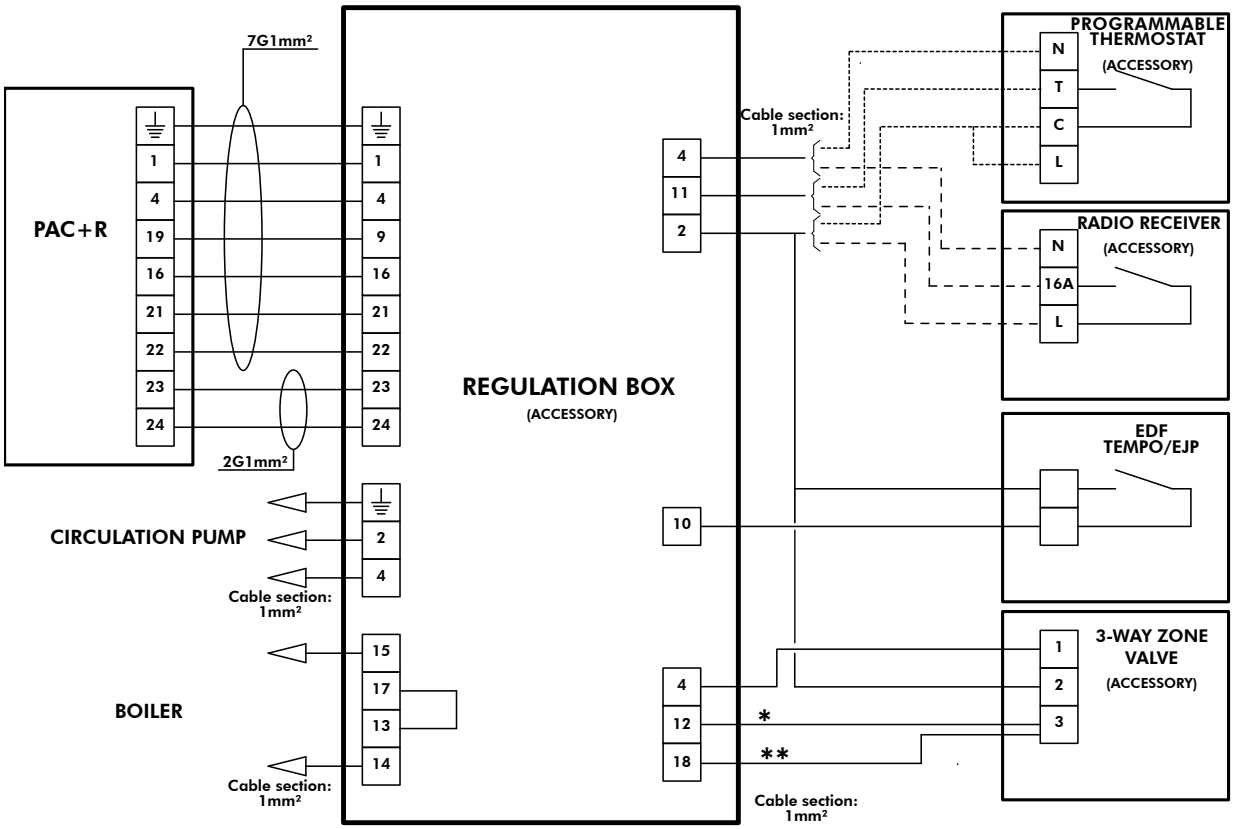
- **PAC+R**
- Zone valve
- Boiler

CIRCULATION PUMP

The circulation pump can be connected to the regulation box. The current draw must not exceed 2A. The circulation pump runs continuously, except when the ON/OFF button is in the OFF position or the **PAC+R** circuit cut-out is open.

