

# INSTALLATION INSTRUCTIONS PLUS – EASYSTART / ALTITUDE KIT SPECIAL FUNCTIONS AND DIAGNOSTICS



**The Installation Instructions Plus applies to the following control units and mounting parts:**

Control unit	Order number
Mini controller	22.1000.32.0700
EasyStart Timer, 12 /24 V	22.1000.34.1500
EasyStart Remote+, 12 /24 V	22.1000.34.1700
EasyStart Remote, 12 /24 V	22.1000.34.2300
EasyStart Select, 12 /24 V	22.1000.34.1300
EasyStart Call, 12 /24 V	22.1000.34.0100
EasyStart Pro, 12 /24 V	22.1000.35.2200
EasyStart Web, 12 /24 V → 06/2019	22.1000.34.5100
EasyStart Web, 12 /24 V 06/2019 →	22.1000.34.7800
<b>Altitude kit</b>	
Altitude kit / altitude sensor, 12 /24 V	22.1000.33.2201

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## 1 Introduction

### 1.1 Content and purpose of these installation instructions

These installation instructions are applicable to the control units and mounting parts listed on the title page, to the exclusion of all liability claims. The necessary work may only be carried out by appropriately trained personnel.

These installation instructions contain the following for the control units and mounting parts:

- the complete vehicle workshop menu
- special functions, e.g. combinations of different EasyStart control units
- installation in ADR vehicles
- installation of an add-on unit
- diagnostics query with the control units
- all circuit diagrams

Depending on the version or modification status of the control units/mounting parts, differences from these installation instructions may occur.

The user must check this before carrying out the installation work and if necessary, take the differences into account.

### 1.2 Special text structure, presentation and picture symbols

Special text formats and picture symbols are used in these instructions to emphasise different situations and subjects. Please refer to the following examples for their meanings and appropriate action.

#### 1.2.1 Special text formats and presentations

- This dot (•) indicates a list, which is introduced by a heading.
  - If an indented dash (–) follows a “dot”, this list is a sub-section of the black dot.

Underlined blue text denotes a cross-reference, which can be clicked in the PDF format. The part of the document named in the text is then displayed.

#### 1.2.2 Picture symbols



#### **Danger!**

This information indicates an imminent risk to life and limb. Failure to avoid this hazard will result in death or severe injuries.

- ➔ This arrow indicates appropriate precautions to take to avert the danger.



#### **Warning!**

This information indicates a potentially imminent risk to life and limb. Failure to avoid this hazard can result in death or severe injuries.

- ➔ This arrow indicates appropriate precautions to take to avert the danger.



#### **Caution!**

This information indicates a potentially imminent risk. Ignoring this information can result in slight or minor injuries.

- ➔ This arrow indicates appropriate precautions to take to avert the danger.



#### **Note**

This information provides recommendations for use and helpful tips for installation and operation and indicates any operating risks of the product.

### 1.3 Other documents

In addition to these Installation Instructions Plus, corresponding operating and installation instructions are available for control units and installation parts; an additional Quick start guide is available for EasyStart Timer, EasyStart Select, EasyStart Remote, EasyStart Remote+, EasyStart Pro and EasyStart Web. These documents provide the support workshop with all the necessary technical information, describes the correct installation in accordance with the regulations and provides the customer with the necessary information for safe operation of the control units.

### 1.4 Liability claim / Warranty

Eberspächer Climate Control Systems International GmbH does not accept any liability whatsoever for defects and damage, which are due to installation or repair by unauthorised and untrained persons. Compliance with the official regulations and the safety instructions is prerequisite for liability claims.

Failure to comply with the official regulations and safety instructions leads to exclusion of any liability of the heater manufacturer.

### 1.5 Accident prevention

General accident prevention regulations and the corresponding workshop and operating safety instructions are to be observed.



#### **Note**

- The relevant rules of sound engineering practice and any information provided by the vehicle manufacturer are to be observed during the installation and repair.
- Before starting any work, disconnect the positive (+) battery cable and earth it (connect it to the vehicle frame).

## 2 Control unit usability

### 2.1 Air and water heaters

The following table shows the usability of EasyStart control units and mini-controllers with Eberspächer air and water heaters.

Version numbers and heater status [see page 6](#).

- Switch+ interface – diagnostics not possible
- LIN interface
- CAN interface

Control unit	Mini controller	EasyStart							
		Remote	Remote+	Select	Timer	Call	Web (2018)	Pro	Web (2019)
Generation	TP 5.0	TP 7.0						TP 7.1	
Update:	lead-free since 2018	S+ since 2018							
Interface									

Combination options with these heaters

Airtronic 2/3 12 V						n/a			
Airtronic 2/3 24 V				n/a		n/a			
Airtronic 1								n/a	
Airtronic L						n/a		n/a	
D8LC*				n/a		n/a		n/a	
Hydronic S3 CS				n/a		n/a			
Hydronic S3 CL Economy	n/a							n/a	
Hydronic I 12V				n/a		n/a		n/a	
Hydronic I 24V	n/a			n/a		n/a		n/a	
Hydronic II								n/a	
Hydronic M II								n/a	
Hydronic L II				n/a		n/a		n/a	
Hydronic auxiliary heater				n/a		n/a		n/a	

\* S+ Operation only possible in addition to own control unit.



Combination without functional limitation of the respective heater.



From heater generation with automatic altitude adjustment, fan mode is possible.

(Identifying feature "automatic altitude adjustment": From production in summer 2008 "H-Kit" is marked on the heater's nameplate.)



External temperature sensor not possible.



LIN Software version 5.4.4 and higher














Temperature preselection not possible.

## 2.2 Air and water heaters in ADR mode

The following table shows the use options of EasyStart control units with Eberspächer air and water heaters in **ADR mode**.

Version number and status of the heaters [see page 6](#).

Control unit	EasyStart	
	Timer	Pro
Generation	TP 7.0	TP 7.1
		
Interface Control unit		
Combination options with these heaters		
Airtronic 2 / 3 24 V		
Airtronic / Airtronic M 12 V / 24 V		n/a
Airtronic L 12 V / 24 V		n/a
Hydronic S3 Commercial 24V		
Hydronic M II 12 V / 24 V		n/a



Combination without functional limitation of the respective heater.



From heater generation with automatic altitude adjustment, fan mode is possible. (Identifying feature "automatic altitude adjustment": From production in summer 2008 "H-Kit" is marked on the heater's nameplate.)

### **i** Note!

The control unit is connected directly to the heater.

- Hydronic series heaters without JE diagnosis can only be controlled via the "AD Add-on Unit" menu item or via "Switch-on signal S+". Diagnosis via the control unit is not possible with either of the two variants.
- Airtronic series heaters can be controlled via the "Switch-on signal S+"; however, the heaters need a further control unit to set the temperature setpoint.

## 2.3 Available heaters

The following tables list the Eberspächer air and water heater types with version number and status, which are suitable for use with EasyStart control units from TP 7.0 and/or altitude kit.

Connection of the control units via the diagnostics cable

### 2.3.1 Air heaters

Heater type	Material number	From status
<b>Airtronic</b>		
D2 – 12V	25.2069.05.0000	.0P
D2 – 12V	25.2115.05.0000	.0Q
D2 – 24V	25.2070.05.0000	.00
D2 – 24V	25.2116.05.0000	.0Q
<b>Airtronic M</b>		
D3 – 12V	25.2317.05.0000	.0J
B4 – 12V	20.1812.05.0000	.0D
D4 – 12V	25.2113.05.0000	.0P

Heater type	Material number	From status
D4 – 24V	25.2114.05.0000	.00
D4 Plus – 12V	25.2484.05.0000	.0C
D4 Plus – 24V	25.2498.05.0000	.0A

### Airtronic L

B5 12V	20.1859.05.0000	.0F
D5 12V	25.2361.05.0000	.0G
D5 24V	25.2362.05.0000	.0G

### Airtronic 2 / 3

12 V / 24 V	all versions	
Altitude adjustment integrated		

### 2.3.2 Water heaters

Heater type	Material number	From status
-------------	-----------------	-------------

#### Hydronic

B4W S – 12V	20.1866.05.0000	.0F
B4W S – 12V	20.1819.05.0000	.0G
B4W S – 12V	20.1852.05.0000	.0B
B5W S – 12V	20.1862.05.0000	.0F
D4W S – 12V	25.2418.05.0000	.0E
D4W S – 12V	25.2355.05.0000	.0B
D5W S – 12V	25.2386.05.0000	.0D
D5W S – 12V	25.2217.05.0000	.0D
B4W SC – 12V	20.1824.05.0000	.0E
B4W SC – 12V	20.1861.05.0000	.0E
B5W SC – 12V	20.1820.05.0000	.0F
B5W SC – 12V	20.1863.05.0000	.0E
D4W SC – 12V	25.2257.05.0000	.0E
D4W SC – 12V	25.2385.05.0000	.0E
D5W SC – 12V	25.2219.05.0000	.0D
D5W SC – 12V	25.2390.05.0000	.0D
D5W S – 24V	25.2218.05.0000	.0A
D5W SC – 24V	25.2147.05.0000	.0A

#### Hydronic II

Economy	all versions	
E-Mobility (Ethanol)	all versions	
Comfort	all versions	

#### Hydronic L II

Commercial	all versions	
Use of altitude kit is not possible		

#### Hydronic S3 CL

Economy	all versions	
Use of altitude kit is not possible		

#### Hydronic S3 12V CS

Economy	all versions	
The altitude function can be activated manually via EasyStart Pro and EasyStart Web		

#### Hydronic S3 24V CS

Economy	all versions	
Altitude adjustment integrated		

Heater type	Material number	From status
<b>Hydronic M-II</b>	all versions	

Altitude adjustment integrated, identifiable from production in summer 2008 as they have "H-Kit" marked on the heater's nameplate.

**i Note**

Heaters that are not listed can possibly be controlled via the switch-on signal S+; in addition the setpoint for air heaters must be set using a separate control unit. For circuit diagrams see [from page 25](#).

## 2.4 Combinations of the EasyStart control units




### 2.4.1 Combination of LIN control units as master/slave



Master control unit	Slave control unit	Comment
Timer with	Timer	Both control units have the same functional scope
Timer with	Remote	Limited functional scope via Remote
Timer with	Select	Limited functional scope via Select
Timer with	Button	Limited functional scope via button
Timer in ADR mode, with	Timer	Both control units have the same functional scope
Timer in ADR mode, with	Select	Limited functional scope via Select
Timer in ADR mode, with	Button	Limited functional scope via button
Remote+ with	Timer	Both control units have the same functional scope
Remote+ with	Select	Limited functional scope via Select
EasyStart Web with	Timer	<ul style="list-style-type: none"> <li>▪ Limited functional scope via Timer</li> <li>▪ System configuration only possible via the web app</li> <li>▪ The current time is provided by EasyStart Web</li> </ul>
EasyStart Web with	Remote	<ul style="list-style-type: none"> <li>▪ Limited functional scope via Remote.</li> <li>▪ System configuration only possible via the web app.</li> <li>▪ Remote teach mode (programming mode) available only after Power On Reset.</li> <li>▪ Teach mode is indicated by modified flashing frequency (flashing becomes slower).</li> <li>▪ The settings of EasyStart Web overwrite the settings in the Remote</li> <li>▪ The Remote uses the operating mode last used by EasyStart Web.</li> </ul>
EasyStart Web with	Select	<ul style="list-style-type: none"> <li>▪ Limited functional scope via select.</li> <li>▪ System configuration only possible via the web app.</li> </ul>
EasyStart Web with	Remote+	<ul style="list-style-type: none"> <li>▪ Combination is not supported</li> <li>▪ EasyStart Web does not generate an error message.</li> </ul>

**i Note!**

- The **Master** control unit is connected directly to the heater.
- The **Slave** control unit is connected to the master control unit.
- An impermissible combination is indicated by



	for Timer and Remote+
	for Select
	for Remote
LED flashes red	

- The mobile unit of the EasyStart Remote+ cannot be operated with the stationary EasyStart Remote unit. During “teaching” (programming), “no communication”  is displayed at the mobile unit of the EasyStart Remote+.
- Combination of the mobile unit of the EasyStart Remote with the stationary unit of the EasyStart Remote+ is allowed.
- In case of air heaters, the EasyStart Remote can only be operated in conjunction with a 2nd control unit for setting the setpoint, otherwise an **Error** is indicated by the red flashing of the LED  during automatic detection.
- The circuit diagrams [from page 25](#) always relate to the master control unit, even in the case of combinations.

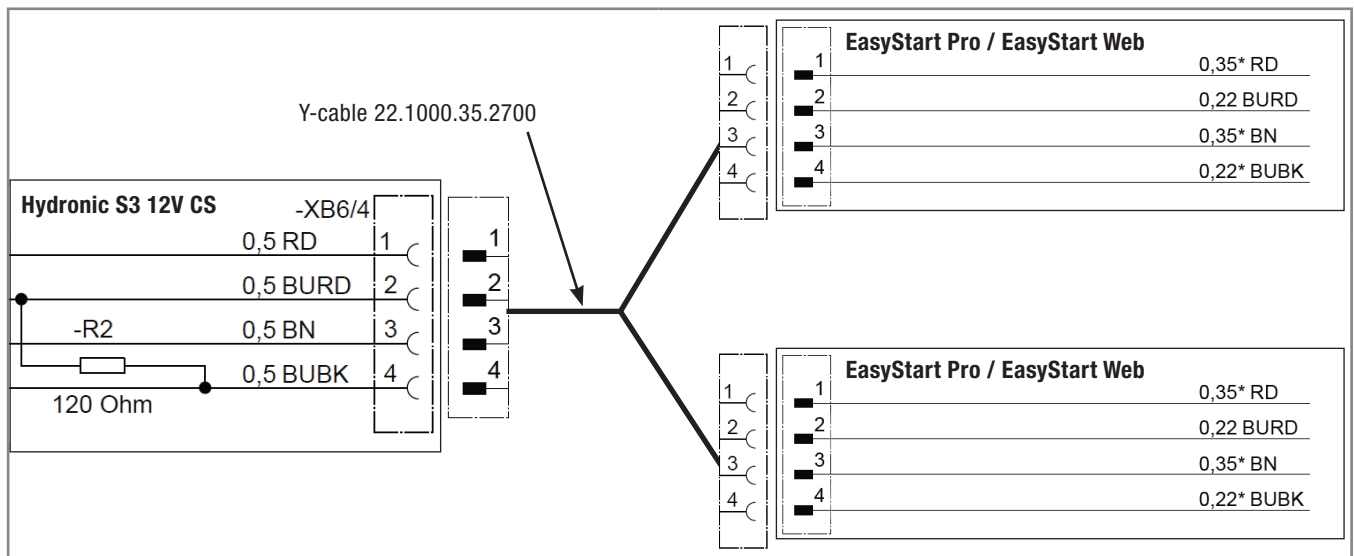
### 2.4.2 Combination of CAN control units

First control unit	Further control unit	Comment
EasyStart Pro with	EasyStart Pro	Both control units have the same functional scope. <ul style="list-style-type: none"> <li>▪ Control unit 1 and control unit 2 are defined automatically during the initial commissioning</li> <li>▪ The initial commissioning runs via control unit 1</li> </ul>
EasyStart Pro with	EasyStart Web	Both control units have the same functional scope. <ul style="list-style-type: none"> <li>▪ Control unit 1 and control unit 2 are defined automatically during the initial commissioning</li> <li>▪ The initial commissioning runs via EasyStart Pro</li> </ul>

#### Special case: Connection of Hydronic S3 12V CS to 2 x EasyStart Pro / EasyStart Web

**Note!**

- Connection of Hydronic S3 12V CS to EasyStart Pro and EasyStart Web via Y-cable (Mat. No. 22.1000.35.2700).





### 3 Product Information

#### 3.1 EasyStart Pro

Order No. 22.1000.35.2200



##### Technical data

Rated voltage	12 V / 24 V
Operating voltage range	9 V – 32 V
Dimensions	W: 82 mm, H: 37 mm, D: 19 mm
Weight	approx. 61 g
allowable ambient temperature	– 40 °C to +85 °C
Installation location	Vehicle interior
Radio interference suppression level	CISPR 25, Class 5
LCD ambient temperature	The display becomes sluggish at temperatures below –10°C, i.e. the flashing sequence of the symbols is somewhat slower. The contrast becomes weaker above +70°C.

#### 3.2 EasyStart Timer

Order No. 22.1000.34.1500



##### Technical data

Rated voltage	12 volt / 24 volt
Operating voltage range	9 – 32 volt
Dimensions	W: 82 mm, H: 37 mm, D: 12 mm
allowable ambient temperature	– 40 °C to +85 °C
LCD ambient temperature	The display becomes sluggish in temperatures below –10 °C, i.e. the flashing sequence of the symbols is somewhat slower, the contrast becomes weaker above +70 °C.
Accessory temperature sensor	Order No. 22.1000 34 22 00
Cover frame for flush mounting	Order No. 22.1000 51 41 00
Installation location	Vehicle interior
Automatic running time calculation	possible with temperature sensor
Preset	3 memory locations for preset times within 7 days
Operating time (default)	<ul style="list-style-type: none"> <li>▪ 30 min. for water heaters</li> <li>▪ continuous heating for air heaters</li> </ul>

### 3.3 EasyStart Select

Order No. 22.1000.34.1300



#### Technical data

Rated voltage	12 volt / 24 volt
Operating voltage range	9 – 32 volt
Dimensions	W: 55 mm, H: 46 mm, D: 9 mm
allowable ambient temperature	– 40 °C to +85 °C
LCD ambient temperature	The display becomes sluggish in temperatures below –10 °C, i.e. the flashing sequence of the symbols is somewhat slower, the contrast becomes weaker above +70 °C.
Installation location	Vehicle interior
Operating time (default)	<ul style="list-style-type: none"> <li>▪ 60 min. for water heaters</li> <li>▪ continuous heating for air heaters</li> </ul>

### 3.4 EasyStart Remote+

Order No. 22.1000.34.1700



#### Technical data

<b>Mobile unit</b>	
Frequency	434.6 MHz
Operating voltage	3 volt battery (round cell battery CR2430)
Dimensions	W: 41 mm, H: 66 mm, D: 16 mm
Operating temperature	– 20 °C to 60 °C
Storage temperature	– 40 °C to +85 °C
LCD ambient temperature	The display becomes sluggish in temperatures below –10 °C, i.e. the flashing sequence of the symbols is somewhat slower, the contrast becomes weaker above +70 °C.
<b>Stationary unit</b>	
Frequency	434.6 MHz
Operating voltage	12 volt / 24 volt
Dimensions	W: 76 mm, H: 76 mm, D: 29 mm
Operating / storage temperature	– 40 °C to +85 °C
Antenna connection	Via coded SMB connector
Installation location	Vehicle interior
Automatic running time calculation	possible with temperature sensor
Preset	3 memory locations for preset times within 7 days
Operating time (default)	<ul style="list-style-type: none"> <li>▪ 30 min. for water heaters</li> <li>▪ continuous heating for air heaters</li> </ul>

### 3.5 Easy Start Remote

Order No. 22.1000.34.2300; 22.1000.34.8100



#### Technical data

Mobile unit	
Frequency	434.6 MHz
Operating voltage	3 volt battery (round cell battery CR2032)
Dimensions	W: 34 mm, H: 54 mm, D: 13 mm
Operating temperature	- 20 °C to 60 °C
Storage temperature	- 40 °C to +85 °C
Stationary unit	
Frequency	434.6 MHz
Operating voltage	12 volt / 24 volt
Dimensions	W: 76 mm, H: 76 mm, D: 29 mm
Operating / storage temperature	- 40 °C to +85 °C
Antenna connection	Via coded SMB connector
Installation location	Vehicle interior
Operating time (default)	30 min.

### 3.6 EasyStart Call

Order No. 22.1000.34.0100



#### Technical data

Operating voltage range	9 – 32 volt
Input voltage	max. 32 volt
Closed-circuit power consumption	0.005 A
Power consumption – data transfer and connection to the GSM network	max. 0.5 A
Dimensions (without fixing tabs)	W: 77 mm, H: 106 mm, D: 25 mm
allowable ambient temperature (with SIM card*)	- 40 °C to +85 °C
Storage temperature (without SIM card)	- 40 °C to +85 °C
GSM Quad Band	EGSM 850 / 900 / 1800 / 1900 MHz
Transmit Power	Class 4 (2W) @ 850 / 900 MHz Class 1 (1W) @ 1800 / 1900 MHz
Installation location	Vehicle interior

\* Note the allowable ambient temperature of the SIM card.

### 3.7 EasyStart Web

Order No. 22.1000.34.5100; 22.1000.34.7800



#### Technical data

Operating voltage range	9 – 32 volt
Input voltage	max. 32 volt
Closed-circuit power consumption	0.005 A
Power consumption – data transfer and connection to the GSM network	max. 0.5 A
Dimensions (with fixing tabs)	L: 126 mm, W: 66 mm, H: 25 mm
allowable ambient temperature	– 40 °C to +85 °C
Storage temperature	– 40 °C to +85 °C
GSM Quad Band	EGSM 850 / 900 / 1800 / 1900 MHz
Transmit Power	Class 4 (2W) @ 850 / 900 MHz Class 1 (1W) @ 1800 / 1900 MHz
Installation location	Vehicle interior
Antenna	internal antenna

### 3.8 Mini controller

Order No. 22.1000.32.0700

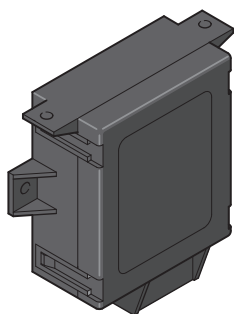


#### Technical data

Rated voltage	12 volt / 24 volt
Operating voltage	8 – 32 volt
Dimensions	W: 76 mm, H: 76 mm, D: 29 mm
Operating temperature	– 40 °C to +85 °C
Installation location	Vehicle interior

### 3.9 Altitude kit

Order No. 22.1000.33.2200



#### Technical data

Max. allowable altitude	approx. 4000 m asl
Measurement range	600 hPa to 1150 hPa
Rated voltage	12 volt / 24 volt
Operating voltage	8 – 32 volt
Dimensions	W: 76 mm, H: 76 mm, D: 29 mm
Operating temperature	– 40 °C to +85 °C
Installation location	Vehicle interior

#### Intended use

The air pressure sensor, used in conjunction with the heater's control box, is for heating at high altitudes.

## 4 Heater combinations

### 4.1 Allowable combinations with LIN interface

With the EasyStart Timer and Remote+ control units a second heater can be controlled and operated using the AD menu item. For connection details see Timer [from page 25](#) and Remote+ circuit diagrams [from page 58](#).

<b>1st heater</b> <b>Diagnostics cable connection</b> to the EasyStart control unit.	<b>Combinable 2nd heater</b> <b>DAT cable connection</b> to the EasyStart control unit.
Hydronic – with the [automatic altitude adjustment] function*	Hydronic – with the [automatic altitude adjustment] function*
Hydronic II (Eco / E-Mobility / Comfort)	Hydronic II (Eco / E-Mobility / Comfort)
Hydronic M-II	Hydronic M-II
Airtronic – with the [automatic altitude adjustment] function*	Airtronic – with the [automatic altitude adjustment] function*
Airtronic M – with the [automatic altitude adjustment] function*	Airtronic M – with the [automatic altitude adjustment] function*
Airtronic L – with the [automatic altitude adjustment] function	Airtronic L – with the [automatic altitude adjustment] function*
Hydronic S3 Economy CL	Hydronic S3 Economy CL

<b>1st heater</b> <b>Diagnostics cable connection</b> to the EasyStart control unit.	<b>Combinable 2nd heater</b> <b>Control signal S+</b> connection to the EasyStart control unit.
Hydronic – with the [automatic altitude adjustment] function*	Hydronic
Hydronic II (Eco / E-Mobility / Comfort)	Hydronic II (Eco / E-Mobility / Comfort)
Hydronic M-II	Hydronic M-II
Airtronic – with the [automatic altitude adjustment] function*	Hydronic L-II
Airtronic M – with the [automatic altitude adjustment] function*	Airtronic 2
Airtronic L – with the [automatic altitude adjustment] function*	Hydronic S3 Economy CS
Hydronic S3 Economy CL	

\* from production in summer 2008 identifiable by "H-Kit" marked on the heater's nameplate.

### 4.2 Allowable combinations with CAN interface

- Both heaters are activated via CAN.
- Grouping is possible in case of two identical heaters. Both heaters are then activated simultaneously.
- If two heaters are grouped together, the ES Pro must always be installed as the control unit.

<b>1st heater</b>	<b>Combinable 2nd heater</b>
Airtronic 2 / Airtronic 3	Airtronic 2 / Airtronic 3
Airtronic 2 / Airtronic 3	Hydronic S3 CS
Hydronic S3 CS	Hydronic S3 CS

## 5 Options

### 5.1 ADR mode with EasyStart Timer

In this operating mode, ADR-conforming operation is enabled in combination with ADR-compatible heaters.

Programming of a timer is **not** permissible.

The control unit is informed whether an ADR case exists via the ADR-R input. If an active ADR case exists the heater is switched off. A high level must be detected when the heater is activated, otherwise the heater is switched off again immediately.

### 5.2 Altitude kit with all EasyStart control units

The altitude sensor, Order No.: 22.1000 33 22 00 can be used to operate the heater at high altitudes.

This also applies to the operation of two heaters.

### 5.3 Temperature display with EasyStart Timer, Remote+ and Select

An external temperature sensor can be connected to the control unit for temperature display.

In the case of air heaters the internal temperature sensor is used

primarily; however, if an external temperature sensor is connected to the control unit, it is always used.

#### **i** Note

- The temperature used for room temperature control is displayed. The displayed temperature may differ from the real room temperature.
- Depending on the air heater's data set the measured temperatures of the control box / temperature sensor (programmed offset) may be displayed as being higher or lower.

### 5.4 Terminal 58 or terminal 15

The GYBK cable of the EasyStart Timer / Select can be optionally connected to terminal 58 or terminal 15. No PWM signal is allowed.

#### **Important information for installation of the EasyStart control units**

#### **i** Note

- The control units must be protected with a maximum 5 A fuse.
- The switching outputs may be loaded with 500 mA maximum.

## 6 Special functions

### 6.1 EasyStart Timer / Remote+

#### 6.1.1 Activation of second heater

##### **Variant 1**

A second heater can be operated by using the DAT cable and the diagnostics cable. However, an additional control unit **cannot** be connected. Diagnosis of both heaters is possible.

##### **Variant 2**

By activating the switch output (S+ / VEH) it is possible to switch on any unit required. A second control unit can be connected via the DAT cable. Diagnosis of the 1st heater is possible, diagnosis of the 2nd heater is **not** possible.

#### 6.1.2 Room temperature control for water heaters via vehicle fan activation

- Depending on the temperature measured by the temperature sensor, the vehicle fan is activated or deactivated via the switching output (S+ / VEH).
- Simultaneous operation of ALB (automatic running time calculation) and room temperature control S+ is not appropriate for water heaters, as the setpoint value cannot be used twice. With immediate operation, the room temperature control is active; in timer mode, ALB is active.

- To prevent vibration of the vehicle fan it is necessary to set hysteresis and sampling time > 0 (see vehicle workshop menu 12.2.2: and 12.2.3:).

### 6.2 EasyStart Timer / Remote+ / Call / Web

#### 6.2.1 Auxiliary heater upgrade to pre-heater

Two variants are possible for upgrading an auxiliary heater to pre-heater:

- Heaters **with** JE diagnostics
  - Use of the upgrade box mode
  - The vehicle fan and the water pump are controlled via a relay, which is activated when the auxiliary heater is started.

#### **i** Note

Fan operation is **not** possible.

- Heaters **without** JE diagnosis (only Timer / Remote+ / Web)
  - Activate S+1 mode at the control unit.
  - The vehicle fan and the water pump are controlled via the additional upgrade box to be installed or via additional relays.

#### **i** Note


It is **not** possible to diagnose the heater via the control unit.

## 6.2.2 Automatic running time calculation

The automatic running time calculation is only allowed for water heaters and for operation of one heater. With other applications it is not possible to guarantee that the required interior temperature is reached.

## 6.3 EasyStart Timer / Remote+ / Web

### 6.3.1 Activation of first heater via switch-on signal S+

The function must be activated via the workshop menu. Only the  symbol is visible in the display.

#### **i** Note

- It is **not** possible to diagnose the heater via the control unit.
- In addition, the setpoint for air heaters must be set using a separate control unit.

## 6.4 EasyStart Timer

### 6.4.1 Running time depends on status of terminal 15

If the heater has been activated either via a timer or the buttons, the heater runs until the timer has expired or the terminal 15 signal fails (falling edge). It does not matter whether the terminal 15 signal was already applied or not when the heater was switched on.

If the heater is activated via the buttons and the operating time is then set to infinite (continuous operation) or the heater is activated via the buttons and the operating time was set to infinite, the heater responds to the terminal 15 signal as follows:

- If the terminal 15 signal fails to arrive the heater switches to a limited time mode, remaining operating time (adjustable).
- If a terminal 15 signal arrives within the remaining operating time the heater switches to continuous operation.

#### **i** Note

The function is solely provided for air heaters. Continuous operation of water heaters is **not** possible.





## 6.5 EasyStart Timer / Select / Web

### 6.5.1 Undervoltage detection

This function can be used to detect an undervoltage and switch off the heater. The undervoltage detection works independently of the heater's undervoltage detection.

#### **i** Note

Depending on the parameterisation, both monitoring functions can become active simultaneously.

- The undervoltage detection of the control unit is only effective if a heater is active.
- The heater is switched off if the voltage  $U_{CU}$  at the control unit is below the threshold  $U_{OFF} + U_{\Delta}$  for longer than the debounce time. The undervoltage error display (Timer  / Select  ) is shown until it is acknowledged for the Timer with the  button and for Select with the  button.
- Boundary conditions for definition of the undervoltage threshold:
  - The measurement is taken not directly at the load (heater) but in the control unit.
  - The vehicle battery voltage depends on the applied load.
  - Due to the higher power consumption of the heater the voltage drop is higher for the heater
    - a higher voltage is measured at the control unit than at the heater.
- The threshold must be chosen so that the battery still has sufficient capacity for the subsequent actions (depending on the connected loads and temperatures).
- The effects of short-term disruptions, e.g. starting the motor, should not be taken into account → debounce time necessary.
- Determining the undervoltage threshold (circuit diagram [see page 93](#)):
  - The target lowest voltage at the battery at which heating mode is still allowed is  $U_{OFF}$ .
  - Voltage  $U_{CU}$  is measured at the control unit, which is value  $U_{\Delta}$  higher than the voltage at the heater
 
$$U_{HTR} - U_{CU} = U_{OFF} = U_{HTR} + U_{\Delta}$$
- The function is configured via Item 3.1: ( $U_{OFF}$ ), 3.2: ( $U_{\Delta}$ ) and 3.3: (debounce time) of the workshop menu.

## 6.6 EasyStart Web

To adjust the undervoltage limit, open the configuration in the workshop menu of EasyStart Web ("EasyStart Web undervoltage detection" submenu).

- Set the undervoltage limit (default: 9 V).
- Set the offset for undervoltage limit.
- Then click [Save].

Unterspannungserkennung EasyStart Web		▼
Unterspannungsgrenze	<input type="text" value="9"/>	Volt
Offset für Unterspannungsgrenze	<input type="text" value="0"/>	Volt



## 7 Workshop menus




### 7.1 EasyStart Timer / Remote+

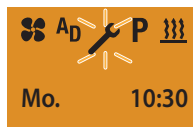
The service functions listed in the following can be displayed, read out and / or changed via the vehicle workshop menu.


#### Note

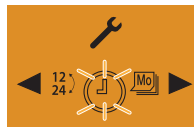
- A reset (remove 5 A fuse) is necessary to activate some functions. To do this, not and follow the relevant note under “Comments” of the “Service functions overview”.
- To correct the fault, refer to the heater's repair instructions.










#### 7.1.1 Opening the vehicle workshop menu

- Display ON, the Start display appears.
- Use the  or  button to select the  symbol in the Menu bar.











- Confirm the SETTINGS menu item by pressing the  button.



- The SET THE TIME symbol  is displayed flashing.
- Press the  LONGPRESS button for longer than 5 sec.; the Workshop menu is displayed.
- Press the  or  button to select the required function, e.g. »2: Select temperature unit, °C or °F« and confirm by pressing the  button.
- Use the  or  button to select the temperature units °C or °F.
- Press the  button to confirm the selection.
- Press the  button to exit the workshop menu.

#### 7.1.2 Service functions overview

Menu item	Service function	Comments
1.1.1	Heater 1 – display current fault	The heater must be switched on to detect current faults. “no diag” is displayed if no diagnostics cable is connected.
1.1.2	Heater 2 – display current fault	The heater must be switched on to detect current faults. “no diag” is displayed if no diagnostics cable is connected.
1.2.1	Heater 1 – read out fault memory F1 – F5	Display fault memory F1 – F5 with error code, e.g.: F1: 12. “no diag” is displayed if no diagnostics cable is connected.
1.2.2	Heater 2 – read out fault memory F1 – F5	Display fault memory F1 – F5 with error code, e.g.: F1: 12. “no diag” is displayed if no diagnostics cable is connected.
1.3.1	Heater 1 – delete fault memory F1 – F5	Select the delete → function by pressing the  button, the DEL display appears, flashing, press the  button to confirm. “no diag” is displayed if no diagnostics cable is connected.
1.3.2	Heater 2 – delete fault memory F1 – F5	Select the delete → function by pressing the  button, the DEL display appears, flashing, press the  button to confirm. “no diag” is displayed if no diagnostics cable is connected.
1.4.1	Heater 1 – read out operating hours counter	Operating time is displayed in minutes. “no diag” is displayed if no diagnostics cable is connected.
1.4.2	Heater 2 – read out operating hours counter	Operating time is displayed in minutes. “no diag” is displayed if no diagnostics cable is connected.
2	Select temperature unit, °C or °F	Default: °C
3.1	Set the undervoltage limit (EasyStart Timer only)	Default. 8 volt, Setting range: 8 – 28 volt in 0.1 volt increments.
3.2	Set the undervoltage limit “offset” (EasyStart Timer only)	Default. 0 volt, Setting range: 0 – 6 volt in 0.1 volt increments.

Menu item	Service function	Comments
3.3	Set the "fault detection" debounce time (EasyStart Timer only)	Default: 20 seconds, Setting range: 5 – 255 seconds in 1 second increments.
4.1	Heater 1 – set max. operating time (EasyStart Timer only)	Default: 120 min. Setting range: 10 – 120 min. in 1 min. increments, from the 120th min. – 720 min. in 5 min. increments. Continuous heating mode is also possible for air heaters. These settings have no effect on the operating time for timer programming.
4.2	Heater 2 – set operating time (EasyStart Timer only)	Default: 120 min. Setting range: 10 – 120 min. in 1 min. increments, from the 120th min. – 720 min. in 5 min. increments. Continuous heating mode is also possible for air heaters. These settings have no effect on the operating time for timer programming.
5	Reset to as delivered condition	Press the  button to select the function, the default display appears, flashing, press the  button to confirm. All active timers are deleted.
6.1	Read out control unit hardware version	Function is intended for internal purposes only.
6.2	Read out control unit software version	Function is intended for internal purposes only.
7	Check measurement of the range (EasyStart Remote+ only)	Take a check measurement. Stand with the mobile unit at a distance of 1 m in front of the vehicle and in the workshop menu, press the  or  button to select item 7. If a value between 75 and 100 is displayed for R and S the measurement is ok. Note on the check measurement: With an optimum installation the transmission power can reach a maximum value of 100. If the maximum value is not reached, change the location of the antenna so that a value for R and S is reached between the minimum value 75 and the maximum value 100.
8	Select language, DE or EN	Default: DE
9	Set upgrade box mode, On or Off	Default: Off A reset must be performed to activate the function (remove fuse).
10	Select start time (On) or departure time (Off)	Default: Off (departure time) The departure time (Off) is absolutely necessary for heating mode with automatic operating time calculation (Item 11.1:). For heating mode without automatic operating time calculation (item 11.1:) it is possible to choose between start time (On) and departure time (Off). A reset must be performed to activate the function (remove fuse).
11.1	Set automatic running time calculation, On or Off	Default: Off A temperature sensor must be connected to the control unit or stationary unit. Additional settings are required, see Item 11.2: and 11.3: A reset must be performed to activate the function (remove fuse). Automatic running time calculation is not possible for air heaters.
11.2	Set the engine size (cubic capacity)	Default: 1800 cm <sup>3</sup> Setting range: 1000 cm <sup>3</sup> – 4000 cm <sup>3</sup> in 100 cm <sup>3</sup> increments. The engine size can only be set if 11.1: is set to On.

Menu item	Service function	Comments
11.3	Set the max. operating time	Default: 60 min. Setting range: 10 min. – 60 min. in 1 min. increments. The max. operating time can only be set if 11.1: is set to On.
12.1	Configure water heater for activation via the switching output S+ as Additional Device [AD]	Default: Off Selection options: 1. Via JE diagnosis → display flame and ventilate symbol (if supported by the heater) in the AD menu. 2. Second heater via switching signal S+2 (deactivates the functions 1.2.2, 1.3.2, 1.4.2, 9) → S+2 (display of flame symbol and AD Heating menu only are visible). 3. First heater switch-on signal S+1 (deactivates function 1) → S+1 (Display Heating menu only). <b>i Note</b> A reset must be performed to activate the function (remove fuse).
12.2.1	Room temperature control, On or Off	Default: Off
12.2.2	Hysteresis (On / Off difference): 0 – 7 °C	Default: 2 °C
12.2.3	Sampling rate: 0 – 15 seconds	Default: 5 seconds
13.1	Select KL58 or KL15 mode	Default: KL58. Input KL58 = control background lighting of control unit. A reset must be performed to activate the function (remove fuse).
13.2	If KL15 mode is active	Default setting: 15 min. Set afterrun time of heater until shutdown. Setting range: 1 - 255 min. Value 0 = heater always remains in continuous operation.
14.1	Show display pixels	Check the individual pixels in test mode. If there are too many defective pixels, replace the control unit if necessary.
14.2	Show display pixels	Check the individual pixels in test mode. If there are too many defective pixels, replace the control unit if necessary.
14.3	Show display pixels	Check the individual pixels in test mode. If there are too many defective pixels, replace the control unit if necessary.
14.4	Show display pixels	Check the individual pixels in test mode. If there are too many defective pixels, replace the control unit if necessary.
14.5	Show display pixels	Check the individual pixels in test mode. If there are too many defective pixels, replace the control unit if necessary.
14.6	Show display contrast	This function changes the contrast of the display. <b>i Note</b> It is also possible to reduce the contrast to such an extent that the screen display is no longer visible. With each PowerOnReset (remove fuse) the contrast is reset to the as-delivered condition.

