INSTALLATION AND MAINTENANCE INSTRUCTIONS

SPLIT

L16 SPLIT, HM SPLIT, EHZK 90 SPLIT/WWS 300 SPLIT/WWS 500 SPLIT
For Home Owners

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In order to gain the greatest benefit from the SPLIT system, please refer to the 'For Home Owners' chapter within this Installation and Maintenance Manual. SPLIT is a quality system offering a long service life and reliable operation.

Installation data

Completed by the installation engineer when the system is installed

<table>
<thead>
<tr>
<th>The Serial number</th>
<th>must always be stated in all correspondence with us.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indoor unit:</td>
<td>Outdoor unit:</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Installation date:</td>
<td></td>
</tr>
<tr>
<td>Check list, page 39, filled in</td>
<td></td>
</tr>
<tr>
<td>Installation engineers:</td>
<td></td>
</tr>
<tr>
<td>Heating</td>
<td></td>
</tr>
<tr>
<td>☐ Radiator ☐ Floor ☐ Fan convector</td>
<td></td>
</tr>
<tr>
<td>External heat source</td>
<td></td>
</tr>
<tr>
<td>☐ Solar ☐ Gas ☐ Oil ☐ Wood ☐ Pellets ☐ Electricity</td>
<td></td>
</tr>
<tr>
<td>Accessories</td>
<td></td>
</tr>
<tr>
<td>☐ KWS ☐ RBE SPLIT ☐ RFV SPLIT ☐ MG 2 SPLIT ☐ VK 2 SPLIT ☐ EP 2 SPLIT</td>
<td></td>
</tr>
<tr>
<td>☐ Other..................................................................................................................</td>
<td></td>
</tr>
</tbody>
</table>

Settings

Enter deviations from default settings.

<table>
<thead>
<tr>
<th>Menu</th>
<th>Setting</th>
<th>Menu</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

Date __________ Signed __________________________________

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

Rights to make any design or technical modifications are reserved.
**Information about the installation**

**Product information**

SPLIT is a complete modern heat pump system that offers effective energy saving and reduced carbon dioxide emissions.

The heat is retrieved from the outdoor air through an outdoor module (L16 SPLIT), where the refrigerant, which circulates in a closed system, transfers the heat from the heat source (outdoor air) to the indoor module (HM SPLIT). This eliminates the need for bore holes and coils in the ground.

**Features of SPLIT**

- Optimal annual heating factor thanks to the inverter controlled compressor.
- Outdoor unit with compact dimensions.
- Speed controlled circulation pump.
- Optimized operating costs. The speed of the compressor is adjusted according to the demand.
- Supplemented with tanks EHZK 90 SPLIT, WWS 300 SPLIT or WWS 500 SPLIT to indoor module HM SPLIT and outdoor module L16 SPLIT.
- Integrated clock for scheduling extra hot water and temperature lowering/increasing the flow line temperature.
- Prepared for control of two climate systems.
- Integrated active cooling function.
- Possible to connect external heat sources.

**Principle of operation SPLIT**

**System without hot water, only heating (cooling)**

1. The refrigerant in L16 SPLIT retrieves heat from the outdoor air then compresses it, which increases the temperature further.
2. The hot refrigerant (now in gas state) is routed into HM SPLIT.
3. The refrigerant releases the heat for further distribution in the system.
4. The refrigerant (now in liquid state) is routed back to L16 SPLIT and the process is repeated.

By reversing the process, thereby allowing the refrigerant in L16 SPLIT to retrieve the heat from the water and release it into the outdoor air, the heat pump can, if necessary, cool instead.

HM SPLIT determines when L16 SPLIT is to work and not to work, using the collated data from the temperature sensor. In the event of extra heat demands, HM SPLIT can connect additional heat in the form of the internal immersion heater, or any connected external addition.
Front panel, indoor module

For Home Owners

### Operating status
Pressing the button (the change does not need to be confirmed with the enter button).
- Current operating mode is shown in the display.
- Further button pressing changes operating mode.
Press the enter button to return to the normal display mode.
*For information about the various operating modes, see the different sections regarding comfort settings.*

### Extra hot water (XHW)
The change does not need to be confirmed with the Enter button.

### Offset heating curve
- Turning clockwise (+) increases the room temperature (if room sensors are not used). When the knob is turned menu 2.0 is shown on the display and the value for the current supply temperature changes.

### Switch

- **1 Normal mode**
  All control functions connected.
- **0 Shutdown**
  Emergency mode
  Only the circulation pump and electrical addition (electrical step 2) are operational.

### Information symbols

- **Menu 1.0**
  Pressing the button takes you directly to menu 1.0.

### Hot water symbol
- The heat pump charges hot water.
- **"A"** Temporary temperature increase in progress.
- **"B"** Time based temperature increase in progress, e.g. periodic.

### Defrosting symbol
- Defrosting in progress.

### Climate system symbol
- **""** Heating/cooling in progress.

### Description of current display parameter

- **1.0 Menu number**
- **""** Key lock activated.

### Plus button
- Scroll forward in the menu system.
- Increase the value of the selected parameter
  See the section "Control – General"

### Minus button
- Scroll back in the menu system.
- Reduce the value of the selected parameter
  See the section "Control – General"

### Enter button
- Select lower menu in the menu system.
- Parameter change activated
- Parameter change confirmed
  See the section "Control – General"

### Clock
- Displayed with all activated scheduling.
  See the section "Control – Menu 7.0"
How to use the front panel

All the most common settings are made from the panel as well as control computer instructions such as comfort etc. that you require the heat pump system to fulfil.

In order for the installation to be used optimally, certain basic settings must have been made (see page 8). In addition the installation in general must be carried out according to the instructions and manufacturer's recommendations.

Menu 1.0 (the temperature in the water heater) is normally shown on the display.

The plus and minus buttons and the enter button are used to scroll through the menu system as well as to change the set value in some menus.

Menu types

Control is divided into different menu types depending on how "deep" into the controls you need to go.

- Normal [N]: The settings you as a customer often need.
- Extended [U]: Shows all detailed menus except the service menus.
- Service [S]: Shows all menus.

Changing of menu type is done from menu 8.1.1

Quick movement

To quickly return to the main menu from a sub menu, press one of the following buttons:

Key lock

A key lock can be activated in the main menus by simultaneously pressing the plus and the minus buttons. The key symbol will then be shown on the display. The same procedure is used to deactivate the key lock.
Comfort setting heating

General
The indoor temperature depends on several factors.
- Sunlight and heat emissions from people and household machines are normally sufficient to keep the house warm during the warmer parts of the year.
- When it gets colder outside, the climate system must be started. The colder it is outside, the warmer radiators and under floor heating systems must be.

Controlling heat production
Normally, the heat pump heats the water (heating medium) to the temperature required at a certain outdoor temperature. This occurs automatically on the basis of the collected temperature values from the outdoor temperature sensor and sensors on the lines to the climate system (flow line sensors). Extra accessories such as room temperature sensors, can influence the temperature.

However, the correct default settings must be made on the heat pump first, see the section "Default settings". The temperature information that the outdoor sensor (mounted on an exterior wall of the house) sends to the heat pump’s control computer senses variations in the outdoor temperature early on. It does not have to be cold inside the house before the control system is activated, as soon as the average outdoor temperature drops outside, the temperature of the water to the climate system (supply temp.) inside the house is increased automatically.

The heat pumps flow temperature (menu 2.0) will hover around the theoretical required value, which is in brackets on the display.

Temperature of the climate system
The temperature of the climate system in relation to the outdoor temperature can be modified by using the "Offset heating curve" knob on the heat pump’s front panel.

Operating status
The "Operating mode" button is used to set the required operating mode with regard to permitting/blocking the circulation pump and additional energy.

The change does not need to be confirmed with the enter button.

The current operating mode is shown on the front panel display when the button is pressed and the mode changes when you continue to press the button.

The display returns to the normal display mode once the enter button is pressed.

The addition is only used for anti-freeze mode, if it is deactivated in the menu system. This applies to all operating modes.

The different operating modes are:
1. "Auto"
   - HM SPLIT selects operating mode automatic (cooling can also be selected now) with regard to the outdoor temperature. This means that the operating mode switches between "Heating", "Cooling" and "Hot water".
   - The circulation pump is permitted to operate when there is a need.
2. "AutoK"*
   - HM SPLIT selects operating mode automatic (cooling can also be selected now) with regard to the outdoor temperature. This means that the operating mode switches between "Heating", "Cooling" and "Hot water".
   - The circulation pump is permitted to operate when there is a need.
3. "Heat" / "Heat addition"
   - Only heating and cooling produced.
   - The circulation pump is in operation the entire time.
   - If "Heat addition" is shown the addition is permitted to operate if necessary.
4. "Cooling"*/ "Super cooling"
   - If addition is permitted, "Super cooling" is displayed.
   - The compressor then only runs in cooling mode. Otherwise, the mode switches to cooling or producing hot water.
   - The circulation pump is in operation the entire time.
   - Hot water is only produced by the immersion heater.
5. "Hot water*"
   - Only hot water is produced.
   - Only the compressor is operational.
6. "Add. heat only"
   - Compressor blocked. The function is activated by pressing in the "operating mode button" for 7 seconds.
7. Deactivate the function by pressing the "Operating mode" button for 7 seconds once again.

* To use the cooling functions, the system must be designed to withstand low temperatures and "Cooling" must be activated in menu 9.3.3.

Changing the room temperature manually
If you want to temporarily or permanently increase or lower the indoor temperature turn the "Offset heating curve" knob clockwise or anticlockwise. One line approximately represents a 1 degree change in room temperature.

NOTE
An increase in the room temperature may be inhibited by the radiator or underfloor heating thermostats, if so these must be turned up.
Default setting
The basic heating is set using menu 2.1.2 and with the “Heating curve offset” knob.
If the required room temperature is not obtained, readjustment may be necessary.
If you do not know the correct settings use the basic data from the automatic heating control system diagram opposite.

NOTE
Wait one day between settings so that the temperatures have time to stabilise.

Setting with diagrams
The diagram is based on the dimensioned outdoor temperature in the area and the dimensioned flow temperature of the climate system. When these two values “meet”, the heating control’s curve coefficient can be read. This is set under menu 2.1.2, “Heating curve”. Limitations, which are not in the diagrams, are included in the control system’s permitted min and max temperatures.
Readjusting the default settings

If the required room temperature is not obtained, readjustment may be necessary.

Cold weather conditions
- When the room temperature is too low, the "Heating curve" value is increased in menu 2.1.2 by one increment.
- When the room temperature is too high, the "Heating curve" value is decreased in menu 2.1.2 by one increment.

Warm weather conditions
- If the room temperature is low, increase the "Heating curve offset" setting by one step clockwise.
- If the room temperature is high, reduce the "Heating curve offset" setting by one step anti-clockwise.
Comfort setting cooling

**General**
The condition in order for cooling to be activated is that "On" is selected in menu 9.3.3 Cooling system.

**NOTE**
The climate system must manage cooling operation. Settings must be made by the installer when commissioning the system.

If a room sensor is connected, it starts and stops cooling together with the outdoor temperature. The lowest calculated supply temperature is set in menu 2.2.4.

**Cooling operated from the outdoor sensor in operating mode AUTOK**
If the cooling system is set to "On" in menu 9.3.3 and the outdoor temperature is greater or equivalent to the set start temperature for cooling in menu 8.2.4, cooling starts.

Cooling stops when the outdoor temperature drops below the set value minus the set value in menu 8.2.5.

The calculated flow line temperature is determined from the selected cooling curve in menu 2.2.2 and the offset for cooling curve, menu 2.2.1. Limitations, which are not in the diagram, are included in the control system’s permitted min temperature.

**NOTE**
HM SPLIT is condensation insulated for cooling operation down to +7 °C in supply temperature.

**Controlling cooling mode using the room sensor**
If RFV SPLIT is present, the condition for cooling is that the room temperature has exceeded the set room temperature (menu 6.3) by the set value in menu 8.2.5 and that the outdoor temperature is equivalent to or exceeds the set outdoor temperature value (menu 8.2.4).

When the room temperature has dropped below the set room temperature in menu 6.3 by the set value in menu 8.2.5 or the outdoor temperature falls below the set value in menu 8.2.4 by the set value in menu 8.2.5, cooling switches off.
Comfort setting hot water

The water heaters are coil models and are heated by circulating water, which is heated by the heat pump.

During "normal" consumption it is enough to run the heat pump's compressor to supply the different tapping points of the house with hot water. The temperature of the hot water in the water heater then varies between the set values.

Under section 1.0 [N] Hot water temp. on page 50 there is a complete description of menu settings for hot water temperatures.

Available volume

**WWS 300 SPLIT**

<table>
<thead>
<tr>
<th>Available volume at different water flows, 40 °C (litre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop temperature hot water °C</td>
</tr>
<tr>
<td>10 l/min</td>
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<tr>
<td>48</td>
</tr>
<tr>
<td>60</td>
</tr>
</tbody>
</table>

**WWS 500 SPLIT**

<table>
<thead>
<tr>
<th>Available volume at different water flows, 40 °C (litre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop temperature hot water °C</td>
</tr>
<tr>
<td>10 l/min</td>
</tr>
<tr>
<td>48</td>
</tr>
<tr>
<td>62</td>
</tr>
</tbody>
</table>

Extra Hot Water

In all "Extra hot water" functions, the temperature of the hot water increases temporarily. The temperature is first increased to an adjustable level by the compressor (menu 1.5) and then the electrical addition increases until the stop temperature is reached (menu 1.4).

Temporary "Extra hot water" is activated manually, whilst time based extra hot water is activated using the settings made in the control computer.

When:
- “A” appears above the icon, temporary extra hot water is active.
- “B” appears above the icon, time based extra hot water is active.

**NOTE**

"Extra hot water" usually means that the electrical addition has been activated and therefore increases the electrical consumption.

"Extra hot water" can be activated in three different ways:

1. **Periodic time based extra hot water**
   - Interval between increases selected in menu 1.7. 
   - Menu 1.8 shows when the next increase is due.
   - The increased temperature is maintained by the electrical addition for one hour.

2. **Schedule time based extra hot water**
   - The start and stop times for the day of the week that the increase is required are set in the sub menus to menu 7.4.0.
   - The increased temperature is maintained by the electrical addition for the selected period.

3. **Temporary extra hot water**
   - The current “extra hot water” mode is shown on the display (A) when the button is pressed and when you continue to press the button the mode changes between 3 hours and standby mode.
   - The increased temperature is maintained by the electrical addition until the period of time has expired.

Prioritizing

If the water within the water heater requires heating, the heat pump prioritises this and shifts to hot water mode with the entire heat pump output.

In this mode, there is no heating or cooling.

Prioritizing can be affected via settings in the front panel. See "1.0 [N] Hot water temp." on page 50.
Maintenance

HM SPLIT and L16 SPLIT require minimal maintenance after commissioning.
SPLIT contains many components and is why monitoring functions are integrated to help you.
If something abnormal occurs, a message appears about malfunctions in the form of different “alarm” texts in display.

Checking the safety valves

The climate system’s safety valve

The climate system’s safety valve (FL2) must be completely sealed. Checks must be carried out regularly as follows:
- Open the valve.
- Check that water flows through the valve. If this does not happen, replace the safety valve.
- Close the valve again.
- The climate system may need to be refilled after checking the safety valve, see the section “Filling the climate system”. Contact your installer for refilling the climate system.

Pressure gauge in EHZK 90 SPLIT, WWS 300 SPLIT, WWS 500 SPLIT

The working range of the climate system is normally 0.5 – 1.5 bar when the system is closed, depending on the height of the system. Check this on the pressure gauge (BP5).

Emptying the coil in the water heater

The water heater is of the coil type and the pressure in the domestic coil can be released by closing the incoming water and opening the hot water tap. However, some water may remain in the domestic coil. Drain by removing the XL3 cold water connection on the heater.

Emptying the vessel

Contact your installer if the vessel in EHZK 90 SPLIT, WWS 300 SPLIT, WWS 500 SPLIT needs emptying.

Maintenance of L16 SPLIT

L16 SPLIT is equipped with control and monitoring equipment, however some exterior maintenance is still necessary.

Make regular checks throughout the year that the inlet grille is not clogged by leaves, snow or anything else. During the cold months of the year, check to make sure that there isn’t a build up of ice or frost under L16 SPLIT. Strong wind combined with heavy snowfall can block the intake and exhaust air grilles. Make sure that there is no snow on the grilles.
Also check that the condensation water drain under L16 SPLIT is not blocked.
If necessary the outer casing can be cleaned using a damp cloth. Care must be exercised so that the heat pump is not scratched when cleaning. Avoid spraying water into the grilles or the sides so that water penetrates into L16 SPLIT. Prevent L16 SPLIT coming into contact with alkaline cleaning agents.

⚠️ WARNING!

Rotating fan in L16 SPLIT.

Saving tips

Your SPLIT installation produces heat and hot water according to your needs. It also attempts to carry out all requirements with all available “aids” from the control settings made.
The indoor temperature is naturally affected by the energy consumption. Therefore, take care not to set a temperature higher than necessary.
Other known factors that affect the energy consumption are, for example, hot water consumption and the insulation level of the house, as well as the level of comfort you require.

Also remember:
- Open the thermostat valves completely (except in the rooms that are to be kept cooler for various reasons, e.g. bedrooms).

Thermostat valves in the radiators and floor loops can negatively affect the energy consumption. They slow the flow in the climate system, which the heat pump wants to compensate with increased temperatures. It then works harder and consumes more electrical energy.
Dealing with comfort disruption

Use the following list to find and remedy any heating or hot water problems.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low hot water temperature or a lack of hot</td>
<td>Circuit or main miniature circuit breaker (MCB) tripped.</td>
<td>Check and replace blown fuses.</td>
</tr>
<tr>
<td>water.</td>
<td>Heat pump and immersion heater do not heat.</td>
<td>Check and replace any blown circuit and main fuses.</td>
</tr>
<tr>
<td></td>
<td>Possible earth circuit-breaker tripped.</td>
<td>Reset the earth circuit-breaker, if the earth circuit-breaker trips repeatedly, call an electrician.</td>
</tr>
<tr>
<td></td>
<td>Switch (SF1) set to mode 0.</td>
<td>Set the switch to 1.</td>
</tr>
<tr>
<td></td>
<td>Large hot water demand.</td>
<td>Wait a few hours and check if the hot water temperature rises.</td>
</tr>
<tr>
<td></td>
<td>Too low start temperature setting on the control system.</td>
<td>Adjust the start temperature setting in menu 1.2.</td>
</tr>
<tr>
<td>Low room temperature.</td>
<td>Possible earth circuit-breaker tripped.</td>
<td>Reset the earth circuit-breaker, if the earth circuit-breaker trips repeatedly, call an electrician.</td>
</tr>
<tr>
<td></td>
<td>Heat pump and immersion heater do not heat.</td>
<td>Check and replace any blown circuit and main fuses.</td>
</tr>
<tr>
<td></td>
<td>Incorrect setting of “Curve slope”, “Heating curve, offset” and/or “Cooling curve, offset”.</td>
<td>Adjust the setting.</td>
</tr>
<tr>
<td></td>
<td>Circuit or main miniature circuit breaker (MCB) tripped.</td>
<td>Check and replace blown fuses.</td>
</tr>
<tr>
<td></td>
<td>Heat pump in incorrect operating mode “Hot water” or “Cooling”.</td>
<td>Change operating mode to “Auto” or “AutoK”.</td>
</tr>
<tr>
<td></td>
<td>The current limiter has restricted the current because many power consumers are being used in the property.</td>
<td>Switch off one/several of the power consumers.</td>
</tr>
<tr>
<td>High room temperature.</td>
<td>Incorrect setting of “Curve slope”, “Heating curve, offset” and/or “Cooling curve, offset”.</td>
<td>Adjust the setting.</td>
</tr>
<tr>
<td></td>
<td>Heat pump in incorrect operating mode.</td>
<td>Change operating mode to “AutoK”.</td>
</tr>
<tr>
<td></td>
<td>Incorrect settings for cooling.</td>
<td>Adjust the settings. Check menu 2.2.1, 2.2.2 and 8.2.4.</td>
</tr>
<tr>
<td>The compressor does not start.</td>
<td>Minimum time between compressor starts, alternatively time after power switch on not achieved.</td>
<td>Wait 30 minutes and check if the compressor starts.</td>
</tr>
<tr>
<td></td>
<td>Alarm tripped.</td>
<td>See section “Alarms”.</td>
</tr>
<tr>
<td></td>
<td>Alarm cannot be reset.</td>
<td>Activate operating mode “Only additional heat”.</td>
</tr>
<tr>
<td>Display not lit.</td>
<td></td>
<td>Check and replace any blown circuit and main fuses.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check that the circuit breaker to the indoor unit is not off.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check that the switch (SF1) is in normal position (1).</td>
</tr>
</tbody>
</table>
Operating mode "Add. heat only"

In the event of malfunctions that cause a low indoor temperature, you can normally activate "Add. heat only" in HM SPLIT, which means that heating only occurs with the immersion heater.

Activate the mode by holding in the operating mode button for 7 seconds.

Note that this is only a temporary solution, as heating with the immersion heater does not make any savings.

Deactivate the function by pressing the "Operating mode" button for 7 seconds once again.

