Webasto

Installation Instructions

Control element

MultiControl | SmartControl | UniBox

SmartControl

MultiControl

English

Table of Contents

1   About this document

1.1   Purpose of the document

These installation instructions are part of the device and contain all the information required to ensure correct and safe installation.

1.2   Enclosed documents

All documents are provided on the enclosed DVD and are available from http://dealers.webasto.com.

Printed copies of the following documents are enclosed with this unit:

- Quick Start Guide
- Information Sheet for Initial Start-up

1.3   Using this document

▶ Print out these Installation Instructions as required.

▶ Read these Installation Instructions before installing the unit.

▶ Read the operating instructions before operating the unit.

1.4   Use of symbols and highlighting

Texts with the symbol 📖 refer to separate documents which are enclosed or can be requested from Webasto.

Texts with the symbol ☞ refer to technical features.

Texts with the symbol ! or ⚠ refer to possible material damage, risk of accident or injury.

Highlight	Explanation
✓	Requirements for the following necessary action
▶	Necessary action

2   Safety

2.1   Qualifications of installation personnel

The installation personnel must have the following qualifications:

- Successful completion of Webasto training
- Corresponding qualification for working on technical systems

2.2   Regulations and legal requirements

▶ Read and follow the operating instructions before starting up the heater.

Directives	Type-approval numbers for MultiControl	SmartControl	Unibox
Radio interference	ECE R10 E1 04 7319 MultiControl|SmartControl

The regulations of these guidelines are binding in the scope of the Directive 70/156/EEC and/or 2007/46/EC (for new vehicle models from 29/04/2009) and should also be observed in countries in which there are no special regulations. Failure to follow the installation instructions will result in the invalidation of the type approval for the heater and therefore invalidation of the general homologation of the vehicle. For vehicles with an EU type approval, an entry is not required in accordance with § 19 section 4 of appendix VIII b of StVZO. Country-specific registration regulations must be complied with.

The variants MultiControl MAR/RV TT and MAR/RV ATE do not comply with the legal requirements of UN/ECE Regulation No. 21 (interior fittings). These may therefore not be fitted in the head impact zone (on the dashboard). This does not include fitting in the exempted area behind the steering wheel with a deviation of up to 125 mm from the outer edge of the steering wheel. In the case of adjustable steering wheels, the zone finally exempted is reduced to the common area of the exempted zones for each of the driving positions which the steering wheel may assume. Please refer to the current version of UN/ECE R 21.

Intended use

The control element MultiControl | SmartControl is used to operate the Webasto water or air heaters for cabin and engine preheating. The control element MultiControl | SmartControl is currently approved for connection to certain Webasto water or air heaters.

2.3   Safety precautions

Safety information on installation

Safety information on operation

3   Unit description

3.1   Scope of Delivery

- MultiControl | SmartControl
- Double-sided adhesive pad
- Optional: bracket for MultiControl / SmartControl
- Optional: UniBox
- Optional: bracket for UniBox

3.2   Type label

The type label is affixed to the rear of the control element.

3.3   Functional description

Control Element

The control element MultiControl | SmartControl is used to operate the Webasto water or air heaters for cabin and engine preheating.

Depending on the heater installed and the application, it may additionally be necessary to install the UniBox (optional).
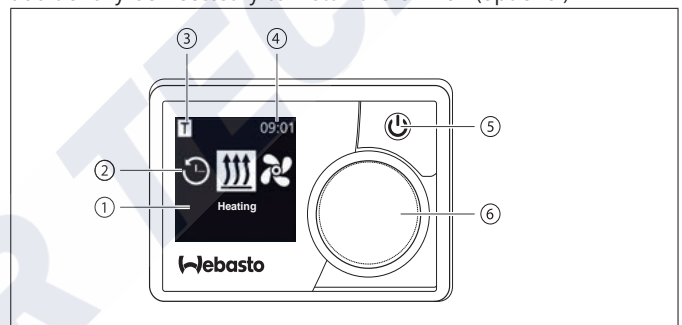
Fig. 01: MultiControl / SmartControl element

1   Submenu name
2   Submenu symbol
3   Activated time settings
4   Time
5   Quick start button
6   Control knob

UniBox

The UniBox makes it possible to operate heaters that are not W-bus compatible using the MultiControl and SmartControl control elements. The UniBox also provides additional inputs and outputs to expand the functional scope.

Communication between the UniBox and the control element takes place via the W-bus. The UniBox is configured automatically when the heater is selected on the control element.

The UniBox is fitted in the area of the vehicle that is not visible to the customer.

3.4   Versions

The control element is available in two versions:

- SmartControl: control element with black frame and no timer function.
- MultiControl: control element with silver-coloured frame, with timer function.

