

### 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

- Arrange the electric cables and components in the vehicle so that their proper function under normal operating conditions is not impaired (e.g. due to effect of heat, moisture, etc.).
- Keep to the specified cable lengths and cable cross-sections of the positive cable 4<sup>2</sup> and the negative cable 2.5<sup>2</sup> 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 29](#).

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

- A10 Hydronic S3 Commercial 24 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
- M10 Water pump
- R1 Terminating resistor I
- 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
- XB7 Relay block
- XB8/1 Bush housing, metering pump plug-in connection
- XB8/2 Bush housing, water pump
- XB6/2 Bush housing, control unit
- XS6/1 Mating connector with terminating resistor
- XS8 Connector housing, metering pump plug-in connection
- W1 Cable loom, water pump
- W2 Cable loom, metering pump
- Y1 Fuel metering pump
  - a to the heater
  - b Activation, vehicle fan
  - c to the control unit CAN
  - c1 to the control unit LIN / S+
  - d to the ADR acknowledgement button, see [on page 26](#)
  - n Generator input D+
  - o Secondary drive input NA+

#### Note

- It must be ensured that if the battery isolating switch is pressed due to EMERGENCY STOP, all the heater's electric circuits are disconnected from the battery immediately (without any consideration of the heater's status).
- If the battery isolating switch is pressed to disconnect the battery from all electric circuits, the heater must be switched off first and if applicable you must wait until the heater's afterrun has finished.

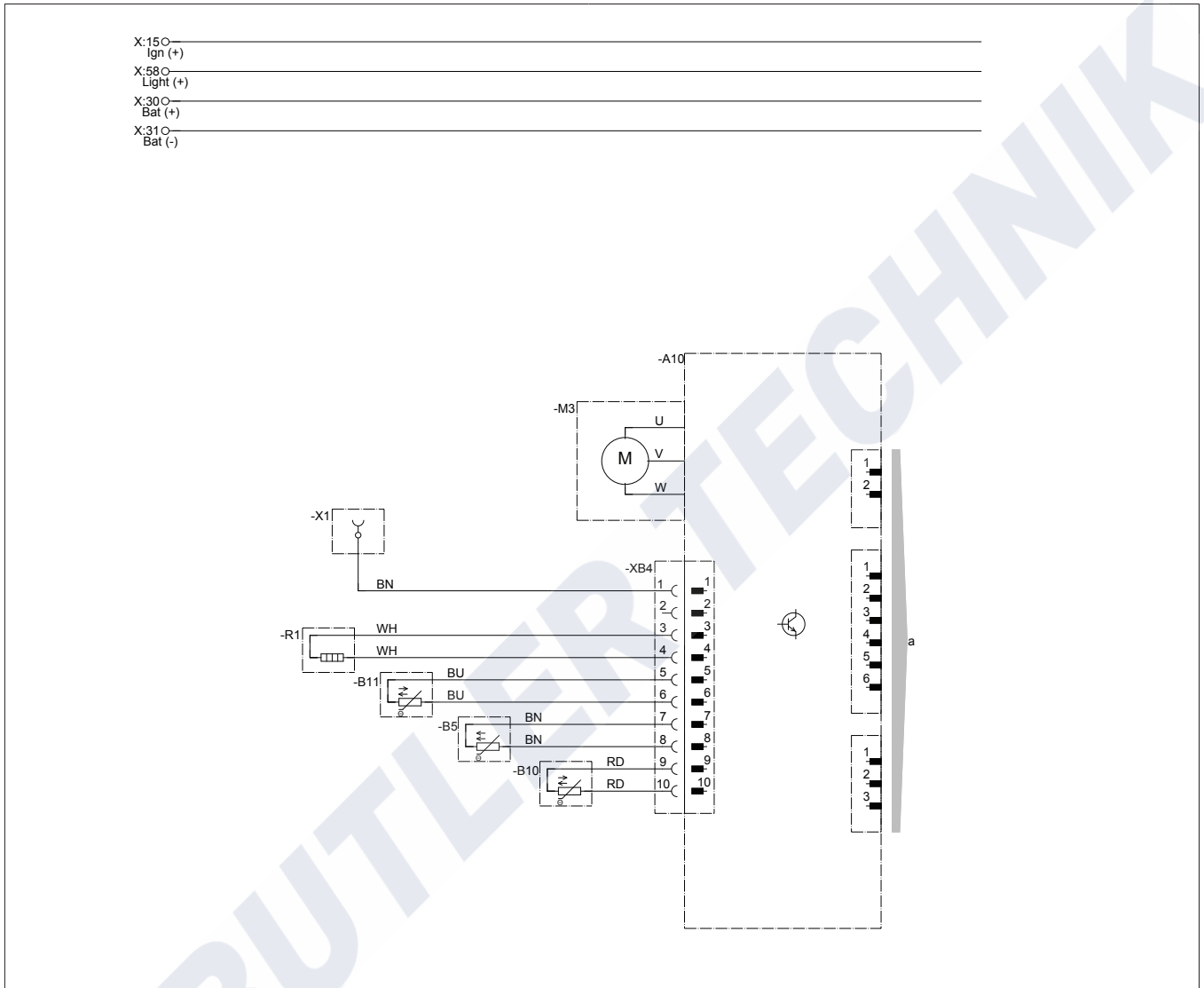
x insulate and tie back any cables that are not needed

