

SERVICE MANUAL

**DOMETIC ABSORPTION-
REFRIGERATOR**
for LEISURE VEHICLES —
the new 8 series



RM 8XXX



Content

Page

MODELS

TD S3

OPERATING

TD S21

COMPONENTS

TD S32

INSTALLATION

TD S39

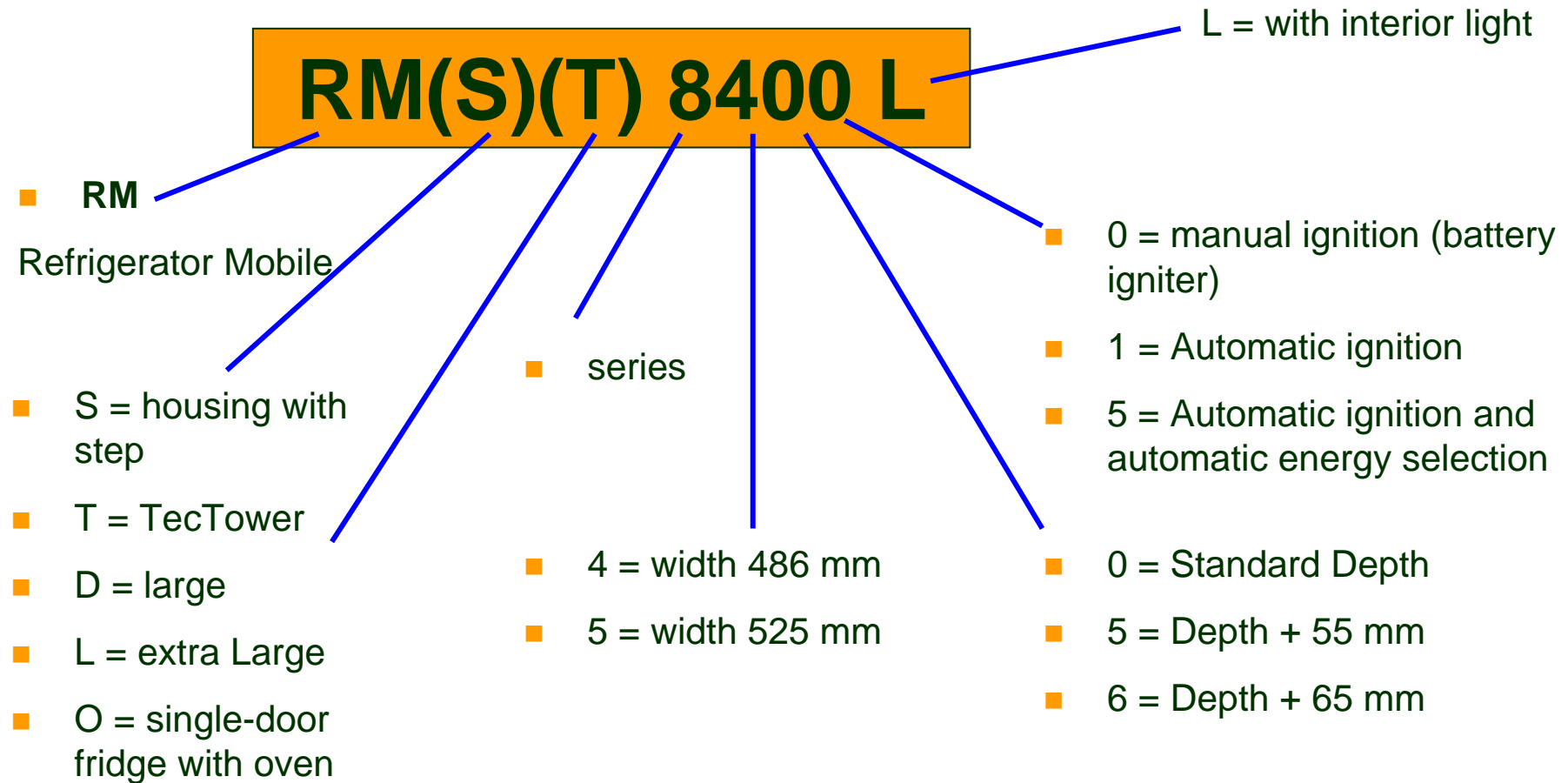
SERVICE + MAINTENANCE

TD S46

MODELS

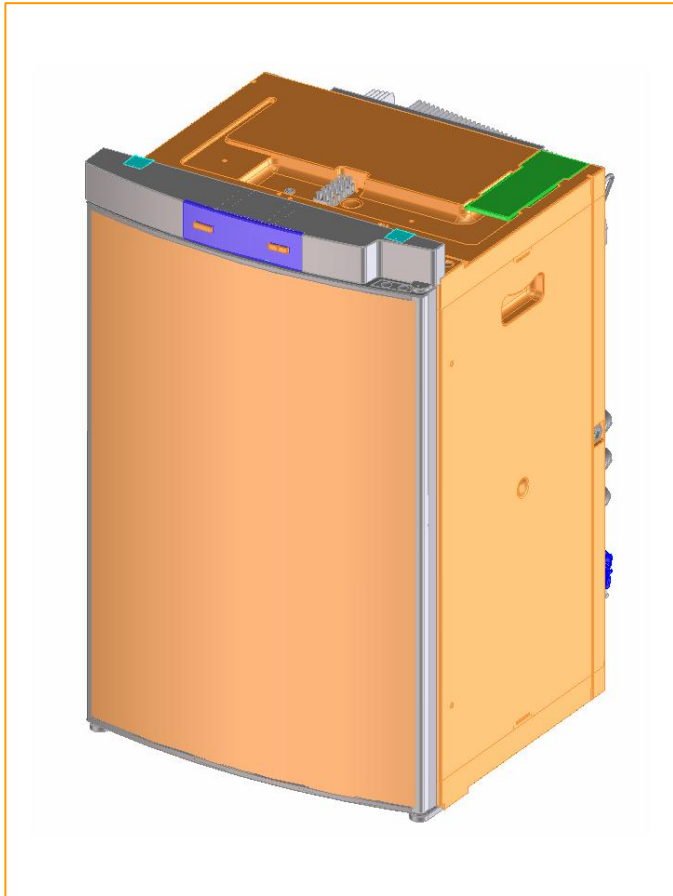
MODELS

Description of models



MODELS

Model Description



- RM(S)8xx1 MES 85-122 l
- RM(S)8xx5 AES 85-122 l
- Width of Housing: 486 mm or 525 mm
- Height: 821 mm
- Depth: 568mm, 623mm or 633mm
- Fridges of the 8-series are only available with curved door



MODELS

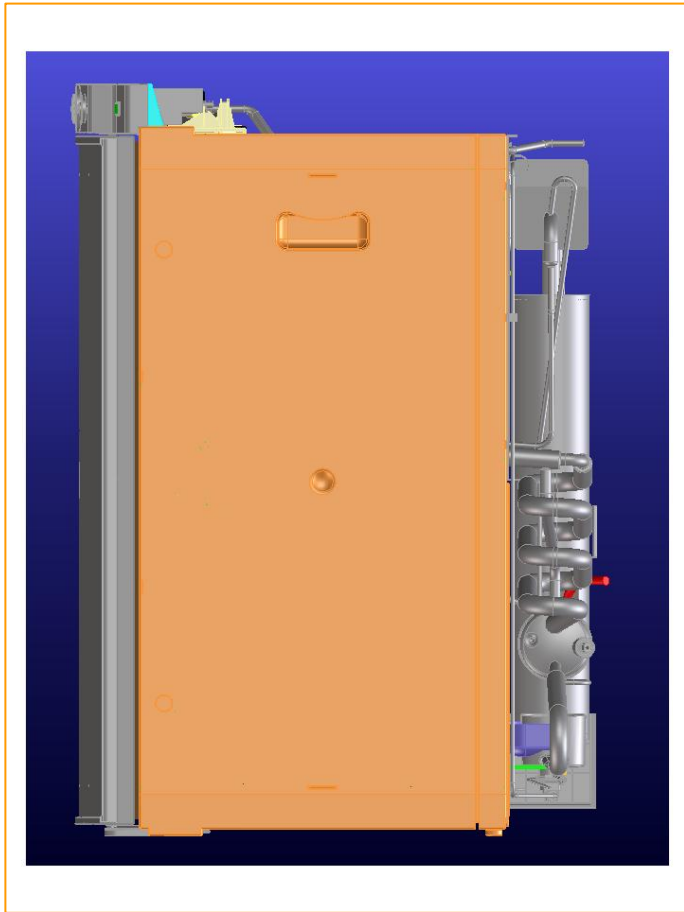
Model Description



- **RM(S)8xx0 Battery Igniter 85-122 I**
- **Width of Housing: 486 mm or 525 mm**
- **Height: 821 mm,**
- **Depth: 568 mm, 623 mm or 633 mm**
- **Fridges of the 8-series with manual ignition are provided with a battery igniter and a Gas-Operation-Indicator (Galvanometer)**

MODELS

Special Features RM 8xxx

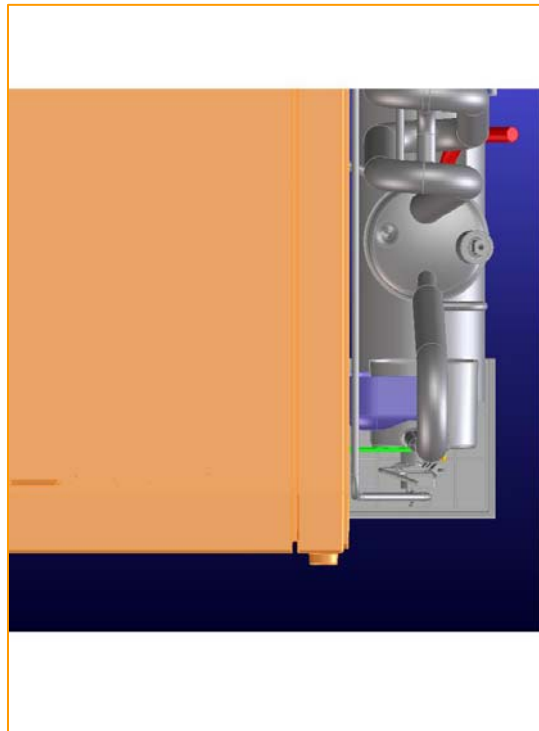
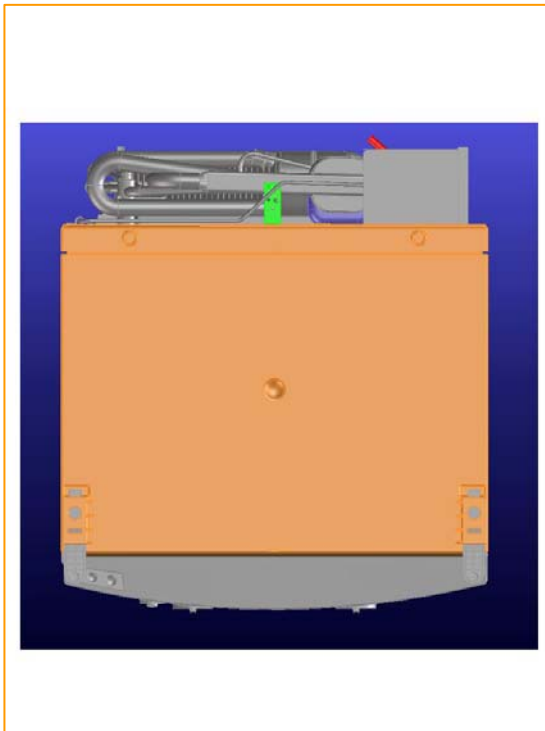


The housing of the fridge RM 8xxx consists of absolute plastic material (Polystyrene) and is equipped with carrying handles on the side. Due to this a decrease of weight of ca. 1.5 kg is achieved compared to similar models like RM 7401 or RM 7405.