## 7.2 EasyStart Select

The service functions listed in the following can be displayed, read out and / or changed via the vehicle workshop menu.

### **i** Note



To correct the fault, refer to the heater's repair instructions.

### 7.2.1 Opening the vehicle workshop menu







- Display ON, the Start display appears.






Start display water heater      Start display air heater



- Press button  and  at the same time for longer than 5 sec. The workshop menu is displayed.



- Press the  or  button to select the required item, e.g. »Item 2: Select temperature unit, °C or °F« and confirm by pressing the  button.
- Use the  or  button to select the temperature units °C or °F.
- Press the  button to confirm the selection.
- Exit the workshop menu via Timeout.

### 7.2.2 Service functions overview

Menu item	Service function	Comments
1.1	Display current fault	Heater must be switched on. The AF display and the digits of the current fault are displayed alternately. The current fault is always written in fault memory F1. "ndi" is displayed if no diagnostics cable is connected.
1.2	Read out fault memory F1 – F5	Heater must be switched on. The F1 display and the digits of the error code are displayed alternately. Select fault memory F2 – F5 display with the  or  button. "ndi" is displayed if no diagnostics cable is connected.
1.3	Delete fault memory F1 – F5	Heater must be switched on. Press the  button to confirm the DEL display. "ndi" is displayed if no diagnostics cable is connected.
2	Select temperature unit, °C or °F	Default: °C
3.1	Set undervoltage limit	Default. 8 volt, Setting range: 8 – 28 volt in 0.1 volt increments (display, e.g. 271 for 27.1 volt).
3.2	Set undervoltage limit "Offset"	Default. 0 volt, Setting range: 0 – 6 volt in 0.1 volt increments (display, e.g. 55 for 5.5 volt).
3.3	Set "Fault detection" debounce time	Default: 20 seconds, Setting range: 5 – 255 seconds in 1 second increments.

Menu item	Service function	Comments
4.1	Setting the operating time	Default: 60 min. for water heaters / infinite for air heaters Setting range: 10 – 120 min. in 1 min. increments, from the 120th min. – 720 min. in 5 min. increments. Continuous heating mode is also possible for air heaters (select OFF). <b>i Note</b> The function is blocked for combination with other control units.
5	Reset to as delivered condition	Press → button  to confirm.
6.1	Read out control unit hardware version	Function is intended for internal purposes only.
6.2	Read out control unit hardware version	Function is intended for internal purposes only.
6.3	Read out control unit software version	Function is intended for internal purposes only.
6.4	Read out control unit software version	Function is intended for internal purposes only.
14	Show all icons (display)	Cancel with  button

### 7.3 Altitude kit – diagnosis

The air pressure sensor connected to the heater can be diagnosed. If errors occur during the altitude adjustment they are saved in the air pressure sensor and can be read out if necessary using the ISO adapter in conjunction with the EDiTH customer service program – Version S3V7-F and higher.

The adapter cable (Order No. 22.1000 33 31 00) is also required.

#### 7.3.1 Perform diagnosis of the air pressure sensor

Disconnect the air pressure sensor / heater cable loom interface, connect the ISO adapter with the additionally required adapter cable and start the diagnosis of the air pressure sensor.

##### The following actions are possible:

- Read out the current fault and the fault memory.

- Delete the fault memory.
- Query the current measured air pressure.
- Query the operating state.
- Query the general data.

##### **i Note**

The fault memory of the air pressure sensor can only be read out with the EDiTH customer service program – Version S3V7-F and higher.

The heater diagnosis can also be performed if the air pressure sensor is connected, namely

- with the EasyStart Timer, EasyStart Remote+, EasyStart Select, EasyStart Call control units.
- with the diagnostic unit or EDiTH Basic; the connection to the “Heater connection plug / cable harness” interface is made with a corresponding adapter cable.

Error code	Error description	Remedial action
<b>Air pressure sensor</b>		
0	No fault	---
11	Communication loss on the diagnostics cable between the HCTRL and air pressure sensor	Interruption on the diagnostics cable between the heater control unit HCTRL and air pressure sensor → check the wiring and plug-in connections
12	HCTRL does not support altitude mode with the air pressure sensor	The air pressure sensor has been connected to a heater that does not support altitude adjustment → use of a heater that supports altitude adjustment
13	Air pressure sensor fault	The air pressure sensor is defective → replace the air pressure sensor

## 7.4 EasyStart Web

### 7.4.1 Configuring the operating mode

To change the operating mode, open the configuration in the workshop menu (“EasyStart Web operating settings” submenu).

- Change the operating mode via the drop-down menu [configuration of the operating modes].
- For example, the operating mode [Switch-on signal via S+] can be

configured here if a heater is to be connected and operated in this way.

#### **i** Note

- The connection of a heater via CAN or LIN is detected by EasyStart Web automatically.
- It is not possible to operate different interfaces in parallel. If heaters with different interfaces are used at the same time, the CAN interface always has priority.

### Betriebseinstellungen EasyStart Web ▼

Voreinstellung Solltemperatur	<input type="text" value="21"/>	°C
Voreinstellung der Laufzeit für die Luftheizung	<input type="text"/>	Minuten
<input checked="" type="checkbox"/> Unbegrenzte Laufzeit ermöglichen		
Unbegrenzte Laufzeit		
<input checked="" type="checkbox"/> Heizgerät 1		
<input type="checkbox"/> Heizgerät 2		
<input type="checkbox"/> Heizgerät 3		
<input type="checkbox"/> Heizgerät 4		
Laufzeitbegrenzung Heizgerät 1	<input type="text" value="120"/>	Minuten
Betriebsmodus für die Timerfunktion	<input type="text" value="Startzeit"/>	▼
Konfiguration der Betriebsmodi	<div style="border: 1px solid #ccc; padding: 5px;"> <span style="float: right;">▼</span>                     Heizgerät Einschaltsignal über Dia                      Heizgerät Einschaltsignal über Diagnoseleitung                      Aufrüstboxmodus Heizgerät 1                      Heizgerät 1 Einschaltsignal über S+                      wird zur Zeit nicht unterstützt                      wird zur Zeit nicht unterstützt                 </div>	
Temperatureinheit (°C/F)		
Temperatursensor angeschlossen		
Bus-Kommunikationssystem	<input type="text" value="CAN"/>	

Configuration	2nd control unit possible?
Heater switch-on signal via diagnostics cable (LIN)	yes
Heater 1 upgrade box	yes
Switch-on signal (connection) via S+	yes
is not supported at present	
is not supported at present	

- Then click [Save].

### 7.4.2 Read out heater fault memory

To read out the heater's fault memory, open the configuration in the workshop menu (“Heater fault memory” submenu).

- Load the saved errors from the heater's memory
- Max. 5 errors (HeIJED)
- Delete the fault memory


### 7.4.3 Reading out the EasyStart Web fault memory

To read out the fault memory of EasyStart Web, open the configuration in the workshop menu (“EasyStart Web fault memory” submenu).

- Errors are displayed immediately (no need to call them up)
- Delete the EasyStart Web fault memory


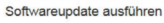
#### 7.4.4 Call up the configuration and software status

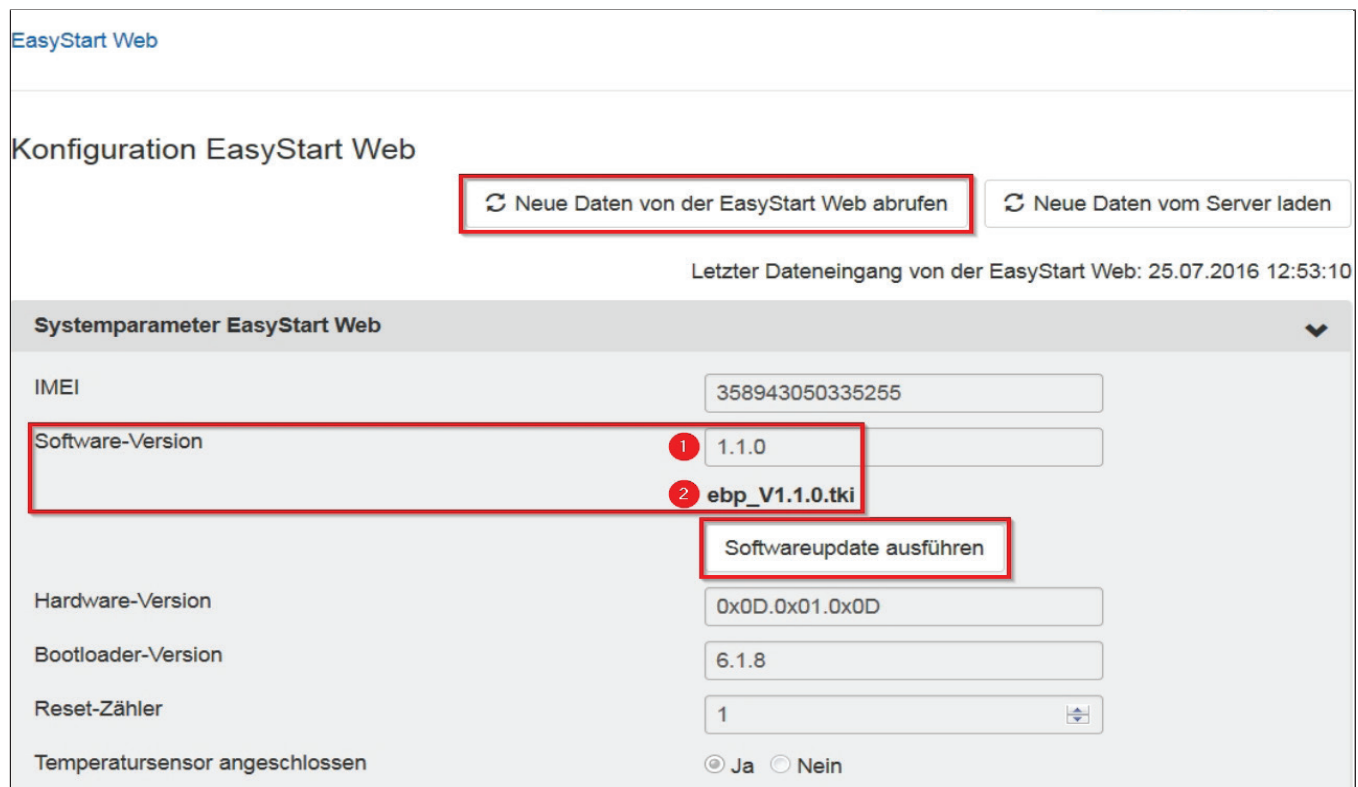
To call up the configuration and software status, open the configuration in the workshop menu (“EasyStart Web system parameters” submenu).

- Click  **Neue Daten von der EasyStart Web abrufen**. The configuration and the currently installed software version (1) are displayed.

#### 7.4.5 Perform software update

To perform a software update, open the configuration in the workshop menu (“EasyStart Web system parameters” submenu).

- Click  **Neue Daten von der EasyStart Web abrufen**. The currently installed software version (1) is displayed.
  - The .tki file (2) indicates the software version currently available on the server.
  - Perform the software update if the available version (2) differs from the currently installed version (1).
- Click the  **Softwareupdate ausführen** button.
  - The EasyStart Web button flashes while the update is in progress.
- When the button stops flashing the update is completed.





### 7.5 EasyStart Pro

#### 7.5.1 Opening the vehicle workshop menu

##### Note

The most important points of the Workshop menu are described in the installation instructions of the EasyStart Pro.

To open the workshop menu, select the Settings  menu and then hold the BACK button  pressed for longer than 2 seconds while the clock symbol under the gear wheel is flashing.



#### 7.5.2 Grouping heaters

The grouping of heaters enables simultaneous activation of two heaters of the same type (e.g. two air or two water heaters).

- During the **initial installation**, EasyStart Pro detects both heaters. After the installation routine the heaters can be grouped via the Workshop menu.



- If a **second** heater is installed subsequently or after **swapping** an existing heater, the following display appears initially after applying the supply voltage:





- Confirm the message by pressing the operating button.
- EasyStart Pro then queries the grouping:



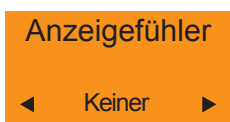
- Confirm with [YES]. [No] cancels the grouping.
- Determining the control sensor. The following options are available to choose from:
  - Control unit: The temperature sensor of the control unit sets the control defaults for control of the heater group.
  - Heater: The control sensors of both heaters set the control defaults for control of their heaters individually.



- Determining the display sensor. The following options are available to choose from:
  - None: The current temperature is not displayed.
  - Control unit: Determines the temperature sensor in the control unit as display sensor
  - Heater 1: Defines the temperature sensor in heater 1 as display sensor
  - Heater 2: Defines the temperature sensor in heater 2 as display sensor
  - Identification: Identify heaters by starting the fan function, [see chap. 7.4.2.](#)

**Note**

Use identification only in the connection constellation of heater 1 and heater 2 is unclear. After the identification via the BACK button back to determining the display sensor.



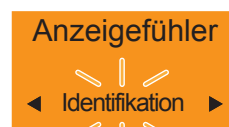
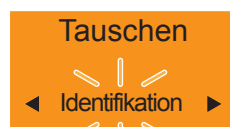
- Carry out other installation steps and close grouping.

### 7.5.3 Identification of heaters/heater groups

**Note**

The Workshop menu [Identification] is a submenu, e.g. for assigning the display sensor or when swapping the activation of two heaters. It enables clear assignment of two connected heaters or heater groups by switching on the respective fan function.

- Confirm [Swap] or [Display sensor] men by pressing the operating button.
- Select [Identification] by turning the operating button.



- Confirm the selection by pressing the operating button.
- Select between [Group1] and [Group2] or [Heater 1] and [Heater 2] by turning the operating button.



- Confirm the selection by pressing the operating button.
- Select between [On] and [Off] by turning the operating button.



- Confirm the selection by pressing the operating button.
- If [On] is selected, the fan of each of the heaters connected in the respective group starts. This enables **clear identification** of the connected heater / heater group.
- [Off] end identification of the heaters connected in the respective group. The fan function is switched off.

#### 7.5.4 Error code list

Error code	Error code message	Cause / Remedy
P000301	Watchdog reset	<ul style="list-style-type: none"> <li>▪ Delete errors, the heater remains ready for operation.</li> <li>▪ Replace control box</li> </ul>
P000302	Too many watchdog resets	<ul style="list-style-type: none"> <li>▪ Delete errors, the heater remains ready for operation.</li> <li>▪ Replace control box</li> </ul>
P00030A	CAN communication error	<ul style="list-style-type: none"> <li>▪ Delete error, if it occurs repeatedly check the CAN connection between heater and control unit</li> </ul>
P001700	No heater connected to the CAN bus	<ul style="list-style-type: none"> <li>▪ Check cable connections and power supply of the heater.</li> </ul>
P001701	Change device at the CAN bus (mismatch)	<ul style="list-style-type: none"> <li>▪ The system configuration has changed – possible causes:               <ul style="list-style-type: none"> <li>– a heater has been replaced</li> <li>– a control unit has been removed</li> <li>– a control unit has been added</li> </ul> </li> <li>▪ Confirm error message via the operating button. New initialisation starts automatically.</li> </ul>
P001702	External temperature sensor is defective (short circuit)	<ul style="list-style-type: none"> <li>▪ Check the cable for damage</li> <li>▪ Check the connection to the external sensor at the control unit</li> <li>▪ Renew sensor if necessary</li> </ul>
P001703	External temperature sensor is defective (interruption)	<ul style="list-style-type: none"> <li>▪ Check the cable for damage</li> <li>▪ Check the connection to the external sensor at the control unit</li> <li>▪ Renew sensor if necessary</li> </ul>
P001707	Internal temperature sensor is defective (short circuit)	<ul style="list-style-type: none"> <li>▪ Internal hardware fault: The sensor can no longer be used as a display or control sensor. Replace control unit if necessary</li> </ul>
P001708	Internal temperature sensor is defective (interruption)	<ul style="list-style-type: none"> <li>▪ Internal hardware fault: The sensor can no longer be used as a display or control sensor. Replace control unit if necessary</li> </ul>
P00170C	Operating button is blocked	<ul style="list-style-type: none"> <li>▪ Remove blockage</li> <li>▪ Check operating button for dirt</li> <li>▪ Replace control unit if necessary</li> </ul>
P001706	Back button is blocked	<ul style="list-style-type: none"> <li>▪ Remove blockage</li> <li>▪ Check Back button for dirt</li> <li>▪ Replace control unit if necessary</li> </ul>
P00170A	Timer is not calibrated	<ul style="list-style-type: none"> <li>▪ Production error: Perform software update with EasyStart Pro or replace control unit.</li> </ul>
P001709	Missing data	<ul style="list-style-type: none"> <li>▪ Production error: Perform software update with EasyStart Pro or replace control unit.</li> </ul>
P001704	Fatal internal error	<ul style="list-style-type: none"> <li>▪ Production error: Perform software update with EasyStart Pro or replace control unit.</li> </ul>
P001705	External flash is defective	<ul style="list-style-type: none"> <li>▪ Production error: Perform software update with EasyStart Pro or replace control unit.</li> </ul>
P00170B	Invalid system configuration	<ul style="list-style-type: none"> <li>▪ Check connected components (heaters and control units), an impermissible system configuration exists:               <ul style="list-style-type: none"> <li>– more than 2 control units are installed</li> <li>– more than 2 heaters are installed</li> <li>– an ADR heater is installed, the control unit does not support the ADR function.</li> </ul> </li> </ul>

## 8 Overview of the circuit diagrams

### 8.1 EasyStart Timer

#### Timer with button → 1 heater

Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M, Hydronic S3 Eco CL [27](#)

Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic L II [28](#)

Airtronic, Airtronic M, Airtronic L with external control temperature sensor, interior, e.g. for fresh air mode [29](#)

#### Timer → 2 heaters

Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic S3 Eco CL (diagnostics cable)  
**AND** Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic S3 Eco CL (diagnostics cable) [30](#)

Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic S3 Eco CL (diagnostics cable)  
**AND** Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic L II, Hydronic S3 Eco CS (switch-on signal S+) [31](#)

Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic S3 Eco CL (diagnostics cable)  
**AND** Airtronic, Airtronic M, Airtronic L (diagnostics cable) [32](#)

Airtronic, Airtronic M, Airtronic L, Airtronic 2 (12V), Airtronic 3 (12V) (diagnostics cable)  
**AND** Airtronic, Airtronic M, Airtronic L, Airtronic 2 (12V), Airtronic 3 (12V) (diagnostics cable) [33](#)

1st Heater: Airtronic 2 12V, Airtronic 3 12V via diagnostics cable  
**AND** 2nd heater via switch-on signal S+ [34](#)

1st Heater: Airtronic 2 12V, Airtronic 3 12V via diagnostics cable  
**AND** 2nd heater via switch-on signal S+ [35](#)

#### Timer with button → 2 heaters

Airtronic, Airtronic M, Airtronic L, Airtronic 2 (12V), Airtronic 3 (12V) and Hydronic, Hydronic II, Hydronic II C (diagnostics cable)  
**AND** Hydronic II Comfort, Hydronic M II, Hydronic L II, Hydronic S3 Eco CS (switch-on signal S+) [36](#)

#### Combined control units

##### Timer / Timer → 1 heater

Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic S3 Eco CL [37](#)

Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic L II, Hydronic S3 Eco CS [38](#)

Airtronic, Airtronic M, Airtronic L, Airtronic 2 (12V), Airtronic 3 (12V) [39](#)

##### Timer / Remote → 1 heater

Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic S3 Eco CL [40](#)

Airtronic, Airtronic M, Airtronic L, Airtronic 2 (12V), Airtronic 3 (12V) [41](#)

Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic, L II, Hydronic S3 Eco CS via switch-on signal S+ [42](#)

##### Timer / Select → 1 heater

Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic S3 Eco CL [43](#)

Airtronic, Airtronic M, Airtronic L, Airtronic 2 (12V), Airtronic 3 (12V) [44](#)

Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic, L II, Hydronic S3 Eco CS via switch-on signal S+ [45](#)

## Combined control units

### Timer / Timer → 2 heaters

1st heater: Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic S3 Eco CL via diagnostics cable

**AND** 2nd heater via switch-on signal S+

[46](#)

1st heater: Airtronic, Airtronic M, Airtronic L, Airtronic 2 (12V), Airtronic 3 (12V) via diagnostics cable

**AND** 2nd heater via switch-on cable S+

[47](#)

## Special functions

### Timer → 1 heater with room temperature controller

Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic S3 Eco CL

[48](#)

## ADR mode

### Timer with button → 1 heater

Hydronic M II

[49](#)

Hydronic 24 volt, Hydronic M II via switch-on signal S+

[50](#)

Airtronic, Airtronic M, Airtronic L

[51](#)

## ADR mode with combined control units

### Timer / Timer → 1 heater

Hydronic 24 volt, Hydronic M II via switch-on signal S+

[52](#)

Hydronic M II

[53](#)

Airtronic, Airtronic M, Airtronic L

[54](#)

### Timer / Select → 1 heater

Hydronic 24 volt, Hydronic M II via switch-on signal S+

[55](#)

Hydronic M II

[56](#)

Airtronic, Airtronic M, Airtronic L

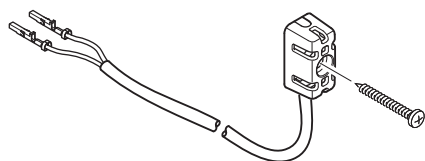
[57](#)

## Note

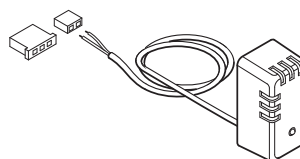
Optional components and cables are shown with dashed lines in the circuit diagrams.

The “Interior temperature sensor -B8” is included with the EasyStart Remote+ and EasyStart Call.

For the EasyStart Timer, the “Interior temperature sensor -B8” must be ordered separately (Order No. 22.1000 34 22 00).

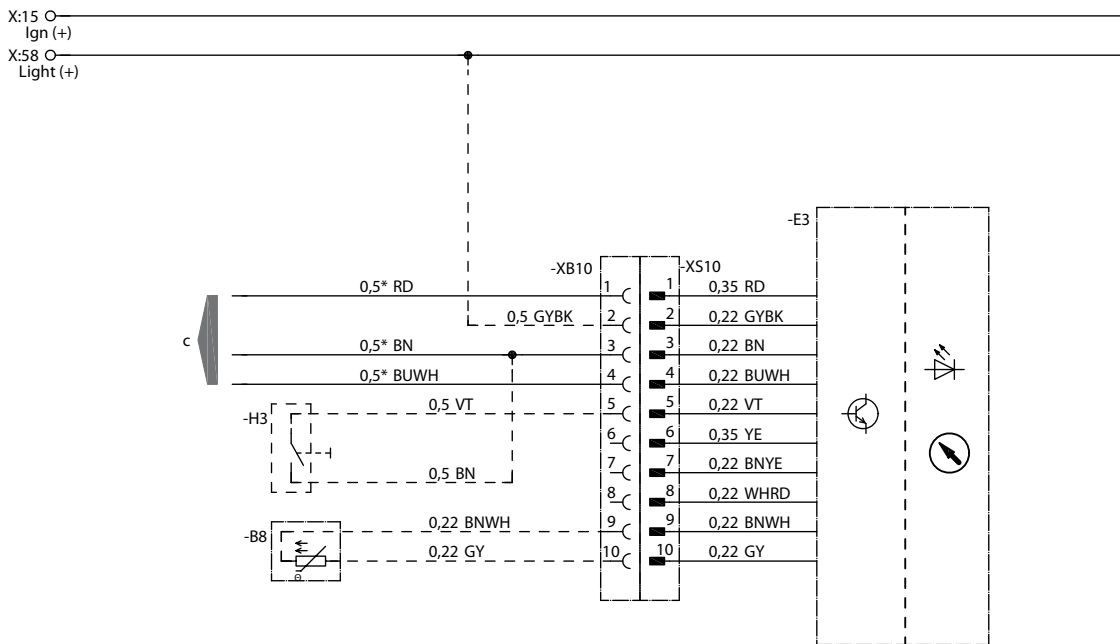


The “External control temperature sensor, interior -B9” must be ordered separately (Order No. 25 1774 89 03 00).



### EasyStart Timer with button connection

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic S3 Economy CL



\* Hydronic MII 0.75

22.1000.34.9711

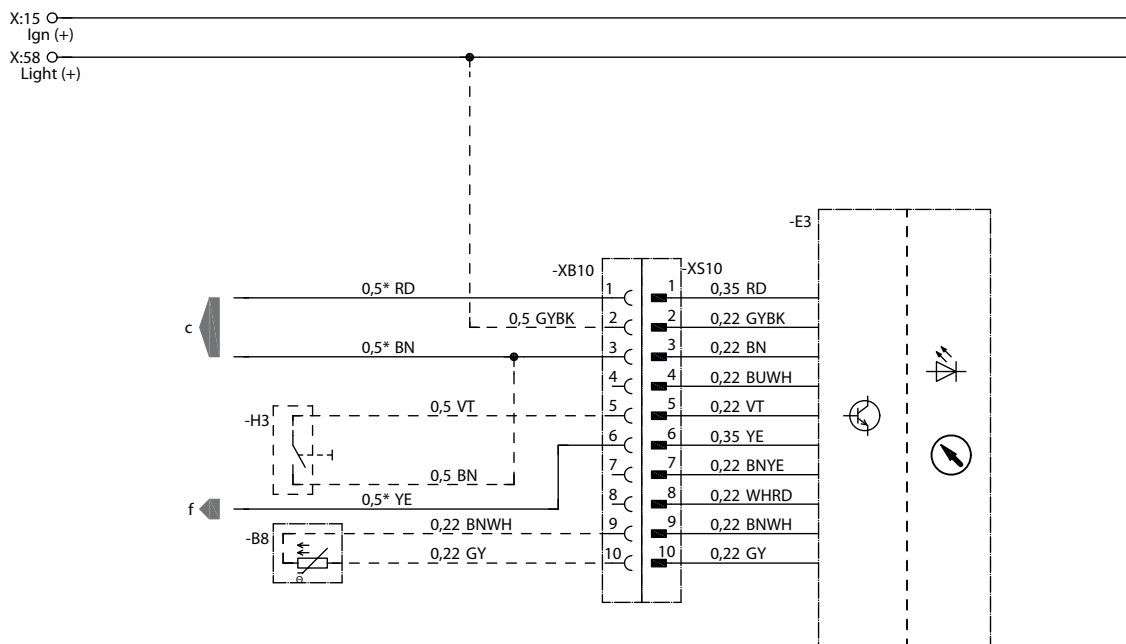
- B8 Sensor, interior temperature
- E3 EasyStart Timer
- H3 EasyStart Timer button
- c to the heater

#### Cable colours

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

**EasyStart Timer with button connection via switch-on signal S+**

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic L II



\* Hydronic MII 0,75 / Hydronic L 1,0

22.1000.34.9703

-B8 Sensor, interior temperature

-E3 EasyStart Timer

-H3 EasyStart Timer button

c to the heater

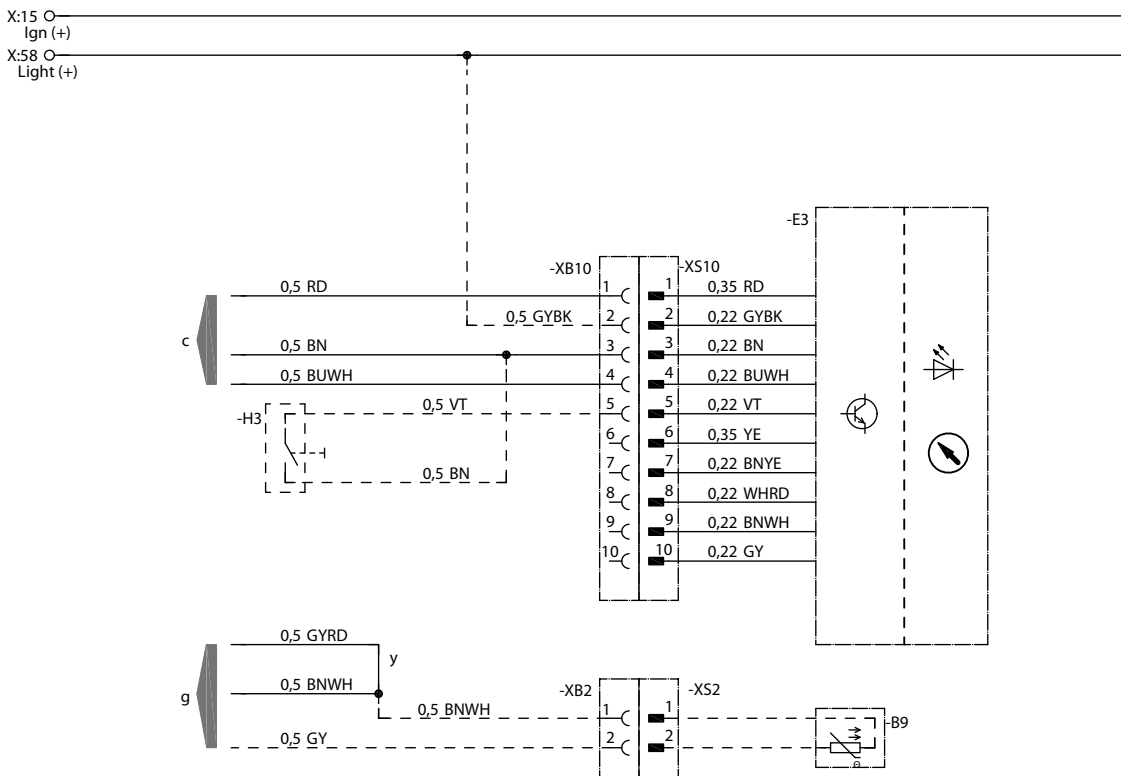
f Switch-on signal S+

**Cable colours**

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

### EasyStart Timer with button connection

Airtronic, Airtronic M, Airtronic L with control temperature sensor external, interior, e.g. for fresh air mode



22.1000.34.9712

-B9 External control temperature sensor, interior

-E3 EasyStart Timer

-H3 EasyStart Timer button

c to the heater

g to the heater

y Connect cables and insulate

#### Cable colours

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



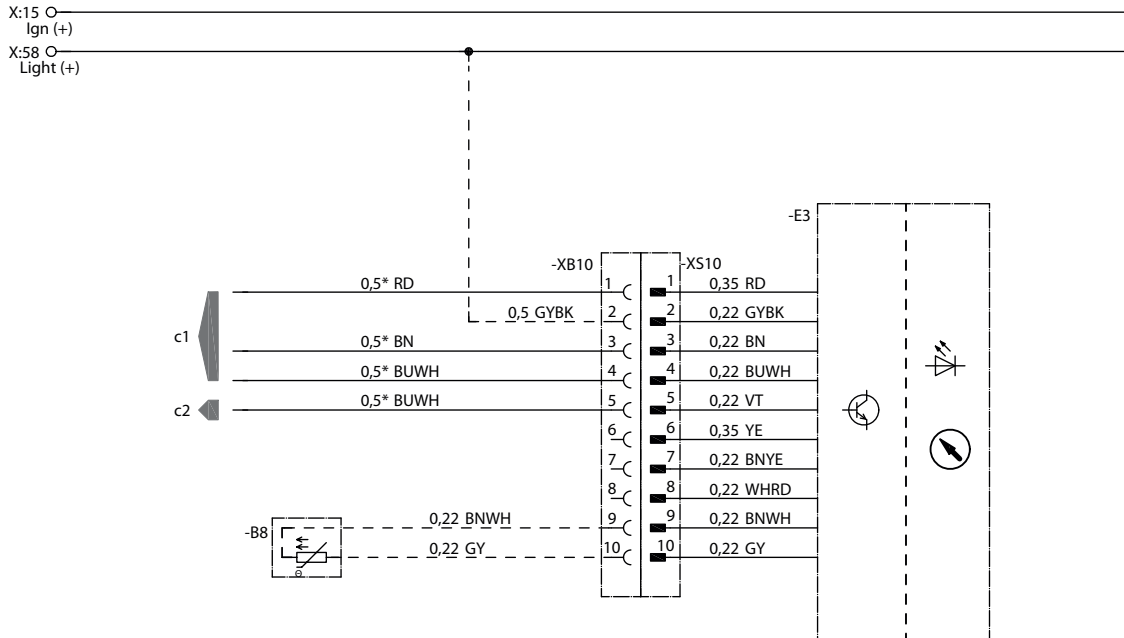
### EasyStart Timer connection

1st heater via the diagnostics cable

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic S3 Economy CL

2nd heater via the diagnostics cable

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic S3 Economy CL



\* Hydronic MII 0,75

22.1000.34.9706

-B8 Sensor, interior temperature

-E3 EasyStart Timer

c1 to heater 1

c2 to heater 2

#### Cable colours

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

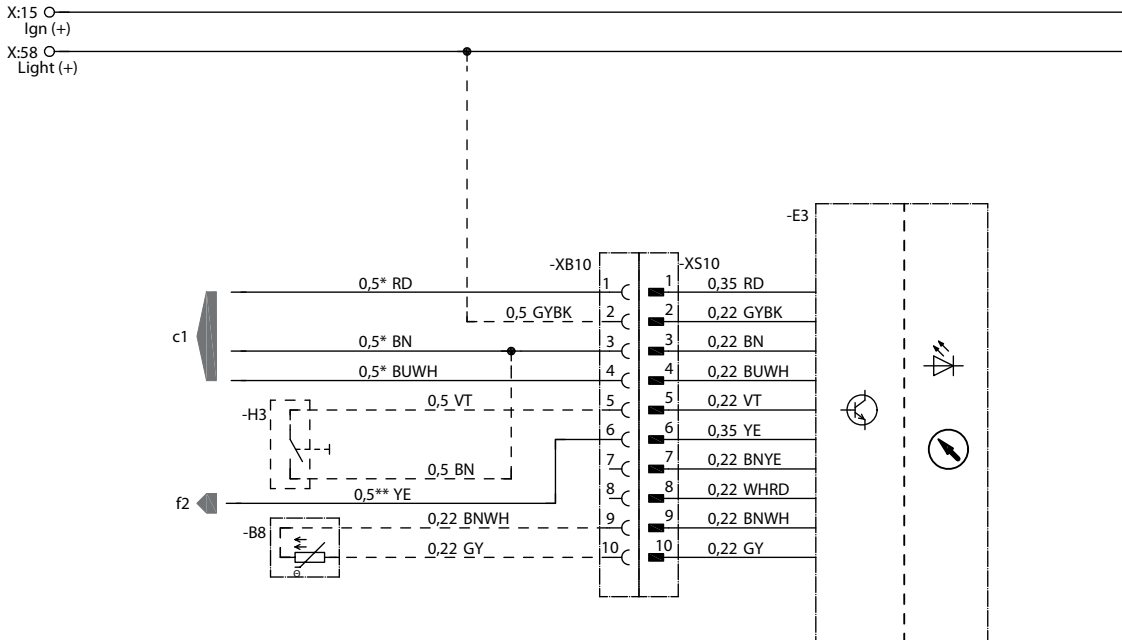
### EasyStart Timer connection

1st heater via the diagnostics cable

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic S3 Economy CL

2nd heater via switch-on signal S+

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic L II, Hydronic S3 Economy CS



\* Hydronic MII 0,75

\*\* Hydronic MII 0,75 / Hydronic L 1,0

22.1000.34.9704

-B8 Sensor, interior temperature

-E3 EasyStart Timer

-H3 EasyStart Timer button

c1 to heater 1

f2 Switch-on signal S+, heater 2

#### Cable colours

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

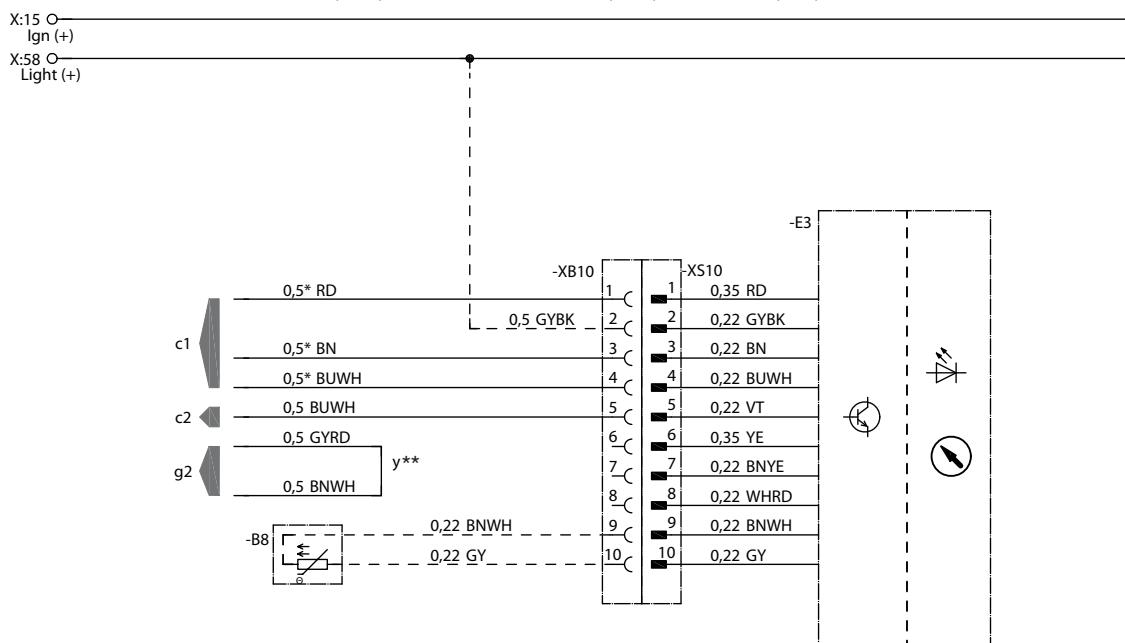
### EasyStart Timer connection

1st heater via the diagnostics cable

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic S3 Economy CL

2nd heater via the diagnostics cable

Airtronic, Airtronic M, Airtronic M2 (12 V), Airtronic L, Airtronic 2 (12 V), Airtronic 3 (12V)