#### 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

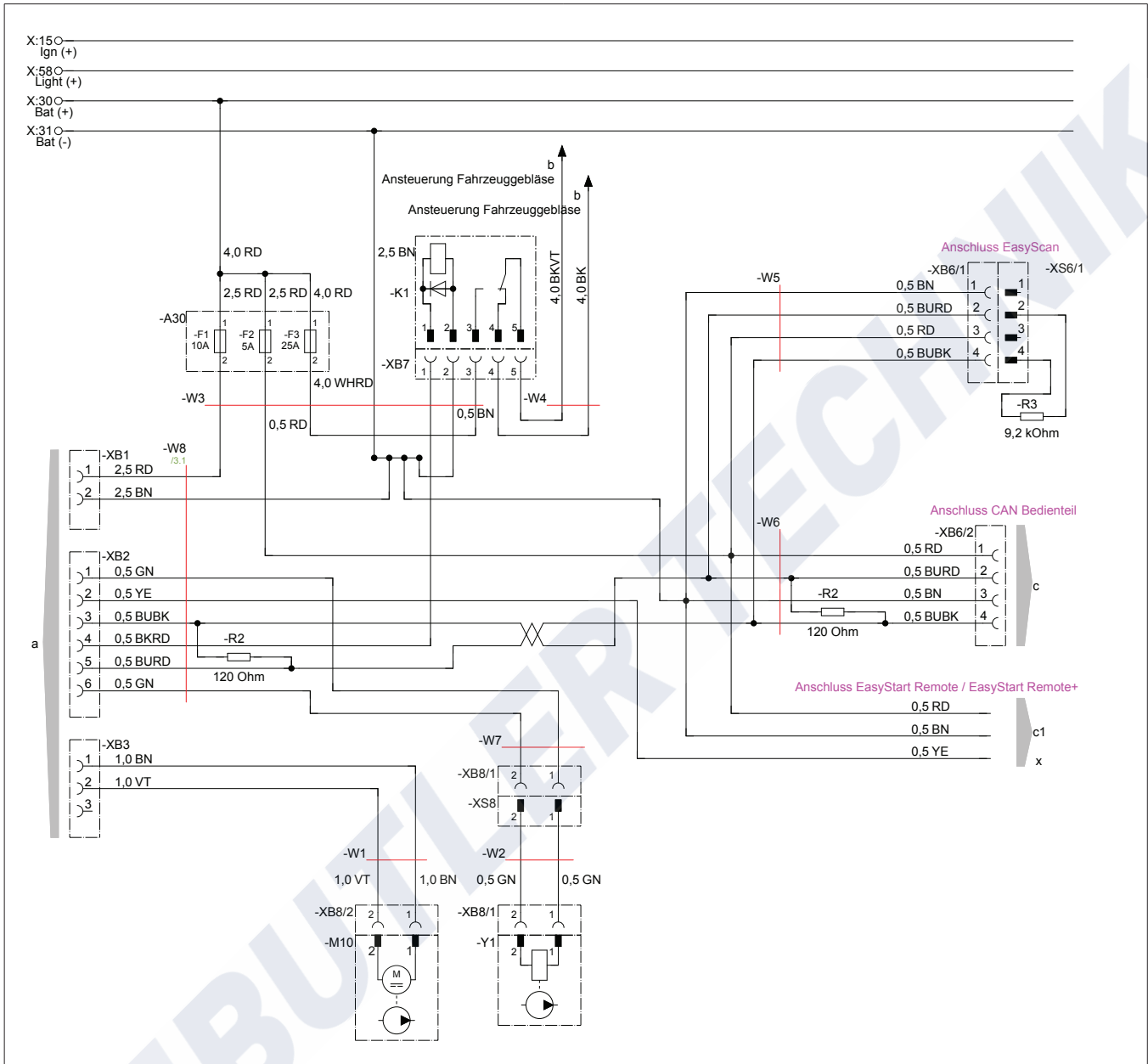
#### 5.3.1 Heater



Parts list [see page 28](#)