There is a continuous groove on the outside and bottom part. A flexible sealing has to be fitted into this groove, in order to enable an airtight assembly.

MODELS

Special Features RM 8xxx

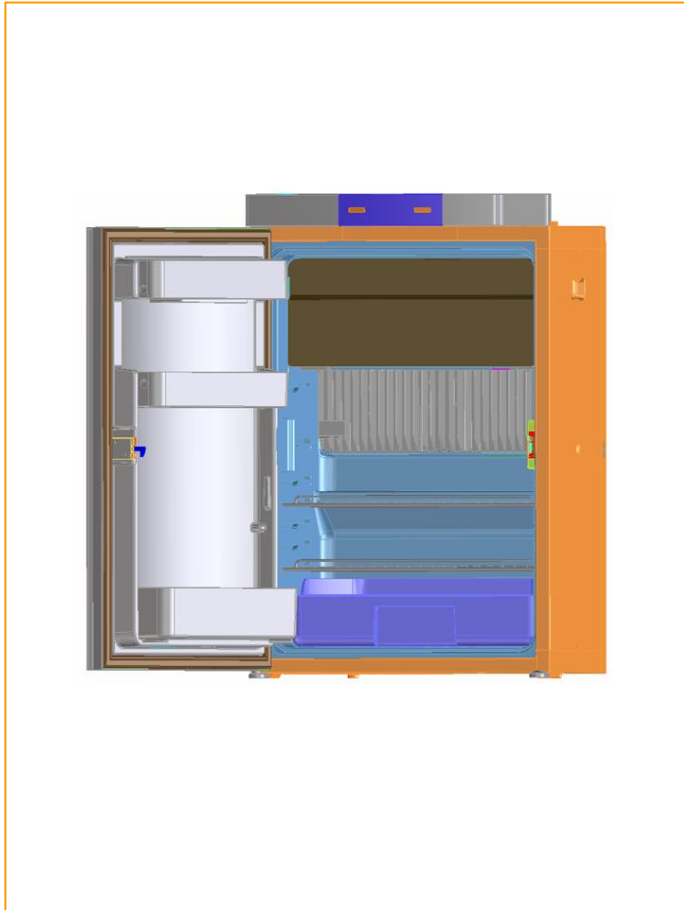


Building in the fridge, please note, that the feet are not screwed onto the housing anymore, but are injected directly onto it.

Thus, when building in the fridge, it is not possible anymore to save 8mm height by taking off the feet.

MODELS

Special Features RM 8xxx



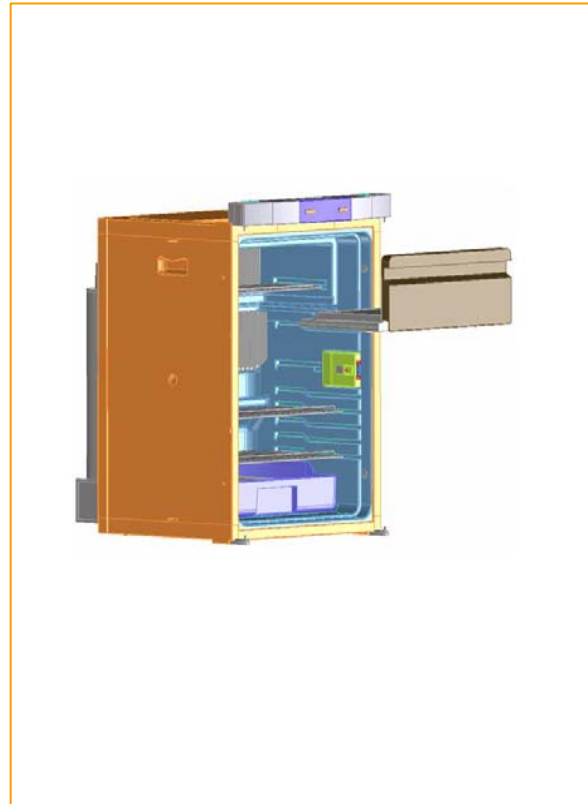
The color of the inner liner is not papyrus white anymore, but white. The shelves and the vegetable bin are ice-blue.

An innovative shelf system enables individual usage of the cooling compartment. The shelves and the bin are dishwasher-suitable. The vegetable bin is available with and without lid.

The rubber sealing is exchangeable.

MODELS

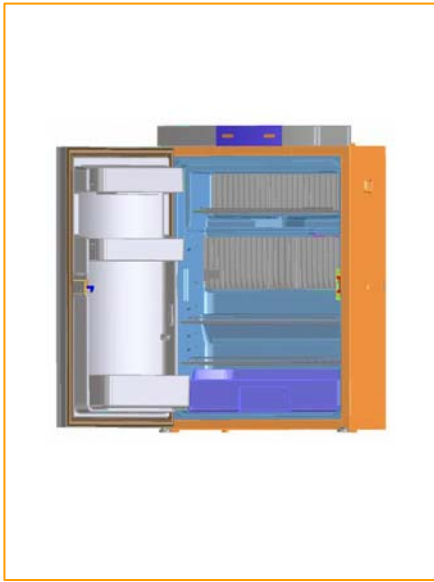
Special Features RM 8xxx



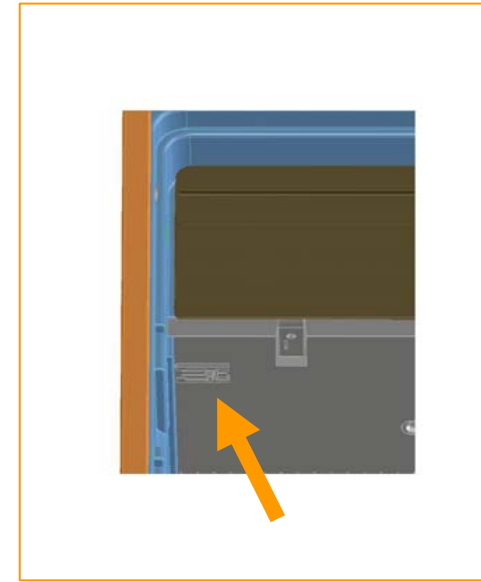
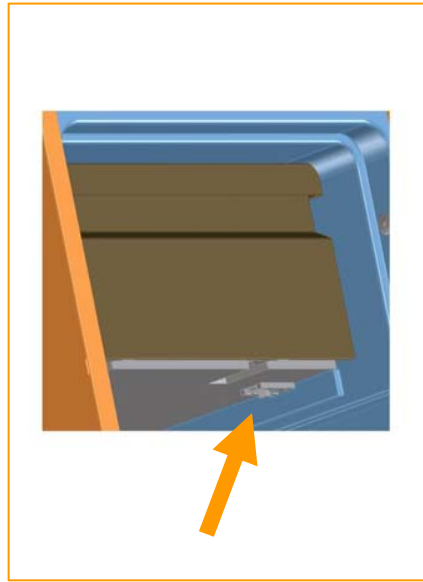
In all single-door RM 8xxx fridges, the freezing compartment can be taken out if needed. This increases the capacity as well as the cooling performance in the cooling compartment.

MODELS

Special Features RM 8xxx



RM 8xxx with
removable
freezer
compartment



Locking of freezing compartment

MODELS

Special Features RM 8xxx



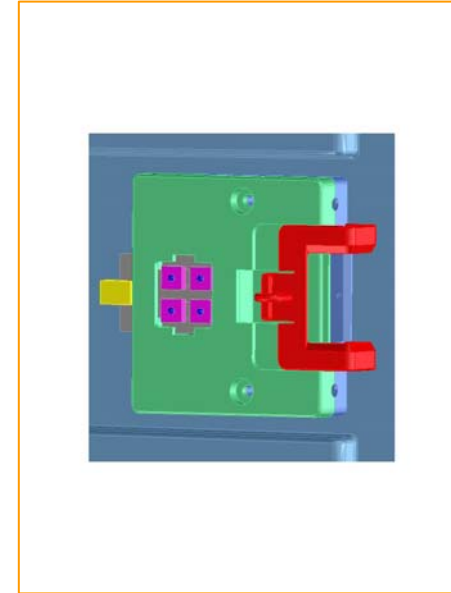
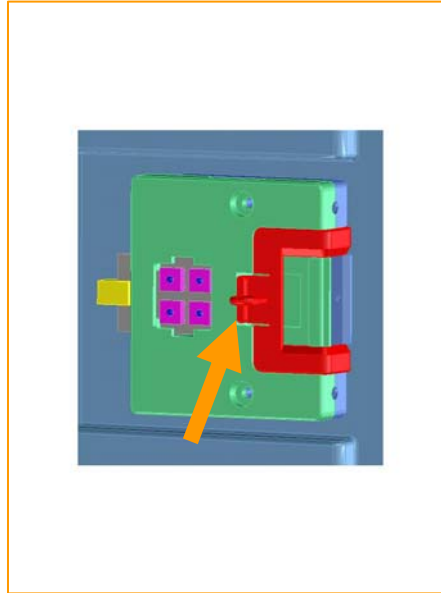
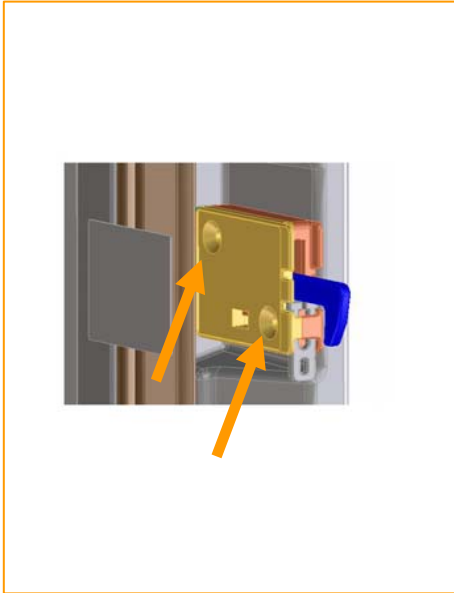
All RM 8xxx fridges have a new door lock. By pushing the locking button the door is opened.