\* Hydronic MII 0.75

\*\* Not applicable to Airtronic 2, Airtronic 3

22.1000.34.9705

-B8 Sensor, interior temperature

-E3 EasyStart Timer

c1 to heater 1

c2 to heater 2

g2 to heater 2

y Connect cables and insulate

#### Cable colours

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

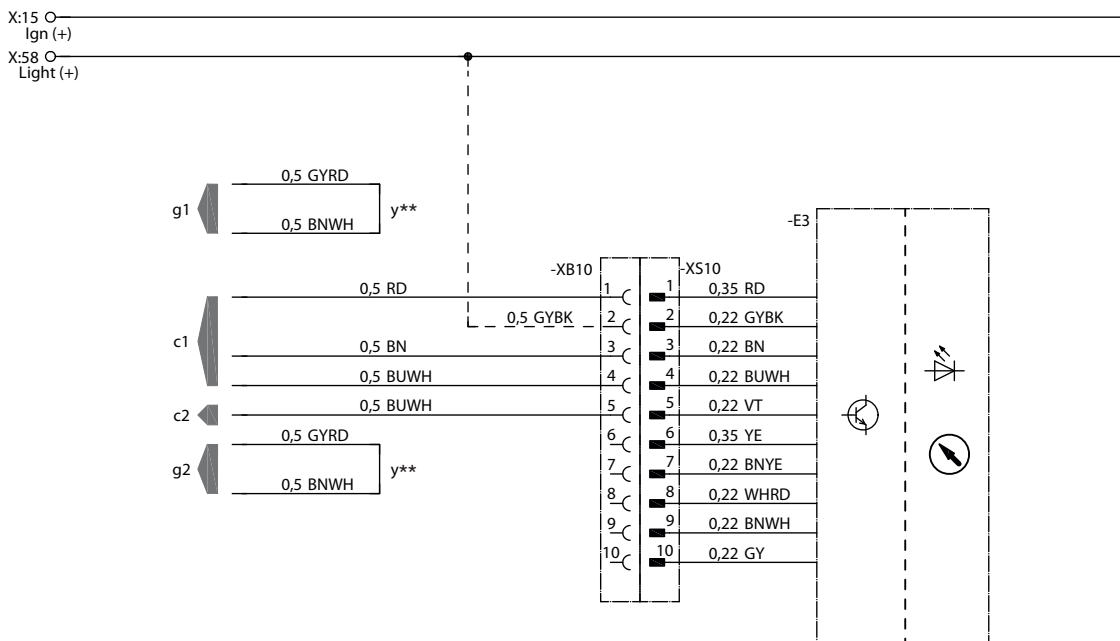
### EasyStart Timer connection

1st heater via the diagnostics cable

Airtronic, Airtronic M, Airtronic M2 (12 V), Airtronic L, Airtronic 2 (12 V), Airtronic 3 (12V)

2nd heater via the diagnostics cable

Airtronic, Airtronic M, Airtronic M2 (12 V), Airtronic L, Airtronic 2 (12 V)



\*\* Not applicable to Airtronic 2, Airtronic 3

22.1000.34.9714

-E3 EasyStart Timer

c1 to heater 1

c2 to heater 2

g1 to heater 1

g2 to heater 2

y Connect cables and insulate

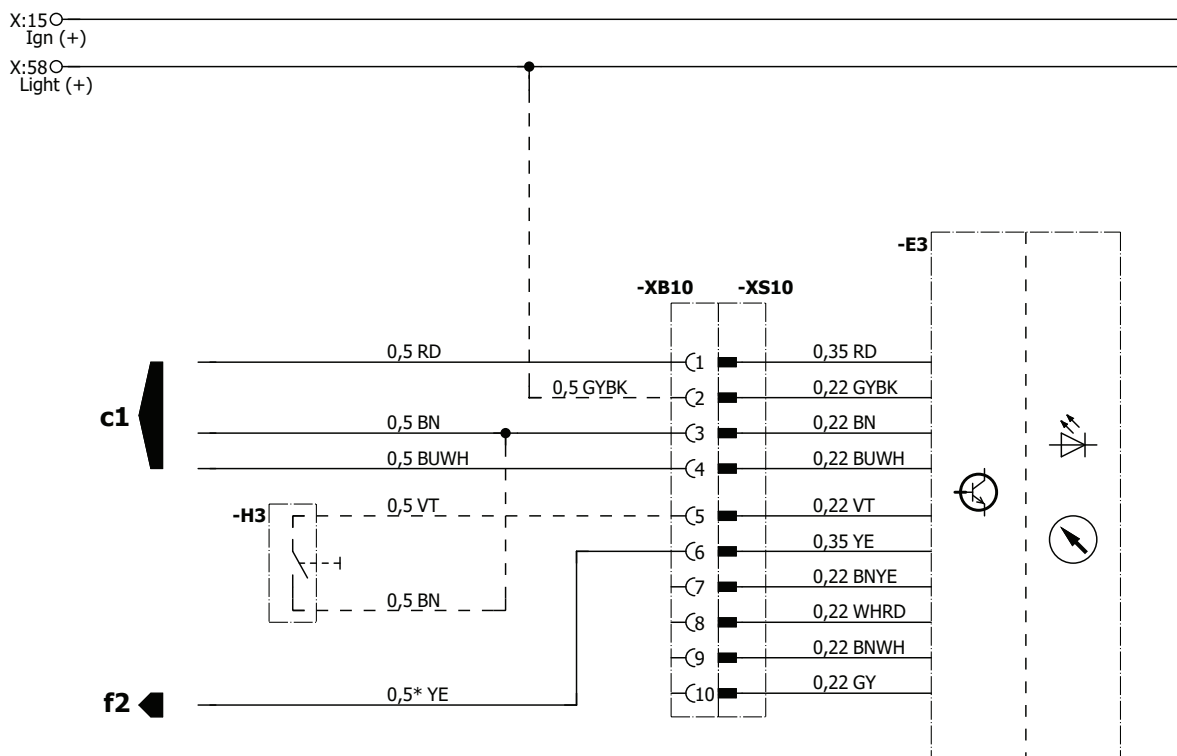
#### Cable colours

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

### EasyStart Timer connection

1st heater via the diagnostics cable  
Airtronic 2 12V, Airtronic 3 12V

2nd heater via switch-on signal S+  
Hydronic M II, Hydronic 3 CS



\* Hydronic M II – 0.75

22.1000.35.9714

-E3 EasyStart Timer

-H3 EasyStart Timer button

c1 to the heater

f2 Switch-on signal S+ for heater 2

#### Cable colours

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

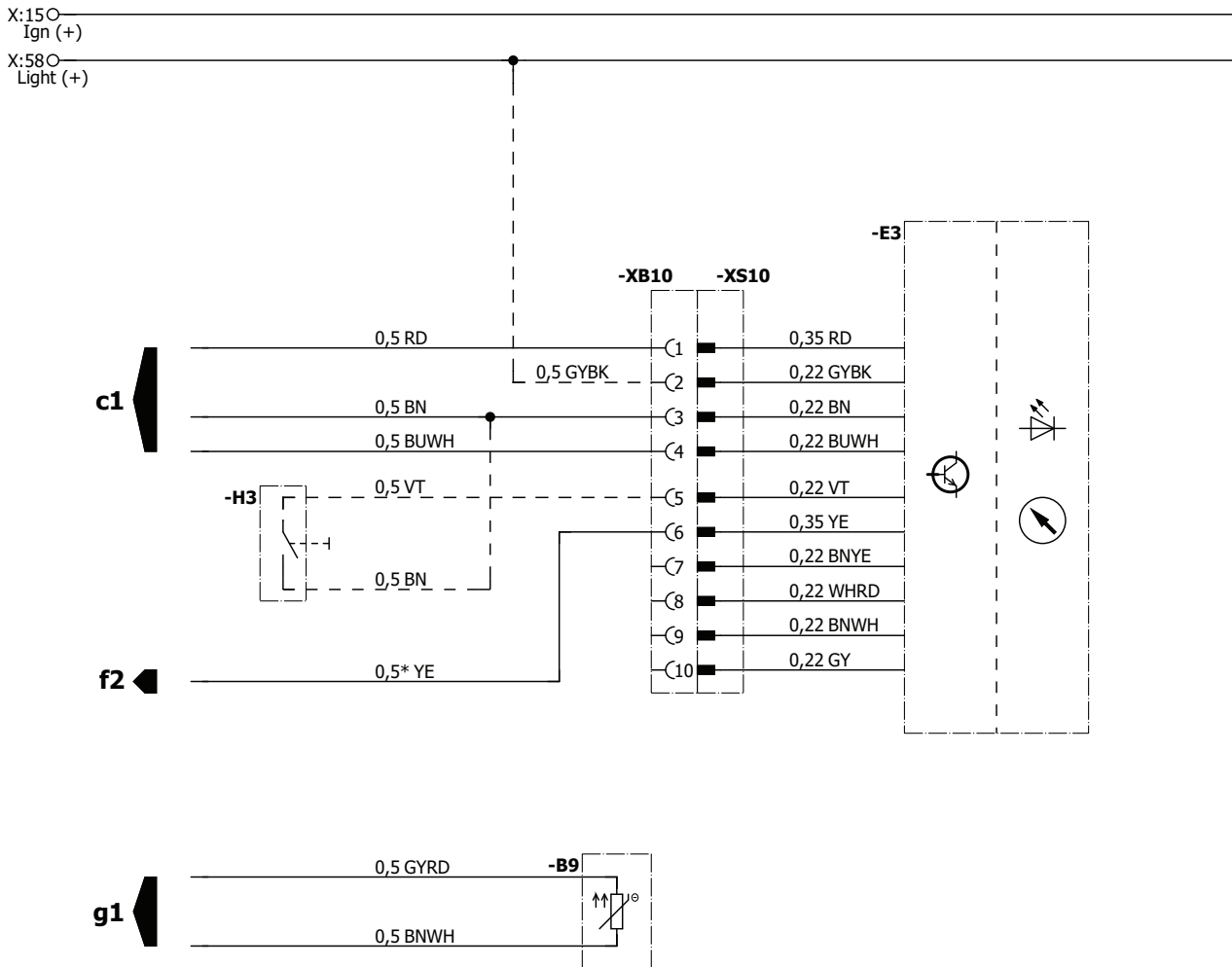
### EasyStart Timer connection

1st heater via the diagnostics cable. with external temperature sensor  
 Airtronic 2 12V, Airtronic 3 12V

2nd heater via switch-on signal S+  
 Hydronic M II, Hydronic 3 CS

**i Note**

External temperature sensor must be coded with EasyScan (LEF 2).



\* Hydronic M II – 0.75

22.1000.35.9714

- B9 External control temperature sensor
- E3 EasyStart Timer
- H3 EasyStart Timer button (optional)
- c1 to heater 1
- f2 Switch-on signal S+ for heater 2
- g1 to heater 1

**Cable colours**

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

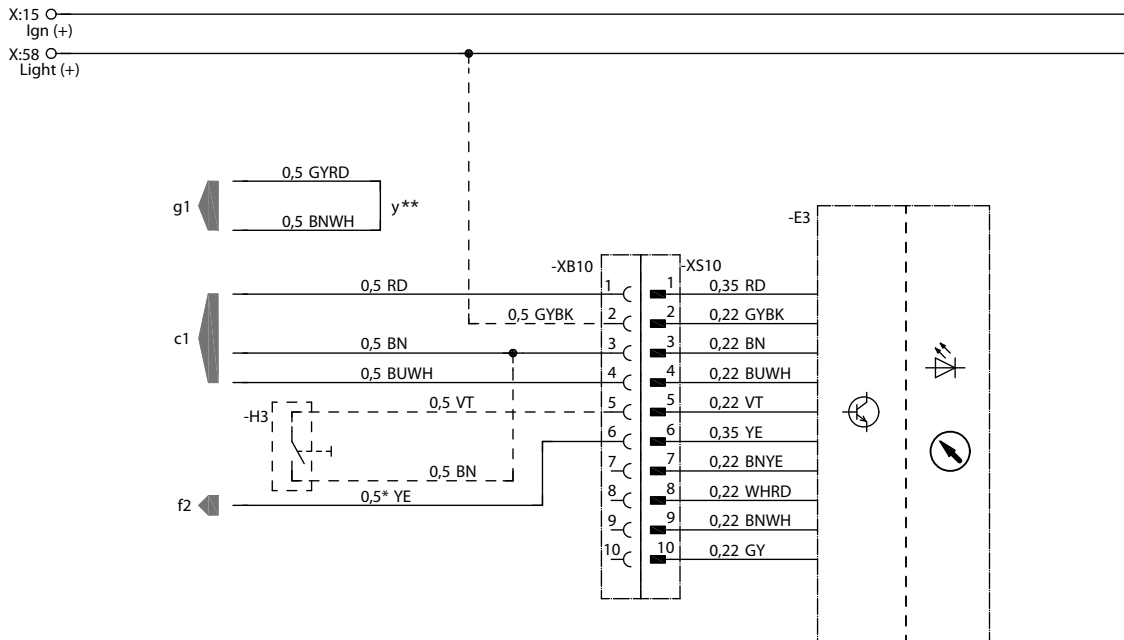
### EasyStart Timer connection

1st heater via the diagnostics cable

Airtronic, Airtronic M, Airtronic L, Airtronic 2 (12V), Airtronic 3 (12V)

2nd heater via switch-on signal S+

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic L II, Hydronic S3 Economy CS



\* Hydronic MII 0.75

Hydronic L 1.0

\*\* Not applicable to Airtronic 2, Airtronic 3

22.1000.34.9715

-E3 EasyStart Timer

-H3 Button

c1 to heater 1

f2 Switch-on signal S+, heater 2

g1 to heater 1

y Connect cables and insulate

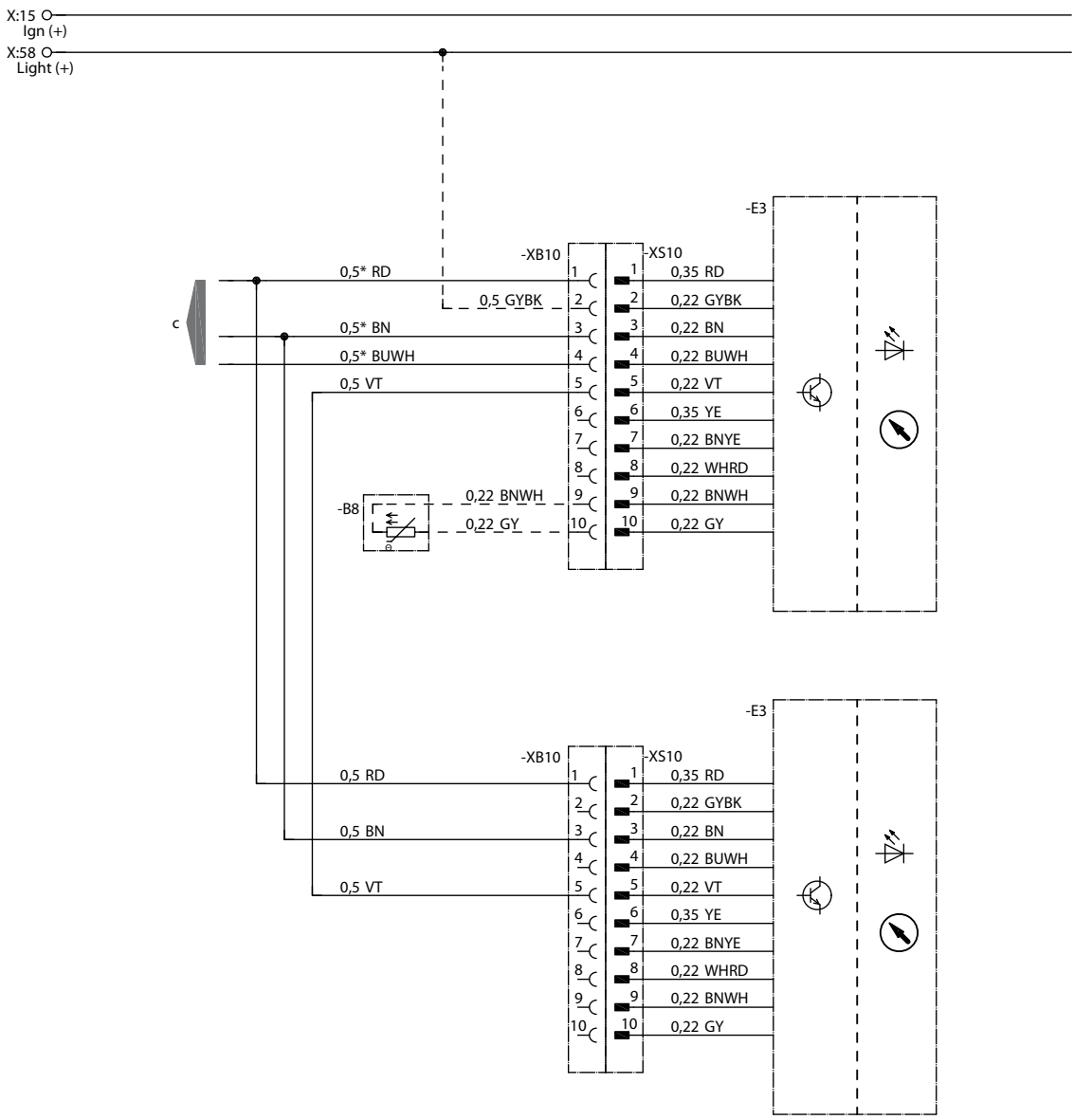
#### Cable colours

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



### Combination of EasyStart Timer with EasyStart Timer

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic S3 Economy CL



\* Hydronic MII 0,75

22.1000.34.9708

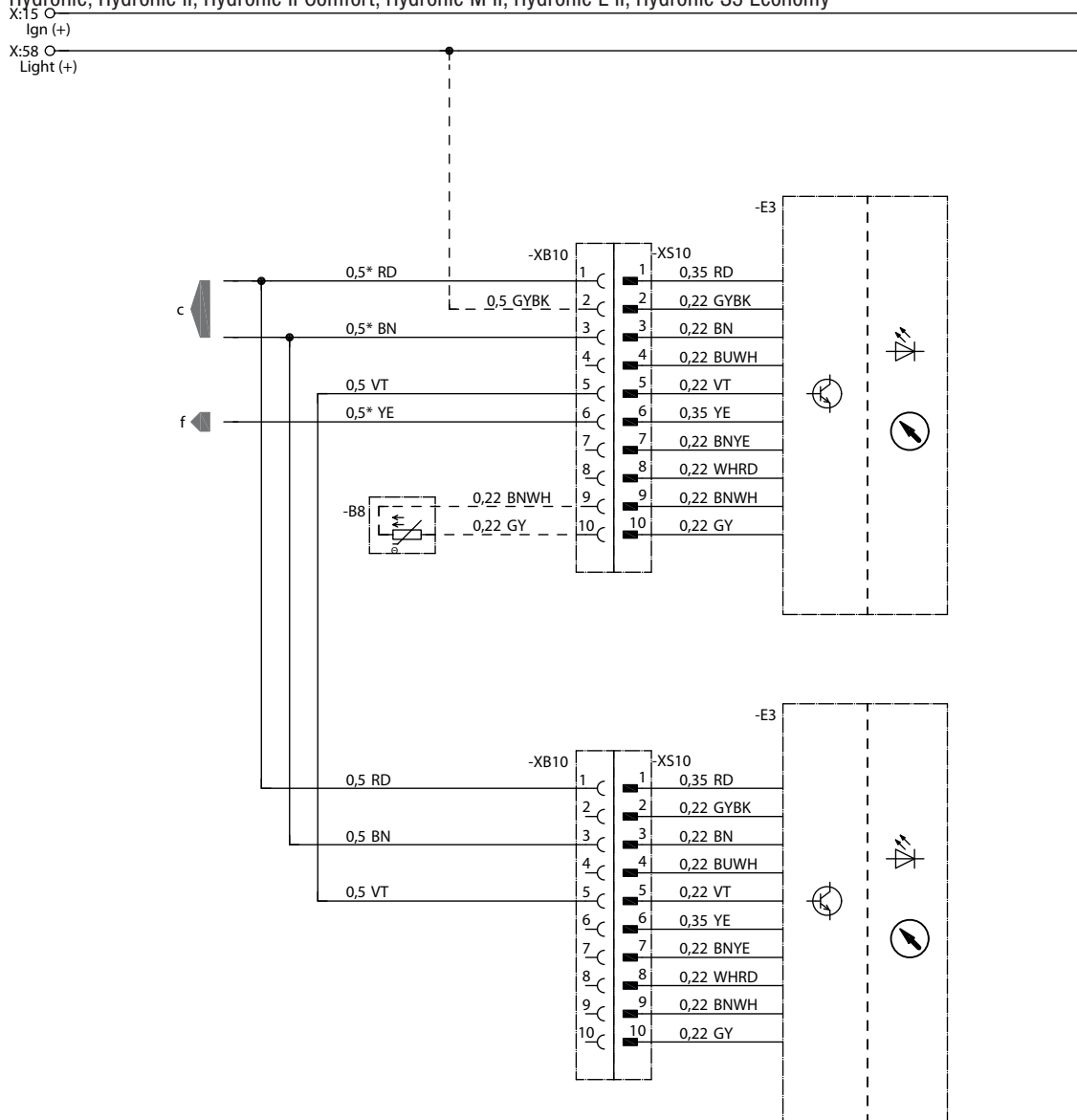
- B8 Sensor, interior temperature
- E3 EasyStart Timer
- c to the heater

#### Cable colours

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

**Combination of EasyStart Timer with EasyStart Timer and connection via switch-on signal S+**

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic L II, Hydronic S3 Economy



\* Hydronic MII 0,75 / Hydronic L 1,0

22.1000.34.9751

-B8 Sensor, interior temperature

-E3 EasyStart Timer

c to the heater

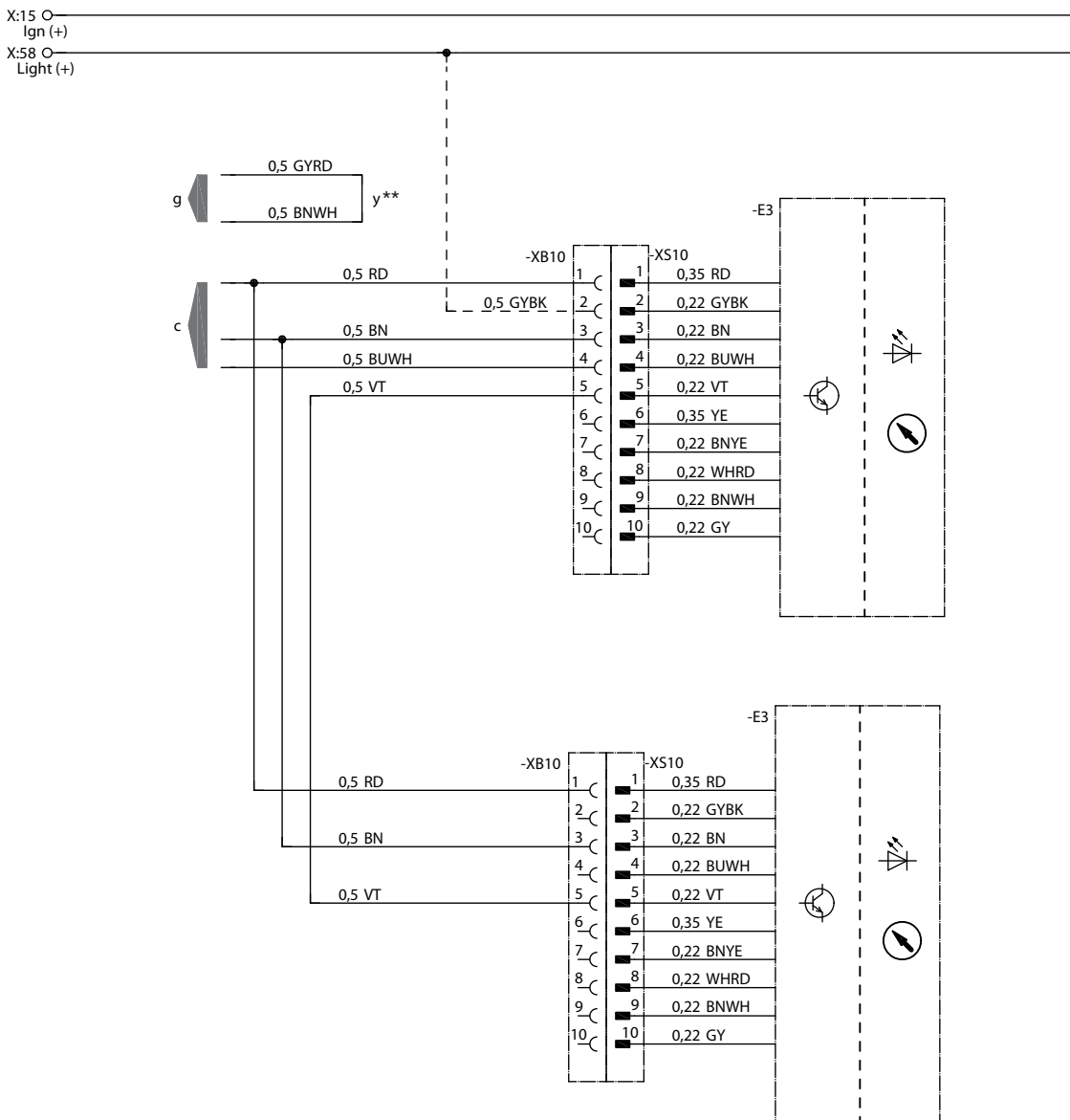
f Switch-on signal S+

**Cable colours**

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

### Combination of EasyStart Timer with EasyStart Timer

Airtronic, Airtronic M, Airtronic L, Airtronic 2 (12V), Airtronic 3 (12V)



\*\* Not applicable to Airtronic 2, Airtronic 3

22.1000.34.9713

-E3 EasyStart Timer

- c to the heater
- g to the heater
- y Connect cables and insulate

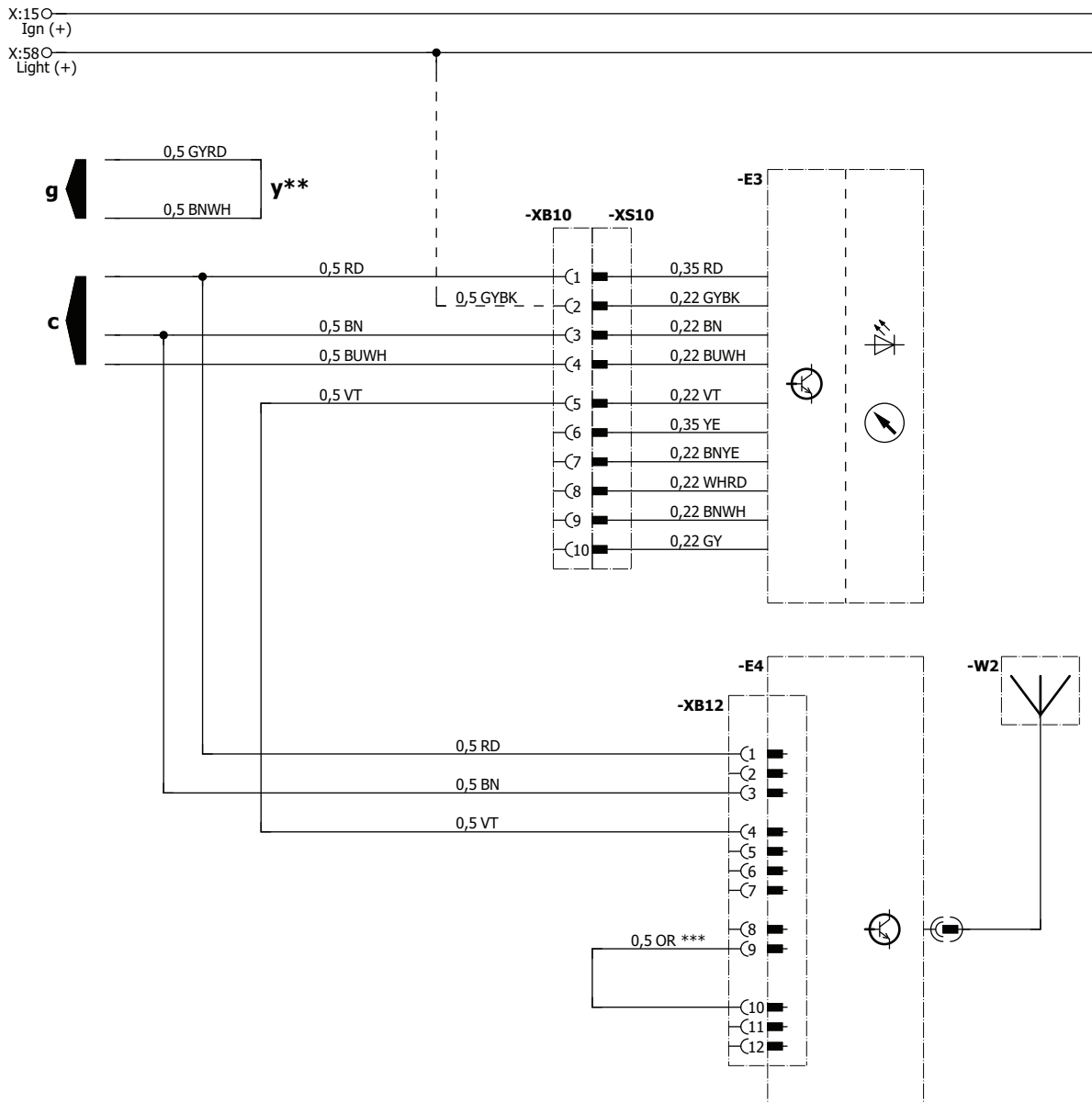
#### Cable colours

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



### Combination of EasyStart Timer with EasyStart Remote

Airtronic, Airtronic M, Airtronic L, Airtronic 2 (12V), Airtronic 3 (12V)



\*\* Not applicable to Airtronic 2, Airtronic 3

\*\*\* Set cable bridge of the EasyStart Remote Mat. No. 2.1000.34.8100

22.1000.34.9743

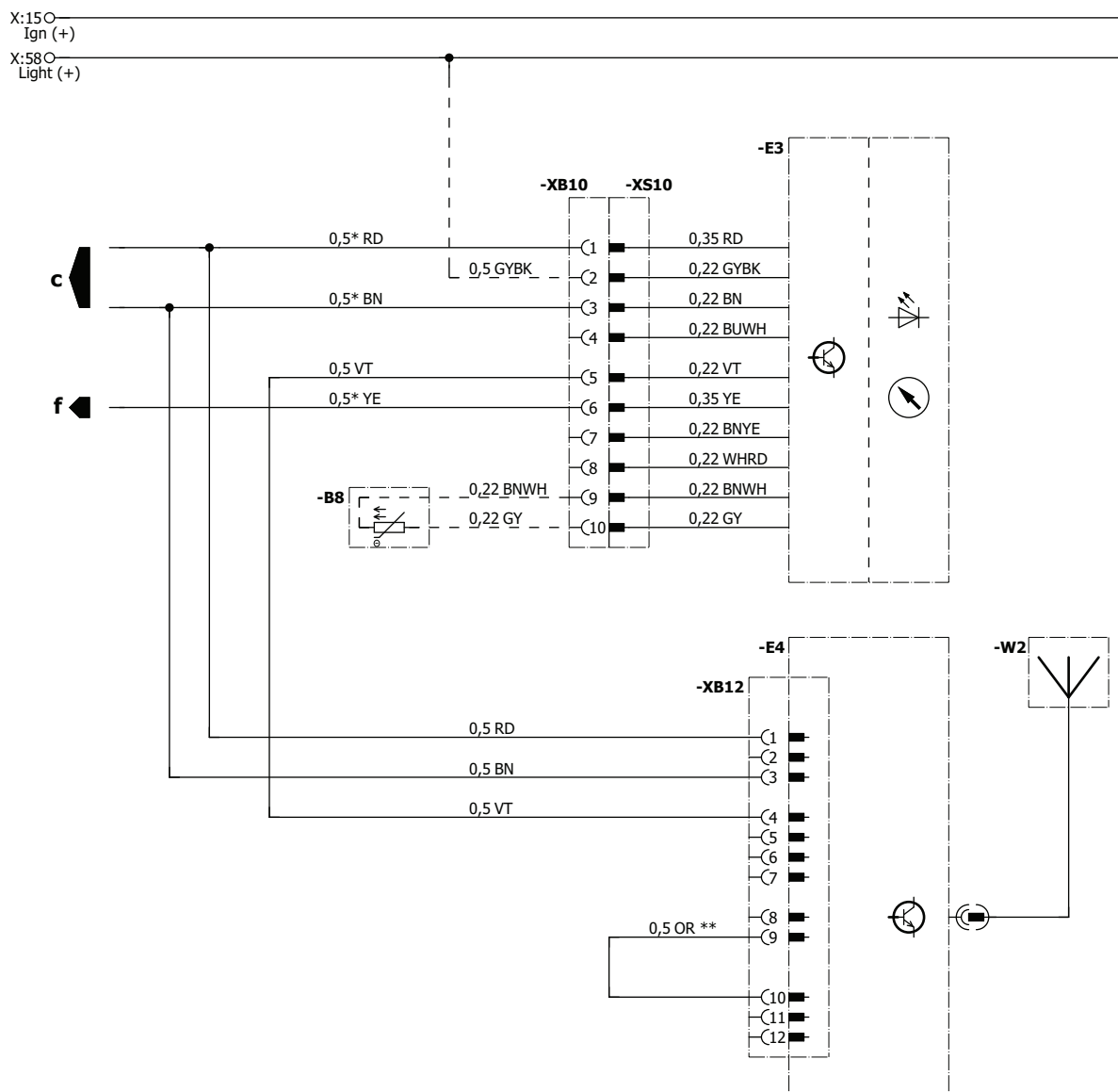
- E3 EasyStart Timer
- E4 EasyStart Remote radio remote control
- W2 EasyStart Remote / Remote+ antenna
- c to the heater
- g to the heater
- y Connect cables and insulate

#### Cable colours

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

**Combination of EasyStart Timer with EasyStart Remote and connection via switch-on signal S+**

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic L II, Hydronic S3 Economy CS



