Dometic

Service-Instruction

COOL 3110

Absorption Refrigerators for Leisure Vehicles

RM 8400   RM 8401   RM 8405   RM 8500   RM 8501   RM 8505   RM 8550   RM 8551   RM 8555

RMS 8400   RMS 8401   RMS 8405   RMS 8460   RMS 8461   RMS 8465   RMS 8500   RMS 8501

RMS 8505   RMS 8550   RMS 8551   RMS 8555   RML 8550   RML 8551   RML 8555 RMSL 8500

RMSL 8501   RMSL 8505   RMD 8501   RMD 8505   RMD 8551   RMD 8555

8 series

CE   e1

English

Table of contents

1.0 Description of model

1.1 Model identification

Example :

RM (S) (L) 8 4 0 0
(D)   1
**   5**

Depth:
0 = Standard
5 = + 55mm
6 = + 65mm

4 = Width 486mm
5 = Width 525mm

Model range

„Large"

S= Stepped cabinet
D = double door fridge

Refrigerator Mobile /
Mobile Absorption Refrigerator
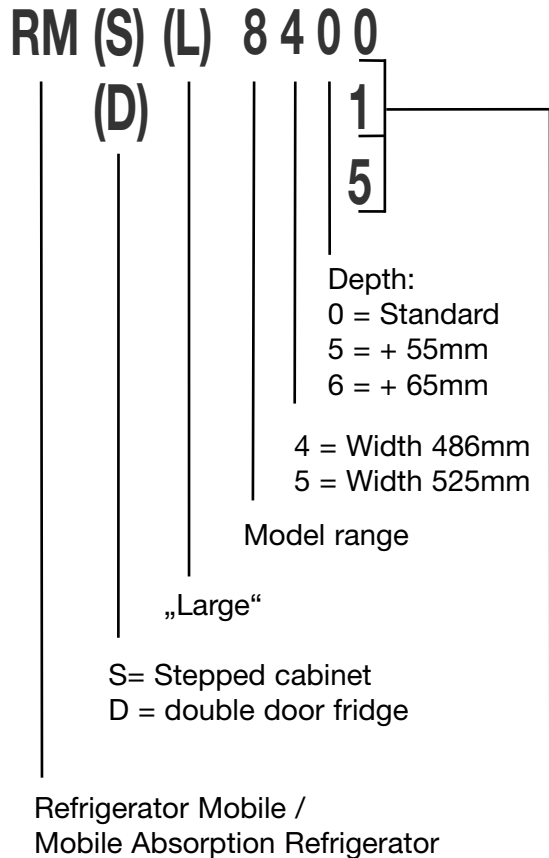
0 = manual energy selection + manual ignition **(battery igniter)**

1 = manual energy selection, automatic ignition **(MES)**

5 = automatic and manual energy selection, automatic ignition **(AES)**

1.2 Refrigerator rating plate

The rating plate is to be found on the inside of the refrigerator. It contains all important details of the refrigerator. You can read off from this the model identification, the product number and the serial number. You will need these details whenever you contact the customer service centre or when ordering spare parts.

Fig. 1

① Model number

② Product number

③ Serial number

④ Electrical rating details

⑤ Gas pressure

ⓘ

Dometic refrigerators are equipped for a connection pressure of **30 mbar**. For connection to a 50 mbar gas system, use **Truma VDR 50/30 medium pressure controller**.
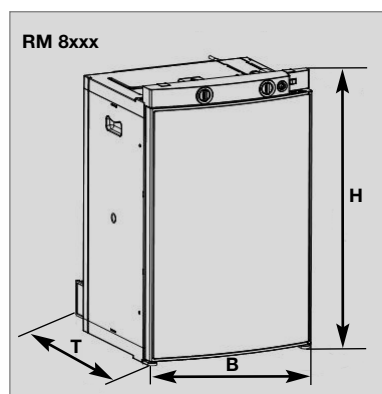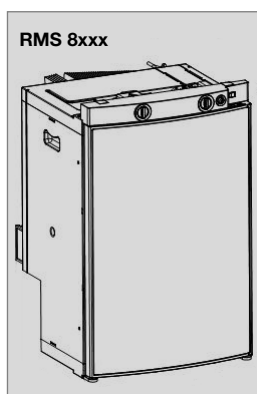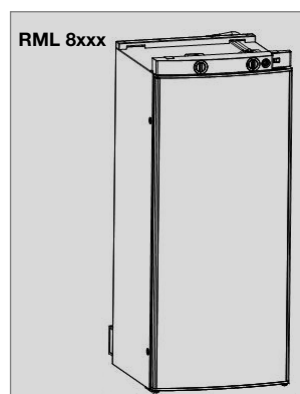
1.3 Technical data

RM 8xxx — Fig. 2

RMS 8xxx — Fig. 3

RML 8xxx — Fig. 4

RMD 8xxx — Fig. 5

Model	Dimensions H x W x D (mm) Depth incl. door	Gross capacity with freezer compartment	without	Rating details mains/battery	Consumption * electricity/gas over 24hrs	Net weight	Ignition Piezo	Automat
RMS 8400	821x486x568	80 / 8 lit.	85 lit.	125 W / 120 W	ca.2,5 KWh / 270 g	25 kg	•	
RMS 8401	821x486x568	80 / 8 lit.	85 lit.	125 W / 120 W	ca.2,5 KWh / 270 g	25 kg		•
RMS 8405	821x486x568	80 / 8 lit.	85 lit.	125 W / 120 W	ca.2,5 KWh / 270 g	25 kg		•
RM 8400	821x486x568	90 / 8 lit.	95 lit.	135 W / 130 W	ca.2,4 KWh / 270 g	27 kg	•	
RM 8401	821x486x568	90 / 8 lit.	95 lit.	135 W / 130 W	ca.2,4 KWh / 270 g	27 kg		•
RM 8405	821x486x568	90 / 8 lit.	95 lit.	135 W / 130 W	ca.2,4 KWh / 270 g	27 kg		•
RMS 8460	821x486x633	90 / 11 lit.	96 lit.	125 W / 120 W	ca.2,5 KWh / 270 g	26 kg	•	
RMS 8461	821x486x633	90 / 11 lit.	96 lit.	125 W / 120 W	ca.2,5 KWh / 270 g	26 kg		•
RMS 8465	821x486x633	90 / 11 lit.	96 lit.	125 W / 120 W	ca.2,5 KWh / 270 g	26 kg		•
RMS 8500	821x523x568	90 / 9 lit.	96 lit.	125 W / 120 W	ca.2,5 KWh / 270 g	26 kg	•	
RMS 8501	821x523x568	90 / 9 lit.	96 lit.	125 W / 120 W	ca.2,5 KWh / 270 g	26 kg		•
RMS 8505	821x523x568	90 / 9 lit.	96 lit.	125 W / 120 W	ca.2,5 KWh / 270 g	26 kg		•
RMS 8550	821x523x623	103 /12 lit.	110 lit.	125 W / 120 W	ca.2,6 KWh / 270 g	27 kg	•	
RMS 8551	821x523x623	103 /12 lit.	110 lit.	125 W / 120 W	ca.2,6 KWh / 270 g	27 kg		•
RMS 8555	821x523x623	103 /12 lit.	110 lit.	125 W / 120 W	ca.2,6 KWh / 270 g	27 kg		•
RM 8500	821x523x568	100 / 9 lit.	106 lit.	135 W / 130 W	ca.2,4 KWh / 270 g	28 kg	•	
RM 8501	821x523x568	100 / 9 lit.	106 lit.	135 W / 130 W	ca.2,4 KWh / 270 g	28 kg		•
RM 8505	821x523x568	100 / 9 lit.	106 lit.	135 W / 130 W	ca.2,4 KWh / 270 g	28 kg		•
RM 8550	821x523x623	115 /12 lit.	122 lit.	135 W / 130 W	ca.2,6 KWh / 270 g	30 kg	•	
RM 8551	821x523x623	115 /12 lit.	122 lit.	135 W / 130 W	ca.2,6 KWh / 270 g	30 kg		•
RM 8555	821x523x623	115 /12 lit.	122 lit.	135 W / 130 W	ca.2,6 KWh / 270 g	30 kg		•
RML 8550	1245x525x625	179 /33 lit.	189 lit.	190 W / 170 W	ca.3,2 KWh / 380 g	45 kg	•	
RML 8551	1245x525x625	179 /33 lit.	189 lit.	190 W / 170 W	ca.3,2 KWh / 380 g	45 kg		•
RML 8555	1245x525x625	179 /33 lit.	189 lit.	190 W / 170 W	ca.3,2 KWh / 380 g	45 kg		•
RMSL 8500	1245x525x568	145 /28 lit.	155 lit.	190 W / 170 W	ca.3,2 KWh / 380 g	40 kg	•	
RMSL 8501	1245x525x568	145 /28 lit.	155 lit.	190 W / 170 W	ca.3,2 KWh / 380 g	40 kg		•
RMSL 8505	1245x525x568	145 /28 lit.	155 lit.	190 W / 170 W	ca.3,2 KWh / 380 g	40 kg		•
RMD 8501	1245x525x567	160 /30 lit.	-----	190 W / 170 W	ca.3,2 KWh / 380 g	40 kg		•
RMD 8505	1245x525x567	160 /30 lit.	-----	190 W / 170 W	ca.3,2 KWh / 380 g	40 kg		•
RMD 8551	1245x525x622	190 /35 lit.	-----	190 W / 170 W	ca.3,2 KWh / 380 g	41.5 kg		•
RMD 8555	1245x525x622	190 /35 lit.	-----	190 W / 170 W	ca.3,2 KWh / 380 g	41.5 kg		•

Subject to technical changes.

RMS = stepped cabinet

*Average consumption measured at an average ambient temperature of 25°C in pursuance of ISO Standard

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1.4　Description of refrigerator
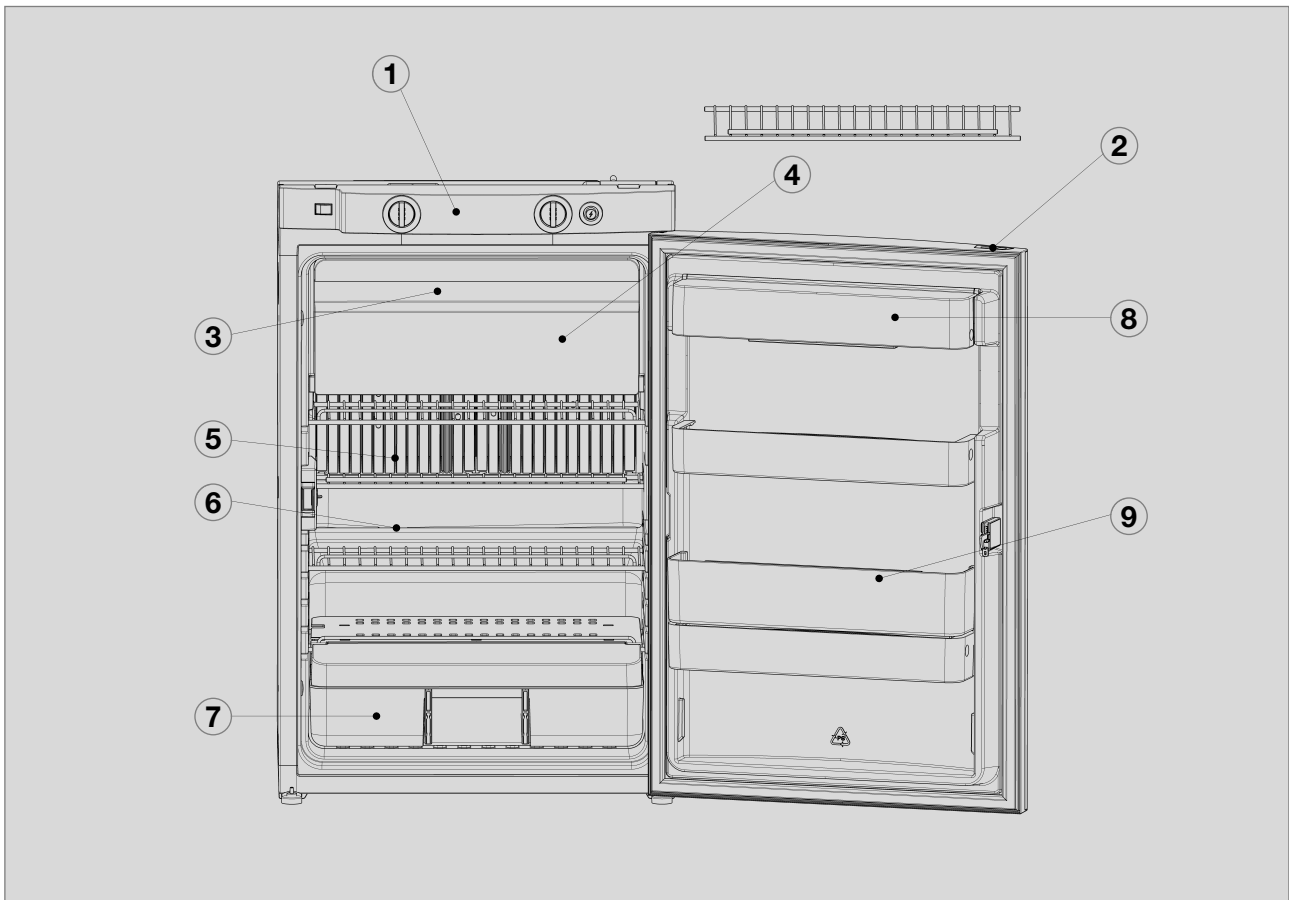
Fig. 6

