



MicroGuard

Intallation Instructions for T4 Heater

equipped with E111 Eberspächer Timer (12-pin Connector),

z.B. 22 1000 30 34 00 oder 22 1000 30 44 00



Timer E111

Operation

MicroGuard has been developed to support dedicated alarm and control functions over GSM network. One of these functions is remote control of heaters in cars and boats. In addition to the remote switch-on functionality, our modules provide the ability to monitor the temperature next to the installation position. The GSM network provides an unlimited range of coverage for all control functions. Following operation characteristics are available:

- Remote switching by **SMS and/or a simple call**.
- The switching can include **built-in timing functionality** or rely on the timer already connected to the heater. In case of the timer E111 the input PIN for an external heat-on/-off button is utilized. At each switching operation our module generates a short pulse at this pin which corresponds to one-time push of the heat-on/-off button. Once the heater is running, the subsequent call/SMS (subsequent switching operation) causes the heater to switch off. Otherwise the heater runs for the time which is programmed into the timer.
- A **switching operation** is strictly allowed **only for the numbers registered** in the phone book of the SIEMENS mobile phone which is installed together with our module. Five numbers can be easily registered by changing the contents of the pre-set phone book entries.
- Our module is powered over the mobile phone interface and does not need a separate supply. You can connect our battery-replacement PCB directly to the board power supply (car/boat battery +12V to +24V). Our battery replacement guarantees reliable operation even at temperatures below -20°C.



Warning! Always connect battery replacement over a 5A fuse. A direct wiring without a fuse might result in serious damage of the module as well as the car/boat where the module is installed..

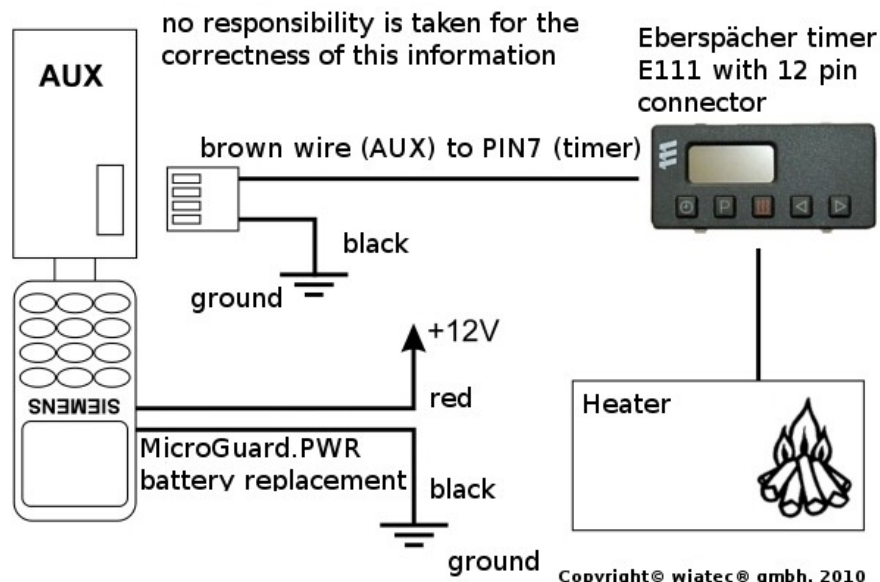


Figure 1: Schematic representation of the wiring

Connection to the timer E111

The connection uses pin 7 at the back side of the timer. The timer connector consists of 12 pins. Pin 7 is the input for an external switch-on/-off button- Fig 2 shows pin 7, where the brown wire from MicroGuard has to be connected to.