\* Hydronic M II – 0.75 / Hydronic L – 1.0

\*\* Set cable bridge of the EasyStart Remote Mat. No. 22.1000.34.8100

22.1000.34.9749

-B8 Sensor, interior temperature

-E3 EasyStart Timer

-E4 EasyStart Remote radio remote control

-W2 EasyStart Remote / Remote+ antenna

c to the heater

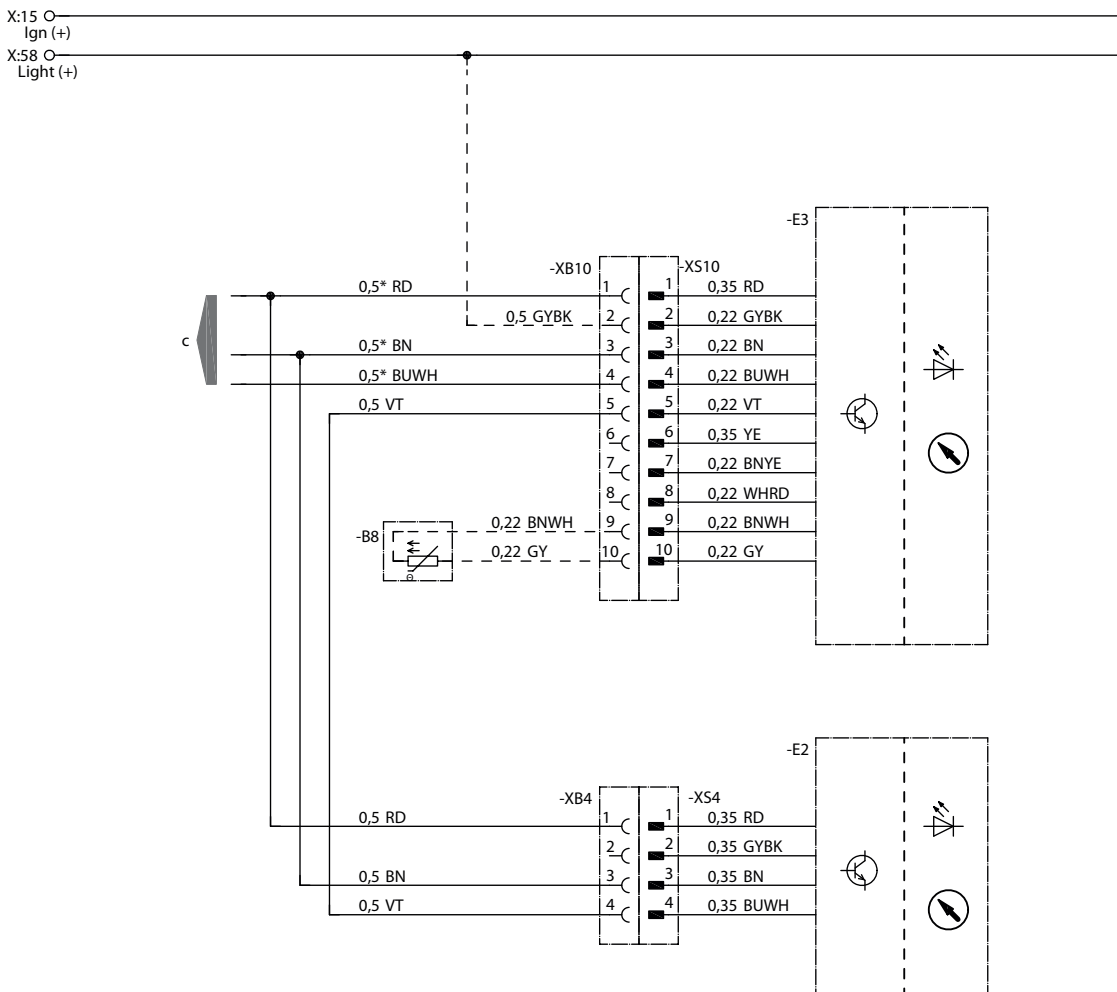
f Switch-on signal S+

**Cable colours**

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

### Combination of EasyStart Timer with EasyStart Select

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic S3 Economy CL



\* Hydronic MII 0,75

22.1000.34.9741

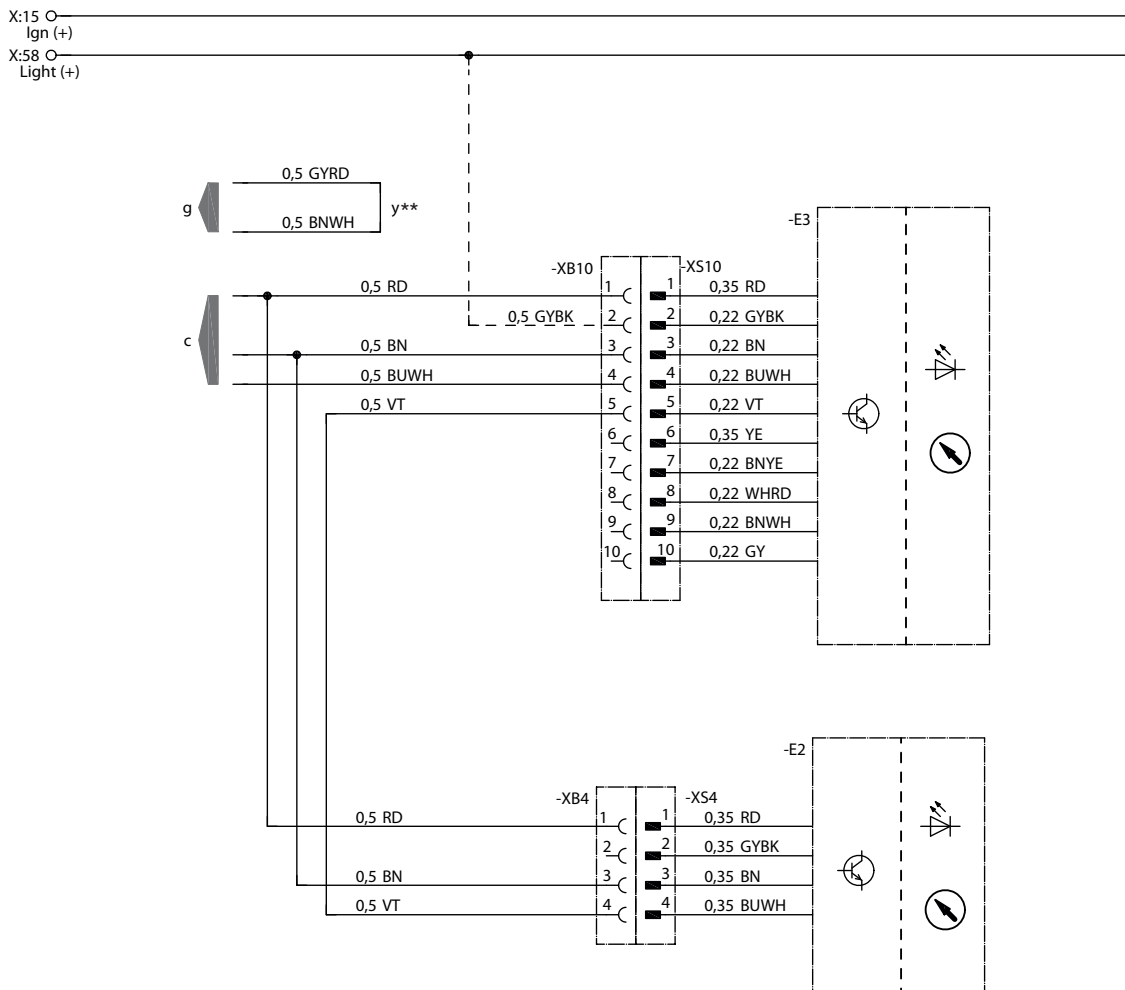
- B8 Sensor, interior temperature
- E2 EasyStart Select control unit
- E3 EasyStart Timer
- c to the heater

#### Cable colours

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

### Combination of EasyStart Timer with EasyStart Select

Airtronic, Airtronic M, Airtronic L, Airtronic 2 (12V), Airtronic 3 (12V)



\*\* Not applicable to Airtronic 2, Airtronic 3

22.1000.34.9744

-E2 EasyStart Select control unit

-E3 EasyStart Timer

c to the heater

g to the heater

y Connect cables and insulate

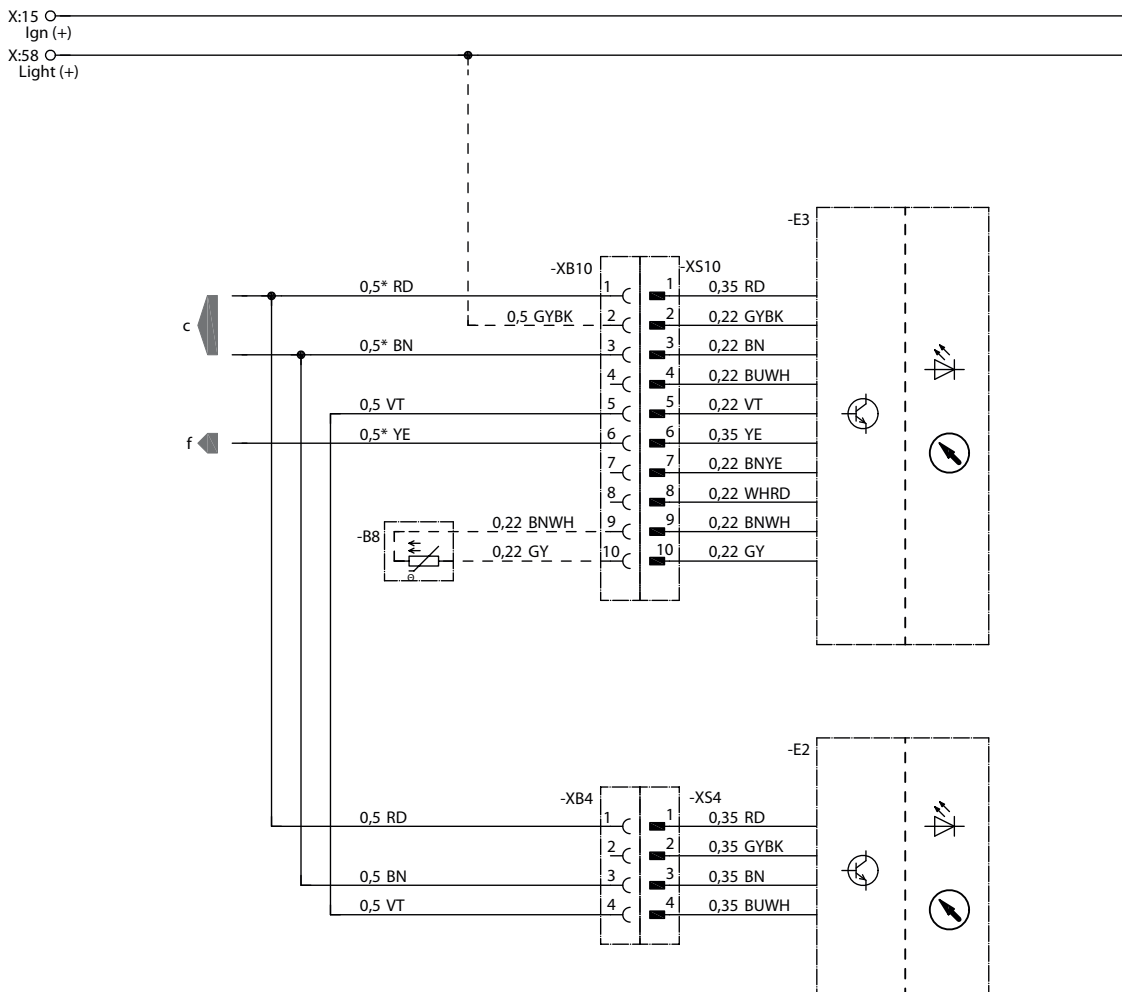
#### Cable colours

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



### Combination of EasyStart Timer with EasyStart Select and connection via switch-on signal S+

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic L II, Hydronic S3 Economy CS



\* Hydronic MII 0,75 / Hydronic L 1,0

22.1000.34.9748

- B8 Sensor, interior temperature
- E2 EasyStart Select control unit
- E3 EasyStart Timer
- c to the heater
- f Switch-on signal S+

#### Cable colours

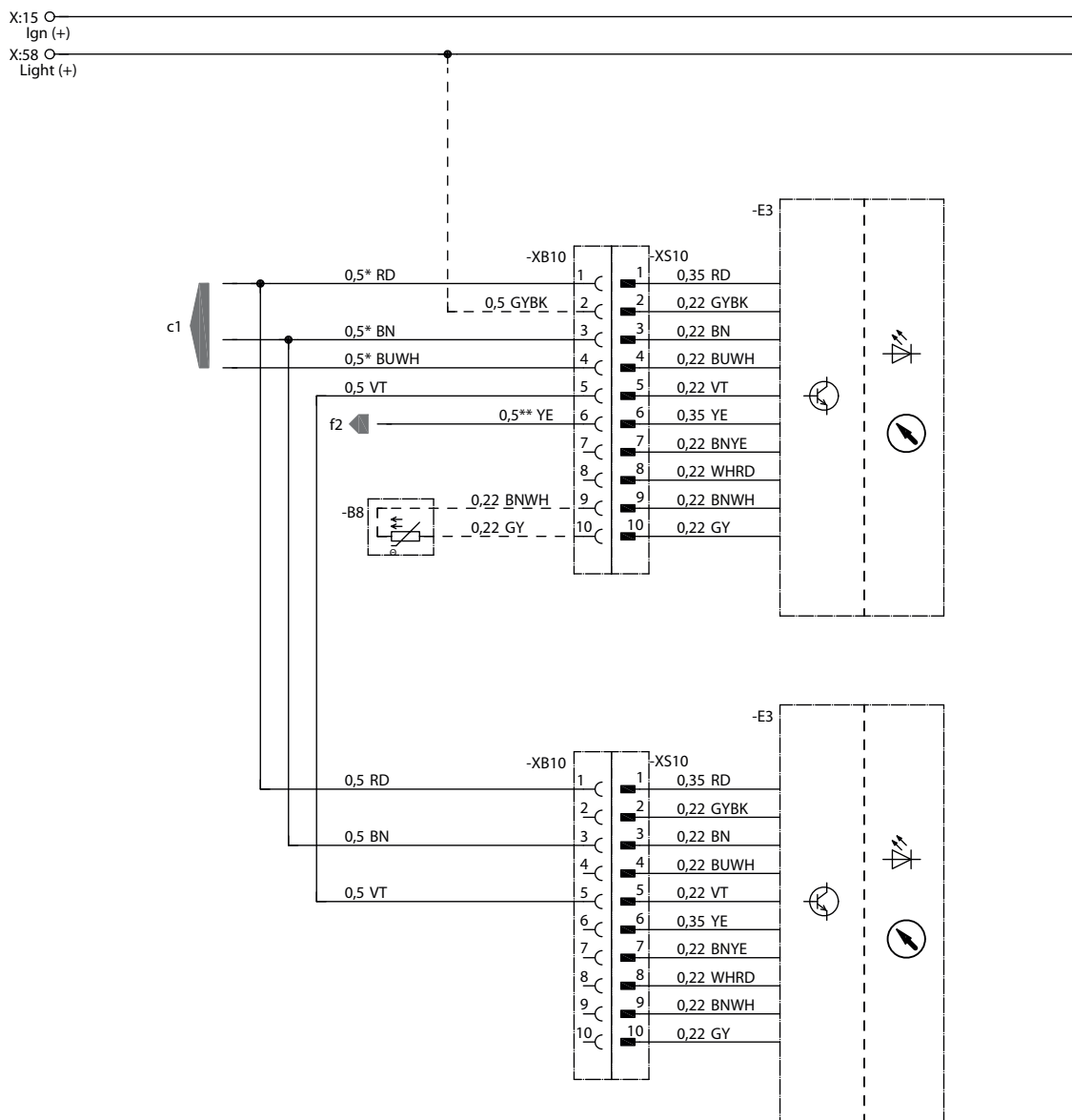
RD	red	GY	grey	BK	black
BU	blue	YE	yellow	GN	green
WH	white	VT	violet	BN	brown

### Combination of EasyStart Timer with EasyStart Timer

1st heater via diagnostics cable

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic S3 Economy CL

2nd heater via switch-on signal S+



\* Hydronic MII 0,75

\*\* Hydronic MII 0,75 / Hydronic L 1,0

22.1000.34.9709

-B8 Sensor, interior temperature

-E3 EasyStart Timer

c1 to heater 1

f2 Switch-on signal S+, heater 2

#### Cable colours

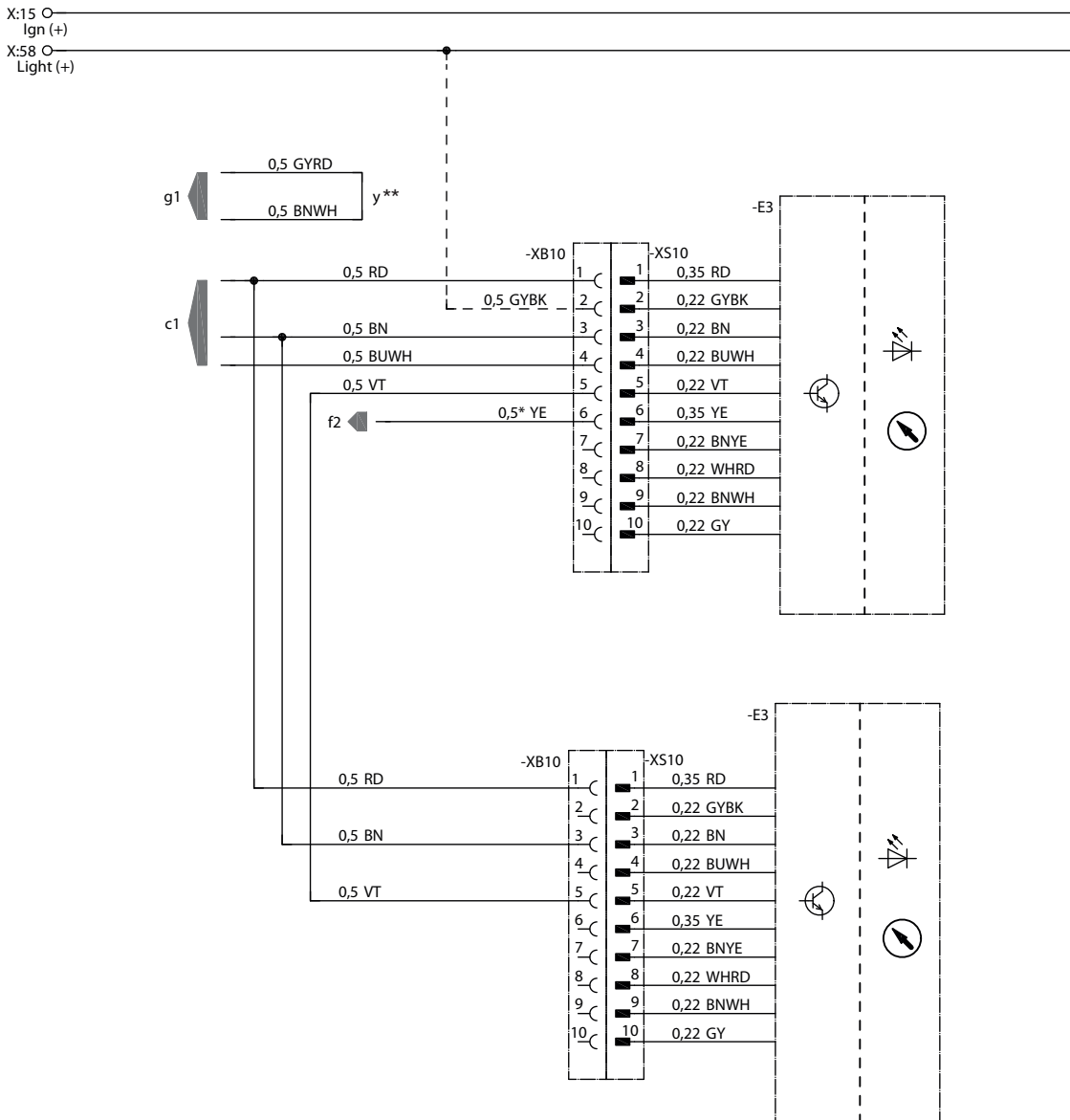
RD	red	GY	grey	BK	black
BU	blue	YE	yellow	GN	green
WH	white	VT	violet	BN	brown

### Combination of EasyStart Timer with EasyStart Timer

1st heater via diagnostics cable

Airtronic, Airtronic M, Airtronic L, Airtronic 2 (12V), Airtronic 3 (12V)

2nd heater via switch-on signal S+



\* Hydronic MII 0.75  
Hydronic L 1.0

\*\* Not applicable to Airtronic 2, Airtronic 3

22.1000.34.9716

-E3 EasyStart Timer

c1 to heater 1

f2 Switch-on signal S+, heater 2

g1 to heater 1

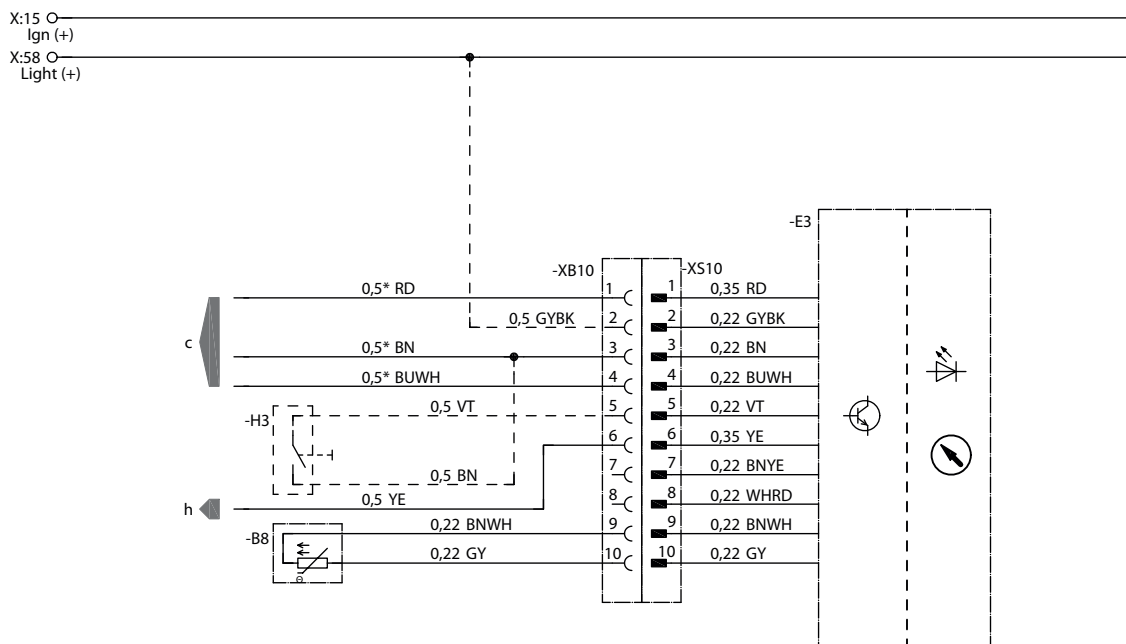
y Connect cables and insulate

#### Cable colours

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

### EasyStart Timer connection

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II with temperature control, Hydronic S3 Economy CL



\* Hydronic MII 0,75

22.1000.34.9707

-B8 Sensor, interior temperature

-E3 EasyStart Timer

-H3 EasyStart Timer button

c to the heater

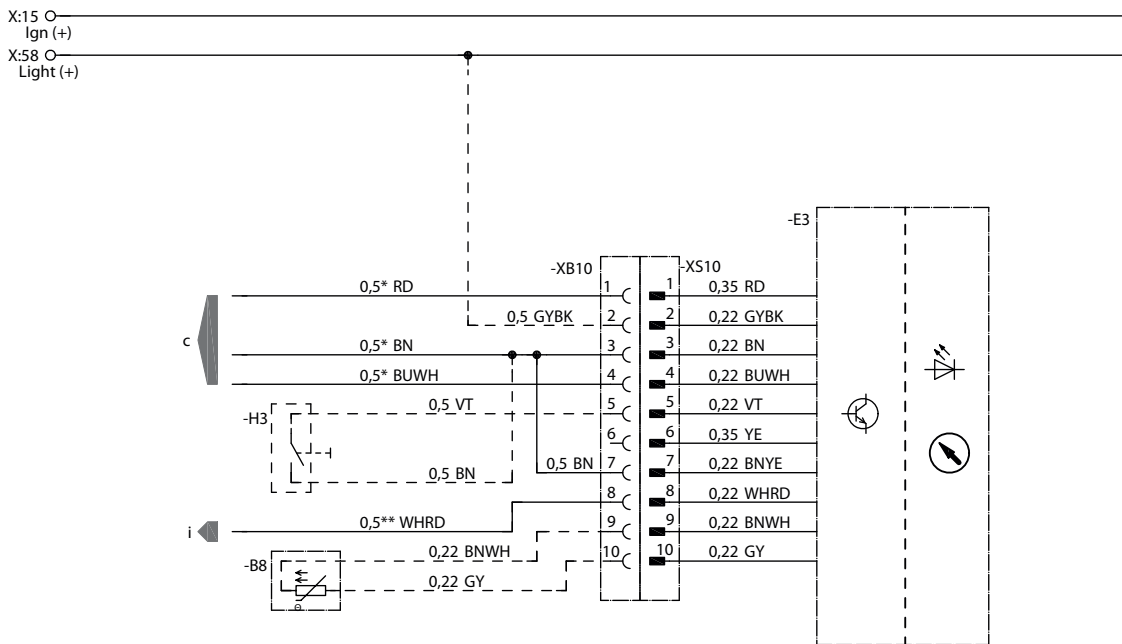
h for example, vehicle fan relay activation (max. 500 mA)

#### Cable colours

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

### ADR mode, EasyStart Timer with button connection

#### Hydronic M II



\* Hydronic MII 0,75  
\*\* Hydronic MII 1,5

22.1000.34.9710

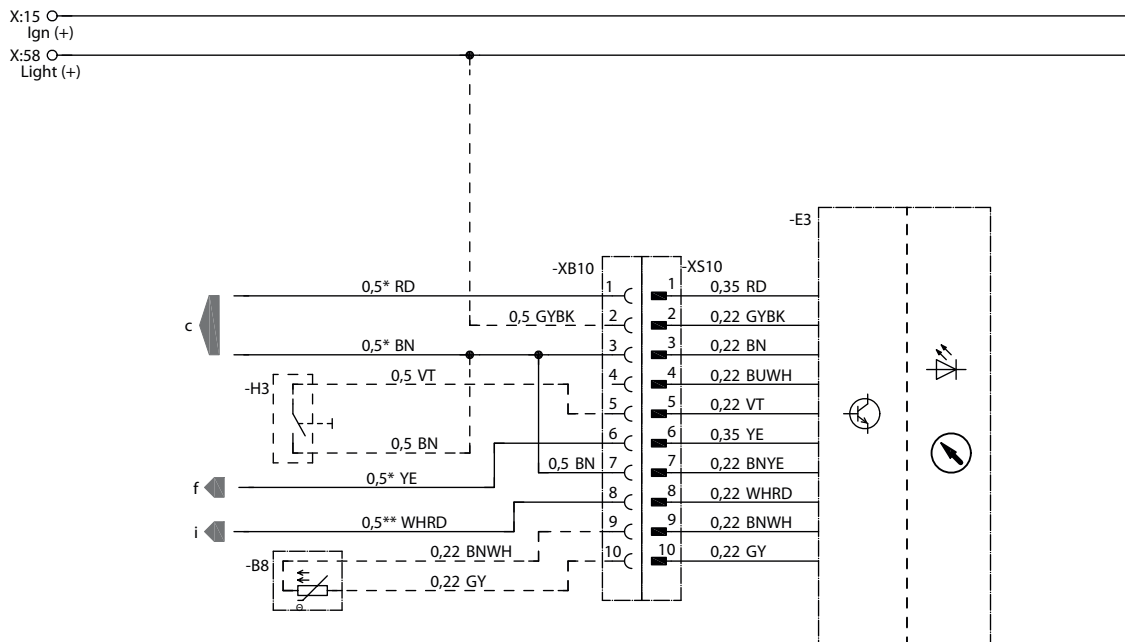
- B8 Sensor, interior temperature
- E3 EasyStart Timer
- H3 EasyStart Timer button
- c to the heater
- i ADR feedback from the heater

#### Cable colours

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

**ADR MODE, EasyStart Timer with button connection and via switch-on signal S+**

Hydronic 24 volt, Hydronic M II



\* Hydronic MII 0,75 / Hydronic L 1,0  
 \*\* Hydronic MII 1,5

22.1000.34.9750

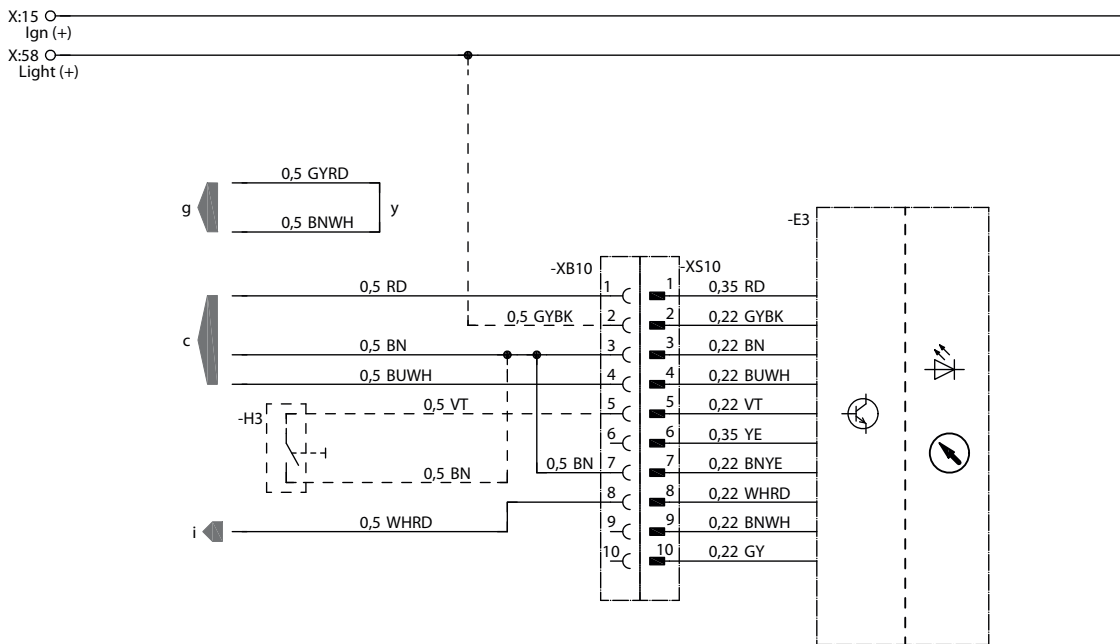
- B8 Sensor, interior temperature
- E3 EasyStart Timer
- H3 EasyStart Timer button
- c to the heater
- f Switch-on signal S+
- i ADR feedback from the heater

**Cable colours**

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

### ADR mode, EasyStart Timer with button connection

Airtronic, Airtronic M, Airtronic L



22.1000.34.9717

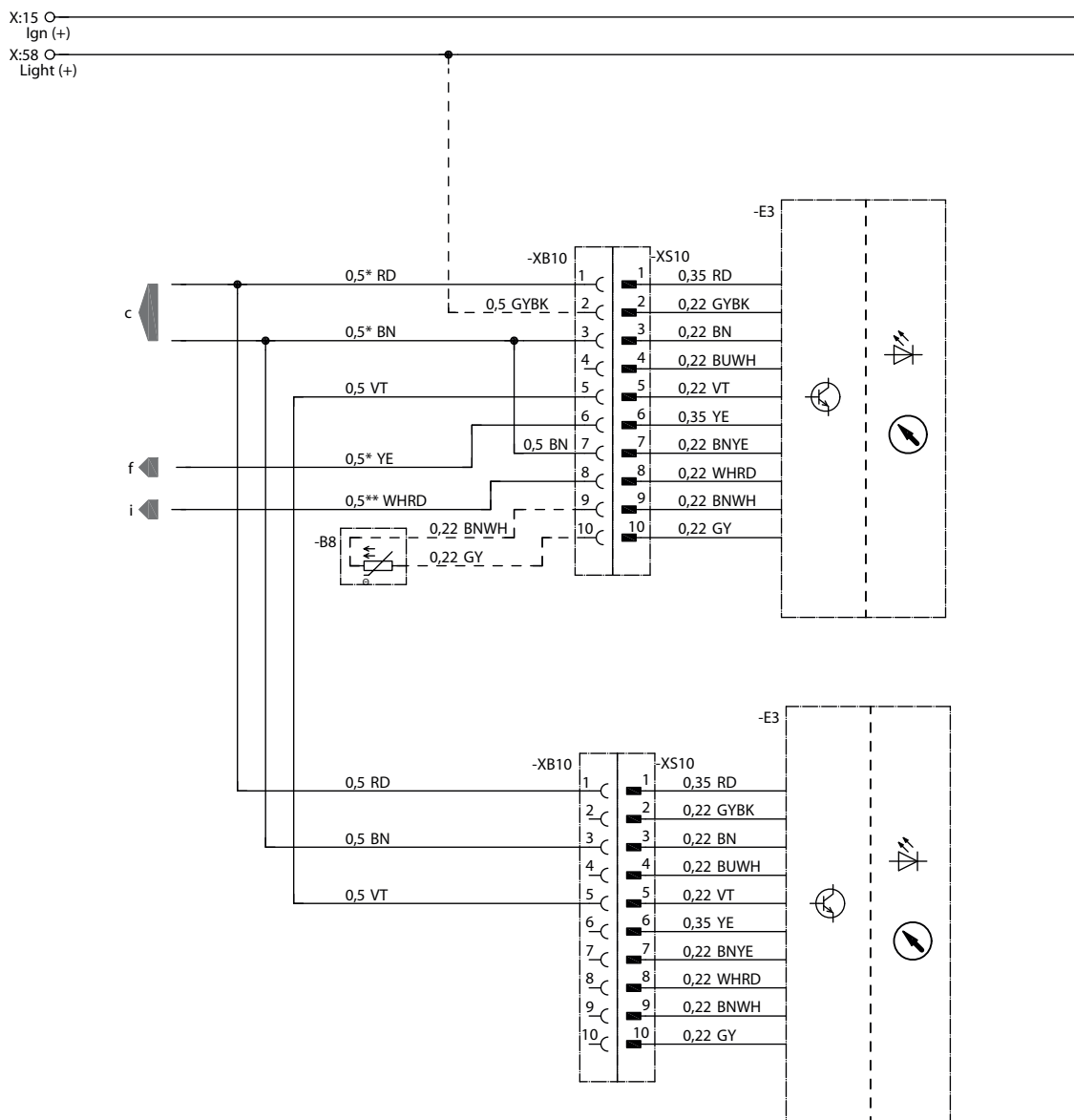
- E3 EasyStart Timer
- H3 EasyStart Timer button
- c to the heater
- g to the heater
- i ADR feedback from the heater
- y Connect cables and insulate

#### Cable colours

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

**ADR mode, Combination of EasyStart Timer with EasyStart Timer and connection via switch-on signal S+**

Hydronic 24 volt, Hydronic M II



\* Hydronic MII 0,75 / Hydronic L 1,0  
 \*\* Hydronic MII 1,5

22.1000.34.9757

- B8 Sensor, interior temperature
- E3 EasyStart Timer
- c to the heater
- f Switch-on signal S+
- i ADR feedback from the heater

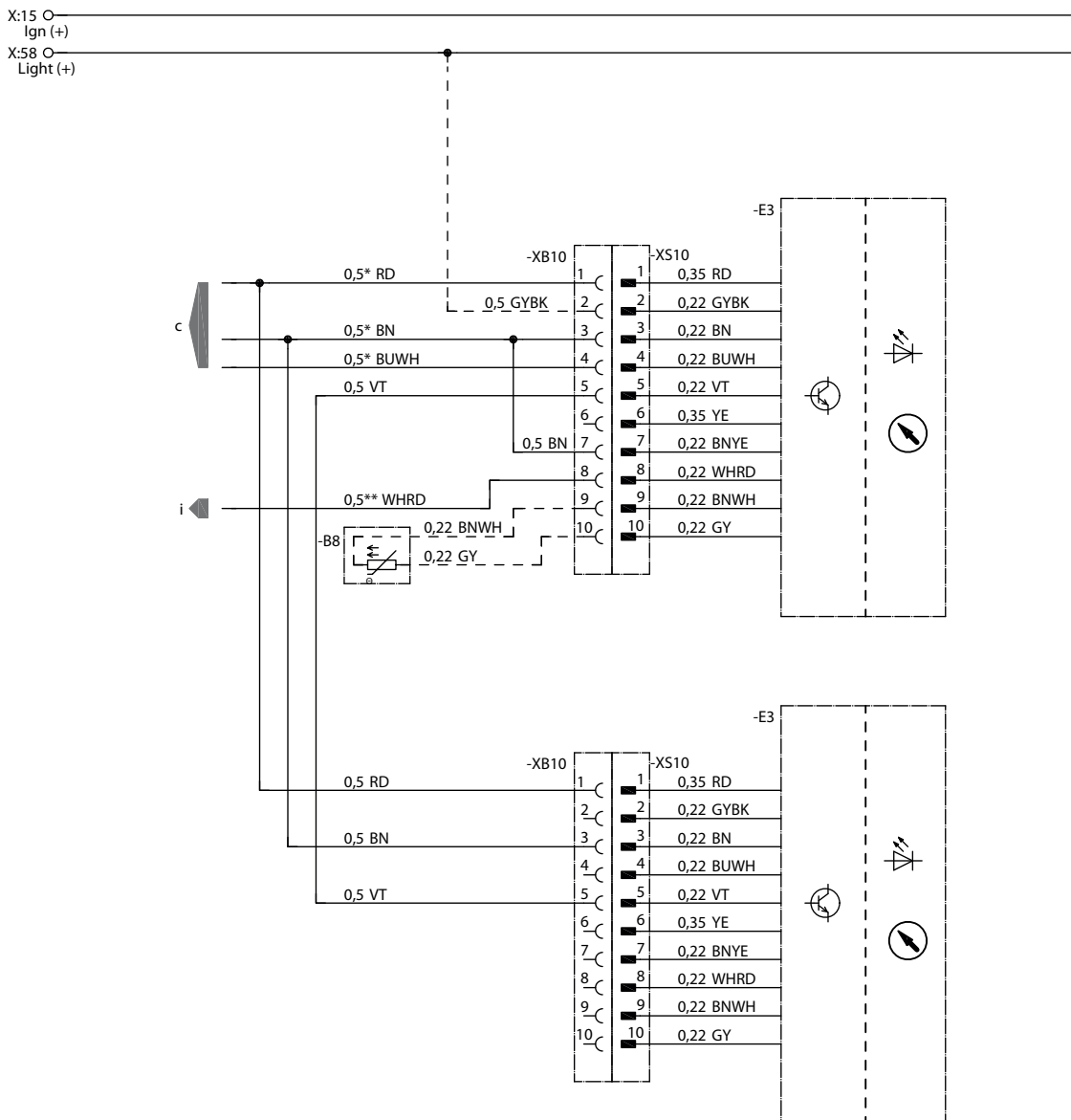
**Cable colours**

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



### ADR mode, Combination of EasyStart Timer with EasyStart Timer

#### Hydronic M II



\* Hydronic MII 0,75  
 \*\* Hydronic MII 1,5

22.1000.34.9765

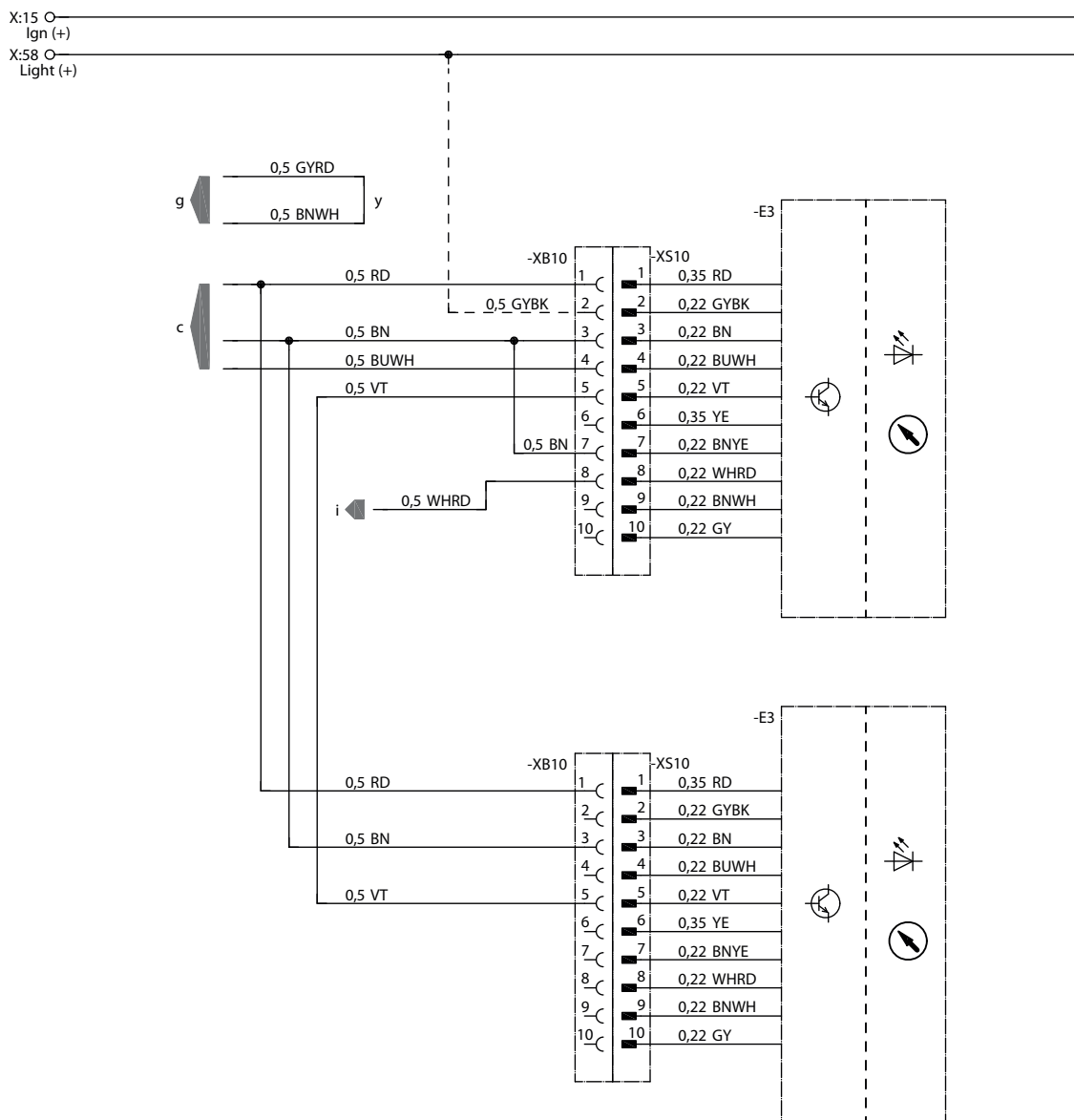
- B8 Sensor, interior temperature
- E3 EasyStart Timer
- c to the heater
- i ADR feedback from the heater