4 Installing the control element

4.1 Notes on installation

> ⚠ **CAUTION**
>
> **Danger of fire due to drilling into electrical cables**
>
> Burn injuries
>
> ▶ Arrange electrical cables behind the installation area outside the drilling points.

> ⚠ **CAUTION**
>
> **Injuries by touching sharp edges**
>
> Grazing of the skin, cuts
>
> ▶ When installing use protective gloves.

4.2 Installation location requirements

> ☞ Comply with legal requirements.

The installation location must satisfy the following requirements:
- ✓ Vehicle interior
- ✓ Ease of access
- ✓ Clear visibility
- ✓ Clean, dry and free of grease
- ✓ Protected from moisture
- ✓ Protected from heat, not in direct hot air flow
- ✓ Sufficient clearance behind installation location

4.3 Installing the control element

Installation using adhesive pads
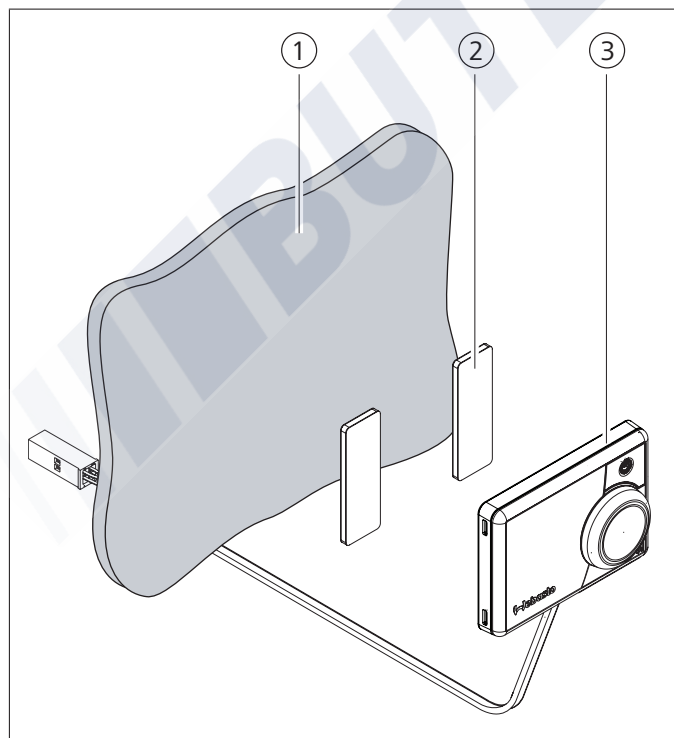
Fig. 02: Installing the control element using adhesive pads

1 Installation location

2 Adhesive pads (double-sided)

3 Control element

▶ Determine the installation location.

▶ Locate bushing for control element wiring harness.

▶ Rotate control element wiring harness through installation opening.

▶ Attach connector.

✓ Rear of control element is clean, dry and free of dust and grease.

▶ Position control element.

▶ Stick adhesive pads to the control element.

▶ Stick control element onto the installation location.

Optional installation using bracket
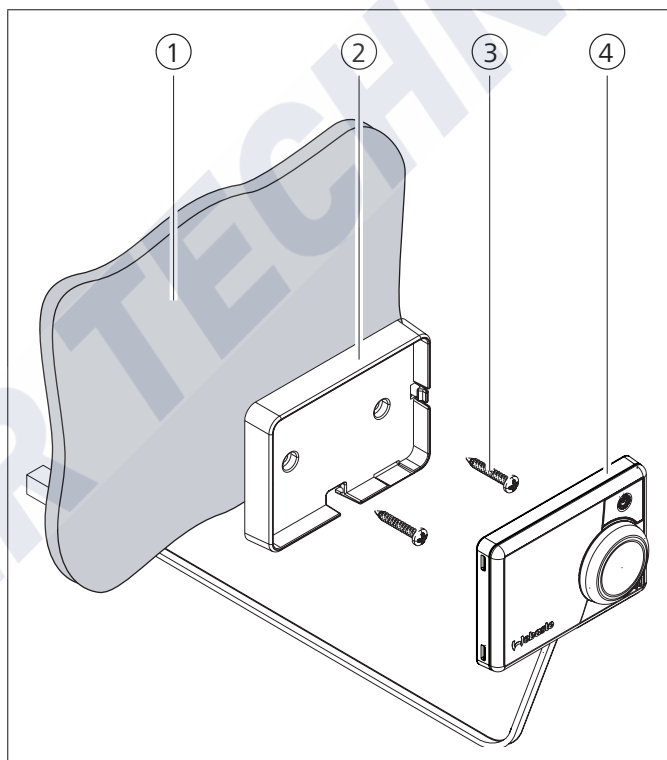
Fig. 03: Installing the control element using a bracket

1 Installation location

2 Bracket

3 Screws

4 Control Element

▶ Determine the installation location.

