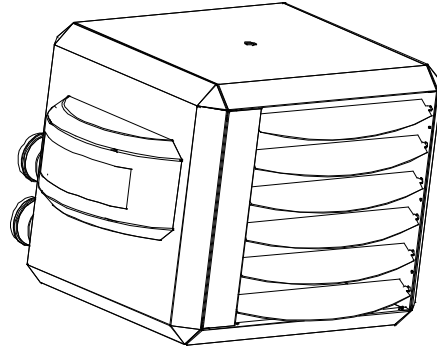


INSTRUCTION MANUAL

PREMIX UNIT AIR HEATER

TYPE XR10... 60



THIS DOCUMENT MUST ABSOLUTELY BE READ BEFORE STARTING THE
INSTALLATION.
INSTRUCT USER AND LEAVE THIS DOCUMENT WITH HEATER FOR
REFERENCE.

1 Introduction:

This installation and user manual is produced specifically for the gas, electrical and mechanical installer , it also gives instructions how to use and maintain the heater.

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3 General

The premix unit air heater is provided with sophisticated control sequence to maintain a comfortable room temperature and even air distribution.

It is paramount that the installation and maintenance of this appliance are carried out by qualified gas engineers, and strictly according to our instructions.

Before unpacking and installation, please check (i.e. on the data badge) if the heater is in accordance with the order and if it is suitable for the local present provisions (gas type, gas pressure, electrical supply etc.)

The installation of this appliance must be in accordance with the relevant requirements of the gas safety regulations building regulations (and the IEE regulations) and any requirements of the Local Authority , Fire Officer and Insurers.

The heater must also comply with all applicable local and national standards.

The heater has been tested in detail on safety and correct operating settings before leaving the factory. It has been adjusted for the type of gas that is stated on the data badge. Should there be any doubt , please contact the manufacturer.

4 Application restrictions



The installation of the air heater must be in accordance with the relevant requirements of the Gas Safety regulations (for example in GB; The Institute of Gas Engineers IGE UP-1 and 2), building regulations and the IIE regulations also incorporating the gas safety (installation and use) regulations. Other national and/or local regulations may apply! The competent installer must make sure the heater operates correctly and must instruct the user about the safe operation of the heater.

A ventilation gap of 30 cm is required from the top and bottom of the heater to any flammable materials.

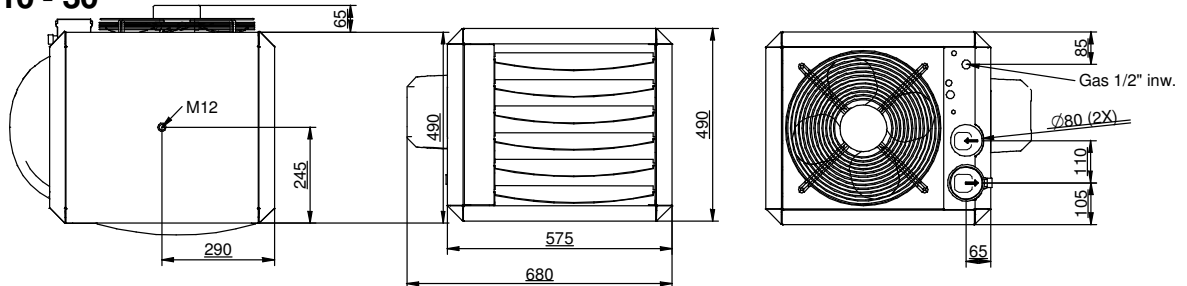
If this heater is drawing its combustion air from within the room in where it is located, the necessary combustion ventilation requirements must be allowed for as per the gas safety regulations. The heater should not be directly installed in areas containing any corrosive or explosive vapours , in high moisture or dust concentrations, at negative pressures or temperatures higher than 30°C ; please consult Winterwarm or your supplier. The guarantee is then invalidated. The heater has a protection degree of IP20, this means for use in a dry and not very dusty environment. This is also the case for the Open-therm room-thermostats.

Make sure that the warm air can be blown out freely. There should absolutely be (no possibility of) materials within 5m from the front of the heater.

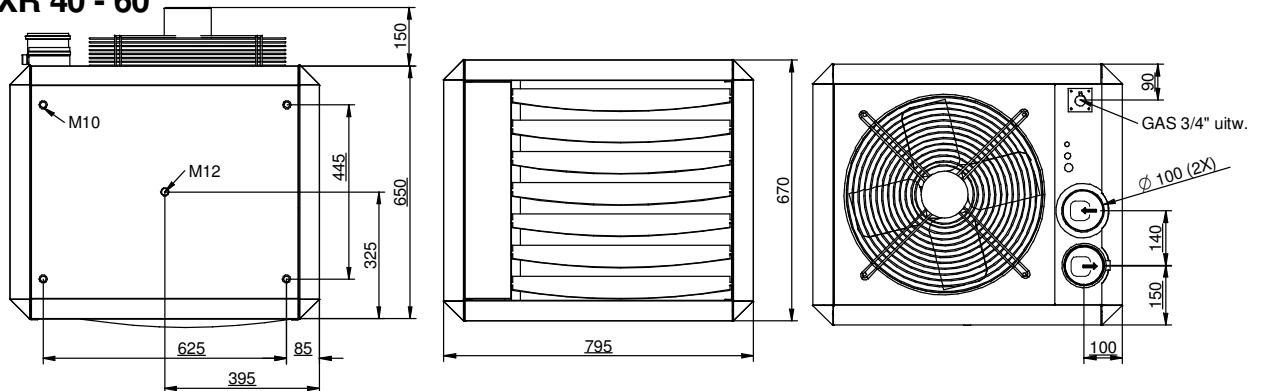
5 Technical details:

Type	unit	10	20	30	40	50	60
Maximum nominal heat input (Nett)	kW	14,0	22,8	32,0	44,0	55,0	66,0
Minimum nominal heat input (Nett)	kW	9,0	14,8	20,5	26,4	33,0	39,6
Maximum heat output	kW	12,6	20,8	29,2	40,2	50,1	60,5
Minimum heat output	kW	8,3	13,8	19,1	24,4	30,8	37,0
Max air output (+ temp increase)	m3/h	1150	2070	2600	4700	5150	6300
Throw horizontal (max)	m	12	16	23	26	28	30
Throw vertical (max.warm)	m	5	5	6	7	7	8
Sound level	dB(A)	42	45	45	46	47	49
Electric Connection	Vac	230	230	230	230	230	230
Thermostat Open Therm		yes	yes	yes	yes	yes	yes
Power Consumption	W	250	250	250	450	450	600
Gas connection	G"	1/2"	1/2"	1/2"	3/4"	3/4"	3/4"
Minimum suspension height horizontal throw	m	1,7	1,7	1,7	2,7	2,7	2,7
Minimum suspension height vertical throw	m	4	4	4	5	6	6
Weight	kg	36	37	38	78	80	82
Min supply pressure	G20 (H)	mbar	20	20	20	20	20
Gas category	Cat	I2H					
Class	Clas.	B23, C13, C33					
Max gas consumption	G20 (H)	m3/h	1,5	2,4	3,4	4,7	5,8
Offset gasvalve		mbar	-0,30	-0,30	-0,50	-0,25	-0,25
CO2 max	G20 (H)	%	9,0	9,0	9,0	9,0	9,0
CO2 min (indication)	G20 (H)	%	(8,1)	(8,2)	(8,7)	(8,1)	(8,2)

XR 10 - 30



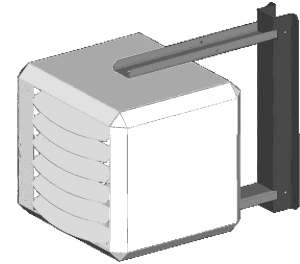
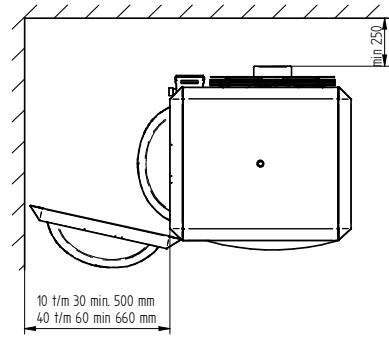
XR 40 - 60



Installation

6.1 Positioning

- Check that the support is solid enough.
- Keep sufficient distance between the heater and any obstruction, in connection with safety and access for service and maintenance. Pay particular attention to any flammable materials. Please take into account the possibility to open the door of the heater for the necessary service and maintenance work. Make sure the air flow to and from the heater is unhindered. Any obstacles should be a minimum of 5 metres away from the front of the heater.
- The heater can be installed horizontally or vertically, the positioning is completely free.
- The heater is provided with 2 off M12 threaded sockets as fixing points (see the dimension diagram). The types 40, 50 and 60 also have four M10 threaded sockets on the top as fixing points. Use preferably the Winterwarm suspension kits.
- Make sure that after fitting, there is no mechanical tension on any connecting gas or electric supplies.
- If the heater is installed with the air stream vertical downwards the maximum suspension height is 8 meters. Otherwise the warm air will not reach the floor.



Attention:

See the application-restrictions in this manual (Chapter 4) for further installation restrictions.

6.2 Gas connection

The gas supply line has to meet the national valid requirements and possibly the local requirements of the building inspector, police or fire brigade. (In GB it must comply with Gas Engineers publication UP-1 and UP-2 together with BS 6891.

A manual isolation valve in the supply line must be placed within reach of the heater, and all gas lines must not be mounted under mechanical tension.

When testing the supply lines with pressures above 60 mbar, this manual valve at the heater must be closed.

The working and standing supply pressure must be a minimum of 17 mbar, and a maximum of 30 mbar, measured at the inlet pressure nipple of the gascontrol in the heater.

6.3 Electrical connection

6.3.1 230Vac supply

The installation must comply with local and national requirements, (as well as IEE regulations)

The unit heater is delivered completely wired internally, where controls of any type are to be added (eg. room thermostat), the relevant wiring diagrams must be adhered to. Never use a room thermostat to interrupt the electrical supply to the heater!