#### Cable colours

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

### ADR mode, Combination of EasyStart Timer with EasyStart Timer

Airtronic, Airtronic M, Airtronic L



22.1000.34.9767

-E3 EasyStart Timer

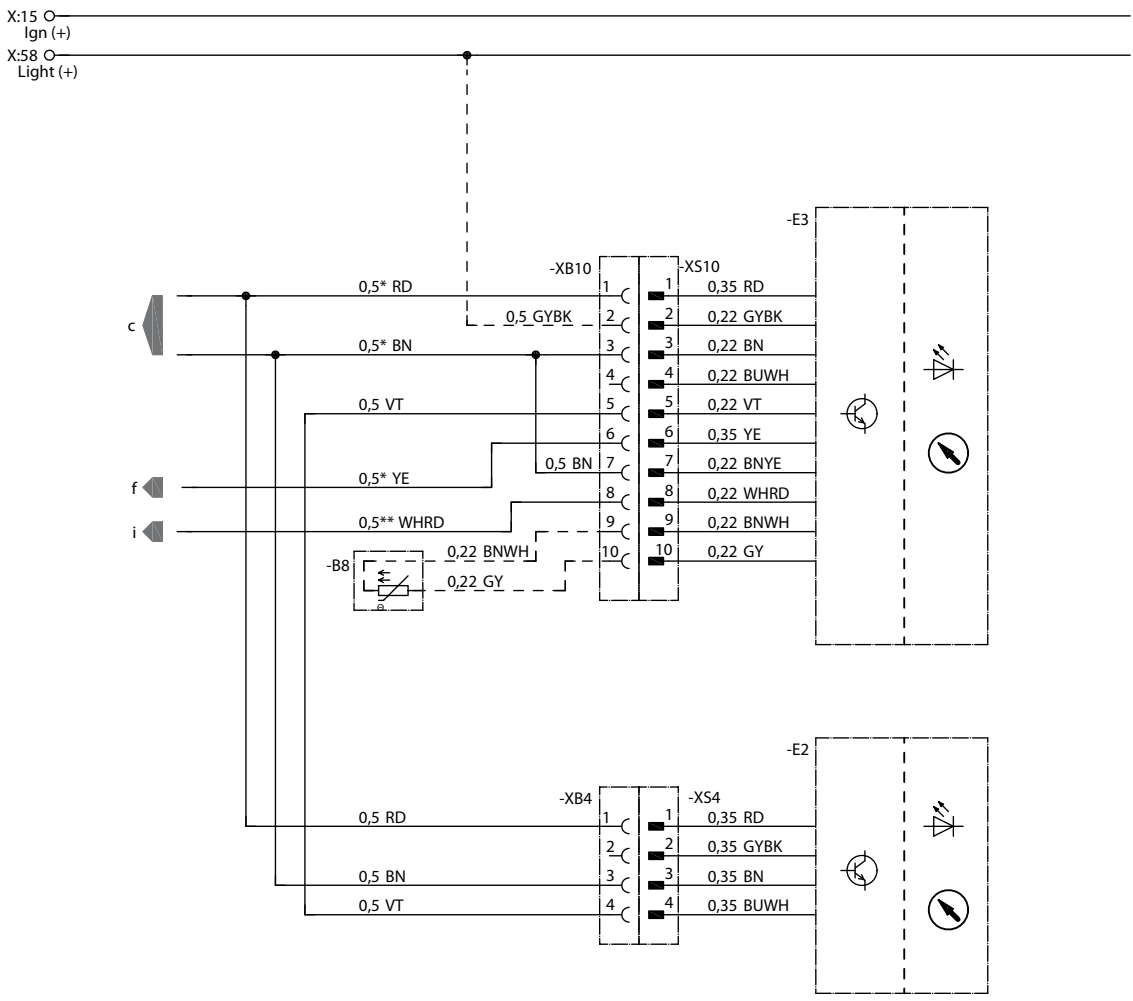
- c to the heater
- g to the heater
- i ADR feedback from the heater
- y Connect cables and insulate

#### Cable colours

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

**ADR mode, Combination of EasyStart Timer with EasyStart Select and connection via switch-on signal S+**

Hydronic 24 volt, Hydronic M II



\* Hydronic MII 0,75  
 \*\* Hydronic MII 1,5

22.1000.34.9758

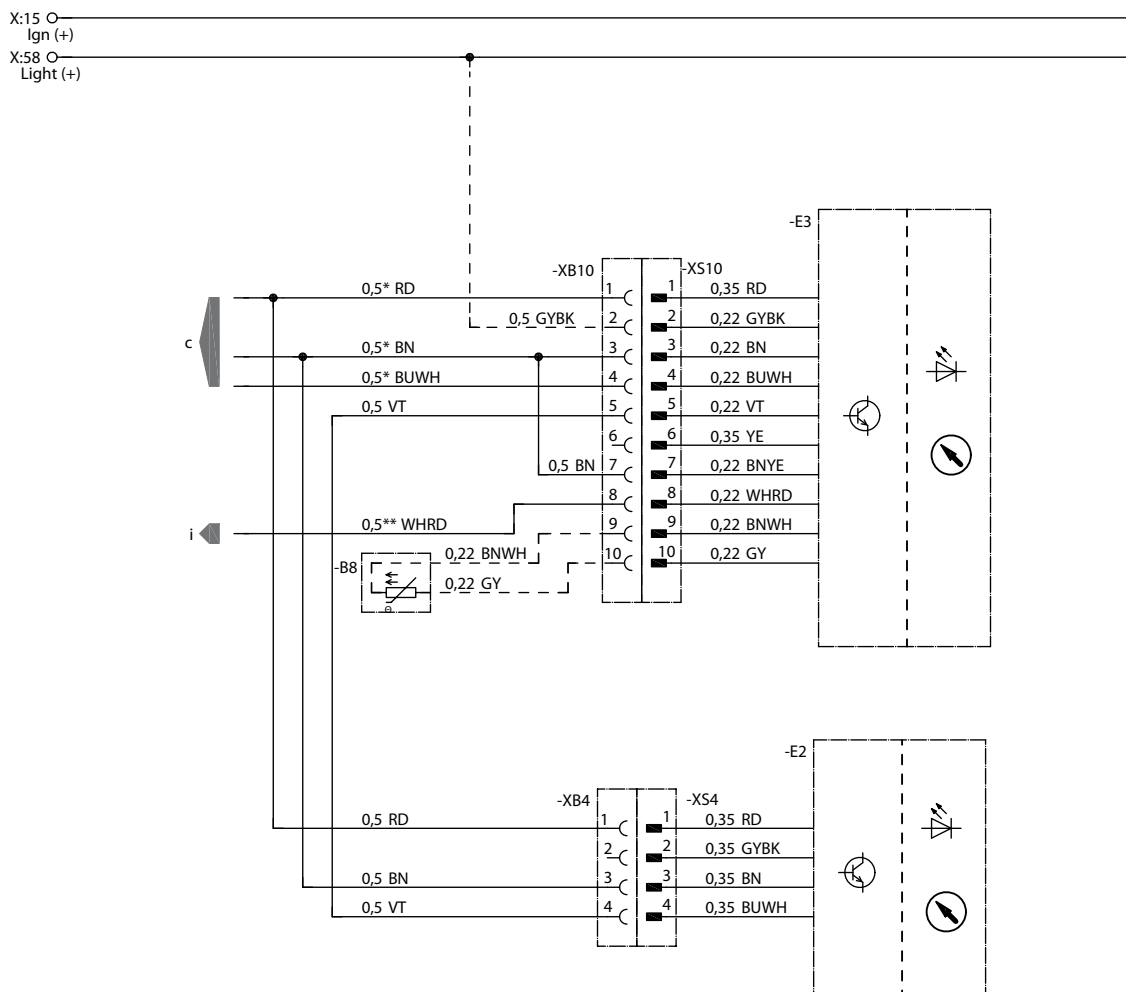
- B8 Sensor, interior temperature
- E2 EasyStart Select control unit
- E3 EasyStart Timer
- c to the heater
- f Switch-on signal S+
- i ADR feedback from the heater

**Cable colours**

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

### ADR mode, Combination of EasyStart Timer with EasyStart Select

#### Hydronic M II



\* Hydronic MII 0,75  
 \*\* Hydronic MII 1,5

22.1000.34.9766

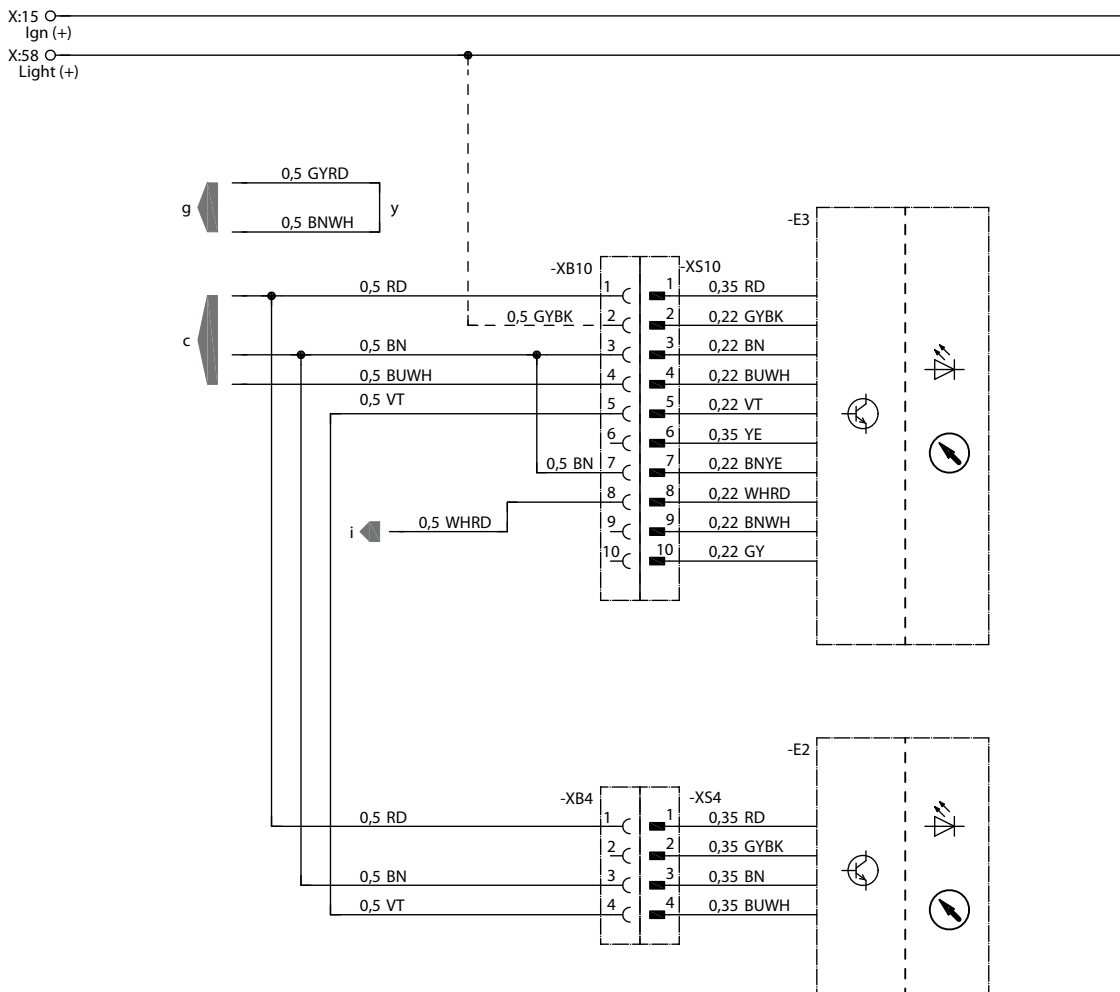
- B8 Sensor, interior temperature
- E2 EasyStart Select control unit
- E3 EasyStart Timer
- c to the heater
- i ADR feedback from the heater

#### Cable colours

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

### ADR mode, Combination of EasyStart Timer with EasyStart Select

Airtronic, Airtronic M, Airtronic L



22.1000.34.9768

- E2 EasyStart Select control unit
- E3 EasyStart Timer
- c to the heater
- g to the heater
- i ADR feedback from the heater
- y Connect cables and insulate

#### Cable colours

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

## Overview of the circuit diagrams

### 8.2 EasyStart Remote+

#### Remote+ → 1 heater

Airtronic, Airtronic M, Airtronic L with external control temperature sensor, interior	<a href="#">59</a>
Airtronic 2 (12V), Airtronic 3 (12V) with external control temperature sensor, interior	<a href="#">60</a>
Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic L II, Hydronic S3 CS via switch-on signal S+	<a href="#">61</a>
Upgrading Hydronic auxiliary heater with JE diagnostics cable to the pre-heater	<a href="#">62</a>
Hydronic auxiliary heater via upgrade box	<a href="#">63</a>

#### Remote+ → 2 heaters

Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic S3 CL (diagnostics cable) and Airtronic, Airtronic M, Airtronic L (diagnostics cable)	<a href="#">64</a>
Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic S3 CL (diagnostics cable) and Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic L II, Hydronic S3 CS (switch-on signal S+)	<a href="#">65</a>
Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic S3 CL (diagnostics cable) and Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic S3 CL (diagnostics cable)	<a href="#">66</a>
Airtronic, Airtronic M, Airtronic L (diagnostics cable) and Airtronic, Airtronic M, Airtronic L (diagnostics cable)	<a href="#">67</a>
Airtronic, Airtronic M, Airtronic L (diagnostics cable) and Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic L II, Hydronic S3 CS (switch-on signal S+)	<a href="#">68</a>
Airtronic 2 (12V), Airtronic 3 (12V) (diagnostics cable) with external control temperature sensor, interior and Hydronic M II, Hydronic S3 CS (switch-on signal S+)	<a href="#">69</a>
Airtronic 2 (12V), Airtronic 3 (12V) (diagnostics cable) and Hydronic M II, Hydronic S3 CS (switch-on signal S+)	<a href="#">70</a>

#### Combined control units

##### Remote+ / Timer → 1 heater

Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic S3 CL	<a href="#">71</a>
Airtronic, Airtronic M, Airtronic L	<a href="#">72</a>
Airtronic 2 (12V), Airtronic 3 (12V)	<a href="#">73</a>
Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic L II via switch-on signal S+	<a href="#">74</a>

##### Remote+ / Select

Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic S3 CL	<a href="#">75</a>
Airtronic, Airtronic M, Airtronic L	<a href="#">76</a>
Airtronic 2 (12V), Airtronic 3 (12V)	<a href="#">77</a>
Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic L II via switch-on signal S+	<a href="#">78</a>

#### Combined control units

##### Remote+ / Timer → 2 heaters

Airtronic, Airtronic M, Airtronic L (diagnostics cable)	
Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic L II, Hydronic S3 CS (switch-on signal S+)	<a href="#">79</a>

#### Special functions

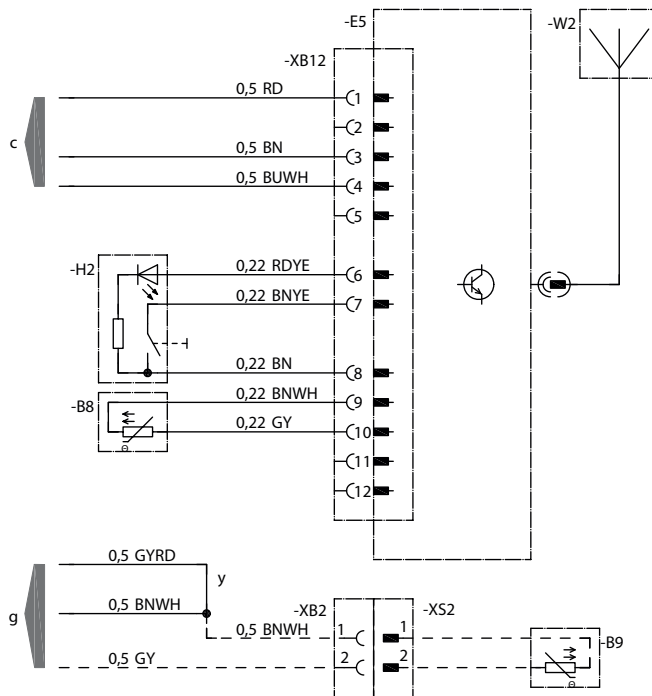
##### Remote+ → 1 heater with room temperature control

Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic S3 CL	<a href="#">80</a>
--	--------------------

### EasyStart Remote+ connection

Airtronic, Airtronic M, Airtronic L with external control temperature sensor, interior

X:15 ○ \_\_\_\_\_  
 Ign (+)  
 X:58 ○ \_\_\_\_\_  
 Light (+)



22.1000.34 9773

- B8 Sensor, interior temperature
- B9 External control temperature sensor, interior
- E5 EasyStart Remote+ remote control
- H2 EasyStart Remote / Remote+ button
- W2 EasyStart Remote / Remote+ antenna
- c to the heater
- g to the heater
- y Connect cables and insulate

#### Cable colours

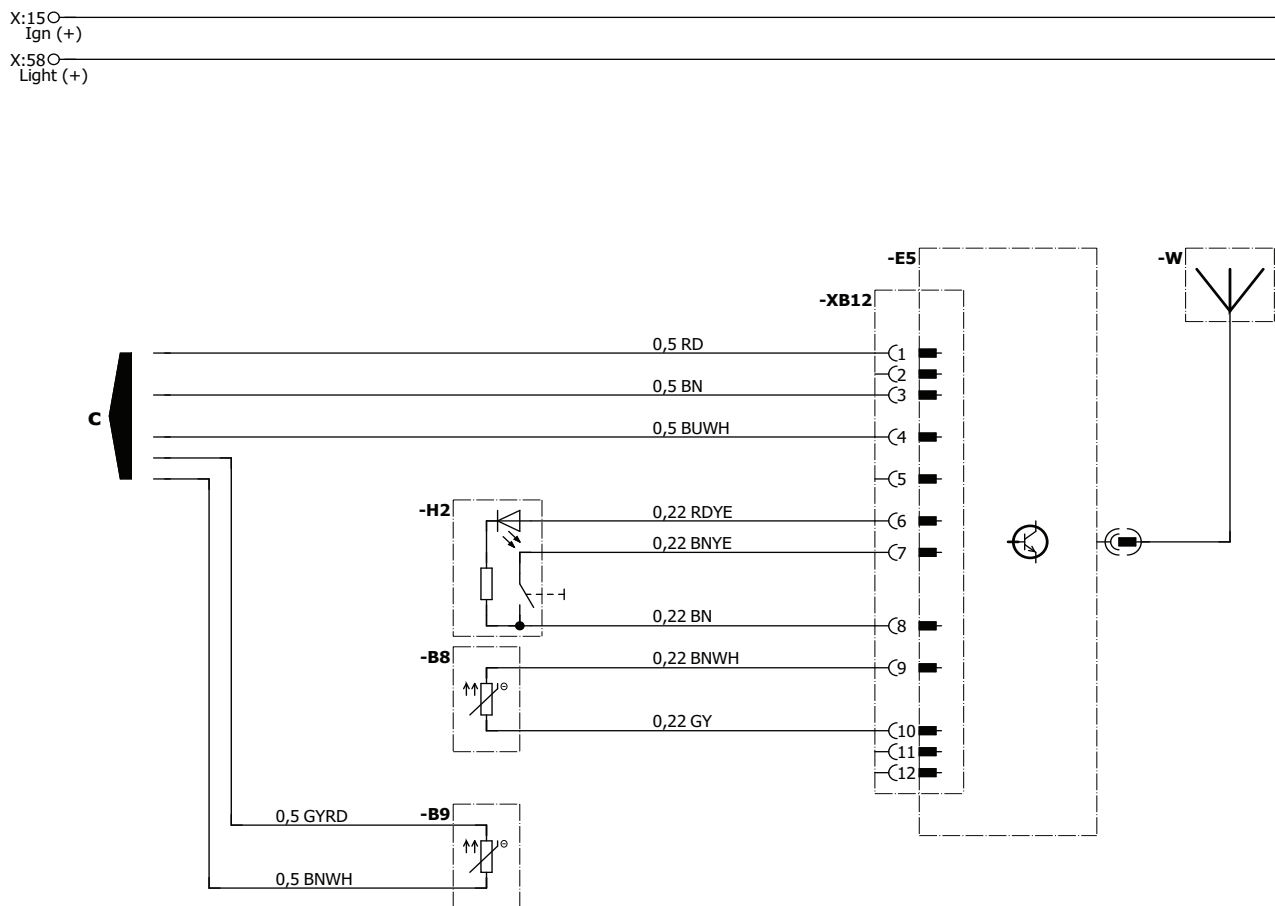
RD	red	GY	grey	BK	black
BU	blue	YE	yellow	GN	green
WH	white	VT	violet	BN	brown

**EasyStart Remote+ connection**

Airtronic 2 12V, Airtronic 3 12V with external control temperature sensor, interior

 **Note**

External temperature sensor must be coded with EasyScan (LEF 2).



22.1000.35.9710

- B8 Sensor, interior temperature
- B9 External control temperature sensor, interior
- E5 EasyStart Remote+ remote control
- H2 EasyStart Remote+ button
- W EasyStart Remote+ antenna
- c to the heater

**Cable colours**

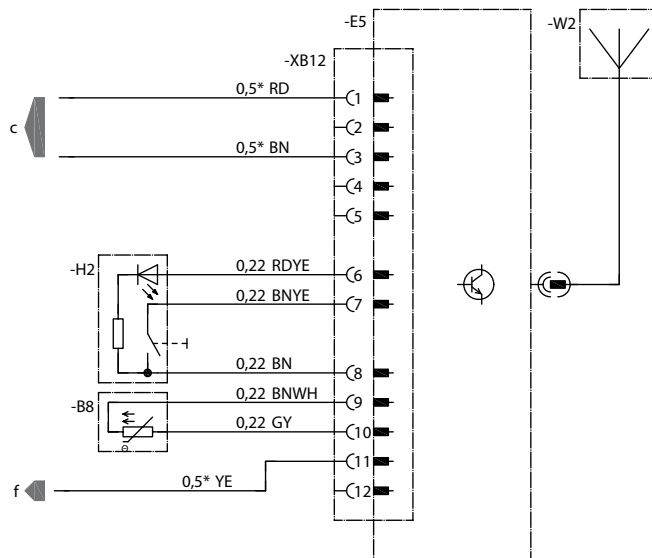
RD	red	GY	grey	BK	black
BU	blue	YE	yellow	GN	green
WH	white	VT	violet	BN	brown



### EasyStart Remote+ connection via switch-on signal S+

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic L II, Hydronic S3 CS

X:15 ○  
Ign (+)  
X:58 ○  
Light (+)



\* Hydronic MII 0,75 / Hydronic L 1,0

22.1000.34.9726

- B8 Sensor, interior temperature
- E5 EasyStart Remote+ remote control
- H2 EasyStart Remote / Remote+ button
- W2 EasyStart Remote / Remote+ antenna
- c to the heater
- f Switch-on signal S+

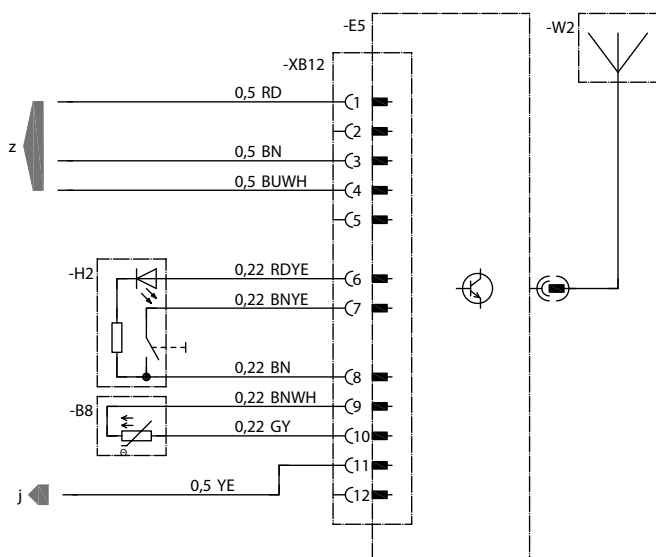
#### Cable colours

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

### EasyStart Remote+ connection

Upgrading Hydronic auxiliary heater with JE diagnostics cable to the pre-heater

X:15 ○ Ign (+)  
 X:58 ○ Light (+)



22.1000.34.9759

- B8 Sensor, interior temperature
- E5 EasyStart Remote+ remote control
- H2 EasyStart Remote / Remote+ button
- W2 EasyStart Remote / Remote+ antenna
- z to the auxiliary heater
- j to the relay for water pump connection and vehicle fan (max. 500 mA)

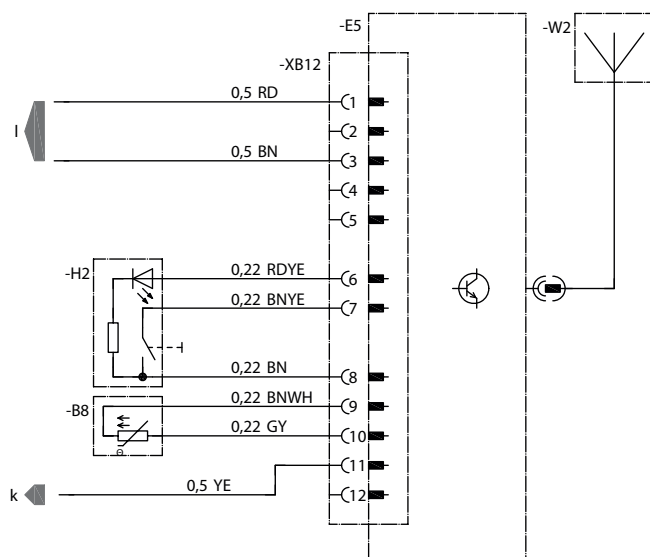
#### Cable colours

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

### EasyStart Remote+ connection

Hydronic auxiliary heater with upgrade box

X:15 ○ Ign (+)  
 X:58 ○ Light (+)



22.1000.34.9760

- B8 Sensor, interior temperature
- E5 EasyStart Remote+ remote control
- H2 EasyStart Remote / Remote+ button
- W2 EasyStart Remote / Remote+ antenna
- k to the upgrade box or relay circuit for connection of water pump and vehicle fan (max. 500 mA)
- I to the upgrade box

#### Cable colours

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

### EasyStart Remote+ connection

1st heater via the diagnostics cable

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic S3 Economy CL

2nd heater via the diagnostics cable

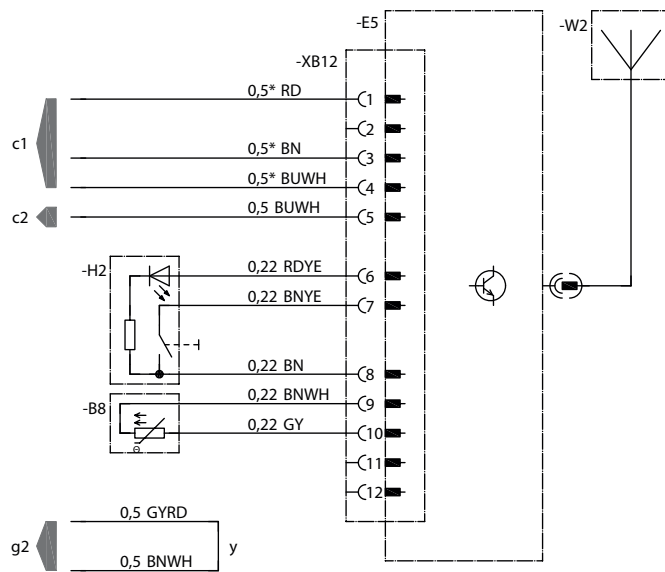
Airtronic, Airtronic M, Airtronic L

X:15 ○  
Ign (+)

---

X:58 ○  
Light (+)

---



\* Hydronic MII 0.75

22.1000.34.9723

-B8 Sensor, interior temperature

-E5 EasyStart Remote+ remote control

-H2 EasyStart Remote / Remote+ button

-W2 EasyStart Remote / Remote+ antenna

c1 to heater 1

c2 to heater 2

g2 to heater 2

y Connect cables and insulate

#### Cable colours

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

### EasyStart Remote+ connection

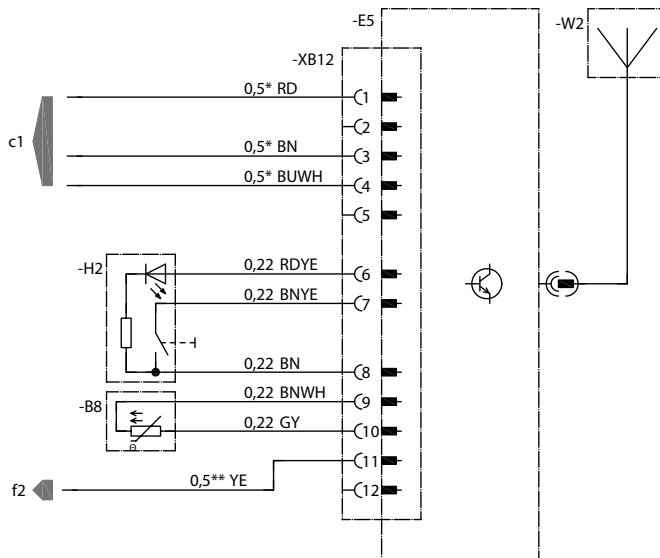
1st heater via the diagnostics cable

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic S3 Economy CL

2nd heater via switch-on signal S+

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic L II, Hydronic S3 Economy CS

X:15 ○ Ign (+)  
 X:58 ○ Light (+)



\* Hydronic MII 0,75  
 \*\* Hydronic MII 0,75 / Hydronic L 1,0

22.1000.34.9725

- B8 Sensor, interior temperature
- E5 EasyStart Remote+ remote control
- H2 EasyStart Remote / Remote+ button
- W2 EasyStart Remote / Remote+ antenna
- c1 to heater 1
- f2 Switch-on signal S+, heater 2

#### Cable colours

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

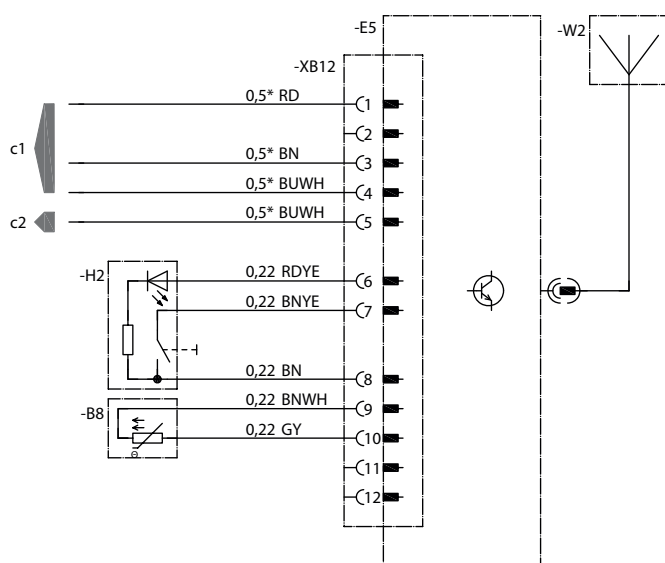
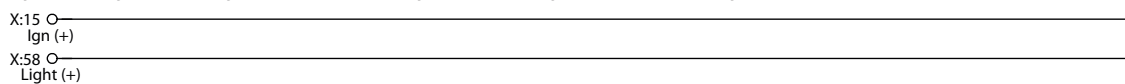
### EasyStart Remote+ connection

1st heater via the diagnostics cable

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic S3 Economy CL

2nd heater via the diagnostics cable

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic S3 Economy CL



\* Hydronic MII 0.75

22.1000.34.9724

-B8 Sensor, interior temperature

-E5 EasyStart Remote+ remote control

-H2 EasyStart Remote / Remote+ button

-W2 EasyStart Remote / Remote+ antenna

c1 to heater 1

c2 to heater 2

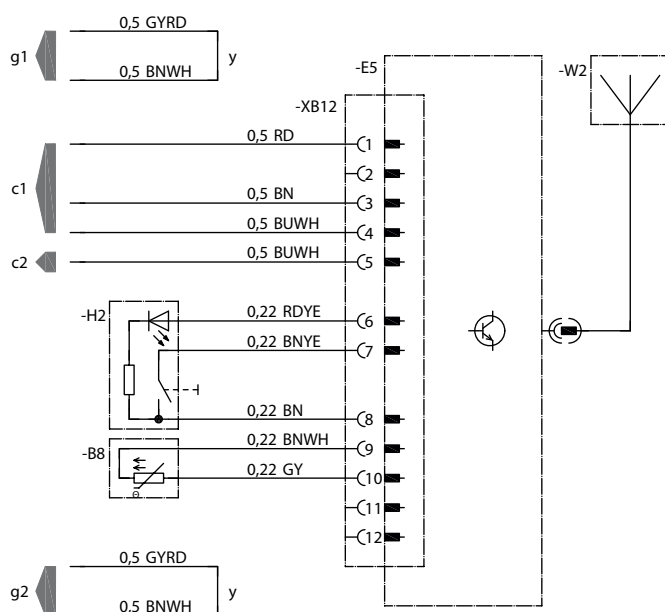
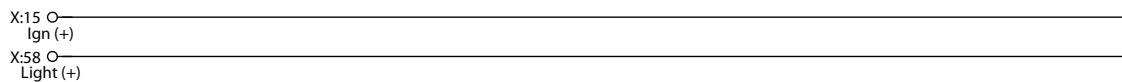
#### Cable colours

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

### EasyStart Remote+ connection

1st heater via the diagnostics cable  
Airtronic, Airtronic M, Airtronic L

2nd heater via the diagnostics cable  
Airtronic, Airtronic M, Airtronic L



22.1000.34.9731

- B8 Sensor, interior temperature
- E5 EasyStart Remote+ remote control
- H2 EasyStart Remote / Remote+ button
- W2 EasyStart Remote / Remote+ antenna
- c1 to heater 1
- c2 to heater 2
- g1 to heater 1
- g2 to heater 2
- y Connect cables and insulate

#### Cable colours

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

### EasyStart Remote+ connection

1st heater via the diagnostics cable

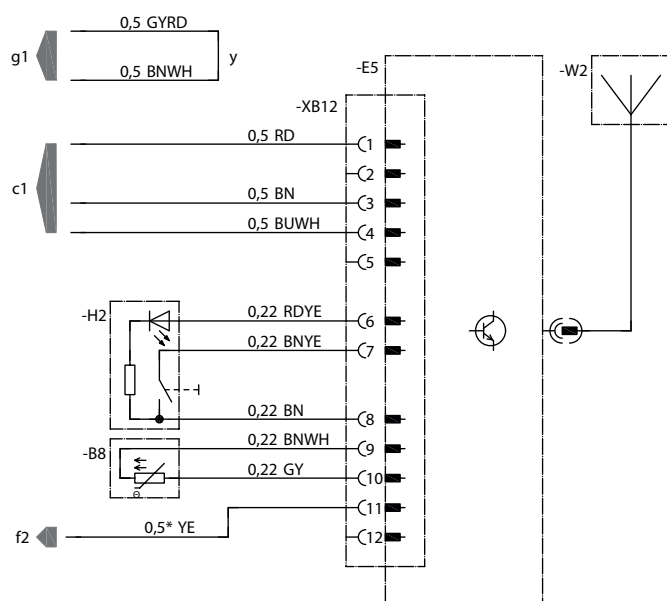
Airtronic, Airtronic M, Airtronic L

2nd heater via switch-on signal S+

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic L II, Hydronic S3 Economy CS

X:15 ○  
Ign (+)

X:58 ○  
Light (+)



\* Hydronic M II – 0.75 / Hydronic L – 1.0

22.1000.34.9732

-B8 Sensor, interior temperature

-E5 EasyStart Remote+ remote control

-H2 EasyStart Remote / Remote+ button

-W2 EasyStart Remote / Remote+ antenna

c1 to heater 1

f2 Switch-on signal S+, heater 2

g1 to heater 1

y Connect cables and insulate

#### Cable colours

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



### EasyStart Remote+ connection

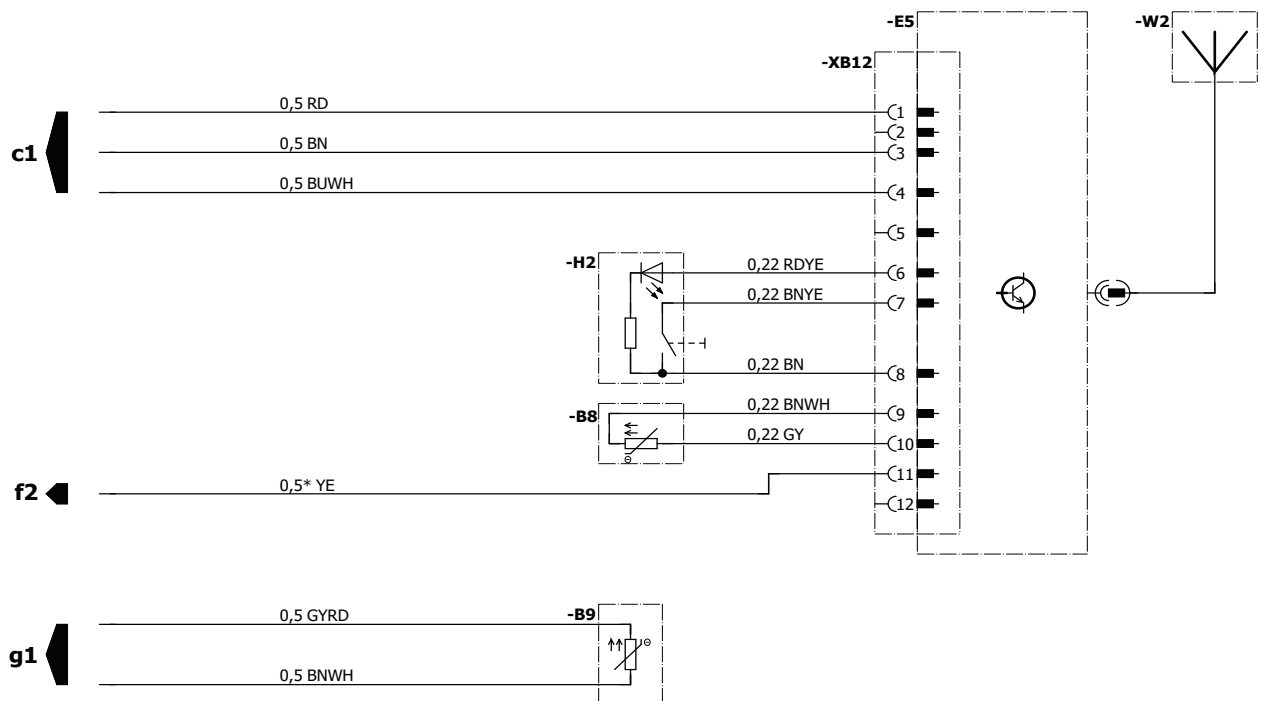
1st heater via the diagnostics cable  
Airtronic 2 12V, Airtronic 3 12V

2nd heater via switch-on signal S+  
Hydronic M II, Hydronic S3 Economy CS

**i Note**

External temperature sensor must be coded with EasyScan (LEF 2).