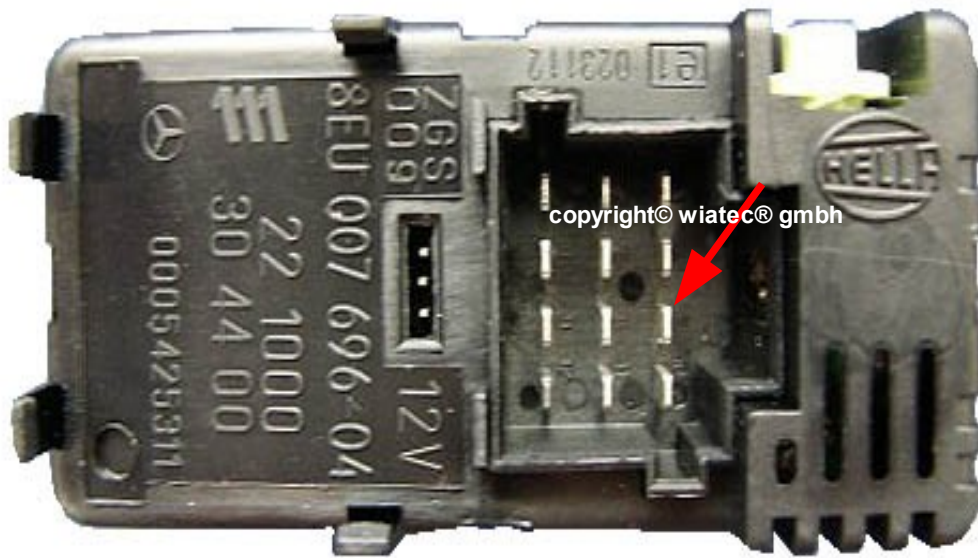


Figure 2: Connection pin (red arrow) for the brown wire from MicroGuard (wire not depicted)

Function tests without battery replacement

Please note that the black wire of the white connector E has to grounded if you do not use battery replacement for your tests. Using battery replacement the black wire is connected to ground via power supply of the replacement PCB. In this case the black wire at connector E can stay unconnected.

System Initialization

Procedure:

1. Disconnect all cables from the module (mobile phone, charger, white connector).
2. Delete the entire SIM card phone book (refer to the phone manual).
3. Dial the phone number which will control heater switching (probably your mobile phone number). Use the international number format (e.g. +49 1XX XXXXXXXX for Germany). Wait until you get the call – you do not have to answer it.
4. Dial '1234' (imaginary number), press green dial button and terminate the call.
5. Connect the module to SIEMENS mobile phone and wait approx. 60 Seconds until a control call to your number is executed.
6. Disconnect the module from SIEMENS mobile phone.
7. Verify the following entries in the phone book of SIEMENS mobile: “MG Puls” und “MG TraceT”. The contents of “MG Puls” has to be set to '002' (connection to timer or original wireless remote) or to the specific number according to the description on built-in timer function. For switching by call the content of “MG TraceT” has to be set to '25'.
8. Save the PIN of your SIM card (SIEMENS mobile) in the entry “MG Pin” of the phone book.
9. Connect the module to SIEMENS mobile and wait approx 2 Minutes until the new settings have been read.
10. Connect the white connector to the module. We assume the white connector has been already wired to the timer or the heater, respectively.
11. Call the SIEMENS mobile using your number (from point 3) and watch the display of SIEMENS mobile. When the call is coming in, you should see “MG01 Control” in the display. Do NOT terminate the call! If the caller ID corresponds to the one dialed in point 3 the module terminates the call after 2-3 calling tones - the heater switches on. If the module does not terminate the call, please verify if the content of MG01 Control is really the number you are calling from.
12. To switch off the heater call SIEMENS mobile again.
13. If you want to allow additional numbers to control the heater, please enter the numbers (note: international format) into the positions MG02 to MG05 Control of the SIM phone book .

Initializing using SIM Cards outside of Germany

If your SIM card for SIEMENS mobile installed with the module has been issued by a provider outside of Germany make sure to use the international number format +XX (NOT 00XX) in point 3 of the initialization procedure. Otherwise the module will assume German country code and the control call will not be able to be forwarded to your mobile.

Problems and Solutions

Please refer to the following remarks in case of problems when installing the system:

Issue	Root cause	Measures
The control call does not reach my mobile. SIEMENS mobile dials, but the call does not come through to my phone.	Country code is wrong	Verify if the entry MG01 Control in the phone book contains exactly your number, especially the correct country code (e.g. +49 - NOT 0049 – for Germany).
The heater does not switch on	Wrong connection to the timer (or the heater)	Check the connection using the brown wire at connecto E. Connect the brown wire to ground for a short time. When disconnection from ground, the heater should switch. Otherwise check the connection to timer's PCB, the heater or remote connector.
When my call comes in I see my call ID as numbers not as "MG01 Control".	The control number is stored not correctly	Verify if the entry MG01 Control in the phone book contains exactly your number, especially the correct country code (e.g. +49 - NOT 0049 – for Germany).
When my call comes in, my caller ID is not shown at all. The display says "unknown ID".	Caller ID not now forwarded to call receiver	Switch on caller ID forward notification.
After connecting MicroGuard the heater cannot be controlled neither by the button on the timer, nor through vendor's remote control.	Switching element in MicroGuard defect.	Please contact us for support.

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