(1) Operating controls

(2) Door locking button

(3) Freezer compartment (removable)

(4) Insertable grid shelf (available as option, to be used when freezer compartment is removed)

(5) Post-evaporator for cooling compartment

(6) Condensation water drain channel

(7) Vegetable bin

(8) Upper door shelf with flap, egg shelf available as option may be inserted

(9) Lower door shelf with bottle holders

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Back side RM 8xxx

Fig. 7

(1) Power module (electronics)

(2) 230V-connection directly to power module

(3) Terminal strip for 12VDC supply

(4) Burner control device

(5) Gas valve

(6) Main connection gas supply

(7) Gas burner (behind cover)

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Back side RMD 8xxx

Fig. 8

1. Power module (electronics)

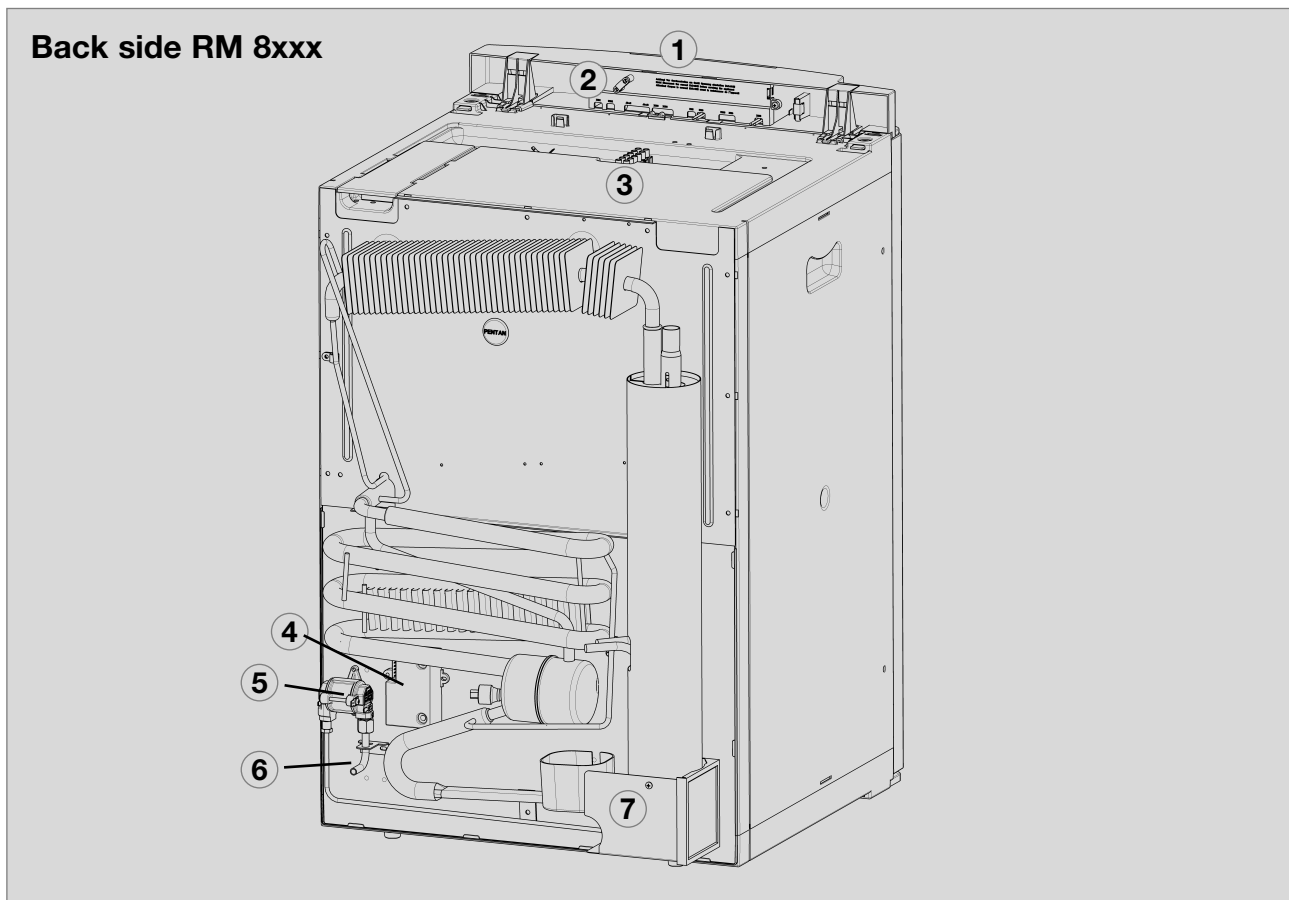2. 230V-connection directly to power module

3. Terminal strip for 12VDC supply

4. Burner control device

5. Gas valve

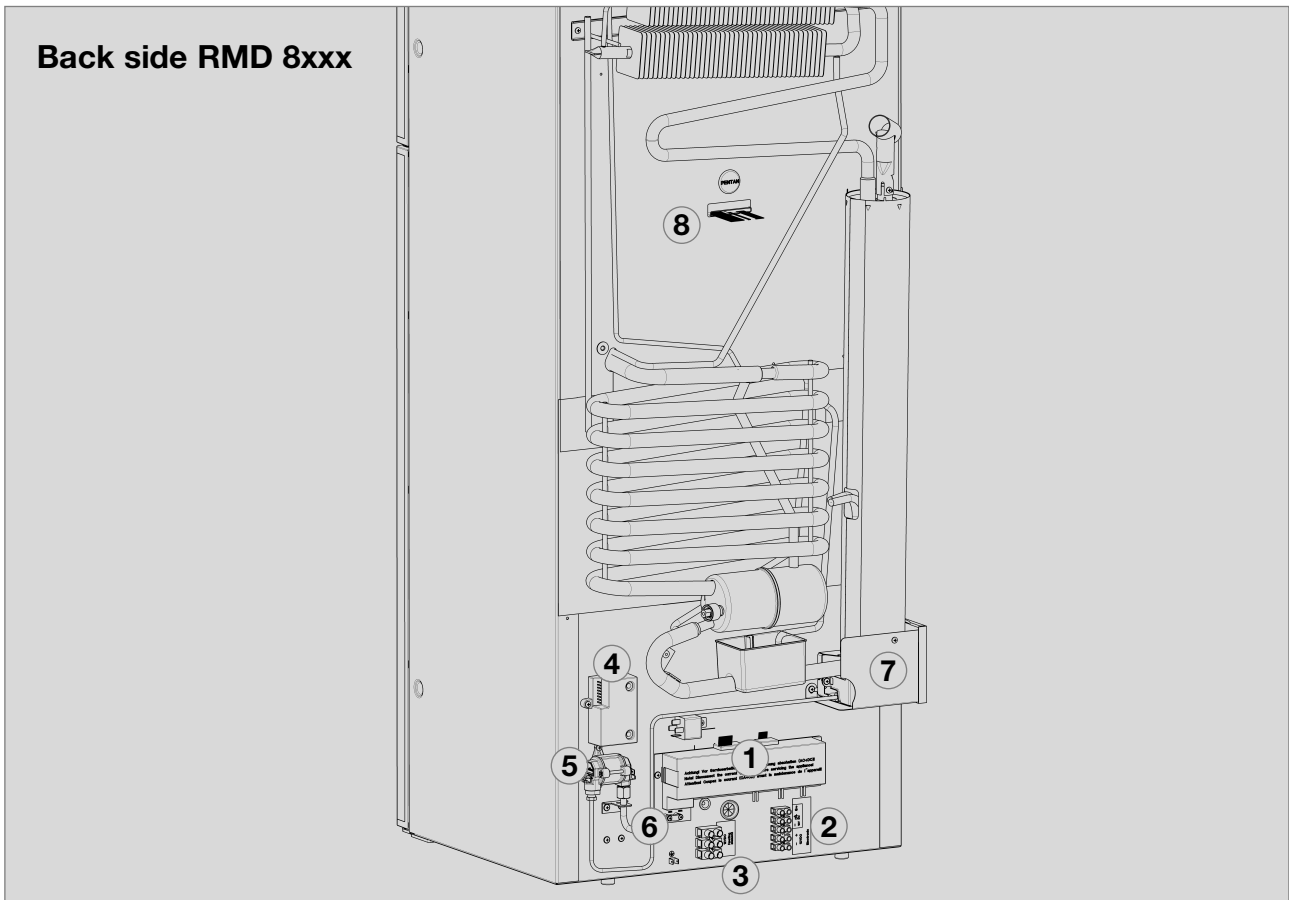6. Main connection gas supply

7. Gas burner (behind cover)

8. Cable to operating panle (front side)

1.5   Terminal block

RM 8xxx

Connections:

A = Ground heating element DC
B = Plus heating element DC
C = Ground electronics
D = Plus electronics

D+ = alternator signal
S+ = *AES*-input-control signal
            (solar charge regulator)

geräteseitig

− + **D+ S+** − +

C D   A B

fahrzeugseitig

Fig. 9

RMD 8xxx

Fig. 10

1   A = Plus heating element DC
         B = Ground heating element DC

2   C = Ground electronics
         D = Plus electronics
         D+ = alternator signal
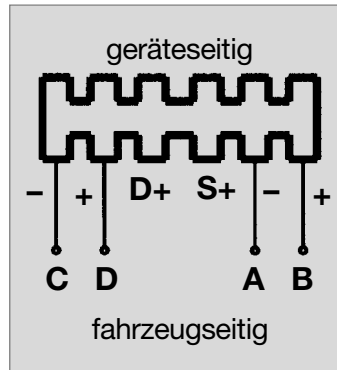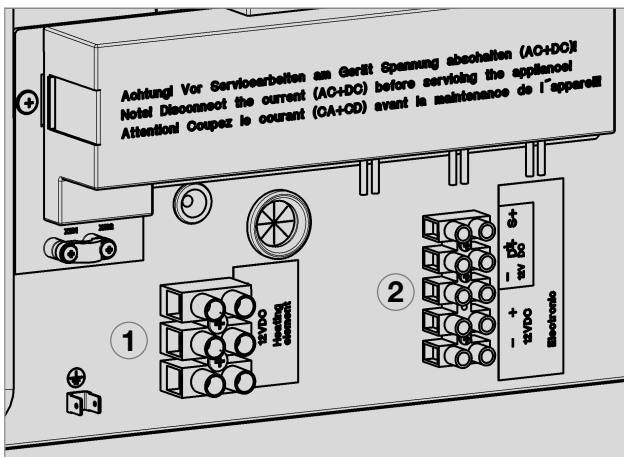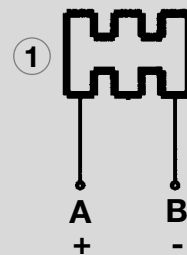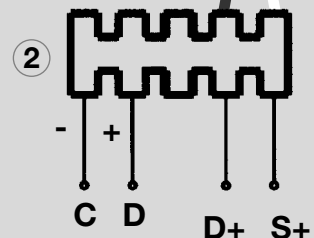   S+ = *AES*-input-control signal
              (solar charge regulato

on the appliance

1

A   B
+   -

on the vehicle

Fig. 11

on the appliance

2

- +

C D   D+ S+

on the vehicle

Fig. 12

1.6 General

■ Fridges of the 8-series with manual ignition are provided with a battery igniter and a Gas-Operation-Indicator (Galvanometer).