X:15  Ign (+)  
X:58  Light (+)



\* Hydronic M II – 0.75

22.1000.35.9712

- B8 Sensor, interior temperature
- B9 External control temperature sensor
- E5 EasyStart Remote+ remote control
- H2 EasyStart Remote+ button
- W2 EasyStart Remote+ antenna

- c1 to heater 1
- f2 Switch-on signal S+, heater 2
- g1 to heater 1

**Cable colours**

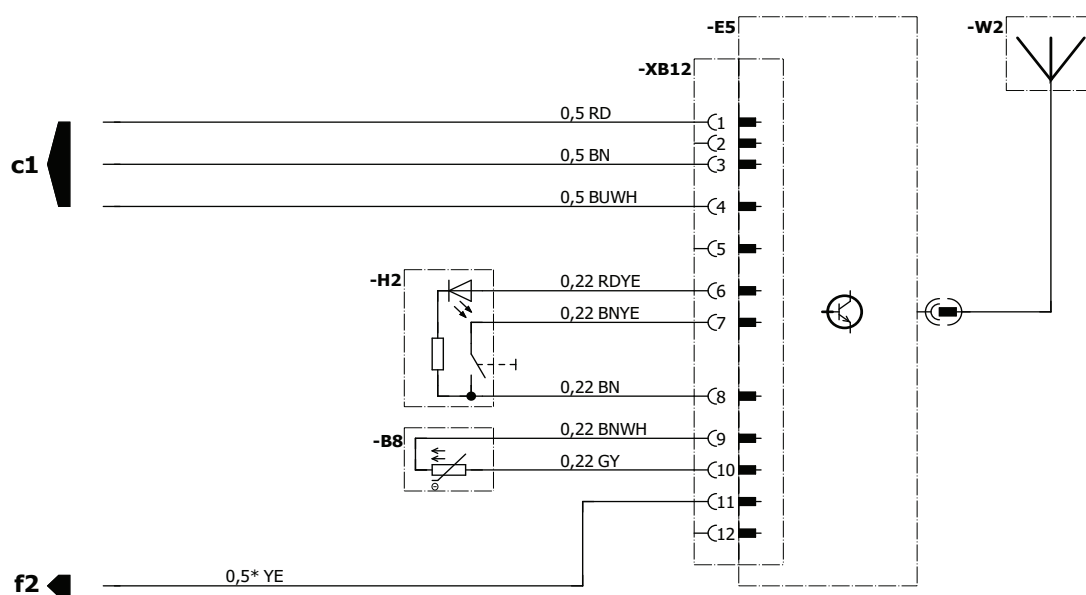
RD	red	GY	grey	BK	black
BU	blue	YE	yellow	GN	green
WH	white	VT	violet	BN	brown

### EasyStart Remote+ connection

1st heater via the diagnostics cable  
Airtronic 2 12V, Airtronic 3 12V

2nd heater via switch-on signal S+  
Hydronic M II, Hydronic S3 Economy CS

X:15  Ign (+)  
X:58  Light (+)



\* Hydronic M II – 0.75

22.1000.35.9711

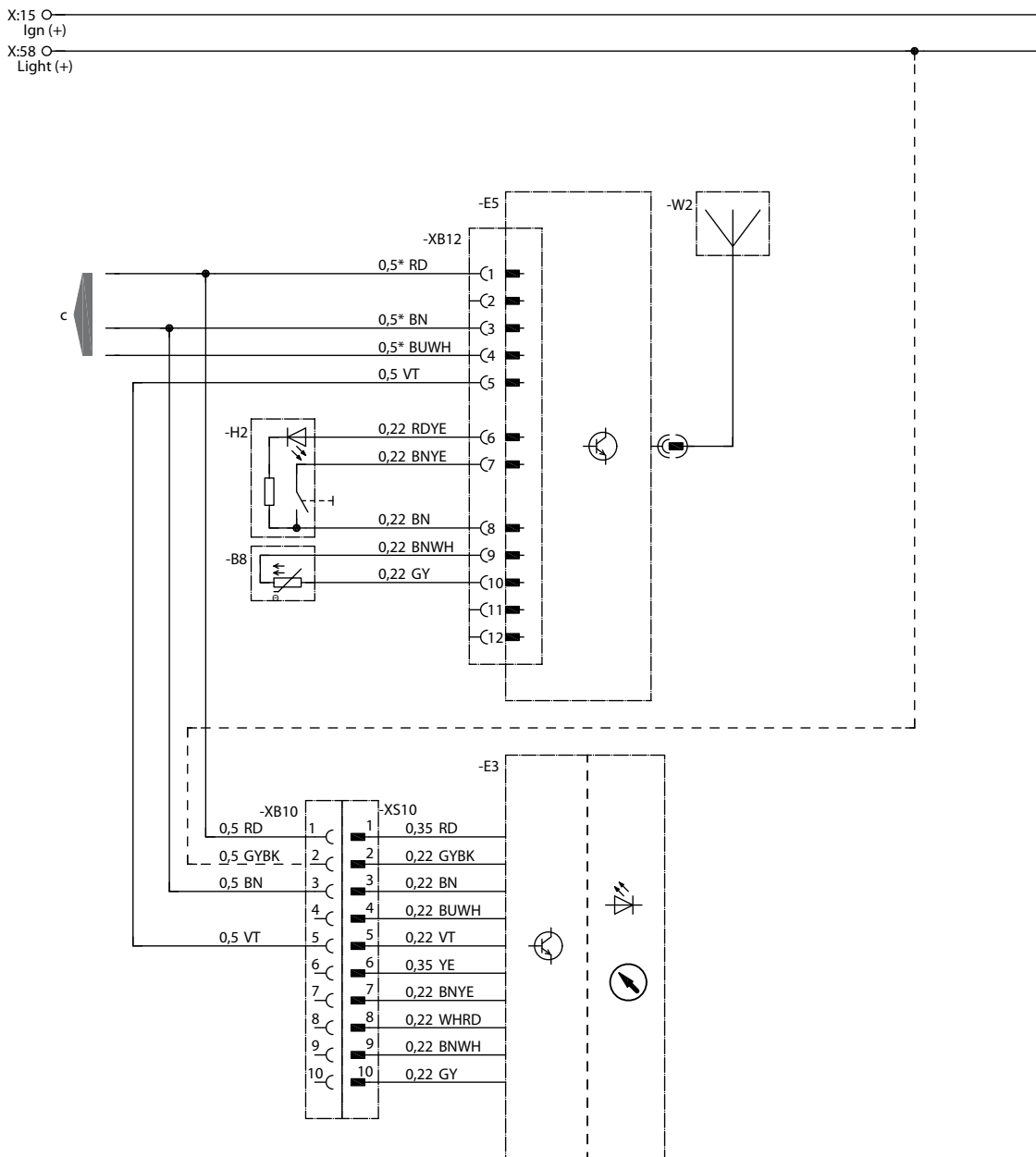
- B8 Sensor, interior temperature
- E5 EasyStart Remote+ remote control
- H2 EasyStart Remote+ button
- W2 EasyStart Remote+ antenna
- c1 to heater 1
- f2 Switch-on signal S+ for heater 2

#### Cable colours

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

### Combination of EasyStart Remote+ and EasyStart Timer

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic S3 Economy CL



\* Hydronic M II – 0.75

22.1000.34.9728

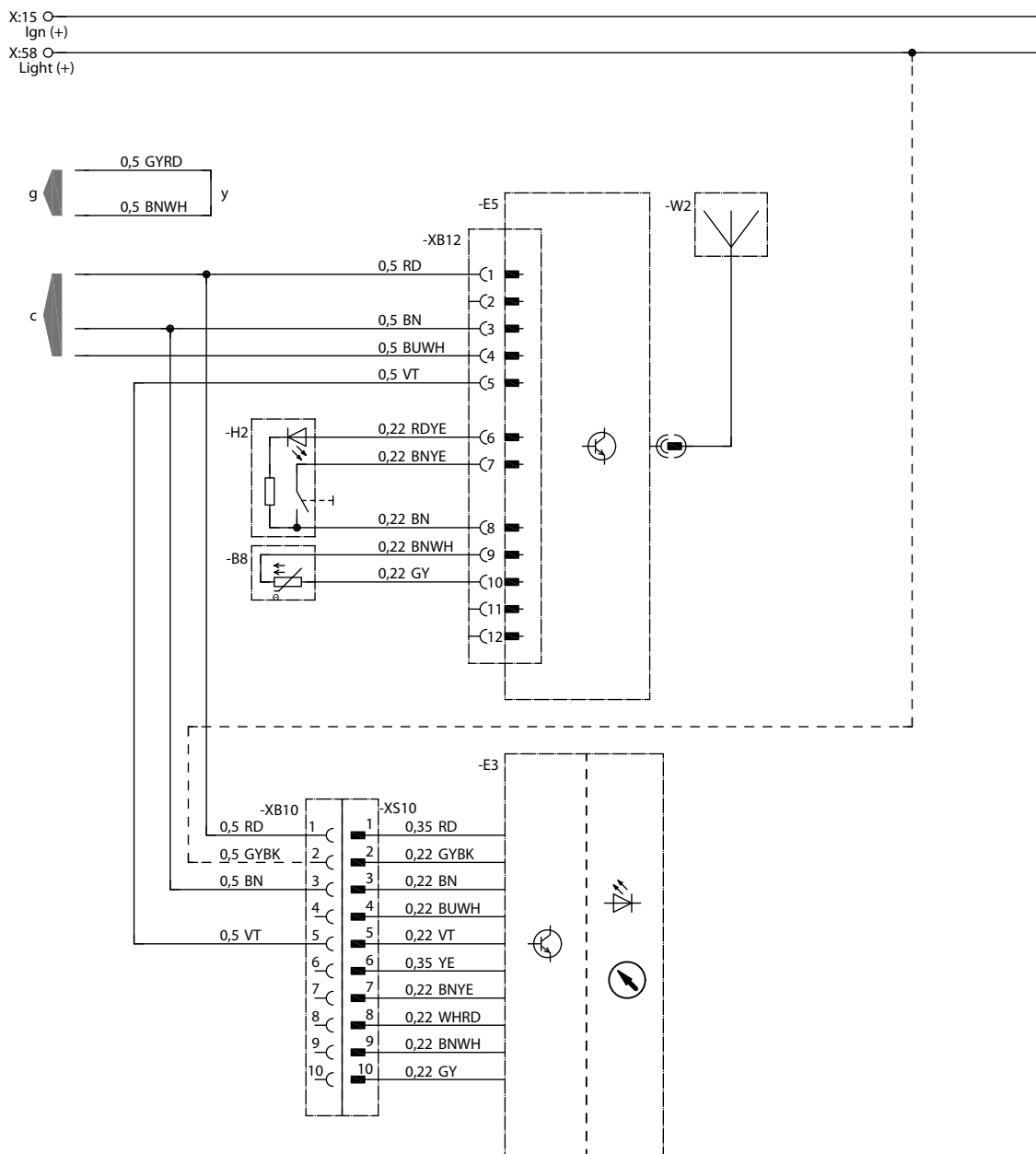
- B8 Sensor, interior temperature
- E3 EasyStart Timer
- E5 EasyStart Remote+ remote control
- H2 EasyStart Remote / Remote+ button
- W2 EasyStart Remote / Remote+ antenna
- c to the heater

#### Cable colours

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

**Combination of EasyStart Remote+ and EasyStart Timer**

Airtronic, Airtronic M, Airtronic L



22.1000.34.9730

- B8 Sensor, interior temperature
- E3 EasyStart Timer
- E5 EasyStart Remote+ remote control
- H2 EasyStart Remote / Remote+ button
- W2 EasyStart Remote / Remote+ antenna

- c to the heater
- g to the heater
- y Connect cables and insulate

**Cable colours**

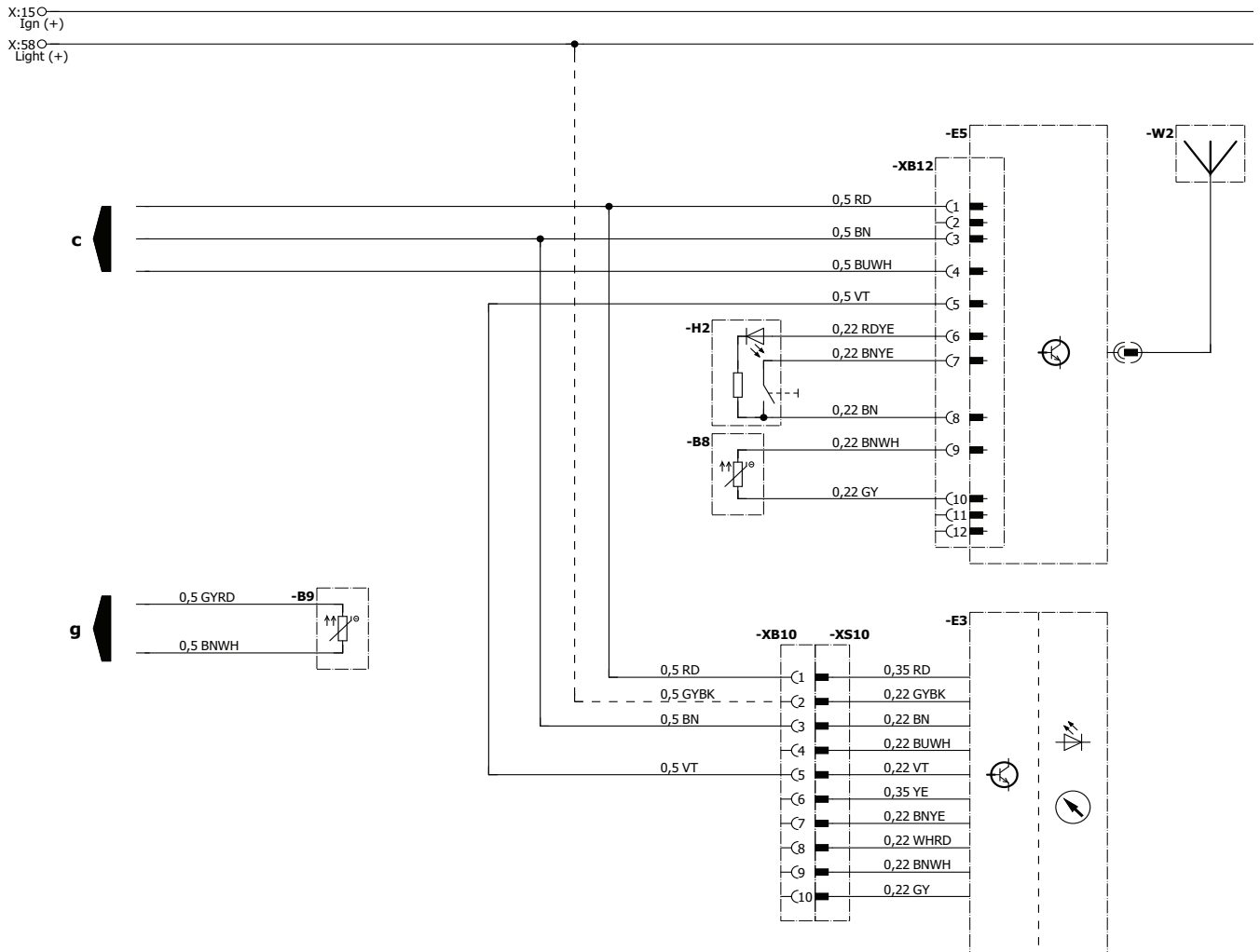
RD	red	GY	grey	BK	black
BU	blue	YE	yellow	GN	green
WH	white	VT	violet	BN	brown

### Combination of EasyStart Remote+ and EasyStart Timer

Airtronic 2 (12V), Airtronic 3 (12V)

**i Note**

External temperature sensor must be coded with EasyScan (LEF 2).



22.1000.35.9708

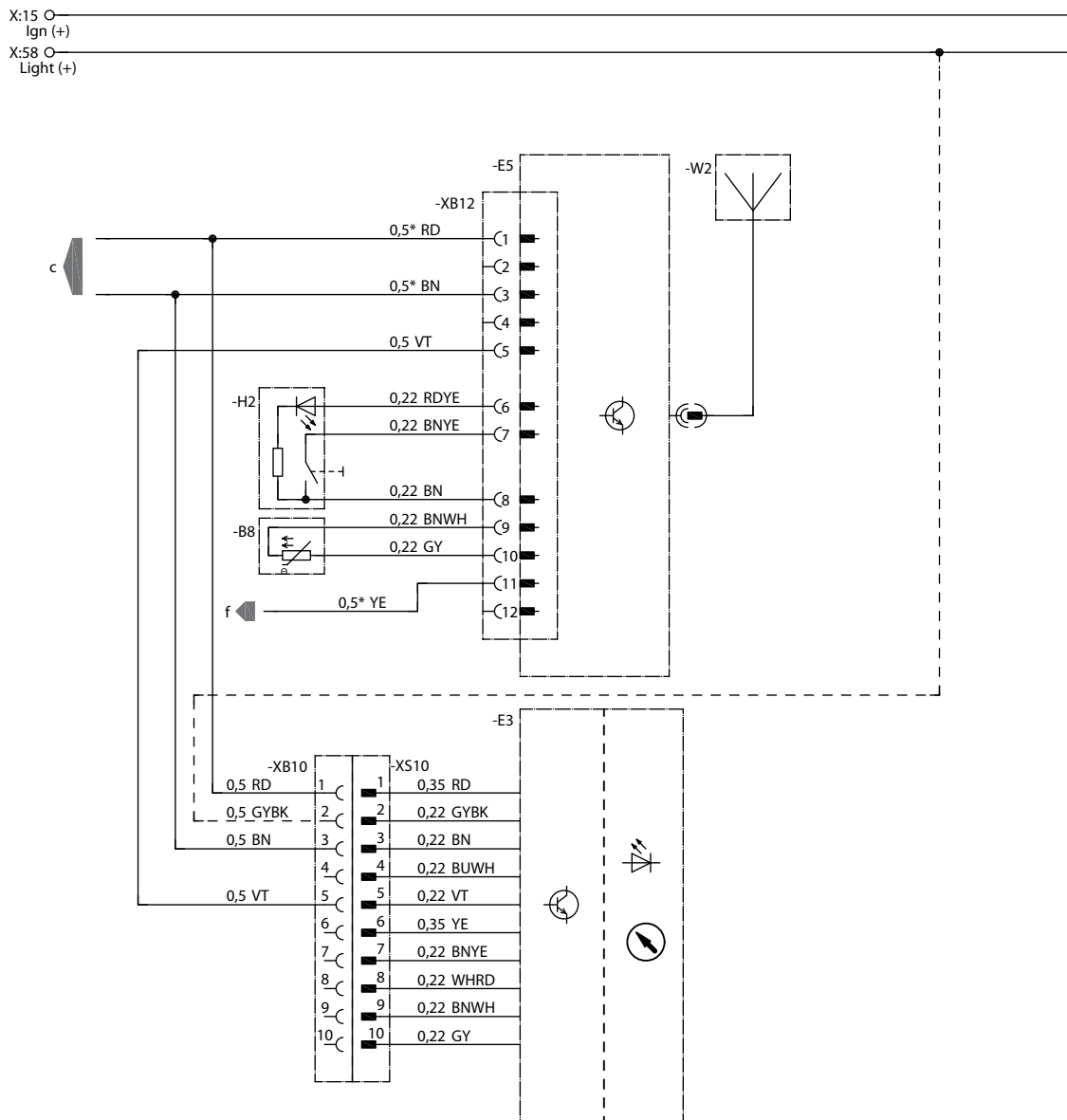
- B8 Sensor, interior temperature
- B9 External control temperature sensor, interior
- E3 EasyStart Timer
- E5 EasyStart Remote+ remote control
- H2 EasyStart Remote+ button
- W2 EasyStart Remote+ antenna
- c to the heater
- g to the heater

**Cable colours**

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

**Combination of EasyStart Remote+ and EasyStart Timer via switch-on signal S+**

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic L II



\*\* Hydronic M II – 0.75 / Hydronic L – 1.0

22.1000.34.9762

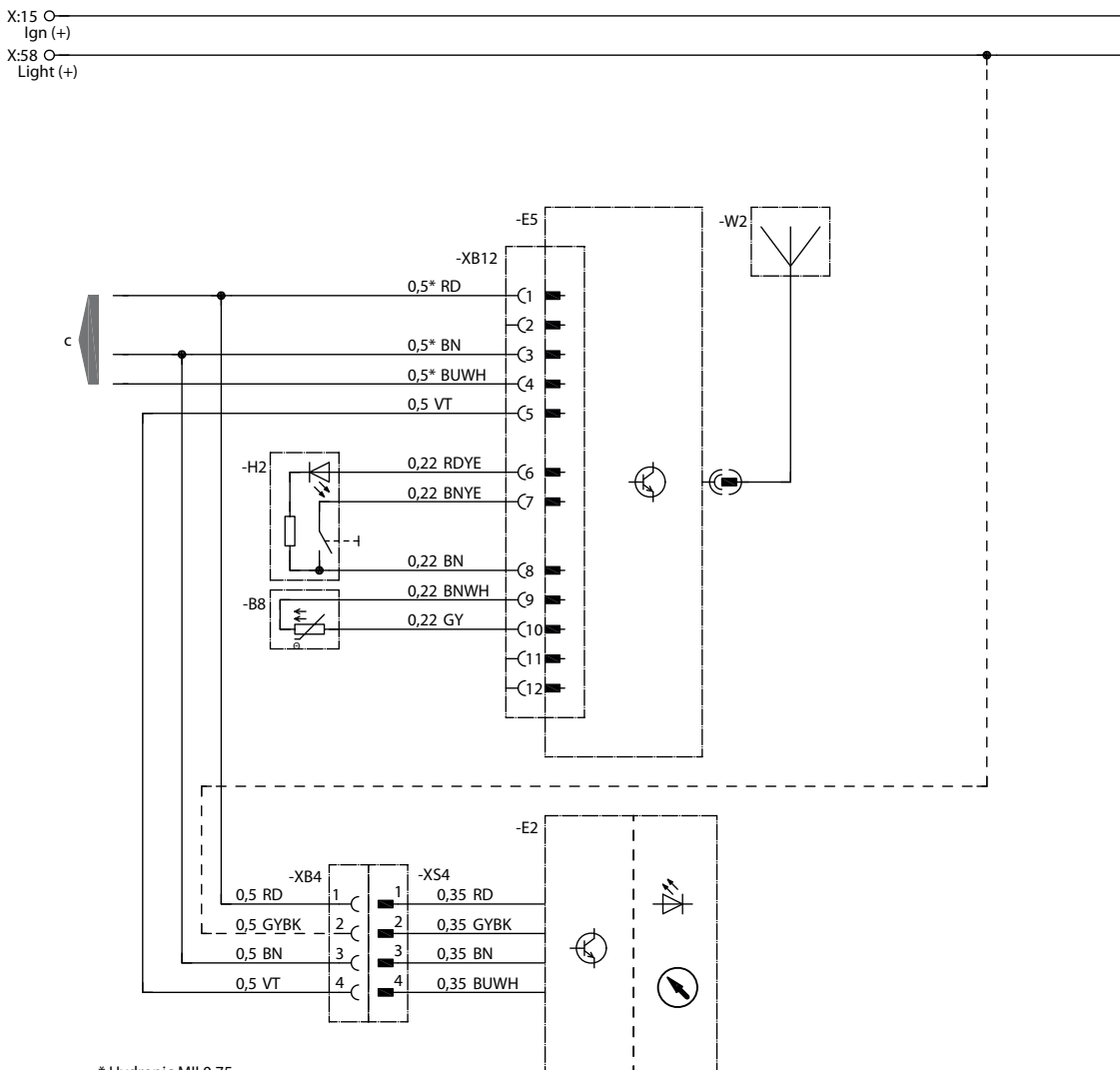
- B8 Sensor, interior temperature
- E3 EasyStart Timer
- E5 EasyStart Remote+ remote control
- H2 EasyStart Remote / Remote+ button
- W2 EasyStart Remote / Remote+ antenna
- c to the heater
- f Switch-on signal S+

**Cable colours**

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

### Combination of EasyStart Remote+ and EasyStart Select

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic S3 Economy CL



\* Hydronic MII 0.75

22.1000.34.9754

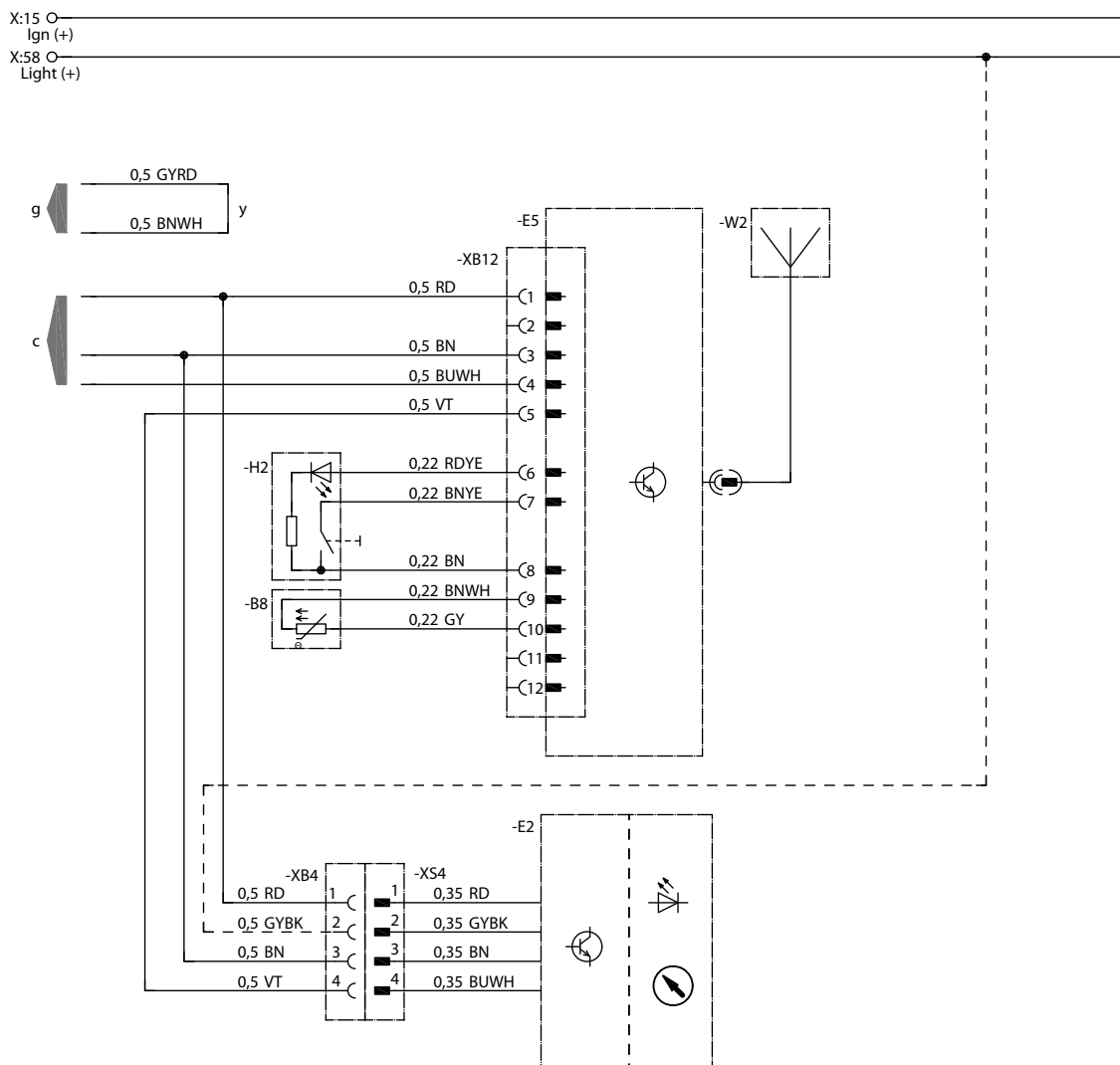
- B8 Sensor, interior temperature
- E2 EasyStart Select control unit
- E5 EasyStart Remote+ remote control
- H2 EasyStart Remote / Remote+ button
- W2 EasyStart Remote / Remote+ antenna
- c to the heater
- g to the heater

#### Cable colours

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

**Combination of EasyStart Remote+ and EasyStart Select**

Airtronic, Airtronic M, Airtronic L



22.1000.34.9756

- B8 Sensor, interior temperature
- E2 EasyStart Select control unit
- E5 EasyStart Remote+ remote control
- H2 EasyStart Remote / Remote+ button
- W2 EasyStart Remote / Remote+ antenna

- c to the heater
- g to the heater
- y Connect cables and insulate

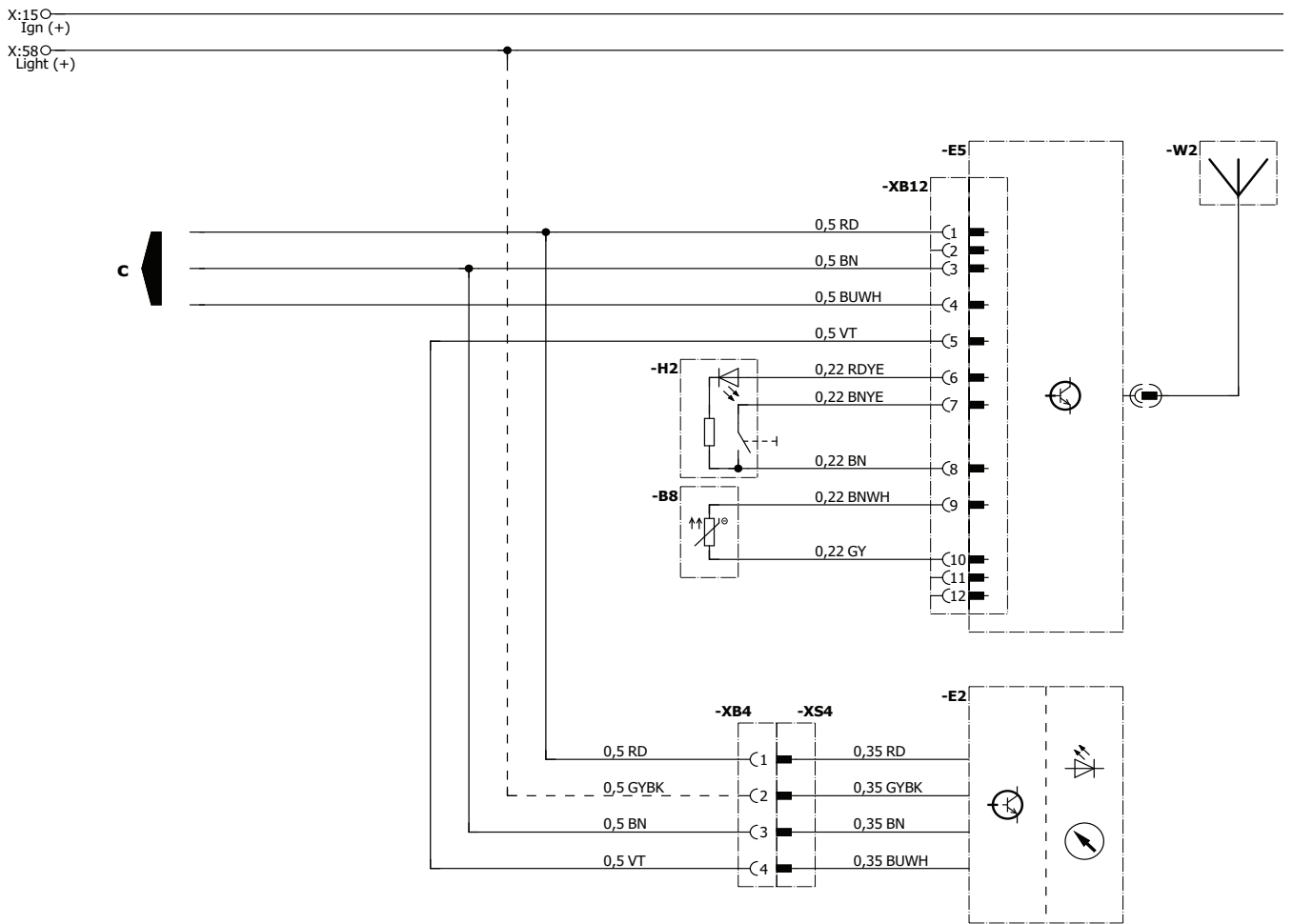
**Cable colours**

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



### Combination of EasyStart Remote+ and EasyStart Select

Airtronic 2 12V, Airtronic 3 12V



22.1000.35.9709

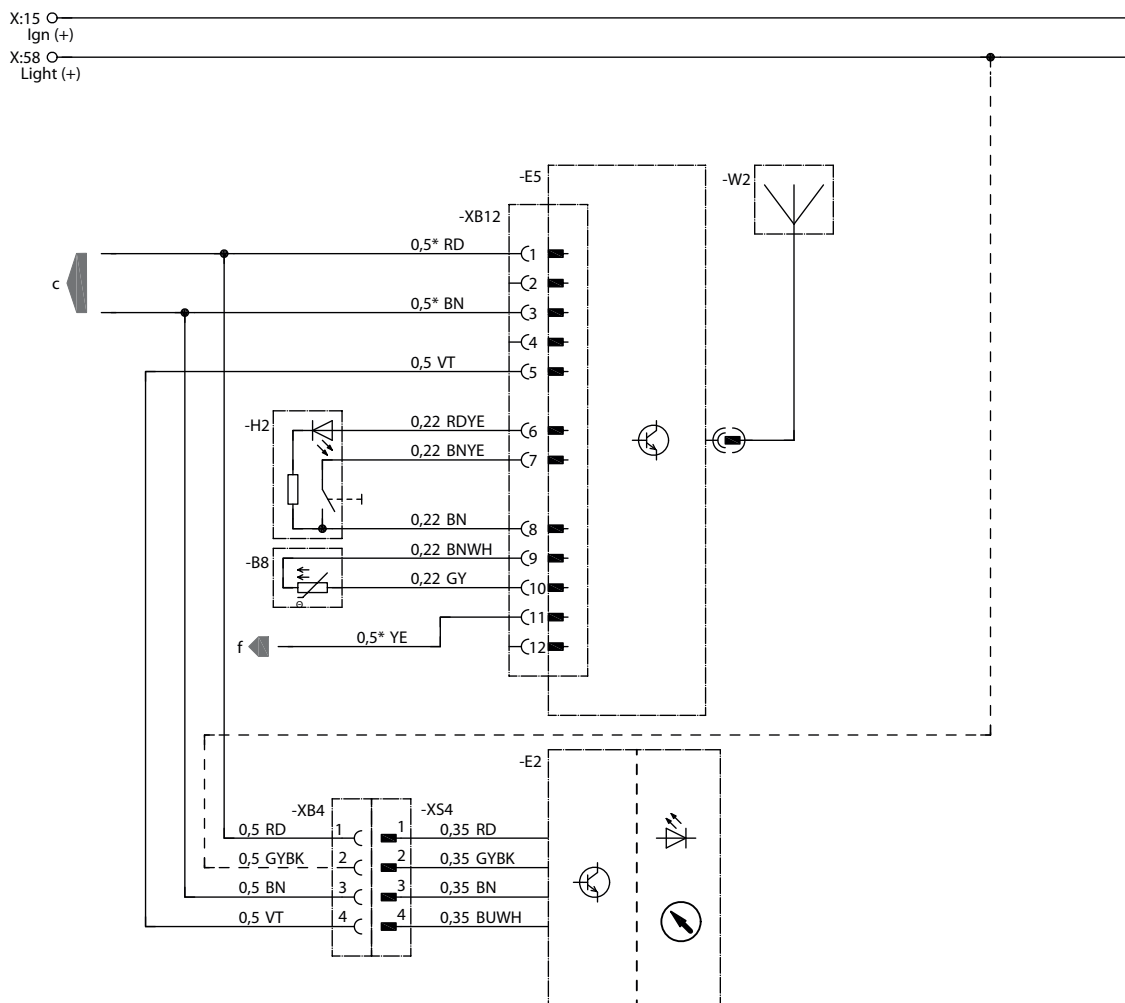
- B8 Sensor, interior temperature
- E2 EasyStart Select
- E5 EasyStart Remote+
- H2 EasyStart Remote+ button
- W2 EasyStart Remote+ antenna
- c to the heater

