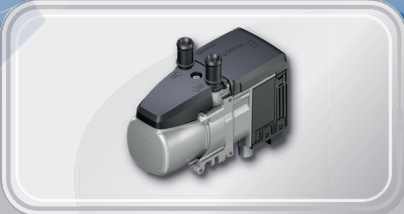


WIRING DIAGRAMS HYDRONIC S3 CS ECONOMY



WICHTIG für den elektrischen Anschluss der Hydronic S3 CS Heizgeräte an EasyFan: Bitte beachten Sie die Hinweise in diesem Dokument (S. 33)!

IMPORTANT NOTE for the electrical connection of Hydronic S3 CS heaters to EasyFan: Please read the reference inside this document (p. 33)!



The technical description and installation instructions are valid for these engine-independent water heaters:

	Order No.	→ 05/2020	05/2020 →
Heaters for petrol			
B 4 E – 12 V CS		20.2007.05.0000	20.2050.05.0000
B 5 E – 12 V CS		20.2008.05.0000	20.2051.05.0000
Heaters for diesel			
D 4 E – 12 V CS		25.2933.05.0000	25.2992.05.0000
D 5 E – 12 V CS		25.2934.05.0000	25.2993.05.0000
Heaters for diesel with inlet pressure resistant metering pump			
D 4 E – 12 V CS VDP		25.2943.05.0000	25.2995.05.0000
D 5 E – 12 V CS VDP		25.2942.05.0000	25.2994.05.0000

For operating details and error list, refer to the “Troubleshooting and Repair Instructions” of the heater and/or the “PLUS–Easy Start / Altitude Kit Installation Instructions, Special Functions and Diagnosis”.

Emergency stop – EMERGENCY OFF

If an emergency stop – EMERGENCY OFF – is necessary during operation, please complete the following steps:

- Switch the heater off at the control unit or
- remove the fuse or
- disconnect the heater from the battery.

5 Electrics

5.1 Heater wiring



Warning!

Safety instructions for wiring the heater!

Connect the heater electrically according to the EMC directives.

EMC can be affected in case of interventions not carried out properly. For this reason, comply with the following instructions:

- Ensure that the insulation of electrical cables is not damaged.
- Avoid: Chafing, kinking, jamming or exposure to heat.
- Seal any connector chambers of watertight connectors not in use with filler plugs to ensure they are dirt-proof and watertight.
- Electrical connections and ground connections must be free from corrosion and securely connected.



Note

- Position electric cables and components in the vehicle so that they can function perfectly under normal operating conditions without impairment (e.g. due to heat exposure, moisture, etc.).
- Keep to the specified cable lengths and cable cross-sections of the positive cable 4² and the negative cable 2.5² between the battery and the heater. This ensures that the maximum allowable voltage drop in the cables does not exceed 0.5 V for 12 V rated voltage.
- If the cable (positive cable + negative cable) is lengthened up to 6 m, the next-higher cable cross-section must be selected.
- If the positive cable is to be connected to the fuse box (e.g. terminal 30), the vehicle's cable from the battery to the fuse box must also be included in the calculation for the total cable length and re-dimensioned if necessary.
- Insulate unused cable ends.
- The 12 volt relay (-K1, from terminal 30 to terminal 87a) has a maximum current carrying capacity of 40 A; i.e. the value of the vehicle's own fan fuse may not be more than 40 A. Circuit diagram [see page 32](#).

