

Eberspächer 25.2829.34.0500

Eberspächer Hydronic S3 Universal Vehicle Heater with Easy Start Pro 12V User Manual

Model: 25.2829.34.0500

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation, installation, and maintenance of your Eberspächer Hydronic S3 Universal Vehicle Heater with Easy Start Pro control unit. Please read this manual thoroughly before attempting any installation or operation to ensure proper function and to prevent damage or injury. Keep this manual in a safe place for future reference.

2. SAFETY INSTRUCTIONS

- **Professional Installation:** The Eberspächer Hydronic S3 heater must be installed by trained and authorized personnel in accordance with all applicable local and national regulations and manufacturer guidelines. Improper installation can lead to serious hazards.
- **Fuel and Exhaust:** Ensure proper ventilation during operation. Never operate the heater in enclosed spaces without adequate exhaust ventilation. Fuel lines and exhaust systems must be securely installed and free from leaks.
- **Electrical Connections:** All electrical connections must be made correctly and securely to prevent short circuits, overheating, or fire. Use only specified voltage (12V for this model).
- **Maintenance:** Regular maintenance is crucial for safe and reliable operation. Refer to the maintenance section for details.
- **Modifications:** Do not modify the heater or its components. Unauthorized modifications can compromise safety and void the warranty.

3. PRODUCT OVERVIEW AND COMPONENTS

The Eberspächer Hydronic S3 is an engine-independent water heater designed to provide heat for various vehicle applications. It operates by heating the vehicle's coolant circuit, which then distributes warmth throughout the vehicle's interior or preheats the engine.



Figure 3.1: The Eberspächer Hydronic S3 Universal Vehicle Heater unit shown alongside its Easy Start Pro control unit. The heater unit is a compact, grey and black device with various ports, while the control unit features a digital display and a rotary knob.

Key components include the main heater unit, which contains the combustion chamber, heat exchanger, and control

unit, and the Easy Start Pro control unit for user interaction.