25.2696.00.9601.0A

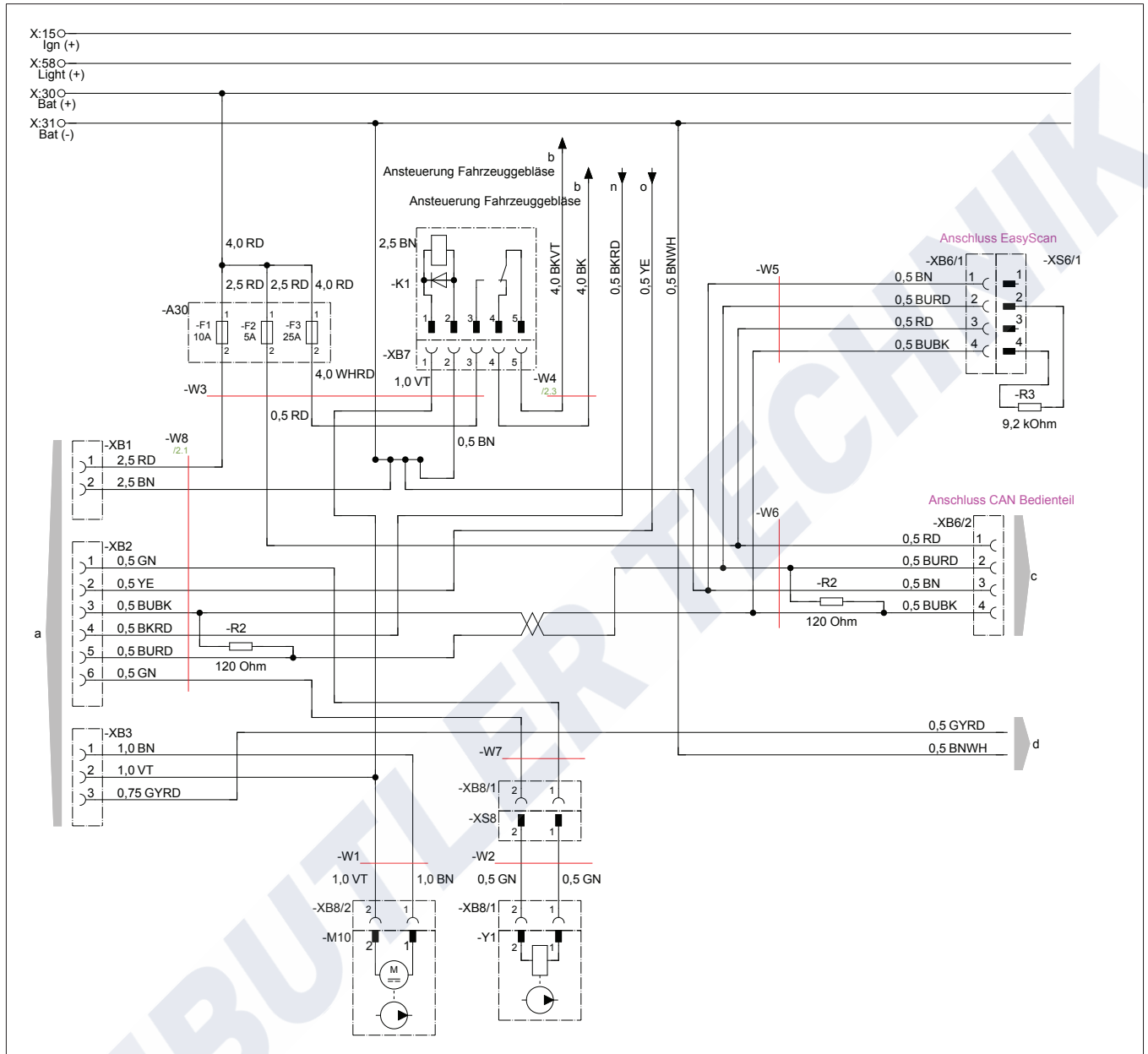
5.3.2 Cable harness 24 V



Parts list [see page 28](#)