5.2 Parts list for circuit diagram for heater and cable harness, normal and ADR version

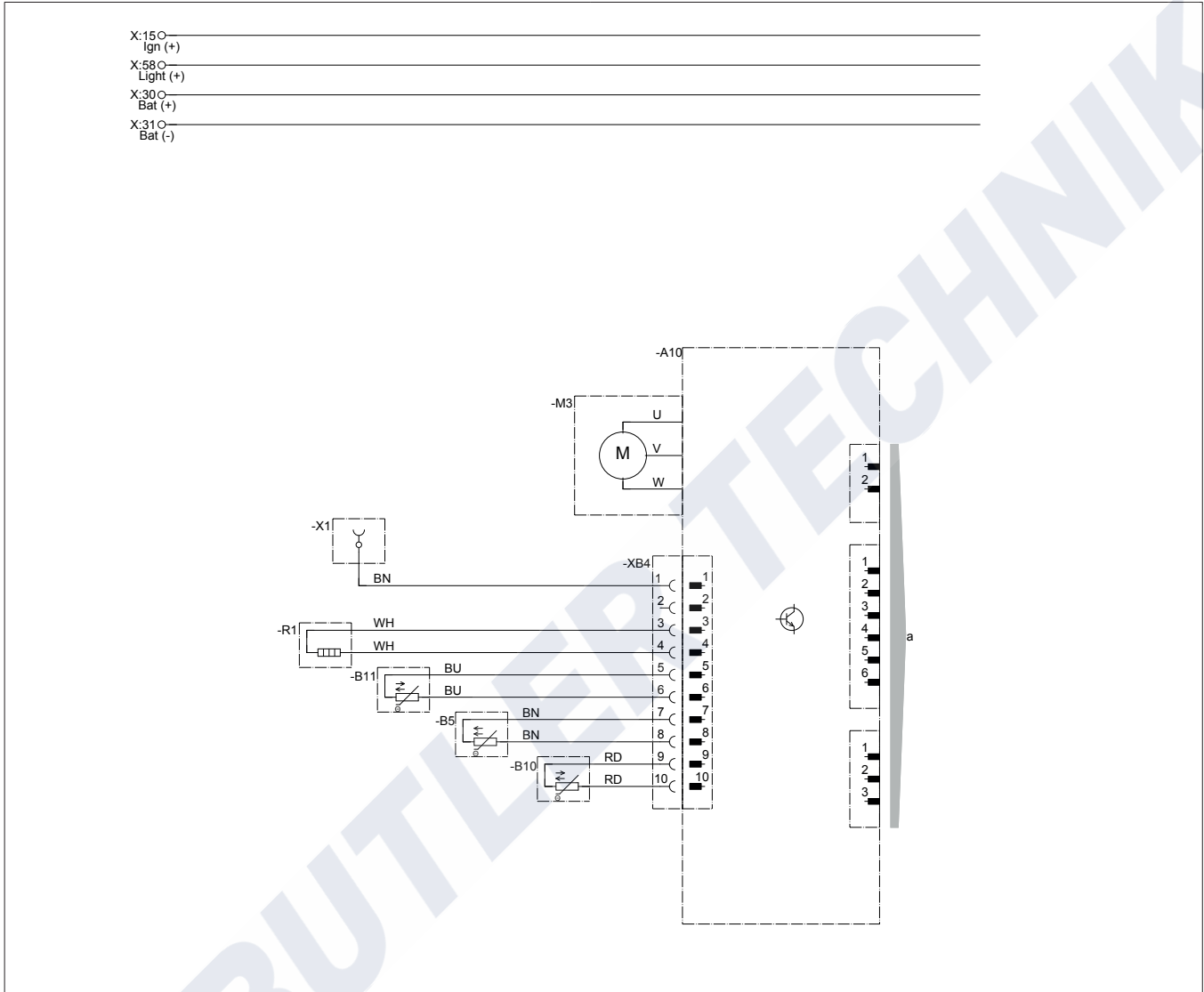
- A10 Hydronic S3 Economy 12 V control box
 - A30 Fuse holder 3-pin
 - B5 Flame sensor
 - B10 WAF (water outlet temperature sensor)
 - B11 WEF (water inlet temperature sensor)
 - F1 Fuse, heater
 - F2 Fuse, control unit
 - F3 Fan relay fuse
 - K1 Fan relay
 - M3 Burner motor
 - W1 Cable loom, water pump
 - W2 Cable loom, metering pump
 - M10 Water pump
 - R1 Terminating resistor l
 - R2 Terminating resistor 120 Ω
 - R3 Terminating resistor, stub line 9.2 kΩ
 - X1 Ring terminal end
 - XB1 Bush housing, heater power supply
 - XB2 Bush housing, heater signals
 - XB3 Bush housing, heater water pump
 - XB6/1 EasyScan bush housing
 - XB6/3 EasyFan bush housing
 - XB6/4 Bush housing, control unit
 - XB7 Relay block
 - XB8/1 Bush housing, metering pump plug-in connection
 - XB8/2 Bush housing, water pump
 - XS6/1 Mating connector with terminating resistor
 - XS8 Connector housing, metering pump plug-in connection
 - Y1 Fuel metering pump
- a to the heater
b Activation, vehicle fan
c to the control unit
x insulate and tie back any cables that are not needed