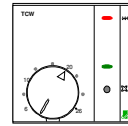
Make provisions to completely isolate the heater for maintenance purposes. This can be an isolation switch (min.3mm contact opening gap), a power plug or a nonswitched fuse spur. The wiring diagram for the heater can be found towards the end of this manual.

The supply is 230Vac. with earth. The control circuit is 24 V.

6.3.2 Roomthermostat

There are several possibilities to connect the heater.

1. By using the TCW OpenTherm thermostat. This offers the possibility to modulate the burner and fan, to reset the heater and to enable summer ventilation.(no time clock). See separate manual !
2. By using an OpenTherm clock thermostat, please ask your supplier.
3. By using an on/off (clock) thermostat.(PCP 5) Attention, when using an on/off thermostat, the heater will not modulate and summer-ventilation is not possible. Furthermore, the so-called delta T-regulation will not be operational and remote reset requires additional wires.



In all cases: make sure you use a screened 24Volts cable.

In a disturbance sensitive environment a so-called sealed "twisted pair" cable must be used. Before connecting, switch off the tension from the heater. Connect the earth shield of the cable only to the earth terminal in the heater.

6.3.4 Lockout indication

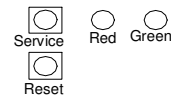
The heater has a potential free contact (max. 230Vac) for lockout indication. (see diagrams further in this manual)

24V is available on the connection-terminals for possible use with this fault indication. This contact is closed in a lockout condition.

6.3.5 Reset

The heater can be reset in 3 ways.

- On the TCW thermostat.
- On the DFC printed circuit-board within the heater, push the lower red button.
- On a remote reset button . For the connection, see the diagram towards the end of this manual.



6.3.6 Fuses

The heater contains 3 fuses:

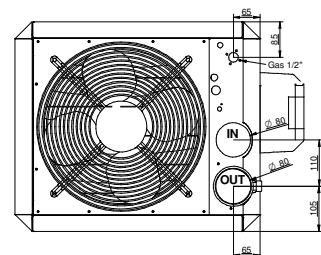
- F1 to protect the DFC regulation printed board
- F2 to protect the DBC burner control and the pre-mix fan
- F3 to protect the system fan and the transformer .

Replace the different fuses only by ones of the same type. See the wiring diagram for the different values.

6.4 Air intake / combustion products discharge

Check for compliance with local / national regulations.

The combined Winterwarm combustion-air supply / combustion-gas outlet device (Roof terminal or wall terminal) has to be used, only so the installation is CE approved. See installation drawings. Never connect a roof terminal for condensing appliances, rain can damage the heater trough the discharge pipes.



Condensation in the discharge system

During heating up, it is possible that condensate is formed in the discharge system. This, however, will evaporate if the heater is operating for a longer period of time.

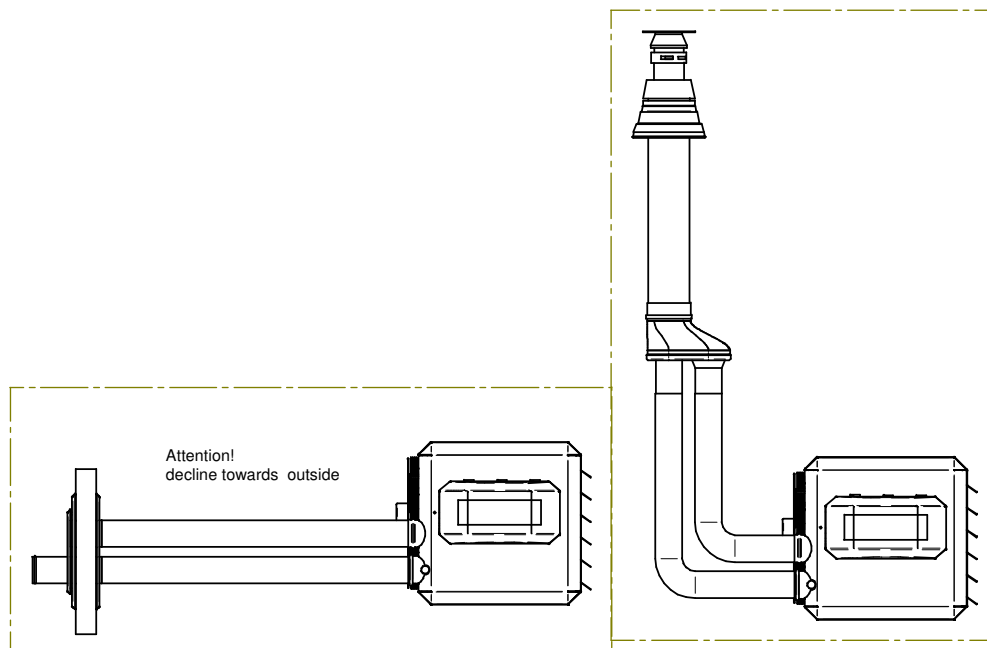
If the straight length of the discharge flue is longer than 4 meters this condensate will not evaporate again and accumulate in the heater ! Isolation of the discharge pipes or an condensate trap just at the heater is then absolutely necessary.