25.2696.00.9602.0A

5.3.3 Cable harness 24 V ADR

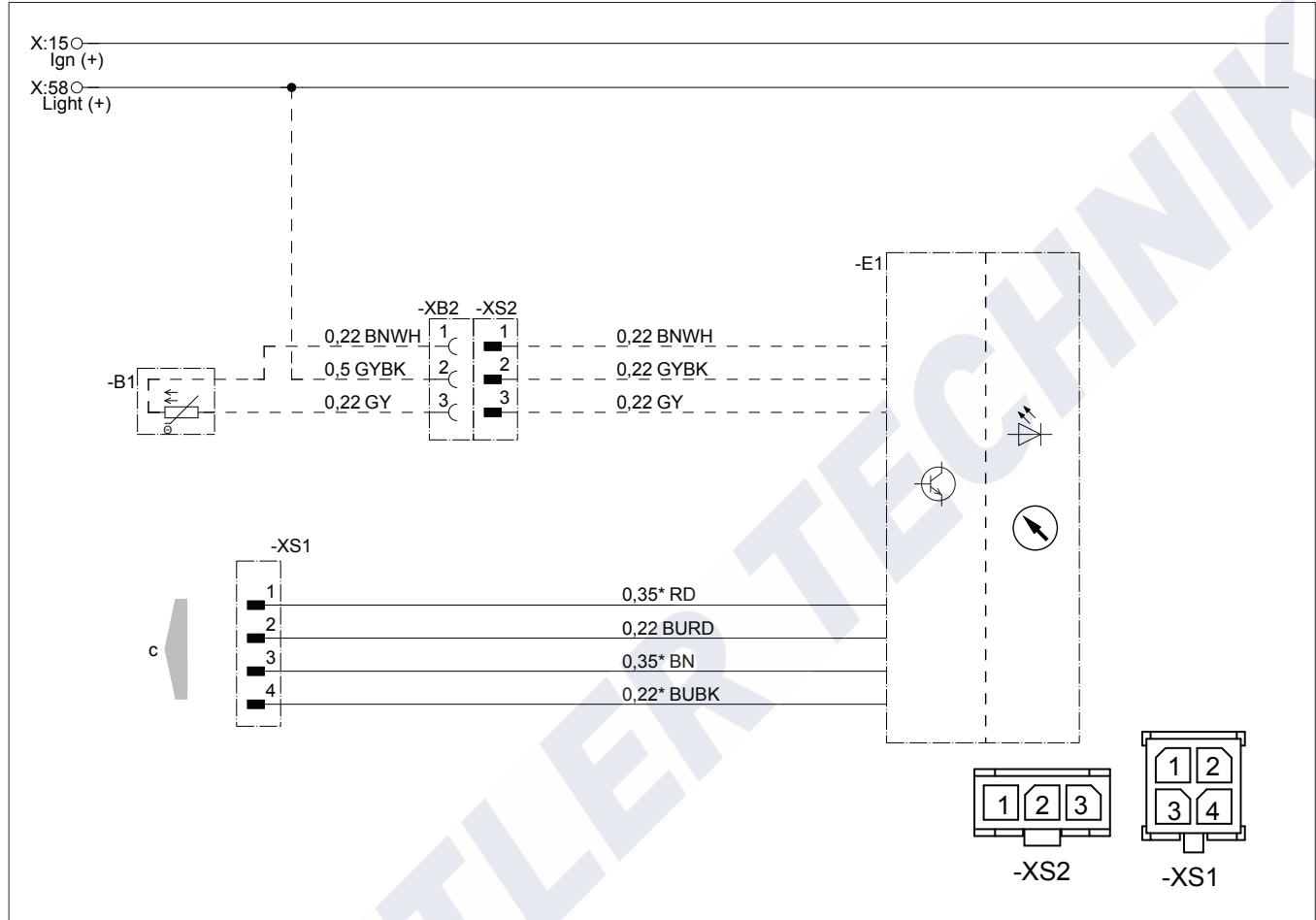


Parts list [see page 28](#)