Emergency mode

Emergency mode is activated by setting the switch to "△". It is used when the control system and thereby operating mode "Add. heat only" do not function as they should. Emergency mode is activated by setting switch (SF1) to "△".

The following applies in emergency mode:

- The front panel is not lit and the control computer in HM SPLIT is not connected.
- L16 SPLIT is off and only the circulation pump HM SPLIT and the immersion heater in EHZK 90 SPLIT, WWS 300 SPLIT, WWS 500 SPLIT are active.
- An electrical step of 4 kW is connected. The immersion heater is controlled by a separate thermostat (BT30).
- The automatic heating control system is not operational, so manual shunt operation is required. Call installer.
Alarm indications

There are many monitoring functions integrated in SPLIT to alert you to any malfunctions, the control computer transmits alarm signals that can be read from the front panel display.

What happens in the event of an alarm?

- The background lighting in the display starts flashing and the status lamp lights red.
- Compressor alarms and outdoor sensor errors change the operating mode to “Anti freeze” and reduce the supply temperature to the minimum permitted temperature to notify you that something is wrong.

Different types of alarms

- Alarms with automatic reset (do not need to be acknowledged when the cause has disappeared).
- Existing alarms that require corrective action by you or the installer.
- A complete list of alarms is on page 62.

Recommended actions

1. Read off which alarm has occurred from the heat pump’s display.
2. As a customer you can rectify certain alarms. See the table below for relevant actions. If the alarm is not rectified, or is not included in the table, contact your installer.

<table>
<thead>
<tr>
<th>Alarm text on the display</th>
<th>Alarm description</th>
<th>Check/remedy before installers/service technicians are called</th>
</tr>
</thead>
<tbody>
<tr>
<td>LP-LARM</td>
<td>Tripped low pressure pressostat.</td>
<td>Check that the thermostats for the radiators/under-floor heating systems are not closed (only during cooling operation).</td>
</tr>
<tr>
<td>HP-LARM</td>
<td>Tripped high pressure pressostat.</td>
<td>Check that the thermostats for the radiators/under-floor systems are not closed. If cooling is in progress: Check that the airflow to L16 SPLIT is not obstructed.</td>
</tr>
<tr>
<td>OU power failure / OU Com. error</td>
<td>Outdoor unit not powered / Communication cut</td>
<td>Check that any circuit breakers to the outdoor unit are not off.</td>
</tr>
<tr>
<td>Display not lit.</td>
<td></td>
<td>Check and replace any blown circuit and main fuses.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check that the circuit breaker to the indoor unit is not off.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check that the switch (SF1) is in normal position (1).</td>
</tr>
</tbody>
</table>

Acknowledging alarms

No harm in acknowledging an alarm. If the cause of the alarm remains, the alarm recurs.

- When an alarm has been triggered, it can be acknowledged by switching HM SPLIT off and on using the switch (SF1). Note that when the power is switched on there is a 30 minute delay before the heat pump restarts. Alternatively, the alarm can be acknowledged in menu 9.7 (service menu).
- When the alarm cannot be reset using the switch (SF1), the operating mode, “Add. heat only”, can be activated to resume a normal temperature level in the house. This is most easily carried out by holding the “Operating mode” button in for 7 seconds.
- Deactivate the function by pressing the “Operating mode” button for 7 seconds once again.

NOTE

Recurring alarms mean that there is a fault in the installation.
Contact your installer!
For the Installer

General information for the installer

Transport and storage

Outdoor module L16 SPLIT

L16 SPLIT should be transported and stored vertically. If the heat pump is to be lifted using lifting straps without packaging, protect as illustrated. The right-hand side of the heat pump (seen from the front) is heavier.

HM SPLIT

HM SPLIT can be transported horizontally on its back and must be stored horizontally and in dry conditions.

EHZK 90 SPLIT, WWS 300 SPLIT, WWS 500 SPLIT tanks

WWS 300 SPLIT and WWS 500 SPLIT must be transported and stored vertically in a dry place. EHZK 90 SPLIT must be transported and stored horizontally on its back in a dry place.

Supplied components

HM SPLIT

Outside sensor

Straps for 1 phase connection

Current sensor, 3 phase

Keys for the actuator motors

Particle filter and shut-off valve

EHZK 90 SPLIT, WWS 300 SPLIT, WWS 500 SPLIT

Enclosed kit EHZK 90 SPLIT

Enclosed kit WWS 500 SPLIT

Safety valve WWS 300 SPLIT

The enclosed kits are located behind the front service cover in HM SPLIT, in the cardboard box on EHZK 90 SPLIT and taped under the tank on WWS 500 SPLIT and on the pallet by WWS 500 SPLIT.
Assembly

Outdoor module L16 SPLIT
Position L16 SPLIT outdoors secured to a firm surface, preferably concrete foundation with ground stand near walls or wall mounting.

It must be positioned so that the lower edge of the evaporator is at the level of the average local snow depth, although a minimum of 200 mm. L16 SPLIT should not be positioned next to noise sensitive walls, for example, next to a bedroom. Also ensure that the placement does not inconvenience the neighbours. Care must be exercised so that the heat pump is not scratched during installation.

Large amounts of condensation water as well as melt water from defrosting can be produced. Provide good drainage at the installation area and make sure water cannot run out onto paths or the like during periods that ice can form.

The distance between L16 SPLIT and the house wall must be at least 150 mm. Ensure that there is at least one metre free space above L16 SPLIT. L16 SPLIT must not be placed so that recirculation of outdoor air can occur. L16 SPLIT must not be placed in a windy location where it is exposed to direct strong winds. This causes lower output and impaired efficiency and it also negatively affects the defrosting function.

For wall installation, ensure that vibrations do not affect the inside of the house. Also ensure that the wall and mounting can take the weight of the heat pump.

HM SPLIT
- It is recommended that HM SPLIT is installed in a room with existing floor drainage, most suitably in a utility room or boiler room.
- Hang HM SPLIT with its back to an outside wall, ideally in a room where noise does not matter. If this is not possible, avoid placing it against a wall behind a bedroom or other room where noise may be a problem.
- Wall bracket (2-piece) for hanging is mounted on the rear of the HM SPLIT. Secure the one piece of the wall bracket in the wall with a suitable material. Then mount HM SPLIT on the wall. Lock HM SPLIT to the wall bracket using the two original screws.
- Route pipes so they are not fixed to an internal wall that backs on to a bedroom or living room.
- Ensure that there is approx. 500 mm free space in front of and 220 mm above the product for any future service. Ensure that there is sufficient space under the machine for pipework and valves. Hang the machine at a height where the display can be read.

EHZK 90 SPLIT
- It is recommended that the EHZK 90 SPLIT tank is installed in a room with existing floor drainage, most suitably in a utility room or boiler room.
- Hang the tank with its back to an outside wall, ideally in a room where noise does not matter. If this is not possible, avoid placing it against a wall behind a bedroom or other room where noise may be a problem.
- Secure the wall bracket (enclosed) to a wall of a suitable material. Hook the tank onto the wall bracket. Install the enclosed screw in the upper hole on the wall bracket to hold the tank in place.
- Route pipes so they are not fixed to an internal wall that backs on to a bedroom or living room.
- Ensure that there is approx. 500 mm free space in front of, 600 mm to the right and 220 mm above the product for any future service. Ensure that there is sufficient space for the drain valve under the tank.
- EHZK 90 SPLIT is supplied with a manometer, a drainage valve and a safety valve. The safety valve (FL2) should be installed as close to the tank as possible. The drainage valve should be positioned at the lowest point. The location of the manometer (BP5) is less sensitive.

WWS 300 SPLIT, WWS 500 SPLIT
- It is recommended that the water heater is installed in a room with existing floor drainage, most suitably in a utility room or boiler room.
- The surface must be firm, preferably a concrete floor or foundation.
- The unit can be aligned using the adjustable feet.
- Route pipes so they are not fixed to an internal wall that backs on to a bedroom or living room.
- Ensure that there is approx. 500 mm free space in front of and 220 mm above the water heater for any future service.

Dimensioning expansion vessel
HM SPLIT is equipped with a membrane expansion vessel on 18 l. A larger expansion vessel may be required depending on installation. The expansion vessel must be dimensioned for every installation. If a larger expansion vessel is required, the existing expansion vessel can be shut off.
### Volume per component

<table>
<thead>
<tr>
<th>Component</th>
<th>Volume (l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HM SPLIT</td>
<td>4</td>
</tr>
<tr>
<td>EHZK 90 SPLIT</td>
<td>30</td>
</tr>
<tr>
<td>WWS 300 SPLIT</td>
<td>300</td>
</tr>
<tr>
<td>WWS 500 SPLIT</td>
<td>500</td>
</tr>
</tbody>
</table>

### Initial pressure and max height difference

The initial pressure of the pressure expansion vessel must be dimensioned according to the maximum height (H) between the vessel and the highest positioned radiator, see figure. An initial pressure of 0.5 bar (5 mvp) means a maximum permitted height difference of 5 m.

If the standard initial pressure in the pressure vessel is not high enough it can be increased by filling via the valve in the expansion vessel. The expansion vessel’s standard initial pressure must be entered in the check list on page 39.

Any change in the initial pressure affects the ability of the expansion vessel to handle the expansion of the water.

### Emptying the vessel

The vessel in EHZK 90 SPLIT, WWS 300 SPLIT, WWS 500 SPLIT is emptied by opening the valve (QM1) and safety valve (FL2).

**NOTE**

When WWS 300 SPLIT/WWS 500 SPLIT is emptied via the valve (QM1), some water will remain in the coil and in HM SPLIT.

This means that there is a risk of the heat exchanger, pipes and valves freezing at low temperatures as well as a hygienic risk for the coil in the hot water section.

### Manual shunting

When HM SPLIT is set to emergency mode, the heating control system is not in operation, and manual shunt operation is required.

1. Depress and lock the button on (QN11).
2. Turn the mixing valve to the desired position by hand.

### Recommended installation order

1. Connect HM SPLIT to the climate system and to the tank. Connect cold and hot water lines as well as any external heat sources to the tank. See page 21. Also see docking descriptions on page 25 and further on.
2. Install the refrigerant pipes according to the description on page 22.
3. Connect the load monitor, outdoor temperature sensor, any centralised load control and external contacts as well as the cable between HM SPLIT, the tank and L16 SPLIT. See page 31.
5. Follow the commissioning instructions on page 36.

---

**For the Installer**

**General information for the installer**
Pipe installation

General
Pipe installation must be carried out in accordance with current norms and directives. HM SPLIT can work at a temperature up to 65 °C. For good savings we recommend that the climate system is dimensioned for max 55 °C.
HM SPLIT is not equipped with shut-off valves. These must be installed outside the indoor module to facilitate any future servicing.
HM SPLIT can be connected to the radiator system, floor heating system and/or fan convectors.

Overflow valve

**NOTE**
A free flow is required for all docking options, which means that an overflow valve must be installed.

System requirements
This is required for minimum configuration:
For correct function the volume of the climate system must meet the installation requirements, see page 25. If this is not fulfilled a volume vessel needs to be installed. WPSK 40SPLIT/WTPSK 100SPLIT.
For more options, see the docking description on page 25.

Dimensions and pipe connections

**HM SPLIT**

- XL1 Climate system, flow Ø 28 mm
- XL2 Climate system, return Ø 28 mm
- XL13 Liquid line refrigerant, flare 3/8"
- XL14 Gas line refrigerant, flare 5/8"
- XL18 Connection, Circulation
- XL19 Connection, Circulation

**EHZK 90 SPLIT**

- XL18 Connection, Circulation
- XL19 Connection, Circulation

**WWS 300 SPLIT**

- XL3 Connection, Cold water
- XL4 Connection, Hot water
- XL8 Connection, Docking, in heating medium
- XL9 Connection, Docking, out heating medium
- XL18 Connection, Circulation
- XL19 Connection, Circulation
**For the Installer**

## Pipe installation

### WWS 500 SPLIT

![Diagram of WWS 500 SPLIT]

- XL3: Connection, Cold water
- XL4: Connection, Hot water
- XL8: Connection, Docking, in heating medium
- XL9: Connection, Docking, out heating medium
- XL18: Connection, Circulation
- XL19: Connection, Circulation

#### Pump capacity diagram

![Pump capacity diagram]

The diagram shows max. performance. This can be restricted in menu 2.0.

### Connection of extra circulation pump

When connecting additional circulation pump GP10, to achieve a higher flow capacity, see alternative “Underfloor heating systems” on page 28. Respective maximum flows must not be exceeded.

### Connecting HM SPLIT to tank

It is necessary to connect a water heater or a tank to HM SPLIT. Pipe connections for the climate system are made at the bottom of HM SPLIT.

- The tank EHZK 90 SPLIT, WWS 300 SPLIT, WWS 500 SPLIT and pipework for HM SPLIT must be installed indoors where the temperature does not fall below 15 °C.
- Maximum pipe length between HM SPLIT and EHZK 90 SPLIT, WWS 300 SPLIT, WWS 500 SPLIT is 10 m.
- Connection (XL 18) on HM SPLIT connected to the tank’s terminal connection (XL 18).
- Connection (XL 19) on HM SPLIT connected to the tank’s terminal connection (XL 19).
- Then mount EHZK 90 SPLIT on the wall. WWS 300 SPLIT/WWS 500 SPLIT should be positioned on a firm surface, preferably a concrete foundation.
- WWS 300 SPLIT/WWS 500 SPLIT level can be adjusted with the help of the adjustable feet.
- Ensure that there is approx. 500 mm free space in front of and 220 mm above EHZK 90 SPLIT, WWS 300 SPLIT, WWS 500 SPLIT for any future service.
Connecting the climate system

- Connect HM SPLIT pipe connections (XL1) and (XL2) to the climate system.

**NOTE**

*The term "Climate system" which is used in these installation and maintenance instructions regards heating or cooling systems from HM SPLIT for heating or cooling.*

---

**Connecting the hot water heater**

The water heater (WWS 300 SPLIT/WWS 500 SPLIT) must be supplied with necessary set of valves.

- There must be a mixing valve if the temperature exceeds 60 °C.
- The safety valve must have a maximum 10.0 bar opening pressure and be installed on the incoming domestic water line according to outline diagram. The entire length of the overflow water pipe from the safety valves must be inclined to prevent water pockets and must also be frost proof.
- See section Dockings on page 25 for outline diagram.

**Extra water heater with immersion heater**

The heat pump should be supplemented with an electric water heater, if a hot tub or other significant consumer of hot water is installed.

If the heater is equipped with a valve connector Ø 15 mm this should be replaced with a corresponding Ø 22 mm.
Connection of external heat source
Connect an external heat source such as gas or oil boiler to (XL8) (in) and (XL9) (out) on WWS 300 SPLIT/WWS 500 SPLIT (dimension G1 internal). Remove any insulation from over the connections to release them. Also see Installation requirements on page 25.

NOTE
Make connections at a 45° angle.

WWS 300 SPLIT

WWS 500 SPLIT

Waste exchanger part
HM SPLIT is equipped with a hose connection at the bottom. A hose can be connected if required.

Connecting refrigerant pipes (not supplied)
Install the refrigerant pipes between the outdoor module L16 SPLIT and HM SPLIT. Installation must be carried out in accordance with current norms and directives.

L16 SPLIT limitations
- Maximum pipe length, L16 SPLIT (L): 15 m.
- Maximum height difference (H): ±7 m.
Pipe dimensions and materials

<table>
<thead>
<tr>
<th></th>
<th>Gas pipe</th>
<th>Liquid pipe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipe dimension</td>
<td>Ø15.88 mm (5/8&quot;)</td>
<td>Ø9.52 mm (3/8&quot;)</td>
</tr>
<tr>
<td>Connection</td>
<td>Flare - (5/8&quot;)</td>
<td>Flare - (3/8&quot;)</td>
</tr>
<tr>
<td>Material</td>
<td>Copper quality SS-EN 12735-1 or C1220T, JIS H3300</td>
<td></td>
</tr>
<tr>
<td>Minimum material thickness</td>
<td>1.0 mm</td>
<td>0.8 mm</td>
</tr>
</tbody>
</table>

Pipe connection

- Perform pipe installation with the service valves (QM35, QM36) closed.
- **HM SPLIT**

The image below shows possible pipe outlets.

 Ensure that water or dirt does not enter the pipes.
- Bend the pipes with as large a radius as possible (at least R100~R150). Do not bend a pipe repeatedly. Use a bending tool.
- Connect the flare connector and tighten to the following torque. Use the "Tightening angle" if a torque wrench is not available.

<table>
<thead>
<tr>
<th>Outer diameter, copper pipe (mm)</th>
<th>Tightening torque (Nm)</th>
<th>Tightening angle (°)</th>
<th>Recommended tool length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø9.52</td>
<td>34~42</td>
<td>30~45</td>
<td>200</td>
</tr>
<tr>
<td>Ø15.88</td>
<td>68~82</td>
<td>15~20</td>
<td>300</td>
</tr>
</tbody>
</table>

**NOTE**

Gas shielding must be used when soldering.

Flare connections

Expansion:

<table>
<thead>
<tr>
<th>Outer diameter, copper pipe (mm)</th>
<th>A (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø9.52</td>
<td>13.2</td>
</tr>
<tr>
<td>Ø15.88</td>
<td>19.7</td>
</tr>
</tbody>
</table>

Ejection:

<table>
<thead>
<tr>
<th>Outer diameter, copper pipe (mm)</th>
<th>B, with an R410A tool (mm)</th>
<th>B, with a conventional tool (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø9.52</td>
<td>0~0.5</td>
<td>0.7~1.3</td>
</tr>
<tr>
<td>Ø15.88</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Pipe installation

Pressure test and leak test
Both HM SPLIT and L16 SPLIT are pressure tested and leak tested at the factory, but the pipe connections between the products must be checked after installation.

NOTE
The pipe connection between the products must be pressure tested and leak tested according to the applicable regulations after installation.
Under no circumstances must a type of medium other than nitrogen be used when pressurising or flushing the system.

Vacuum pump
Use a vacuum pump to evacuate all air. Vacuum for at least one hour and end pressure after evacuation must be 1 mbar (100 Pa, 0.75 dry or 750 micron) absolute pressure.
If the system has remaining moisture or a leak, the vacuum pressure will rise after completed evacuation.

TIP
For a better end result and to quicken the evacuation, the following points must be followed.
- The connection lines must be as large and short as possible.
- Evacuate the system down to 4 mbar and fill the system with dry nitrogen to atmospheric pressure to finish the evacuation.

Filling refrigerant
L16 SPLIT is delivered complete with the refrigerant required for the installation of refrigerant pipes up to 15 m in length.

NOTE
For installations with refrigerant pipes up to 15 m in length no extra refrigerant in addition to the supplied amount needs to be topped up.

When carrying out pipe connections, pressure tests, leak tests and vacuuming, the service valves (QM35, QM36) can be opened, to fill the pipes and HM SPLIT with refrigerant.

Insulating refrigerant pipes
- Insulate refrigerant pipes (both gas and liquid pipes) for heat insulation and to prevent condensation.
- Use insulation that can withstand at least 120 °C. Poorly insulated pipes can cause insulation related problems and unnecessary cable wear.

Principle:

Connections:
Dockings

Installation requirements

<table>
<thead>
<tr>
<th></th>
<th>L16 SPLIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max pressure, climate system</td>
<td>0.25 MPa (2.5 Bar)</td>
</tr>
<tr>
<td>Max temperature, climate system</td>
<td>+65 °C</td>
</tr>
<tr>
<td>Max temperature in HM SPLIT</td>
<td>+65 °C</td>
</tr>
<tr>
<td>Max temperature from external heat source</td>
<td>+65 °C</td>
</tr>
<tr>
<td>Max flow line temperature with compressor</td>
<td>+58 °C</td>
</tr>
<tr>
<td>Min supply temperature cooling, HM SPLIT</td>
<td>+7°C/+18°C</td>
</tr>
<tr>
<td>Max supply temp. cooling</td>
<td>+25 °C</td>
</tr>
<tr>
<td>Min volume, climate system during heating, cooling*</td>
<td>150 l</td>
</tr>
<tr>
<td>Min volume, climate system during under floor cooling*</td>
<td>150 l</td>
</tr>
<tr>
<td>Max flow, climate system</td>
<td>0.79 l/s</td>
</tr>
<tr>
<td>Min flow, climate system, at 100% circulation pump speed (defrost flow)</td>
<td>0.39 l/s</td>
</tr>
<tr>
<td>Min flow, heating system</td>
<td>0.24 l/s</td>
</tr>
<tr>
<td>Min flow, cooling system</td>
<td>0.32 l/s</td>
</tr>
</tbody>
</table>

Docking external addition

<table>
<thead>
<tr>
<th></th>
<th>WW5 300 SPLIT</th>
<th>WW5 500 SPLIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output external addition</td>
<td>9–27 kW</td>
<td></td>
</tr>
<tr>
<td>Recommended docking flow</td>
<td>0.17–0.33 l/s</td>
<td></td>
</tr>
</tbody>
</table>

* Regards circulating volume.

External circulation pump must be used when the pressure drop in the system is greater than the available external pressure. In such cases, a bypass line with non-return valve must be installed.

Overflow valve must be used if min. system flow cannot be guaranteed.