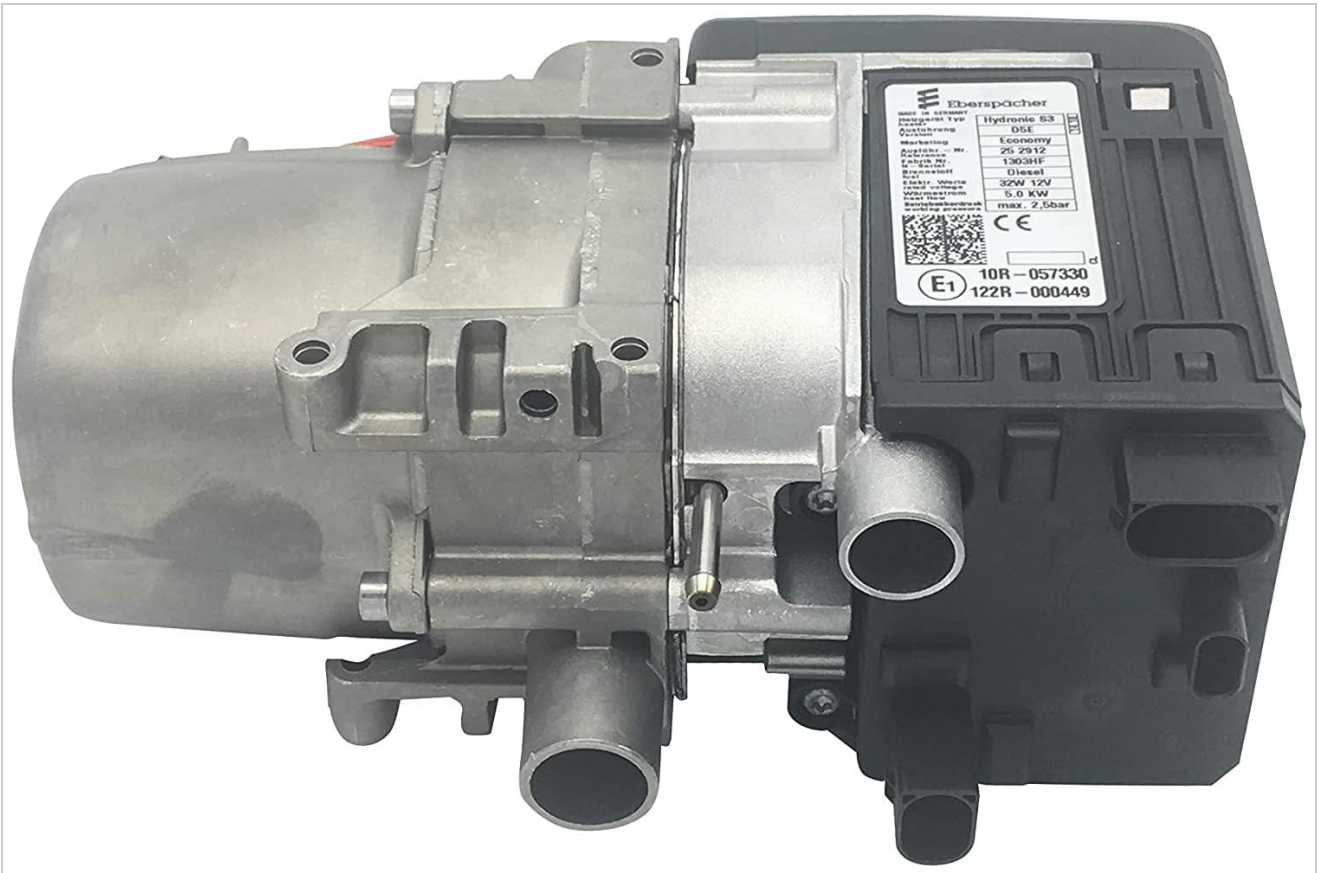
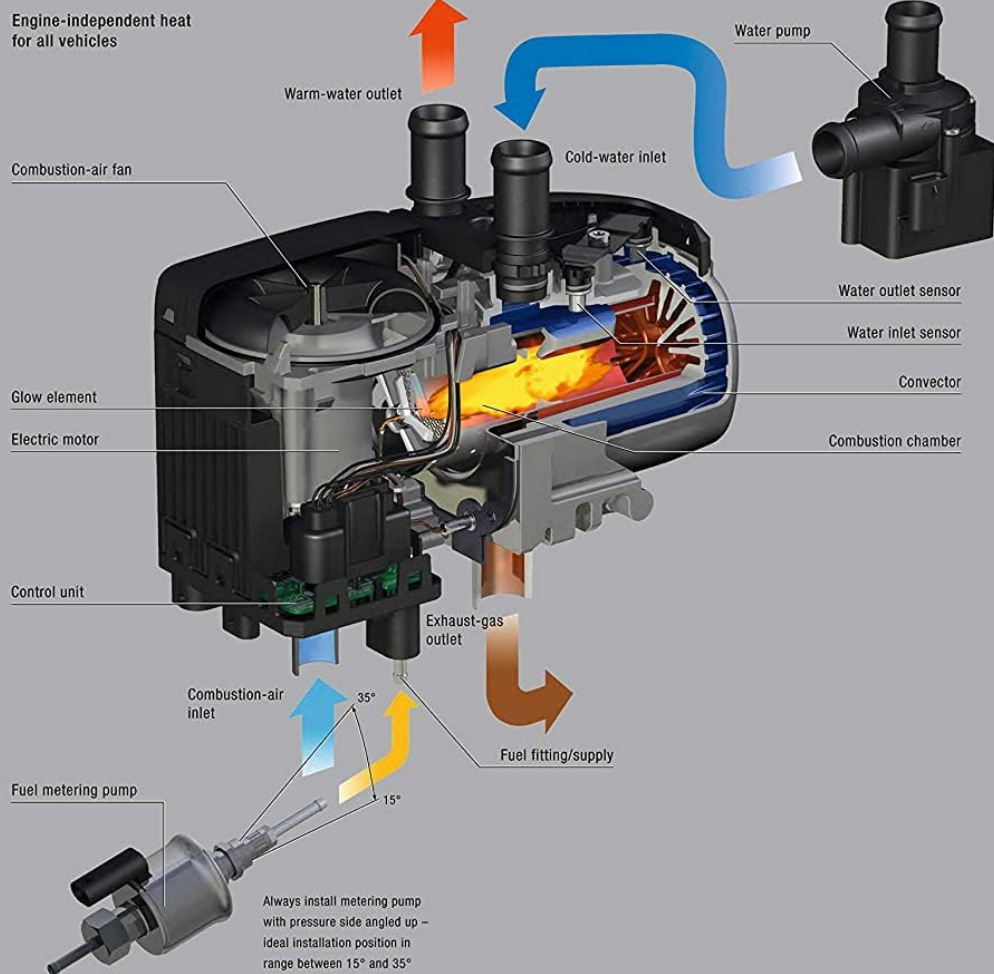