CONNECTIONS

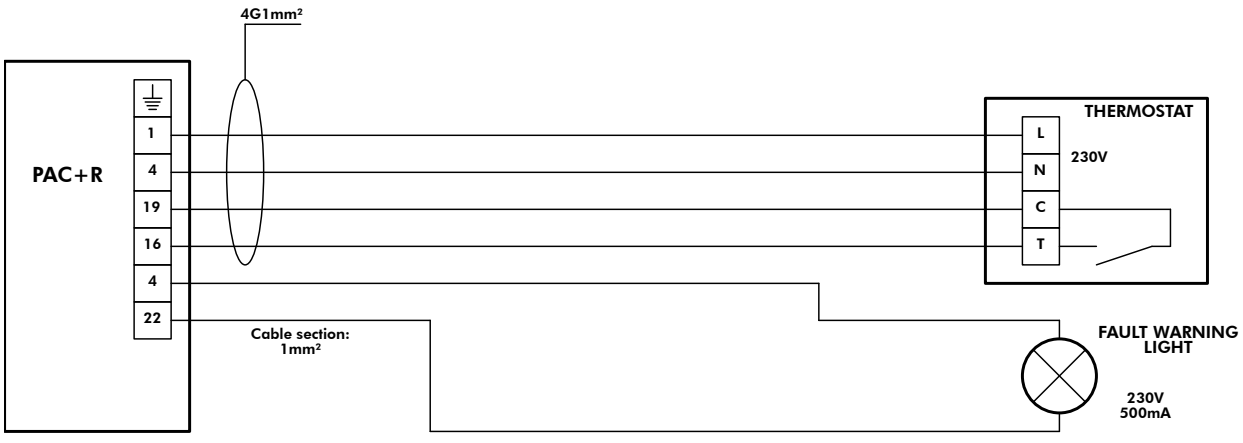
WITH REGULATION BOX



* Connection between terminals 3 and 12 for a water circuit with the boiler on the right.

** Connection between terminals 3 and 18 for a water circuit with the boiler on the left.

WITHOUT REGULATION BOX



PARAMETERS LIST

							Radiator Version-RA	Under-floor Version-PA
NB	**REF**	**Set temperature parameters**	**Unit**	**min**	**max**	**Protection**	**Value**	**Value**
0	Coo	"Cooling" mode set temperature value	°C	H04	H03	OPEN	12	23
1	Hea	"Heating" mode set temperature value	°C	H02	H01	OPEN	33	22.5
		Configuration parameters						
3	H01	Maximum "Heating" mode set temperature value	°C	22	99	PASSWORD	35	35
4	H02	Minimum "Heating" mode set temperature value	°C	-40	22	PASSWORD	25	20
5	H03	Maximum "Cooling" mode set temperature value	°C	20	90	PASSWORD	20	25
6	H04	Minimum "Cooling" mode set temperature value	°C	-40	20	PASSWORD	10	10
7	H05	ST1 configuration	Num.	0	5	PASSWORD	1	1
8	H06	ST2 configuration	Num.	0	4	PASSWORD	1	1
9	H07	ST3 configuration	Num.	0	5	PASSWORD	1	1
10	H08	ST4 configuration	Num.	0	3	PASSWORD	3	3
15	H13	ID4 digital input polarity	flag	0	1	PASSWORD	1	1
16	H14	ID5 digital input polarity	flag	0	1	PASSWORD	0	0
26	H24	RL4 output relay configuration	Num.	0	2	PASSWORD	2	2
28	H26	Series protocol configuration (non managed)	flag	0	1	PASSWORD	0	0
29	H27	Operating mode selection	Num.	0	2	PASSWORD	1	1
31	H29	Programming mode	°C	0	255	PASSWORD	10	10
32	H30	Differential selection mode	°C	0	25.5	PASSWORD	15	15
33	H31	Dynamic set temperature point authorisation	flag	0	1	PASSWORD	1	1
34	H32	Maximum offset in "cooling" (dynamic set temperature point)	°C	-12.7	12.7	PASSWORD	0	0
35	H33	Maximum offset in "heating" (dynamic set temperature point)	°C	-12.7	12.7	PASSWORD	12	10
36	H34	Outdoor temperature in "cooling" (dynamic set temperature point)	°C	-127	127	PASSWORD	22	22
37	H35	Outdoor temperature in "heating" (dynamic set temperature point)	°C	-127	127	PASSWORD	15	15
38	H36	Outdoor temperature differential in "cooling" (dynamic set temperature point)	°C	-12.7	12.7	PASSWORD	0	0
39	H37	Outdoor temperature differential in "heating" (dynamic set temperature point)	°C	-30	-30	OPEN	-15	-25
40	H38	Changeover valve polarity	flag	0	1	PASSWORD	0	0
41	H39	ST1 offset	°C	-12.7	12.7	PASSWORD	0	0
42	H40	ST2 offset	°C	-12.7	12.7	PASSWORD	0	0
43	H41	ST3 offset	°C/10-KPa*10	-127	127	PASSWORD	0	0
44	H42	ST4 offset	°C	-12.7	12.7	PASSWORD	0	0
45	H43	Mains frequency	flag	0	1	INTERDIT	0	0
46	H44	Family series address	Num.	0	14	PASSWORD	0	0
47	H45	Device series address	Num.	0	14	PASSWORD	0	0
49	H47	Memory stick writing password	Num.	0	255	OPEN	2	2
54	H52	° C or ° F selection	flag	0	1	PASSWORD	0	0
55	H53	SET appliance air/air display	Flag	0	1	OPEN	0	0
56	H54	Client code 1	Num.	0	999	OPEN	0	0
57	H55	Client code 2	Num.	0	999	OPEN	0	0
58	H56	Alarm relay polarity	Flag	0	1	OPEN	0	0
59	H57	Alarm relay live in OFF position (when stopped)	Flag	0	1	OPEN	0	0