■ For using the locking button, the panel is formed asymmetric (recess on one side). I.e. changing the door rabbet is not possible any more. The rabbet has to be determined before the fridge is installed.
The product number controls the side of the door rabbet. Please notify this, if the door or the fridge is exchanged!

■ At all RM 8xxx models the door seal is exchangeable.

Additional features MES / AES

■ If the door is open, the interior lighting is switched off automatically after 2 minutes.

■ 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.

■ Failures are indicated by flashing of the failure indicator LED..

Additional features AES

■ Should the door be kept open for too long (more than 2 minutes), an acoustic signal is initiated (pulsing whistle tone).

■ Should the electronic control detect any failure, an acoustic signal will sound (pulsing whistle tone) for 60 seconds .

Additional features RMD 8xxx

■ Failures are indicated by flashing of the red external failure indicator LED.

■ Should the door be kept open for too long (more than 2 minutes), the blue external LED starts flashing until the door is closed.

■ **Only with AES models RMD 8xx5 :**
Should the electronic control detect any failure, an acoustic signal will sound (pulsing whistle tone) for 30 seconds (. It is repeated every hour, if the failure ist not resolved.

(*i*)

A description of the components of RM 8xx0 (piezo) models can be found in the instruction 599 5175-18 EN (RM 7xxx models).

1.7 Explanation of operating controls

Manual energy selection / manual ignition (RM 8xx0) battery igniter:
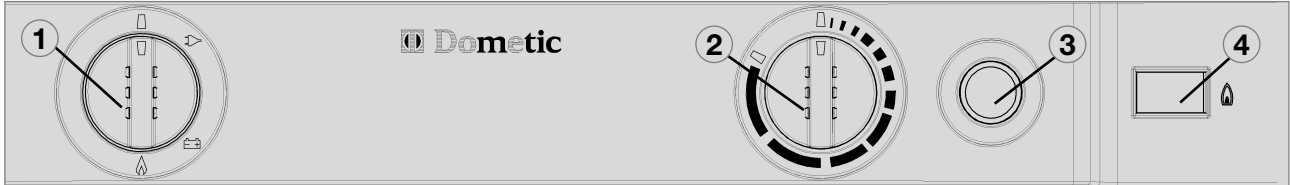
Fig. 13

Manual energy selection / automatic ignition (RM 8xx1) MES:
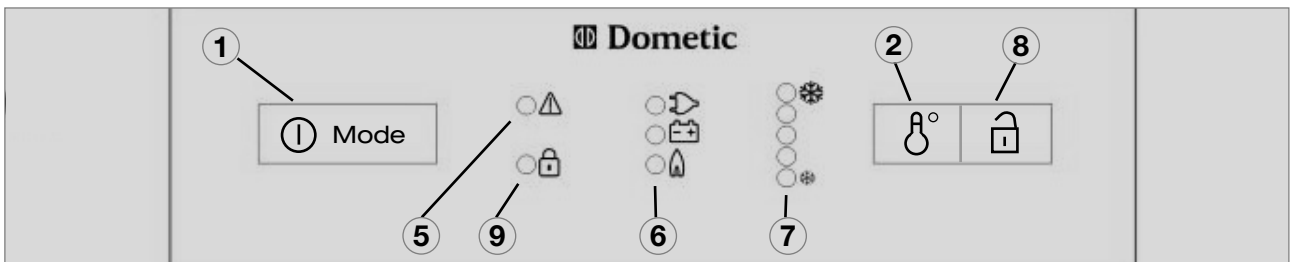
Fig. 14

Automatic energy selection / automatic ignition (RM 8xx5) AES:
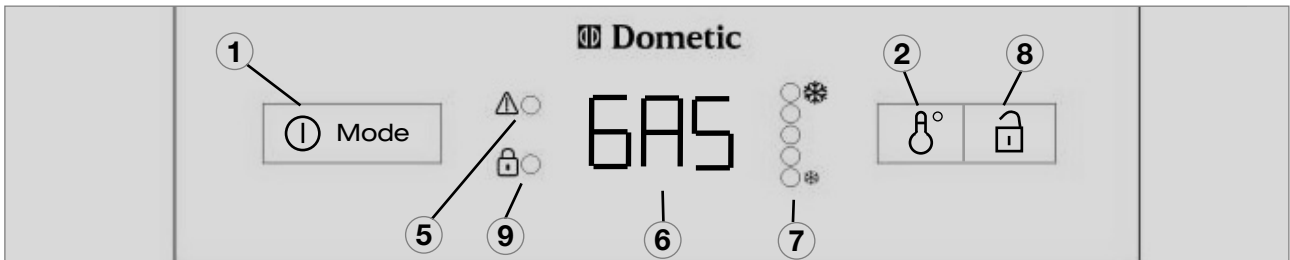
Fig. 15

Manual energy selection / automatic ignition (RMD 8xx1) MES:
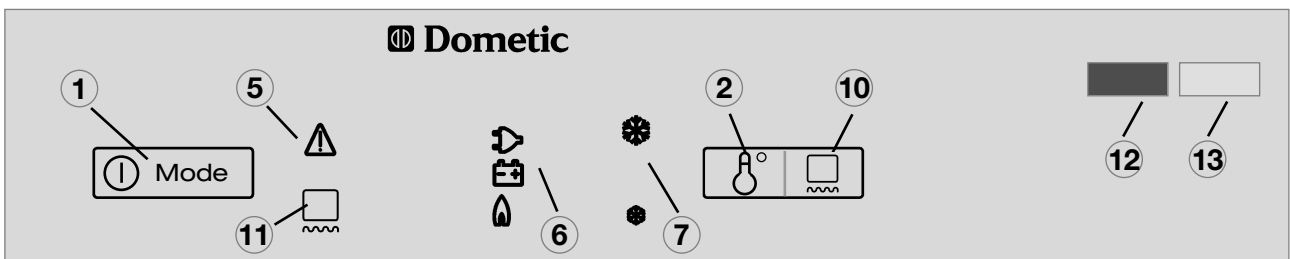
Fig. 16

ⓘ Indication of operating status at AES model with 7-segment display

① Power On switch / Energy selector switch
② Temperature selection
③ PIEZO-ignition (battery igniter)
④ Flame indicator (galvanometer) (PIEZO-models)
⑤ Indicator LED failure
⑥ Indikator-LED / operating mode display
⑦ Temperature level display

⑧ Door opening (only when equipped with electrical door lock))
⑨ Indicator LED door lock (optional)
⑩ Power On switch frame heating
⑪ Indicator LED frame heating
⑫ External display Failure (red)
⑬ External display Apliance in operation (blue)

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2.0 Components

2.1   Power modules

2.1.1   Power module RM 8xx1 (MES)
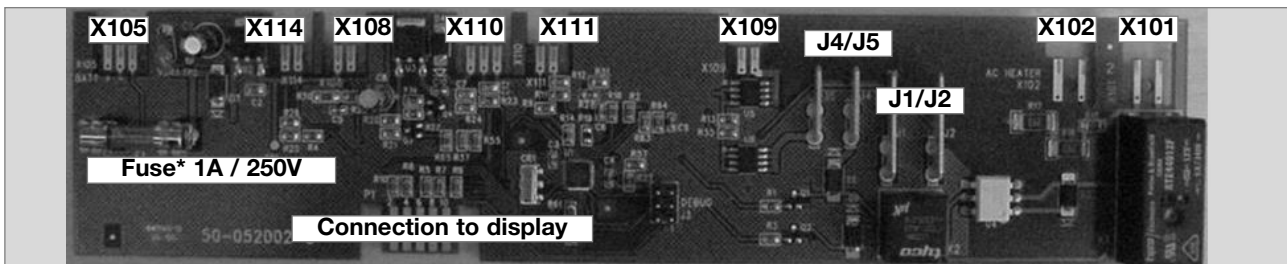
Fig. 17

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   *Fuse 12V

2.1.2   Power module RM 8xx5 (AES)

Fig. 18

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   *Fuse 12V

2.1.3 Power module RMD 8xx1 (MES)
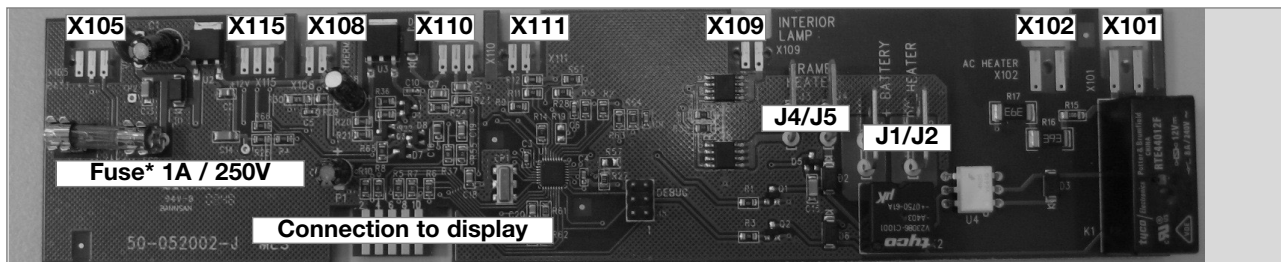
Fig. 19

X105 = 12 V Supply / - Wiring Recognition of heating element
X115 = 3 pin connection from display moduls to external LEDs (operating display)
X108 = Temperature sensor (NTC)
X110 = Connection to burner control device (+/-, failure)
X111 = Door switch for interior light
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   *Fuse12V
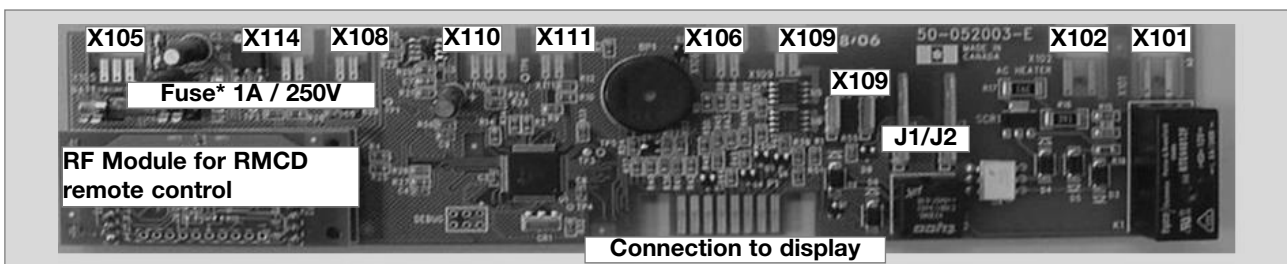
2.1.4 Power module RMD 8xx5 (AES)
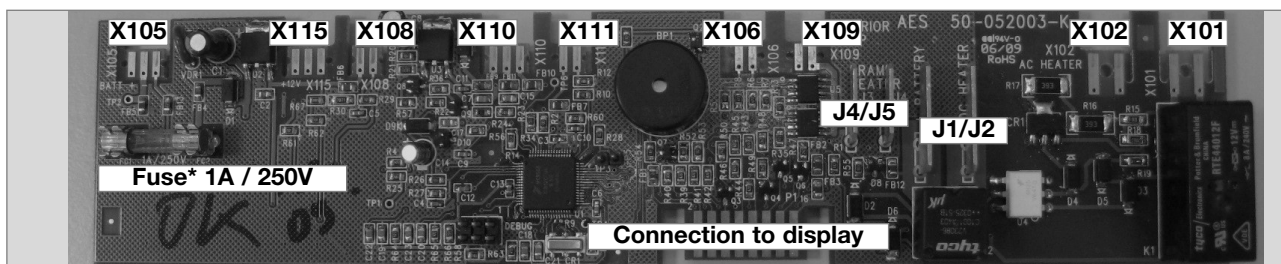
Fig. 20

X105 = 12 V Supply / - Wiring Recognition of heating element
X115 = 3 pin connection from display moduls to external LEDs (operating display)
X108 = Temperature sensor (NTC)
X110 = Connection to burner control device (+/-, failure)
X111 = Door switch for interior light
X106 = D+/Solar+ - connection
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   *Fuse 12V

i

Differences to MES/AES RM 8xxx: **RF function eliminated on AES board**
X114 no electrical door lock
X115 new, connection for exteranl LED

2.1.5   Operating principle

The electronics regulates the function of the components according to the selected energy, e.g. power supply for the heating elements. In addition the AES-power module ensures the operating with the optimal energy source according to the priority "230V AC - 12V DC - GAS". It also controlles the low voltage operation at 230V AC (no low voltage op. at 12V DC mode), and the "refuelling stop function" as well. The temperature sensor and interior light are also controlled by the electronics. The power module is protected with 1A fuse for 12 VDC.