The maximum flue length not isolated is 4 meters. (do not count bends)

The maximum flue length isolated is 9 meters. (do count bends, see below).

The maximum pressure drop in either the air supply pipe, or the flue pipe ,must not exceed 9 metres straight pipe , excluding the terminal. Whenever bends are used the pressure drop is greater and therefore a 90° bend will count as 2 metres and a 45° bend as 1 metre. All flue pipes must be of the same diameter as the flue spigots on the heater, and all flue joints must be sealed. For further information regarding the flue system please contact Winterwarm or your supplier. Make sure the roof terminal is at least 0,5m above roof level..

Do not connect a 'standard' flue terminal to this heater ,nor a terminal for a condensing boiler. Use only pipes and bends for overpressure with profiled sealing-rings.



6 Functioning of the unit

6.1 General

The unit can heat as well as ventilate. By using the temperature-sensor on the unit and the one in the room-thermostat, the temperature-difference between the two in the room is monitored. Should the difference become higher than a set value, due to the fact that warm air has accumulated underneath the roof, the system-fan will start and push the warm air down, acting as a destratification fan.

6.2 Heat demand

If the thermostat indicates heat demand, the following cycle will commence:

The DFC circuit board acknowledges the heat-demand and sends a signal to the burner control DBC.

The DBC gives power to the premixfan and the latter will start running on the starting speed. After 30 seconds the electrode will spark for max. 5 seconds and the gas-air mixture will ignite. When the flame is detected, the unit will modulate to the desired load after ca. 15 seconds. Depending on the given load, the system fan will start modulating (3 steps) as well.

When the heat demand is satisfied, the burner will switch off and the system fan will continue to run for ca. 3 minutes in order to cool the unit down.

The unit will try to ignite twice before lockout on flame fault.
In the case of flame failure during operation, the heater will attempt one restart.

6.3 Delta-T-regulation (temperature controlled destratification fan)

In case there is no heatdemand, the delta-T-regulation will be active. (only in case OpenTherm thermostat is installed).

When the temperature-difference between the sensor on the unit (the NTC) and the sensor in the OpenTherm thermostat is bigger than the set value (factory setting standard 10°C), the systemfan will start ,at a regulated speed, depending on the differential temperature difference. This operation ensures an even temperature distribution throughout the building, thus acting as a fully automatic variable destratification fan.

Should this delta-T-regulation not be required , the connection between the OpenTherm thermostat and the unit must be interrupted electrically(by means of a so-called Out-of-service switch). Alternatively the set point for the delta T regulation to become active, can be set to 15°C (maximum)by turning Potentiometer 2 (P2) fully clockwise. See below.

6.4 High limit protection

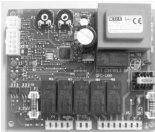
The unit contains 2 temperature protections. The NTC thermostat monitors the air temperature electronically. Should the temperature become too high, the burner will switch off. When the unit has cooled down , it will automatically restart.

Should the temperature increase to an unacceptable level, , the STB (capillary thermostat) will interrupt the electric power to the DBC. This thermostat can only be reset manually.

If during operation the power line is disconnected, the STB can switch because of the internal heat in the appliance. It has to be reset before the heater functions again.

6.5 Description spare parts

List of abbreviations:



DFC: Digital Fan Control. This is the central regulation printed circuit board that communicates with the room thermostat and modulates the premix fan, it also determines the system fan speed.



DBC Digital Burner Control, situated on the gascontrol. This monitors the ignition and burner sequence, whilst supplying power to the premix-fan.



NTC Negative Temperature Sensor. This sensor measures the temperature of the blown out air.



STB This mechanical maximum thermostat that measures the temperature of the blown out air by means of a capillary sensor. The set value cannot be changed.

PWM This is the pulsating 24 Volts signal of the DFC to the pre-mix fan. The PWM regulates the modulation and the start-up speed.

6.6 Functions of the DFC :

Lock out

(Red) The alarmed lights up red, when the DBC 577 is locked and the alarmcontact is therefore active.

Burnerdemand Led

(Green) This led lights up green, when heat demand is present.

Service button

push 1 time = low load
push another time = high load
push 3 times = off (normal operation)

Reset button

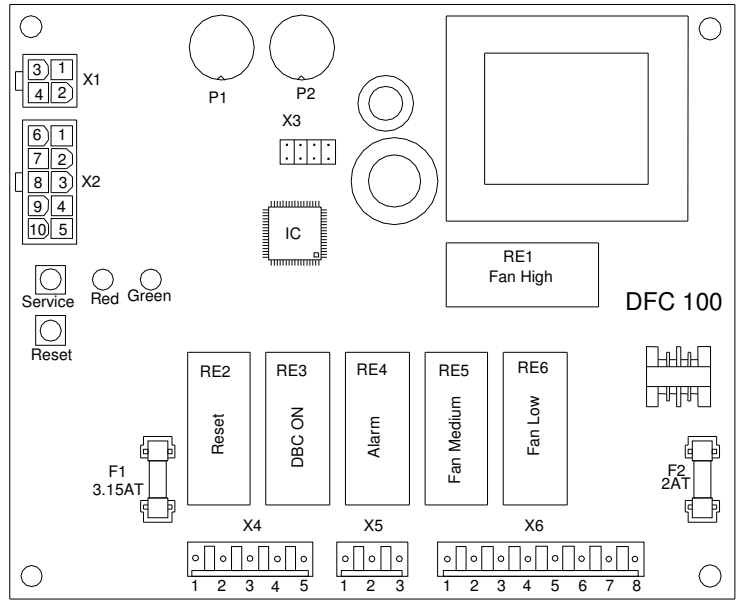
push 1 time to reset

Potentiometer 1 (P1)

This one is for the manufacturer only, it has no function for the end-user.