25.2696.00.9603.0A

## 5.4 Circuit diagrams for control units

### 5.4.1 Easy Start Pro



22.1000.34.9722

#### Parts list

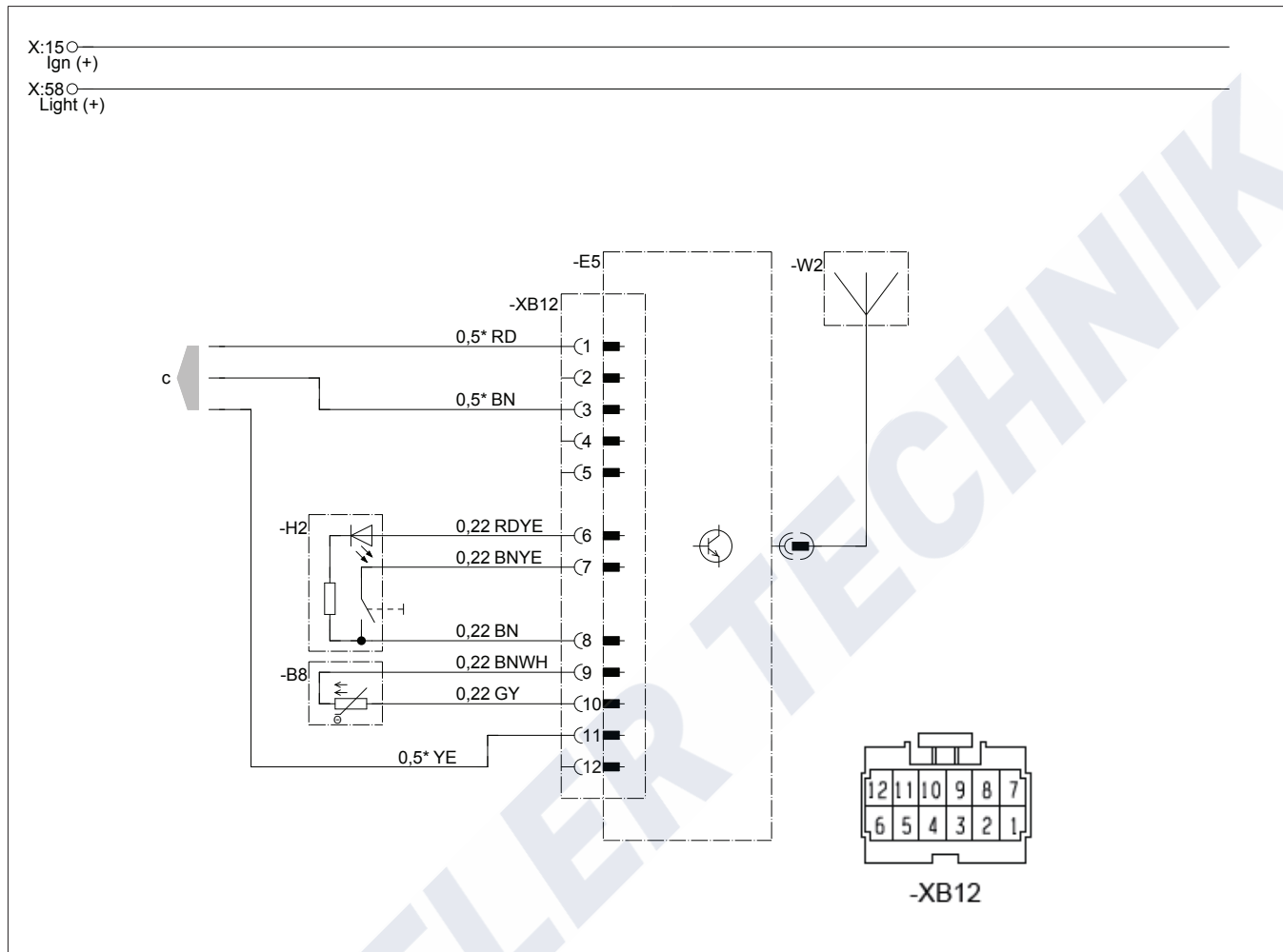
- B1 Room temperature sensor
- E1 Easy Start Pro
- c to the heater cable harness