#### Cable colours

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

**Combination of EasyStart Remote+ and EasyStart Select via switch-on signal S+**

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic L II



\*\* Hydronic MII 0,75 / Hydronic L 1,0

22.1000.34.9763

- B8 Sensor, interior temperature
- E2 EasyStart Select control unit
- E5 EasyStart Remote+ remote control
- H2 EasyStart Remote / Remote+ button
- W2 EasyStart Remote / Remote+ antenna
- c to the heater
- f Switch-on signal S+

**Cable colours**

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

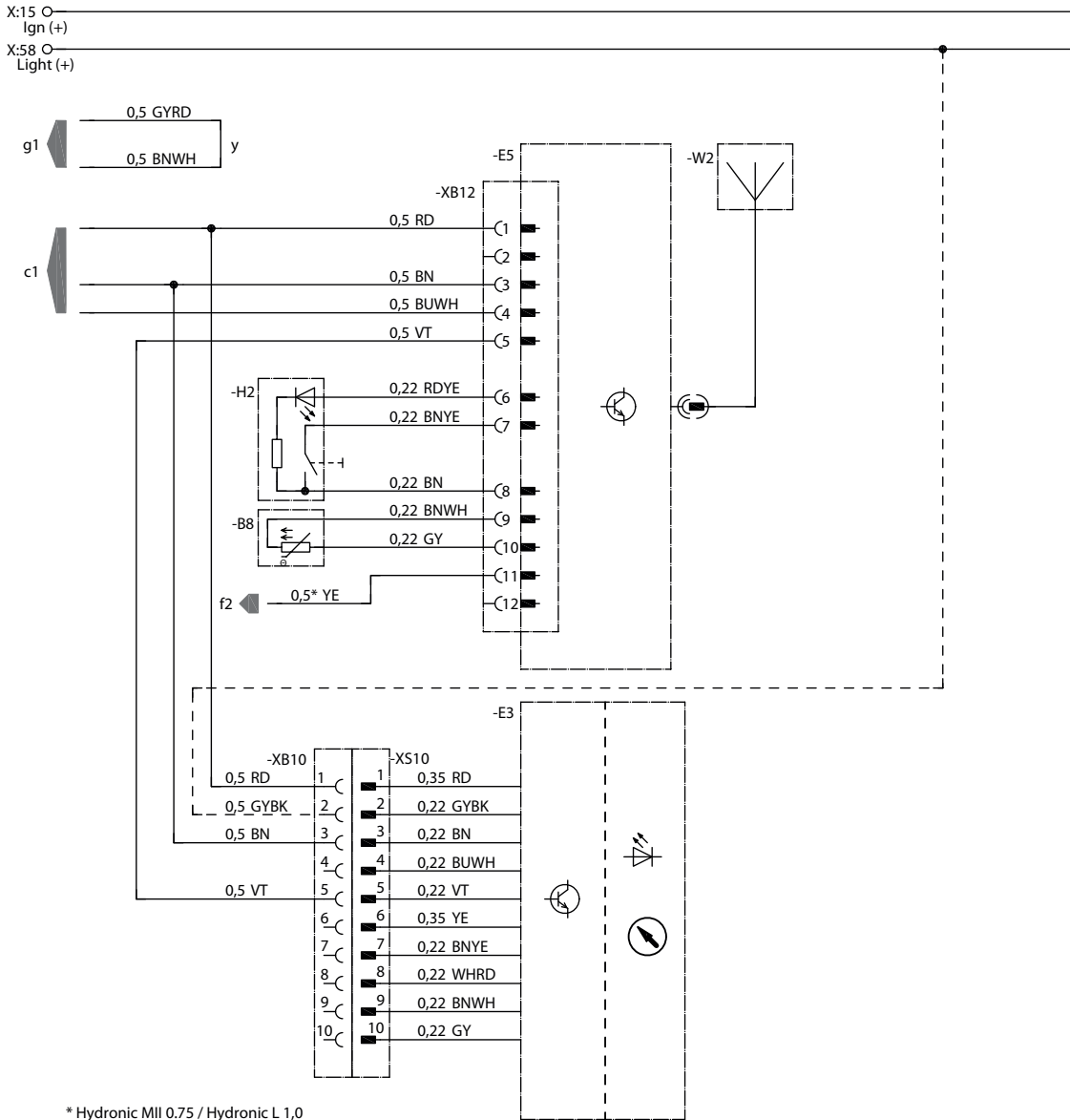
### Combination of EasyStart Remote+ and EasyStart Timer

1st heater via the diagnostics cable

Airtronic, Airtronic M, Airtronic L

2nd heater via switch-on signal S+

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic L II, Hydronic S3 Economy CS



22.1000.34.9764

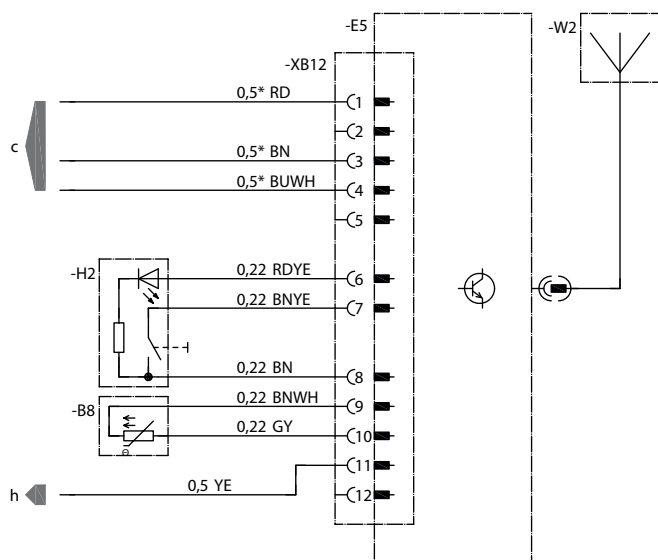
- B8 Sensor, interior temperature
- E3 EasyStart Timer
- E5 EasyStart Remote+ remote control
- H2 EasyStart Remote / Remote+ button
- W2 EasyStart Remote / Remote+ antenna
- c1 to heater 1
- f2 Switch-on signal S+, heater 2
- g1 to heater 1
- y Connect cables and insulate

#### Cable colours

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

**EasyStart Remote+ connection with room temperature control**

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic S3 Economy CL

 X:15 ○ \_\_\_\_\_  
 Ign (+)  
 X:58 ○ \_\_\_\_\_  
 Light (+)


\* Hydronic MII 0.75

22.1000.34.9727

- B8 Sensor, interior temperature
- E5 EasyStart Remote+ remote control
- H2 EasyStart Remote / Remote+ button
- W2 EasyStart Remote / Remote+ antenna
- c to the heater
- h for example, vehicle fan relay activation (max. 500 mA)

**Cable colours**

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

## Overview of the circuit diagrams

### 8.3 EasyStart Remote / Select / Call / Mini-controller / Altitude kit / Special functions

#### Select → 1 heater

Airtronic, Airtronic M, Airtronic L with external control temperature sensor, interior [82](#)

#### Call → 1 heater

Hydronic, Hydronic II, Hydronic II C, Hydronic II Comfort, Hydronic M II, Hydronic S3 CL [83](#)

Airtronic, Airtronic M, Airtronic L [84](#)

Airtronic, Airtronic M, Airtronic L with external control temperature sensor, interior [85](#)

Upgrading Hydronic auxiliary heater with JE diagnostics cable to the pre-heater [86](#)

#### Mini controller → 1 heater

Airtronic 2, Airtronic 3 [87](#)

#### Altitude sensor → 1 heater

EasyStart Timer, Remote, Remote+, Select, Call  
Hydronic, Hydronic II, Hydronic II Comfort, Hydronic S3 CL connection (all unit versions installed with altitude sensor) [88](#)

EasyStart Timer, Remote+, Select, Call  
Airtronic, Airtronic M, Airtronic L connection (all unit versions installed with altitude sensor) [89](#)

EasyStart control unit connection via switch-on signal S+  
Hydronic, Hydronic II, Hydronic II Comfort (all unit versions installed with altitude sensor) [90](#)

#### Altitude sensor → 2 heaters

EasyStart control unit connection to an 2 heaters with altitude sensor [91](#)

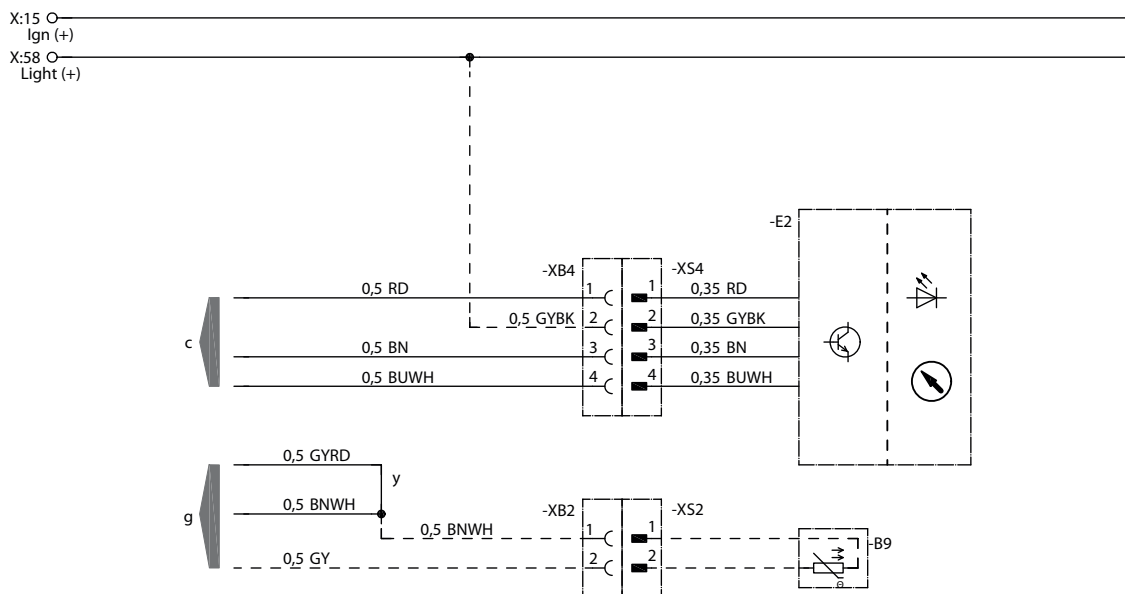
Connection of 2 EasyStart control units to 2 heaters with altitude sensor [92](#)

#### Special functions

Measurement of the battery voltage with EasyStart Timer / Select connection  
Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II or Airtronic, Airtronic M, Airtronic L [93](#)

**EasyStart Select connection**

Airtronic, Airtronic M, Airtronic L with external control temperature sensor, interior



22.1000.34.9772

-B9 External control temperature sensor, interior

-E2 EasyStart Select control unit

c to the heater

g to the heater

y Connect cables and insulate

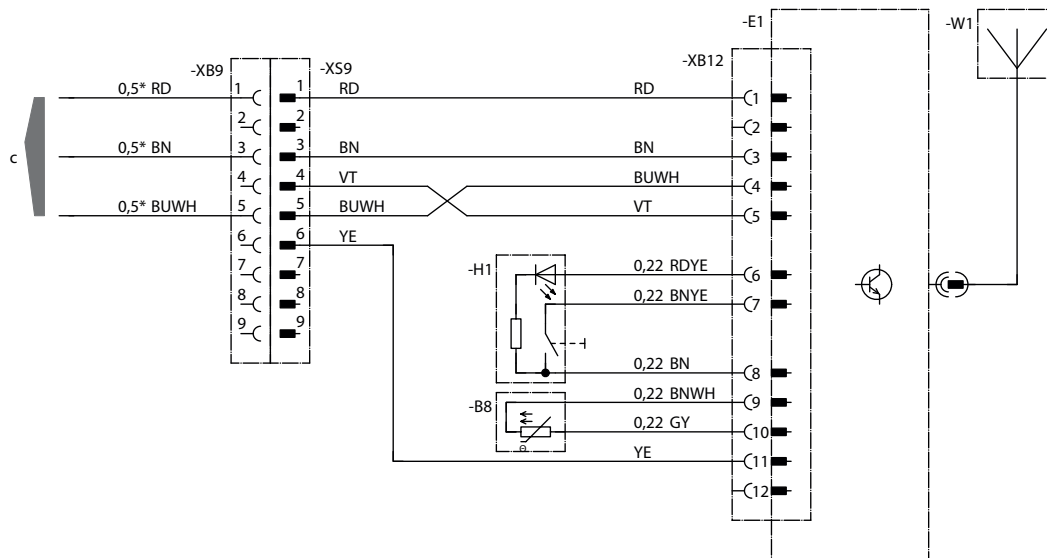
**Cable colours**

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

### EasyStart Call connection

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic S3 Economy CL

X:15 ○ Ign (+)  
 X:58 ○ Light (+)



\* Hydronic MII 0,75

22.1000.34.9718

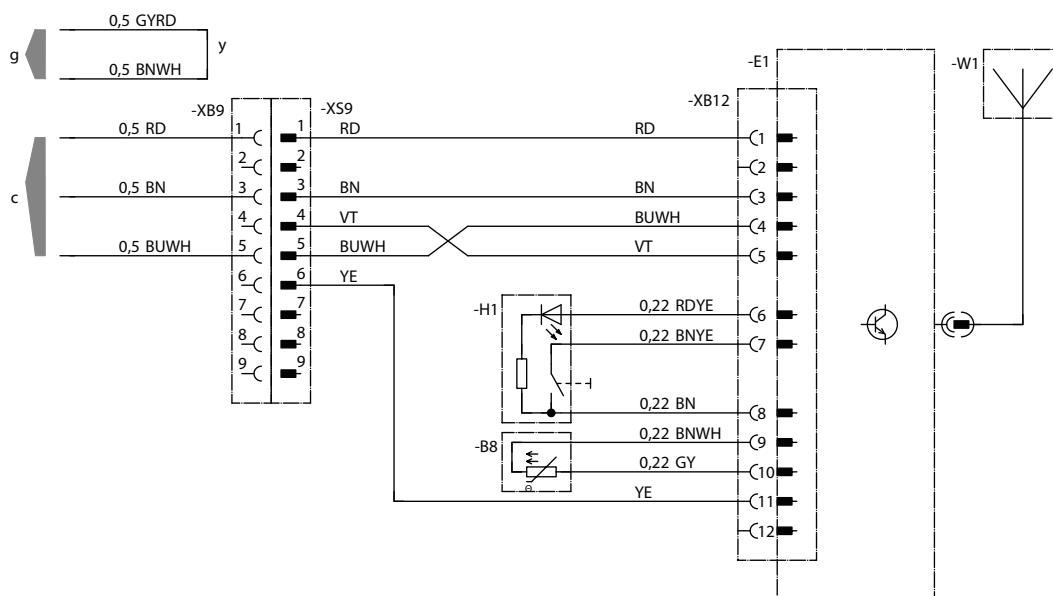
- B8 Sensor, interior temperature
- E1 EasyStart Call radio remote control
- H1 EasyStart Call button
- W1 EasyStart Call antenna
- c to the heater

#### Cable colours

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

**EasyStart Call connection**

Airtronic, Airtronic M, Airtronic L

 X:15  Ign (+)  
 X:58  Light (+)


22.1000.34.9720

- B8 Sensor, interior temperature
- E1 EasyStart Call radio remote control
- H1 EasyStart Call button
- W1 EasyStart Call antenna

- c to the heater
- g to the heater
- y Connect cables and insulate

**Cable colours**

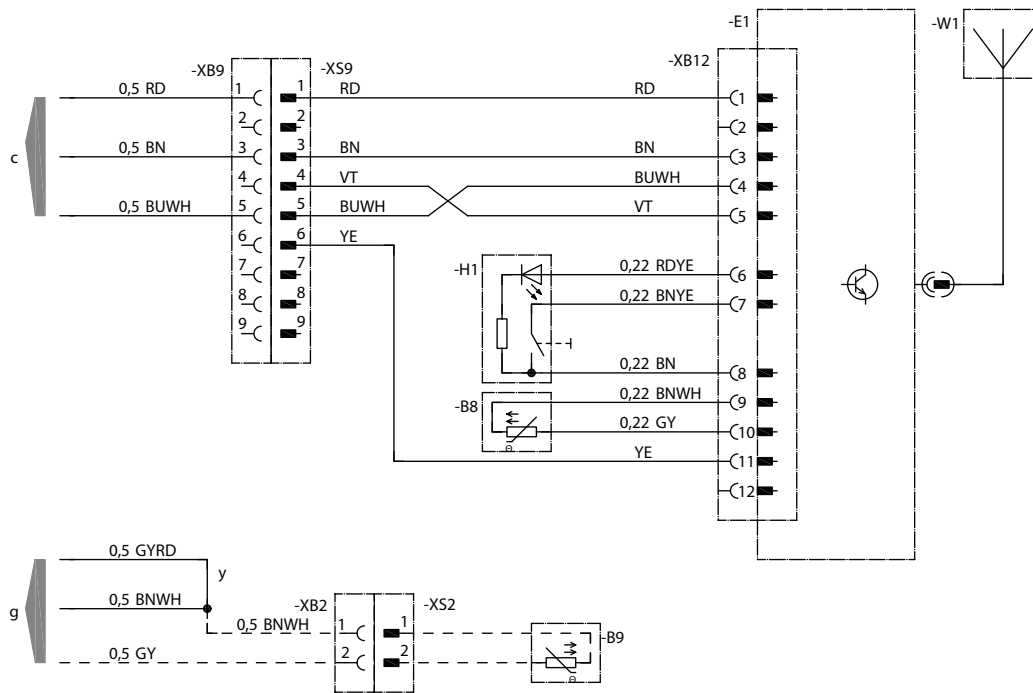
RD	red	GY	grey	BK	black
BU	blue	YE	yellow	GN	green
WH	white	VT	violet	BN	brown



### EasyStart Call connection

Airtronic, Airtronic M, Airtronic L with external control temperature sensor, interior

X:15 ○ Ign (+)  
 X:58 ○ Light (+)



22.1000.34.9740

- B8 Sensor, interior temperature
- B9 External control temperature sensor, interior
- E1 EasyStart Call radio remote control
- H1 EasyStart Call button
- W1 EasyStart Call antenna
- c to the heater
- g to the heater
- y Connect cables and insulate

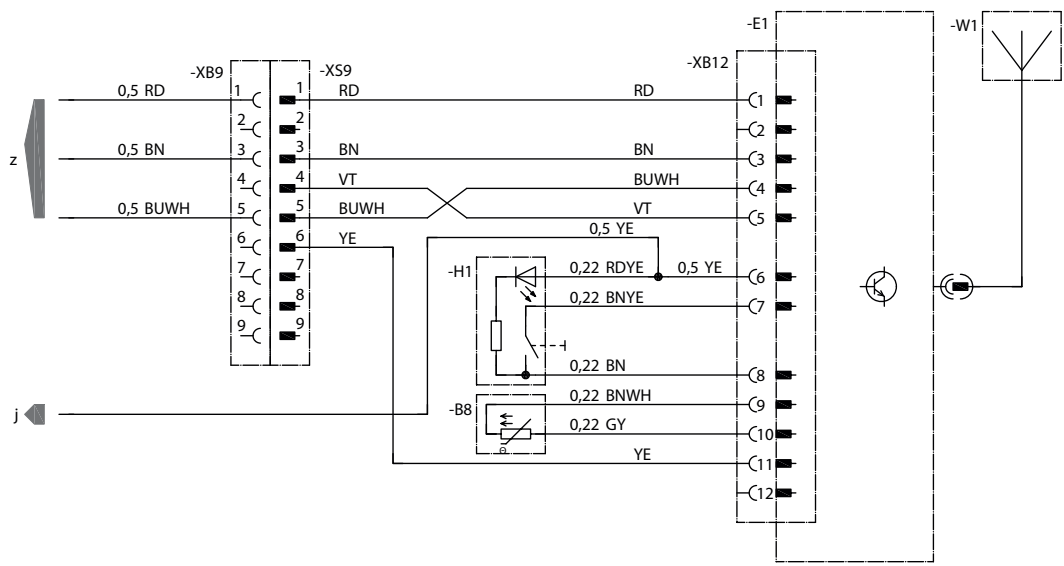
#### Cable colours

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

**EasyStart Call connection**

Upgrading Hydronic auxiliary heater with JE diagnostics cable to the pre-heater

X:15 ○ Ign (+)  
 X:58 ○ Light (+)



22.1000.34.9752

- B8 Sensor, interior temperature
- E1 EasyStart Call radio remote control
- H1 EasyStart Call button
- W1 EasyStart Call antenna
- j to the relay for water pump connection and vehicle fan (max. 500 mA)
- z to the auxiliary heater

**Cable colours**

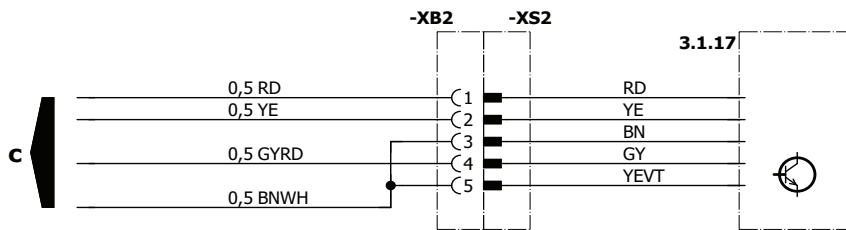
RD	red	GY	grey	BK	black
BU	blue	YE	yellow	GN	green
WH	white	VT	violet	BN	brown

### Mini-controller connection

Airtronic 2, Airtronic 3

X:15   
Ign (+)

X:58   
Light (+)



22.1000.34.9752

3.1.17 Mini controller  
c to the heater

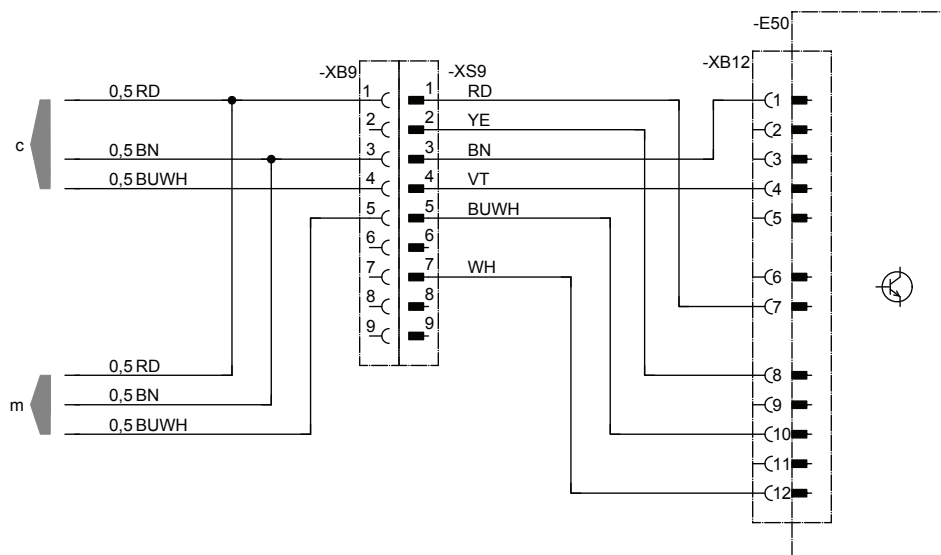
#### Cable colours

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

**EasyStart Timer / Remote / Remote+ / Select / Call connection**

Hydronic, Hydronic II, Hydronic II Comfort (unit versions installed with altitude sensor), Hydronic S3 Economy CL

 X:150  
Ign (+)

 X:580  
Light (+)


22.1000.34.9736

-E50 Air pressure sensor  
 c to the heater  
 m to the control unit

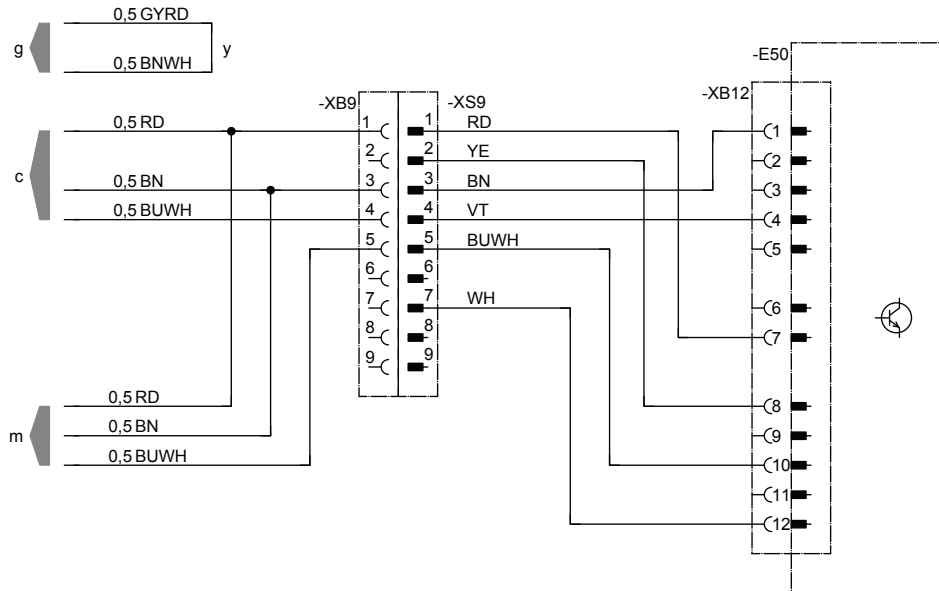
**Cable colours**

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

**EasyStart Timer / Remote / Remote+ / Select / Call connection**

Airtronic, Airtronic M, Airtronic L (all unit versions installed with altitude sensor)

X:15 Ign (+)  
 X:58 Light (+)



22.1000.34.9737

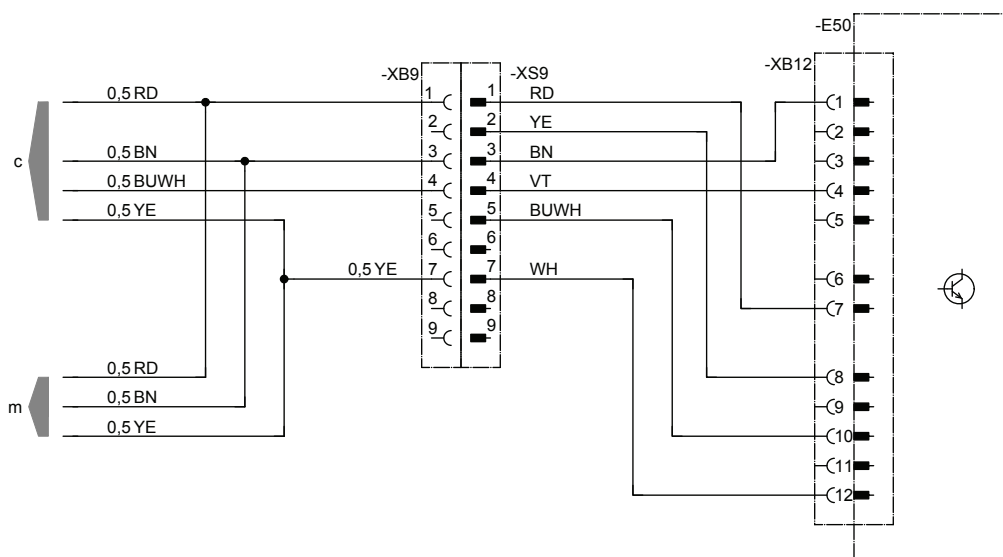
- E50 Air pressure sensor
- c to the heater
- g to the heater
- m to the control unit
- y Connect cables and insulate

**Cable colours**

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

**Connection of EasyStart control units via switch-on signal S+**

Hydronic, Hydronic II, Hydronic II Comfort (unit versions with installed altitude sensor)

 X:150 Ign (+)  
 X:580 Light (+)


22.1000.34.9738

-E50 Air pressure sensor  
 c to the heater  
 m to the control unit

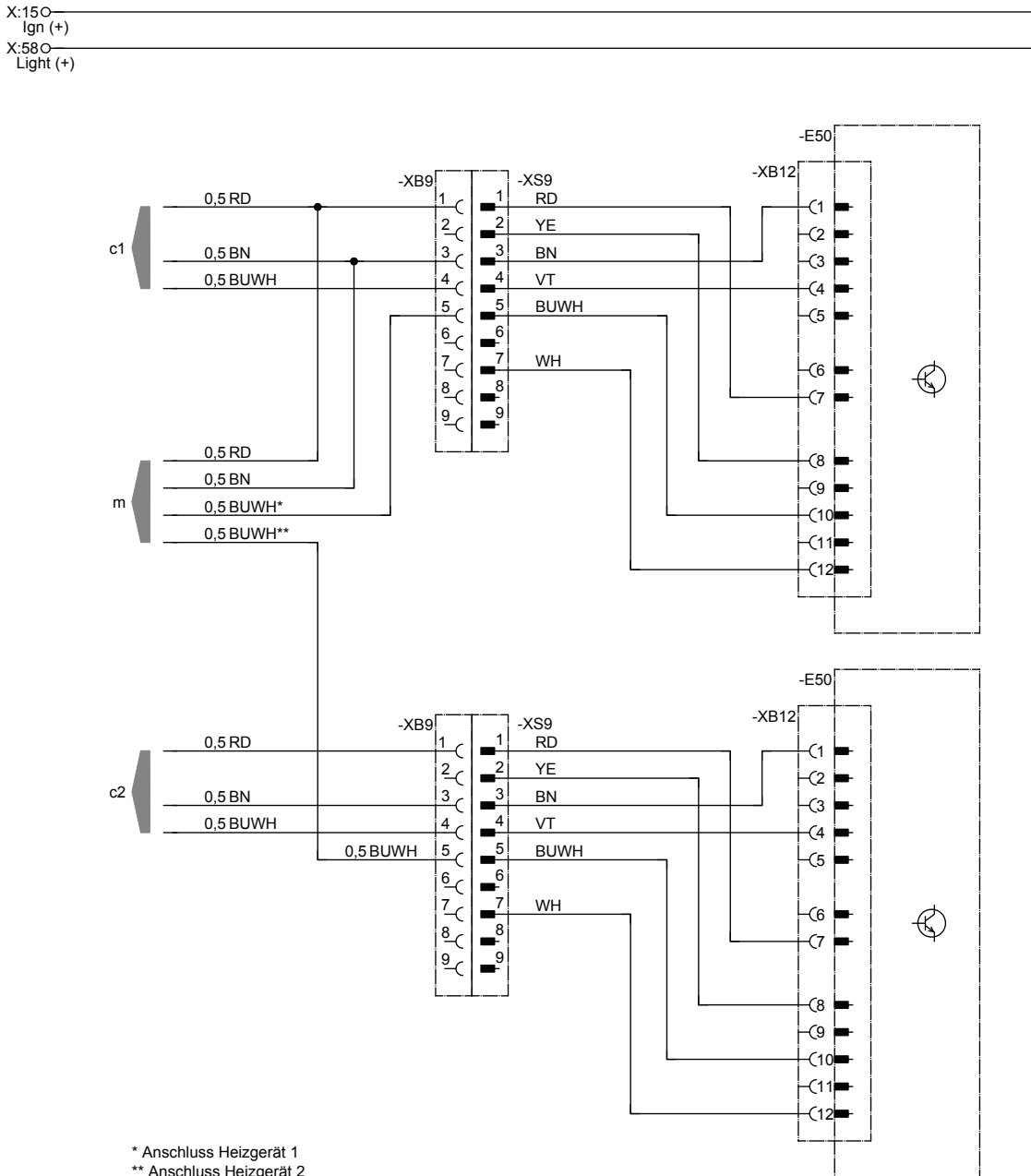
**Cable colours**

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

### Connection of EasyStart control units to 2 heaters with altitude sensor

**i Note**

If using Airtronic, Airtronic M, Airtronic L the 0.5 GYRD and 0.5 BNWH cables in the heater cable harness must also be bridged. Connection of heater 1 and 2 via diagnostics cable



22.1000.34.9769

- E50 Air pressure sensor
- c1 to heater 1
- c2 to heater 2
- m to the control unit

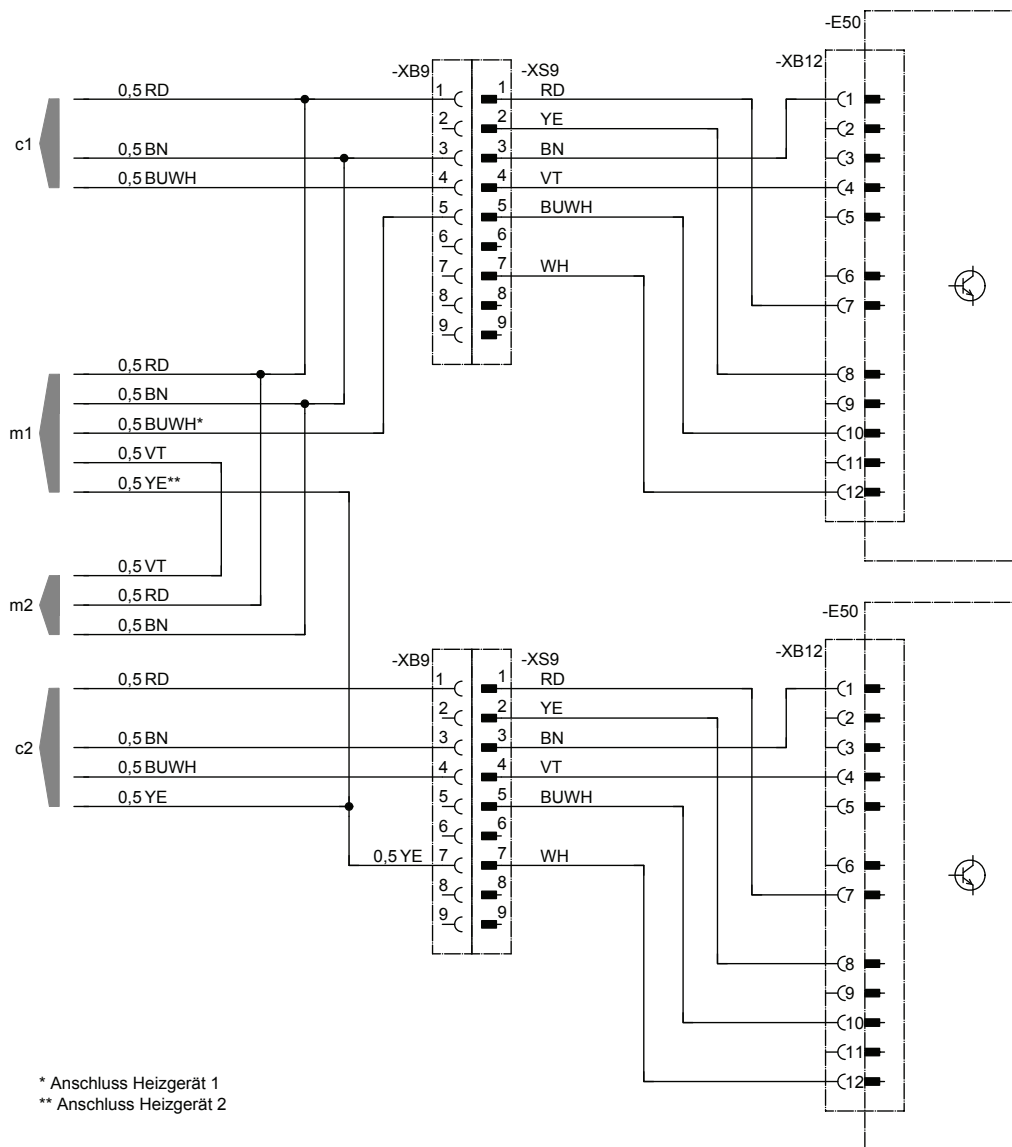
**Cable colours**

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

**Connection of 2 EasyStart control units to 2 heaters with altitude sensor**
**Note**

If using Airtronic, Airtronic M, Airtronic L the 0.5 GYRD and 0.5 BNWH cables in the heater cable harness must also be bridged. Connection of heater 1 via diagnostics cable, heater 2 via switch-on signal S+

X:15○  
Ign (+)  
X:58○  
Light (+)