▶ Locate bushing for control element wiring harness.

▶ Install bracket using the enclosed screws.

▶ Pass the control element wiring harness through from the front.

▶ Clip the control element into the bracket.

MultiControl | SmartControl | UniBox
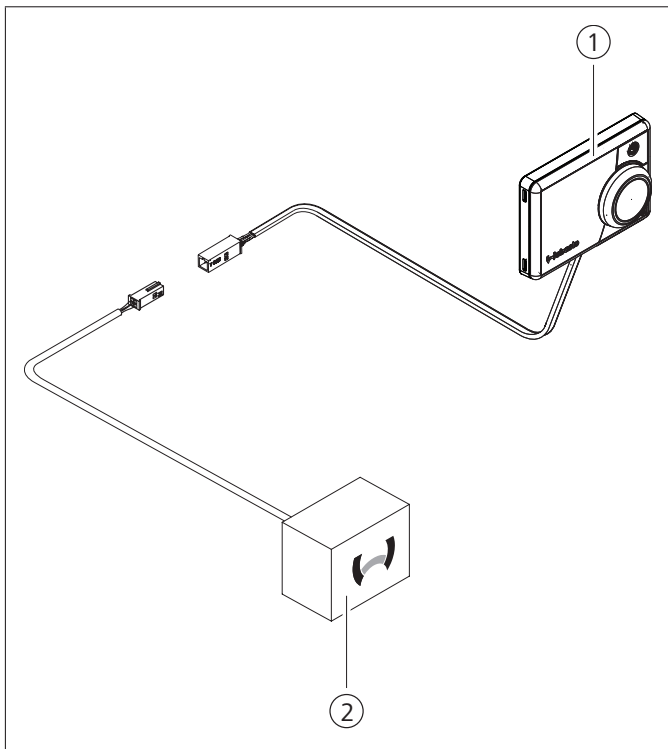
Fig. 04: Example of connecting control element (1) to heater (2)

Fig. 06: Example of connecting UniBox (1), control element (2), heater (3) and vehicle wiring harness (4)

4.4   Optional: Installing the UniBox

Fig. 05: Optional: Installing the UniBox using a bracket

▶ Determine the installation location.

> ☞ Fit the unit in the area of the vehicle that is not visible to the customer.

▶ Install bracket using the enclosed screws.
▶ Determine the layout for the enclosed UniBox wiring harness.
▶ Clip the UniBox into the bracket.

MultiControl | SmartControl | UniBox   6

5 Initial start-up

5.1 Information on initial operation

⚠️ **WARNING**
Inhaling poisonous gases in the enclosed rooms

Danger of poisoning and suffocation

▶ Never operate the heater (also not with programmed heating start) in closed rooms such as garages or workshops that do not have an exhaust extraction unit.

▶ In workshops with exhaust extraction facilities, make sure that the exhaust extractor is fully operational.

5.2 Starting up

✓ Heater is correctly installed.

✓ Control element is correctly installed.

✓ Vehicle on-board power supply is connected to the battery voltage.

Select heater

👉 Manual heater selection is omitted in the event of automatic heater detection.

Rotate the control knob and select the installed heater.
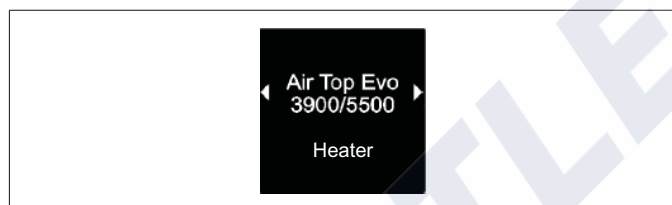
Fig. 07: "Heater" menu element

▶ Press the control knob.

Setting the day of the week:
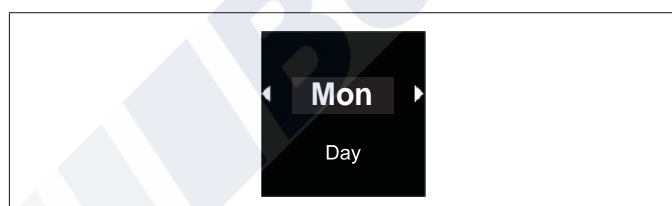
Fig. 08: Day of the week

▶ Rotate the control knob, select weekday.
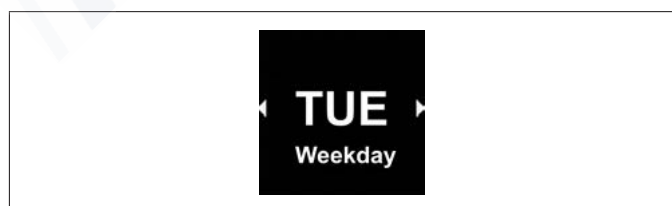
Fig. 09: Setting the time

Setting the time:

▶ Rotate the control knob, set the hour.