Cable colours

RD	red	GR	grey	BK	black
BU	blue	YE	yellow	GN	green
WH	white	VT	violet	BN	brown

5.3 Heater circuit diagrams

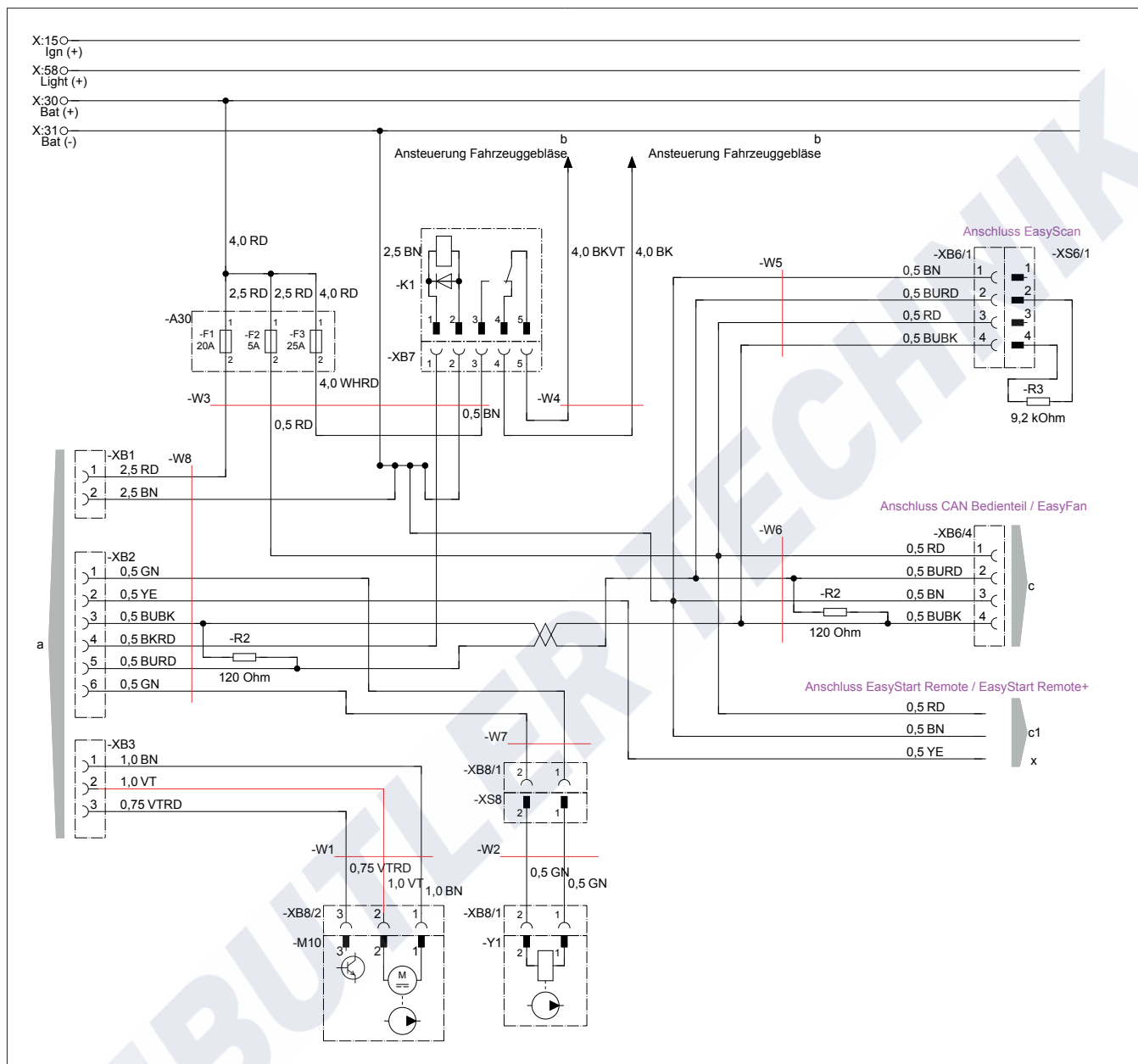
5.3.1 Heater



Parts list [see page 31](#)

25.2691.00.9601.0A

5.3.2 Cable harness



Parts list [see page 31](#)