Closing the door the locking bar snaps in and the door is locked. For using the locking button, the panel is formed asymmetric (recess on one side). I.e. changing the door ratchet is not possible anymore. The ratchet has to be determined before the fridge is installed.

The product number controls the side of the door ratchet. Please notify this, if the door or the fridge is exchanged!

MODELS

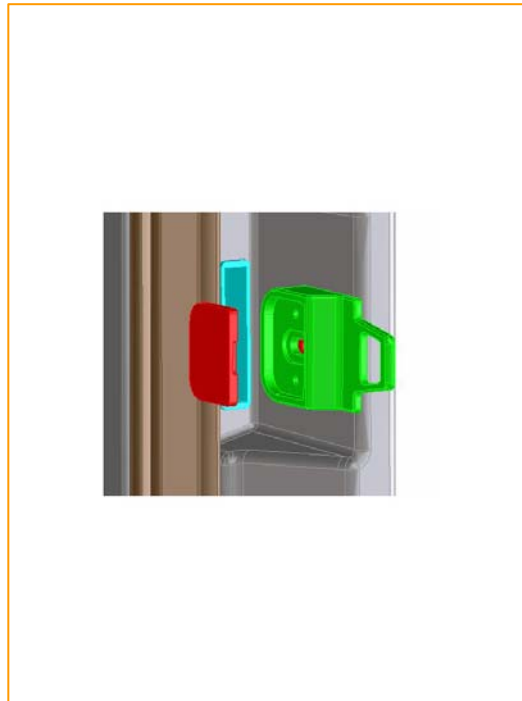
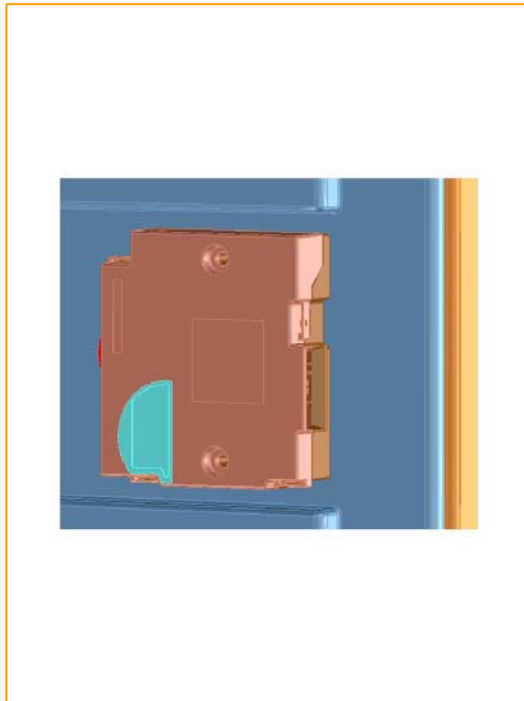
Special Features RM 8xxx



The locking bar inside the door is fixed with two screws, which are behind a plastic cover. The gear rods inside the door are not exchangeable. The lock in the fridge is exchangeable. It also contains the fridge lighting, which was converted into a long-living LED-lighting. The door is brought into winter position by moving the red hook.

MODELS

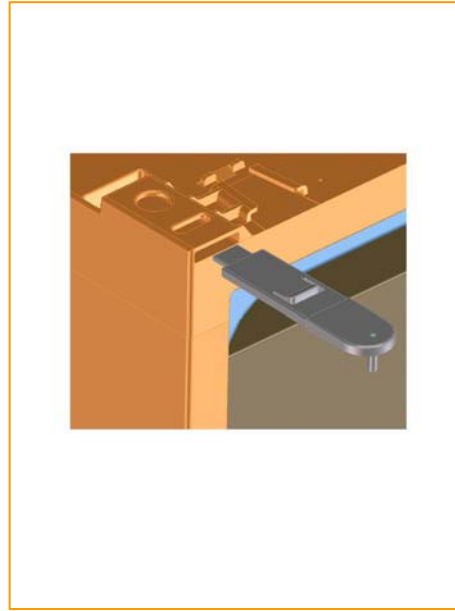
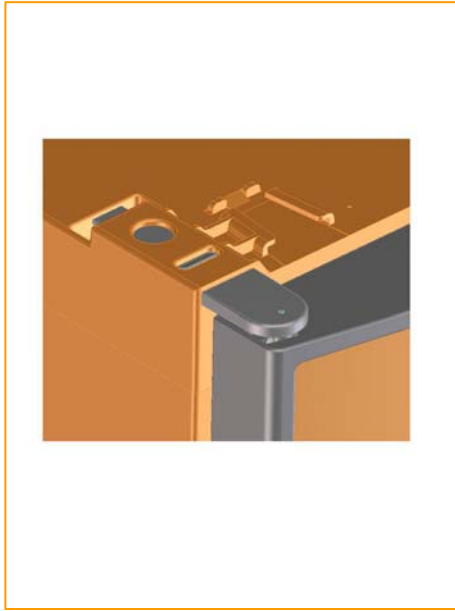
Special Features RM 8xxx



Purchasing an RM 7xxx or an RM 8xxx, there is the option of an electrical door-lock. When the fridge door is closed, it is kept shut by a magnetic sealing, but not locked. Starting the engine, the electronics will automatically lock the fridge door, due to the recognition of the D+ signal. Also with this kind of door lock, changing the door rabbet is not possible.

MODELS

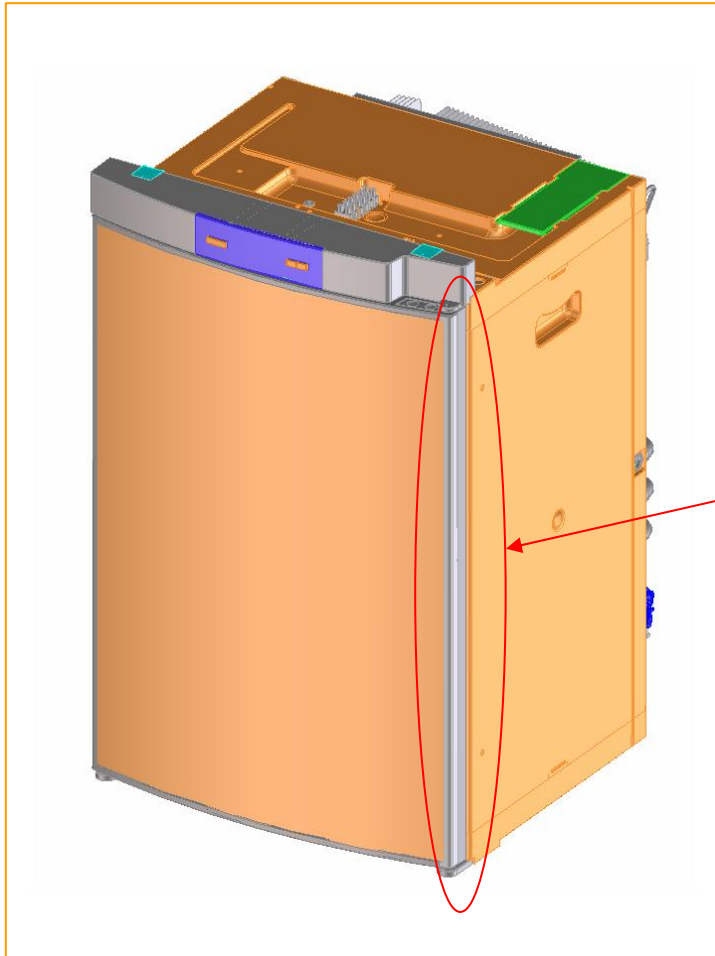
Special Features RM 8xxx



All RM 8xxx fridges are equipped with new door hinges made of metal with a plastic casing (polystyrene). These hinges are not screwed onto the housing anymore, but snap in. Thus it is not necessary anymore to adjust the height. Building in the fridge, please note, that the door hinges have to be supported. Minimum requirement for the supporting surface of the lower hinges is the distance from the housing edge to the outer edges of the hinges with 40mm.

MODELLE

Special Features RM 8xxx

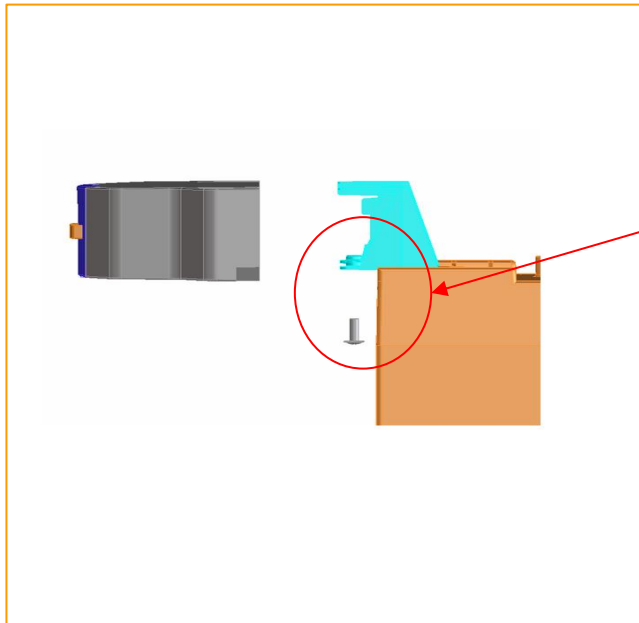


Changing the decor plate, the door has not to be demounted anymore. It can be changed easily:

Loosen the plastic ledge on the locking side carefully. This ledge is only snapped in, but not screwed onto the housing. Then pull out the decor plate and put in the new one. After this reattach the plastic ledge.