No low-voltage-control during 12V mode at **RMD**-models.

Differences power module RMD 8xxx to RM 8xxx

- Controls are hidden behind the door; integrated between freezer and cooling compartment. Status is shown by blue LED (fridge working) and red LED (error).
- In Auto Mode "AES" is shown on the display (instead of "AU").
- No electrical doorlock available.
- Frame heater activation via right button.
- Automatic switch off of the frame heater after 2 hours.
- Acoustic alarm limited to 1 minute, but repeated every hour (if error has not been reseted)
- **Powermodul mounted on the lower back.** Access via lower ventilation grid.

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The functionality of RMD 8xxx models will also be valid for RM 8xx1 and RM 8xx5 models probably starting with season 2010.

2.2   Temperature sensor NTC

NTC - table of resistances

Temperature °C	Resistance in kOhm
0	27.70
5	22.29
10	18.07
15	14.74
20	12.11
25	10.00

Measuring points:
electronics / power module
loosen contacts   X108
cable white / brown

In case of a defective sensor, the fridge operates in intervals (45 min. ON; 14 min OFF).

2.3   Burner Control device P810

- activates ignition
- flame control and flame failure device
- controles gas valve (closes valve if failure occure)

Power supply : ca. 1.5 V (only measurable if no failure exists)

Measuring points : Flat plug
between Pin 6 and Pin 7
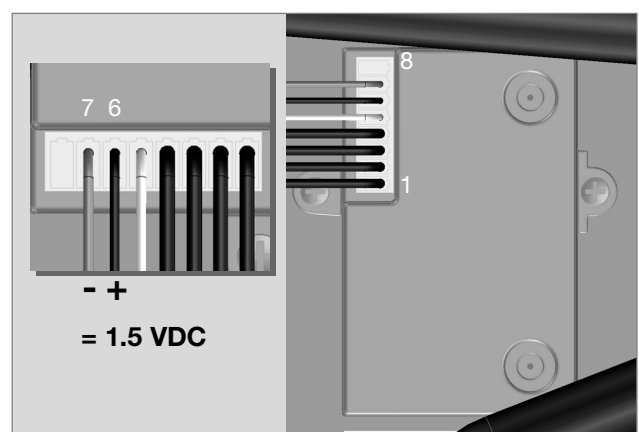
Fig. 21

2.4   Gas valve GV 100

This component includes two gas valves in serial mounting (as part of gas safety device).

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

inductive resistance : per valve approx. 48-50 Ohm

Measuring points: voltage and resistance
valve 1: Pin 1 – ground
valve 2: Pin 2 – ground
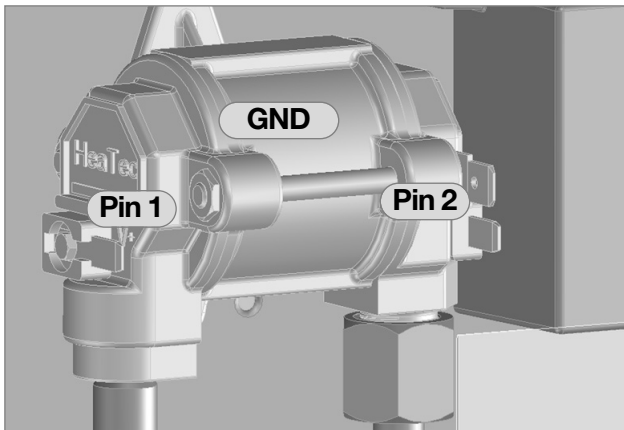
Fig 22

2.5   Gas burner
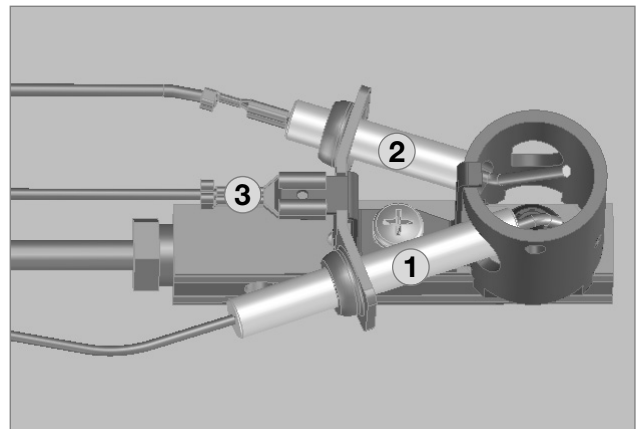
Fig 23

1 Ignition electrode
2 Ionisation electrode
3 Ground (connection to burner control device)

2.5.1   Cleaning of burner

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

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A listing of burners and jets can be found in chpt. 6.1 .

2.6 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.
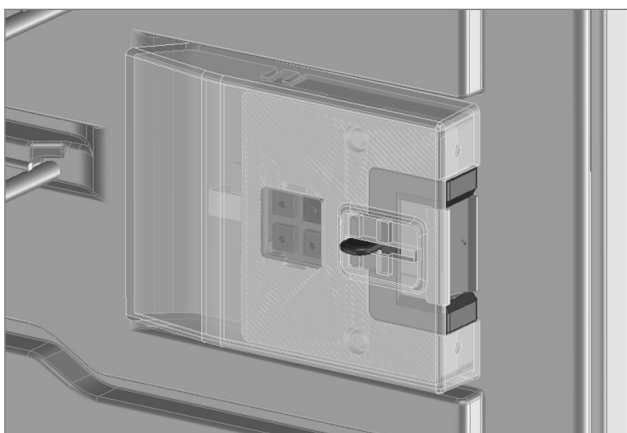
Fig. 24

The locking bar inside the door is fixed with two screws, which are behind a plastic cover.

Fig. 25

Electrical door lock (option)

As an option an electrical door lock was available which locks the door automatically while the engine is running. With switched off engine the door is kept shut by a magnetic sealing, but not locked.
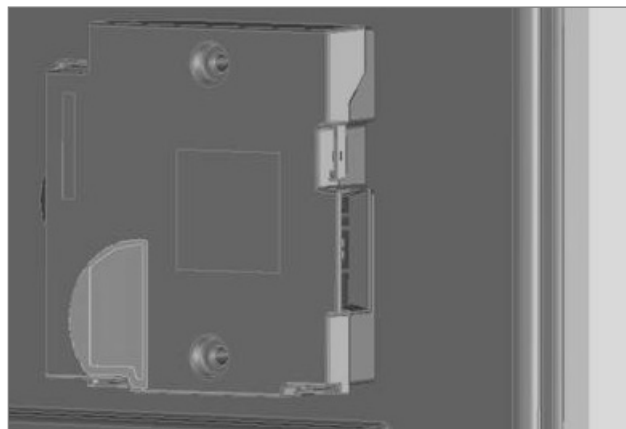
Fig. 26

Recognising interior light and door lock (until 2010)

Interior light and door lock are recognised by a door switch. The door switch is mounted behind the fascia.
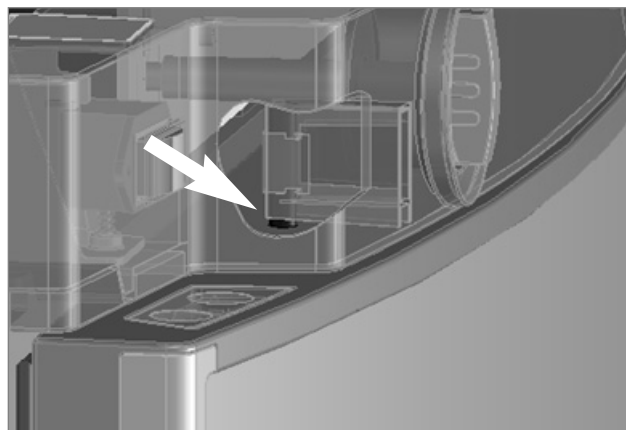
Fig. 27

Recognising interior light and door lock (starting I/2010), all models RM 8xxx and RMD 8xxx

The door opening is recognised by a micro switch (1) in the door lock housing.

Door closed = contact open
Door open = contact closed
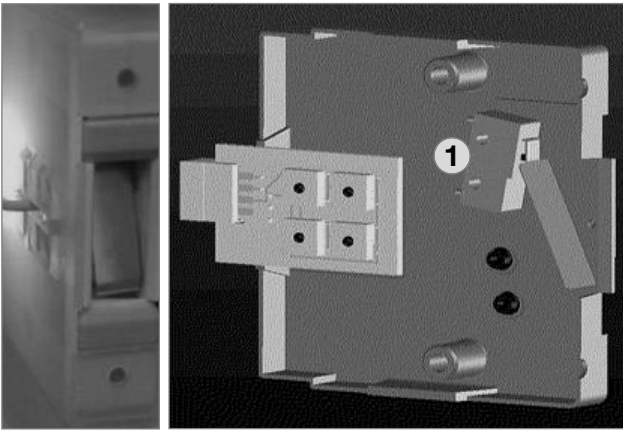
Fig. 28