25.2691.00.9602.0A

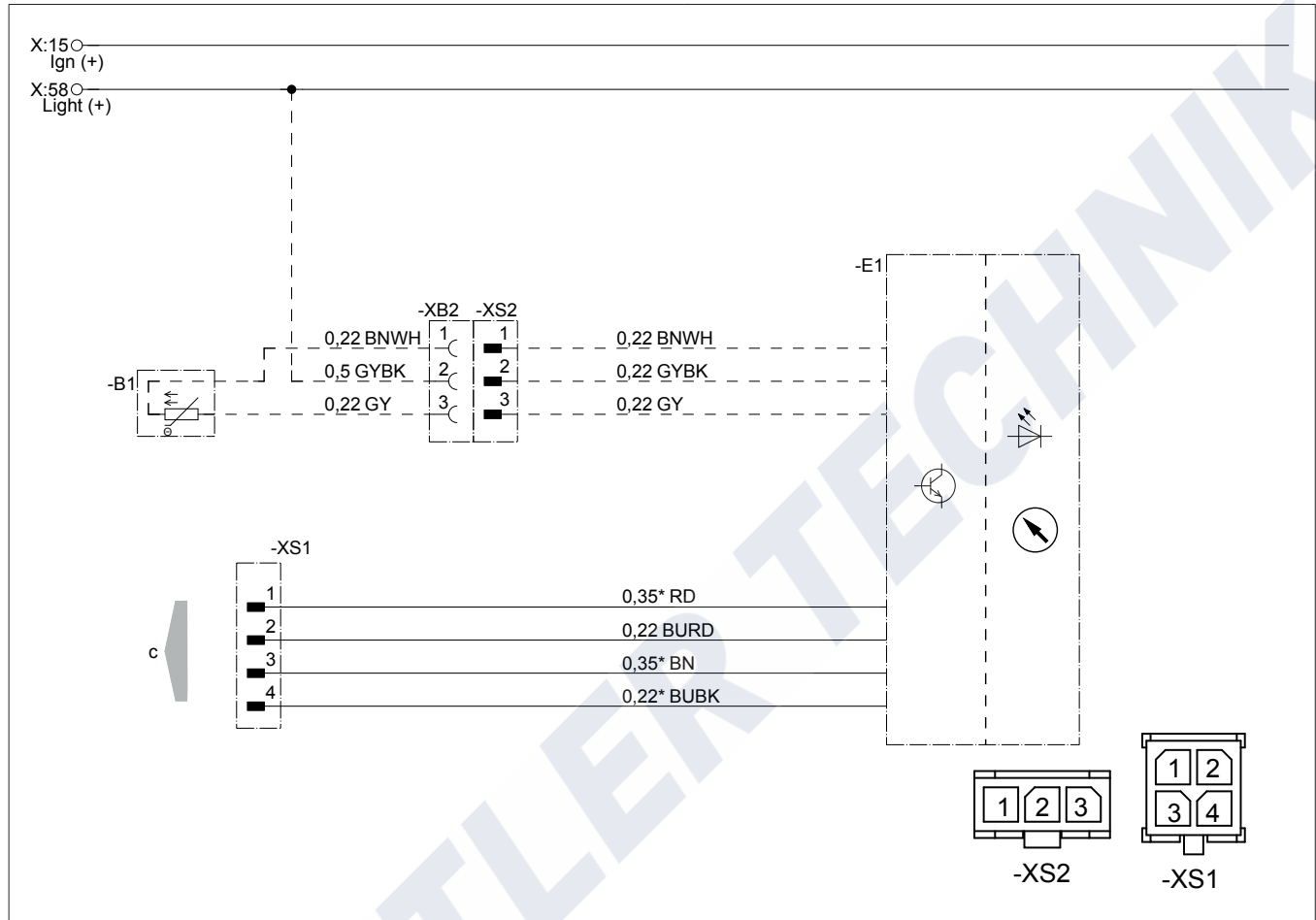
i Note

Use the Y-cable 22.1000.35.2800 (not included) to connect EasyFan to the heater. The cable disconnects the CAN connection to EasyFan, as EasyFan does not communicate with CAN-capable heaters and control units.

- Connect the 4-pin connector of the heater lead harness to the Y-cable.
- Connect the 4-pin connector of the Y-cable to the EasyFan control box.
- Connect the BKRD cable of the heater lead harness (fan output) to the BKRD cable of the EasyFan control box lead harness (8-pin connector, PIN 7).