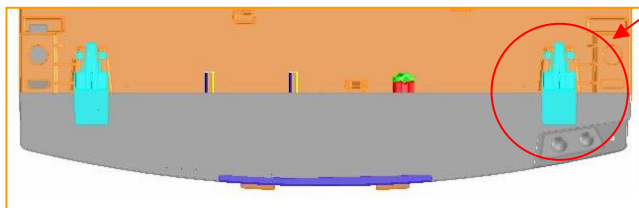
MODELS

Special Features RM 8xxx



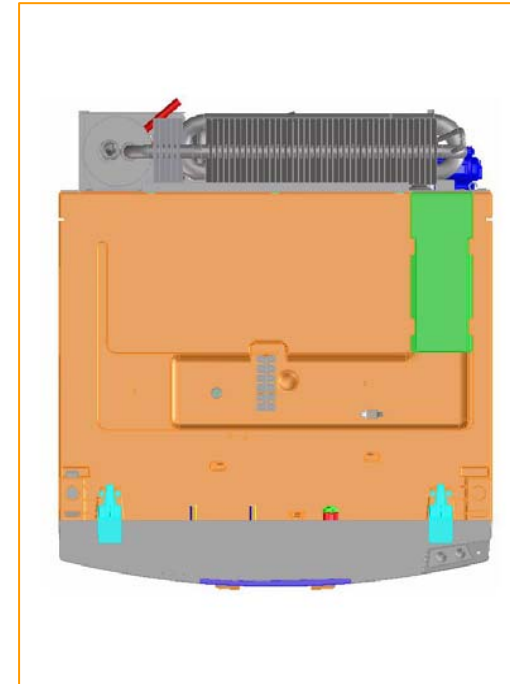
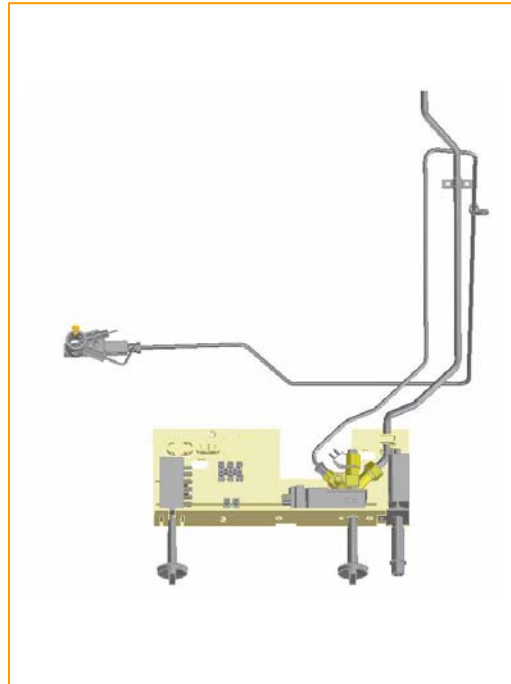
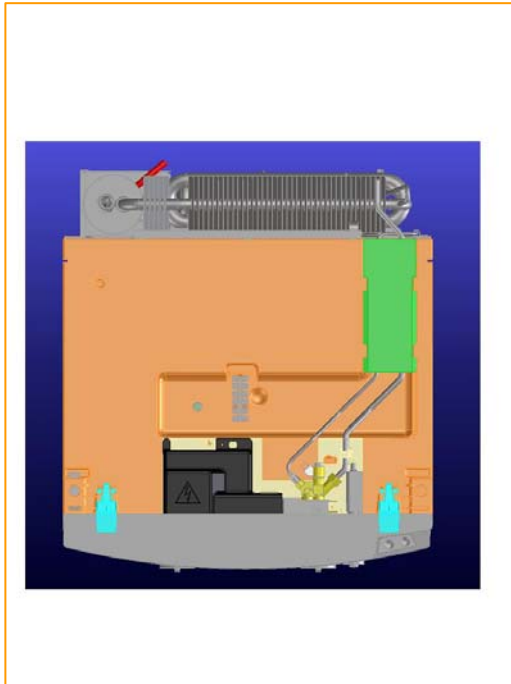
The operation panel can be loosened with two screws, when the door is opened. The electronics at the RM 8xx1 and RM 8xx5 is screwed into the panel from the inside.

If the fridge is demounted, the operation panel including the holding device can be loosened very easily. It is only attached to the housing.



MODELS

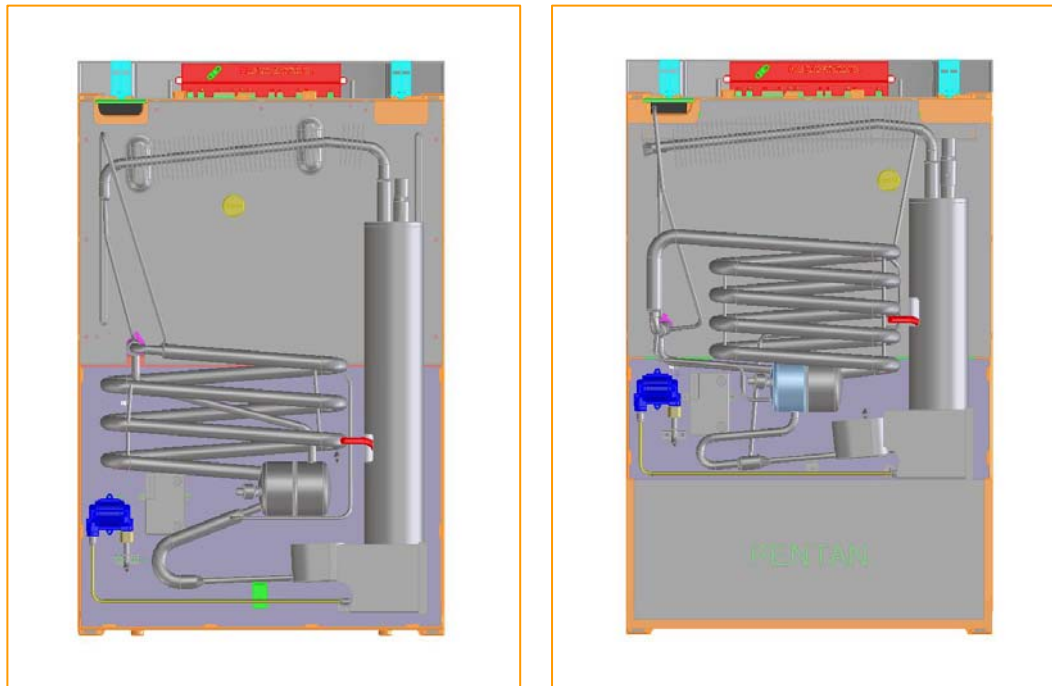
Special Features RM 8xxx



If the fridge is equipped with a battery igniter, as with the 7xxx – generation, a V85 Gas / electro fitting and the known energy-selection switch are used. Also, the RM 8xxx fridges are equipped with a galvanometer, which indicates if the flame is burning. At all single-door fridges of the 8-series, the main connecting block is positioned on the top of the housing. The electronics is screwed into the panel.

MODELS

Special Features RM 8xxx



On the backside of the 8-series fridges the same components are used as with the 7xxx-Generation. Cooling unit, gas valve GV 100, burner control device P810, burner and heating elements are identical.

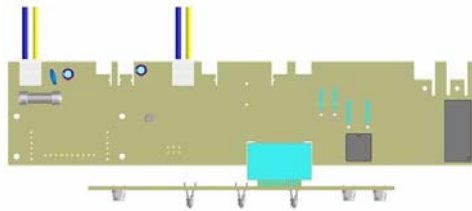
The cooling unit and the components are screwed onto a metal sheet plate, which is fixed onto the back side of the plastic housing.

MODELS

Special Features RM 8xxx

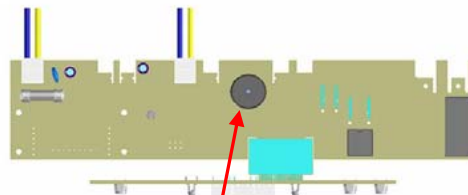
MES

Electronics



AES

Electronics



Optical differentiation:
a "BEEPER"

The electronics were completely renewed. Instead of using a semiconductor, as with **AES III** or **MES**, the new generation uses a microprocessor. The AES-models are equipped with a 7-segment-display. If an error occurs, there is an acoustic signal. There is no acoustic signal for the MES-models. All optical indications are shown with LED.

OPERATION

OPERATION

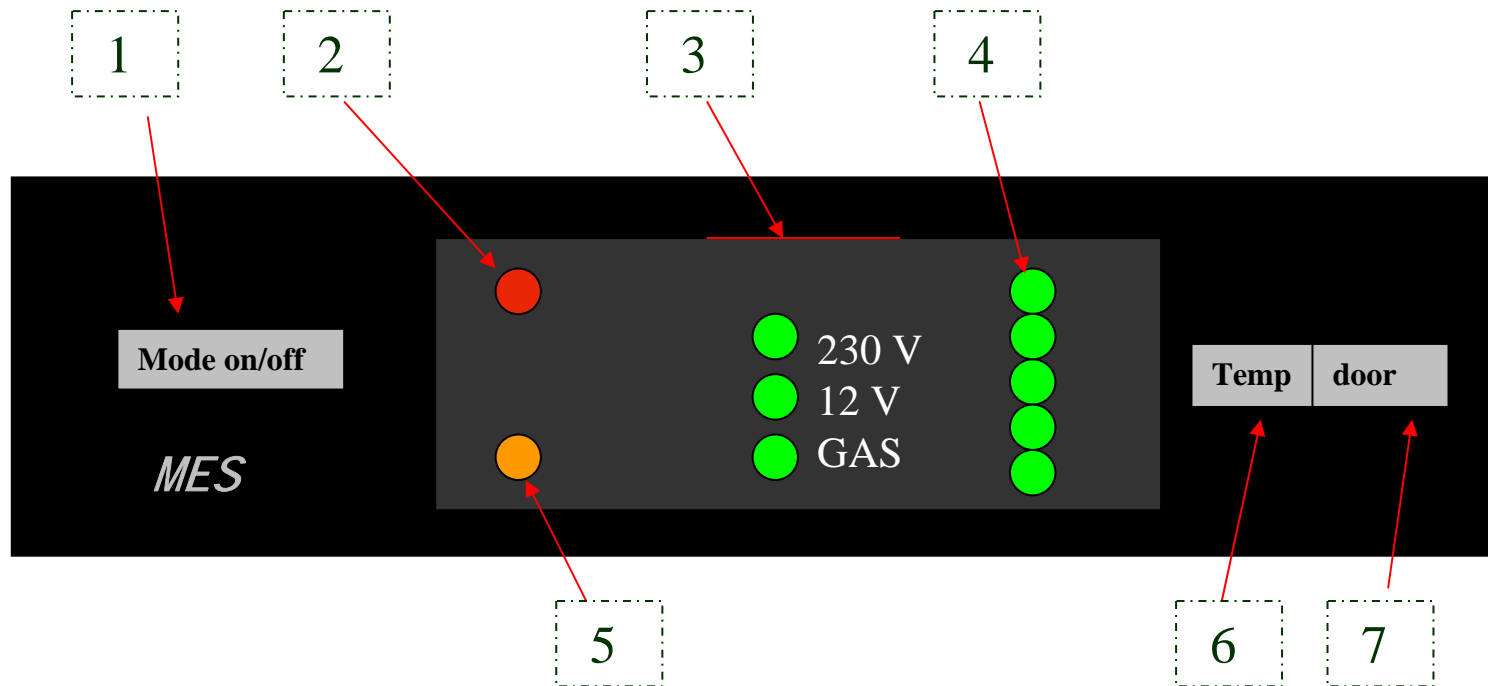
- **Interior light**

If the door is left opened, the lighting switches off automatically after 2 minutes.

