INSTRUCTION MANUAL
OPTION BOARD AIR HEATER
With Argus print board

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

Instruction manual version 5 GB
Date: 04-03-2008

1 Introduction:

This installation and user manual is made specifically for the electrical installer. It also gives instructions how to connect and use the option board with the heaters.

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3 General

The Option Board is an external control board that can communicate with the Argus heater control boards. It can be used as an expansion board, and can control up to 8 heaters at the same time. This board is specially designed for working with a Building Management System. The board has several analogue inputs (0…10Vdc) and digital input, also some outputs are present.

Inputs / outputs as follows:

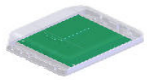
- Input 0-10V for modulating Power
- Input 0-10V for modulating summer ventilation
- Input for minimum Power
- Input for maximum power
- Input for reset of the heater
- Input for summer ventilation on/off

All connected heaters (max. 8) react in the same way to the option board.
It is paramount that the installation and maintenance of this appliance are carried out by qualified engineers, and strictly according to our instructions.

3.1 Guarantee

The guarantee is invalidated when the air heaters are not installed in accordance with this manual.

4 Technical details

Ambient Temperature	Functional Storage	0 to +60°C (Peak temperatures, not continuous) -25 to +75°C
Fuse		3,15 AT
PCB Dimensions	l × w × h	100mm × 100mm × 40mm
Weight		Approx. 350 grams
Connections		See specs. later
Housing		

Important!
The installation en maintenance of this air heater should be performed by an authorised competent installer in accordance with this manual.

4.1 INPUT signals

4.1.1 Working with 0-10V signal for modulating burner

For modulating operation of the heater(s) an analogue 0-10V DC input signal can be used on clamps 19 and 20.
The option board regulates the heaters as follows:
0-2V Heater(s) OFF
2-10V 2V minimum load; 10V maximum load

In this mode the burner as well as the system ventilator is fully modulating between minimum and maximum settings.
All the heaters react in the same way to the signals from the option board.

DO NOT OVERLOAD!!!!
If the input signal exceeds 12V too long, the option board will break down (no warranty!).

First start:
When the option board is connected to the 230V power, it sends for a short period (10 sec) the BURN command to the heater, even if there is no 0-10V demand.
That means that the heater(s) will burn for 4 minutes.
After this first start the heater(s) will stop if there is no 0-10V demand, and is standby for regulation.

4.1.2 Working with the Analogue Minimum and maximum power inputs

If the heater(s) has to be operated at ON/OFF and/or HIGH/LOW operation, the clamps 13 to 16 have to be used.

If a connection between clamps 13 and 14 is closed, the heater(s) will burn at minimum power. (This connection overrules the summer ventilation and the analogue input).
If a connection between clamps 15 and 16 is closed, the heater will burn at maximum power (Overrules summer ventilation, minimum power and the analogue input)

4.1.3 Summer ventilation

The system fan can operate without the burner for ventilation purposes. It can be done by means of a on/off signal or an 0-10V signal when the system fan has to be modulated.
If the connections between the clamps 11 and 12 are closed, the system fan of the unit is operated at minimum stage (= the summer ventilation).
For modulating the system fan an analogue 0-10V DC input signal can be used, clamps 21 and 22.
The option board regulates the heaters as follows:
0-2V Fan OFF
2-10V 2V minimum stage; 10V maximum stage
This setting overrules the analogue input for the burner. This means that if the heater is burning in modulating mode (0-10V), the burner stops and the system fan keeps on running in low speed for the summer ventilation.
All the heaters react in the same way to the signals from the option board.

4.1.4 Reset

If one or more heaters have an alarm signal, the heaters can be reset by making the connection between the clamps 17 and 18.

4.2 Output signals

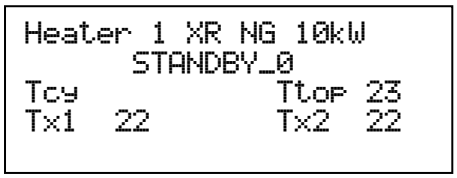
4.2.1 Alarm

If one or more heaters have an alarm signal, the option board will close a relay and on the clamps 5 and 6 an output signal from 230VAC is available. This can be used to make an alarm light switched on.

4.2.2 Flame

If one or more heaters are in operation and burning, a relay is closed on the option board. This is not directly a 230V output signal. It is an open contact. So if 230V is provided on one of the clamps 3 or 4, the other clamp is switched.
This contact can also switch any low voltage signal.

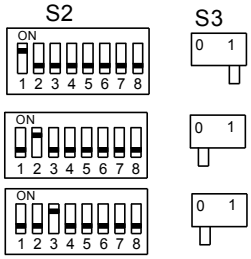
4.2.3 Getting more information from the haters



It can be helpful that more specific information from the status off the heaters is available. In the options mentioned above there is no indication which heater has an error.
This can be solved by connecting a DB8 / MTC thermostat to the system. This thermostat has the possibility to view the status of the heaters connected. It is important that when this is installed that the thermostat is “in view mode only” (see manual thermostat) else the thermostat and the option board both want to regulate the installation, this results in a conflict.