Symbol key

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>↑</td>
<td>Venting valve</td>
</tr>
<tr>
<td>✘</td>
<td>Shut-off valve</td>
</tr>
<tr>
<td>✘</td>
<td>Non-return valve</td>
</tr>
<tr>
<td>✘</td>
<td>Control valve</td>
</tr>
<tr>
<td>✘</td>
<td>Safety valve</td>
</tr>
<tr>
<td>✗</td>
<td>Temperature sensor</td>
</tr>
<tr>
<td>🎈</td>
<td>Expansion vessel</td>
</tr>
<tr>
<td>📦</td>
<td>Pressure gauge</td>
</tr>
<tr>
<td>🪐</td>
<td>Circulation pump</td>
</tr>
<tr>
<td>✡</td>
<td>Shunt / shuttle valve</td>
</tr>
<tr>
<td>🎁</td>
<td>Fan</td>
</tr>
</tbody>
</table>
SPLIT with climate system and any addition

For the Installer

Pipe installation

SPLIT26
NOTE

These are outline diagrams. Actual installations must be planned according to applicable standards.
Climate system

Radiator system
Under floor heating systems
Fan convector system

Radiator and under floor heating for heating as well as fan convector system for cooling
Double under floor heating system for heating and fan convector for cooling

Explanation

EP21 Climate system 2
BT2 Temperature sensor, flow pipe
BT3 Temperature sensor, return
GP20 Circulation pump
QN25 Shunt valve

EP22 Climate system 3
QN12 Reversing valve, cooling/heating

Miscellaneous
BT1 Temperature sensor, outdoor
CM1 Expansion vessel

CP1 Buffer vessel WPSK
GP12 Charge pump
RM Non-return valve
External addition

Solar panels

Wood boiler with accumulator

Gas boiler

Oil/pellet boiler

Explanation

CMS5 Expansion vessel
CP1 Accumulator tank
EB1 Immersion heater
EM1 Wood-fired boiler

ALT 1 Gas V.

EP8

GP32 Oil/Pellet boiler

EM2 Oil/Pellet boiler

FL1 Safety valve

GP12 Charge pump

GP31 Pump station, limits high temperature

GP32 Pump station, limits low temperature

HQ Particle filter

RMS Non-return valve

For the Installer

Pipe installation
Electrical installation

General
HM SPLIT must be installed via an isolator switch with a minimum breaking gap of 3mm.
Other electrical equipment, except the outdoor sensors, current sensors and outdoor module L16 SPLIT is already connected at the factory.

- Disconnect the indoor module HM SPLIT and outdoor module L16 SPLIT before insulation testing the house wiring.
- For fuse ratings, see technical data, “Fuse protection”.
- If the building is equipped with an earth-fault breaker, HM SPLIT should be equipped with a separate one.
- Connection must not be carried out without the permission of the electricity supplier and under the supervision of a qualified electrician.
- Cables must be routed so that they are not damaged by metal edges or trapped by panels.
- L16 SPLIT is equipped with a single phase compressor. This means that phase L3 is loaded with up to 25 A during compressor operation.

NOTE
Electrical installation and service must be carried out under the supervision of a qualified electrician. Electrical installation and wiring must be carried out in accordance with the stipulations in force.

NOTE
The switch (SF1) must not be moved to “1” or “2” until the boiler has been filled with water. The circulation pump and immersion heater may become damaged.

Principle diagram, electrical installation

Electrical components

EHZK 90 SPLIT

* Only in a 3-phase installation.
**Connecting the supply**

Incoming electricity supply is connected to terminal block (X1) in HM SPLIT via cable gland (UB1). The cable must be dimensioned according to the applicable norms.

HM SPLIT can be connected with either 400 V 3NAC or 230 V 1AC.

**400 V 3NAC**: Connect incoming supply according to the markings on terminal (X1).

**NOTE**

*Depending on the house main fuse and to avoid the load monitor slowing down the compressor, other loads in the house should be moved from L3 to L1 and L2.*

**230 V 1AC**: Install the supplied straps between terminals L1 and L2 as well as between L2 and L3 on incoming terminal block (X1). Connect incoming supply according to the terminal markings.

**Miniature circuit-breaker**

The automatic heating control system, circulation pumps and their wiring in HM SPLIT, are internally fuse protected with a miniature circuit breaker (FA1). Outdoor module L16 SPLIT and equipment are internally fuse protected in HM SPLIT, with a miniature circuit breaker (FA2).

**Temperature limiter**

The temperature limiter (FD1) cuts the current supply to the electrical addition if the temperature rises between 90 and 100°C and can be manually reset.

**NOTE**

*Reset the temperature limiter, it may have tripped during transport.*

**Connection between HM SPLIT and L16 SPLIT**

The cable between the units must be connected between terminal block for incoming supply (TB) in L16 SPLIT and terminal block (X2) in HM SPLIT via cable gland (UB2).
NOTE

L16 SPLIT must be earthed before the wiring between the units is connected.
The wiring must be attached so that the terminal block is not put under stress.
Scale length of conductor is 8 mm.

Connection between HM SPLIT and EHZK 90 SPLIT, WWS 300 SPLIT, WWS 500 SPLIT

The cable between the units must be connected between terminal block for outgoing electricity (X4) in HM SPLIT and terminal block X100 in EHZK 90 SPLIT, WWS 300 SPLIT, WWS 500 SPLIT.
Scale length of conductor is 12 mm.

L16 SPLIT

Connect phase (brown), neutral (blue), as well as earth (yellow/green) as illustrated:

Connection between HM SPLIT and EHZK 90 SPLIT, WWS 300 SPLIT, WWS 500 SPLIT

The cable between the units must be connected between terminal block for outgoing electricity (X4) in HM SPLIT and terminal block X100 in EHZK 90 SPLIT, WWS 300 SPLIT, WWS 500 SPLIT.
Scale length of conductor is 12 mm.
Connection between HM SPLIT and EHZK 90 SPLIT, WWS 300 SPLIT, WWS 500 SPLIT

---

**Setting max power, electrical addition**

Setting the different maximum immersion heater outputs is performed using the knob (R25) on the current limiter board (AA22). Set value displayed in menu 8.3.2. The following table only applies when menu 9.2.8 Add. heat type is set to "Internal power 1" (factory setting).

<table>
<thead>
<tr>
<th>Immersion heater, output (kW)</th>
<th>Knob position</th>
<th>Max. electric power</th>
<th>L1 (A)</th>
<th>L2 (A)</th>
<th>L3 (A) Compressor on</th>
<th>off</th>
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<tbody>
<tr>
<td>0.0</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>2.0</td>
<td>-</td>
<td>1</td>
<td>5.3</td>
<td>4.3</td>
<td>25</td>
<td>0</td>
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<tr>
<td>4.0</td>
<td>A</td>
<td>2</td>
<td>9.7</td>
<td>8.7</td>
<td>25</td>
<td>0</td>
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<tr>
<td>6.0</td>
<td>B</td>
<td>3</td>
<td>14</td>
<td>13</td>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>9.0</td>
<td>C</td>
<td>4</td>
<td>14</td>
<td>13</td>
<td>25</td>
<td>0</td>
</tr>
</tbody>
</table>

---

**Setting max boiler temperature**

The setting of the different maximum boiler temperatures is made on the knob (R26) on the current limiter board (AA22). Set value displayed in menu 9.3.1.

<table>
<thead>
<tr>
<th>Boiler temperature</th>
<th>Knob position</th>
</tr>
</thead>
<tbody>
<tr>
<td>55</td>
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<td>60</td>
<td>B</td>
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<td>65</td>
<td>C</td>
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<td>65</td>
<td>D</td>
</tr>
<tr>
<td>65</td>
<td>E</td>
</tr>
<tr>
<td>65</td>
<td>F</td>
</tr>
</tbody>
</table>

---

**EBV board, terminal and wiring diagram**

The following connections are made on the EBV board (AA22).

See page 66 for complete wiring diagram of board.

---

**Connecting the outside sensor**

Install the outdoor temperature sensor (BT1) in the shade on a wall facing north or north-west, so it is unaffected by the morning sun. Connect the sensor to terminal block X1:1 and X1:2 on the current limiter board (AA22) via cable grommet UB4. Use a 2 core cable of at least 0.5 mm².

If the outside sensor cable runs close to power cables, shielded cable must be used.

If a conduit is used it must be sealed to prevent condensation in the sensor capsule.
Connecting the temperature sensor hot water charging

The water sensor (BT6) and immersion heater sensor (BT19) are located on EHZK 90 SPLIT/WWS 300 SPLIT/WWS 500 SPLIT and are connected using a cable between HM SPLIT (terminal block AA22-X4) and EHZK 90 SPLIT/WWS 300 SPLIT/WWS 500 SPLIT (terminal block X101). Use a 4 core cable of at least 0.5 mm² cable area.

*The hot water sensor (BT6) is not used in EHZK 90 SPLIT.

Connecting the current limiter

**NOTE**

Only applies to 3X400V.

When many power consumers are connected in the property at the same time as the electric addition is operating, there is a risk of the property's main fuse tripping. HM SPLIT is equipped with an integrated current limiter that controls the electrical steps and the compressor. If necessary, the electrical steps are disengaged and/or the compressor frequency is reduced.

A current sensor should be installed on each incoming phase conductor into the distribution box to measure the current. The distribution box is an appropriate installation point.

Connect the current sensors to a multi-core cable in an enclosure next to the distribution box. Use unscreened multi-core cable of at least 0.50 mm², from the enclosure to HM SPLIT.

In HM SPLIT connect the cable to the current limiter board (AA22) on terminal X1:8–11.

L1 connects on X1:8 and X1:11.

L2 connects on X1:9 and X1:11.

L3 connects on X1:10 and X1:11.

X1:11 is the common terminal block for the three current sensors.

---

Connection of centralised load control/tariff

In those cases centralised load control or tariff control is used this can be connected to the terminal block (X1) on the EBV card (AA22), which is positioned behind the front cover.

Tariff A, the electrical addition is disconnected. Connect a potential free contact function to terminal X1:5 and X1:7.

Tariff B, the compressor in L16 SPLIT is disconnected. Connect a potential free contact function to terminal X1:6 and X1:7.

Tariff A and Tariff B can be combined.

A closed contact results in the electrical output being disconnected.

Connecting external contacts

RFV SPLIT, sensor for changing the room temperature

An external sensor (BT50) can be connected to HM SPLIT to change the flow temperature and with that set the room temperature, for example, a room sensor (RFV SPLIT, accessory). Connect the sensor to the terminal block from X4:1 to X4:3 on the current limiter board (AA22) according to wiring diagram.

Activated in menu 9.3.6.

The difference between the room temperature and the set room temperature affects the flow temperature. The required room temperature is set using the knob on RFV SPLIT and is shown in menu 6.3.

Contact for changing the room temperature

Climate system 1:

An external contact function can be connected to HM SPLIT to change the flow temperature and in doing so change the room temperature, for example, a room thermostat or a timer. The contact must be potential free and non-locking and connected to terminal block X1:3 and X1:4 on the current limiter board (AA22).

When the contact is closed, the heating curve offset is changed by the number of steps shown here. The value is adjustable between -10 and +10. The value for the change is set in menu 2.4, "External adjustment".

Climate system 2:

An external contact function can be connected to HM SPLIT to change the flow temperature and in doing so change the room temperature, for example, a room thermostat or a timer. The contact must be potential free and non-locking and connected to terminal block X1:14 and X1:15 on the current limiter board (AA22).
When the contact is closed, the heating curve offset is changed by the number of steps shown here. The value is adjustable between -10 and +10. The value for the change is set in menu 3.5, "External adjust. 2".

**Contact for activation of “Extra hot water”**

An external contact function can be connected to HM SPLIT for activation of the “Temporary extra hot water” function. The contact must be potential free and non-locking and connected to terminal block X6:1 and X6:2 on the current limiter board (AA22).

When the contact is closed for at least one second, the “Temporary Extra hot water” function is activated. An automatic return to the previously set function occurs after 3 hours.

**Alarm outputs**

External indication of common alarms is possible through the relay function on the current limiter board (AA22), terminal block X2:1–2.

Electrical circuit diagram on page 66 shows the relay in the alarm position.

When switch (SF1) is in the "0" or "△" position the relay is in the alarm position.

**Docking specific connection**

HM SPLIT is prepared to control an external circulation pump (GP10), external shunt (QN11), exchange valve for cooling (QN12), as well as external addition e.g. oil, gas or pellets.

**External circulation pump (max 50W)**

Connect external circulation pump (GP10) to terminal block X3:1 (230 V), X3:4 (N) and X3:5 (PE).

The circulation pump (GP10) is active when the circulation pump (GP1) in HM SPLIT is active.

The accessory HS SPLIT can be used if the connection output exceeds 50W. See section Component positions on page 75.

**External shunt (accessory)**

Connection and function are described in the Installation instructions for accessory MG2 SPLIT.

**Shuttle valve, cooling (accessory)**

Connection and function are described in the Installation instructions for accessory VK2 SPLIT.

**External addition**

HM SPLIT can control an external addition.

Sensor BT19 must be moved to sensor output BT24 between the docking connections XL8 and XL9 on the tank (does not apply to solar power or wood fired docking). See section Component positions on page 75.

**Ext. 1 step**

1. Remove the strap on terminal block X3:2 and X3:3. See section Component positions on page 75 and section Electrical circuit diagram on page 66.

2. Connect the addition’s phase to terminal block X3:2 (230 V) and X3:4 (N) (max 0.2 A).

3. Use the accessory HS SPLIT when the need for potential for signal and/or when controlling external charge pumps.

Start-up and inspection

Preparations
Connect L16 SPLIT to HM SPLIT (refrigerant pipe and wiring) and connect HM SPLIT to the climate system.

Filling the climate system
1. Ensure that the pressure gauge (BP5) is visible.
2. Connect a hose to the filling valve (QM1) and open the valve to fill the
3. After a while observe that the pressure on the manometer (BP5) rises.
4. When the pressure has reached about 0.25 MPa (2.5bar) a mix of air and water starts to emerge from the safety valve (FL2). Close the filling valve (QM1).

Venting the climate system
Bleed HM SPLIT via the bleed valve (QM20), and the rest of the climate system via the relevant bleed valves.
Keep topping up and venting until all air has been removed and the correct pressure has been obtained.

Filling the hot water coil
The hot water coil is filled by opening a hot water tap.

Commissioning

NOTE
Do not start L16 SPLIT at outdoor air temperatures of -20 °C or less.

1. Check that the miniature circuit-breaker (FA2) in HM SPLIT is on.
2. Check that the temperature limiter (FD1) has not tripped.
3. Switch on the main circuit breaker and check that the miniature circuit breaker (FA1) in HM SPLIT is on.
4. Set switch (SF1) to "1" (the switch should be switched on for 6 hours before the compressor can be started).
   When switch (SF1) is set to "0" - wait at least 1 minute before setting it back to "1".
5. Select operating mode "Add. heat only" by holding in the operating mode button for 7 seconds.
6. Set the date and time in menu 7.1 and 7.2.
7. Select "Service" in menu 8.1.1.
8. Select addition type in menu 9.2.8.
9. Set the fuse size on knob (R24). Check the value in menu 8.3.1.
10. Set the max immersion heater output on knob (R25). Check the value in menu 8.3.2.
11. Select the desired curve slope in menu 2.1.2 and set the parallel offset using the knob. Also see section Default setting on page 8.

12. Check that the hot water temperature in menu 1.0 exceeds 25 °C.

13. When point 11 has been carried out, select operating mode "Auto".

The heat pump starts after 30 minutes.

**Setting system flow heating**

1. Ensure that the heat pump produces heating for the climate system.
4. Check the supply and return line temperatures in menu 2.5. Adjust the circulation pump speed in menu 2.1.5 so that the difference between these temperatures is according to the diagram below.
5. Select "Off" in menu 9.6.2.

[Diagram showing ΔT and Outdoor temperature with graph]

**Setting system flow cooling**

A temperature difference of \( dt = 7 \) K is recommended in most cases. To achieve this, the following setting can be selected:

| Dimensioned cooling output \( Q_c \) kW | 7 | 9 | 11 | 13 |
| Menu 2.2.5 % | 60 | 60 | 70 | 90 |

The table shows the recommended output position, depending on the dimensioned cooling output. Go to menu 2.2.5 for further adjustment of pump speed.

The result should be checked and adjusted further, if necessary.

**Commissioning HM SPLIT without L16 SPLIT connected**

1. Check that the temperature limiter (FD1) has not tripped.
2. Switch on the main circuit breaker and check that the miniature circuit breaker (FA1) in HM SPLIT is on.
3. Set switch (SF1) to "1".
4. Select operating mode "Add. heat only" by holding in the operating mode button for 7 seconds.
5. Set the date and time in menu 7.1 and 7.2.
7. Select addition type in menu 9.2.8.

8. Set the fuse size on knob (R24). Check the value in menu 8.3.1.
9. Set the max immersion heater output on knob (R25). Check the value in menu 8.3.2.
10. Select the desired curve slope in menu 2.1.2 and set the parallel offset using the knob. Also see section Default setting on page 8.

**Checking external addition with internal immersion heater blocked**

2. Select operating mode "Add. heat only" by holding in the operating mode button for 7 seconds.
3. Ensure that the max temperature from the external addition does not exceed 65 °C.
4. Select operating mode "Auto" by pressing the operating mode button.

**Checking external addition (not controlled by HM SPLIT) with internal immersion heater as backup**

1. Adjust the start temperature of the addition so that it starts at a higher temperature than the internal electrical addition (see set value in menu 1.2).
2. Adjust the addition’s stop temperature so that the temperature in HM SPLIT does not exceed 65 °C.

**Inspection of the installation**

Current regulations require the heating installation to be inspected before it is commissioned. The inspection must be carried out by a suitably qualified person and should be documented. Use the check list on the following page. The above applies to closed climate systems.

Do not replace any part of the split-system without carrying out new checks.

**Cleaning the particle filter**

Clean the particle filter (HQ1) after installation.

1. Close valve QM31 and the valve by the particle filter (HQ1).
2. Open the bleed valve (QM20) to ensure that the pressure in HM SPLIT falls.
3. Clean the particle filter (HQ1) as illustrated.
Secondary adjustment
Air is initially released from the hot water and venting may be necessary. If gurgling sounds can be heard from HM SPLIT or from the climate system, the entire system will require additional venting.

NOTE
Use bleed valve (QM20), any external bleed valves as well as safety valve (FL2). The latter must be operated carefully as it opens quickly. When the system is stable (correct pressure and all air eliminated) the automatic heating control system can be set as required.

See Default setting on page 8.
## Checklist: Checks before commissioning

<table>
<thead>
<tr>
<th>Category</th>
<th>Notes</th>
<th>Checked</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hot water</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-return valve</td>
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<tr>
<td>Safety valve</td>
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<td>Mixing valve</td>
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<td></td>
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<tr>
<td>Shut off valves</td>
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<tr>
<td><strong>Heating</strong></td>
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<td>System volume</td>
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<td>Safety valve</td>
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<td>Internal addition</td>
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<td>External addition</td>
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<td></td>
</tr>
<tr>
<td><strong>Cooling</strong></td>
<td></td>
<td></td>
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<tr>
<td>Pipe system, condensation insulation</td>
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<td></td>
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<tr>
<td>Three way valve (QN12) cooling/ heating</td>
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<td><strong>Refrigerant system</strong></td>
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<td>Pipe length</td>
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<td>Property’s main fuse</td>
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<td>Group fuse</td>
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<td>KWS</td>
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<td>WPSK</td>
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<td>Overflow valve</td>
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<td>Room sensor</td>
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<tr>
<td>Solar control</td>
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<tr>
<td>KWS</td>
<td></td>
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</tr>
</tbody>
</table>

### Miscellaneous
- Start-up and inspection
Control

Display

Menu types

Control is divided into different menu types depending on how “deep” into the controls you need to go.

- Normal [N]: The settings you as a customer often need.
- Extended [U]: Shows all detailed menus except the service menus.
- Service [S]: Shows all menus.

Changing of menu type is done from menu 8.1.1

Menu management

The Plus button is used to move forward to the next menu on the current menu level and to increase the value of the parameter in menus where this is possible.

The Minus button is used to move back to the previous menu on the current menu level and to decrease the value of the parameter in menus where this is possible.

The Enter button is used to select submenus of the current menu, to permit parameters to be changed and to confirm any changes to parameters. When the menu number ends with a zero this indicates that there is a submenu.

Changing parameters

- Changing a parameter (value):
- Access the required menu.
- Press the enter button, the numerical value starts to flash.
- Increase or decrease using the Plus/Minus buttons.
- Confirm by pressing the enter button.
- Menu 1.0 is automatically displayed again 30 minutes after the last button press.

Example

Changing the curve slope, menu 2.1.

- The starting point is menu 1.0.
- Press the plus button to move to menu 2.0.
- Press the enter button to move to menu 2.1.
- Press the enter button to change the value.
- Change the value by pressing the plus or minus buttons.
- Confirm the selected value by pressing the enter button.
- Press the quick movement button to access menu 1.0.

Quick movement

To quickly return to the main menu from a sub menu, press one of the following buttons:

Key lock

A key lock can be activated in the main menus by simultaneously pressing the plus and the minus buttons. The key symbol will then be shown on the display.