NB	REF	Alarm parameters	Unit	min	max	Protection	Radiator Version-RA Value	Under-floor Version-PA Value
60	A01	LP pressostat by-pass time lag	s	0	255	PASSWORD	90	90
61	A02	Number of events/hour before Low Pressure manual reset	Num.	0	255	PASSWORD	4	4
62	A03	Pump activation flow controller by-pass	s	0	255	PASSWORD	10	10
63	A04	Controller input time - active flow	s	0	255	PASSWORD	10	10
64	A05	Controller input time –inactive flow	s	0	255	PASSWORD	15	15
65	A06	Flow controller - number of incidents / hour	Num.	0	255	PASSWORD	1	1
66	A07	Compressor thermal by-pass by compressor activation	s	0	255	PASSWORD	5	5
67	A08	Number of events/hour for compressors 1 and 2 thermal overload protection	Num.	0	255	PASSWORD	2	2
68	A09	Number of events/hour for fan thermal overload protection	Num.	0	255	PASSWORD	2	2
69	A10	Anti-freeze protection alarm by-pass via ON/OFF	min	0	255	PASSWORD	0	0
70	A11	Anti-freeze protection alarm activation programming	°C	-127	127	PASSWORD	3	3
71	A12	Anti-freeze protection alarm hysteresis	°C	0	25.5	PASSWORD	1	1
72	A13	Number of events/hour for anti-freeze protection alarm	Num.	0	255	PASSWORD	2	2
73	A14	High pressure analogue input activation programming	°C/10-KPa*10	0	900	PASSWORD	600	600
74	A15	High pressure analogue input hysteresis	°C/10-KPa*10	0	255	PASSWORD	10	10
75	A16	Low pressure analogue input by-pass activation	s	0	255	PASSWORD	120	120
76	A17	Low pressure analogue input programming activation	°C/10-KPa*10	-500	800	PASSWORD	-400	-400
77	A18	Low pressure analogue input hysteresis	°C/10-KPa*10	0	255	PASSWORD	10	10
78	A19	Number of events/hour for low pressure analogue input	Num.	0	255	PASSWORD	5	5
79	A20	Appliance no-load differential	°C	0	25.5	PASSWORD	0.3	0.3
80	A21	Appliance no-load by-pass	min	0	255	PASSWORD	30	30
81	A22	Appliance no-load duration	min	0	255	PASSWORD	15	15
82	A23	Appliance no-load alarm activation	flag	0	1	PASSWORD	0	0
83	A24	Anti-freeze protection minimum alarm active	flag	0	1	PASSWORD	0	0
84	A25	Over-temperature programming	°C	0	255	PASSWORD	90	80
85	A26	ON over-temperature duration	s*10	0	255	PASSWORD	20	20
		Compressor parameters						
86	C01	OFF-ON anti-short cycling time lag	s*10	0	255	PASSWORD	9	9
87	C02	ON-ON anti-short cycling time lag	s*10	0	255	PASSWORD	30	30
88	C03	Cooling thermo-regulator hysteresis	°C	0	25.5	PASSWORD	1.5	1.5
89	C04	Heating thermo-regulator hysteresis	°C	0	25.5	PASSWORD	2.5	2.5
90	C05	Step settings intervention differential	°C	0	25.5	PASSWORD	1	1
91	C06	First-second compressor intervention interval (running)	s	0	255	PASSWORD	20	20
92	C07	First-second compressor power cut-off interval (running)	s	0	255	PASSWORD	5	5