5.4 Circuit diagrams for control units

5.4.1 Easy Start Pro



22 1000 34 97 22

Parts list

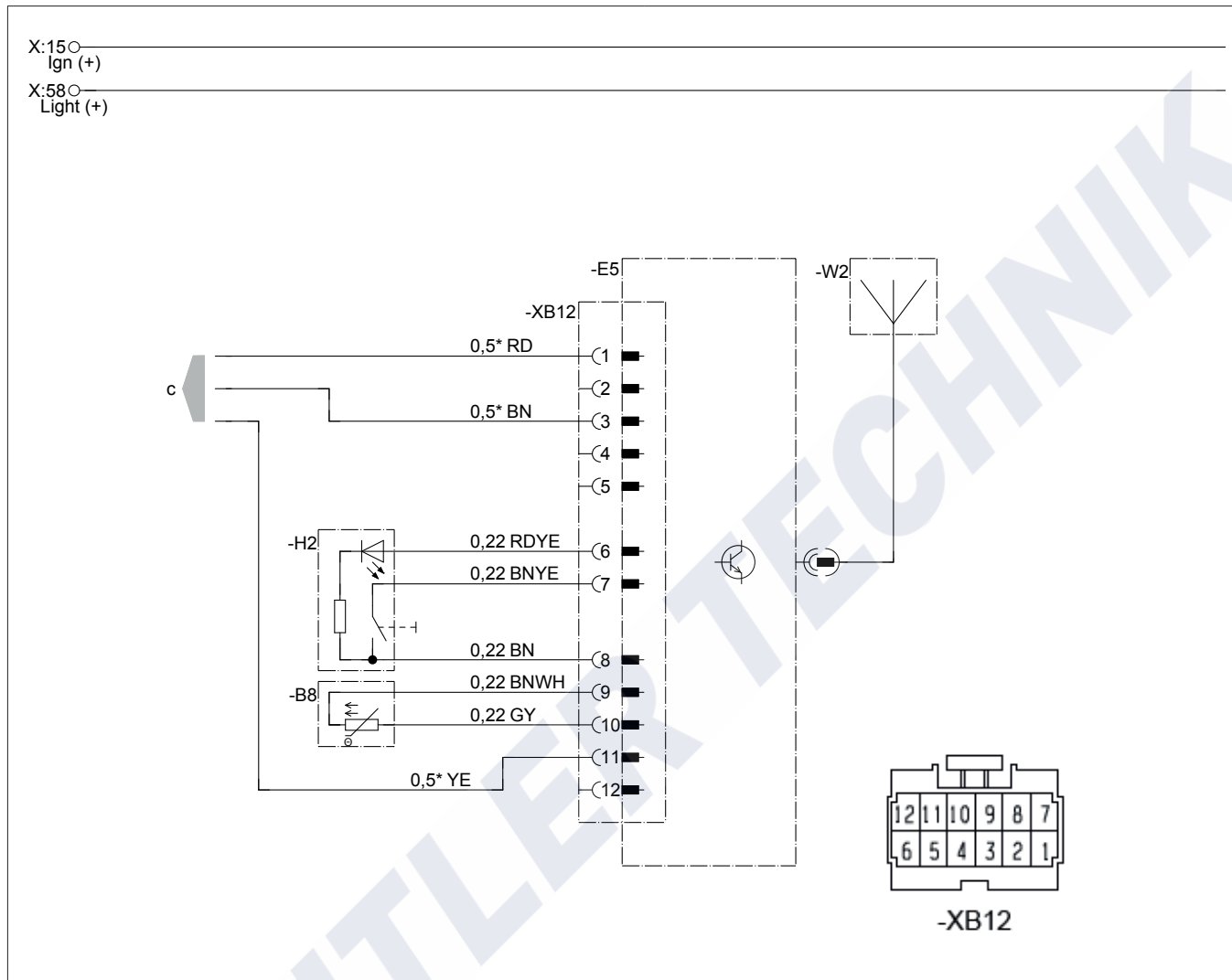
- B1 Room temperature sensor
- E1 Easy Start Pro
- c to the heater cable harness

Connectors and bush housings are shown from the cable inlet side.

i Note

Further circuit diagrams for the Easy Start Pro are printed in the Installation Instructions Plus; these are available to view and download from the Service Portal.