The same procedure is used to deactivate the key lock.
Menu tree

1.0 [N] Hot water temp.
1.1 [N] Max HW/Period time
1.2 [N] Start temperature HW
1.3 [N] Stop temperature HW
1.4 [U] Stop temperature XHW
1.5 [U] Heat pump stop XHW
1.6 [U] Max heat p. time XHW
1.7 [U] Interval XHW
1.8 [U] Next XHW action
1.9 [U] HW run time

1.10.0 [S] HW charge act/set
1.10.1 [S] HW charge set temp
1.11.0 [S] CompFreq HW settings
1.12 [N] Return

1.10.2 [S] Circ-pump speed HW
1.10.3 [S] Circ-pump manual
1.10.4 [S] HW reg min
1.10.10 [S] Return

1.11.1 [S] CompFreq HW set
1.11.2 [S] CompFreq manual
1.11.3 [S] CompFreq at +20
1.11.4 [S] CompFreq at -5
1.11.5 [S] Return
## 2.0 [N] Supply temp.

### 2.1.0 [N] Heating settings
- 2.1.1 [N] Offset heating/Total
- 2.1.2 [N] Heating curve
  - 2.1.3.0 [U] Own heating curve
    - 2.1.3.1 [U] Supply temp. at +20
    - 2.1.3.2 [U] Supply temp. at -20
    - 2.1.3.3 [U] Buckling temperature
    - 2.1.3.4 [U] Supply t. at buckl.
    - 2.1.3.5 [U] Return
- 2.1.4 [U] Min supply heating
- 2.1.5 [U] Circ-pump speed heat
- 2.1.6 [N] Return

### 2.1.5 Cooling settings
- 2.2.1 [N] Offset cooling/Total
- 2.2.2 [N] Cooling curve
  - 2.2.3.0 [U] Own cooling curve
    - 2.2.3.1 [U] Supply temp. at +20
    - 2.2.3.2 [U] Supply temp. at +40
    - 2.2.3.3 [U] Return
- 2.2.4 [U] Min supply cooling
- 2.2.5 [U] Circ-pump speed cool
- 2.2.6 [N] Return

### 2.3 [U] Max supply temp.
- 2.4 [U] External adjustment
- 2.5 [U] Supply/Return temp.
- 2.6 [U] Degree minutes
- 2.7 [N] Return
### 3.0 [N] Supply temp. 2

<table>
<thead>
<tr>
<th>3.0.1 [N] Offset heating/Tot 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0.2 [N] Heating curve 2</td>
</tr>
<tr>
<td>3.0.3 [U] Min supply temp. 2</td>
</tr>
<tr>
<td>3.0.4 [U] Max supply temp. 2</td>
</tr>
<tr>
<td>3.0.5 [U] External adjust. 2</td>
</tr>
</tbody>
</table>

#### 3.6.0 [U] Own heating curve 2

- 3.6.1.1 [U] Supply temp. at +20
- 3.6.1.2 [U] Supply temp. at -20
- 3.6.1.3 [U] Buckling temperature
- 3.6.1.4 [U] Supply t. at buckl
- 3.6.1.5 [U] Return

### 3.7 [U] Supply/Return temp 2

| 3.8 [N] Return |

### 4.0 [N] Outdoor temp.

<table>
<thead>
<tr>
<th>4.0.1 [N] Outdoor avg. temp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0.2 [U] Outdoor filter time</td>
</tr>
<tr>
<td>4.0.3 [U] Outdoor avg. 1min.</td>
</tr>
<tr>
<td>4.0.4 [N] Return</td>
</tr>
</tbody>
</table>
### 5.0 [N] Heat pump

<table>
<thead>
<tr>
<th>5.1 [N] Number of starts</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2 [N] Run time compressor</td>
</tr>
<tr>
<td>5.3 [U] Time to start</td>
</tr>
<tr>
<td>5.4 [U] Outdoor temp. Tho-A</td>
</tr>
<tr>
<td>5.5 [U] Heat Ex Tho-R1</td>
</tr>
<tr>
<td>5.6 [U] Heat Ex Tho-R2</td>
</tr>
<tr>
<td>5.7 [U] Suction temp. Tho-S</td>
</tr>
<tr>
<td>5.8 [U] Hot gas Tho-D</td>
</tr>
<tr>
<td>5.9 [U] Liquid line temp.</td>
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<tr>
<td>5.10 [U] Condensor out / max</td>
</tr>
<tr>
<td>5.11 [U] HP</td>
</tr>
<tr>
<td>5.12 [U] LP LPT</td>
</tr>
<tr>
<td>5.13 [U] Fan speed</td>
</tr>
<tr>
<td>5.14.0 [U] CompFreq act/set</td>
</tr>
<tr>
<td>5.14.1 [U] OU current CT</td>
</tr>
<tr>
<td>5.14.2 [U] Inverter temp Tho-IP</td>
</tr>
<tr>
<td>5.14.3 [U] Return</td>
</tr>
<tr>
<td>5.15.0 [S] OU communication</td>
</tr>
<tr>
<td>5.15.1 [S] Com. error rate</td>
</tr>
<tr>
<td>5.15.2 [S] Com. errors</td>
</tr>
<tr>
<td>5.15.3 [S] Reset com. errors</td>
</tr>
<tr>
<td>5.15.4 [S] Return</td>
</tr>
<tr>
<td>5.16 [N] Return</td>
</tr>
</tbody>
</table>

### 6.0 [N] Room temperature*

<table>
<thead>
<tr>
<th>6.1 [U] Room compensation</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2 [U] Heating system</td>
</tr>
<tr>
<td>6.3 [N] Room temp. setpoint</td>
</tr>
<tr>
<td>6.4 [U] Room temp avg. 1min</td>
</tr>
<tr>
<td>6.5 [U] Room integrator time</td>
</tr>
<tr>
<td>6.6 [N] Return</td>
</tr>
</tbody>
</table>

*Requires accessory and activation in menu 9.3.6.
### 7.0 [N] Clock

<table>
<thead>
<tr>
<th>7.1 [N] Date</th>
<th>7.2 [N] Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.3.0 [U] Temp set back</td>
<td>7.3.1 [U] Set back time</td>
</tr>
<tr>
<td>7.3.2 [U] Set back temp +/-</td>
<td>7.3.3 [U] Heating system</td>
</tr>
<tr>
<td>7.3.4 [U] Return</td>
<td></td>
</tr>
<tr>
<td>7.4.0 [U] Extra hot water</td>
<td>7.4.1 [U] XHW Monday</td>
</tr>
<tr>
<td>7.4.2 [U] XHW Tuesday</td>
<td>7.4.3 [U] XHW Wednesday</td>
</tr>
<tr>
<td>7.4.4 [U] XHW Thursday</td>
<td>7.4.5 [U] XHW Friday</td>
</tr>
<tr>
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<td>7.5.2 [U] Vacation ends</td>
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<td>7.5.6 [U] Return</td>
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<tr>
<td>7.6.0 [N] Silent mode</td>
<td>7.6.1 [N] Silent mode time</td>
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<td>7.6.2 [N] Return</td>
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<td>7.7 [N] Return</td>
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### 9.1 [S] Heat pump settings

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<td>9.1.4</td>
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<tr>
<td>9.1.5</td>
<td>Stop temp. cool low</td>
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<tr>
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<td>9.1.7</td>
<td>Time bet. starts</td>
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### 9.2 [S] Add. heat settings

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<tbody>
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<td>DM start add. heat</td>
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<td>Max. boiler temp.</td>
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<td>9.3.7.2</td>
<td>K2</td>
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<td>9.3.7.3</td>
<td>K3</td>
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<tr>
<td>9.3.7.4</td>
<td>K4</td>
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<td>9.3.7.5</td>
<td>K5</td>
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<tr>
<td>9.3.7.6</td>
<td>K6</td>
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<td>9.3.7.7</td>
<td>K7</td>
</tr>
<tr>
<td>9.3.7.8</td>
<td>K8</td>
</tr>
<tr>
<td>9.3.7.9</td>
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<td>9.3.7.10</td>
<td>K10</td>
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<td>9.3.7.11</td>
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<td>9.3.7.14</td>
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<td>9.3.7.15</td>
<td>Alarm 1</td>
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<td>9.3.7.16</td>
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</thead>
<tbody>
<tr>
<td>9.3.8</td>
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### 9.3.9 [S] Operating state

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<tbody>
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<td>Floor drying setting</td>
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<tr>
<td>9.3.10.1</td>
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<td>9.3.11 [S] Supply pump exer.</td>
<td>9.3.10.3 [S] Temp. period 1</td>
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<tr>
<td>9.3.12 [S] Supply diff HP</td>
<td>9.3.10.4 [S] Period time 2</td>
</tr>
<tr>
<td>9.3.13 [S] Diff HP add. heat</td>
<td>9.3.10.5 [S] Temp. period 2</td>
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<tr>
<td>9.3.14 [S] Block HW/Heating</td>
<td>9.3.10.6 [S] Return</td>
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<tr>
<td>9.3.15 [S] Heat drop at alarm</td>
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<tr>
<td>9.3.16 [S] Type of HW sensor</td>
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<tr>
<td>9.3.17 [S] Freeze protection HX</td>
<td></td>
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<tr>
<td>9.3.18 [S] Return</td>
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</table>

### 9.4 [S] Quick start

### 9.5.0 [S] System info

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<tbody>
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<td>9.5.1 [S] Heat pump type</td>
<td></td>
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<tr>
<td>9.5.2 [S] Cpu usage percent</td>
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<tr>
<td>9.5.3 [S] Com rate/1000</td>
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<tr>
<td>9.5.4 [S] Unit w. com. problem</td>
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<td>9.5.5 [S] Run time add. heat</td>
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<tr>
<td>9.5.6 [S] Run time hot water</td>
<td></td>
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<tr>
<td>9.5.7 [S] Program version</td>
<td></td>
</tr>
<tr>
<td>9.5.8 [S] 106-card version</td>
<td></td>
</tr>
<tr>
<td>9.5.9 [S] Display version</td>
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</tr>
<tr>
<td>9.5.10 [S] Relay card version</td>
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<tr>
<td>9.5.11 [S] Lowest supply temp.</td>
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<tr>
<td>9.5.12 [S] Percent runtime</td>
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<tr>
<td>9.5.13 [S] Period</td>
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<td>9.5.14 [S] Run status</td>
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<tr>
<td>9.5.15 [S] Run status last</td>
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<tr>
<td>9.5.16 [S] Run status time</td>
<td></td>
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<td>9.5.17 [S] Return</td>
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</table>

### 9.6.0 [S] Heat reg. settings

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<tbody>
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<td>9.6.2 [S] Manual CompFreq</td>
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<td>9.6.3 [S] Max deltaF act/set</td>
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</tr>
<tr>
<td>9.6.4 [S] CompFreq regP</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>9.6.6 [S] Time min freq heat</td>
<td></td>
</tr>
<tr>
<td>9.6.7 [S] Max diff flow-cFlow</td>
<td></td>
</tr>
<tr>
<td>9.6.8 [S] CompFreq GMz</td>
<td></td>
</tr>
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<td>9.6.9 [S] Return</td>
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</tr>
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</table>

### 9.7 [S] Reset alarm

### 9.8.0 [S] Alarm log

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<thead>
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<td>9.8.x.1 [S] Time</td>
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<td>9.8.x.2 [S] Alarm type</td>
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<td>9.8.x.3 [S] Run status</td>
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<tr>
<td>9.8.x.4 [S] Run status last</td>
<td></td>
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<tr>
<td>9.8.x.5 [S] Run status time</td>
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</tr>
<tr>
<td>9.8.x.6 [S] Run time compressor</td>
<td></td>
</tr>
<tr>
<td>9.8.x.7 [S] Outdoor avg. 1min.</td>
<td></td>
</tr>
<tr>
<td>9.8.x.8 [S] Outdoor temp Tho-A</td>
<td></td>
</tr>
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</table>
## 9.0 [S] Service menus

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<td>9.8.x.10 [S]</td>
<td>Condensor out</td>
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<tr>
<td>9.8.x.11 [S]</td>
<td>Hot water temp.</td>
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<td>9.8.x.12 [S]</td>
<td>CompFreq act/set</td>
</tr>
<tr>
<td>9.8.x.13 [S]</td>
<td>Heat Ex Tho-R1</td>
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<td>9.8.x.14 [S]</td>
<td>Heat Ex Tho-R2</td>
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<td>9.8.x.15 [S]</td>
<td>Suction temp. Tho-S</td>
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<tr>
<td>9.8.x.16 [S]</td>
<td>Hot gas Tho-D</td>
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<td>9.8.x.17 [S]</td>
<td>Liquid line temp.</td>
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<td>9.8.x.18 [S]</td>
<td>HP</td>
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<td>9.8.x.19 [S]</td>
<td>LP LPT</td>
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<td>9.8.x.20 [S]</td>
<td>OU current CT</td>
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<td>9.8.x.21 [S]</td>
<td>Inverter temp Tho-IP</td>
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<td>9.8.x.22 [S]</td>
<td>Circ-pump speed</td>
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<td>9.8.x.23 [S]</td>
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<td>9.8.x.24 [S]</td>
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### Miscellaneous

- 9.9 [S] Return

### Control

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<td>9.8.4.0 [S]</td>
<td>Log 4</td>
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<tr>
<td>9.8.5 [S]</td>
<td>Clear alarm log</td>
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<td>9.8.6 [S]</td>
<td>Return</td>
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</tbody>
</table>
Main menus

Menu 1.0 [N] Hot water temp.
The current hot water temperature in the hot water heater is shown here.

Menu 2.0 [N] Supply temp.
The current supply temperature for the climate system is shown here with the calculated supply temperature in brackets.

Menu 3.0 [N] Supply temp. 2
The current supply temperature for climate system 2 is shown here with the calculated supply temperature in brackets.

Menu 4.0 [N] Outdoor temp.
The current outdoor air temperature is displayed here.

Menu 5.0 [N] Heat pump
Readings regarding the status of the outdoor unit are shown in the sub-menus to this menu.

The following text appears in the display.

<table>
<thead>
<tr>
<th>Text</th>
<th>Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>Shown when there is no compressor demand and none of the following apply.</td>
</tr>
<tr>
<td>On</td>
<td>Shown during normal operation with the compressor.</td>
</tr>
<tr>
<td>Initiates</td>
<td>Shown while the compressor is running.</td>
</tr>
<tr>
<td>Com. problem</td>
<td>Shown in the event of temporary communication problems.</td>
</tr>
<tr>
<td>Defrosting</td>
<td>Shown during defrost.</td>
</tr>
<tr>
<td>Oil return</td>
<td>Shown when the compressor is rotated to be lubricated.</td>
</tr>
<tr>
<td>Protection</td>
<td>Shown when the compressor is in some form of protection or during a start delay of 30 minutes.</td>
</tr>
<tr>
<td>Shutdown</td>
<td>Shown in the event of an alarm, tariff B or Operating mode Addition only.</td>
</tr>
<tr>
<td>Stopped</td>
<td>Shown when the outdoor temperature is outside the compressor's working range (too high or too low temperature).</td>
</tr>
</tbody>
</table>

Menu 6.0 [N] Room temperature
The room temperature is shown here and the set room temperature in brackets. Settings concerning the factor for the room sensor and which climate system the sensor should control are made in the sub-menus for this menu.

Menu 7.0 [N] Clock
Settings regarding the date and time are made in the sub-menus of this menu. Different temperature reductions and increases at selected times are also set from this menu.

Menu 8.0 [N] Other adjustments
Settings regarding the menu type, language, operating mode settings and load monitor reading are made in the sub-menus to this menu.

Menu 9.0 [S] Service menus
This menu and its sub-menus are only shown on the display screen when access has been selected in menu 8.1.1. Values can be read and various settings can be made from these sub-menus.

NOTE
These settings should only be made by persons with the necessary expertise.

[N] Normal, covers the normal user’s needs.
[U] Extended, shows all menus except the service menus.
[S] Service, shows all menus, returns to normal 30 minutes after the last button was pressed.
1.0 [N] Hot water temp.

Menu 1.1 [N] Max HW/Period time
The time of the hot water period and the time for the whole period are shown here. Shown for both hot water charging and heating when necessary:
Time Heating/Max. when heating is in progress.
Time Hot water/Max. if hot water charging is in progress.

Menu 1.2 [N] Start temperature HW
The temperature when the heat pump starts hot water charging is set here.
Setting range: 25 – 55 °C
Default value: 47 °C

Menu 1.3 [N] Stop temperature HW
The temperature when the heat pump stops hot water charging is set here.
Setting range: 30 – 60 °C
Default value: 53 °C

Menu 1.4 [U] Stop temperature XHW
The desired temperature during extra hot water is set here.
Setting range: 40 – 65 °C
Default value: 65 °C

Menu 1.5 [U] Heat pump stop XHW
The desired stop temperature during extra hot water for the heat pump is set here.
Setting range: 40 – 60 °C
Default value: 60 °C

Menu 1.7 [U] Interval XHW
Periodic time based extra hot water is selected here.
Extra hot water is shut off at the value "Off". Extra hot water is started when the value is confirmed.
Setting range: From - 90 days
Default value: Off

Menu 1.8 [U] Next XHW action
Next periodic increase to the "Extra hot water" level shown here.

Menu 1.9 [U] HW run time
Shows how long hot water charging with the compressor has been in progress (accumulated).

Menu 1.10.0 [S] HW charge act/set
Shows the actual and desired values for the hot water charging temperature.
Hot water charging settings are made in the sub-menus for this menu.

Menu 1.10.1 [S] HW charge set temp
Shows the actual set point value for the hot water charging temperature.
The set point value for temperatures above the stop value for hot water charging is selected within brackets.
Setting range: 0 – 10 °C
Default value: 2.0 °C

Menu 1.10.2 [S] Circ-pump speed HW
The speed of the heating medium pump during hot water charging is shown here.

Menu 1.10.3 [S] Circ-pump manual
Select "On" to manually control the HW pump.
Setting range: Off, On
Default value: Off

Menu 1.10.10 [S] Return
Return to menu 1.10.0.

Menu 1.11.0 [S] CompFreq HW settings
The compressor frequency that is used during hot water charging is shown here.
Settings can be made regarding the compressor frequency during hot water charging in the submenus to this menu.

Menu 1.11.1 [S] CompFreq HW set
The compressor frequency for hot water charging is shown here.
Here you select the compressor frequency for hot water charging during manual control.
These setting initially apply when "On" is selected in menu 1.11.2.

Menu 1.11.2 [S] CompFreq manual
Select "On" to control the compressor frequency for hot water charging manually.
Setting range: Off, On
Default value: Off

Menu 1.11.3 [S] CompFreq at +20
The compressor frequency for hot water charging at an outdoor air temperature of 20 °C is selected here.

Menu 1.11.4 [S] CompFreq at -5
The compressor frequency for hot water charging at an outdoor air temperature of -5 °C is selected here.

Menu 1.11.5 [S] Return
Return to menu 1.11.0.

Menu 1.12 [N] Return
Return to menu 1.0.

2.0 [N] Supply temp.

Menu 2.1.0 [N] Heating settings
Heating settings are made in the sub-menus for this menu.
Menu 2.1.1 [N] Offset heating/Total
The selected heating curve offset is shown here. The total offset of the heat curve is also shown here. It includes schedule, outer compensation and any room control.

**NOTE**
The value is changed using the “Heating curve offset” knob.

Setting range: -10 – 10

Menu 2.1.2 [N] Heating curve
The selected curve slope (heating curve) is shown here. At value 0, the function “Own heat curve” is activated, see menu 2.1.3.0.
Setting range: 0 – 20
Default value: 9

Menu 2.1.3.0 [U] Own heating curve
Here you can select your own curve definition. This is an individual linear curve with one break point. You select a break point and the associated temperatures.

**NOTE**
The “Curve slope” in menu 2.1.2 must be set to 0 to activate this function.

Menu 2.1.3.1 [U] Supply temp. at +20
The supply temperature at an outdoor air temperature of +20 °C is selected here.
Setting range: 0 – 80* °C
Default value: 20 °C

Menu 2.1.3.2 [U] Supply temp. at -20
The supply temperature at an outdoor air temperature of -20 °C is selected here.
Setting range: 0 – 80* °C
Default value: 35 °C

Menu 2.1.3.3 [U] Buckling temperature
Here you select at what outside air temperature the break point shall occur.
Setting range: -15 – 15 °C
Default value: 0 °C

Menu 2.1.3.4 [U] Supply t. at buckl.
You set the required flow temperature for the break point here.
Setting range: 0 – 80* °C
Default value: 30 °C

Menu 2.1.3.5 [U] Return
Return to menu 2.1.3.0.

Menu 2.1.4 [U] Min supply heating
The set minimum level for the supply temperature to the climate system is shown here. The calculated flow temperature never drops below the set level irrespective of the outdoor temperature, curve slope or offset heating curve.
Setting range: 20 – 65 °C
Default value: 25 °C

Menu 2.1.5 [U] Circ-pump speed heat
The speed of the heating medium pump during house heating is selected here.
Setting range: 1 – 100
Default value: 60

Menu 2.1.6 [N] Return
Return to menu 2.1.0.

Menu 2.2.0 [N] Cooling settings
Cooling settings are made in the sub-menus for this menu.