							Radiator Version-RA	Under-floor Version-PA
NB	**REF**	**Fan parameters**	**Unit**	**min**	**max**	**Protection**	**Value**	**Value**
93	F01	Fan outlet configuration	Num.	0	3	PASSWORD	0	0
94	F02	Fan start-up time lag	s/10	0	255	PASSWORD	50	50
95	F03	Fan de-phasing	%	0	100	PASSWORD	5	5
96	F04	Triac firing impulse time	uS*10	0	255	PASSWORD	8	8
97	F05	Compressor driven operation	flag	0	1	PASSWORD	0	0
98	F06	Minimum speed in Cooling mode	%	0	100	PASSWORD	50	50
99	F07	"Silent" speed in Cooling mode	%	0	100	PASSWORD	100	100
100	F08	Temperature/pressure programming – minimum speed in Cooling mode	°C/10-KPa*10	-500	800	PASSWORD	300	300
101	F09	Proportional band in Cooling mode	°C/10-KPa*10	0	255	PASSWORD	100	100
102	F10	Disconnection differential	°C/10-KPa*10	0	255	PASSWORD	100	100
103	F11	Disconnection hysteresis	°C/10-KPa*10	0	255	PASSWORD	10	10
104	F12	Disconnection by-pass time lag	s	0	255	PASSWORD	20	20
105	F13	Maximum speed in Cooling mode	%	0	100	PASSWORD	100	100
106	F14	Temperature/pressure programming – maximum speed in Cooling mode	°C/10-KPa*10	-500	800	PASSWORD	350	350
107	F15	Minimum speed in Heating mode	%	0	100	PASSWORD	100	100
108	F16	"Silent" speed in Heating mode	%	0	100	PASSWORD	100	100
109	F17	Temperature/pressure programming – minimum speed in Heating mode	°C/10-KPa*10	-500	800	PASSWORD	150	150
110	F18	Proportional band in Heating mode	°C/10-KPa*10	0	255	PASSWORD	20	20
111	F19	Maximum speed in Heating mode	%	0	100	PASSWORD	100	100
112	F20	Temperature/pressure programming – maximum speed in Heating mode	°C/10-KPa*10	-500	800	PASSWORD	150	150
113	F21	Internal fan steps differential	°C	0	25.5	PASSWORD	2	2
114	F22	Internal fan steps hysteresis	°C	0	25.5	PASSWORD	1	1
115	F23	Hot start set value	°C	0	255	PASSWORD	50	50
116	F24	Hot start hysteresis	°C	0	25.5	PASSWORD	1	1
117	F25	Pre-ventilation in Cooling mode	s	0	255	PASSWORD	0	0
		Pump parameters						
118	P01	Pump operating mode	Num.	0	4	PASSWORD	0	0
119	P02	Time lag STOP pump – STOP compressor	s	0	255	PASSWORD	30	30
120	P03	Time lag STOP compressor – STOP pump	s	0	255	PASSWORD	180	180

NB	REF	Boiler parameters	Unit	min	max	Protection	Radiator Version-RA Value	Under-floor Version-PA Value
121	R01	Resistance configuration in anti-freeze protection mode	flag	0	1	PASSWORD	0	0
122	R02	Active resistance configuration in Cooling mode	flag	0	1	PASSWORD	0	0
123	R03	Active resistance configuration in Heating mode	flag	0	1	PASSWORD	1	1
124	R04	Anti-freeze protection resistances setting probe configuration in Heating mode	flag	0	1	PASSWORD	1	1
125	R05	Anti-freeze protection resistances setting probe configuration in Cooling mode	flag	0	1	PASSWORD	1	1
126	R06	Resistance configuration in OFF or stand-by mode	flag	0	1	PASSWORD	1	1
127	R07	Internal anti-freeze protection set value in Heating mode	°C	-10	90	PASSWORD	3	3
128	R08	Internal anti-freeze protection set value in Cooling mode	°C	-10	90	PASSWORD	3	3
129	R09	Maximum limit for anti-freeze protection resistances set value	°C	-10	127	PASSWORD	90	90
130	R10	Maximum limit for anti-freeze protection resistances set value	°C	-127	90	PASSWORD	-10	-10
131	R11	Anti-freeze protection resistance hysteresis	°C	0	25.5	PASSWORD	0.1	0.1
132	R12	Outdoor anti-freeze protection resistances set value	°C	-10	90	PASSWORD	5	5
133	R13	Outdoor temperature programming for boiler activation.	°C	-127	127	PASSWORD	COMPRESSOR STD -5 COMPRESSOR ZH -10	-20
134	R14	Boiler de-activation differential	°C	0	25.5	PASSWORD	2	3
135	R15	Regulator resistances integration	flag	0	1	PASSWORD	1	1
		Anti-freeze protection parameters						
136	D01	Anti-freeze protection authorisation	flag	0	1	PASSWORD	1	1
137	D02	Start of anti-freeze protection temperature/ pressure	°C/10-KPa*10	-500	800	PASSWORD	-20	-20
138	D03	Anti-freeze protection interval (demand time lag)	Min.	0	255	PASSWORD	45	45
139	D04	End of anti-freeze protection temperature/pressure	°C/10-KPa*10	-500	800	PASSWORD	180	180
140	D05	Maximum anti-freeze protection time lag (time-out)	Min.	0	255	PASSWORD	10	10
141	D06	Compressor*valve (anti-purge) waiting time lag	s	0	255	PASSWORD	0	0
142	D07	Drip time	s	0	255	PASSWORD	0	0
143	D08	Anti-freeze protection start temperature if H49=1	°C	-50	80	PASSWORD	-2	-2
144	D09	Anti-freeze protection end temperature if H49=1	°C	-50	80	PASSWORD	18	18
145	D10	Compensation authorisation	flag	0	1	PASSWORD	1	1
146	D11	Temperature/pressure compensation offset	°C/10-KPa*10	-255	255	PASSWORD	-100	-100
147	D12	Temperature/pressure set compensation	°C	-127	127	PASSWORD	0	0
148	D13	Temperature/pressure compensation delta	°C	-25.5	25.5	PASSWORD	-7	-7