- **Dimming function of the indications on the operation panel**

10 seconds after the button has been pushed for the last time, the indication (LED) switches into the dim-mode. The dim-mode is reversed by pushing a button. The desired function is activated by pushing the button again.

OPERATION



Description of the Display:

1. Pushing the button ON/OFF and mode-selection-button longer than 2 seconds = ON/OFF
Pushing the button <2 Seconds = Selection next Mode (230V, 12V, GAS, Auto)
2. LED Fault indication
3. LED Mode-Indication
4. 5-step LED-Indication for inner temperature selection (5 LEDs = max. Setting)
5. LED-Indication for „Door locked“ (only for electrical lock)
6. Button for temperature selection
7. Button for unlocking the door while driving (only for electrical lock)

OPERATION

- **230V-Operation mode (AC-Mode)**

The 230V-operation mode is selected by pushing the button 1 (see TD S23). The button has to be pushed several times, until the **LED** next to the Symbol of the **power plug** lights up.

- **Detection of undervoltage while operating with 230V**

The controlling electronics is equipped with a detection of undervoltage.

Conditions:

- limit value: 195 V AC (min. 188 V, max. 202V)
- The 230V-Relais switches off after ca. 5 seconds “observation”
- Switches back from undervoltage mode to normal mode after ca. 20 seconds
- Undervoltage fault indication by flashing of display 2 + 3 (see TD S23)

OPERATION

- **12V-operation mode (DC-Mode)**

The 12V-operation mode is selected by pushing the button 1 (see TD S23). The button has to be pushed several times, until the **LED** next to the Symbol of the **battery** lights up.

- **Detection of undervoltage while operating with 12V**

The controlling electronics is equipped with a detection of undervoltage.

Conditions:

- Limit value: 10.5 V AC (min. 10.2 V, max. 10.8 V)
- The 12V-Relais switches off after ca 10 minutes „observation“
- Switches back from undervoltage mode to normal mode after ca. 25 minutes
- Undervoltage fault indication by flashing of Display 2 + 3 (see TD S23)

OPERATION

- **Gas-operation mode**

The 12V-operation mode is selected by pushing the button 1 (see TD S23). The button has to be pushed several times, until the **LED** next to the Symbol of the **Gas** lights up or the (AES-) display indicates **GAS**.

- **Ignition while operating with gas.**

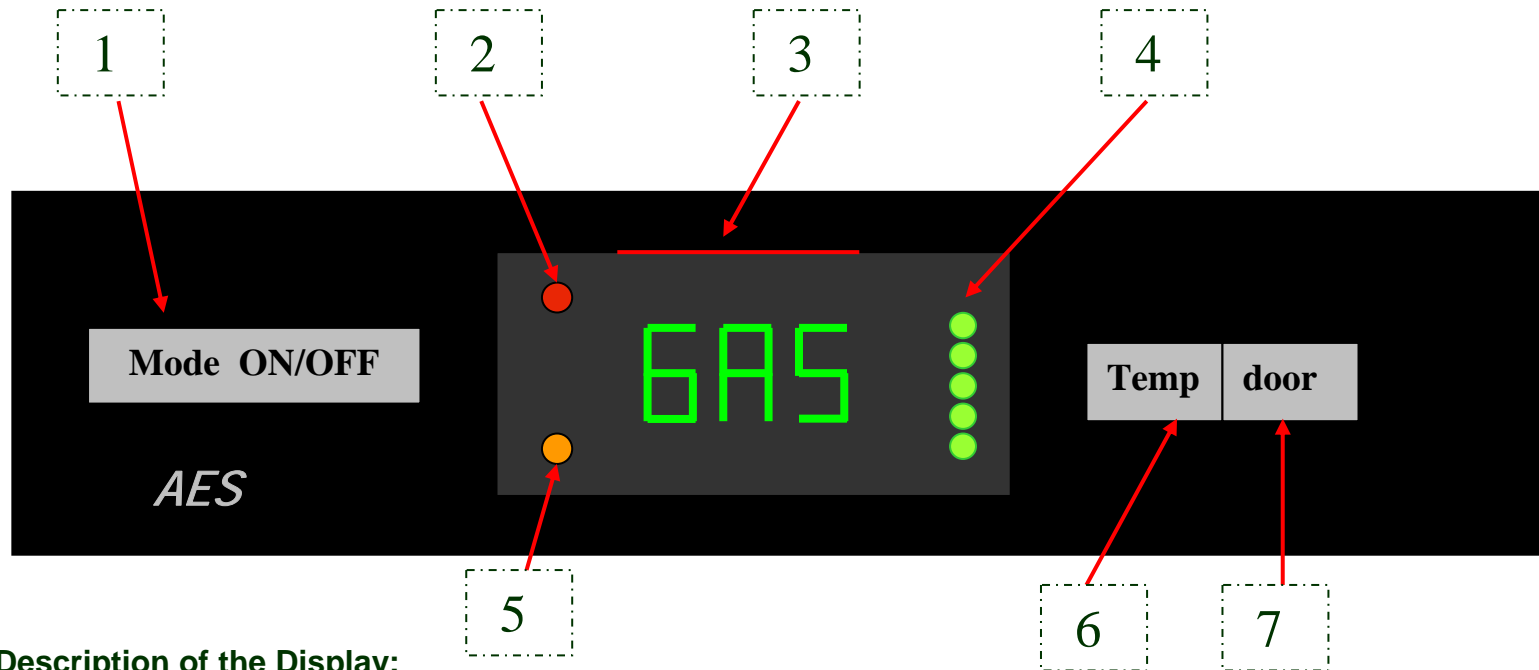
The controlling electronics initiates max. 3 ignition attempts in the following cycle:

25 sec. ignition, if not ok, 2 min. ventilation break

25 sec. ignition, if not ok, 2 min. ventilation break

25 sec. Ignition, if not ok, **FAULT INDICATION** by flashing of the **fault-LED** and the **gas operation LED** (see TD S23).

OPERATION



Description of the Display:

- 1.** Pushing the button ON/OFF and Mode-selection-button longer than 2 seconds = ON/OFF
Pushing the button <2 Seconds = Selection next mode (230V, 12V, GAS, Auto)
- 2.** LED Fault indication
- 3.** Segment Mode-Indication:
GAS = Gas mode
12 = 12 V DC Mode
230=230 V AC Mode
Selecting the automatic mode, the display shows AU alternating Gas, 12 or 230 (AU = automatic mode)
- 4.** 5-step LED-Indication for inner temperature selection (5 LEDs =max. Setting)
- 5.** LED-Indication for „Door locked“ (only for electrical lock)
- 6.** Button for temperature selection
- 7.** Button for unlocking the door while driving (only for electrical lock)

OPERATION

■ **230V-operation mode (manual)**

The 12V-operation mode is selected by pushing the button 1 (see TD S27). The button has to be pushed several times, until the 7-segment-display indicates **230**.

■ **Detection of undervoltage while operating with 230V**

The controlling electronics is equipped with a detection of undervoltage.
Conditions:

- Limit value: 195 V AC (min. 188 V, max. 202V)
- 230V-Relais switches off after ca. 5 seconds “observation”
- Switches back from undervoltage mode to normal mode after ca. 20 seconds
- Undervoltage fault indication by flashing of display 2 + 3 and acoustic signal (see TD S27).

OPERATION

■ **12V- operation mode (manual)**

The 12V-operation mode is selected by pushing the button 1 (see TD S27). The button has to be pushed several times, until the 7-segment-display indicates 12V. D+ or S+ is not taken into account in the manual mode.

■ **Detection of undervoltage while operating with 12V**

The controlling electronics is equipped with a detection of undervoltage.

Conditions:

- Limit value: 10.5 V AC (min. 10.2 V, max. 10.8 V)
- 12V-Relais switches off after ca. 10 minutes „observation“
- Switches back from undervoltage mode to normal mode after ca. 25 minutes
- undervoltage fault indication by flashing of display 2 + 3 and acoustic signal (see TD S27).

OPERATION

- **Gas-operation mode (manual)**

The gas operation mode is selected by pushing the button 1 (see TD S27). The button has to be pushed several times, until the 7-Segment display indicates **GAS**.

- **Ignition while operating with gas**

The controlling electronics initiates max. 3 ignition attempts in the following cycle:

25 sec. ignition, if not ok, 2 min. ventilation break,

25 sec. ignition, if not ok, 2 min. ventilation break,

25 sec. ignition, if not ok, **FAULT INDICATION** by flashing of the **Fault-LED** and the **7-segment-display** (see TD S27).

OPERATION

■ Automatic Mode

The automatic mode is selected by pushing the button 1 (see TD S27). The button has to be pushed several times, until the 7-segment display indicates **AU**. The display switches from AU to the current energy mode every 10 seconds.

- Priority

→ **12V-Solar** → **230V** → **12V (D+)** → **Gas**

- Refueling stop of 15 minutes while operating in Auto-12V-Mode (i.e. the electronics system switches into gas mode only after 15 minutes). During this time the appliances is in stand-by-operation mode and only the AU-LED lights up.