▶ Press the control knob.

▶ Rotate the control knob, set the minutes.

▶ Press the control knob.
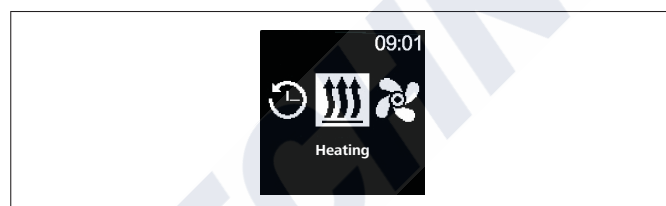
Fig. 10: Main menu

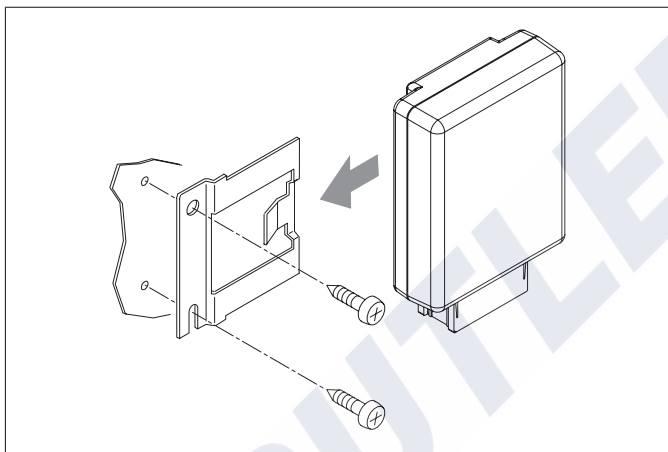When the main menu is displayed, initial start-up is completed.

👉 The selected heater can be changed at a later date. See "5.3 Selecting the heater at a later date" on page 7.

5.3 Selecting the heater at a later date

👉 In the event of a Reset, all the settings and timer programs on the control element are reset to the default settings or to the values preset by the technician.
In the event of a Reset, the language is reset to English.

▶ Select the "Settings" symbol ⚙ from the main menu.
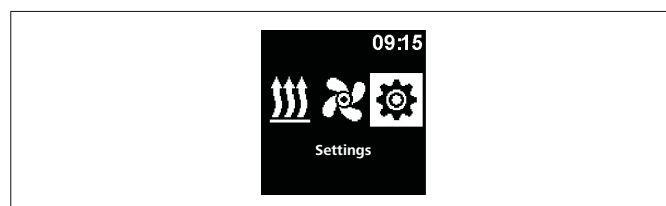
Fig. 11: "Settings" menu element

▶ Press the control knob.

▶ Select the "Reset" menu element.
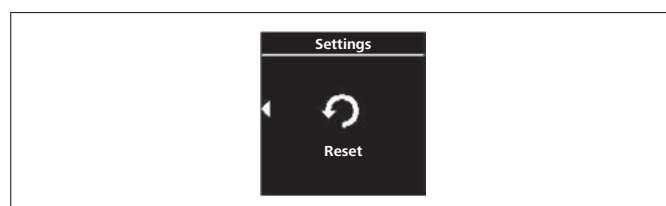
Fig. 12: "Reset" menu element

▶ Press the control knob.
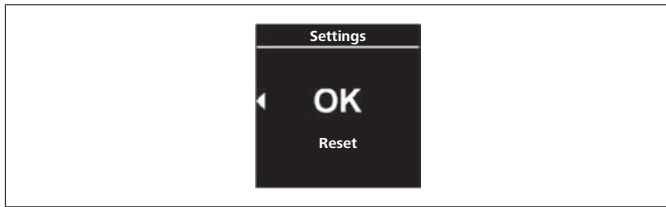
Fig. 13: "Confirm reset" menu element

▶ Press the control knob again to confirm the menu selection.

✓ The control element is restarted.

▶ **When restarting the control element (the start screen is displayed for 1.5 seconds), press the control knob and quick start button simultaneously for 3 seconds.**

Fig. 14: "Heater" menu element

▶ Select the desired heater.

▶ Press the control knob.

6   Technician mode

6.1   Functional description

This specific function is not visible to the customer and is only enabled when the diagnostic adapter is used. This function can be used to select the preset heaters and their settings and activate them. The limit values for temperature/operating duration etc. can be adjusted by the technician if the presetting is not correct for the system as setup. As an alternative, the settings can also be carried out using the WTT (Webasto Thermo Test) diagnostic software.