Potentiometer 2 (P2)

This alters the set value for the the delta-T regulation to become active. This can be between 4°C (potentiometer completely anti-clockwise) and 15°C (potentiometer completely clockwise).
Factory setting: 10°C.



7 Putting into operation and adjustment

8.1 General

Prior to packaging, each unit is checked in detail on safety and well functioning. It is a.o. adjusted to the right efficiency of combustion. In general, the heater is not needed to be adjusted after installation, only a check of well functioning is necessary by a competent person. Also obtain a flue gas analysis and record it for later reference.

Use only a calibrated instrument !

The CO₂ value may be adjusted if necessary, only do this in case it turns out that the CO₂ value is not correct. Do not ever turn injudiciously the adjusting screws!
Adjustment of the gascontrol without a supporting flue gas analysis will invalidate the warranty.

Once the unit is installed according this manual, the unit can be put into operation. Make sure the gaspipe is clean, gastight and free from air.

Switch on the electric supply with the maintenance-switch, and open the door in order to be able to observe the first start-up and so become familiar with the functioning of the heater.

Should the gas line not be purged correctly the heater will attempt to start twice before going into a lock-out condition. Manual reset is necessary in that case.

Do not forget to instruct the end user about a safe use of the heater (presence of gas, place of the manual gasvalve !), the operation of the heater (lock-out indication and reset) and about the necessary maintenance. This manual must be left with the end user.

8.2 Start by using the service-button

Press the service-button (shortly) once , and the unit will commence the ignition-cycle; (30 sec pre-purge, ignition, 15 sec flame stabilize, modulating operation) The burner will then start in low fire. By pressing the service-button again, the burner will go to high fire.

Pressing the service-button for a third time will put the unit into normal operation. (depending on the thermostat)

8.3 Start by bypassing thermostat

When the thermostat connection is jumpered (between terminals 4 and 5), the unit will only function on high fire. The ignition sequence is always the same as 8.2.

8.4 Start by using the thermostat

Put the thermostat in the highest position.

With the TCW roomthermostat following functions are possible ;

Red LED lights continuously :	Flame on.
Red LED lights intermittently :	Flame in lock-out.
Green LED lights :	Summer ventilation on.
Grey button ; press 1 sec. :	Summer ventilation on / off.
Grey button ; press 6 sec. :	Flame fault reset

8.5 To simulate a lock out condition

Close the manual gas supply valve. The heater will go to lock-out after a restart attempt. The lock out indication (in the heater) must light up. The lock out indication on the TCW room Thermostat (if installed) will now flash.

Check also the function of the reset button (with gasvalve open again), and observe if heater starts smoothly.

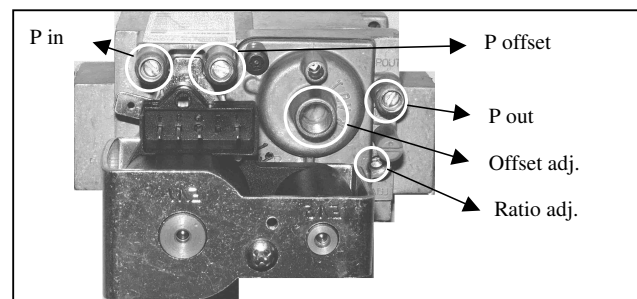
8 Adjusting the gas-control

In principle, it is **not** necessary to adjust the gascontrol after putting the unit into operation. In case it needs to be adjusted, (f.e. after fitting a new one), this must be done only by a qualified person. **Only use calibrated instruments !** A poor adjustment can lead to overheating and / or production of the poisonous carbon monoxide !.

There are two screws to adjust the gascontrol, the Offset adjuster and the Ratio adjuster.

Put the heater into operation at high fire by pressing the service button twice quickly.

If the heater does not ignite while sparking, you can, if necessary, close the air-openings of the coloured ring on the gas-air mixer with thumb and forefinger during ignition. The mixture will become richer and will ignite more easily.



Open the pressure-nipple “P offset” and connect a calibrated pressure gauge to it. If the heater is in operation, the read underpressure must comply with the value from the technical specifications. You can change this underpressure by turning the Offset adjuster screw located under the little cover. Turn to the left for more underpressure, turn to the right for less underpressure. When the underpressure is set correctly, you replace the little cover and close the pressure-nipple “P offset”.