- Recognition of undervoltage as in 230V-mode (also active while D + signal is available)

COMPONENTS

COMPONENTS

Electronics POWER MODULE MES

Contacts

X 105

X 114

X 108

X 110

X 111

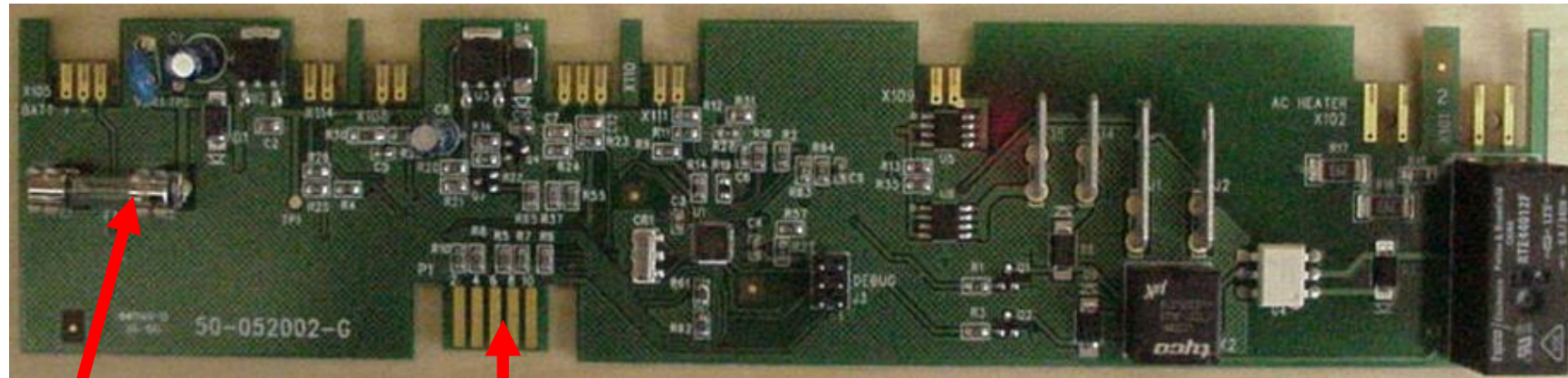
X 109

J4 / J5

J1/ J2

X 102

X 101



Fuse 1A
(250V)

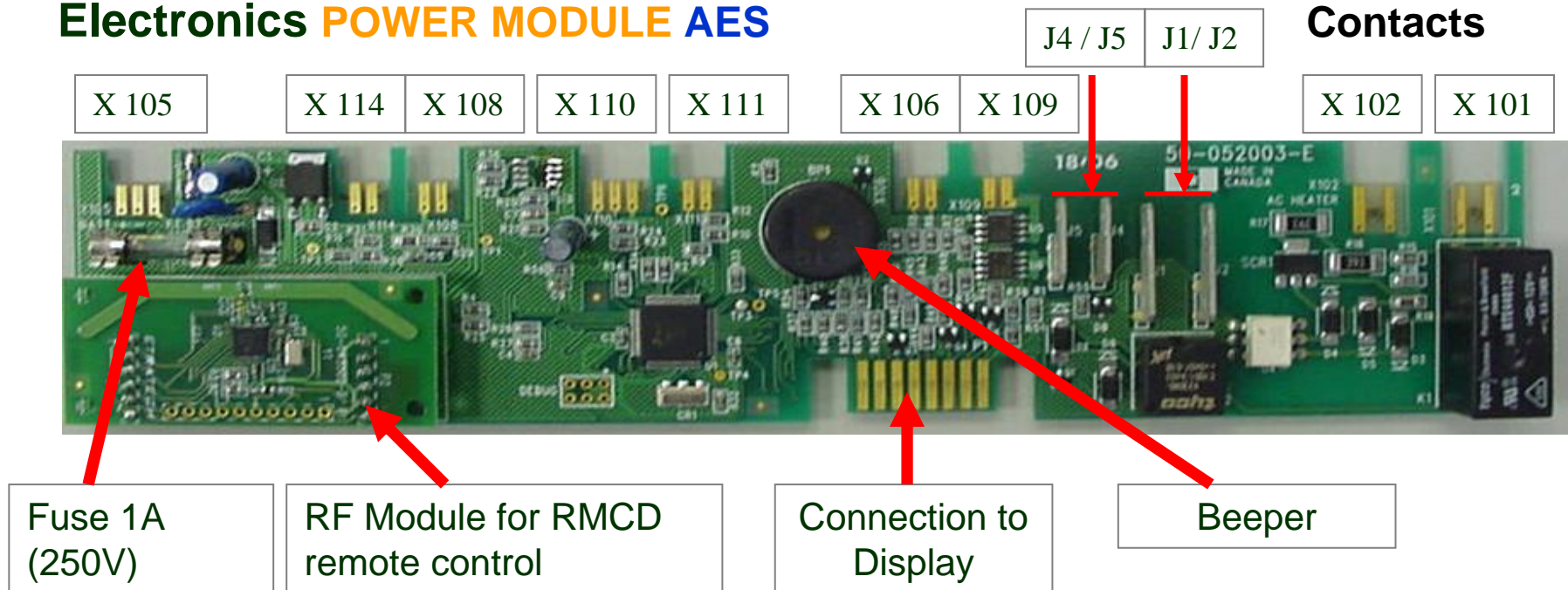
Fuse for
burner
control
device

Connection
to Display

X105 = 12 V Supply / - Wiring Recognition of heating element
 X114 = Reed switch or alt. electr. lock
 X108 = Temperature sensor (NTC)
 X110 = Connection burner control device (+/-, failure)
 X111 = alt. 2. electr. Lock or reed switch
 X109 = Lighting
 J4/J5 = Frame heating
 J1 = +12 V IN for heating element
 J2 = +12 V Heating element
 X102 = Heating element mains power
 X101 = mains power inlet

COMPONENTS

Electronics POWER MODULE AES



Fuse 1A
(250V)

RF Module for RMCD
remote control

Connection to
Display

Beeper

X105 = 12 V Supply / - Wiring
Recognition of heating element
X114 = Reed switch or alt. electr. lock
X108 = Temperature sensor (NTC)
X110 = Connection to burner control device (+/-, failure)
X111 = alt. 2. electr. Locks or reed switch

X106 = D+/Solar
X109 = Interior light
J4/J5 = Frame heating
J1 = +12 V IN for heating element
J2 = +12 V Heating element
X102 = Heating element mains power
X101 = Mains power inlet

COMPONENTS

Burner Control Device P810

includes

Igniter (20-30 sec.)

Flame control and

Flame failure device

Gas valve control

(stops ignition and gas input in case of gas fault)

Power supply : approx. 1.3V



COMPONENTS

Gas (Safety)-Valve **GV100**

includes

2 serial mounted **gas valves**

Power supply: approx. 1.3V - 1.5V per valve (if switched on approx. 0,7V -09V)



COMPONENTS

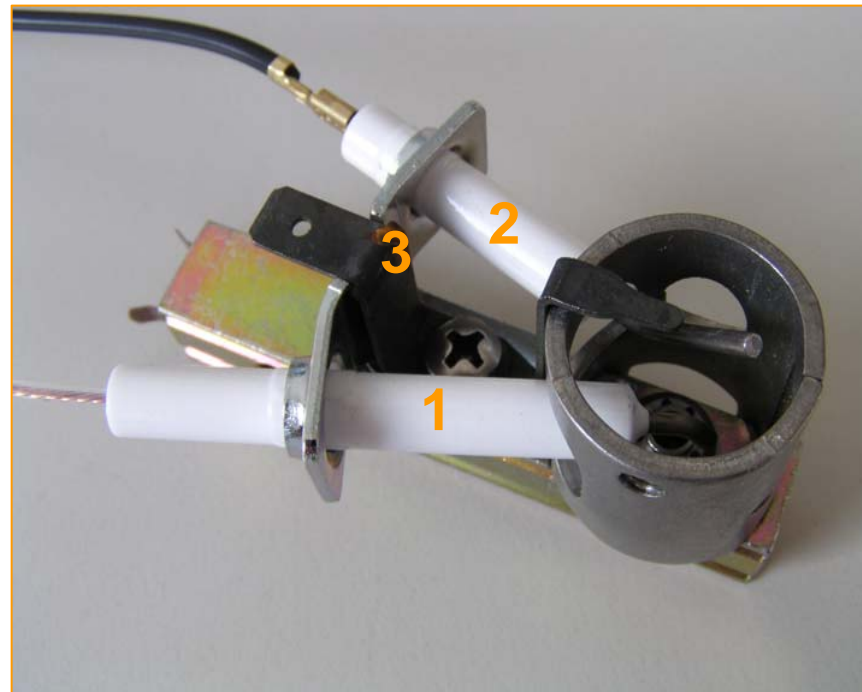
Gas Burner Device

Already installed

Igniting electrode (1)

Ionization electrode (2)

and **ground contact (3)** on
burner chassis



COMPONENTS

Temperature sensor (NTC)

Installed at lower reevaporator

All operation modes (DC/AC/GAS)
are controlled thermostatically.



INSTALLATION

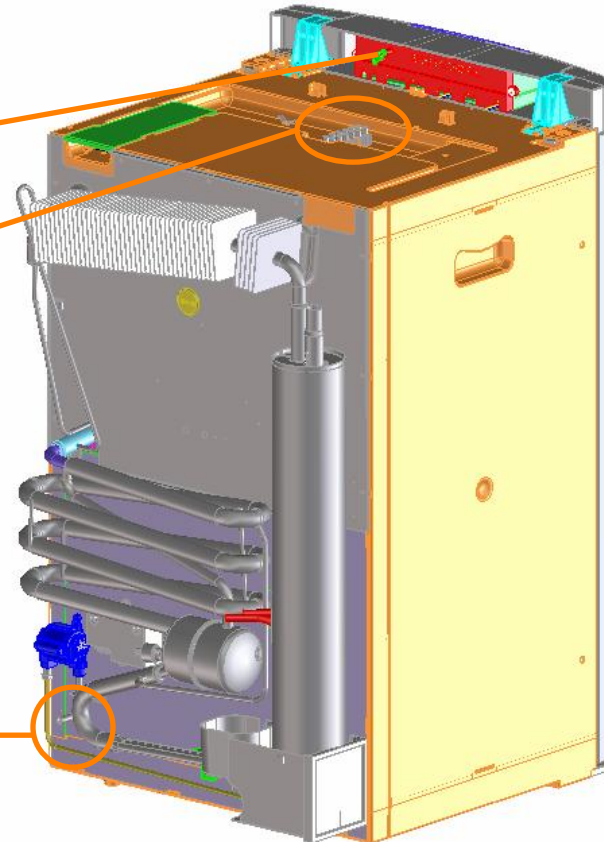
INSTALLATION

Scheme of connecting points

230V-wire – connection
to electronics

Connection power supply 12VDC
D+ and S+ Signal
12VDC Power supply
Heating element

Gas supply



INSTALLATION

Electrical Installation

First of all, please note the **INSTALLATION INSTRUCTIONS**.

Some important points:

- **Power line connection**
protection with a 2A fuse
- **Battery connection**
protection with a 16A fuse
- The electric circuit of the 12V-heating element has to be switched via an appropriate relay, so the heating element is not supplied anymore, after the engine has been turned off.
- The electronics has to be permanently attached to 12V, which is not interrupted, turning off the engine.