☞   Factory settings can only be changed by professionals.

6.2   Connecting the diagnostic adapter

▶ Remove the cover from the diagnostic adapter port.
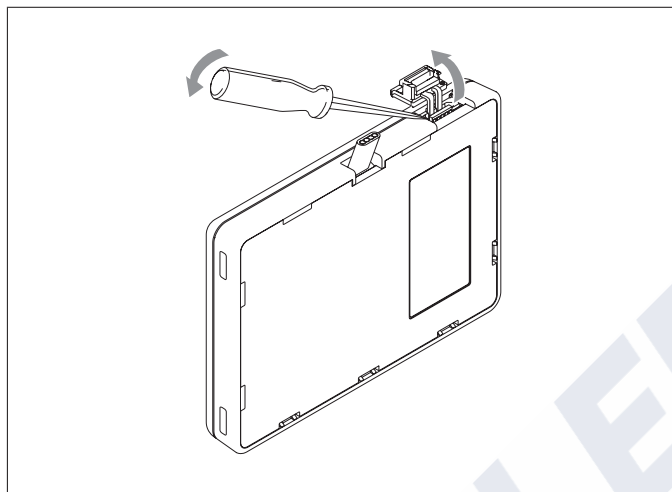
Fig. 15: Removing the cover

⚠ **ATTENTION**

Dust and moisture can damage the diagnostic adapter port

The unit may produce incorrect or no diagnostic information

▶ Close the cover on the diagnostic adapter port after use.

▶ Connect the diagnostic adapter to the control element.
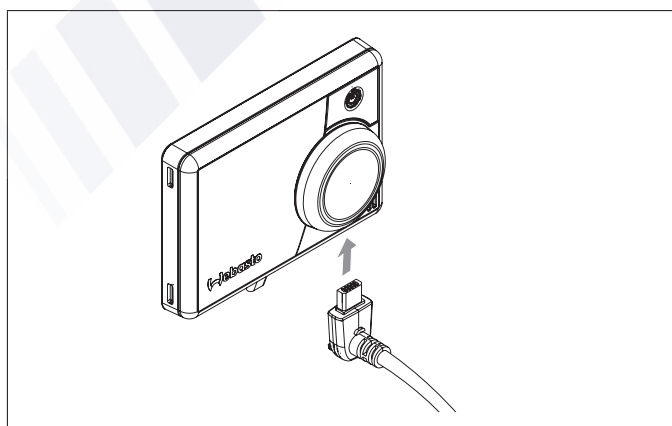
Fig. 16: Connecting the diagnostic adapter

6.3   Selecting the Service menu

▶ In the main menu, select the "Service" symbol 🏃.

Fig. 17: "Service" menu element

☞   The items in the Technician menu are an extension of the User menu and are available in addition. The "Service" symbol replaces the "Settings" symbol as soon as the diagnostic adapter is connected.

6.4   Service settings

✓ The diagnostic cable connector is connected to the control element. See chapter "6.2 Connecting the diagnostic adapter" on page 9.

✓ "Service" symbol has been selected in the main menu.

▶ Press the control knob.

"Quick start" symbol is shown in the display.

6.5   Select heater

A different heater can be selected using this menu item. If a different heater is selected, other settings from this menu are also reset to the specific values for that heater. This includes deleting the error memory.

✓ "Service" symbol has been selected in the main menu.

✓ "Quick start" symbol is shown in the display.

▶ Rotate the control knob in order to select the desired symbol "Heater".

✓ The heater name is shown in the display.

▶ Rotate the control knob in order to select the heater.

▶ Press the control knob in order to confirm selection.

6.6   Min duration

Preset the minimum operating duration that the customer can select from the menu when configuring the quick start button or for heating/ventilation. The value for "Min duration" can be set between 10 minutes and the "Max duration".

✓ "Service" symbol has been selected in the main menu.

✓ "Quick start" symbol is shown in the display.

▶ Rotate the control knob in order to choose the desired symbol "Min duration".

▶ Press the control knob in order to confirm selection.

✓ The min duration is shown in the display and the min duration "hour" is flashing.

▶ Rotate the control knob in order to choose the desired min duration "hour".

▶ Press the control knob in order to confirm selection.

✓ The min duration is shown in the display and the min duration "minute" is flashing.

▶ Rotate the control knob in order to choose the desired min duration "minute".

▶ Press the control knob in order to confirm selection.

6.7 Max duration

Preset the maximum operating duration that the customer can select from the menu when configuring the quick start button or for heating/ventilation. The range for "Max duration" can be set between value for "Min duration" and the maximum time applicable for the selected heater.