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+



22.1000.35.9702

Parts list

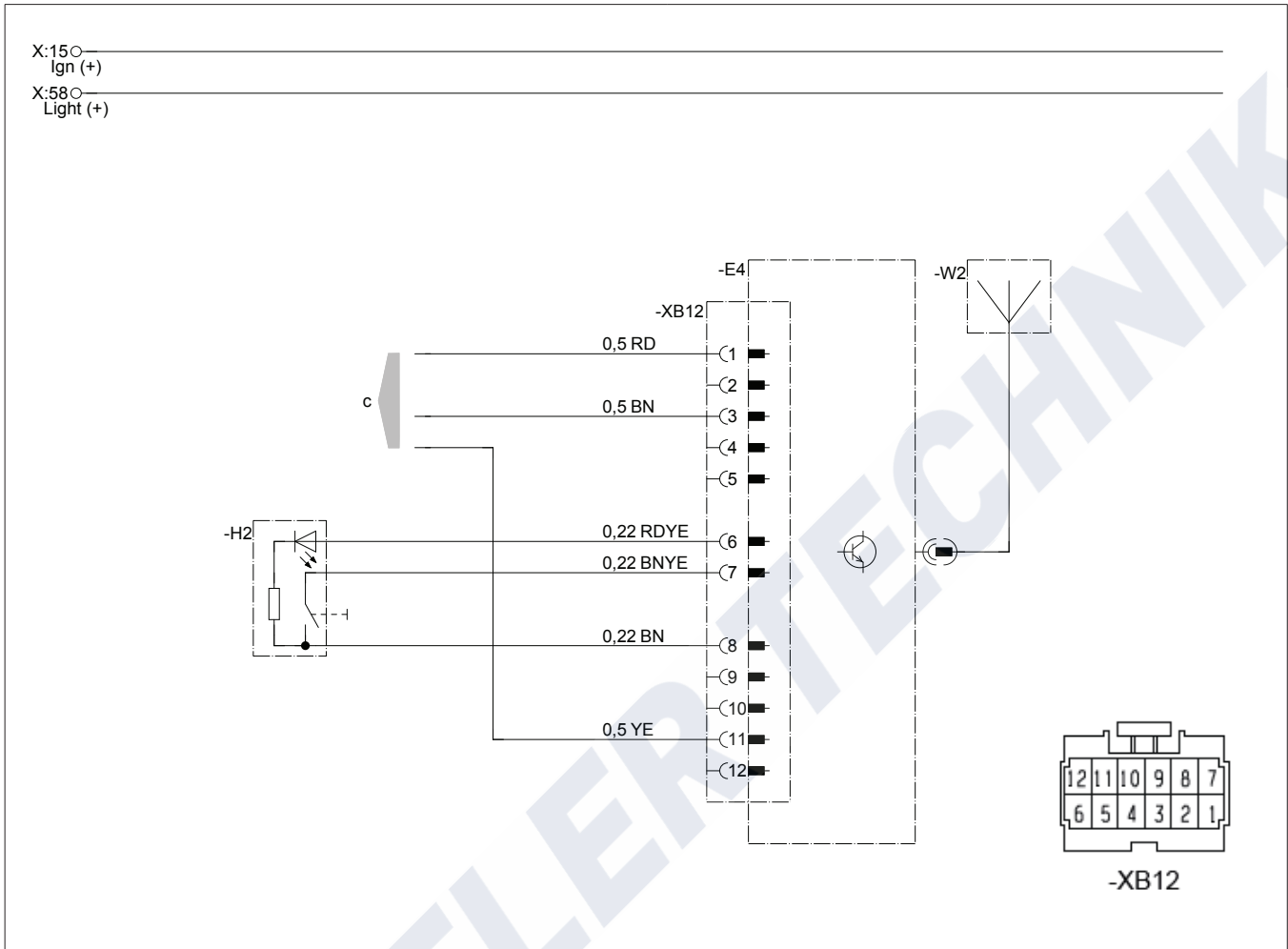
- B8 Room temperature sensor
- E5 Stationary unit, EasyStart Remote+
- H2 Button
- W2 Antenna
- c to the cable harness