5.4.2 Easy Start Remote+



22 1000 35 97 02

Parts list

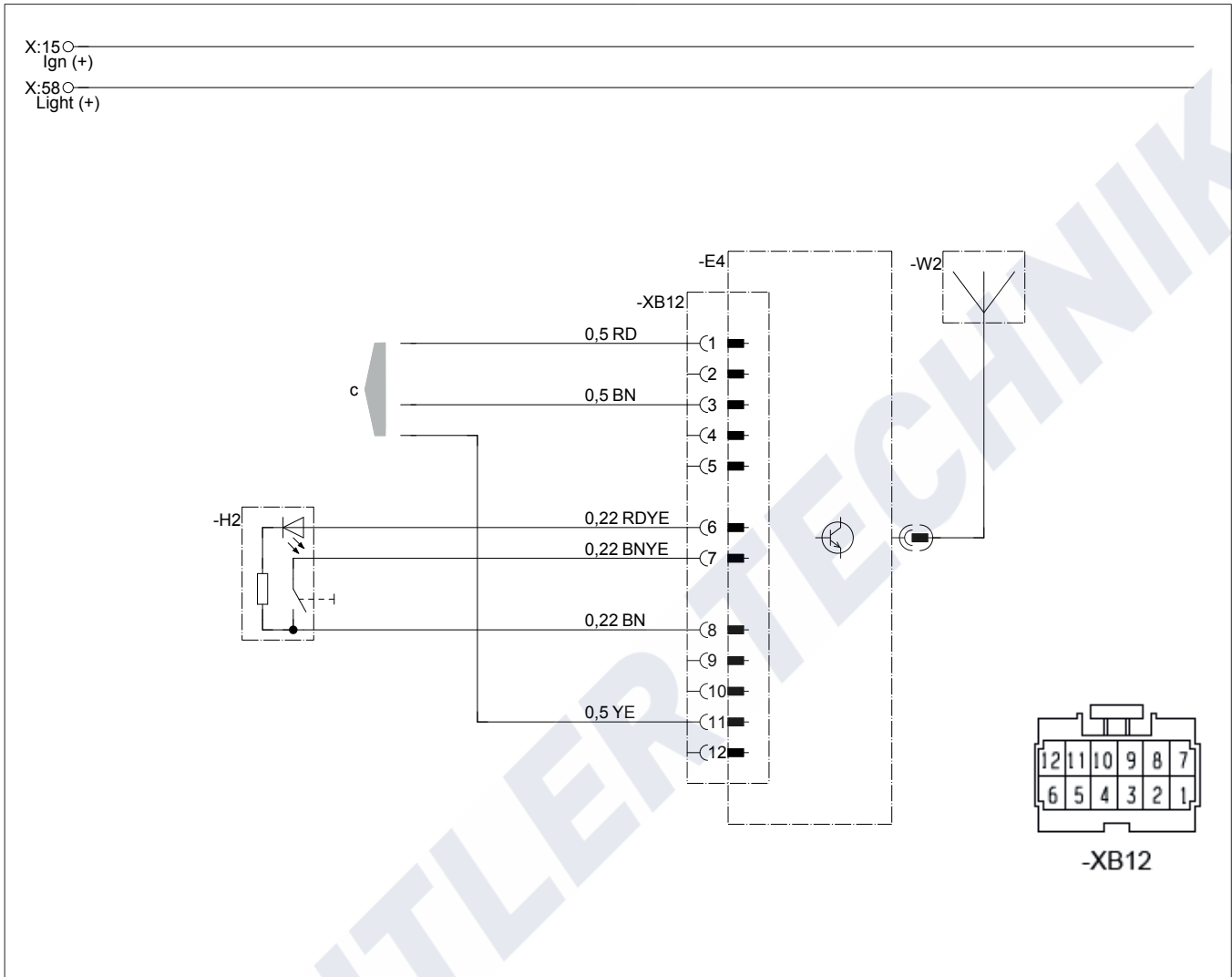
- B8 Room temperature sensor
- E5 Stationary unit, EasyStart Remote+
- H2 Button
- W2 Antenna
- c to the cable harness

Connectors and bush housings are shown from the cable inlet side.

Note

Further circuit diagrams for the EasyStart Remote+ are printed in the Installation Instructions Plus, these are available to view and download from the Service Portal.