Menu 2.2.1 [N] Offset cooling/Total
The selected cooling curve offset is changed here. The total offset of the cooling curve is also shown here. It includes schedule, outer compensation and any room control.
Setting range: -10 – 10
Default value: -1

Menu 2.2.2 [N] Cooling curve
The selected curve slope (cooling curve) is shown here. At value 0, the function “Own cooling curve” is activated, see menu 2.2.3.0.
Setting range: 0 – 3
Default value: 1

Menu 2.2.3.0 [U] Own cooling curve
Here you can select your own curve definition.

**NOTE**
The “Curve slope” in menu 2.2.2 must be set to 0 to activate this function.

Menu 2.2.3.1 [U] Supply temp. at +20
The supply temperature at an outdoor air temperature of +20 °C is selected here.
Setting range: 0 – 25* °C
Default value: 20 °C

Menu 2.2.3.2 [U] Supply temp. at +40
The supply temperature at an outdoor air temperature of +40 °C is selected here.
Setting range: 0 – 25* °C
Default value: 10 °C

Menu 2.2.3.3 [U] Return
Return to menu 2.2.3.0.

* Limited by menu 2.3 Max supply temp..
Menu 2.2.4 [N] Min supply cooling
The set minimum level for the supply temperature to the climate system during cooling is shown here.
The calculated flow temperature never drops below the set level irrespective of the outdoor temperature, curve slope or offset heating curve.
Setting range: 7 – 25 °C
Default value: 18 °C

NOTE
HM SPLIT is insulated to prevent condensation for cooling operation down to +7°C in the supply temperature.

Menu 2.2.5 [N] Circ-pump speed cool
The speed of the heating medium pump during house cooling is selected here.
Setting range: 1 – 100
Default value: 60
Menu 2.2.6 [N] Return
Return to menu 2.2.0.

Menu 2.3 [U] Max supply temp.
The set maximum level for the supply temperature to the climate system is shown here.
The calculated flow temperature never exceeds the set level irrespective of the outdoor temperature, curve slope or offset heating curve.
Setting range: 25 – 65 °C
Default value: 55 °C

Menu 2.4 [U] External adjustment
Connecting an external contact, for example, a room thermostat (accessory) or a timer allows you to temporarily or periodically raise or lower the room temperature. When the external contact is closed, the heating curve offset is changed by the number of steps shown here.
If room control is active there is a degree change to the set room temperature.
Setting range: -10 – 10
Default value: 0

Menu 2.5 [U] Supply/Return temp.
The current actual flow and return line temperatures are shown here.

Menu 2.6 [U] Degree minutes
Current value for number of degree-minutes. For example, this value can be changed to accelerate the start of heating production or cooling.
Setting range: -32000 – 32000
Menu 2.7 [N] Return
Return to menu 2.0.

3.0 [N] Supply temp. 2
Menu 3.1 [N] Offset heating/Tot 2
The selected heating curve offset 2 is selected here.
The total offset of heat curve 2 is also shown here. It includes schedule, outer compensation and any room control.
Setting range: -10 – 10
Default value: -1
Menu 3.2 [N] Heating curve 2
The selected curve slope (heating curve) is shown here. At value 0, the function "Own heat curve 2" is activated, see menu 3.6.0.
Setting range: 0 – 20
Default value: 6
Menu 3.3 [U] Min supply temp. 2
The set minimum level for the supply temperature for climate system 2 is shown here.
The calculated flow temperature never drops below the set level irrespective of the outdoor temperature, curve slope or offset heating curve.
Setting range: 10 – 65 °C
Default value: 15 °C
Menu 3.4 [U] Max supply temp. 2
The set maximum level for the supply temperature for climate system 2 is shown here.
The calculated flow temperature never exceeds the set level irrespective of the outdoor temperature, curve slope or offset heating curve.
Setting range: 10 – 65 °C
Default value: 45 °C
Menu 3.5 [U] External adjust. 2
Connecting an external contact, for example, a room thermostat (accessory) or a timer allows you to temporarily or periodically raise or lower the room temperature. When the external contact is closed, the heating curve offset is changed by the number of steps shown here.
If room control is active there is a degree change to the set room temperature.
Setting range: -10 – 10
Default value: 0
Menu 3.6.0 [U] Own heating curve 2
Here you can select your own curve definition. This is an individual linear curve with one break point. You select a break point and the associated temperatures.

NOTE
The “Curve slope” in menu 3.2 must be set to 0 to activate this function.

* Limited by menu 3.4 Max supply temp. 2.
Menu 3.6.1 [U] Supply temp. at +20
The supply temperature at an outdoor air temperature of +20 °C is selected here.
Setting range: 0 – 80° °C
Default value: 20 °C

Menu 3.6.2 [U] Supply temp. at -20
The supply temperature at an outdoor air temperature of -20 °C is selected here.
Setting range: 0 – 80° °C
Default value: 35 °C

Menu 3.6.3 [U] Buckling temperature
Here you select at what outside air temperature the break point shall occur.
Setting range: -15 – 15 °C
Default value: 0

Menu 3.6.4 [U] Supply t. at buckl
You set the required flow temperature for the break point here.
Setting range: 0 – 80° °C
Default value: 30 °C

Menu 3.6.5 [U] Return
Return to menu 3.6.0.

Menu 3.7 [U] Supply/Return temp 2
The present actual flow and return line temperatures for climate system 2 are shown here.

Menu 3.8 [N] Return
Return to menu 3.0.

4.0 [N] Outdoor temp.
Menu 4.1 [N] Outdoor avg. temp.
This menu shows the average outdoor temperature according to the set value in menu 4.2 (factory setting: 24h).

Menu 4.2 [U] Outdoor filter time
Here you select during how long the average temperature in menu 4.1 is calculated.
Setting range: 1 min, 10 min, 1h, 2h, 4h, 6h, 12h, 24h
Default value: 24h

Menu 4.3 [U] Outdoor avg. 1min.
Shows the average outdoor temperature over the last minute.

Menu 4.4 [N] Return
Return to menu 4.0.

5.0 [N] Heat pump
Menu 5.1 [N] Number of starts
The accumulated number of starts with the compressor in L16 SPLIT is shown here.

Menu 5.2 [N] Run time compressor
The accumulated time that the compressor has been used in L16 SPLIT is shown here.

Menu 5.3 [U] Time to start
Time until the compressor start in the L16 SPLIT is shown in this menu.

Menu 5.4 [U] Outdoor temp. Tho-A
This menu shows the outdoor air temperature that the heat pump measures.

Menu 5.5 [U] Heat Ex Tho-R1
This menu shows the evaporator temperature in the heat pump at sensor Tho-R1.

Menu 5.6 [U] Heat Ex Tho-R2
This menu shows the evaporator temperature in the heat pump at sensor Tho-R2.

Menu 5.7 [U] Suction temp. Tho-S
This menu shows the suction gas temperature in the heat pump.

Menu 5.8 [U] Hot gas Tho-D
This menu shows the hot gas temperature in the heat pump.

Menu 5.9 [U] Liquid line temp.
This menu shows the liquid line temperature in the heat pump.

Menu 5.10 [U] Condensor out / max
Shows the current and max. allowed temperature after the condenser.

Menu 5.11 [U] HP
The current high pressure and corresponding temperature during heating are shown here. During cooling, the actual low pressure and corresponding temperature are shown.

Menu 5.12 [U] LP LPT
The current low pressure is shown here.

Menu 5.13 [U] Fan speed
No function.

Menu 5.14.0 [U] CompFreq act/set
The actual and set point value for the compressor frequency are shown here.

Menu 5.14.1 [U] OU current CT
The present phase current to L16 SPLIT is shown here.

Menu 5.14.2 [U] Inverter temp Tho-IP
The current inverter temperature is shown here.

Menu 5.14.3 [U] Return
Return to menu 5.14.0.

Menu 5.15.0 [S] OU communication
Readings regarding any communication errors can be made in the sub-menus to this menu.

Menu 5.15.1 [S] Com. error rate
Shows the percentage of incorrect communications with L16 SPLIT since start-up.

Menu 5.15.2 [S] Com. errors
Shows the total number of incorrect communications with L16 SPLIT since start-up.
Menu 5.15.3 [S] Reset com. errors
Select “Yes” here to reset the counters in menu 5.15.1 and 5.15.2. The settings returns to “No” once the action has been carried out.
Setting range: Yes, No

Menu 5.15.4 [S] Return
Return to menu 5.15.0.
Menu 5.16 [N] Return
Return to menu 5.0.

6.0 [N] Room temperature*

Menu 6.1 [U] Room compensation
A factor is selected here that determines how much the flow temperature is affected by the difference between the room temperature and the set room temperature. A higher value gives a greater change.
Setting range: 0 – 10.0
Default value: 2.0

Menu 6.2 [U] Heating system
Select here whether the room sensor should activate climate system 1 (menu 2.0) and/or climate system 2 (menu 3.0).
Setting range: Off, System 1, System 2, System 1+2
Default value: Off

Menu 6.3 [N] Room temp. setpoint
The desired room temperature is shown here.
Setting range: 10 – 30 °C

Menu 6.4 [U] Room temp avg. 1min
Shows the average room temperature over the last minute.

Menu 6.5 [U] Room integrator time
Select the integration time for room control here.
Setting range: 0 – 120
Default value: 0

Menu 6.6 [N] Return
Return to menu 6.0.

7.0 [N] Clock

Menu 7.1 [N] Date
The current date is set here.
Menu 7.2 [N] Time
Here the current time is set.

Menu 7.3.0 [U] Temp set back
Settings, e.g. for night reduction can be selected in the sub-menus to this menu.

Menu 7.3.1 [U] Set back time
The time for the day change, e.g. night reduction is chosen here.

Menu 7.3.2 [U] Set back temp +/-
Changes to the heat curve with a day change, e.g. the night reduction is set here.
Setting range: -10 – 10
Default value: 0

Menu 7.3.3 [U] Heating system
The climate system that the day change is to affect is selected here. If shunt group 2 is present the menu can be set to “Off”, “System 1”, “System 2” or “System 1+2”. In other cases only “Off” and “System 1” can be selected.
Setting range: Off, System 1, System 2, System 1+2
Default value: Off

Menu 7.3.4 [U] Return
Return to menu 7.3.0.

Menu 7.4.0 [U] Extra hot water
Settings are made in the sub-menus of this menu when extra hot water is required on a specific day.

Menu 7.4.1 – 7.4.7 [U] XHW Monday – XHW Sunday
Here you select the period for respective days when extra hot water should be activated. Hours and minutes for both start and stop are shown. Equal values mean that extra hot water is not activated. Time can be set past midnight.
Setting range: 00:00 – 23:45
Default value: 00:00 – 00:00

Menu 7.4.8 [U] Return
Return to menu 7.4.0.

Menu 7.5.0 [U] Vacation set back
Holiday settings are made in the sub-menus to this menu. When the holiday function is active, the flow line temperature is reduced according to the setting and hot water charging can be switched off.
When the holiday function is deactivated, the heat pump heats the water for an hour, before periodic extra hot water is activated (if periodic extra hot water is activate din menu 1.7).

**NOTE**
The holiday setting does not deactivate cooling.

Menu 7.5.1 [U] Vacation begins
The start date for holiday changing is set here. The date is changed by pressing the enter button. The holiday change starts applying at 00:00 on the selected date.
Same date in menu 7.5.1 and 7.5.2 deactivates the holiday function.

Menu 7.5.2 [U] Vacation ends
The end date for holiday changing is set here. The date is changed by pressing the enter button. The holiday change stops applying at 23:59 on the selected date.
Same date in menu 7.5.1 and 7.5.2 deactivates the holiday function.

*Requires accessory and activation in menu 9.3.6.
Menu 7.5.3 [U] Heating system
The climate system that the vacation set back is to affect is selected here. If shunt group 2 is present the menu can be set to “Off”, “System 1”, “System 2” or “System 1+2”. In other cases only “Off” and “System 1” can be selected.
Setting range: Off, System 1, System 2, System 1+2
Default value: Off

Menu 7.5.4 [U] Offset heating curve
How much the heating curve is to be offset during the holiday period is set here.
If the relevant climate system has a room temperature sensor, the change is given in degrees.
Setting range: -10 – 10
Default value: -5

Menu 7.5.5 [U] HW off
If the hot water charge is to be shut off during the holiday period this is set here.
Setting range: No, Yes
Default value: Yes

Menu 7.5.6 [U] Return
Return to menu 7.5.0.

Menu 7.6.0 [N] Silent mode
The period for silent mode, where the heat pump operates at a lower noise level by limiting the compressor and fan speeds, is selected in the sub-menu.

Menu 7.6.1 [N] Silent mode time
The time interval for silent mode is set here. The period is selectable for a maximum of 23:45 (hh:mm) with increments of 15 min. If the same time is selected for stop and start the function is off.
Default value: off

Menu 7.6.2 [N] Return
Return to menu 7.6.0.

Menu 7.7 [N] Return
Return to menu 7.0.

8.0 [N] Other adjustments
Menu 8.1.0 [N] Display settings
Settings concerning language and menu type are set in the sub-menus to this menu.

Menu 8.1.1 [N] Menu type
The menu type is chosen here.
[N] Normal, covers the normal user’s needs.
[U] Extended, shows all menus except the service menus.
[S] Service, shows all menus, returns to normal menu level 30 minutes after the last button was pressed.

NOTE
Incorrect settings in the service menus can damage the property and/or heat pump.

Setting range: N, U, S
Default value: N

Menu 8.1.2 [N] Language
Language settings are made here.

Menu 8.1.3 [U] Display contrast
The display's contrast is set here.
Setting range: 0 – 31
Default value: 20

Menu 8.1.4 [U] Light intensity
The light intensity in idle mode is set here. Idle mode starts 30 minutes after the last button was pushed.
Setting range: 0=off, 1=low, 2=average.
Default value: 1

Menu 8.1.5 [N] Return
Return to menu 8.1.0.

Menu 8.2.0 [N] Op. mode settings
Settings regarding auto mode can be made in the sub-menus to this menu.

Menu 8.2.1 [N] Allow add. heat
At which operating mode the electric addition is to be permitted to produce hot water and heat when needed is selected here.
Setting range: Off, Heating, Heating + Cooling, Cooling
Default values: Heating

Menu 8.2.2 [N] Add. heat mode
Selected if electric addition is to be used to produce hot water and heat.
Setting range: Off, On
Default value: Off

Menu 8.2.3 [U] Stop temp. heating
The average outdoor air temperature at which the heat pump (in auto mode) is to stop heat production.
When the average outdoor air temperature falls below Stop temp. heating – Hysteresis (menu 8.2.5) heating starts again.
Setting range: 1 – 43 °C
Default value: 17 °C
Menu 8.2.4 [U] Start temp. cooling
The average outdoor air temperature at which the heat pump (in auto mode) is to start cooling.
When the average outdoor temperature switches over, Start temp. cooling (menu 8.2.5) cooling starts.
When the average outdoor air temperature falls below Start temp. cooling – Hysteresis (menu 8.2.5) cooling stops.
Setting range: 10 – 43 °C
Default value: 25 °C

Menu 8.2.5 [U] Hysteresis
See menu 8.2.3 and menu 8.2.4. Also affects control with room sensor.
Setting range: 1.0 – 10.0
Default value: 1.0

Menu 8.2.6 [N] Return
Return to menu 8.2.0.

Menu 8.3.0 [U] Current limiter
Settings and readings regarding the load monitor are set in the sub-menus to this menu.

Menu 8.3.1 [U] Fuse size
The setting selected on the EBV card (AA22) knob (R24) is shown here.

Menu 8.3.2 [U] Max. electric power
The setting selected on the EBV card (AA22) knob (R25) is shown here.

Menu 8.3.3 [U] Current phase 1
Measured current from phase 1 shown here. If the value falls below 2.8 A “low” is displayed.

Menu 8.3.4 [U] Current phase 2
Measured current from phase 2 shown here. If the value falls below 2.8 A “low” is displayed.

Menu 8.3.5 [U] Current phase 3
Measured current from phase 3 shown here. If the value falls below 2.8 A “low” is displayed.

Menu 8.3.6 [U] Transform. ratio EBV
The transfer value must be defined depending on the current sensors used for the EBV card.
Setting range: 100 – 1250
Default value: 300

Menu 8.3.7 [U] Return
Return to menu 8.3.0.

Menu 8.5.0 [U] Period settings
Time periods for heating and hot water production are set in the sub-menus for this menu.

Menu 8.5.1 [U] Period time
The length of time for production of hot water and heating is set here.
Setting range: 5 – 60 min
Default value: 60 min

Menu 8.5.2 [U] Max time for HW
Here you select how much time of the period time (menu 8.5.1) is to be used to heat the hot water when there is a need for both heating and hot water.
Setting range: 0 – 60 min
Default value: 40 min

Menu 8.5.3 [U] Return
Return to menu 8.5.0.

Menu 8.6 [N] Return
Return to menu 8.0.

9.0 [S] Service menus
Menu 9.1.0 [S] Heat pump settings
Settings for L16 SPLIT are made in the sub-menus to this menu.

Menu 9.1.1 [S] DM start heating
Degree minute setting for start of heat pump, heating.
Setting range: -120 – 0
Default value: -60

Menu 9.1.2 [S] DM start cooling
Degree minute setting for start of heat pump, cooling.
Setting range: 0 – 120
Default value: 60

Menu 9.1.3 [S] Stop temp. heat low
Lower parameter for the heat pump’s working range during heating. It stops below this outdoor air temperature.
The heat pump is permitted to start again when the outdoor air temperature increases by two degrees over the set value.
Setting range: -25 – 43 °C
Default value: -25 °C

Menu 9.1.4 [S] Stop temp. heat high
Upper parameter for the heat pump’s working range during heating. It stops above this outdoor air temperature.
The heat pump is permitted to start again when the outdoor air temperature decreases by two degrees below the set value.
Setting range: -25 – 43 °C
Default value: 43 °C

Menu 9.1.5 [S] Stop temp. cool low
Lower parameter for the heat pump’s working range during cooling. It stops below this outdoor air temperature.
The heat pump is permitted to start again when the outdoor air temperature increases by two degrees over the set value.
Setting range: 10 – 43 °C
Default value: 10 °C
### Menu 9.1.6 [S] Stop temp. cool high
Upper parameter for the heat pump’s working range during cooling. It stops above this outdoor air temperature. The heat pump is permitted to start again when the outdoor air temperature decreases by two degrees below the set value.

- **Setting range:** 10 – 43 °C
- **Default value:** 43 °C

### Menu 9.1.7 [S] Time bet. starts
Minimum time interval in minutes between compressor starts in the heat pump.

- **Setting range:** 0 – 60 min
- **Default value:** 0 min

### Menu 9.1.8 [S] Min CompFreq act/set
Select the min compressor frequency here. Display of both the current and the set.

<table>
<thead>
<tr>
<th>Setting range</th>
<th>Factory setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>L16 SPLIT</td>
<td>20 – 77 Hz</td>
</tr>
<tr>
<td></td>
<td>20 Hz</td>
</tr>
</tbody>
</table>

### Menu 9.1.9 [S] Max CompFreq act/set
Select here the max limit for the compressor. Display of the actual and set via the display.

<table>
<thead>
<tr>
<th>Setting range</th>
<th>Factory setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>L16 SPLIT</td>
<td>20 – 85 Hz</td>
</tr>
<tr>
<td></td>
<td>85 Hz</td>
</tr>
</tbody>
</table>

### Menu 9.1.10 [S] OU current heat act/max
The phase current to L16 SPLIT and the highest permitted current that can be set during heating are shown here.

<table>
<thead>
<tr>
<th>Setting range</th>
<th>Factory setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>L16 SPLIT</td>
<td>7 – 25</td>
</tr>
<tr>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

### Menu 9.1.11 [S] OU cur. cool act/max
The phase current to L16 SPLIT and the highest permitted current that can be set during cooling are shown here.

<table>
<thead>
<tr>
<th>Setting range</th>
<th>Factory setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>L16 SPLIT</td>
<td>7 – 23</td>
</tr>
<tr>
<td></td>
<td>22</td>
</tr>
</tbody>
</table>

If the system is colder than the set value defrosting occurs connecting to HW. If HW is colder, the electrical addition starts.

- **Setting range:** 20 – 30 °C
- **Default value:** 20 °C

### Menu 9.2.0 [S] Add. heat settings
Settings regarding additional heat and shunt in HM SPLIT and any extra shunt can be made in the sub-menus to this menu.

### Menu 9.2.1 [S] DM start add. heat
The degree minute deficit that must be set before the additional heat supply is activated is set here.

- **Setting range:** -1000 – -30
- **Default value:** -400

### Menu 9.2.2 [S] Time factor
The time factor of the immersion heater since first start up is shown here. The value is saved and is not reset even when the boiler is switched off using the main power switch.

### Menu 9.2.6 [S] Shunt amplification
Applies to shunt 1 (QN11). E.g. 2 degrees difference and 2 in amplification gives 4 sec/min controlling the shunt.

- **Setting range:** 0.1 – 5.0
- **Default value:** 1.0

### Menu 9.2.7 [S] Shunt amplification2
Applies to any shunt 2 (accessory required). E.g. 2 degrees difference and 2 in amplification gives 4 sec/min controlling the shunt. This function compensates for the speed variation found on different shunt motors that may be installed.