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



22.1000.35.9701

Parts list

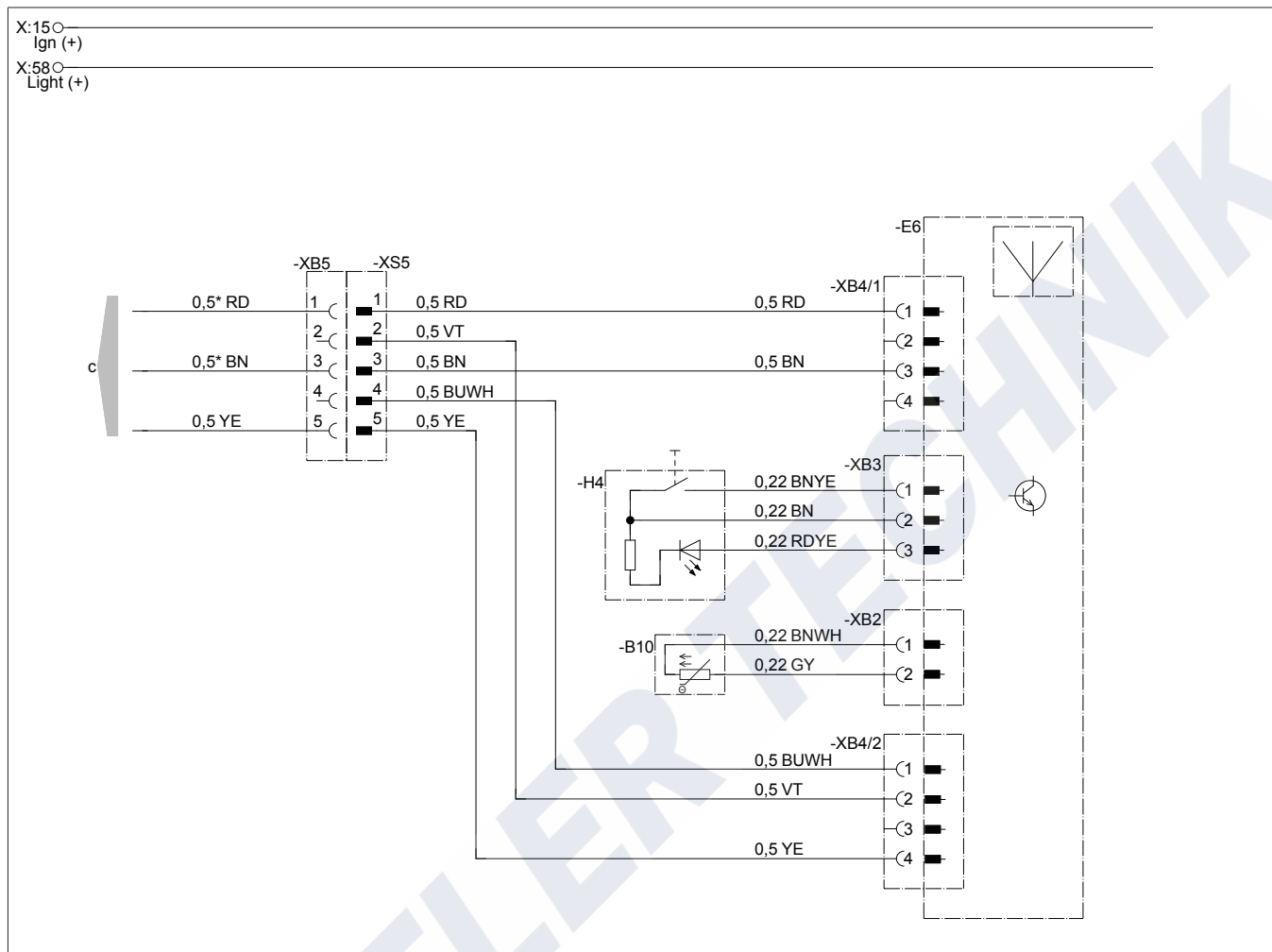
- E4 Stationary unit EasyStart Remote
- H2 Button
- W2 Antenna
- c to the cable harness

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

**Note**

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