Check the CO₂ in high load of the heater. In case the CO₂ is too high, you turn the Ratio adjuster to the right (less gas). In case the CO₂ is too low, you turn the Ratio adjuster to the left (more gas).

Never forget to check the CO (carbon monoxide) production of the heater!!! Too much CO means mostly that the mixture is too rich. CO value should always be below 100 ppm. Always check and (adjust eventually) the CO₂ content (see above), and then control the CO value.

After adjusting the high fire, the heater should be checked on low fire. (use servicebutton)

9 Problem solving

9.1 General

When it turns out that the problem is **not** caused by the external circumstances (i.e. no electric supply power or no gas), please take the following instructions into account. Please remember the built in waiting times of the heater (do not react too soon!) and the signals of the LEDs! Attention!: The fault-signal will only be indicated when there is heat-demand! Please check the following items **first** :

- Check the fuses as well as the wires and plugs in the heater for possible loose contacts.
- In a heat-demand situation, the green LED on the print DFC must light up.
- In a flame failure situation, the red LED on the DFC will illuminate, if so, reset.
- Use first the service-button to put the heater in run mode, try later the room thermostat.

Premix-fan (M2) does not start

- a) Check if the heater is not in an over heat condition. On both terminals of the STB must be 230 Volt. This STB must be reset if necessary, or it can be jumpered temporarily.
- b) Check if the NTC prevents the DFC from functioning. Measure the resistance of the NTC (pull plug from DFC). This must be approx. 20 kilo Ohm at 25°C, or 40 kOhm at 10°.
- c) Check that a 230V signal is being received at the DBC.
- d) Check that a230V signal is being received on the plug of the pre-mix fan (between the brown and the blue wire).
- e) It is possible that there is no (!) PWM-signal to the pre-mix fan for the starting-speed. This can be checked on the 24V plug of the pre-mix-fan.
- f) Depending on e), c) and d) the DFC or the DBC may be faulty.
- g) Check if the pre-mix fan is not blocked by pushing the cooling impeller carefully. The cause of non-starting of the pre-mix-fan could be in the fan itself.

Premix-fan does start, but no further action, no flame failure.

- a) Faulty DBC , replace.

Premix-fan does start, no sparks, then flame lock-out.

- a) Check if the electrode does spark by unscrewing it and taking it out of the heat exchanger and holding it against the mass (with an insulated pliers) during the sparking period. In case you see or hear no spark, the DBC must be replaced.

Sparks in the heatexchanger, then heater goes on lock out.

- a) There could be no gas. Check this by measuring the underpressure on the pressure-nipple on the gascontrol (P out). During the purge cycle there is an underpressure of circa 6 mbar. When the gascontrol is opened and there is gas during the sparking period, this underpressure will lower by circa 3 mbar, to circa 3 to 4 mbar. If not, take the DBC off the gascontrol (unscrew M3 screw between the wires) and check with a multimeter if the coils of the gascontrol are not interrupted internally. There are two coils, you must find on both some (k)Ohms resistance, if not they are broken. Also check the screen on the inlet side of the gascontrol. This can be done by detaching the gasconnection outside the heater and by looking through the gasconnection into the gascontrol.

It can also be that the DBC does not send a 230 Volt signal to the coils. In this case, try another DBC.

- b) There are sparks and the gascontrol opens, but the mixture does not ignite. Check if the flame does ignite if the coloured air inlet ring on the pre-mixfan is closed partially between thumb and forefinger. There will be less air, so the mixture is richer and ignites easier. If the flame now becomes established, check the CO₂-content when the heater is warm at high fire. Adjust it if necessary with the adjusting-screw on the gascontrol. **Only** do this with a good (calibrated) CO₂-meter in the outlet of the heater.

The burner ignites briefly, then the heater goes to lock-out

This points to problems with the flame-ionisation. Check first for a sound earth connection in the heater, by pulling shortly on various earth wires.

The ionisation current itself must be circa 2 microampère. This can be measured, provided the connections of the multimeter are jumpered during the sparking period in order to prevent the meter from damage.

Most of the time, problems with the ionisation current, can be solved by replacing the DBC.

Heater does start, but shows other problems.

- a) Heater stays on starting speed and does not modulate to a higher work speed : Check if the pre-mixfan speed does vary if you press the service button of the DFC. Press one time; the heater will go to low-fire, press one more time; the heater will go to high fire. Pressing a further time will de-activate the servicemode. After 10 minutes of servicemode this function will switch off automatically. Check if the heater does function normally if the wires of the roomthermostat are jumpered (heater must start up and go to full load), and if it switches off when the wires are opened again. Try first another OpenTherm thermostat. If this does not work, the DFC must be replaced. It can also be the pre-mixfan itself that does not modulate in spite of a good input signal. The heat output of the heater will also be insufficient if there is too much resistance in the inlet- or outlet flue system. In this case the pre-mixfan will be on full speed, but because of the high resistance too little air is moved and therefore also too little gas. The pressure in the outlet flue for example, will normally never be above 30 Pascal.
- b) Systemfan (M1) does not start or does not vary in speed; Check first the functioning of this fan by connecting it to 230 Volt. Check with a multimeter if the different lower tensions are secondary present on the transformer as well. The fuse could have failed. If the motor and transformer are OK, the cause of the problem must be in the DFC, as the DFC dictates the different voltages from the transformer to the fanmotor. In that case, replace the DFC.
- c) Delta-T-regulation problems: For this regulation, potentiometer P2 on the DFC is used. This controls the desired difference in temperature between the room sensor (the OpenTherm) and the sensor in the heater (NTC). A smaller difference in temperature (potentiometer P2 anti clock wise) will keep the systemfan running on higher speed for longer periods. Check the functioning of the OpenTherm thermostat by putting it on heatdemand for a little while. In case this functions well, then check the NTC (measure the Ohm resistance). The problem may be the DFC. In this case, the DFC must be reprogrammed, or replaced. Resistance value NTC sensor at 20 °C= 25 kOhm.