Connection details LED-PCB

Sensor

LED

Fig. 29

17
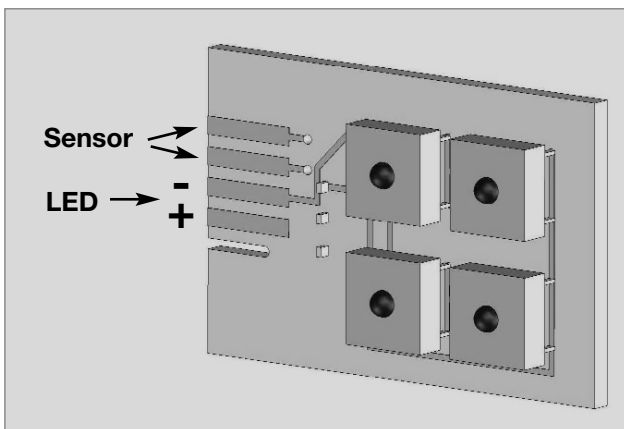
3.0 Wiring diagrams

3.1 RM 8xx0 / RMS 8xx0

Fig. 30

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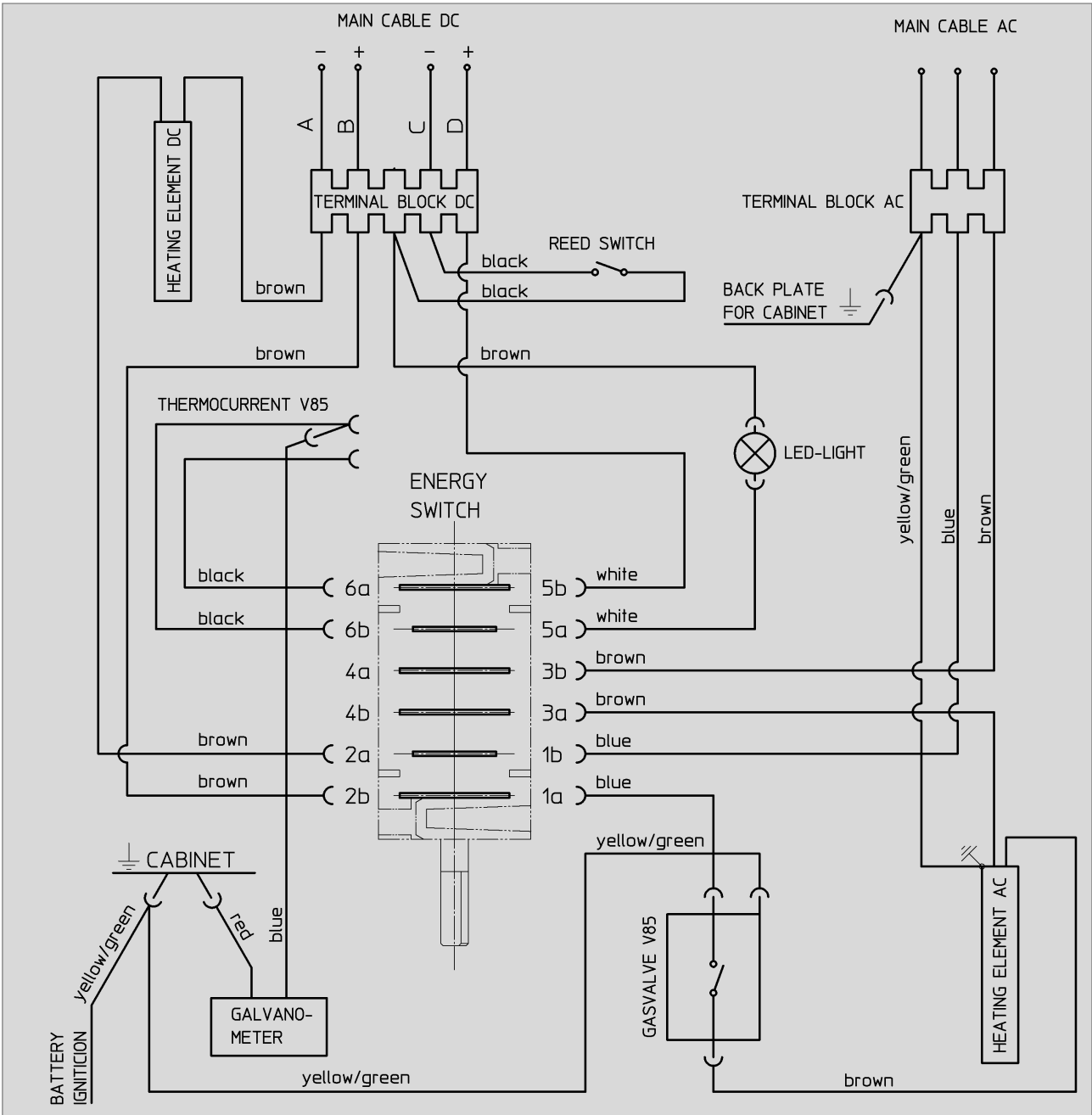
3.2 RM 8xx1 / RMS 8xx1

Fig. 31

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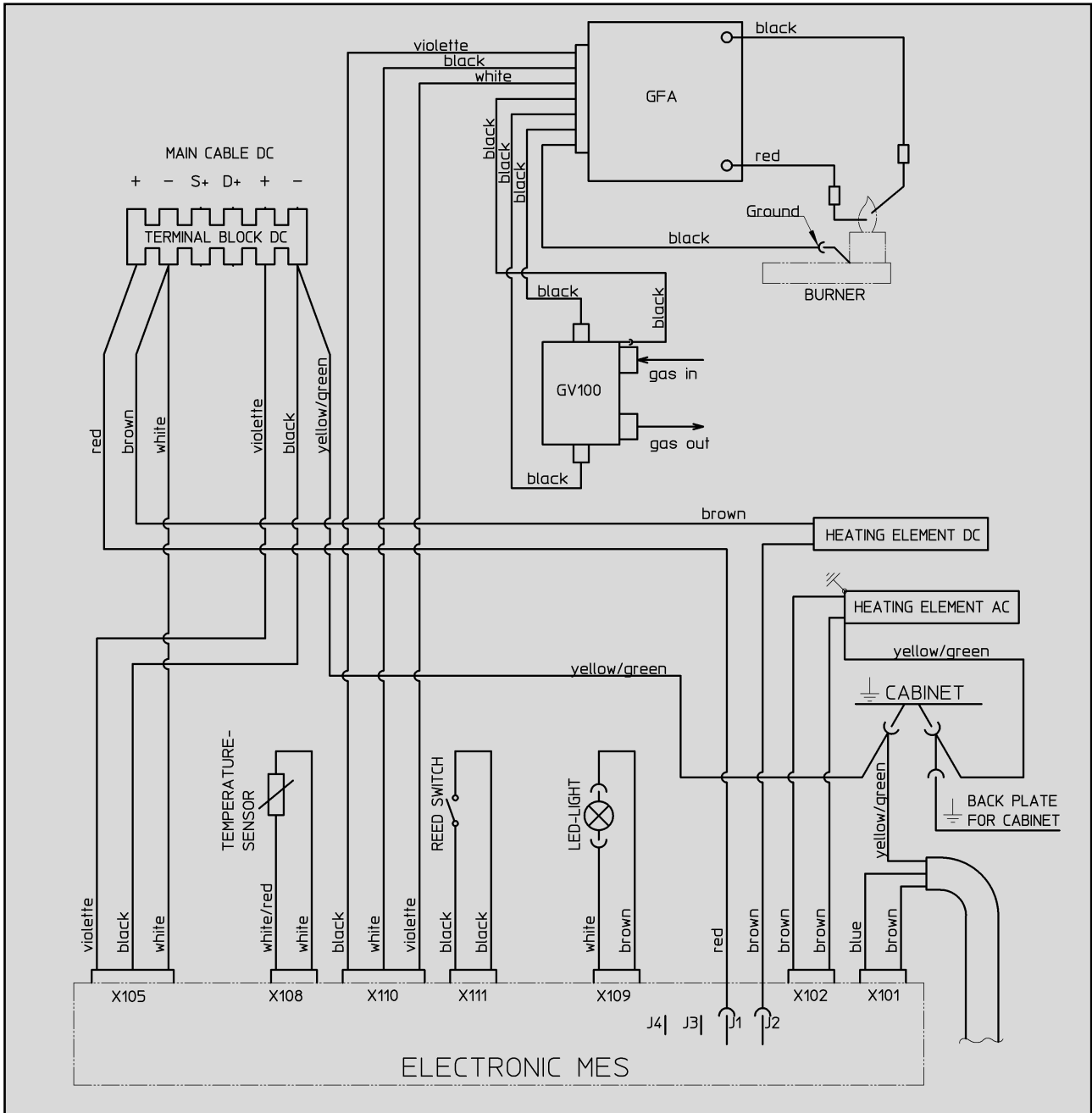
3.3 RM 8xx5 / RMS 8xx5

Fig. 32

20
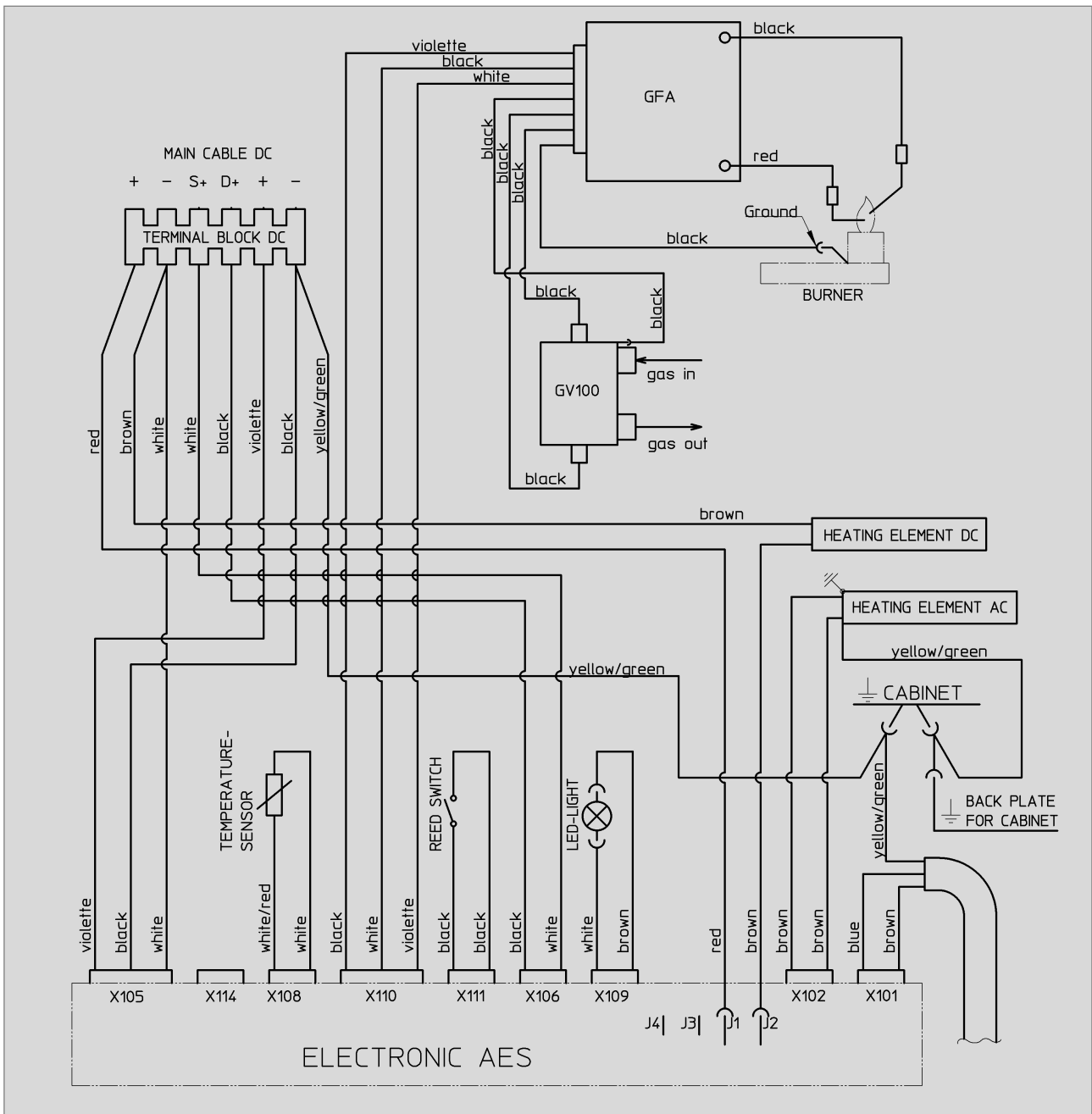
3.4 RM 8xx5 with electrical door lock

Fig. 33

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⫿⫿ **Dometic**

3.5 RML 8xx0 / RMSL 8xx0

Anschlußblock Heizpatrone 12V DC
Terminal block HEATING ELEMENT

terminal block 12V DC
(rear wall)

brown(violett//blue)

brown (violett//blue)

white (black)

+ 12VDC

switch for lighting

lighting LED
DC

Galvano-
meter

Thermostrom-
Adapter

cabinet

Relais 30A

Mains Cable
AC

yellow/green

Ground cabinet (Top)