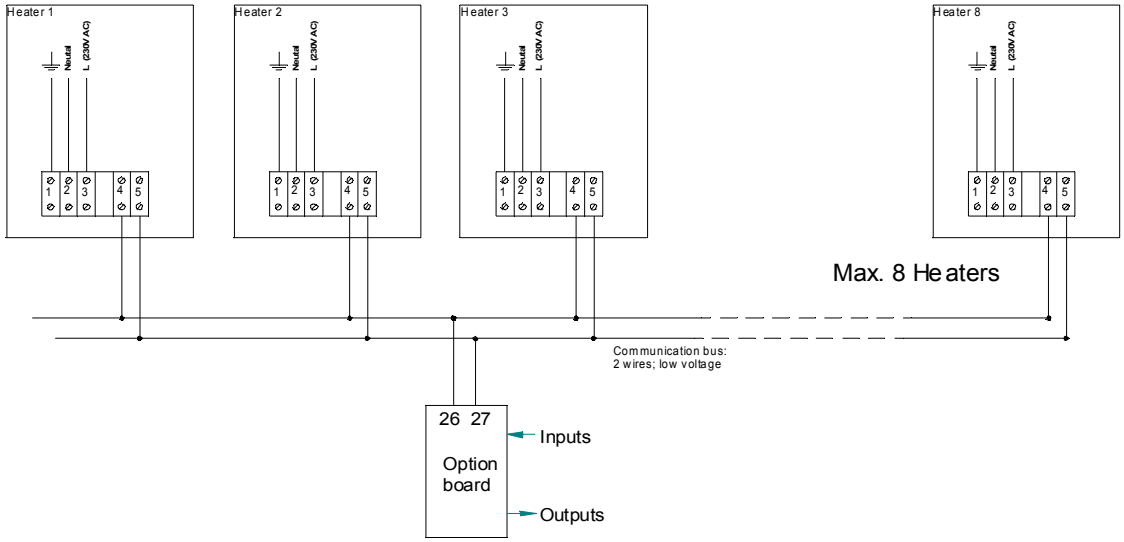
5 Electrical diagram

5.1 Installation with 0-10V signal

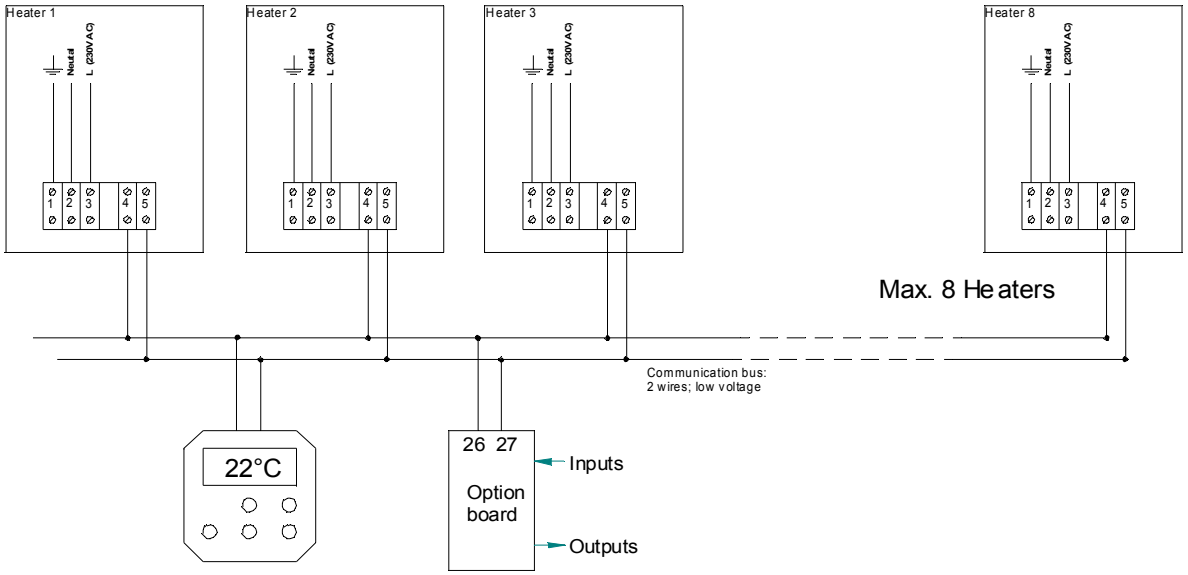


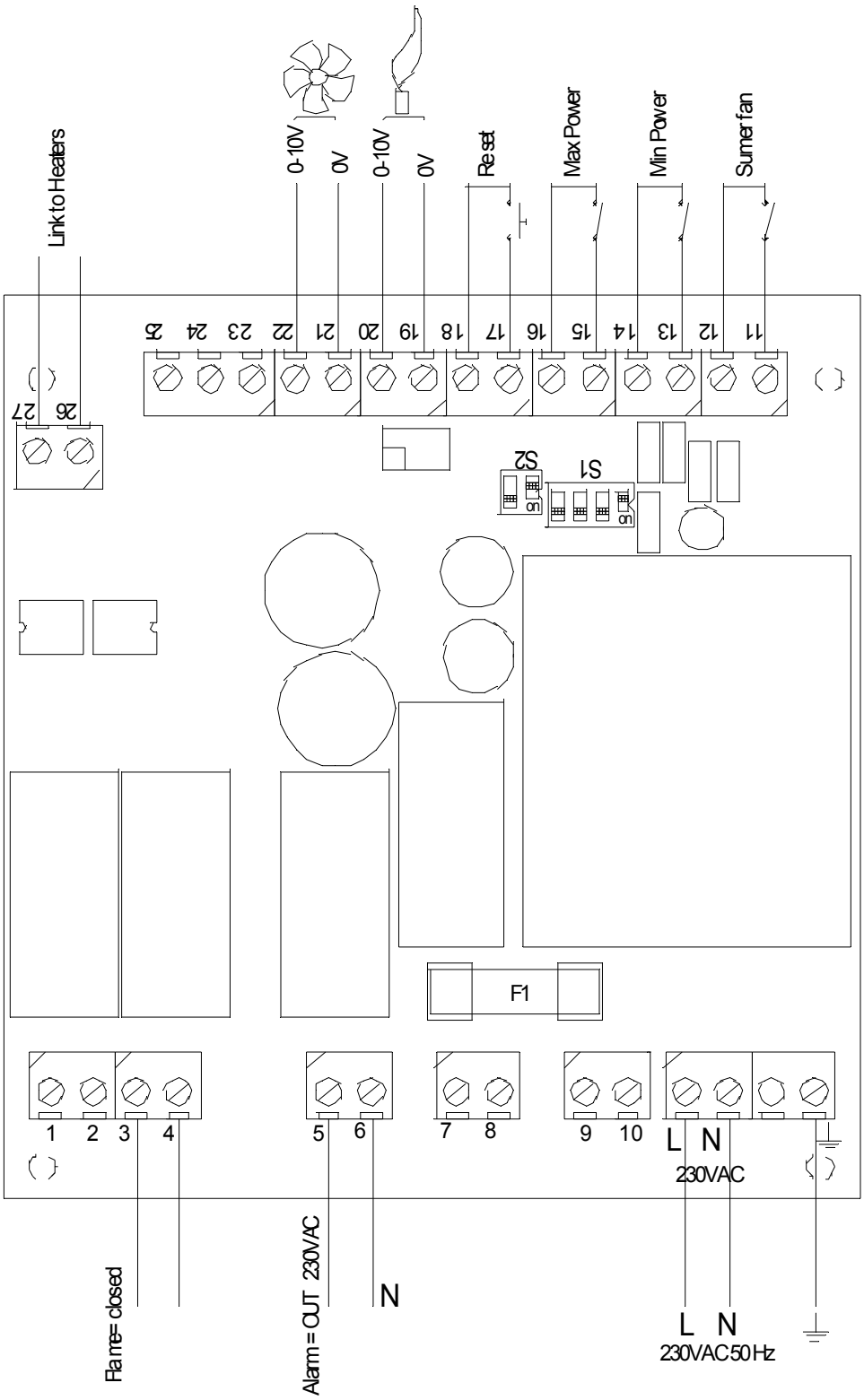
- Connect the Option board to 230Vac
- Connect the in and output signals
- Connect the clamps 26 and 27 with the heaters (terminal 4 and 5 in the heaters)
- Make settings of the switches S2 and S3 in the heaters. Each heater needs its own unique number to recognise the heater by the option board. The number of the heater can be set by the microswitch on the heater control in the heater. The number at the upper position of the switch is the given number for that heater. Make sure that each heater has its own unique number. If more than one heater have the same number, the system does not work
- After making the changes inside the heater always unplug and re plug the power to the heater for the changes to become effective.

5.1.1 Example for connecting the option board with the heaters



5.1.2 Example for connecting the option board and the DB8 / MTC in “view mode only”




Link to Heaters
0-10V
0V
0-10V
0V
Reset
Max Power
Min Power
Sumer fan
25 24 23 22 21 20 19 18 17 16 15 14 13 12 11
26 27
S2
S1
F1
1 2 3 4
5 6
7 8
9 10
L N
230VAC
Flame= closed
Alarm= OUT 230VAC
N
L N
230VAC 50 Hz