10 Maintenance / spareparts

The heater must be inspected and cleaned regularly (once a year) by a qualified installer who understands this appliance.

This is all the more important as the circumstances are heavier, especially in case of dust, humidity, high frequency of switching on/off etc.

Activities:

10.1 General inspection

- Check the overall condition of the installation. Check the heater, the thermostat, the wires and the gas line.

10.2 Inspection of the heater

Before starting the inspection, switch off the electric power to the heater with the maintenance-switch and close the manual gasvalve.

- Take out the burner, complete with flange and pre-mix fan, by unscrewing the 6 off M6 socket screws and you have taken off the ignition and fan wires
- Check the heatexchanger from the inside for dirt and/or damage.
- Check the burner on damage and clean the ignition electrode if necessary . CAUTION: do not twist the electrode out of shape!
- Check the airsupply and the flue discharge.
- Clean eventual the inside of the heater with a vacuum cleaner.
- In case the heatexchanger is dirty on the outside, clean it with a soft brush. Never use a steel wire brush!
- Clean the fan-grid with a vacuum cleaner and a brush.
- Put the burner back in (renew the gasket)

After this, check the heater on efficiency of combustion and adjust these if necessary
Check the heater operates correctly.

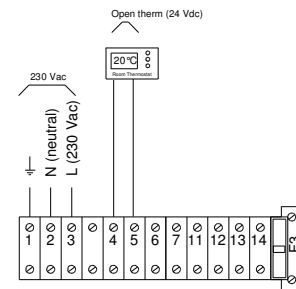
10.3 Spare parts

Description	10	20	30	40	50	60
Burner XR	IX.3206	IX.3206	IX.3208	IX.3208	IX.3210	IX.3212
Ignition/Ionisation electrode	IX.3458	IX.3458	IX.3458	IX.3458	IX.3458	IX.3458
Premix fan MVL RG128 (M2)	IX.4500	IX.4500	IX.4500	IX.4500	IX.4500	IX.4500
Inspection glass	IX.6812	IX.6812	IX.6812	IX.6812	IX.6812	IX.6812
Gas-AirMixer SIT 391 AGM	IX.4506	IX.4504	IX.4502	-	-	-
Gascontrol SIT SIGMA 848	IX.3000	IX.3000	IX.3000	IX.3000	IX.3000	IX.3000
Burner control SIT DBC577	IX.3550	IX.3550	IX.3550	IX.3550	IX.3550	IX.3550
Fan Control DFC 100	GA.5706	GA.5708	GA.5710	GA.5712	GA.5714	GA.5716
Systemfan FMV (M1)	IX.4200	IX.4200	IX.4200	IH.4206	IH.4206	IX.4205
NTC Cable sensor	IX.3918	IX.3918	IX.3918	IX.3918	IX.3918	IX.3918
STB capillary thermostat	IX.3914	IX.3914	IX.3914	IX.3914	IX.3914	IX.3914
Transformer system fan	IX.5100	IX.5100	IX.5100	IX.5098	IX.5098	IX.5098
Gasket ; inlet heatexchanger	IX.6702	IX.6702	IX.6702	IX.6742	IX.6742	IX.6742
Gasket ; outlet heatexchanger	IX.6708	IX.6708	IX.6708	IX.6744	IX.6744	IX.6744
Gasket ; premix fan	IX.6704	IX.6704	IX.6704	IX.6704	IX.6704	IX.6704
Gasket ; ignition / ionisation electr	IX.6710	IX.6710	IX.6710	IX.6710	IX.6710	IX.6710
Gasket ; inspection glass	IX.6706	IX.6706	IX.6706	IX.6706	IX.6706	IX.6706
Burner isolation plate	IX.6720	IX.6720	IX.6720	IX.6724	IX.6724	IX.6724

11 Examples electrical installation

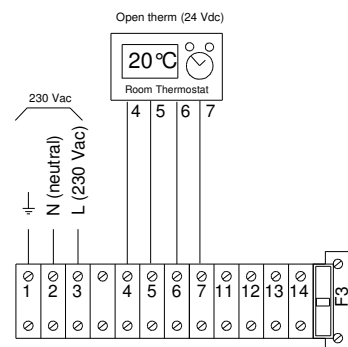
11.1 Installation with OpenTherm TCW thermostat