cabinet

V85

battery ignition

yellow/green

heating element
AC

heating element
DC
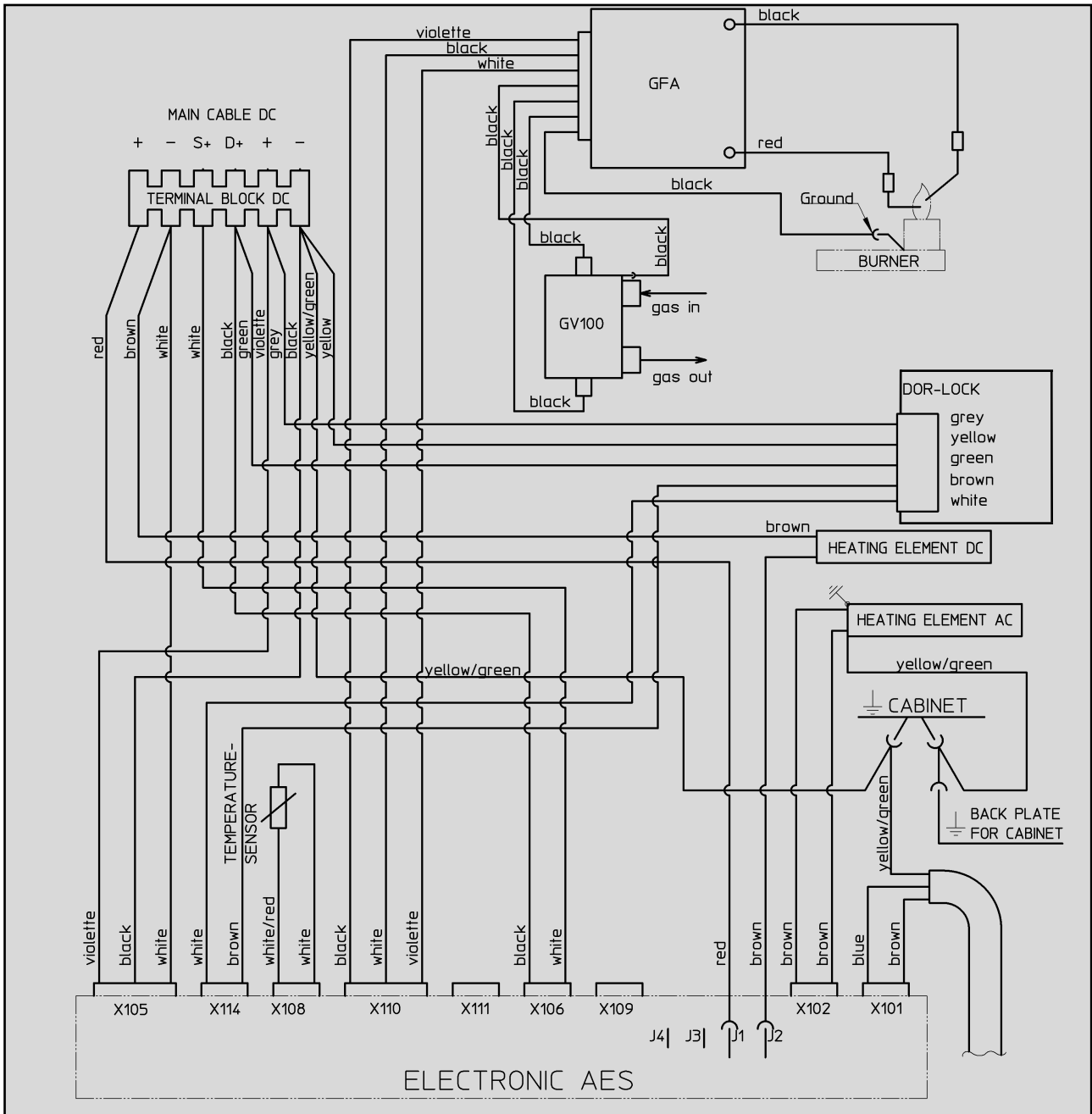
Fig. 34

3.6   RML 8xx1 / RMSL 8xx1

Fig. 35

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⌀ **Dometic**
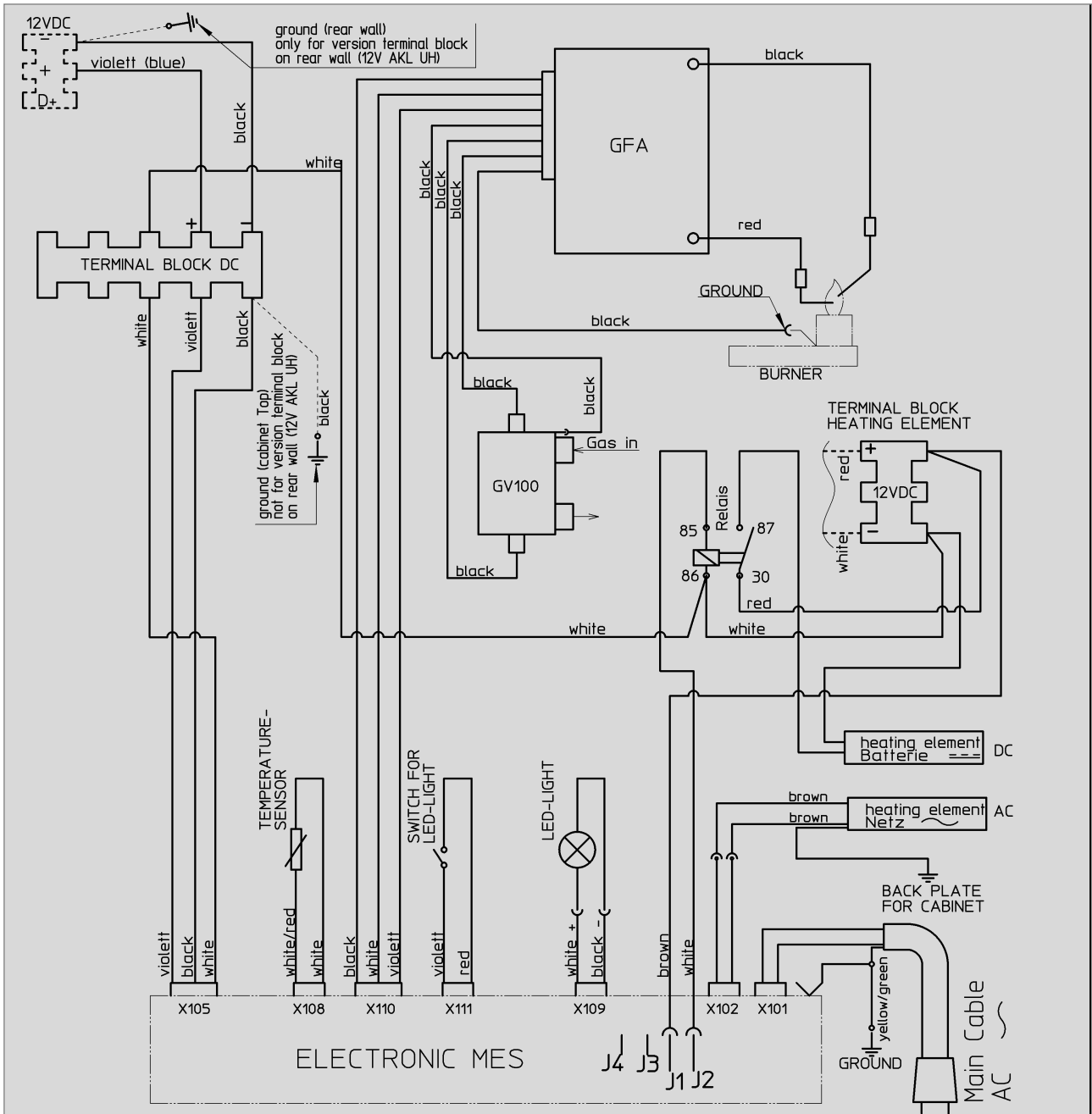
3.7   RMSL 8xx5 / RMD 8xx5

Fig. 36

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3.8 RMD 8xx1

Fig. 37

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3.9   RMD 8xx5

TERMINAL BLOCK
S+   D+   +   -

GFA

black

red

GROUND

black

BURNER

TERMINAL BLOCK
HEATING ELEMENT

GROUND

black
black
black

black

black

GV100

GAS IN

GAS OUT

black

RELAIS

85   87

86   30

red

white   white

12VDC

brown

white   red

brown

brown

HEATING ELEMENT

brown
brown

HEATING ELEMENT

GROUND

white

violet
black

white
black
violet

black

TEMPERATURE
SENSOR

SWITCH
LED

LED

FRAME HEATER

CONNECTION CABLE
TO DISPLAY

DISPLAY

red
black
blue

white
green
brown

OPERATION DISPLAY

violet
black
white

red
black
blue

white/red
white

black
white
violett

violet
red

white
black

white
black

brown
white

yellow/green

X105   X115   X108   X110   X111   X106   X109   X102 X101

ELECTRONICS

J4 J3   J1 J2

CONNECTION CABLE
TO DISPLAY

GROUND

MAINS CORD

Fig. 38

4.0 Troubleshooting

4.1 Information on failure display and trouble-shooting

■ Refrigerators with an electronics system (MES, AES) indicate the occurence of a malfunction by the LED or display flashing.

■ If a malfunction occurs, the indicator LED "Failure" ① flashes simultaneously. In the case of AES models an acoustic alarm sounds.

① = Indicator LED failure
② = Operating mode display
③ = Temperature level display
④ = additonal Indicator LED failure RMD
⑤ = Operating mode display RMD

4.1.1 Status messages on the display
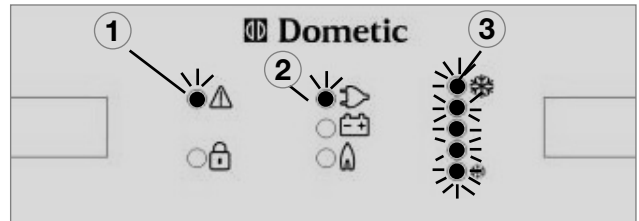
Fig. 39

Fig. 40
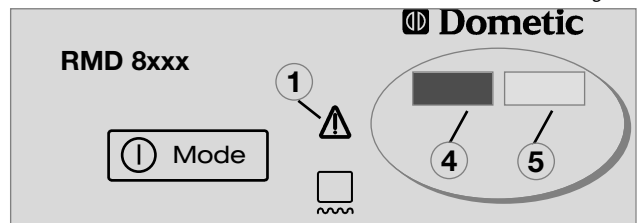
Fig. 41

Display : LED ① flashes +		Failure :
MES	**AES**	
⊳ LED is flashing	**"230"** is flashing	**230V mode:** "230V" not available or voltage too low
🔋 LED is flashing	**"12"** is flashing	**12V mode:** "12V" not available or voltage too low
🔥 LED is flashing	**"GAS"** is flashing	**GAS/Auto mode:** Flame not ignited
All temperature setting LEDs are flashing	All temperature setting LEDs are flashing	Temperature sensor defective, refrigerator works on mid temperature setting
⊳ LED + all temperature setting LEDs are flashing	**"HE1"** is flashing	230V - Heating element defective / or cooling unit
🔋 LED + all temperature setting LEDs are flashing	**"HE2"** is flashing	12V - Heating element defective / or cooling unit

5.0 Repair & Maintenance

5.1 Entering the service mode

RM 8xx1 and RM 8xx5 have an internal service mode which can be used for testing and adjusting the interior light or the electrical door lock.

5.1.1 Service mode MES
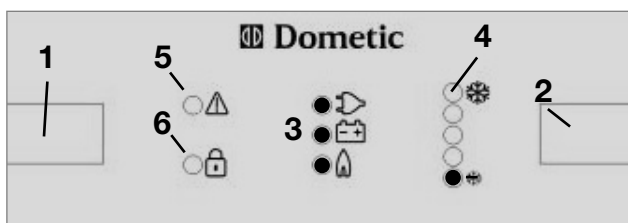
Fig. 42

The service mode is activated by keeping pressed down the temperature button (2) on the left side and switching on the main button (1).
After this all 3 mode-LEDs light up.
By pushing the temperature button (2), the different test-steps can be activated, test steps 1-6 are indicated by the temperature LEDs (3).

Step 1:
activates 230 V heating element (230V must be available)
Step 2:
activates 230V relay (230V has not to be necessarily available)
Step 3:
activates 12 V heating element (12V has to be available)
Step 4:
activates burner control device – output (Gas operation)
Step 5:
activates frame heating
Step 6:
activates interior lights (for fridges with electrical lock)

Step 7:
Recognition sequence (Reed switch or electrical lock)
Step 8:
activates temperature LEDs (4)
Step 9:
activates lock and failure LED (2) + (5)

To leave the diagnosis mode: Push button „**2**" repeatedly or wait for 10 minutes.
Caution: Changes then are not saved or if „Mode" button is used!

5.1.2 Service mode AES
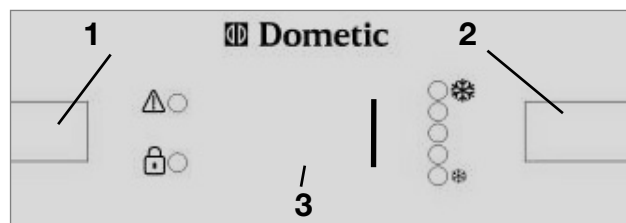
Fig. 43

The service mode is activated by keeping pressed down the temperature button (2) on the left side and switching on the main button (1).
After this all 3 mode-LEDs light up.
By pushing the temperature button (2), the different test-steps can be activated, test steps 1-6 are indicated by the temperature LEDs (3).

Step 1:
activates 230 V heating element (230V must be available)
Step 2:
activates 230V relay (230V has not to be necessarily available)
Step 3:
activates 12 V heating element (D+ and 12V supply has to be available
Step 4:
Intern test step (is not indicated)
Step 5:
activates burner control device – output (Gas operation)

Step 6:
activates frame heating
Step 7:
activates interior lights (Except for electrical lock)
Step 8:
Intern test step (is not indicated)
Step 9:
Recognizing electrical lock or reed switch
Step 10:
activates all 7 segment-components one after the other
Step 11:
activates all LED´s

To leave the diagnosis mode: Push button „**2**" repeatedly or wait for 10 minutes.
Caution: Changes then are not saved or if „Mode" button is used!