✓ "Service" symbol has been selected in the main menu.

✓ "Quick start" symbol is shown in the display.

▶ Rotate the control knob in order to choose the desired symbol "Max duration".

▶ Press the control knob in order to confirm selection.

✓ The max duration is shown in the display and the max duration "hour" is flashing.

▶ Rotate the control knob in order to choose the desired max duration "hour".

▶ Press the control knob in order to confirm selection.

✓ The max duration is shown in the display and the max duration "minute" is flashing.

▶ Rotate the control knob in order to choose the desired max duration "minute".

▶ Press the control knob in order to confirm selection.

6.8 Permanent mode

Here you can enable or block permanent operation of the heater by the user. Permanent mode is only possible in heaters that support this mode. If this option is selected for heaters that do not support permanent mode, the heater determines the operating duration when the user starts the functions heating/ventilation in permanent mode.

✓ "Service" symbol has been selected in the main menu.

✓ "Quick start" symbol is shown in the display.

▶ Rotate the control knob in order to choose the desired symbol "Permanent mode".

▶ Press the control knob to choose between "On" and "Off".

☞ This setting is taken over without confirmation.

6.9 Ventilation

This option can be used to remove the "Ventilation" menu item from the customer menu. This option has no effect for heaters that do not support "ventilation".

✓ "Service" symbol has been selected in the main menu.

✓ "Quick start" symbol is shown in the display.

▶ Rotate the control knob in order to choose the desired symbol "Ventilation".

▶ Press the control knob to choose between "On" and "Off".

☞ This setting is taken over without confirmation.

6.10 Temperature range

Here you can restrict the temperature range for air heaters that the user can select from the menu when configuring the quick start button or when heating. The minimum temperature can be selected between 5°C and 20°C and the maximum temperature can be selected between 20°C and 35°C. This setting has no effect for water heaters.

✓ "Service" symbol has been selected in the main menu.

✓ "Quick start" symbol is shown in the display.

▶ Rotate the control knob in order to choose the desired symbol "Temperature range".

✓ If the temperature setting function is not supported by the heater, "N/A" appears in the display and no settings can be made here.

▶ Press the control knob in order to confirm selection.

✓ The minimum temperature is shown in the display.

▶ Rotate the control knob to select the desired minimum temperature.

▶ Press the control knob in order to confirm selection.

✓ The maximum temperature is shown in the display.

▶ Rotate the control knob to select the desired maximum temperature.

▶ Press the control knob in order to confirm selection.

6.11 Show temperature

This configures the temperature display in the status bar. If this option is switched off, the current temperature is not shown in the status bar. The temperature shown is always the current temperature as reported by a connected sensor or the internal sensor in the MultiControl/SmartControl. Following a factory reset or after selecting a new heater, all possible sensors are queried and the first available sensor is selected for temperature determination. The query sequence is as follows:

- External sensor on the W-bus
- Sensor in the heater
- External sensor connected to the UniBox
- Internal sensor of the MultiControl/SmartControl

✓ The temperature can be displayed and hidden in the main menu.

✓ "Service" symbol has been selected in the main menu.

✓ "Quick start" symbol is shown in the display.

▶ Rotate the control knob to choose the desired symbol "Show temperature".

▶ Press the control knob to choose between "On" and "Off".

☞ This setting is taken over without confirmation.

6.12 UniBox

In principle, following a factory reset or heater selection, there will be automatic detection of any UniBox that is present. If the UniBox is retrofitted, support can be forced by activating this option so that the additional functions, such as ignition detection, ADR, additional external button (like the quick start button) can be used.

✓ "Service" symbol has been selected in the main menu.

✓ "Quick start" symbol is shown in the display.

▶ Turn the control knob in order to choose the desired "UniBox".

▶ Press the control knob to choose between "On" and "Off".

☞ This setting is taken over without confirmation.

6.13 Undervoltage shutdown

If this option is activated, the supply voltage is continuously checked during heating/ventilation mode and, if the configured value is undershot for more than 5 seconds, the heater is shut down. The heater can only be switched back on when the voltage is stable above the configured value. Failure to reach the necessary value is indicated in the status bar by means of a battery symbol.

✓ "Service" symbol has been selected in the main menu.

✓ "Quick start" symbol is shown in the display.

▶ Rotate the control knob in order to choose the desired symbol "Undervoltage shutdown".

✓ If undervoltage shutdown is active, the display shows the preset value. If it is deactivated, "Off" is shown.

▶ Press the control knob in order to confirm selection.

▶ Rotate the control knob to set the value or deactivate the function (Off).