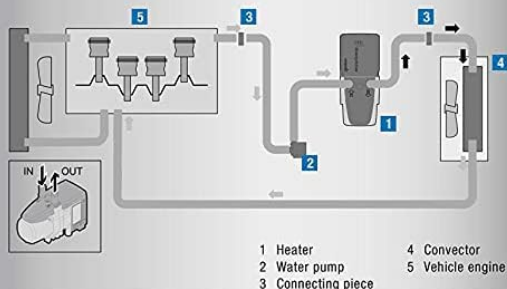
Figure 3.2: Side view of the Hydronic S3 heater unit, illustrating the various connection points for coolant, fuel, and exhaust. The unit's identification label is also visible.

EBERSPÄCHER WATER HEATER HYDRONIC S3 ECONOMY



Standard circuit: "inline integration" of coolant circuit

Integration of pre-heater into the existing coolant circuit. During pre-heating, the heat is initially provided to the engine only. Once the coolant temperature reaches approx. 30 °C, the vehicle's fan starts up and heat is supplied to the passenger compartment as well.



Comfort circuit: small coolant circuit with two check valves

During pre-heating with the engine off, heat is provided exclusively to the vehicle interior to heat it up more rapidly.

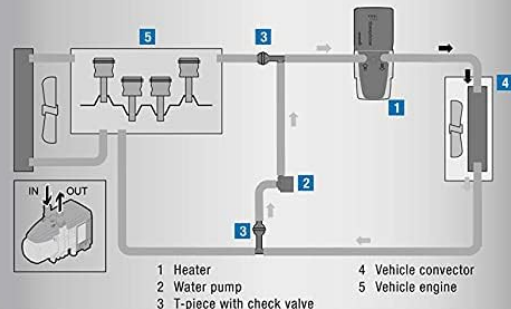


Figure 3.3: Detailed diagram of the Hydronic S3 Economy water heater, showing internal components such as the combustion-air fan, glow element, electric motor, combustion chamber, and various sensors. It also illustrates two standard coolant circuit configurations: 'inline integration' and 'small coolant circuit with two check valves'.

4. SETUP AND INSTALLATION

Installation of the Hydronic S3 heater requires specialized knowledge and tools. It is strongly recommended that installation be performed by an authorized Eberspächer service partner or a qualified technician.

4.1 General Installation Guidelines

- **Mounting Location:** Choose a mounting location that is protected from road spray and mechanical damage, allows for proper air circulation, and provides sufficient space for maintenance.
- **Coolant Circuit Integration:** The heater must be integrated into the vehicle's coolant circuit. Refer to Figure 3.3 for typical circuit diagrams. Ensure all hose connections are secure and leak-free.
- **Fuel Supply:** Connect the heater to the vehicle's fuel system using the provided fuel metering pump. The metering pump should be installed at an angle between 15° and 35° to ensure proper operation.
- **Exhaust System:** Install the exhaust pipe according to manufacturer specifications, ensuring it is routed away from heat-sensitive components and exits the vehicle safely.
- **Electrical Connection:** Connect the heater to the vehicle's 12V electrical system. Ensure proper fusing and wiring according to the wiring diagram provided with the full installation manual. The Easy Start Pro control unit connects via CAN bus communication.

5. OPERATING THE HEATER (EASY START PRO CONTROL UNIT)

The Hydronic S3 heater is controlled by the Easy Start Pro control unit, which offers intuitive navigation and various functions.