- **Setting range:** 0.1 – 5.0
- **Default value:** 1.0

### Menu 9.2.8 [S] Add. heat type
Select the type of addition to be used.

- **Setting range:** Internal power 1, Ext. 1 step, Ext. Lin 3, Ext. Bin 3
- **Default values:** Internal power 1

### Menu 9.2.9 [S] Return
Return to menu 9.2.0.

### Menu 9.3.0 [S] Operating settings
Settings regarding accessories, additional heat operation, floor drying and a return to the factory settings can be made in the sub-menus to this menu.

### Menu 9.3.1 [S] Max. boiler temp.
The setting selected on the EBV card (AA22) knob (R26) is shown here.

### Menu 9.3.2 [S] Logger
NOTE
Only for service work, special accessory required.

Select "On" here if logger is installed.

- **Setting range:** Off, On
- **Default value:** Off

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**NOTE**

Only for service work, special accessory required.
Menu 9.3.3 [S] Cooling system
Select "On" if cooling system is installed (accessory required).
Setting range: Off, On
Default value: Off

Menu 9.3.4 [S] Heating system 2
Here you select how climate system 2 is installed and if "Off" is selected in menu 9.3.3 only "Off" or "Heat" can be selected (accessory required).
Setting range: Off, Heating, Heating + Cooling, Cooling
Default value: Off

Menu 9.3.5 [S] Room unit
Here you select whether the Room unit (RBE SPLIT) is to be activated or not (accessory required).
Setting range: Off, On
Default value: Off

Menu 9.3.6 [S] Room sensor type
Room sensor type is selected here. Menu 6.0 can be accessed.
Setting range: Off, RFV SPLIT, RBE SPLIT
Default value: Off

Menu 9.3.7.0 [S] Forced control
Settings regarding forced control of the relays in the heat pump are made from the sub-menus in this menu.

Menu 9.3.7.1 [S] Forced control
When "On" is selected in this menu, the user temporarily takes control of the relays in the heat pump. The setting automatically returns to "Off", 30 minutes after the last button was pushed or after a restart.
Setting range: Off, On
Default value: Off

Menu 9.3.7.2 – 9.3.7.15 [S] K1 – K14
Here you can select manual control of the relays.
Setting range: Off, On, Auto
Default value: Auto

Menu 9.3.7.16 [S] Alarm 1
Here you can select select manual test of alarm relay 1.
Setting range: Off, On, Auto
Default value: Auto

Menu 9.3.7.17 [S] Alarm 2
Here you can select manual test of alarm relay 2.
Setting range: Off, On, Auto
Default value: Auto

Menu 9.3.7.18 [S] Return
Return to menu 9.3.7.0.

Menu 9.3.8 [S] Factory setting
Here you can select to restore factory settings in HM SPLIT.
When returning to the factory settings the language switches to English.
Setting range: Yes, No
Default value: No

Menu 9.3.9 [S] Operating state
Describes the operating status of HM SPLIT and L16 SPLIT.
Shut dow n: Additional heater and heat pump are shutdown due to an alarm.
Alternating: The heat pump produces heat and switches, when necessary, between hot water and climate system.
Combined Mode: Due to a great heating demand, the addition is used for hot water and the heat pump produces heat. The addition assists, when necessary, with heat production.
Cooling: The heat pump produces cooling and switches between hot water and cooling system, when necessary.
Super cooling: Only cooling. This is carried out by the heat pump. Hot water produced by addition.
Hot water: Only hot water is produced. This is carried out by the heat pump.
Addition: The heat pump is off and both hot water and heat is produced by the addition.

Menu 9.3.10.0 [S] Floor drying setting
Settings for the floor drying program are made in the sub-menus to this menu.

Menu 9.3.10.1 [S] Floor drying
"On" or "Off" is selected for the floor drying program from this sub-menu. After time period 1 a switch is made to time period 2 followed by a return to the normal settings.
Setting range: Off, On
Default value: Off

Menu 9.3.10.2 [S] Period time 1
Selection of the number of days in period 1.
Setting range: 1 – 5 days
Default value: 3 days

Menu 9.3.10.3 [S] Temp. period 1
Selection of the flow temperature in period 1.
Setting range: 15 – 50 °C
Default value: 25 °C

Menu 9.3.10.4 [S] Period time 2
Selection of the number of days in period 2.
Setting range: 1 – 5 days
Default value: 1 days

Menu 9.3.10.5 [S] Temp. period 2
Selection of the flow temperature in period 2.
Setting range: 15 – 50 °C
Default value: 40 °C

Menu 9.3.10.6 [S] Return
Return to menu 9.3.10.0.

Menu 9.3.11 [S] Supply pump exer.
Pump operation can be deactivated here. Pump is in operation for 2 minutes, 12 hours after last operation.
Setting range: Off, On
Default value: On
Menu 9.3.12 [S] Supply diff HP

When the current flow temperature deviates from the set value compared to that calculated, the heat pump is forced to stop/start irrespective of the degree-minute figure.

Heating mode: If the current flow temperature exceeds the calculated flow with set value, the degree minute number is set to 1. The compressor stops when there is only a heating requirement.

If the calculated flow temperature drops below the calculated flow with set value, the degree minute number is set to the value in menu 9.1.1 minus 1. This means that the compressor will start.

Cooling mode: If the current supply temperature drops below the calculated supply with set value, the degree minute number is set to -1. The compressor stops when there is only a cooling requirement.

Setting range: 3 – 25 °C
Default value: 10 °C

Menu 9.3.13 [S] Diff HP add. heat

If additional heat is permitted (menu 8.2.1) and the current flow line temperature falls below the calculated set value plus the value from menu 9.3.12, the degree minute value is to the value in menu 9.2.1 plus 1 until the compressor has reached full speed. When the compressor has reached full speed, the degree minute value is set to the set value in menu 9.2.1 and addition is permitted. This means that the addition can cut in immediately.

Setting range: 1 – 8 °C
Default value: 3 °C

Menu 9.3.14 [S] Block HW/Heating

If heating or hot water are not required, they can be deselected here.

Operating mode Hot water or Only addition must be selected if heating is deselected.

Setting range: No HW, No heating, HW+Heating
Default value: HW+Heating

Menu 9.3.15 [S] Heat drop at alarm

Here you select whether heat production is to be reduced in the event of an alarm.

Setting range: Yes, No
Default value: Yes

Menu 9.3.16 [S] Type of HW sensor

Here you can select whether to use hot water sensors that manage higher temperatures (above 90 °C) or not.

Standard: Standard setting

High temp: Calculation for HW jacket sensor (BT6), Addition sensor (BT19) as well as supply sensor (BT2) are replaced to suit a sensor that manages higher temperatures (up to 110 °C). Used if new sensor is installed in connection with installation of solar heating.

Setting range: Standard, High temp
Default value: Standard

Menu 9.3.17 [S] Freeze protection HX

Select here whether heat exchanger anti freeze is to be active or not.

Setting range: On, Off
Default value: On

Menu 9.3.18 [S] Return

Return to menu 9.3.0.

Menu 9.4 [S] Quick start

If “Yes” is selected, the compressor starts in the heat pump within 4 minutes if there is a demand. However, there is always a 30 minute compressor start delay if the current has been switched off.

Setting range: No, Yes
Default value: No

Menu 9.5.0 [S] System info

The sub menus to this menu contain information that is used when troubleshooting.

Only for service personnel.

Menu 9.5.1 [S] Heat pump type

The type of heat pump connected is shown here.

Menu 9.5.2 [S] Cpu usage percent

The CPU load is shown here.

Menu 9.5.3 [S] Com rate/1000

The number of communication retransmissions is shown here.

Menu 9.5.4 [S] Unit w. com. problem

Any communication problems that a unit may have are shown here as well as the relevant unit.

Menu 9.5.5 [S] Run time add. heat

The accumulated running time for the electric addition since the first start is shown.

Menu 9.5.6 [S] Run time hot water

The accumulated operating time in hours for hot water production with compressor since the first start-up is shown here.

Menu 9.5.7 [S] Program version

The current program software version in HM SPLIT is shown here.

Menu 9.5.8 [S] 106-card version

The communication card version number is shown here (AA23).

Menu 9.5.9 [S] Display version

The display version number is shown here.

Menu 9.5.10 [S] Relay card version

The relay card version number is shown here.

Menu 9.5.11 [S] Lowest supply temp.

The minimum flow line temperature since start-up is shown here.

Menu 9.5.12 [S] Percent runtime

The compressor’s running time percentage.

Menu 9.5.13 [S] Period

Period counter for switching between hot water and heating/cooling.
Menu 9.5.14 [S] Run status
Shows the current operating status of L16 SPLIT
The display can show: Off, Hot water, Heating, Cooling, Defrost, Oil return or XHW.

Menu 9.5.15 [S] Run status last
Shows the previous operating status for L16 SPLIT
The display can show: Off, Hot water, Heating, Cooling, Defrost, Oil return or XHW.

Menu 9.5.16 [S] Run status time
The time since the last operating status change.

Menu 9.5.17 [S] Return
Return to menu 9.5.0.

Menu 9.6.0 [S] Heat reg. settings
Settings regarding the heating regulator can be made in the sub-menus to this menu.

Menu 9.6.1 [S] CompFreq
The current set point value frequency to the compressor is shown here.
Setting the set point during manual control of the compressor frequency is activated in menu 9.6.2.

<table>
<thead>
<tr>
<th></th>
<th>L16 SPLIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting range</td>
<td>20 – 85 Hz</td>
</tr>
</tbody>
</table>

Menu 9.6.2 [S] Manual CompFreq
Select “On” to control the compressor frequency manually in menu 9.6.1.
Setting range: Off, On
Default value: Off

Menu 9.6.3 [S] Max deltaF act/set
The parameter for the heat regulator’s max change of the set point is selected here.
Setting range: 1 – 10 Hz
Default value: 3 Hz

Menu 9.6.4 [S] CompFreq regP
Select P part for heat regulator.
Setting range: 1 – 60
Default value: 5

Menu 9.6.5 [S] Time min freq start
Select here the time that the compressor is to run at min speed, after start connecting to the climate system.
Setting range: 10 – 120 min
Default value: 70 min

Menu 9.6.6 [S] Time min freq heat
Select here the time that the compressor is to run at fixed frequency after shifting to heating. The compressor then runs at min frequency or at the frequency it had before hot water charging.
Setting range: 3 – 60 min
Default value: 3 min

Menu 9.6.7 [S] Max diff flow-cFlow
Select here limitation of flow when the degree minute regulator is way off the set point. Max difference between flow line front and calculated flow line.
Setting range: 2.0 – 10.0 °C
Default value: 4.0 °C

Menu 9.6.8 [S] CompFreq GMz
Here you select a value for the dynamic in the degree minute regulator.
Setting range: 95 – 127
Default value: 126

Menu 9.6.9 [S] Return
Return to menu 9.6.0.

Menu 9.7 [S] Reset alarm
Select “Yes” here to reset/acknowledge alarms in HM SPLIT. The settings returns to "No" once the action has been carried out.
Setting range: Yes, No

Menu 9.8.0 [S] Alarm log
The alarm logs with the last 4 alarms are shown in the sub-menus of this menu.

Menu 9.8.1.0 – 9.8.4.0 [S] Log 1 – Log 4
The alarm logs are shown in the sub-menus of this menu. Log 1 is the last alarm, log 2 the next to last, etc.
**Menu 9.8.x.1 [S] Time**

**Menu 9.8.x.2 [S] Alarm type**

See section Alarm list on page 62 for further alarm information.

<table>
<thead>
<tr>
<th>Alarm number</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>HP alarm</td>
</tr>
<tr>
<td>2</td>
<td>LP alarm</td>
</tr>
<tr>
<td>3</td>
<td>TB alarm</td>
</tr>
<tr>
<td>4</td>
<td>OU power failure</td>
</tr>
<tr>
<td>5</td>
<td>Low condenser out</td>
</tr>
<tr>
<td>6</td>
<td>High KF</td>
</tr>
<tr>
<td>7</td>
<td>Anti freezeHX</td>
</tr>
<tr>
<td>8</td>
<td>High HW temp.</td>
</tr>
<tr>
<td>9</td>
<td>High AH temp.</td>
</tr>
<tr>
<td>10</td>
<td>High VBF1</td>
</tr>
<tr>
<td>11</td>
<td>High VBF2</td>
</tr>
<tr>
<td>12</td>
<td>High VBR1</td>
</tr>
<tr>
<td>13</td>
<td>High VBR2</td>
</tr>
<tr>
<td>15</td>
<td>OU not compatible</td>
</tr>
<tr>
<td>16</td>
<td>Defrosting interrupted</td>
</tr>
<tr>
<td>30</td>
<td>Sensor fault UG</td>
</tr>
<tr>
<td>31</td>
<td>S. fault HP</td>
</tr>
<tr>
<td>32</td>
<td>Sensor fault KF</td>
</tr>
<tr>
<td>33</td>
<td>S. fault Liquid line</td>
</tr>
<tr>
<td>34</td>
<td>S. fault HW</td>
</tr>
<tr>
<td>35</td>
<td>S. fault AH</td>
</tr>
<tr>
<td>36</td>
<td>Sensor fault VBF1</td>
</tr>
<tr>
<td>37</td>
<td>Sensor fault VBF2</td>
</tr>
<tr>
<td>38</td>
<td>Sensor fault VBR1</td>
</tr>
<tr>
<td>39</td>
<td>Sensor fault VBR2</td>
</tr>
<tr>
<td>E34</td>
<td>OU phase error</td>
</tr>
<tr>
<td>E35</td>
<td>High HX temp.</td>
</tr>
<tr>
<td>E36</td>
<td>High hotgas</td>
</tr>
<tr>
<td>E37</td>
<td>Sensor fault OU</td>
</tr>
<tr>
<td>E38</td>
<td>Sensor fault OU</td>
</tr>
<tr>
<td>E39</td>
<td>Sensor fault OU</td>
</tr>
<tr>
<td>E40</td>
<td>HP alarm</td>
</tr>
<tr>
<td>E41</td>
<td>Inverter error</td>
</tr>
<tr>
<td>E42</td>
<td>Inverter error</td>
</tr>
<tr>
<td>E45</td>
<td>Inverter error</td>
</tr>
<tr>
<td>E47</td>
<td>Inverter error</td>
</tr>
<tr>
<td>E48</td>
<td>Fan alarm</td>
</tr>
<tr>
<td>E49</td>
<td>LP alarm</td>
</tr>
<tr>
<td>E51</td>
<td>Inverter error</td>
</tr>
<tr>
<td>E53</td>
<td>Sensor fault OU</td>
</tr>
<tr>
<td>E54</td>
<td>LP alarm</td>
</tr>
<tr>
<td>E57</td>
<td>Low refrigerant</td>
</tr>
<tr>
<td>E59</td>
<td>Inverter error</td>
</tr>
</tbody>
</table>

**Menu 9.8.x.3 [S] Run status**

**Menu 9.8.x.4 [S] Run status last**

**Menu 9.8.x.5 [S] Run status time**

**Menu 9.8.x.6 [S] Run time compressor**

**Menu 9.8.x.7 [S] Outdoor avg. 1min.**

**Menu 9.8.x.8 [S] Outdoor temp Tho-A**

**Menu 9.8.x.9 [S] Supply/Return temp**

**Menu 9.8.x.10 [S] Condensor out**

**Menu 9.8.x.11 [S] Hot water temp.**

**Menu 9.8.x.12 [S] CompFreq act/set**

**Menu 9.8.x.13 [S] Heat Ex Tho-R1**

**Menu 9.8.x.14 [S] Heat Ex Tho-R2**

**Menu 9.8.x.15 [S] Suction temp. Tho-S**

**Menu 9.8.x.16 [S] Hot gas Tho-D**

**Menu 9.8.x.17 [S] Liquid line temp.**

**Menu 9.8.x.18 [S] HP**

**Menu 9.8.x.19 [S] LP LPT**

**Menu 9.8.x.20 [S] OU current CT**

**Menu 9.8.x.21 [S] Inverter temp Tho-IP**

**Menu 9.8.x.22 [S] Circ-pump speed**

**Menu 9.8.x.23 [S] Relay status 1-8**

**Menu 9.8.x.24 [S] Relay status 9-14**

**Menu 9.8.x.25 [S] Program status 1-8**

**Menu 9.8.x.26 [S] Program status 9-16**

**Menu 9.8.x.27 [S] Return**

Return to menu 9.8.x.0.

**Menu 9.8.x.28 [S] Clear alarm log**

Select “Yes” to erase the entire alarm log. The settings returns to “No” once the action has been carried out.

Setting range: Yes, No

**Menu 9.8.x.29 [S] Return**

Return to menu 9.8.0.

**Menu 9.9 [S] Return**

Return to menu 9.0.
Alarm list

Acknowledging alarms

No harm in acknowledging an alarm. If the cause of the alarm remains, the alarm recurs.

- When an alarm has been triggered, it can be acknowledged in menu 9.7 (service menu) by switching HM SPLIT off and on using the switch (SF1). Note that when the power is switched on there is a 30 minute delay before the heat pump restarts.

When an alarm has been triggered, it can be acknowledged by switching HM SPLIT off and on using the switch (SF1). Note that when the power is switched on there is a 30 minute delay before the heat pump restarts.

When an alarm has been triggered, it can be acknowledged by switching HM SPLIT off and on using the switch (SF1). Note that when the power is switched on there is a 30 minute delay before the heat pump restarts.

- When an alarm cannot be reset using the switch (SF1), the operating mode, “Add. heat only”, can be activated to resume a normal temperature level in the house. This is most easily carried out by holding the “Operating mode” button in for 7 seconds.

**NOTE**

Recurring alarms mean that there is a fault in the installation.

Alarm with automatic reset

<table>
<thead>
<tr>
<th>Alarm no.</th>
<th>Alarm on display</th>
<th>Triggers alarm</th>
<th>Resets alarm</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>Low condenser out</td>
<td>When condenser supply (BT12) is less than 5°C during cooling.</td>
<td>- When condenser supply is greater than 14°C during cooling. - When defrost has ended. If the defrost caused the alarm (condenser supply during defrost is approx. 10°C).</td>
</tr>
<tr>
<td>71</td>
<td>High KF</td>
<td>When condenser supply is greater than 60°C and there are more than 120 seconds since shifting to the climate system.</td>
<td>- When condenser out is lower than 51°C.</td>
</tr>
<tr>
<td>72</td>
<td>Anti freeze HX</td>
<td>When the low pressure is less than 0.65 MPa (6.5 bar) in cooling mode.</td>
<td>- When the low pressure is greater than 0.83 MPa (8.3 bar) and condenser out is greater than 14 degrees.</td>
</tr>
<tr>
<td>73</td>
<td>Freeze prot</td>
<td>When the outdoor temperature drops below 0°C and the operating mode does not permit heating.</td>
<td>- When the outdoor temperature rises above 1°C.</td>
</tr>
<tr>
<td>75</td>
<td>Current limit</td>
<td>Too high current output from the house.</td>
<td>- When the current output decreases.</td>
</tr>
<tr>
<td>76</td>
<td>Com. alarm</td>
<td>Failed communication to one or more boards.</td>
<td>- When the fault has been corrected.</td>
</tr>
<tr>
<td>77</td>
<td>Defrosting interrupted</td>
<td>When the temperature in the water heater is too low (low pressure is less than 0.5 MPa, 5.0 bar) during defrost.</td>
<td>- When defrost has ended.</td>
</tr>
<tr>
<td>78</td>
<td>Protection</td>
<td>Exceeded limit value</td>
<td>- When defrost has ended.</td>
</tr>
</tbody>
</table>

Temperature limiter alarm

The following alarm blocks both L16 SPLIT and addition.

<table>
<thead>
<tr>
<th>Alarm no.</th>
<th>Alarm on display</th>
<th>Description</th>
<th>May be due to</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>TB alarm</td>
<td>Temperature limiter in the tank has tripped.</td>
<td>- The temperature limiter has tripped during transportation - High temperature in the tank - Blown circuit fuse (L2)</td>
</tr>
</tbody>
</table>

HM SPLIT alarm

The following alarms block L16 SPLIT. Addition runs at min permitted supply temperature.