▶ Press the control knob in order to confirm selection.

6.14 Max active timers

Only one timer can be activated as standard. Using this option, you can increase the number of times that can be activated simultaneously to as many as 21.

Please note the legal requirements, in particular that only one activated timer is permitted for passenger cars.

✓ "Service" symbol has been selected in the main menu.

✓ "Quick start" symbol is shown in the display.

▶ Rotate the control knob in order to choose the desired symbol "Max active timers".

✓ The preset value (number of timers) is shown.

▶ Press the control knob in order to confirm selection.

▶ Rotate the control knob to set the value.

▶ Press the control knob in order to confirm selection.

6.15 Unlock heater

⚠ **CAUTION**
Possible risk of fire
Burn injuries
▶ Rectify cause of error.
▶ The heater may only be unlocked by trained technicians.

❗ **ATTENTION**
Risk of damage to the heater
▶ Rectify cause of error.
▶ The heater may only be unlocked by trained technicians.

▶ Bring up the Service menu.

▶ Rotate the control knob clockwise.

▶ Select the "Unlock heater" menu element.

▶ Press the control knob on "Unlock heater".

▶ Rotate the control knob and select "Unlock heater OK" or "Back" (cancel).

▶ Press the control knob. Fault codes in the heater will be deleted.

6.16 Basic configuration

In the event of a reset, all settings are restored to basic configuration except weekday and time. Following the reset, proceed as for installation and initial start-up.

"Quick start" symbol is shown in the display.

▶ Rotate the control knob in order to choose the desired symbol "Factory reset".

▶ Press the control knob in order to confirm selection.

✓ "OK" is shown in the display.

✓ Press the control knob in order to confirm selection.

✓ Then the restart is performed.

7   Troubleshooting

7.1   Fault code output

☞ The heater will output a fault code on the control element if a fault occurs during heating mode.
▶ Pressing the quick start button confirms the error display.

📖 You will find further information in the operating instructions.

☞ An error that has occurred is shown on the control element display as Txx or Fxx and the LED flashes red. The error display also appears after waking up the control element from standby and must be confirmed by pressing the control knob or the quick start button. This error is saved in the error entries in the control element menu (menu element "Error entry") and can be called up. Selecting "Reset" in the customer menu deletes all error entries for the control element and the UniBox.

Table of internal control element errors "Txx"

Fault code	Faults	Fault description	Troubleshooting
Ted	Supply voltage too high	Supply voltage exceeds 36V.	Check car electrical installation.
Te3	Display background illumination faulty		Contact Webasto service workshop.
Te4	Defective LED status		Contact Webasto service workshop.
Te5	Temperature sensor error	Temperature sensor of MultiControl/SmartControl faulty.	Contact Webasto service workshop.
Te6	W-bus temperature sensor error	Temperature from external sensor (W-bus) cannot be read correctly.	Check installation. Replace sensor if necessary.
T12	Communication error on the W-bus		Check installation.
Te7/Te8	Flash		Contact Webasto service workshop.
Tea	Faulty feedback signal from heater (ST)		Check installation.
Tec	Control knob sticking	Control knob pressed for longer than 10 seconds.	Contact Webasto service workshop.
T46	Excess current/short circuit at switch output SAU1	Current exceeds 500mA.	Check installation. Ensure that the consumer at the switch output SAU1 is not drawing more than 500mA.
Te0	Reduced voltage	Supply voltage is below value set by technician.	Charge the battery and check car electrical installation.
T84	Operating voltage too low	Supply voltage is less than 8V.	Charge the battery and check car electrical installation.
Te1	Ambient temperature too low/high	Ambient temperature is outside the operating range of -20°C to +70°C.	The error disappears automatically when the ambient temperature is once more within the range of -20°C to +70°C.
Teb	RTC fault		In case of voltage interruption lasting more than 8 minutes: Enter day/time again. If this error appears without voltage interruption: Contact Webasto service workshop.

Error with UniBox connected and analogue heater

Fault code	Faults	Fault description	Troubleshooting
Fed	Supply voltage too high	Supply voltage exceeds 36V.	Check car electrical installation.
F5d	Temperature sensor error	The temperature from the external sensor connected to the UniBox cannot be read correctly.	Check installation. Contact Webasto service workshop.
F12	Communication error on the W-bus		Check installation.
Fe7/Fe8	Flash	Read/write from/to the internal memory failed.	Contact Webasto service workshop.
Fe9	Signal from switch output SAU1 not plausible	The UniBox is receiving an implausible signal.	Check installation. Contact Webasto service workshop.
Fea	Faulty feedback signal from heater (ST)		Check installation.
Fec	External control knob sticking	External control knob pressed for longer than 10 seconds.	Check installation. Contact Webasto service workshop.
F01 to F0F	Heater error	Please look through the heater documentation.	Contact Webasto service workshop.
T5d	UniBox temperature sensor error	The temperature from the external sensor connected to the UniBox cannot be read correctly.	Check installation. Replace sensor if necessary.
T84	Operating voltage too low	Supply voltage is less than 8V.	Charge the battery and check car electrical installation.