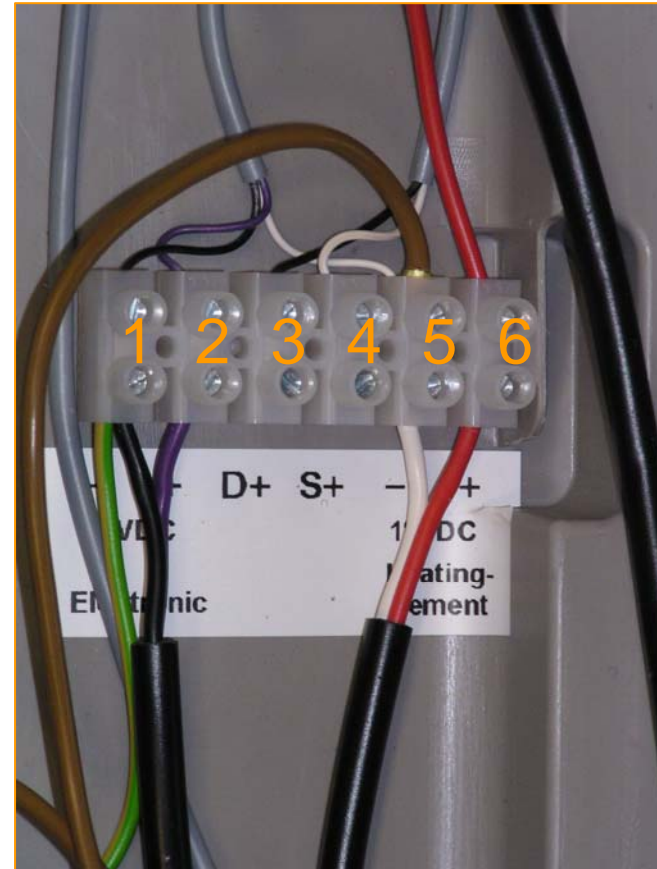
INSTALLATION

Electrical Installation

Terminal block AES-Model

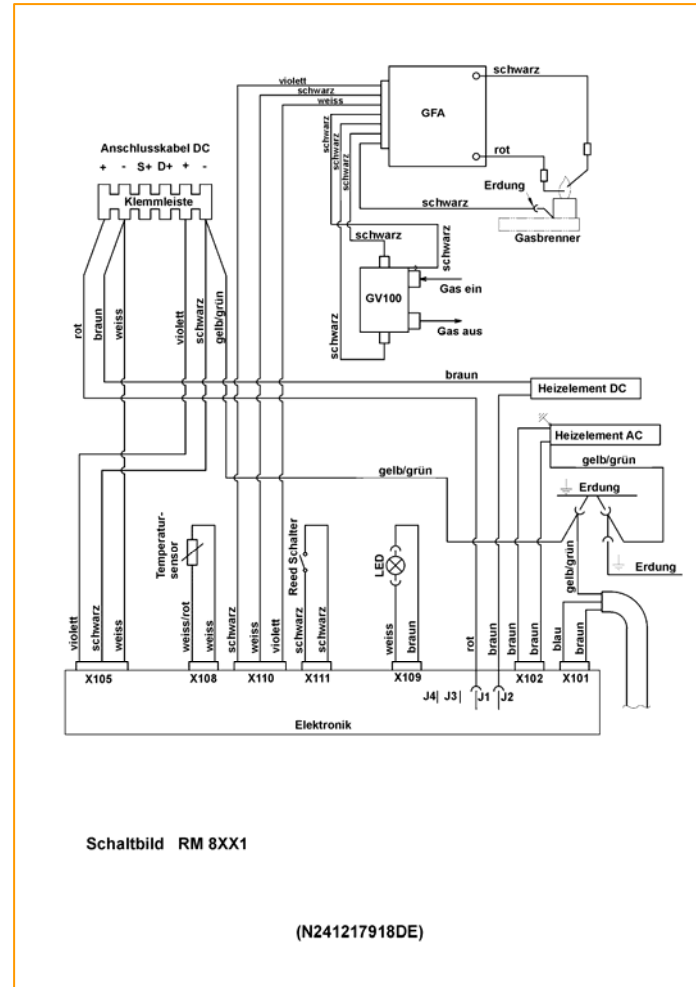
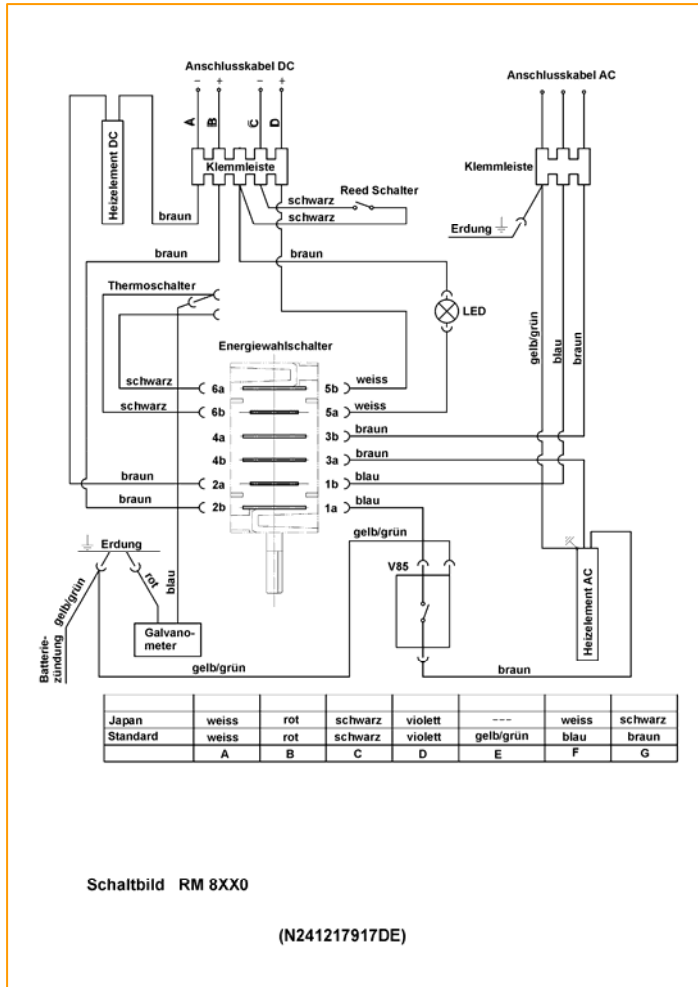
- 1 black: - cable
12V-permanent connection for electronics
- 2 violet: + cable
12V-permanent connection for electronics
- 3 bl: D+ cable to contact X106 on the electronics
- 4 wt: S+ cable to contact X106 on the electronics
- 5 white: -cable for 12V heating element
- 6 red: + cable for 12V heating element via starter lock and 16A fuse

At the terminal strip of the MES-models, the terminals 3 + 4 are not used.



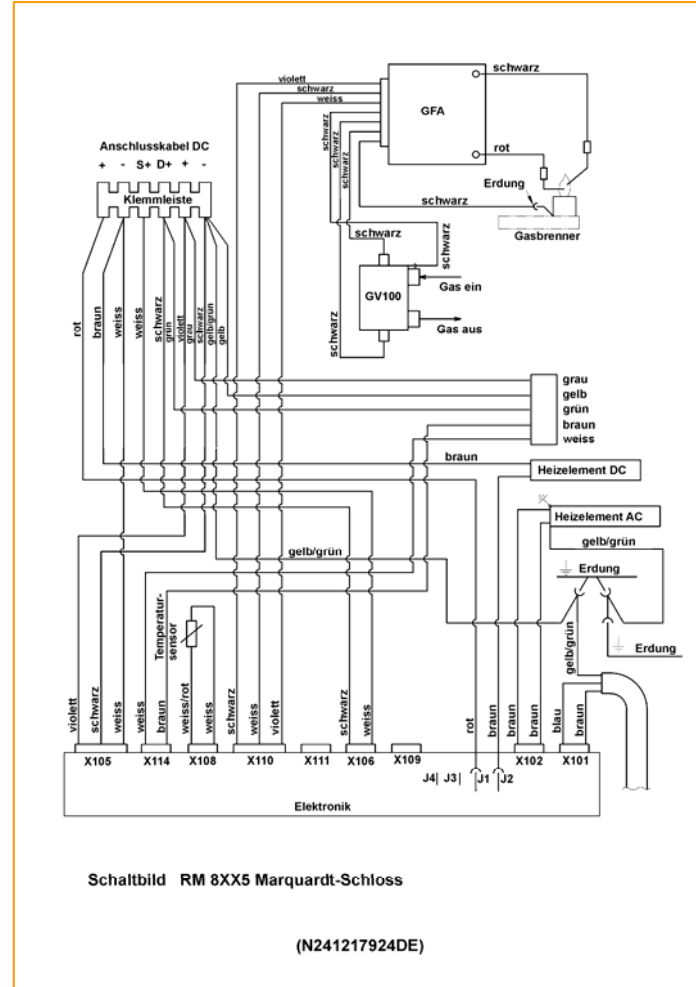
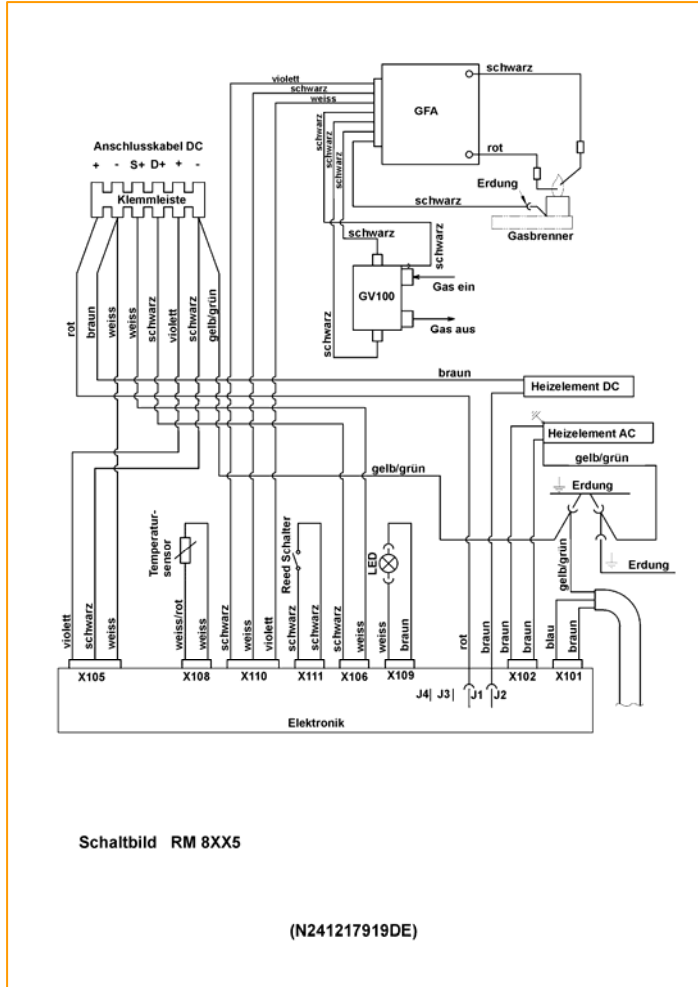
INSTALLATION

Electrical Installation



INSTALLATION

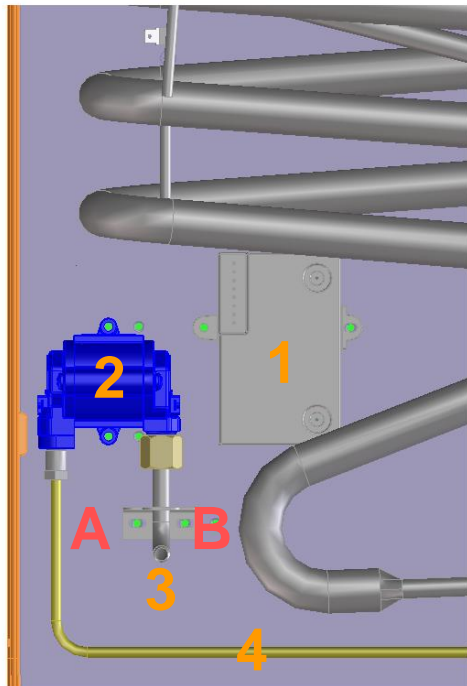
Electrical Installation



INSTALLATION

Gas installation

First of all, please note the information of the **INSTALLATION INSTRUCTIONS**.