<table>
<thead>
<tr>
<th>Alarm no.</th>
<th>Alarm on display</th>
<th>Description</th>
<th>May be due to</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>OU power failure</td>
<td>No voltage to the outdoor unit from HM SPLIT.</td>
<td>- Blown circuit fuse (L3) - Tripped miniature circuit breaker (-FA2)</td>
</tr>
<tr>
<td>5</td>
<td>Low condenser out</td>
<td>Too low temperature out from the condenser. Occurs if alarm 70 occurs 3 times within an hour.</td>
<td>- Low temperature during cooling - Low flow during cooling</td>
</tr>
</tbody>
</table>
### Alarm list

<table>
<thead>
<tr>
<th>Alarm no.</th>
<th>Alarm text on the display</th>
<th>Description</th>
<th>May be due to</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>High KF</td>
<td>Too high temperature out from the condenser. Occurs if alarm 71 occurs 3 times within an hour.</td>
<td>Low flow in heating operation, too high set temperatures</td>
</tr>
<tr>
<td>7</td>
<td>Anti freeze HX</td>
<td>Anti-freeze of heat exchanger. Occurs if alarm 72 occurs 3 times within an hour.</td>
<td>Low flow during defrost, abnormally low temperature in the climate system</td>
</tr>
<tr>
<td>14</td>
<td>Defrosting interrupted</td>
<td>Occurs if the alarm 77 occurs 10 times in succession.</td>
<td>Low flow during defrost, abnormally low temperature in the climate system</td>
</tr>
<tr>
<td>15</td>
<td>OU not compatible</td>
<td>Indoor unit and outdoor unit do not communicate with each other.</td>
<td>Indoor unit and outdoor unit not compatible with each other.</td>
</tr>
<tr>
<td>16</td>
<td>Defrosting interrupted</td>
<td>Occurs if the alarm 78 occurs 10 times in succession.</td>
<td>Low flow during defrost</td>
</tr>
<tr>
<td>31</td>
<td>S. fault HP</td>
<td>Sensor fault, high pressure (BP4).</td>
<td>Open-circuit or short-circuit on sensor input, sensor does not work</td>
</tr>
<tr>
<td>32</td>
<td>Sensor fault KF</td>
<td>Sensor fault, cond out (BT12).</td>
<td>Open-circuit or short-circuit on sensor input, sensor does not work (see &quot;Temperature sensor&quot; section)</td>
</tr>
<tr>
<td>33</td>
<td>S. fault Liquid line</td>
<td>Sensor fault, liquid line (BT15).</td>
<td>Open-circuit or short-circuit on sensor input, sensor does not work (see &quot;Temperature sensor&quot; section)</td>
</tr>
</tbody>
</table>

### L16 SPLIT alarm

The following alarms block L16 SPLIT. Addition runs at min permitted supply temperature.

<table>
<thead>
<tr>
<th>Alarm no.</th>
<th>Alarm text on the display</th>
<th>Description</th>
<th>May be due to</th>
</tr>
</thead>
<tbody>
<tr>
<td>E5</td>
<td>OU Com. error</td>
<td>Communication between the outdoor unit and HM SPLIT is broken. There must be 22 volt direct current (DC) in the switch CNW2 on the control board (PWB1).</td>
<td>Any isolator switches for L16 SPLIT off, incorrect cable routing</td>
</tr>
<tr>
<td>E35</td>
<td>High HX temp</td>
<td>Temperature deviation on the hot gas sensor (Tho-R1/R2) five times within 60 minutes or under 60 minutes.</td>
<td>Sensor does not work (see &quot;Temperature sensor&quot; section), insufficient air circulation or blocked heat exchanger, defective control board in L16 SPLIT, too much refrigerant</td>
</tr>
<tr>
<td>E36</td>
<td>Permanent Hotgas</td>
<td>Temperature deviation on the hot gas sensor (Tho-D) two times within 60 minutes or under 60 minutes.</td>
<td>Sensor does not work (see &quot;Temperature sensor&quot; section), insufficient air circulation or blocked heat exchanger, if the fault persists during cooling, there may be an insufficient amount of refrigerant, defective control board in L16 SPLIT</td>
</tr>
<tr>
<td>E37</td>
<td>S. fault Tho-R</td>
<td>Sensor fault, heat exchanger in L16 SPLIT (Tho-R).</td>
<td>Open-circuit or short-circuit on sensor input, sensor does not work (see &quot;Temperature sensor&quot; section), defective control board in L16 SPLIT</td>
</tr>
<tr>
<td>Alarm no.</td>
<td>Alarm on the display</td>
<td>Description</td>
<td>May be due to</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------------</td>
<td>-------------</td>
<td>---------------</td>
</tr>
</tbody>
</table>
| E38       | S. fault Tho-A       | Sensor fault, outdoor sensor in L16 SPLIT (Tho-A). | - Open-circuit or short-circuit on sensor input  
- Sensor does not work (see “Temperature sensor” section)  
- Defective control board in L16 SPLIT |
| E39       | S. fault Tho-D       | Sensor fault, hot gas in L16 SPLIT (Tho-D). | - Open-circuit or short-circuit on sensor input  
- Sensor does not work (see “Temperature sensor” section)  
- Defective control board in L16 SPLIT |
| E40       | HP alarm             | The high pressure pressostat (63H1) deployed 5 times within 60 minutes or under 60 minutes continuously. | - Insufficient air circulation or blocked heat exchanger  
- Open circuit or short circuit on input for high pressure pressostat (63H1)  
- Defective high pressure pressostat  
- Expansion valve not correctly connected  
- Service valve closed  
- Defective control board in L16 SPLIT  
- Low or no flow during heating operation  
- Defective circulation pump  
- Defective fuse, F(4A) |
| E41       | Power transistor too hot | When iPM (Intelligent power module) displays FO-signal (Fault Output) five times during a 60-minute period. | Can occur when 15V power supply to the inverter PCB is unstable. |
| E42       | Inverter error       | Voltage from the inverter outside the parameters four times within 30 minutes. | Incoming power supply interference  
- Service valve closed  
- Insufficient amount of refrigerant  
- Compressor fault  
- Defective circuit board for inverter in L16 SPLIT |
| E45       | Inverter error       | Communication between circuit board for inverter and control board broken. | Open-circuit in connection between boards  
- Defective circuit board for inverter in L16 SPLIT  
- Defective control board in L16 SPLIT |
| E47       | Inverter error       | Overcurrent, Inverter A/F module | - Sudden power failure |
| E48       | Fan alarm            | Deviations in the fan speed in L16 SPLIT. | - The fan cannot rotate freely  
- Defective control board in L16 SPLIT  
- Defective fan motor  
- Control board in L16 SPLIT dirty  
- Fuse (F2) blown |
| E49       | LP alarm             | Too low value on the low pressure transmitter 3 times within 60 minutes. | - Open circuit or short circuit on input for low pressure transmitter  
- Defective low pressure transmitter  
- Defective control board in L16 SPLIT  
- Open circuit or short circuit on input for suction gas sensor (Tho-S)  
- Defective suction gas sensor (Tho-S) |
| E51       | Inverter error       | Continuous deviation on power transistor for 15 minutes. | Defective fan motor  
- Defective circuit board for inverter in L16 SPLIT |
### Alarm list

<table>
<thead>
<tr>
<th>Alarm no.</th>
<th>Alarm text on the display</th>
<th>Description</th>
<th>May be due to</th>
</tr>
</thead>
</table>
| E53       | S. fault Tho-S            | Sensor fault, suction gas in L16 SPLIT (Tho-S). | - Open-circuit or short-circuit on sensor input  
- Sensor does not work (see "Temperature sensor" section)  
- Defective control board in L16 SPLIT |
| E54       | S. fault LPT              | Sensor fault, low pressure transmitter in L16 SPLIT. | - Open-circuit or short-circuit on sensor input  
- Sensor does not work (see "Temperature sensor" section)  
- Defective control board in L16 SPLIT  
- Fault in the refrigerant circuit |
| E57       | Insufficient refrigerant  | Insufficient refrigerant is detected upon start-up in cooling mode. | - Service valve closed  
- Loose connection sensor (BT15, BT3)  
- Defective sensor (BT15, BT3)  
- Too little refrigerant |
| E59       | Inverter error            | Failed start for compressor | - Defective circuit board for inverter in L16 SPLIT  
- Defective control board in L16 SPLIT  
- Compressor fault |

### Hot water alarm

The following alarms block hot water production via L16 SPLIT. The addition is blocked completely.

<table>
<thead>
<tr>
<th>Alarm no.</th>
<th>Alarm text on the display</th>
<th>Description</th>
<th>May be due to</th>
</tr>
</thead>
</table>
| 8         | High HW temp.             | Too high temperature (>90 °C) on hot water sensor (BT6). | - Contactor to internal electricity defective  
- Incorrect external addition setting |
| 9         | High AH temp.             | Too high temperature (>90 °C) on immersion heater sensor (BT19). | - Contactor to internal electricity defective  
- Incorrect external addition setting |
| 34        | S. fault HW               | Sensor fault, hot water (BT6). | - Open-circuit or short-circuit on sensor input  
- Sensor does not work (see "Temperature sensor" section) |
| 35        | S. fault AH               | Sensor fault, immersion heater (BT19). | - Open-circuit or short-circuit on sensor input  
- Sensor does not work (see "Temperature sensor" section) |

### Supply alarm

The following alarms switch off heating/cooling. Only hot water production is permitted.

<table>
<thead>
<tr>
<th>Alarm no.</th>
<th>Alarm text on the display</th>
<th>Description</th>
<th>May be due to</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>High VBF1</td>
<td>Too high temperature (&gt;90 °C) on flow line sensor, system 1 (BT2).</td>
<td>- Sensor does not work (see &quot;Temperature sensor&quot; section)</td>
</tr>
<tr>
<td>11</td>
<td>High VBF2</td>
<td>Too high temperature (&gt;90 °C) on flow line sensor, system 2.</td>
<td>- Sensor does not work (see &quot;Temperature sensor&quot; section)</td>
</tr>
</tbody>
</table>
| 36        | Sensor fault VBF1         | Sensor fault, supply, system 1 (BT2). | - Open-circuit or short-circuit on sensor input  
- Sensor does not work (see "Temperature sensor" section) |
| 37        | Sensor fault VBF2         | Sensor fault, supply, system 2. | - Open-circuit or short-circuit on sensor input  
- Sensor does not work (see "Temperature sensor" section) |
Outdoor sensor alarm
The following alarms set so that the system runs at minimum permitted supply temperature.

<table>
<thead>
<tr>
<th>Alarm no.</th>
<th>Alarm text on the display</th>
<th>Description</th>
<th>May be due to</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>Sensor fault UG</td>
<td>Sensor fault, outdoor temperature (BT1).</td>
<td>- Open-circuit or short-circuit on sensor input</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Sensor does not work (see &quot;Temperature sensor&quot; section)</td>
</tr>
</tbody>
</table>
Miscellaneous

Electrical circuit diagram
L16 SPLIT

Electrical circuit diagram
## Designation

<table>
<thead>
<tr>
<th>Designation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>20S</td>
<td>Solenoid for 4-way valve</td>
</tr>
<tr>
<td>52X1</td>
<td>Auxiliary relay (for CH)</td>
</tr>
<tr>
<td>52X2</td>
<td>Auxiliary relay (for DH)</td>
</tr>
<tr>
<td>52X3</td>
<td>Auxiliary relay (for 20S)</td>
</tr>
<tr>
<td>52X4</td>
<td>Auxiliary relay (for SV1)</td>
</tr>
<tr>
<td>63H1</td>
<td>High pressure pressostat</td>
</tr>
<tr>
<td>CH</td>
<td>Compressor heater</td>
</tr>
<tr>
<td>CM</td>
<td>Compressor motor</td>
</tr>
<tr>
<td>CnA–Z</td>
<td>Terminal block</td>
</tr>
<tr>
<td>CT</td>
<td>Current sensor</td>
</tr>
<tr>
<td>DH</td>
<td>Drain pan heater</td>
</tr>
<tr>
<td>DM</td>
<td>Diode module</td>
</tr>
<tr>
<td>F</td>
<td>Fuse</td>
</tr>
<tr>
<td>FM01,2</td>
<td>Fan motor</td>
</tr>
<tr>
<td>IPM</td>
<td>Intelligent power module</td>
</tr>
<tr>
<td>L</td>
<td>Induction coil</td>
</tr>
<tr>
<td>LED1</td>
<td>Indication lamp (red)</td>
</tr>
<tr>
<td>LED2</td>
<td>Indication lamp (green)</td>
</tr>
<tr>
<td>LPT</td>
<td>Low pressure transmitter</td>
</tr>
<tr>
<td>SM1</td>
<td>Expansion valve for cooling</td>
</tr>
<tr>
<td>SM2</td>
<td>Expansion valve for heating</td>
</tr>
<tr>
<td>SW1</td>
<td>Pumpdown</td>
</tr>
<tr>
<td>SW3</td>
<td>Local settings</td>
</tr>
<tr>
<td>TB</td>
<td>Terminal block</td>
</tr>
<tr>
<td>Tho-A</td>
<td>Temperature sensor, outdoor air</td>
</tr>
<tr>
<td>Tho-D</td>
<td>Temperature sensor, hot gas</td>
</tr>
<tr>
<td>Tho-R1</td>
<td>Temperature sensor, heat exchanger out</td>
</tr>
<tr>
<td>Tho-R2</td>
<td>Temperature sensor, heat exchanger, in</td>
</tr>
<tr>
<td>Tho-S</td>
<td>Temperature sensor, suction gas</td>
</tr>
<tr>
<td>Tho-P</td>
<td>Temperature sensor, IPM</td>
</tr>
</tbody>
</table>
Component positions

HM SPLIT

Component image
Component list
Pipe connections
XL1 Climate system supply
XL2 Climate system return
XL13 Liquid line refrigerant
XL14 Gas line refrigerant
XL18 Connection, Circulation
XL19 Connection, Circulation

Valves etc.
EP2 Heat exchanger
GP1 Circulation pump, climate system
HQ1 Particle filter
HZ2 Drying filter
QM20 Venting valve
QM30 Actuator, reversing valve, hot water
QM31 Actuator shuttle valve, climate system
QM40 Valve, shut-off
QN11 Actuator, mixing valve

Electrical components
X1 Terminal block, incoming mains supply
X2 Terminal block, outgoing supply and communication
X3 Terminal block, external addition
X4 Terminal block, external immersion heater and temperature limiter/thermostat emergency mode FD1-BT30
SF1 Switch
FA1 Miniature circuit breaker, control system
FA2 Miniature circuit breaker, outdoor unit
FA3 Miniature circuit breaker, external immersion heater
AA4 Display unit
AA6 Relay card
AA21 CPU card
AA22 EBV card
R24 Setting, fuse size
R25 Setting, max power, electrical addition
R26 Setting, max boiler temperature
X1 Terminal block
X4 Terminal block
AA23 Communication board
QA1 Contactor
QA2 Contactor
QA3 Contactor

Sensor, thermostats
BP4 Pressure sensor, high pressure
BT1 Temperature sensor, outdoor
BT2 Temperature sensor, heating medium, flow
BT3 Temperature sensor, heating medium, return
BT12 Temperature sensor, condenser, supply
BT15 Temperature sensor, fluid pipe
FD1-Contactor, temperature limiter
QA41

Miscellaneous
UB1 Cable gland
UB2 Cable gland
UB3 Cable gland
PF1 Rating plate
PF3 Serial number plate
PF4 Sign, pipe connections

Component location according to IEC 62400.
EHZK 90 SPLIT, WWS 300 SPLIT, WWS 500 SPLIT
Component image
List of components

Pipe connections
XL3  Connection, Cold water
XL4  Connection, Hot water
XL8  Connection, Docking, in heating medium
XL9  Connection, Docking, out heating medium
XL18 Connection, Circulation
XL19 Connection, Circulation

Valves etc.
FL2  Safety valve, heating medium
QM1  Drain valve, heating medium
QM20 Venting valve

Electrical components
EB1  Immersion heater
X100 Terminal block
X101 Terminal block

Sensor, thermostats
BP5  Pressure gauge
BT6  Temperature sensor, hot water charging
BT19 Temperature sensor, immersion heater
BT24 Temperature sensor, docking
FD1- Temperature limiter
BT30 /Emergency mode thermostat

Miscellaneous
PF1  Rating plate
PF4  Sign, pipe connections

Component location according to IEC 62400.
Outdoor unit
Component image, L16 SPLIT
List of components

63H1 High pressure pressostat
LPT Low pressure transmitter
FM01 Fan
FM02 Fan
20S 4-way valve
CM Compressor
PWB1 Control board
PWB2 Inverter board
PWB3 Filter board
QM35 Service valve, liquid side
QM36 Service valve, gas side
EEV-H Expansion valve, heating
EEV-C Expansion valve, cooling
TB Terminal block, incoming supply and communication
PF3 Serial number plate
DH Drain pan heater

Component location according to IEC 62400.
Temperature sensor

Sensor placement

BT1  Temperature sensor, outdoor (external)
BT2  Temperature sensor, flow pipe
BT3  Temperature sensor, return
BT6  Temperature sensor, hot water
BT12 Temperature sensor, condenser out
BT15 Temperature sensor, fluid pipe
BT19 Temperature sensor, immersion heater
Tho-A Temperature sensor, outdoor air
Tho-B Temperature sensor, hot gas
Tho-R1 Temperature sensor, heat exchanger out
Tho-R2 Temperature sensor, heat exchanger, in
Tho-S Temperature sensor, suction gas

Data for sensor in L16 SPLIT

Tho-D

Tho-S, Tho-R1, Tho-R2

Tho-A
<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>Resistance (kΩ)</th>
<th>Voltage (V)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-40</td>
<td>102.35</td>
<td>4.78</td>
</tr>
<tr>
<td>-35</td>
<td>73.51</td>
<td>4.70</td>
</tr>
<tr>
<td>-30</td>
<td>53.44</td>
<td>4.60</td>
</tr>
<tr>
<td>-25</td>
<td>39.29</td>
<td>4.47</td>
</tr>
<tr>
<td>-20</td>
<td>29.20</td>
<td>4.31</td>
</tr>
<tr>
<td>-10</td>
<td>16.62</td>
<td>3.90</td>
</tr>
<tr>
<td>-5</td>
<td>12.71</td>
<td>3.65</td>
</tr>
<tr>
<td>0</td>
<td>9.81</td>
<td>3.38</td>
</tr>
<tr>
<td>5</td>
<td>7.62</td>
<td>3.09</td>
</tr>
<tr>
<td>10</td>
<td>5.97</td>
<td>2.80</td>
</tr>
<tr>
<td>15</td>
<td>4.71</td>
<td>2.50</td>
</tr>
<tr>
<td>20</td>
<td>3.75</td>
<td>2.22</td>
</tr>
<tr>
<td>25</td>
<td>3.00</td>
<td>1.95</td>
</tr>
<tr>
<td>30</td>
<td>2.42</td>
<td>1.70</td>
</tr>
<tr>
<td>35</td>
<td>1.96</td>
<td>1.47</td>
</tr>
<tr>
<td>40</td>
<td>1.60</td>
<td>1.27</td>
</tr>
<tr>
<td>45</td>
<td>1.31</td>
<td>1.09</td>
</tr>
<tr>
<td>50</td>
<td>1.08</td>
<td>0.94</td>
</tr>
<tr>
<td>60</td>
<td>0.746</td>
<td>0.70</td>
</tr>
<tr>
<td>70</td>
<td>0.525</td>
<td>0.51</td>
</tr>
</tbody>
</table>
Dimensions

Dimensions diagram Indoor unit

Under

Right

Front

360

1140

1040
Hot water tank EHZK 90 SPLIT

Right

Front

Above
Water heater WWS 300 SPLIT

Dimensions

Under

Front

Left

Above

Adjustable

30~45

Miscellaneous

Dimensions
Water heater WWS 500 SPLIT

Dimensions

Front

Above

Left
Outdoor unit
L16 SPLIT

Dimensions
## Technical specifications

<table>
<thead>
<tr>
<th>SPLIT</th>
<th>1 x 230 V</th>
<th>3 x 400 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working range during heating with compressor (ambient temperature)</td>
<td>-20 – +43 ºC</td>
<td></td>
</tr>
<tr>
<td>Working range during cooling (ambient temperature)</td>
<td>+15 – +43 ºC</td>
<td></td>
</tr>
<tr>
<td>Max temperature flow line</td>
<td>65 ºC</td>
<td></td>
</tr>
<tr>
<td>Max temperature flow line, only compressor</td>
<td>58 ºC</td>
<td></td>
</tr>
<tr>
<td>Max temperature return line</td>
<td>65 ºC</td>
<td></td>
</tr>
<tr>
<td>Min temperature flow line during heating with compressor and continuous operation</td>
<td>25 ºC</td>
<td></td>
</tr>
<tr>
<td>Maximum temperature supply during cooling and continuous operation</td>
<td>25 ºC</td>
<td></td>
</tr>
<tr>
<td>Max. current</td>
<td>50 A</td>
<td>25 A</td>
</tr>
<tr>
<td>Recommended fuse rating</td>
<td>50 A</td>
<td>25 A</td>
</tr>
<tr>
<td>Starting current</td>
<td></td>
<td>5 A</td>
</tr>
<tr>
<td>Incoming supply, deviation</td>
<td>-15 % – +10 %</td>
<td></td>
</tr>
<tr>
<td>The water quality, domestic hot water and climate system</td>
<td>≤ EU directive no. 98/83/EF</td>
<td></td>
</tr>
</tbody>
</table>