5.2 Displaying Software versions of power module (RMD 8xxx)

The service mode starts with showing all "LEDs on" for 3 seconds, followed by stating the SW version status and then service mode sequence starts as on normal 8 series fridges.

MES :
stating the SW version status via operating LED and temperature LEDs.
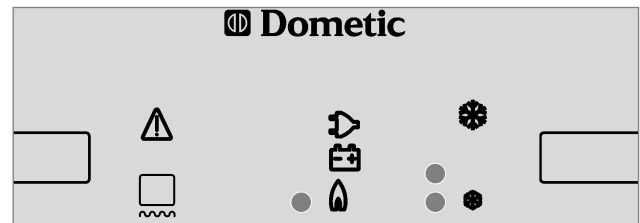
Fig. 44

Example : Software version **V 1.2**

AES :
stating the SW version status via display

Fig. 45

Example : Software version **V 1.66**

(*i*)

Probably starting with season 2010 these functions will be valid for all models RM 8xx1 and models RM 8xx5.

5.3 Sequence for recognizing „Heating element defect"

Conditions:

■ Interior temperature >18°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 and no door openings have happened (RMD).

■ If the temperature difference a-b < 3 °K, the corresponding heating element error will be indicated.

5.4 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.

■ Choose step 7 in the service mode

■ Deactivate D+; open the door

■ Push temperature button

■ Close the door (Reed switch will be recognized)

■ Continue service mode (push temp. button)

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

5.5 Recognising the 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.

■ Open the door(s)

■ Choose step 7 in the service mode

■ Close the door(s)

■ Activate D+

■ 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. (s. pg 9)

i

The electrical door lock is no option anymore since 2009. Only a few number of pieces of RM 8xxx models are equipped with it.

i

Items 5.4 and 5.5 are not valid for RMD 8xxx models.

5.6   Removal of the door

This hinges are screwed onto the housing and snapped in as well. Unscrew at first , then unlock the hinge and the door by pushing the lock notch.
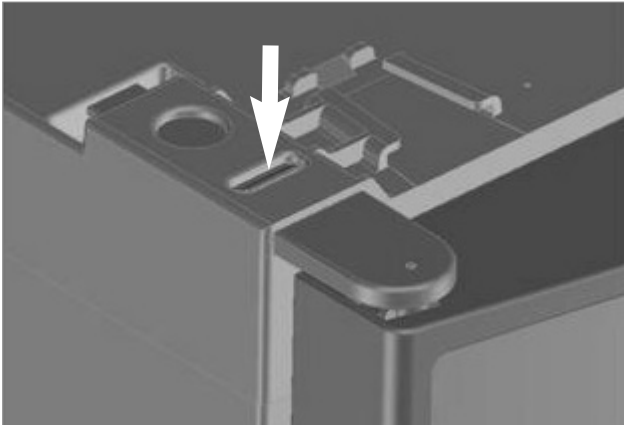
Fig. 46
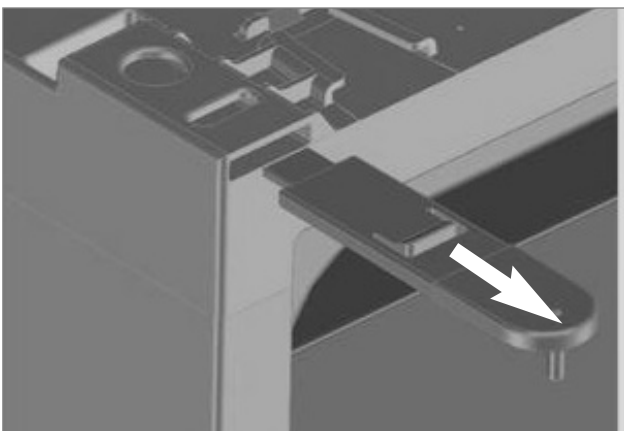
Fig. 47

5.7   Removal of the fascia

The operation panel can be loosened by removing two screws, when the door is opened. The electronics at the RM(D) 8xx1 and RM(D) 8xx5 is screwed into the panel from the inside.
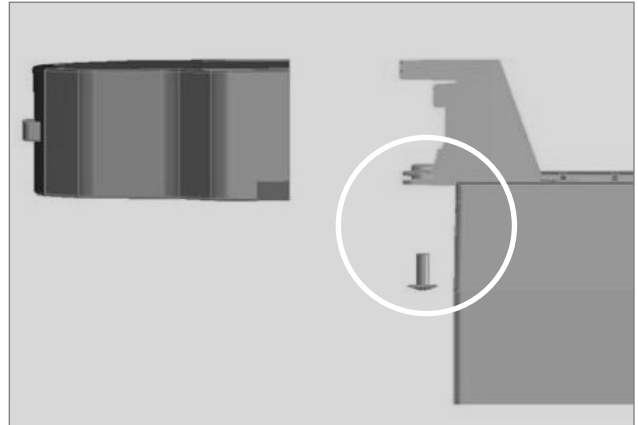
Fig. 48

If the fridge is demounted, the operation panel including the holding device can be loosened very easily. It is only attached to the housing.
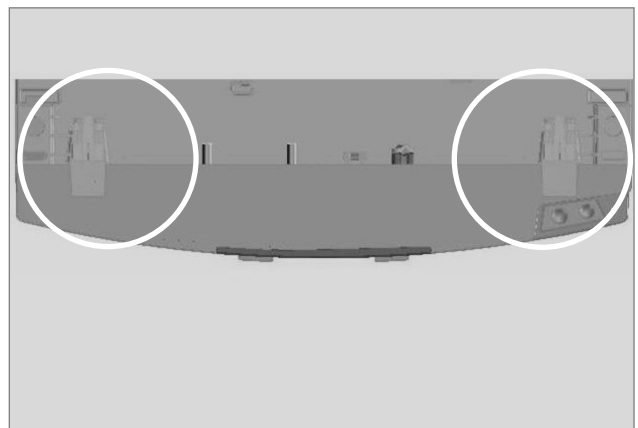
Fig. 49

5.8 Removing interior light and door lock

In case of a defective lighting the whole unit (doorlock device) is to be changed. The transparent cover is a separate part which does not belong to the unit.

After removing the cover the housing can be unscrewed.
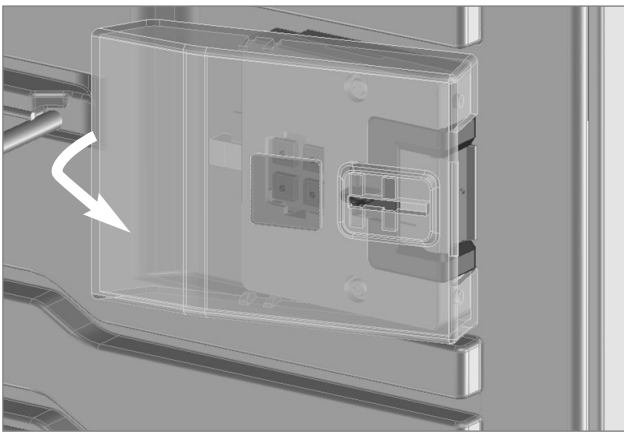
Fig. 50
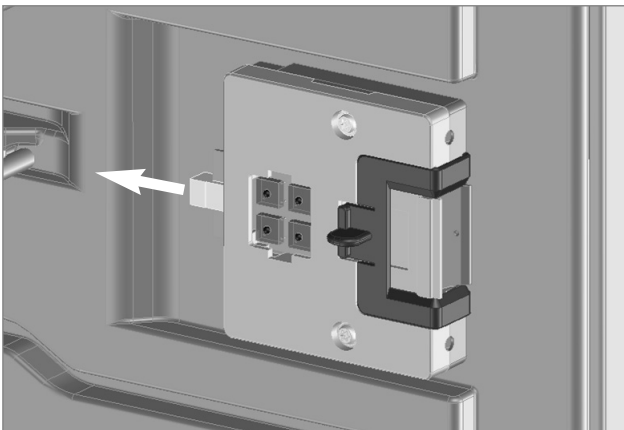
Fig. 51
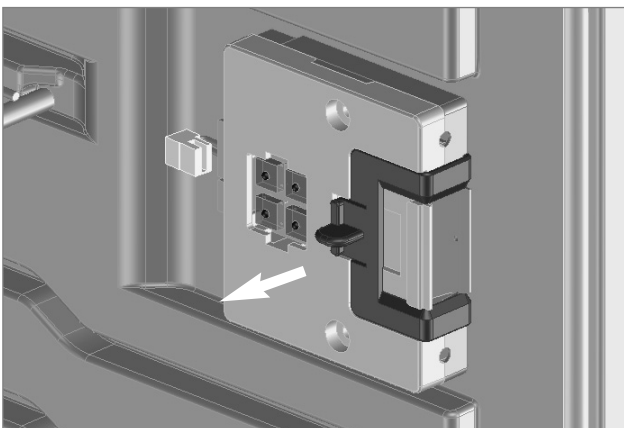
Fig. 52

Find behind the plastic cover two screws holding the locking hook.
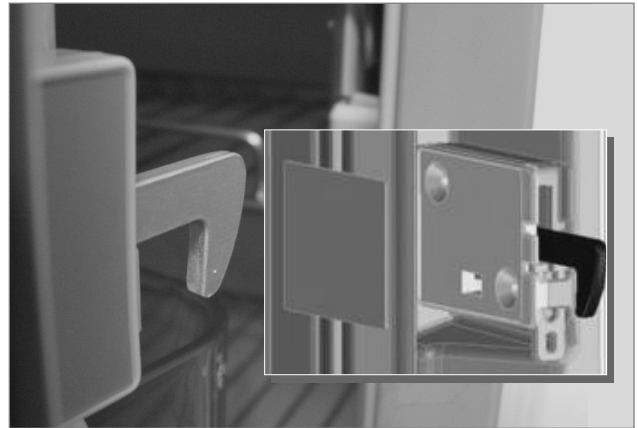
Fig. 53

Electrical doorlock (was an option)

Proceed in the same way as above to remove electrical door lock device.

Fig. 54

The door lock tongue is fixed with two screws behind the cover plate.

Fig. 55

The tongue can be adjusted if the door does not close correctly.

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5.8　Flowcharts

MES / AES

```
┌─────────────────────────┐
│  Interior light does not │
│          work            │
└─────────────────────────┘
```

Interior light not programmed?
-> programm via service-mode

5.5

Wiring not ok?
-> check wiring (connector X111 or 114=door switch input; X109= light output); note polarity for LED light!

2.1

LED light module defective?
-> exchange light module

MES / AES board defective?
-> exchange main board

5.7

5.1

5.8

MES / AES

Gas mode does not work

Wiring not ok?
-> check wiring from main board to burner control (X110)

2.3

Burner control P810 defective?
-> check burner control with other AES or MES board; exchange P810

2.4

MES / AES board defective?
-> exchange main board

5.7

2.1

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MES

AC mode does not work

Wiring not ok?
-> check wiring and connectors (supply X101; AC heater X102)

2.1

AC Heating element defective?
-> check resistance of AC heater (approx. 350 Ohm)

5.1.1

MES / AES board defective?
-> exchange main board

5.7

2.1

AES

AC mode does not work (although AC is connected)

Wiring not ok?
-> check wiring and connectors (DC heater supply (X103/X104)

2.1

AC Heating element defective?
-> check resistance of AC heater (approx. 350 Ohm)

5.1.2

AES board defective?
-> exchange main board

5.7

2.1

AC low detection not ok? (on Fridges older than 8/2008)?
-> exchange main board

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MES/ AES

DC mode does not work

Wiring not ok?
-> check wiring and connectors (DC heater supply (X103/X104)

2.1

DC Heating element defective?
-> check resistance of DC heater (approx. 1-2 Ohm)

5.1.