EASYSTART PRO – THE INTELLIGENT PERMANENTLY INSTALLED CONTROL UNIT:

The new, permanently installed EasyStart Pro control unit is based on Eberspächer CAN bus communication and is designed for the new Hydronic S3 Economy / Hydronic Commercial and Airtronic S2 / M2 heater generations. In addition to a timer function, the new control unit is equipped with many new product features such as:

- Intuitive navigation with control knob
- Integrated temperature sensor
- Up to two heaters can be operated separately, or two identical heaters (Airtronic or Hydronic) can be operated as a group
- Simple diagnostics function in text form for users
- Integrated residual-heat function for Hydronic heaters: efficient heating mode by using the engine's residual heat
- Altitude mode can be activated manually above 1,500 m (Hydronic S3 Economy)
- Endless heater operating time can be set (Airtronic and Hydronic)
- Menu navigation available in 25 other languages in addition to English and German (from Q4/2018 via EasyScan)

A WORLD OF COMFORT



Figure 5.1: The Easy Start Pro control unit display, showing current settings such as a 20-minute operating time and a target temperature of 22°C. Icons indicate various functions like heating, ventilation, and settings.

5.1 Basic Operation

- **Turning On/Off:** Use the control knob or dedicated buttons on the Easy Start Pro unit to switch the heater on or off. A long press may be required for certain functions.
- **Setting Temperature:** Rotate the control knob to adjust the desired temperature. The display will show the selected temperature.
- **Timer Function:** Utilize the timer function to program specific heating times. This allows the heater to activate automatically before you use the vehicle.

5.2 Advanced Features

- **Integrated Temperature Sensor:** The control unit features an integrated temperature sensor for accurate climate control.
- **Altitude Mode:** For operation above 1,500 meters, activate the altitude mode manually to ensure optimal combustion and performance.
- **Diagnostics:** The Easy Start Pro provides simple diagnostic functions to help identify and troubleshoot issues.

6. MAINTENANCE

Regular maintenance ensures the longevity and safe operation of your Eberspächer Hydronic S3 heater. It is recommended to have the heater inspected by an authorized service partner annually, especially before the heating season.

- **Visual Inspection:** Periodically check all hoses, connections, and wiring for signs of wear, damage, or leaks.
- **Exhaust System:** Ensure the exhaust pipe is clear of obstructions and free from corrosion.
- **Air Intakes:** Keep the combustion air intake and warm air outlet free from dirt and debris.
- **Functional Check:** Regularly test the heater's operation to ensure it starts and runs correctly.

7. TROUBLESHOOTING

If you encounter issues with your Hydronic S3 heater, refer to the following common troubleshooting steps. For complex problems, contact an authorized service partner.

| Problem | Possible Cause | Solution |
|----------------------------------|--|---|
| Heater does not start | Low fuel level, electrical fault, air in fuel line, control unit error | Check fuel level, inspect fuses/wiring, bleed fuel system, check control unit display for error codes. |
| Heater stops unexpectedly | Overheating, low voltage, exhaust blockage, fuel supply interruption | Check coolant level, battery voltage, exhaust pipe, and fuel supply. Allow heater to cool down. |
| Insufficient heating performance | Low coolant level, air in coolant system, faulty water pump, incorrect temperature setting | Check and top up coolant, bleed coolant system, verify water pump function, adjust temperature setting. |
| Excessive smoke or unusual odors | Incomplete combustion, faulty glow plug, exhaust leak | Immediately switch off the heater. Do not operate until inspected and repaired by a qualified technician. |

8. SPECIFICATIONS

The following table provides key technical specifications for the Eberspächer Hydronic S3 Universal Vehicle Heater (Model 25.2829.34.0500).