5.4.3 Easy Start Remote



22 1000 35 97 01

Parts list

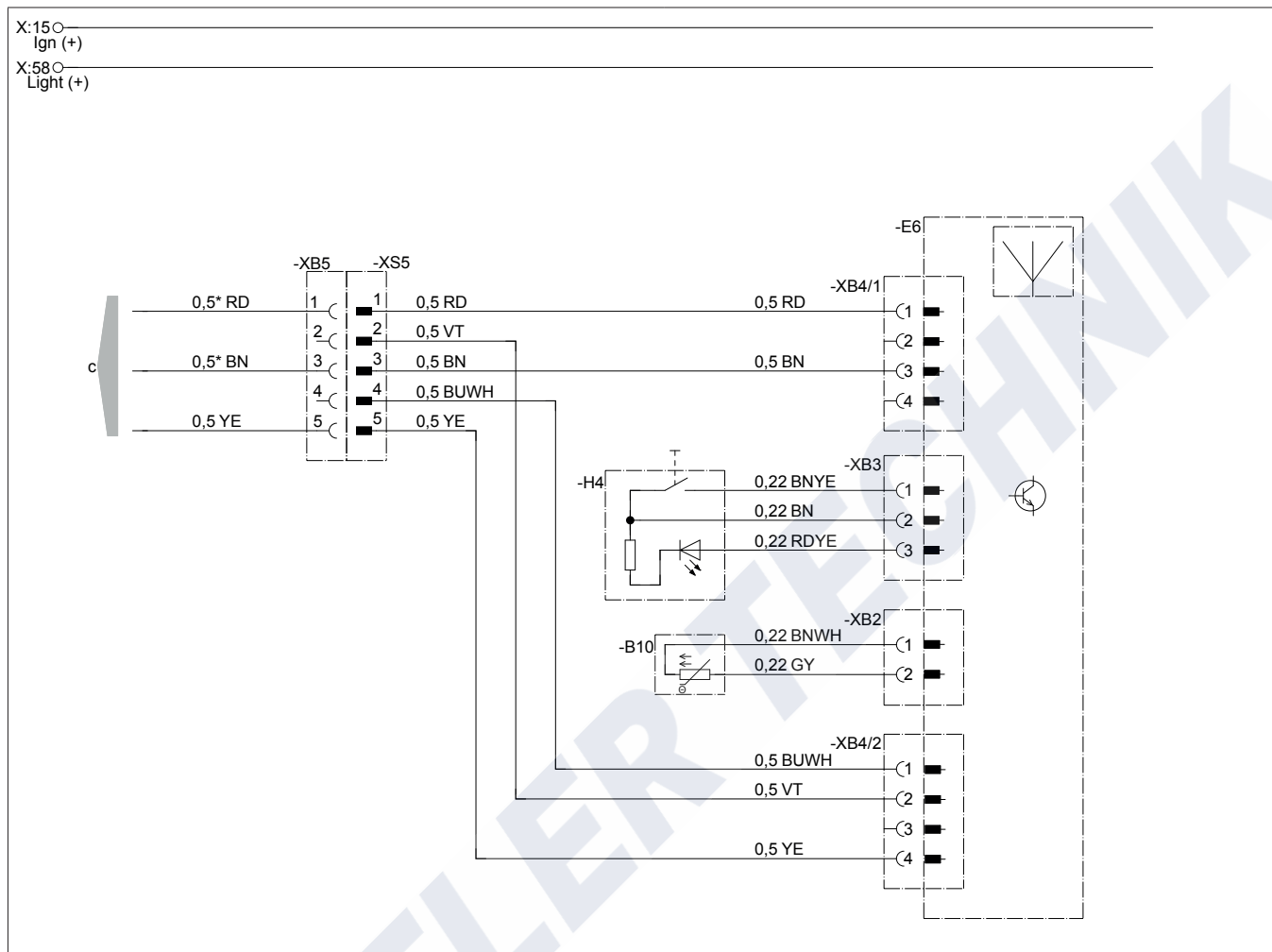
- E4 Stationary unit EasyStart Remote
- H2 Button
- W2 Antenna
- c to the cable harness

Connectors and bush housings are shown from the cable inlet side.

Note

Further circuit diagrams for the Easy Start Remote are printed in the Installation Instructions Plus. They are available to view and download in the Service Portal.

5.4.4 EasyStart Web



22.1000.34.9719.9A

Parts list

- B10 Easy Start Web interior temperature sensor
- E6 Easy Start Web radio remote control
- H4 Easy Start Web button
- c to the heater

Connectors and bush housings are shown from the cable inlet side.

i Note

- With this connection constellation, fault diagnosis of the heater via the EasyStart Web control unit is not possible.
- Further circuit diagrams for the Easy Start Web are printed in the Installation Instructions Plus. They are available to view and download in the Service Portal.

Cable colours

RD	red	GR	grey	BK	black	WH	white	VT	violet
BU	blue	YE	yellow	GN	green	OR	orange	BN	brown