MES / AES board defective?
-> exchange main board

5.7

2.1

MES / AES

```
┌─────────────────────┐
│   Display is black; │
│ impossible to switch│
│         on          │
└─────────────────────┘
```

Wiring not ok?
->check wiring to X105
(DC supply)

2.1

Fuse broken?
->check fuse

2.1

Microprocessor hung up?
->Make a hardware reset
by interrupting 12 VDC
(use main DC switch in
vehicle)

Fridge older than Oct.2007?
->exchange main board

6.2.1

6.2.2

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MES / AES

Relay buzzing in 12 V mode

Reason: Wiring before Sept. 28, 2007
-> connect white cable and black cable of X105 to ground

2.1

Reason: vehicle's voltage not stable
->check terminals, fuse of vehicle defective
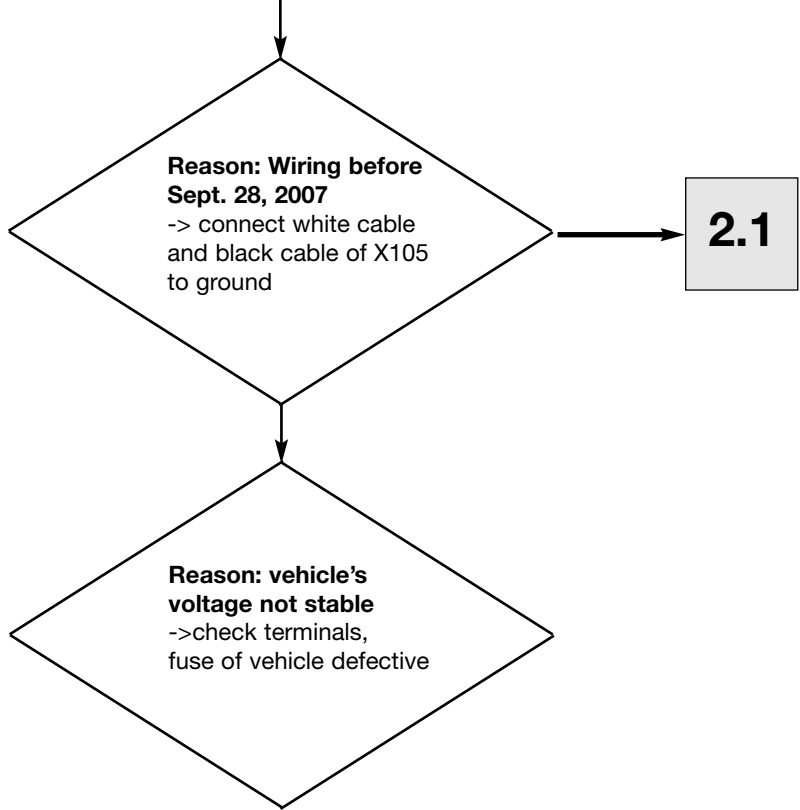
Fridge does not switch to DC (auto) mode after the RV engine is started

Reason: Softwarebug; Fridge older than Dec. 20, 2007
->exchange main board

6.2.1

6.2.2
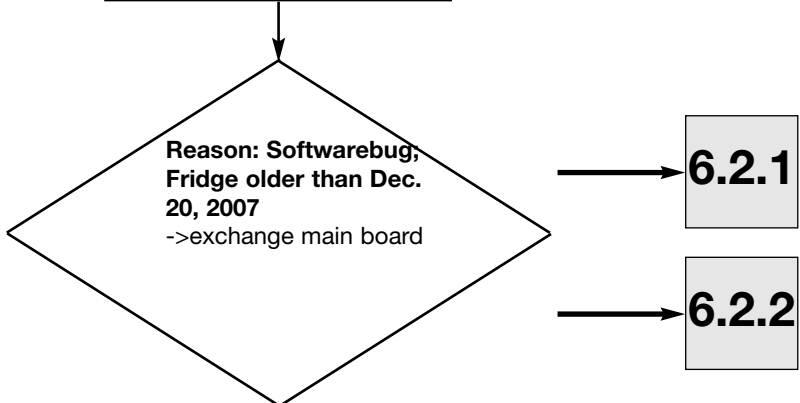
5.9   Testplan MES

**Before testing make sure, that all cables are connected to the PCB !
Provide a possibility, that the 12 VDC supply , the AC supply , the +12 V
heater supply and the D+/S+ connection (only on AES) can be interrupted
easily ! The supply voltage must be between 11 VDC and 14 VDC.**

No.	Action	Indication	Result
1.	**230 VAC Function test**		
1.1	Turn rotation knob to AC with AC supply not connected	AC LED and red LED must flash	
1.2	Provide AC supply (230 V)	AC LED lights green after a few seconds	AC relay switches
2.	**12 VDC Function test**		
2.1	Turn rotation knob to DC with +12 V heater supply not connected	DC LED and red LED must flash	
2.2	Provide +12 V heater supply	DC LED lights green after a view seconds	DC relay switches
3.	**Gas Function test**		
3.1	Turn to Gas, wait ca. 5,5 minutes (3 ignition trials)	Gas LED and red LED flash (gas lockout)	(3 ignition trials: 30 seconds ignition, 2 minutes ventilation pause, 30 seconds ignition, 2 minutes ventilation pause, 30 seconds ignition.
3.2	Switch off and on again; go to gas mode, provide gas to gas input tube	Gas LED lights green	Ignition starts until flame is on
4.	**Interior light test**		
4.1	Turn to any mode, open door		Interior light switches on
4.2	Close door		Interior light switches off
4.3	Turn to - OFF mode and open door		Interior light keeps off

5.10 Testplan AES

No.	Action	Indication	Result
	230 VAC Function test		
	Turn to AC mode with AC supply not connected	Display shows "230" flashing with red LED	
	Provide AC supply (230 V)	Display shows "230"	AC relay switches
	12 VDC Function test		
	Turn rotation knob to DC with +12 V heater supply not connected	Display shows "12" flashing with red LED	
	Provide +12 V heater supply	Display shows "12"	DC relay switches
	Gas Function test		
	Turn to Gas, wait ca. 5,5 minutes (3 ignition trials)	Display shows "GAS" flashing with red LED (gas lockout)	3 ignition trials: 30 seconds ignition, 2 minutes ventilation pause, 30 seconds ignition, 2 minutes ventilation pause, 30 seconds ignition.
	Switch off and on again; go to gas mode, provide gas to gas input tube.	Display shows "GAS"	Ignition starts until flame is on
	Interior light test		
	Turn to any mode, open door		Interior light switches on
	Close door		Interior light switches off
	Turn to - OFF mode and open door		Interior light keeps off
	AES Mode		
	Turn to AES mode; +12 VDC heater and AC supply not connected	Display shows "AES" changing with "GAS"; after ca. 5,5 min the display shows "AES" flashing with red LED (gas lockout).	3 ignition trials: 30 seconds ignition, 2 minutes ventilation pause, 30 seconds ignition, 2 minutes ventilation pause, 30 seconds ignition.
	Provide AC supply	Display shows "AES" changing with "230"	AC relay switches
	Remove AC and provide DC heater supply and D+ (alternator input)	Display shows "AES" changing with "12"	DC relay switches
	Remove DC and wait approx. 15 Minutes	Display shows "AES" ; after 15 minutes the display shows "AES" changing with "GAS"	DC mode switches off; after 15 minutes (tankstop delay) ignition starts (3 attemps)

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6.0 Appendix

6.1 List of gas burners and jets

Model	Part no. gas burner	Gas pressure	Jet ID number	Nominal thermal input (in W)	Part no. jet
RM 8400	292 3430-51 / 2	30 mbar	KZ 43	252	292 2033-06 / 9
RM 8401	241 2802-81 / 7	30 mbar	KZ 43	252	292 2033-06 / 9
RM 8405	241 2802-81 / 7	30 mbar	KZ 43	252	292 2033-06 / 9
RM 8500	292 3430-51 / 2	30 mbar	KZ 43	252	292 2033-06 / 9
RM 8501	241 2802-81 / 7	30 mbar	KZ 43	252	292 2033-06 / 9
RM 8505	241 2802-81 / 7	30 mbar	KZ 43	252	292 2033-06 / 9
RM 8550	292 3430-51 / 2	30 mbar	KZ 43	252	292 2033-06 / 9
RM 8551	241 2802-81 / 7	30 mbar	KZ 43	252	292 2033-06 / 9
RM 8555	241 2802-81 / 7	30 mbar	KZ 43	252	292 2033-06 / 9
RMD 8501	241 2802-81 / 7	30 mbar	KZ 16	310	292 2033-10 /1
RMD 8505	241 2802-81 / 7	30 mbar	KZ 16	310	292 2033-10 /1
RMD 8551	241 2802-81 / 7	30 mbar	KZ 16	310	292 2033-10 /1
RMD 8555	241 2802-81 / 7	30 mbar	KZ 16	310	292 2033-10 /1
RML 8550	292 3430-51 / 2	30 mbar	KZ 16	310	292 2033-10 /1
RML 8551	241 2802-81 / 7	30 mbar	KZ 16	310	292 2033-10 /1
RML 8555	241 2802-81 / 7	30 mbar	KZ 16	310	292 2033-10 /1

Model	Part no. gas burner	Gas pressure	Jet ID number	Nominal thermal input (in W)	Part no. jet
RMS 8400	292 3430-51 / 2	30 mbar	KZ 43	252	292 2033-06 / 9
RMS 8401	241 2802-81 / 7	30 mbar	KZ 43	252	292 2033-06 / 9
RMS 8460	292 3430-51 / 2	30 mbar	KZ 43	252	292 2033-06 / 9
RMS 8461	241 2802-81 / 7	30 mbar	KZ 43	252	292 2033-06 / 9
RMS 8465	241 2802-81 / 7	30 mbar	KZ 43	252	292 2033-06 / 9
RMS 8500	292 3430-51 / 2	30 mbar	KZ 43	252	292 2033-06 / 9
RMS 8501	241 2802-81 / 7	30 mbar	KZ 43	252	292 2033-06 / 9
RMS 8505	241 2802-81 / 7	30 mbar	KZ 43	252	292 2033-06 / 9
RMS 8550	292 3430-51 / 2	30 mbar	KZ 43	252	292 2033-06 / 9
RMS 8551	241 2802-81 / 7	30 mbar	KZ 43	252	292 2033-06 / 9
RMS 8555	241 2802-81 / 7	30 mbar	KZ 43	252	292 2033-06 / 9
RMSL 8500	292 3430-51 / 2	30 mbar	KZ 16	310	292 2033-10 /1
RMSL 8501	241 2802-81 / 7	30 mbar	KZ 16	310	292 2033-10 /1
RMSL 8505	241 2802-81 / 7	30 mbar	KZ 16	310	292 2033-10 /1

6.2 Overview software changes

6.2.1 MES models (RM 8xx1)

No.	Change	Software name	Marking	introduced since
1.	Software: DC low voltage detection sequence changed (changes within 1 sec, if 12 V heater DC is available)	MES_Jun_27	green "geprüft"-sticker on housing	week 26 / 2007
2.	Software: DC low voltage detection reduced to 8.5 V. Sensitivity for ground difference increased to 1.3 V ; white ground cable linked with black ground cable (both of X105).	MES_10_Sept	white cross on housing	week 37, 2007
3.	Software: adjusted to longer ignition times of burner control P810	MES_Sept_28	white circle on housing	week 41, 2007
4.	Softwareänderung; EMC improvement for frequency1 Hz-1 Mhz	MES_Oct_15	white circle with cross on housing or sticker on PCB	week 45, 2007
5.	**Version for RMD 8XX1 models** driver for external status LED frameheater driver via right button automatic frame heater switch off after 2 hours no electrical doorlock driver no "learning" necessary when starting the servicemode all LEDs are lighted followed by the SW status if the door is open longer than 2 minutes, the blue external LED will flash no DC low voltage detection.	MES_1.2	sticker on PCB and shown in servicemode	week 21, 2009

6.2.2 AES models (RM 8xx5)

No.	Change	Software name	Marking	introduced since
1.	Software: DC low voltage detection sequence changed (changes within 1 sec, if 12 V heater DC is available)	AES_main_V1_40.s19 (27 July 2007)	white circle on housing or stikker on PCB	since December 12, 2007
2.	AC low voltage detection revised (Threshold 195 V)	AES_main_V1_52.s19	sticker on PCB	since August 15, 2008
3.	**Version for RMD 8XX5 models** driver for external status LED frameheater driver via right button automatic frame heater switch off after 2 hours no electrical doorlock driver no "learning" necessary when starting the servicemode all LEDS are lighted followed by the SW status. If the door is open longer than 2 minutes, the blue external LED will flash no DC low voltage detection acoustic alarm limited to 60 sec. followed every hour, if error is not confirmed	V1.66.s19	sticker on PCB and shown in servicemode	week 21, 2009