The gas connection to the appliance has to be done with a cutting ring connection L8, DIN 2353-ST acc. to EN 1949 (e.g.. Ermeto).

Burner control device (1)

Gas valve (2)

Gas connection (3)

Gas tube to the burner (4)

A (max. torque **10Nm**) and **B** (max. torque **20 Nm**) are preinstalled pipes

SERVICE + MAINTENANCE

SERVICE + MAINTENANCE

Some information

Gas Valve **GV100**

This component includes two serial mounted gas valves (as part of flame failure device).

Power supply : approx. 1.3V - 1.5V per valve

Power supply : approx. 0,7V - 0,9V per valve
(switched on gas mode)

Inductive resistance : per valve ca. 28,5 Ohm

Measuring points: Voltage and Resistance
Valve 1 : Pin 1 - Ground (Housing)
Valve 2 : Pin 2 - Ground (Housing)



SERVICE + MAINTENANCE

Some information

Burner Control Device P810

Power Supply: ca. 1.3V

Measuring points: Flat plug connection
between Pin 2 and Pin 3.

Cable to Ignition plug : 1

Cable to ionization plug : 2

Exchanging the cables is not possible, as they have different dimensions.



SERVICE + MAINTENANCE

Some information

Temperature Sensor (NTC)

Table of resistance

Temperature °C *Resistance kOhm*

0	27.7
5	22.29
10	18.07
15	14.74
20	12.11
25	10.00

Measuring Point:

Electronics

loosen contact X108

Cable white / brown



When the sensor is defect, the fridge will operate permanently.

Some information

Interior light and door lock

The Interior light and the door lock are unit, which is exchanged completely in case of a defect.

The transparent cover is not included, but a separate part.

After removing the cover, the lighting housing can be dismantled.

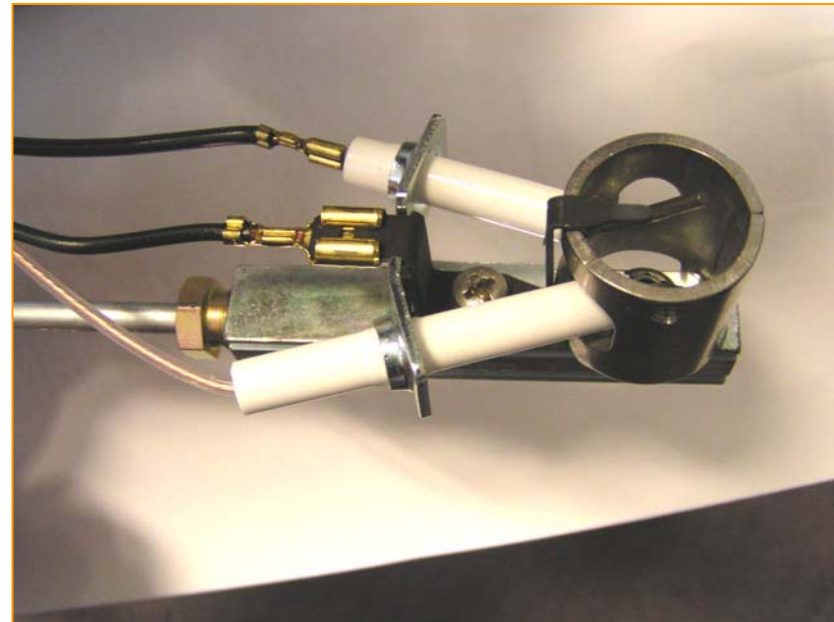


Some information

Cleaning of burner

The burner and the chimney must be cleaned regularly, at least one time a year.

If auto gas is used, Dometic recommends a maintenance every half year, as the contamination risk of the burner is higher, due to the burning of the auto gas.



Service Mode AES

The Service Mode is activated by keeping pressed down the temperature button and switching on the main button.

After this the 7-Segment-Display shows „1“. By pushing the temperature button, the different test-steps can be activated:

- 1 = activates 230 V heating element (230V must be available)
- 2 = activates 230V relay (230V has not to be necessarily available)
- 3 = activates 12 V heating element (D+ and 12V supply has to be available)
- 4 = Intern test step (is not indicated)
- 5 = activates burner control device – output (Gas operation)
- 6 = activates frame heating
- 7 = activates interior lights (Except for electrical lock)

Service Mode AES

8 = Intern test step (is not indicated)

9 = Recognizing electrical lock or reed switch

10 = activates all 7 segment-components one after the other

11 = activates all LED's

Exiting the diagnosis mode: Push „mode“ button or wait for 10 minutes.

Controlling the interior light via reed switch

The AES-Electronics uses the X114 and X111 as well for controlling the reed switch as well as the electrical lock.

The electronics will recognize the application of a reed switch, following the below steps:

1. Choose step 9 in the service mode
2. Open the door
3. Close the door (reed switch will be recognized)
4. Continue service mode (push button 6)

The interior light will now be controlled via the reed switch.

Basically the electronics are defined with “recognizing Reed switch”.

Electrical door lock

Optionally, 2 electrical door locks can be controlled.

They are connected to X111 and X114 (it does not matter in which order; X111 and X114 are equivalent)

In the service mode the electronics will recognize the locks, following the below steps:

1. Open the door(s)
2. Choose step 9 in the service mode
3. Close door(s) (Door locks will be recognized)
4. Activate D+
5. Continue Service mode (push button 6)

The locked door is indicated with LED 5 and can be unlocked by pushing the button 7.

If you have 2 electrical door locks, LED 5 will flash, if one lock is not locked.

SERVICE + MAINTENANCE

No.	Failure	AES
1	No 230V, respective under 195V (AC Mode)	Failure LED 2 and „230“ (3) flash Acoustic Signal
2	No 12V, respective under 10,5V (DC Mode)	Failure LED 2 and „12“ (3) flash Acoustic Signal
3	Ignition without success (Gas Mode)	Failure LED 2 and „GAS“ (3) flash Acoustic Signal
4	NTC sensor defect	Failure LED 2 and Temp.-LEDs (4) flash Acoustic Signal
5	230V heating element defect*	Failure LED 2 and Indicator 4 „HE 1“ flash Acoustic Signal
6	12V heating element defect*	Failure LED 2 and Indicator 4 „HE 2“ flash Acoustic Signal
7	Door opened (longer than 2min.)	Acoustic Signal

***Sequence for recognizing „Heating element defect“:**

- Conditions: Interior temperature $>18^{\circ}\text{C}$, corresponding relay is switched on (230V or 12V), door has to be closed for longer than 5 minutes.
- Temperature of reevaporater (a) is recorded
- After 2 hours, the temperature (b) is recorded again, if the fridge is in the same mode
- If the temperature difference $a-b < 3^{\circ}\text{K}$, the corresponding heating element error will be indicated

Service Mode MES

The Service Mode is activated by keeping pressed down the temperature button and switching on the main button.

After this all 3 mode-LEDs (3) light up.

By pushing the temperature button (6), the different test-steps can be activated, test steps 1-6 are indicated by the temperature LEDs (4)

1 = activates 230 V heating element (230V must be available)

2 = activates 230V relay (230V has not to be necessarily available)

3 = activates 12 V heating element (12V has to be available)

4 = activates burner control device – output (Gas operation)

5 = activates frame heating

6 = activates interior lights (For fridges without electrical lock)

Service Mode MES

7 = Recognition sequence (Reed switch or electrical lock)

8 = activates temperature LEDs (4)

9 = activates lock and failure LED (2) + (5)

Exiting the diagnosis mode: Push the „mode“ button or wait for 10 minutes.

Controlling the interior light via reed switch

The MES-Electronics uses the X114 and X111 as well for controlling the reed switch as well as the electrical lock.

In the Service mode, the electronics will recognize the application of a reed switch, following the below steps:

1. Choose step 7 in the service mode
2. Deactivate D+; open the door
3. Push temperature button (6)
4. Close the door (reed switch will be recognized)
5. Continue service mode (push button 6)

The interior light will now be controlled via the reed switch.

Basically the electronics are defined with “recognizing Reed switch”.

Electrical door lock

Optionally, max. two electrical door locks can be controlled. They are connected to X111 and X114 (Notify, that if there is only one lock this has to be connected to X111).

In the service mode the electronics will recognize the locks following the below steps:

1. Open the door(s)
2. Choose step 7 in the service mode
3. Close the door(s)
4. Deactivate D+
5. Continue Service mode with step 6

The locked door will be indicated via LED 5, and can be unlocked by pushing button 7. If you have 2 electrical door locks, LED 5 will flash, if one lock is not locked.

SERVICE + MAINTENANCE

Error messages

No.	Error	AES
1	No 12V, respective under 10,5V (DC Mode)	Failure LED 2 and LED 3 (DC Mode) flash
2	Ignition without success (Gas Mode)	Failure LED 2 and LED 3 (Gas Mode) flash
3	NTC sensor defect	Failure LED 2 and temperature – LEDs 4 flash
4	230V heating element or cooling unit defect*	Failure LED 2, LED 3 (AC Mode) and temperature – LEDs 4 flash
5	12V heating element or cooling unit defect*	Failure LED 2, LED 3 (DC Mode) and temperature – LEDs 4 flash

***Sequence for recognizing „heating element defect“:**

- Conditions: Interior temperature $>18^{\circ}\text{C}$, corresponding relay is switched on (230V or 12V), door has to be closed for longer than 5 minutes
- Temperature of reevaporator (a) is recorded
- After 2 hours, the temperature (b) is recorded again, if the fridge is in the same mode.
- If the temperature difference $a-b < 3^{\circ}\text{K}$, the corresponding heating element error will be indicated.

DOMETIC GMBH

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