Errors relating to a connected heater

Fault code	Faults	Fault description	Troubleshooting
F01 to F99	Heater error (analogue)	See workshop manual for heater	Contact Webasto service workshop
F01 to FFE **H01 to Hxx**	Heater error (W-bus)		

8 Technical data

Control Element	MultiControl / SmartControl	UniBox
Rated voltage [V]	12 to 24	
Maximum current consumption (during operation without external relay) [mA]	17 to 23	12
Maximum current consumption (in standby) [mA]	0.5	
Permissible ambient temperature [°C] (operation/storage)	-40 to +75 / -40 to +90	
Control element dimensions [mm] (length/depth/height)	68 / 15 (9.5 without control knob) / 48	90 (104 with connected wiring harness) / 60 / 25
Weight [g]	41	66

9 Electrical Connections

9.1 Connector designation MultiControl | SmartControl

No.	Colours	Description	Remarks
Contact 1	yellow	W Bus / Low Switch / Diagnostics	The connection is configured differently depending on the heater selected. Please note that there is no W-bus on this line for heaters with analogue control. W-bus diagnostics are only possible with a W-bus heater connected or with a UniBox connected.
Contact 2	black	SAU1 switch output	max. switching current 500 mA
Contact 3	red	KL30	Plus+
Contact 4	brown	KL31	Earth-
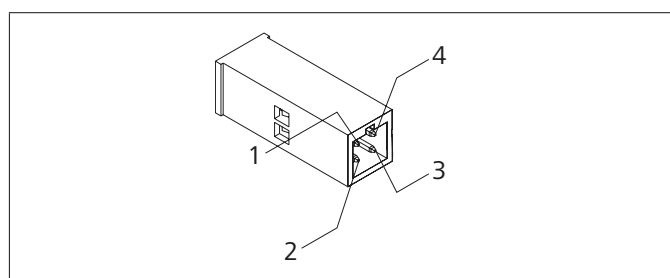
Fig. 18: Control element connections

9.2 Connector designation, UniBox

| No.	Colours	Description	Remarks
Contact 1	red	KL30	Plus+ (control element)
Contact 2	brown	KL31	Earth- (control element)
Contact 3	yellow	W-bus	W bus (control element)
Contact 4	grey	SAU1 switch output	Switch output, heating (control element)
Contact 5	red	KL30	Plus+
Contact 6	brown	KL31	Earth-
Contact 7	green / white	W-bus	W-bus
Contact 8	black	SAU1 switch output	Switch output, heating (high side) from UniBox
Contact 9	red / white	SAU2 switch output	Switch output, ventilation (low side) from UniBox max. switching current 20mA
Contact 10		TS (Plus)	External temperature sensor
Contact 11		TS (Earth)	External temperature sensor
Contact 12	blue	SWG (Plus)	Setpoint input
Contact 13	white	SWG (Earth)	Setpoint input
Contact 14	black / grey	KL15	Ignition
Contact 15	violet	ADR (TRS)	ADR operation Display on control element
Contact 16	GREEN	SEI	Switch input External button for switching on and off
Contact 17	red / black	ST / status	Fault code / status
Contact 18	white / red	Multifunction	Multifunctional input (air heater)
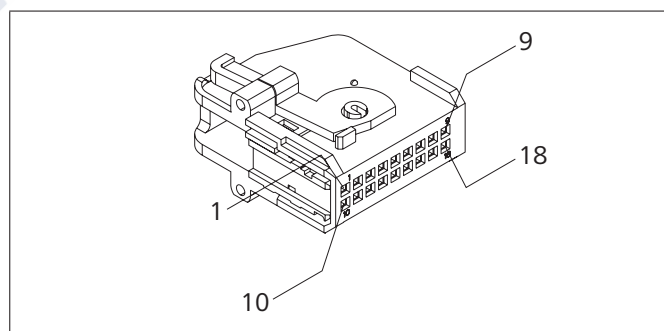
Fig. 19: UniBox connections

In multilingual versions the German language is binding. You can request your language if it is missing.

The telephone number of the respective country can be obtained from the Webasto service point flyer or the homepage of your respective Webasto country representative.

Webasto Thermo & Comfort SE
Postfach 1410
82199 Gilching
Germany

Visitors Address:
Friedrichshafener Str. 9
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