HYDRONIC S3 ECONOMY/COMMERCIAL WATER HEATER

ADVANTAGES:

- Interfaces: CAN and S+
- Economy: service life 3,000 h
- Commercial: service life 5,000 h
- Compatibility with all new and many conventional control units
- New 24-volt heater for commercial applications
- NEW: Power version with 5.6 kW heating performance
- Very large output range
- Utilization of residual heat through heating circuit run-on control
- Stepless heating performance control
- Noise emissions optimized

ADDITIONAL FEATURES:

- Economy: gasoline (also E10) and diesel (also B30)
Commercial: diesel (also B30)
- Diagnostic display via EasyStart TP 7.1 control units, as well as via EasyStart CAN-based control units
- Economy: suitable for altitudes up to 1,500 m above sea level; altitude adjustment can be activated manually above 1,500 m with EasyStart Pro
Commercial: automatic altitude adjustment up to 3,000 m above sea level
- Connection diameters:
water 20 mm, exhaust gas 24 mm, combustion air 20 mm
- ADR compatible with EasyStart Pro (with "Commercial" version)

ECONOMY SEGMENTS:



COMMERCIAL SEGMENTS:



| HYDRONIC S3 | Economy | | | | Commercial | | |
|---------------------------------------|----------|---|-----------------|-----------------|--------------------|-----------------|--|
| | Gasoline | | Diesel | | NEW: Power version | | |
| Version | B4E | B5E | D4E | D5E | D5L | D6L | |
| Heating performance control | Stepless | | | | | | |
| Service life | h | | | | h | | |
| | 3,000 | | | | | | |
| Heating performance | kW | 1.8 to 4.3 | 1.8 to 5.0 | 1.3 to 4.3 | 1.3 to 5.0 | 1.3 to 5.6 | |
| Voltage | V | 12 | | | | 24 | |
| Electric power consumption without WP | W | 24 | 32 | 24 | 32 | 37 | |
| with WP | W | 42 | 50 | 42 | 50 | 72 | |
| Fuel consumption | l/h | 0.57 | 0.67 | 0.53 | 0.59 | 0.65 | |
| Operating temperature range | °C | -40 to +60 | | -40 to +80 | | | |
| Weight without WP** and without MP*** | kg | 2.0 | | | | | |
| Main dimensions L x W x H | mm | 215 x 91 x 144 | | | | | |
| Protection rating | | Heater: IP5K6K, IP5K9K, control unit: IP6K6K, IP6K9K* | | | | | |
| Interfaces | | CAN, S+ | | | | | |
| Part number | | 20.2007.05.0000 | 20.2008.05.0000 | 25.2933.05.0000 | 25.2934.05.0000 | 25.2696.05.0000 | |
| | | | | | 25.2745.05.0000 | | |

* The heater is protected against dust in harmful quantities, against powerful water jets under increased pressure and against water during high-pressure/steam jet cleaning (provided it is not in operation). The control unit is fully dustproof, fully protected against powerful water jets under increased pressure, as well as against water during high-pressure/steam jet cleaning (provided it is not in operation).
** Water pump *** Metering pump

HYDRONIC S3 ECONOMY/COMMERCIAL:

New control unit
for CAN communication
and high performance



Product picture does not show series scope

NEW HOLDER DESIGN FOR HYDRONIC S3 COMMERCIAL:

Part number: 22.1000.51.5000

Four different installation versions:

- two vertical (left or right side)
- two horizontal (left or right side)



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FACT | factnet.de · Version 06/2018 · Subject to change without notice

Figure 8.1: Comprehensive technical data for the Hydronic S3 Economy/Commercial water heater, detailing versions, heating performance, voltage, electrical power consumption, fuel consumption, operating temperature range, dimensions, and protection ratings.

| Feature | Specification |
|-------------------------------|--|
| Manufacturer | Eberspächer |
| Model Number | 25.2829.34.0500 |
| Voltage | 12V |
| Heating Performance (min-max) | 1.8 kW - 5.0 kW |
| Fuel Consumption (min-max) | 0.57 l/h - 0.69 l/h (Gasoline/Diesel dependent on version) |
| Operating Temperature Range | -40 °C to +60 °C |
| Protection Rating | IP5K9K, IP6K6K, IP6K9K* |
| Item Weight | 15.09 pounds (approx. 6.84 kg) |
| Package Dimensions | 23.23 x 12.13 x 7.01 inches (approx. 59 x 31 x 18 cm) |

9. WARRANTY AND SUPPORT

Eberspächer products are manufactured to high-quality standards. For warranty information, please refer to the documentation provided with your purchase or contact your authorized Eberspächer dealer. For technical support, service, or genuine replacement parts, please contact an authorized Eberspächer service partner. Using non-genuine parts may void your warranty and compromise the safety and performance of your heater.