- Connect the heater to 230Vac
- Connect the thermostat to the terminals according to the diagram. (terminal 4 and 5)



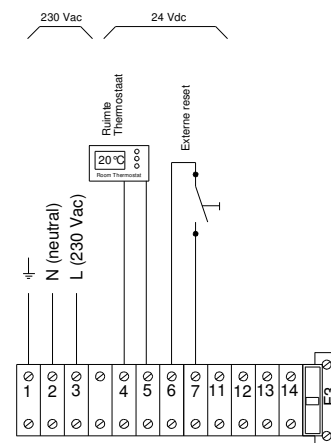
11.2 Installation with OpenTherm clock thermostat

- Connect the heater to 230Vac
- Connect the thermostat to the terminals according to the diagram. (terminal 4, 5, 6 and 7)

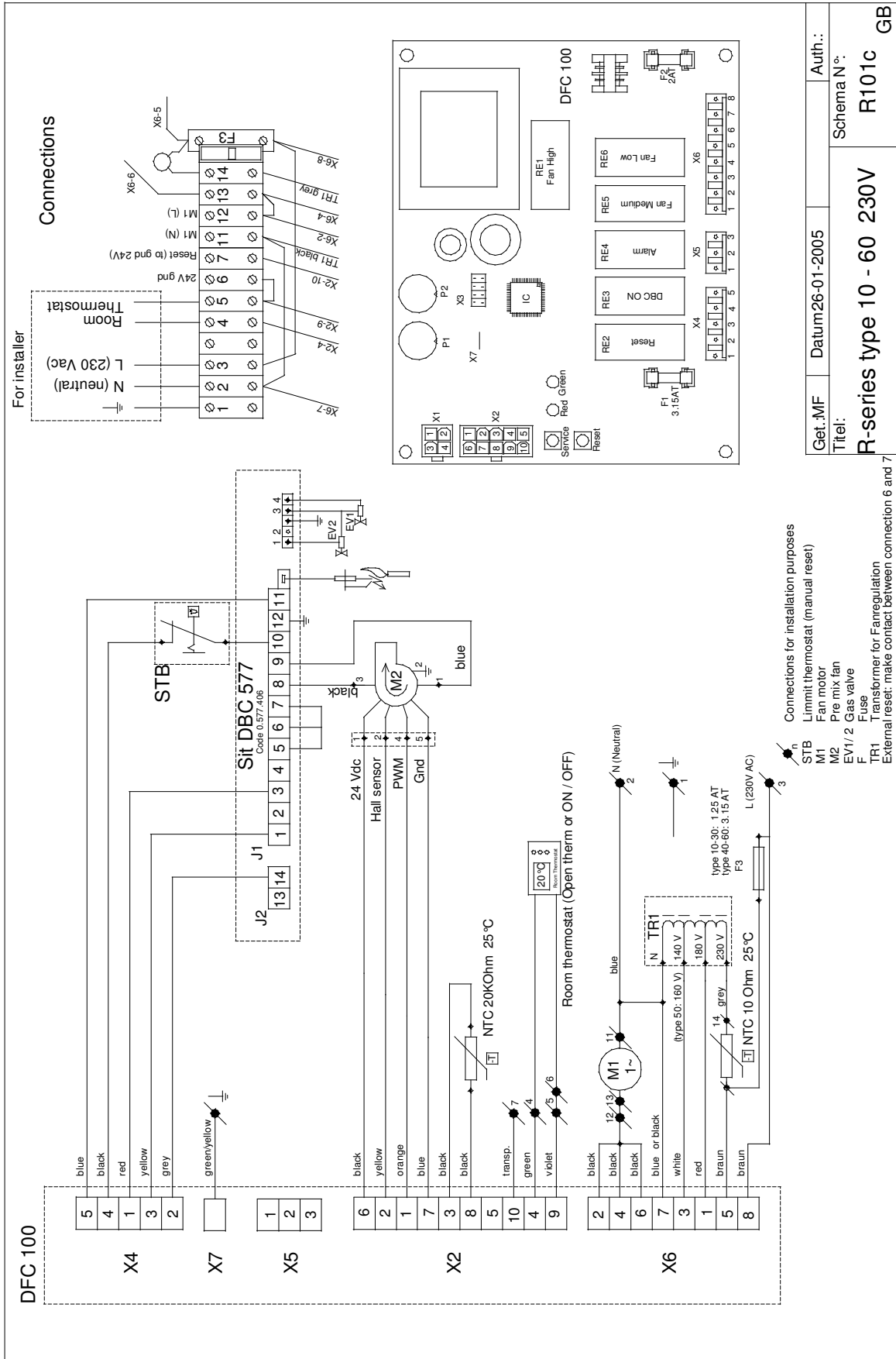


11.3 Installation with extra reset possibility

- Connect the heater to 230VaC
- Connect the thermostat (can be OpenTherm or on/off).
- Reset is possible by mounting a pressbutton between terminals 6 and 7



12 Electrical diagram



Get..MF	Datum26-01-2005	Auth.:
Titel:		Schema N°:
R-series type 10 - 60 230V		R101c
		GB