### Indoor module

<table>
<thead>
<tr>
<th>HM SPLIT</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Circulation pump, output</td>
<td>9–110 W (variable speed)</td>
</tr>
<tr>
<td>Circulation pump, max available pressure</td>
<td>60 kPa (external)</td>
</tr>
<tr>
<td>Circulation pump, max flow</td>
<td>0.83 l/s</td>
</tr>
<tr>
<td>Circulation pump, flow at 20 kPa external pressure drop</td>
<td>0.72 l/s</td>
</tr>
<tr>
<td>Min/max system flow, heating operation</td>
<td>0.25 /0.79 l/s</td>
</tr>
<tr>
<td>Min/max system flow, cooling operation</td>
<td>0.32 /0.79 l/s</td>
</tr>
<tr>
<td>Min flow, climate system, at 100% circulation pump speed (defrost flow)</td>
<td>0.39 l/s</td>
</tr>
<tr>
<td>Enclosure class</td>
<td>IP 21</td>
</tr>
<tr>
<td>Volume, total</td>
<td>4 l ± 5 %</td>
</tr>
<tr>
<td>Max pressure, climate system</td>
<td>0.25 MPa (2.5 bar)</td>
</tr>
<tr>
<td>Expansion vessel</td>
<td>18 l</td>
</tr>
<tr>
<td>Max pressure, cooling system</td>
<td>4.5 MPa</td>
</tr>
<tr>
<td>Water quality, climate system</td>
<td>≤ EU directive no. 98/83/EF</td>
</tr>
<tr>
<td>Max operating temperature</td>
<td>65 ºC</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>5–35 ºC, max relative humidity 95 %</td>
</tr>
<tr>
<td>Connection, tank</td>
<td>Compression ring 28 mm</td>
</tr>
<tr>
<td>Height, without pipe/with pipe</td>
<td>1040/1140 mm</td>
</tr>
<tr>
<td>Width</td>
<td>510 mm</td>
</tr>
<tr>
<td>Depth</td>
<td>360 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>68.5 kg</td>
</tr>
<tr>
<td>Electrical connections</td>
<td>230 V 1AC 50 Hz or 400 V 3NAC 50 Hz</td>
</tr>
<tr>
<td>Min temperature flow line during cooling</td>
<td>7 ºC</td>
</tr>
<tr>
<td>Part no.</td>
<td>150 786 01</td>
</tr>
</tbody>
</table>

*Depending on display language.*
## Technical specifications

<table>
<thead>
<tr>
<th>Tank</th>
<th>EHZK 90 SPLIT</th>
<th>WWS 300 SPLIT</th>
<th>WWS 500 SPLIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immersion heater Max 9 kW</td>
<td>9 kW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Possible electrical step 4 (2, 4, 6, 9 kW)</td>
<td>4 (2, 4, 6, 9 kW)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency mode thermostat</td>
<td>35–45 °C (factory setting 35 °C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature limiter</td>
<td>98 (-8) °C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety valve, climate system</td>
<td>0.25 MPa (2.5 bar)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enclosure class</td>
<td>IP 21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume, total</td>
<td>30 l</td>
<td>300 l</td>
<td>500 l</td>
</tr>
<tr>
<td>Volume, hot water coil</td>
<td>-</td>
<td>14 l</td>
<td>21 l</td>
</tr>
<tr>
<td>Material, hot water coil</td>
<td>Stainless steel (AISI316L/AISI316 DIN 1.4404/1.4401)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max pressure, vessel</td>
<td>0.25 MPa (2.5 bar)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max pressure, hot water coil</td>
<td>1.0 MPa (10 bar)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The water quality, domestic hot water and climate system</td>
<td>≤ EU directive no. 98/83/EF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max operating temperature, tank</td>
<td>65 °C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient temperature, tank</td>
<td>5–35 °C, max relative humidity 95%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Idle loss according to EN255-3</td>
<td>-</td>
<td>82 W</td>
<td>143 W</td>
</tr>
<tr>
<td>Connection, domestic water</td>
<td>-</td>
<td>1” ext. thread</td>
<td></td>
</tr>
<tr>
<td>Connection, docking</td>
<td>-</td>
<td>1” int. thread</td>
<td></td>
</tr>
<tr>
<td>Connection HM SPLIT</td>
<td>1” ext. thread</td>
<td>28 mm compression fitting</td>
<td></td>
</tr>
<tr>
<td>Height</td>
<td>385 mm</td>
<td>1900+(20-45) mm</td>
<td>1740+(20-55) mm</td>
</tr>
<tr>
<td>Required ceiling height</td>
<td>-</td>
<td>2080 mm</td>
<td>1900 mm</td>
</tr>
<tr>
<td>Width</td>
<td>596 mm</td>
<td>600 mm</td>
<td>760 mm</td>
</tr>
<tr>
<td>Depth</td>
<td>365 mm</td>
<td>600 mm</td>
<td>876 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>24 kg</td>
<td>95 kg</td>
<td>130 kg</td>
</tr>
<tr>
<td>Electrical connections</td>
<td>230 V 1AC 50 Hz or 400 V 3NAC 50 Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part no.</td>
<td>150 796 01</td>
<td>150 805 01</td>
<td>150 806 01</td>
</tr>
</tbody>
</table>

### Outdoor module

<table>
<thead>
<tr>
<th>L16 SPLIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressor</td>
</tr>
<tr>
<td>Speed, heating operation</td>
</tr>
<tr>
<td>Speed, cooling operation</td>
</tr>
<tr>
<td>Max fan flow (heating, nominal)</td>
</tr>
<tr>
<td>Fan rating</td>
</tr>
<tr>
<td>Defrosting</td>
</tr>
<tr>
<td>Drain pan heater</td>
</tr>
<tr>
<td>Breaking value high pressure</td>
</tr>
<tr>
<td>Cut-out value low pressure (15 s)</td>
</tr>
<tr>
<td>Height</td>
</tr>
<tr>
<td>Width</td>
</tr>
<tr>
<td>Depth</td>
</tr>
<tr>
<td>Weight</td>
</tr>
<tr>
<td>Colour (two coats powder coating)</td>
</tr>
<tr>
<td>Power and communication connection from indoor module</td>
</tr>
<tr>
<td>Refrigerant quantity (R410A)</td>
</tr>
<tr>
<td>Max. length, refrigerant pipe, one way</td>
</tr>
<tr>
<td>Max height difference, refrigerant pipe</td>
</tr>
<tr>
<td>Pipe connection option</td>
</tr>
</tbody>
</table>
### Outdoor module

<table>
<thead>
<tr>
<th>Dimensions, refrigerant pipe</th>
<th>L16 SPLIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas pipe: OD15.88 (5/8&quot;)</td>
<td></td>
</tr>
<tr>
<td>Liquid pipe: OD9.52 (3/8&quot;)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pipe connections</th>
<th>Flare</th>
</tr>
</thead>
</table>

| Part no. | 100 628 01 |

*If the length of the refrigerant pipes exceeds 15 m extra refrigerant must be filled at 0.06 kg/m.

### Performance, HM SPLIT and L16 SPLIT

#### Heating

<table>
<thead>
<tr>
<th>EN14511 ΔT5K Output/input/COP</th>
<th>Outd. temp: / Supply temp.</th>
<th>Min</th>
<th>Nominal</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/35 °C (floor)</td>
<td>3.66/0.95/3.86</td>
<td>12.02/2.71/4.44</td>
<td>15.82/3.89/4.07</td>
<td></td>
</tr>
<tr>
<td>2/35 °C (floor)</td>
<td>2.98/0.97/3.08</td>
<td>10.12/2.74/3.69</td>
<td>10.82/3.20/3.38</td>
<td></td>
</tr>
<tr>
<td>-7/35 °C (floor)</td>
<td>2.72/1.18/2.30</td>
<td>8.08/2.69/3.01</td>
<td>10.09/3.54/2.85</td>
<td></td>
</tr>
<tr>
<td>-15/35 °C (floor)</td>
<td>2.92/1.44/2.02</td>
<td>6.34/2.60/2.44</td>
<td>7.99/3.29/2.43</td>
<td></td>
</tr>
<tr>
<td>7/45 °C</td>
<td>5.09/1.51/3.38</td>
<td>11.69/3.56/3.28</td>
<td>15.20/4.37/3.48</td>
<td></td>
</tr>
<tr>
<td>2/45 °C</td>
<td>4.10/1.48/2.77</td>
<td>9.53/3.21/2.97</td>
<td>12.18/4.40/2.77</td>
<td></td>
</tr>
<tr>
<td>-7/45 °C</td>
<td>3.08/1.56/1.97</td>
<td>7.49/3.11/2.41</td>
<td>10.05/4.37/2.30</td>
<td></td>
</tr>
<tr>
<td>-15/45 °C</td>
<td>2.72/1.68/1.61</td>
<td>5.52/2.93/1.88</td>
<td>7.50/4.00/1.88</td>
<td></td>
</tr>
<tr>
<td>7/55 °C</td>
<td>6.55/2.38/2.76</td>
<td>10.31/3.86/2.67</td>
<td>13.29/5.28/2.52</td>
<td></td>
</tr>
<tr>
<td>-7/55 °C</td>
<td>3.74/2.33/1.61</td>
<td>6.26/3.55/1.76</td>
<td>7.83/4.50/1.74</td>
<td></td>
</tr>
</tbody>
</table>

#### Cooling

<table>
<thead>
<tr>
<th>EN14511 ΔT5K Output/input/EER</th>
<th>Outd. temp: / Supply temp.</th>
<th>Min</th>
<th>Nominal</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>27/18 °C</td>
<td>5.80/160/4.20</td>
<td>15.0/338/4.42</td>
<td>18.5/4.26/4.35</td>
<td></td>
</tr>
<tr>
<td>35/18 °C</td>
<td>5.20/1.79/3.41</td>
<td>13.5/3.82/3.52</td>
<td>16.6/4.78/3.47</td>
<td></td>
</tr>
</tbody>
</table>
Sound pressure levels

L16 SPLIT is usually placed next to a house wall, which gives a directed sound distribution that should be considered. Accordingly, you should always attempt to find a placement on the side that faces the least sound sensitive neighbouring area.

The sound pressure levels are further affected by walls, bricks, differences in ground level, etc and should therefore only be seen as guide values.

<table>
<thead>
<tr>
<th>Noise, L16 SPLIT</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sound power level, according to EN12102 at 7/45°C (nominal)</td>
<td>L_w(A) 71.5</td>
</tr>
<tr>
<td>Sound pressure level at 2 m free standing (nominal)</td>
<td>dB(A) 57.5</td>
</tr>
</tbody>
</table>
Accessories

**RFV SPLIT**

Room sensor
Part no. 150 799 01

**HS SPLIT**

Auxiliary relay
Part no. 150 801 01

**VK 2 SPLIT**

Reversing valve, cooling.
For separate cooling and heating systems.
Part no. 150 798 01

**RBE SPLIT**

Room unit
Part no. 150 800 01

**MG 1 SPLIT/MG 2 SPLIT**

Extra mixing valve group.
Part no. 150 793 01/150 794 01

**WPSK/WTPSK SPLIT**

Buffer vessel/operating tank in steel
**WPSK 40 SPLIT**

Heating/cooling
Part no. 150 791 01

**WTPSK 100 SPLIT**

Heating/cooling
Part no. 150 792 01

**EP 2 SPLIT**

Cable kit if MG 1 SPLIT/MG 2 Split or VK 1 SPLIT/VK 2 SPLIT is used.
Part no. 150 803 01

**KVL SPLIT**

Refrigerant pipe kit 12 m
Insulated
Part no. 150 790 01

**BKS SPLIT**

For L16 SPLIT
Part no. 150 788 01

**KWS 2**

Condensation water pipe, different lengths.
KWS 2/1 SPLIT, 1 m
Part no. 150 812 01
KWS 2/3 SPLIT, 3 m
Part no. 150 813 01
KWS 2/6 SPLIT, 6 m
Part no. 150 814 01
Safety precautions

Caution

The installation must be carried out by a qualified installer.
If you install the system yourself, serious problems may occur, for example water leaks, refrigerant leaks, electric shocks, fire and personal injury, as a result of a system malfunction.

Install the system in full accordance with this installation manual.
Incorrect installation can cause bursts, personal injury, water leaks, refrigerant leaks, electric shocks and fire.

Observe the measurement values before working on the cooling system, especially when installing in small rooms, so that the limit for the refrigerant's density is not exceeded.
Consult an expert to interpret the measurement values. If the refrigerant density exceeds the limit, lack of oxygen can occur in the event of any leak, which can cause serious accidents.

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Consult an expert to interpret the measurement values. If the refrigerant density exceeds the limit, lack of oxygen can occur in the event of any leak, which can cause serious accidents.

Use original accessories and the stated components for the installation.
If parts other than those stated by us are used, water leaks, electric shocks, fire and personal injury may occur as the unit may not work properly.

Ventilate the working area well – refrigerant leakage may occur during installation work.
If the refrigerant comes into contact with naked flames, poisonous gas is created.

Install the unit in a location with good support.
Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury. Installation without sufficient support can also cause vibrations and noise.

Ensure that the unit is stable when installed, so that it can withstand earthquakes and strong winds.
Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury.

Ensure that no air enters the process circuit when the heat pump is installed or removed.
If air enters the process circuit, the pressure becomes too high, which can cause bursts and personal injury.

The electrical installation must be carried out by a qualified electrician and the system must be connected as a separate circuit.
Power supply with insufficient capacity and incorrect function can cause electric shocks and fire.

Use the stated cables for the electrical connection, tighten the connection correctly to prevent overloading the terminal blocks.
Loose connections or cable mountings can cause abnormal heat production or fire.

Arrange the wiring in the control box so that it cannot be pushed up further into the box by mistake. Install the service panel's cover correctly.
Incorrect installation can result in overheating and fire.

Check, after completed installation, that no refrigerant leaks from the system in gas form.
If refrigerant gas leaks into the house and comes into contact with an aerotemp, an oven or other hot surface, poisonous gases are produced.

For R410A use the stated pipe type and cap nuts and for R410A use the stated tool.
Using existing parts (for R22) can cause breakdowns and serious accidents due to process circuit bursts.

Tighten the cap nut as stated using a torque wrench.
Tighten to the correct torque. Over tightening of the cap nut can lead to breaks and refrigerant leaks.

Connect the cooling circuit pipe and complete the pipe installation before running the compressor.
If the compressor is run when the service valve is not open and the pipe is not connected, the system may burst causing personal injury, due to abnormally high pressure in the system.

Switch off the compressor before disconnecting the pipe from the pump.
If the pipe is disconnected whilst the compressor is running and the service valve is open, air is mixed into the process circuit. This causes unusually high pressure in the process circuit, which can cause bursts and personal injury.

Only use original accessories. The installation must be carried out by a qualified installer.
If you install the system yourself, water leaks, electric shock and fire can occur.

Do not perform any repairs yourself. Consult the dealer if the system requires repair.
Incorrectly performed repairs can cause water leakage, refrigerant leakage, electric shocks or fire.

Consult the dealer or an expert regarding removal of the heat pump.
Incorrect installation can cause water leakage, refrigerant leaks, electric shocks or fire.

Switch off the power supply in the event of a service or inspection.
If the power supply is not shut off, there is a risk of electric shocks and damage due to the rotating fan.

Do not run the unit with removed panels or protection.
Touching rotating equipment, hot surfaces or high voltage parts can cause personal injury due to entrapment, burns or electric shocks.

Cut the power before starting electrical work.
Failure to cut the power can cause electric shocks, damage and incorrect function of the equipment.

Care

Carry out the electrical installation with care.
Do not connect the ground lead to the gas line, water line, lightning conductor or telephone line's ground lead. Incorrect grounding can cause unit faults such as electric shocks due to short-circuiting.

Use main switch with sufficient breaking capacity.
If the switch does not have sufficient breaking capacity, malfunctions and fire can occur.

Always use a fuse with the correct rating in the locations where fuses are to be used.
Connecting the unit with copper wire or other metal thread can cause unit breakdown and fire.

Cables must be routed so that they are not damaged by metal edges or trapped by panels. Incorrect installation can cause electric shocks, heat generation and fire.

Do not install the indoor unit in close proximity to locations where leakage of combustible gases can occur.
If leaking gases collect around the unit, fire may occur.

Do not install the unit where corrosive gas (for example nitrous fumes) or combustible gas or steam (for example thinner and petroleum gases) can build up or collect, or where volatile combustible substances are handled.
Corrosive gas can cause corrosion to the heat exchanger, breaks in plastic parts etc. and combustible gas or steam can cause fire.

Do not use the indoor section where water splashes may occur, for example in laundries.
The indoor section is not waterproof and electric shocks and fire can therefore occur.

Do not use the indoor section for storing food, cooling precision instruments, freeze-conservation of animals, plants or art.
This can damage the items.

Do not install and use the system close to equipment that generates electromagnetic fields or high frequency harmonics.
Equipment such as inverters, standby sets, medical high frequency equipment and telecommunications equipment can affect the air conditioning unit and cause malfunctions and breakdowns. The air conditioning unit can also affect medical equipment and telecommunication equipment, so that it functions incorrectly or not at all.

Do not install the outdoor unit in the locations stated below.
- Locations where leakage of combustible gas can occur.
- Locations where carbon fibre, metal powder or other powder that can enter the air.
- Locations where substances that can affect the air conditioning unit, for example, sulphide gas, chlorine, acid or alkaline substances can occur.
- Locations with direct exposure to oil mist or steam.
- Locations where machines that generate high frequency harmonics are used.
- Locations where cosmetic or special sprays are often used.
- Locations where the system is exposed to chimney smoke.

If the bottom frame of the outdoor section is corroded, or in any other way damaged, due to long periods of operation, it must not be used. Using an old and damaged frame can cause the unit to fail and cause personal injury.

If soldering near the unit, ensure that solder residue does not damage the drip tray. If solder residue enters the unit during soldering, small holes can appear in the tray resulting in water leakage. To prevent damage, keep the indoor unit in its packing or cover it.

Do not allow the drainage pipe to exit into channels where poisonous gases, containing sulphides for example, can occur. If the pipe exits into such a channel, any poisonous gases will flow into the room and seriously affect the user’s health and safety.

Insulate the cooler unit’s connection pipes so that the ambient air moisture does not condense on them. Insufficient insulation can cause condensation, which can lead to moisture damage on the roof, floor, furniture and valuable personal property.

Do not install the outdoor unit in a location where insects and small animals can inhabit. Insects and small animals can enter the electronic parts and cause damage and fire. Instruct the user to keep the surrounding equipment clean.

Take care when carrying the unit by hand. If the unit weighs more than 20 kg, it must be carried by two people. Do not carry by the plastic strap, always use the carry handle when carrying the unit by hand. Use gloves to minimize the risk of cuts from the aluminium flanges.

Dispose of any packaging material correctly. Any remaining packaging material can cause personal injury as it contains nails and wood.

Do not touch any buttons with wet hands. This can cause electric shocks.

Do not touch any refrigerant pipes with your hands when the system is in operation. During operation the pipes become extremely hot or extremely cold, depending on the method of operation. This can cause burn injuries or frost injuries.

Do not shut off the power supply immediately after operation has started. Wait at least 5 minutes, otherwise there is a risk of water leakage or breakdown.

Do not control the system with the main switch. This can cause fire or water leakage. In addition, the fan can start unexpectedly, which can cause personal injury.

Especially for units intended for R410A

- Only use R410A refrigerant. R410A means that the pressure is about 1.6 times as high as conventional refrigerants.

- The service valve’s filling connection and control output on the indoor unit in the system for R410A are different sizes, to prevent the system being filled with the incorrect refrigerant by mistake. The machined dimension on the refrigerant pipe’s collared part as well as the cap nut’s parallel side dimension has been changed to increase the system’s overpressure durability.

- Therefore, installers and service technicians must ensure that only tools approved for working with R410A are used.

- Do not use charging bottles. These types of bottles change the composition of the refrigerant, which makes the performance of the system worse.

- When filling refrigerant, the refrigerant must always leave the bottle in liquid form.
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EC Declaration of Conformity in accordance with the EC Low Voltage Directive 2006/95/EC, Annex III

The undersigned confirms that the following designated device(s) as designed and marketed by us fulfill the standardized EC directives, the EC safety standards and the product-specific EC standards. In the event of modification of the device(s) without our approval, this declaration shall become invalid.

Designation of the device(s)

**Heat Pump**

<table>
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<tr>
<th>Unit model</th>
<th>Number</th>
</tr>
</thead>
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<tr>
<td>L 8Split</td>
<td>100 626 01</td>
</tr>
<tr>
<td>L 12Split</td>
<td>100 627 01</td>
</tr>
<tr>
<td>L 16Split</td>
<td>100 628 01</td>
</tr>
<tr>
<td>HT Split</td>
<td>150 780 01</td>
</tr>
<tr>
<td>HT/E Split</td>
<td>150 782 01</td>
</tr>
<tr>
<td>HM Split</td>
<td>150 786 01</td>
</tr>
<tr>
<td>EHZK 90Split</td>
<td>150 796 01</td>
</tr>
<tr>
<td>WWS 300Split</td>
<td>150 805 01</td>
</tr>
<tr>
<td>WWS 500Split</td>
<td>150 806 01</td>
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</table>

**EC Directives 2006/95/EC**

2004/108/EC

2002/95/EC

**Standardized EN**

EN 55014-1, A1

EN 55014-2, A1/A2

EN 55014-2, A1/A2

EN 60335-2-40 A1/A2/A11/A12

EN 61000-3-2 A1/A2

EN 61000-3-3/3-11/3-12

EN 62233

* Pressure equipment component

Category II

Module A1

Designated position:

TÜV-SÜD

Industrie Service GmbH (Nr.:0036)

**Company:**

ait-deutschland GmbH

Industrie Str. 3

95359 Kasendorf

Germany

**Place, date:** Kasendorf, 01.08.2013

**Signature:** Jesper Stannow

Head of Heating Development

UK818167
For technical support, please contact your authorised installer or the manufacturer's local service partner. Contact details for your local service partner can be found at www.alpha-innotec.com.

ait-deutschland GmbH
Industriestrasse 3
D-95359 Kasendorf

E-mail: info@alpha-innotec.com
www.alpha-innotec.com