REGULATION BOX

Two models of regulation box are available as accessories.

- The first model is supplied with a hardwired programmable ambience thermostat.
- The second model is supplied with a radio-controlled programmable ambience thermostat. It is supplied with a factory-fitted radio receiver.

Outdoor temperature display and balance point parameterisation.

ON: Heating authorised

OFF: Heating off, system anti-freeze protection is not activated.

Fault warning light: refer to the display on the **PAC+R** to identify the alarm code.

Switch
Normal operation/Emergency

CHANGING THE BALANCE POINT

The display on the regulation box indicates the outdoor temperature. Proceeds as follows if you wish to change the balance point (boiler start-up authorisation):

1

Press the "Set" key to select the balance point.

2

Press the "Set" key to display the balance point value.

3

The balance point is set at the factory at 4° C. Press the "▲" or "▼" keys to change this value.

4

Press the "ESC" key to confirm the new balance point value.

5

Press the "ESC" key to display the outdoor temperature.

6

THERMOSTAT

The thermostat is available as an accessory.

The ambience thermostat manages the operating mode and the ambient temperature limits. The other functions are managed by the regulator in the outdoor unit. This thermostat enables you to:

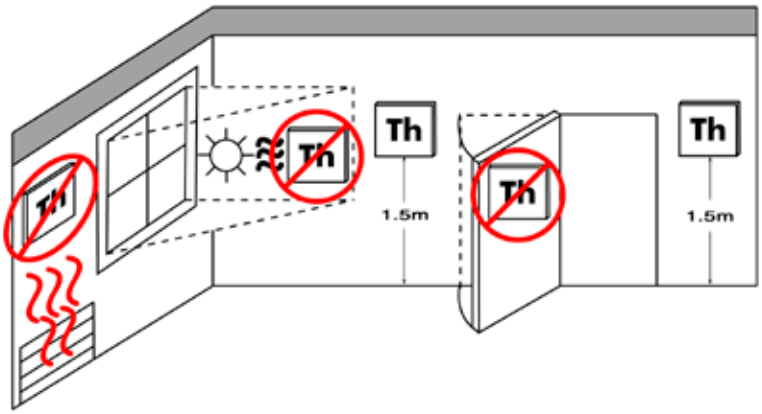
- Select 3 permanent temperatures
  - Above freezing
  - Economy
  - Comfort
- Use the **AUTO** daily time and temperature setting programming function
- Define a **PROG** daily time and temperature setting programme (refer to thermostat manual)
- Set the time and day
- Switch the **PAC+R** to standby mode .

THERMOSTAT LOCATION.

To guarantee proper thermostat operation it should be fitted on an indoor wall in a frequently occupied area of the building. It should be mounted at a height of around 1.5m from the floor in an area with normal airflow at the average temperature of the premises.

Prohibited locations:

- Behind a door or in a corner out of air currents.
- In a location where it could be directly exposed to sunlight or radiation from a heating appliance.
- On an outdoor wall.



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