22.1000.34.9770

-E50 Air pressure sensor

c1 to heater 1

c2 to heater 2

m1 to control unit 1

m2 to control unit 2

**Cable colours**

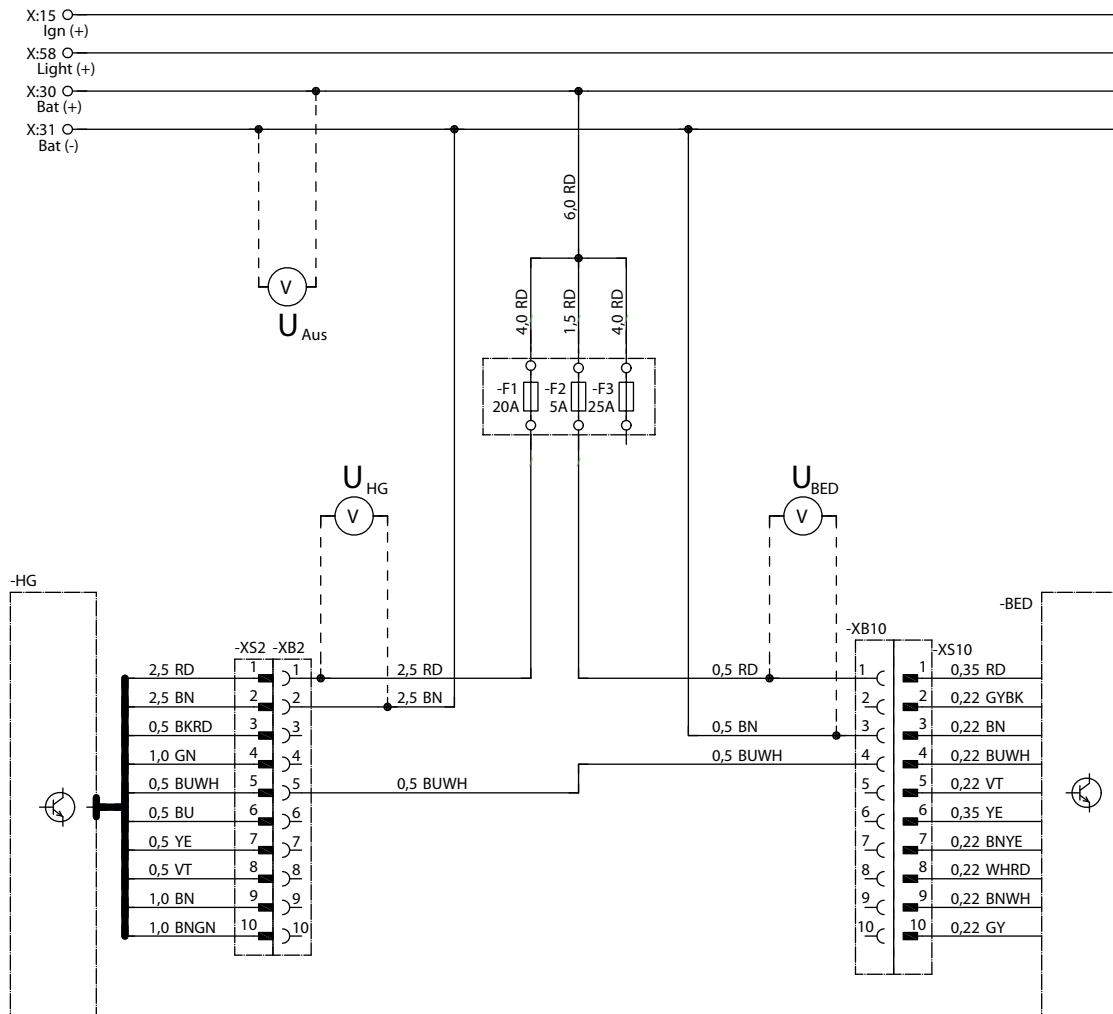
RD	red	GY	grey	BK	black
BU	blue	YE	yellow	GN	green
WH	white	VT	violet	BN	brown



### Measurement of the battery voltage with EasyStart Timer / Select connection

Hydronic, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic S3 Economy CL

Airtronic, Airtronic M, Airtronic L



22.1000.34.9771

- BED Control unit (Select or Timer)
- F1 Fuse, heater
- F2 Fuse, control unit
- F3 Fuse, vehicle fan
- HG Heater (Airtronic or Hydronic)

#### Cable colours

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

## Overview of the circuit diagrams

### 8.4 EasyStart Web / Special functions

#### EasyStart Web → 1 heater

Hydronic I, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic L II via switch-on signal S+ (upgrade box)	<a href="#">95</a>
Upgrading Hydronic auxiliary heater with JE diagnostics cable to the pre-heater	<a href="#">96</a>
Airtronic 2 (12V), Airtronic 3 (12V)	<a href="#">97</a>
Airtronic 2 (12V), Airtronic 3 (12V) with external temperature sensor	<a href="#">98</a>

#### Combined control units

##### EasyStart Web/Remote → 1 heater

Hydronic I, Hydronic II, Hydronic M II, Hydronic S3 Economy CL	<a href="#">99</a>
Airtronic, Airtronic 2 (12V), Airtronic 3 (12V)	<a href="#">100</a>

##### EasyStart Web/Select → 1 heater

Hydronic I, Hydronic II, Hydronic M II, Hydronic S3 Economy CL	<a href="#">101</a>
Airtronic, Airtronic 2 (12V), Airtronic 3 (12V)	<a href="#">102</a>

##### EasyStart Web/Timer → 1 heater

Hydronic I, Hydronic II, Hydronic M II, Hydronic S3 Economy CL	<a href="#">103</a>
Hydronic I, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic L II via switch-on signal S+	<a href="#">104</a>
Airtronic, Airtronic 2 (12V), Airtronic 3 (12V)	<a href="#">105</a>

#### Combined CAN control units

##### EasyStart Web or EasyStart Pro → 2 heaters

Airtronic 2 (12V) / Airtronic 3 (12V) / Hydronic S3 CS	<a href="#">106</a>
--	---------------------

##### EasyStart Web and EasyStart Pro → 2 heaters

Airtronic 2 (12V) / Airtronic 3 (12V) / Hydronic S3 CS	<a href="#">107</a>
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##### EasyStart Web and EasyStart Pro → 1 heater

Airtronic 2 (12V) / Airtronic 3 (12V) / Hydronic S3 CS	<a href="#">108</a>
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#### Special functions

##### EasyStart Web → Altitude sensor

EasyStart Web connection to altitude sensor	<a href="#">109</a>
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##### EasyStart Web → EasyScan

EasyStart Web connection to EasyScan	<a href="#">110</a>
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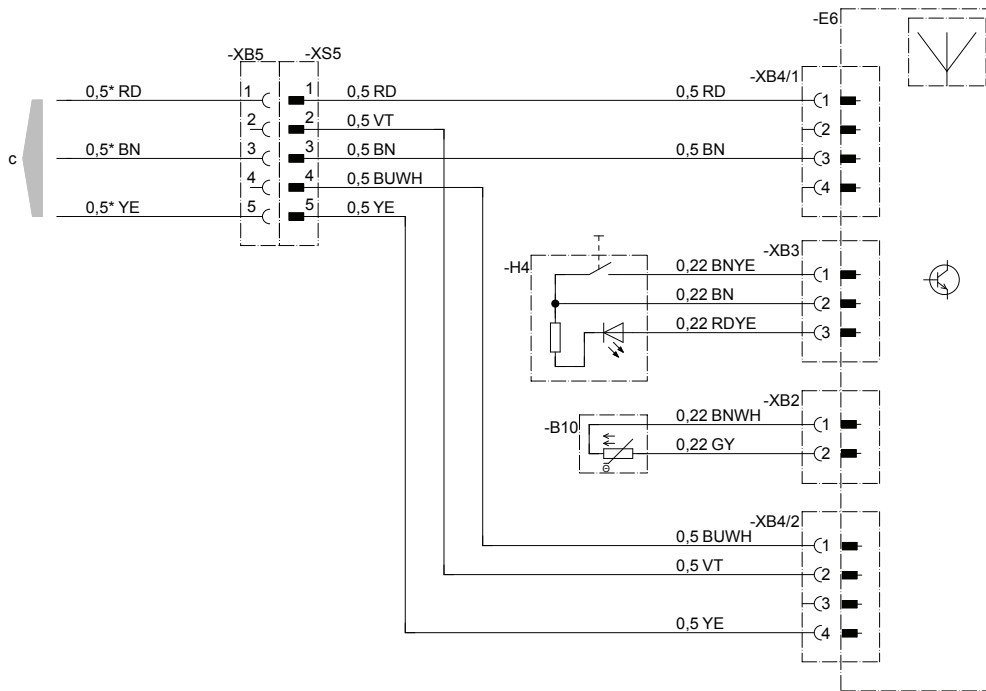
### EasyStart Web connection via switch-on signal S+

Hydronic I, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic L II, upgrade box

**i Note**

Set operating mode 3 – [see page 21](#).

X:15  Ign (+)  
 X:58  Light (+)



\* Hydronic L 1,0

22.1000.34.9783

- c to the heater
- H4 EasyStart Web button
- B10 Sensor, interior temperature
- E6 EasyStart Web

**Cable colours**

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

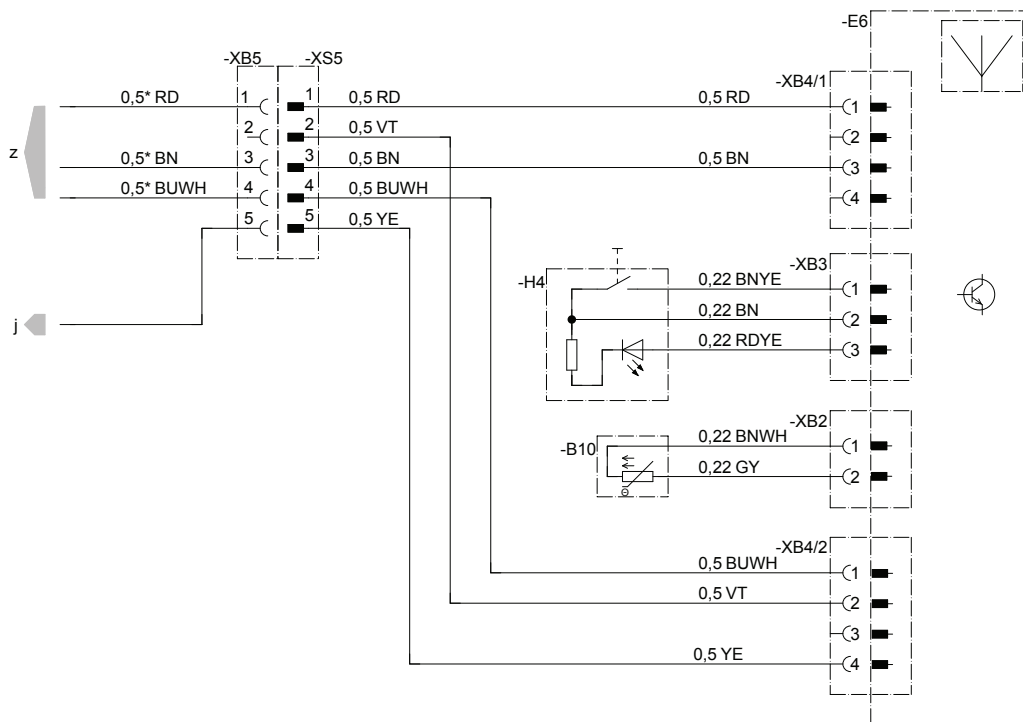
### EasyStart Web connection

Upgrading Hydronic auxiliary heater with JE diagnostics cable to the pre-heater

#### **i** Note

Set operating mode 2 – [see page 21](#).

X:15  Ign (+)  
 X:58  Light (+)



22.1000.34.9739



- z to the auxiliary heater
- j Connection of water pump and vehicle fan (max. 500 mA)
- H4 EasyStart Web button
- B10 Sensor, interior temperature
- E6 EasyStart Web

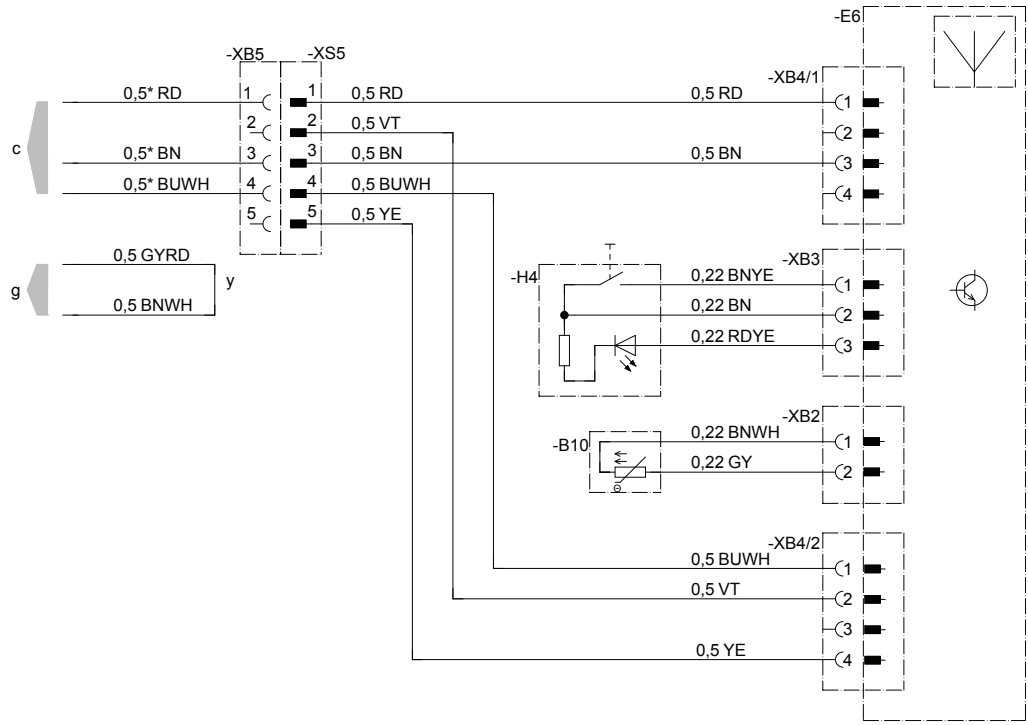
#### Cable colours

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

### EasyStart Web connection

Airtronic

X:15  Ign (+)  
 X:58  Light (+)



22.1000.34.9721

- c to the heater
- y Connect cables and insulate
- g to the heater
- H4 EasyStart Web button
- B10 Sensor, interior temperature
- E6 EasyStart Web

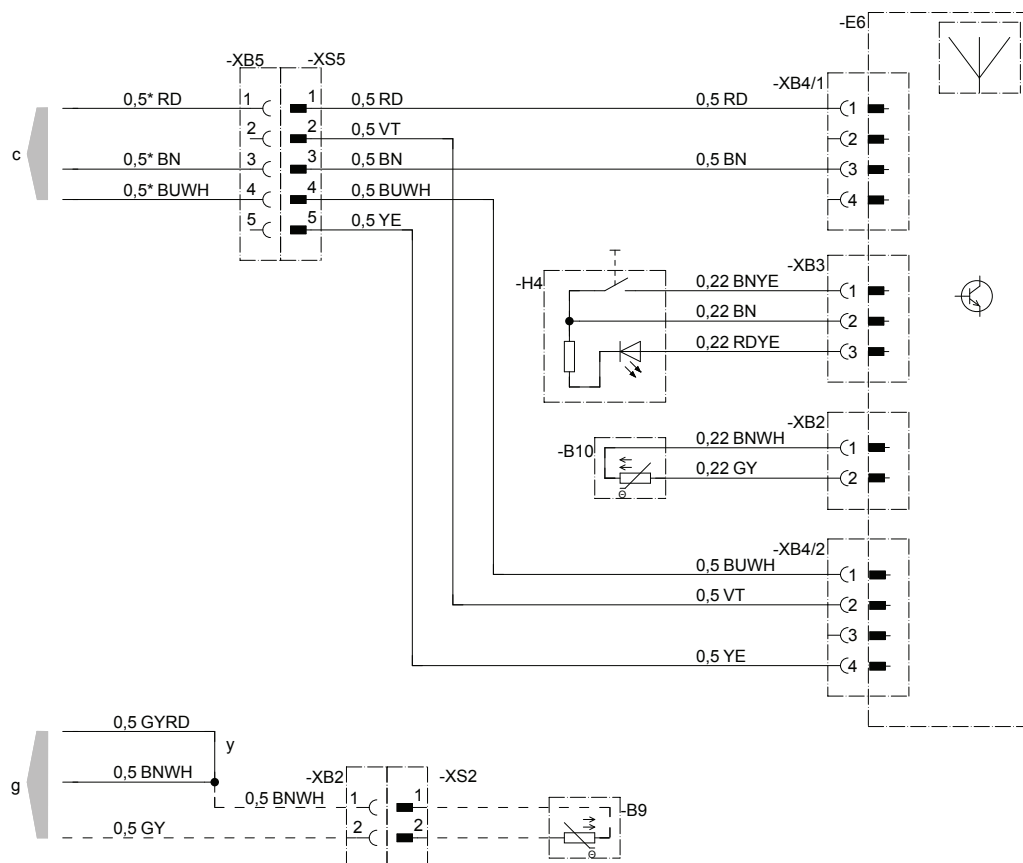
**Cable colours**

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

**EasyStart Web connection**

Airtronic with external temperature sensor

 X:15  Lgn (+)

 X:58  Light (+)


22.1000.34.9761

- c to the heater
- y Connect cables and insulate
- g to the heater
- H4 EasyStart Web button
- B10 Sensor, interior temperature
- B9 external interior control temperature sensor
- E6 EasyStart Web

**Cable colours**

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

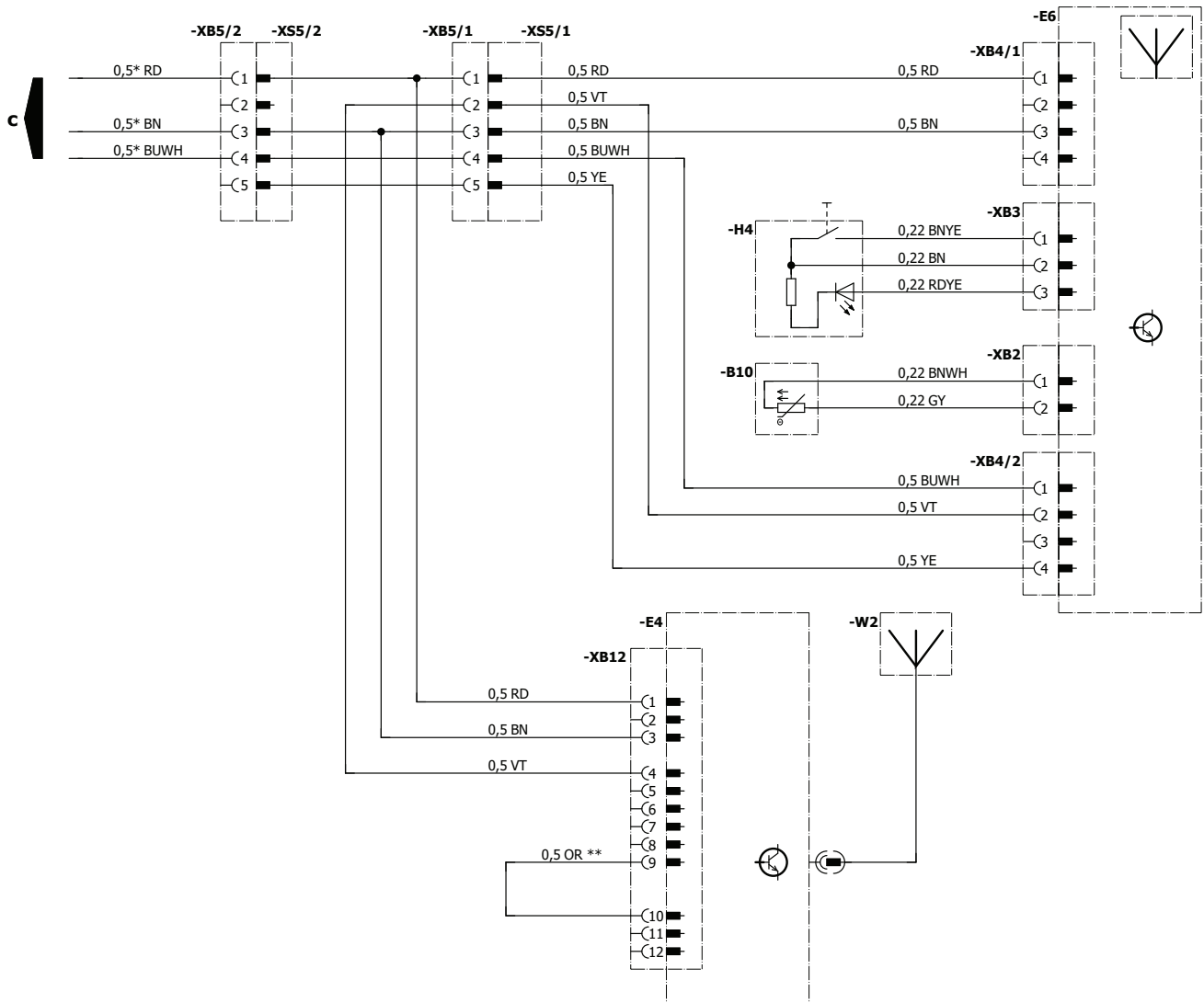
### Combination of EasyStart Web and EasyStart Remote

Hydronic I, Hydronic II, Hydronic M II, Hydronic S3 Economy CL

**i Note**

If using this combination it is necessary to update the EasyStart Web software (only up to Version 1.1.0) – [see page 22.](#)

X:15 Ign (+)  
X:58 Light (+)



\* Hydronic M II – 0.75

\*\* Set cable bridge of the EasyStart Remote Mat. No. 22.1000.34.8100

22.1000.34.9742

- c to the heater
- w2 Antenna
- H4 EasyStart Web button
- B10 Sensor, interior temperature
- E4 EasyStart Remote
- E6 EasyStart Web

**Cable colours**

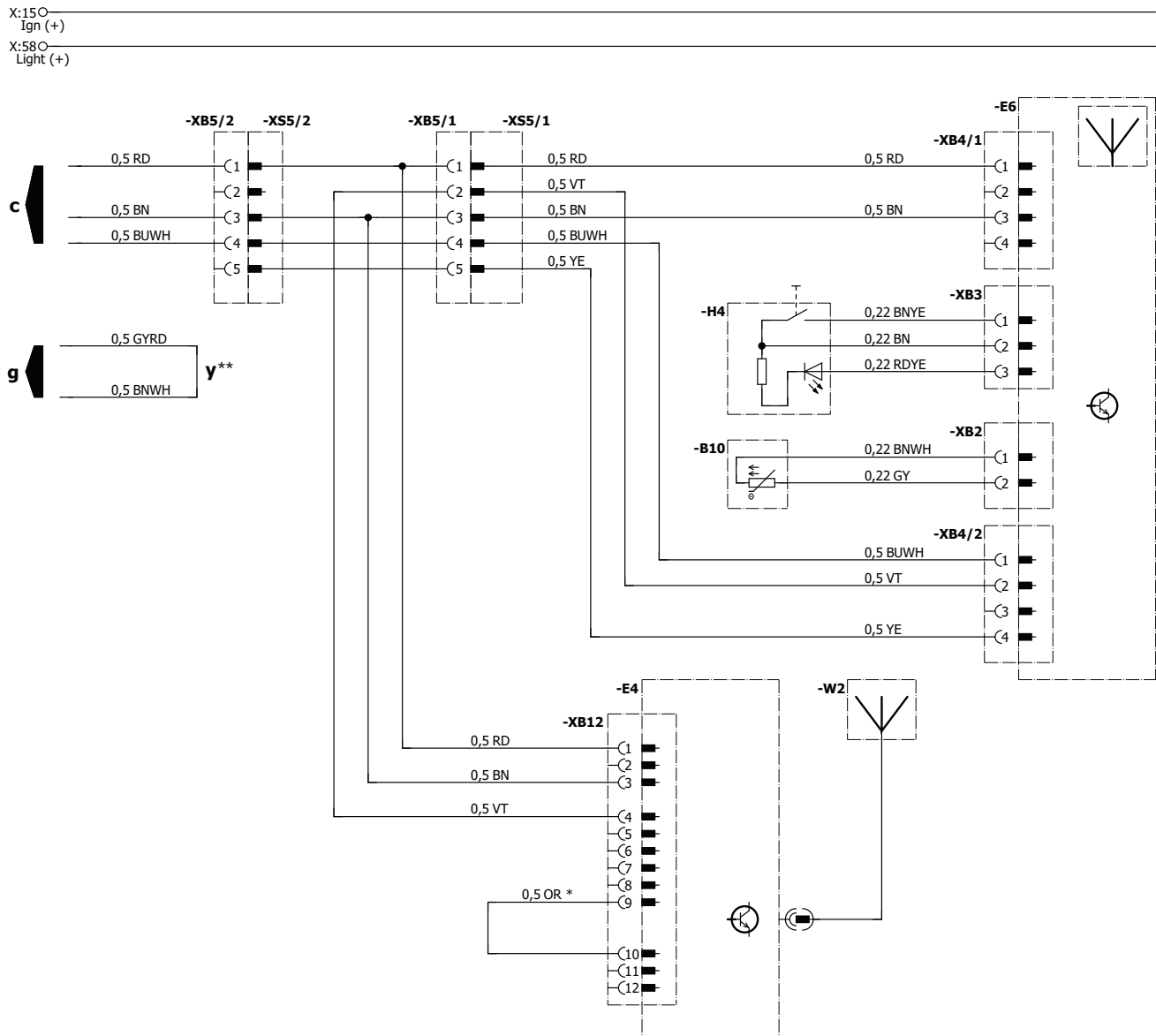
RD	red	GY	grey	BK	black
BU	blue	YE	yellow	GN	green
WH	white	VT	violet	BN	brown

### Combination of EasyStart Web and EasyStart Remote

Airtronic, Airtronic 2, Airtronic 3

#### **i** Note

If using this combination it is necessary to update the EasyStart Web software (only up to Version 1.1.0) – [see page 22.](#)



\* Set cable bridge of the EasyStart Remote Mat. No. 22.1000.34.8100

22.1000.34.9753

\*\* Not applicable to Airtronic 2, Airtronic 3

- c to the heater
- y Connect cables and insulate
- g to the heater
- w2 Antenna
- H4 EasyStart Web button
- B10 Sensor, interior temperature
- E4 EasyStart Remote
- E6 EasyStart Web

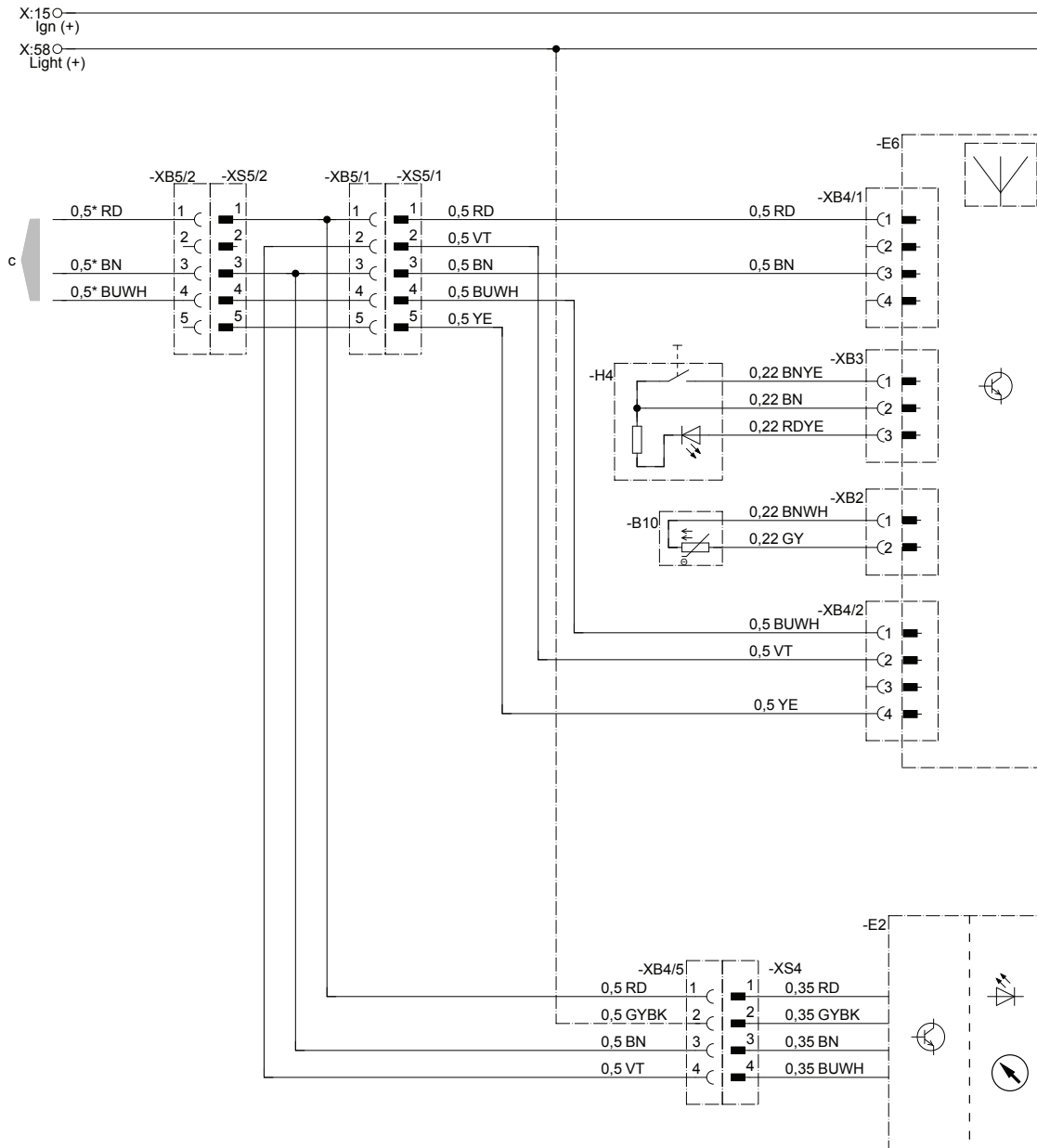
#### Cable colours

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



### Combination of EasyStart Web and EasyStart Select

Hydronic I, Hydronic II, Hydronic M II, Hydronic S3 Economy CL



\* Hydronic MII 0,75

22.1000.34.9747

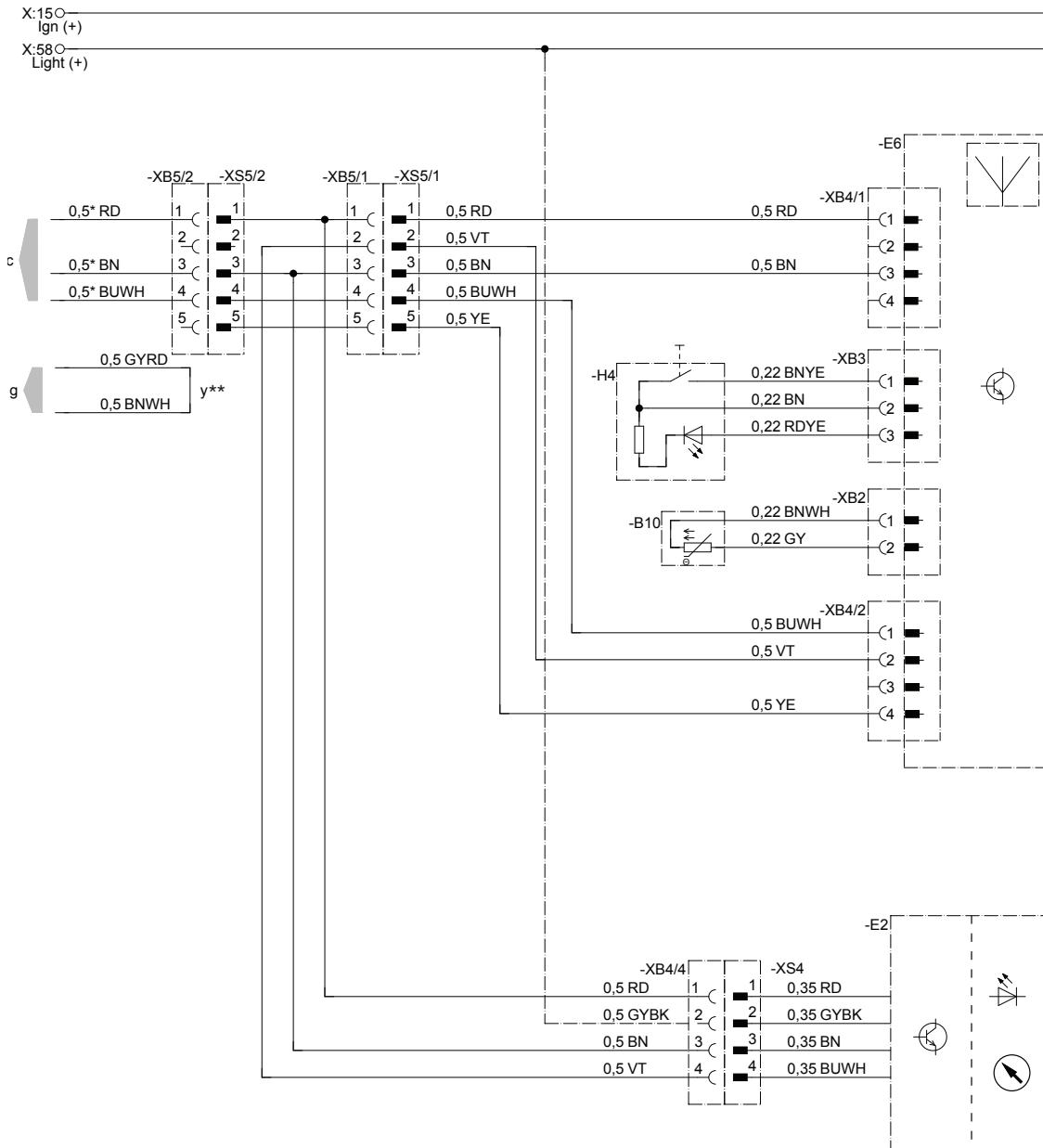
- c to the heater
- H4 EasyStart Web button
- B10 Sensor, interior temperature
- E2 EasyStart Select
- E6 EasyStart Web

#### Cable colours

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

**Combination of EasyStart Web and EasyStart Select**

Airtronic, Airtronic 2, Airtronic 3



\*\* Not applicable to Airtronic 2, Airtronic 3

22.1000.34.9755

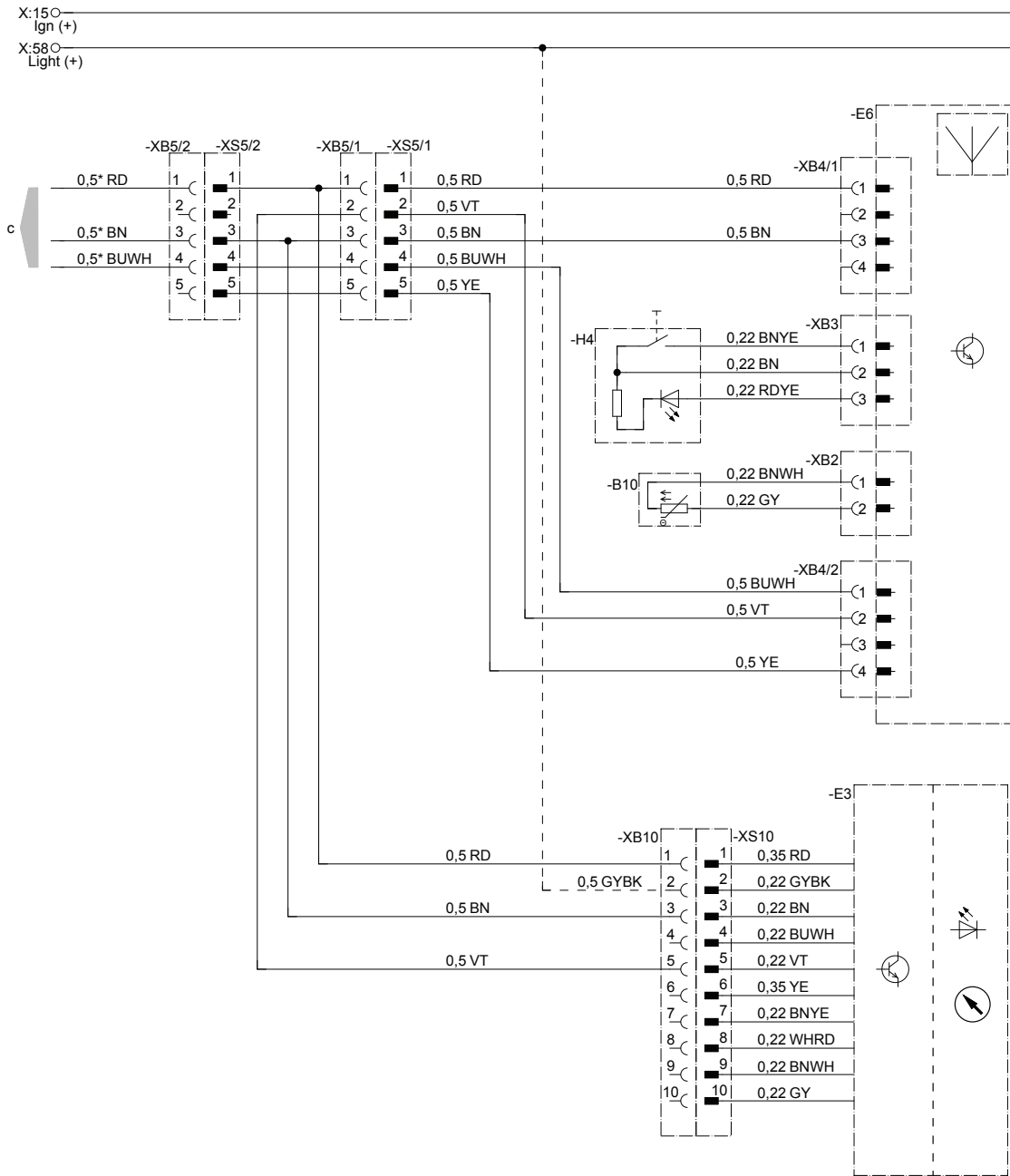
- c to the heater
- y Connect cables and insulate
- g to the heater
- H4 EasyStart Web button
- B10 Sensor, interior temperature
- E4 EasyStart Remote
- E6 EasyStart Web

**Cable colours**

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

### Combination of EasyStart Web and EasyStart Timer

Hydronic I, Hydronic II, Hydronic M II, Hydronic S3 Economy CL



\* Hydronic MII 0,75

22.1000.34.9771

- c to the heater
- H4 EasyStart Web button
- B10 Sensor, interior temperature
- E3 EasyStart Timer
- E6 EasyStart Web

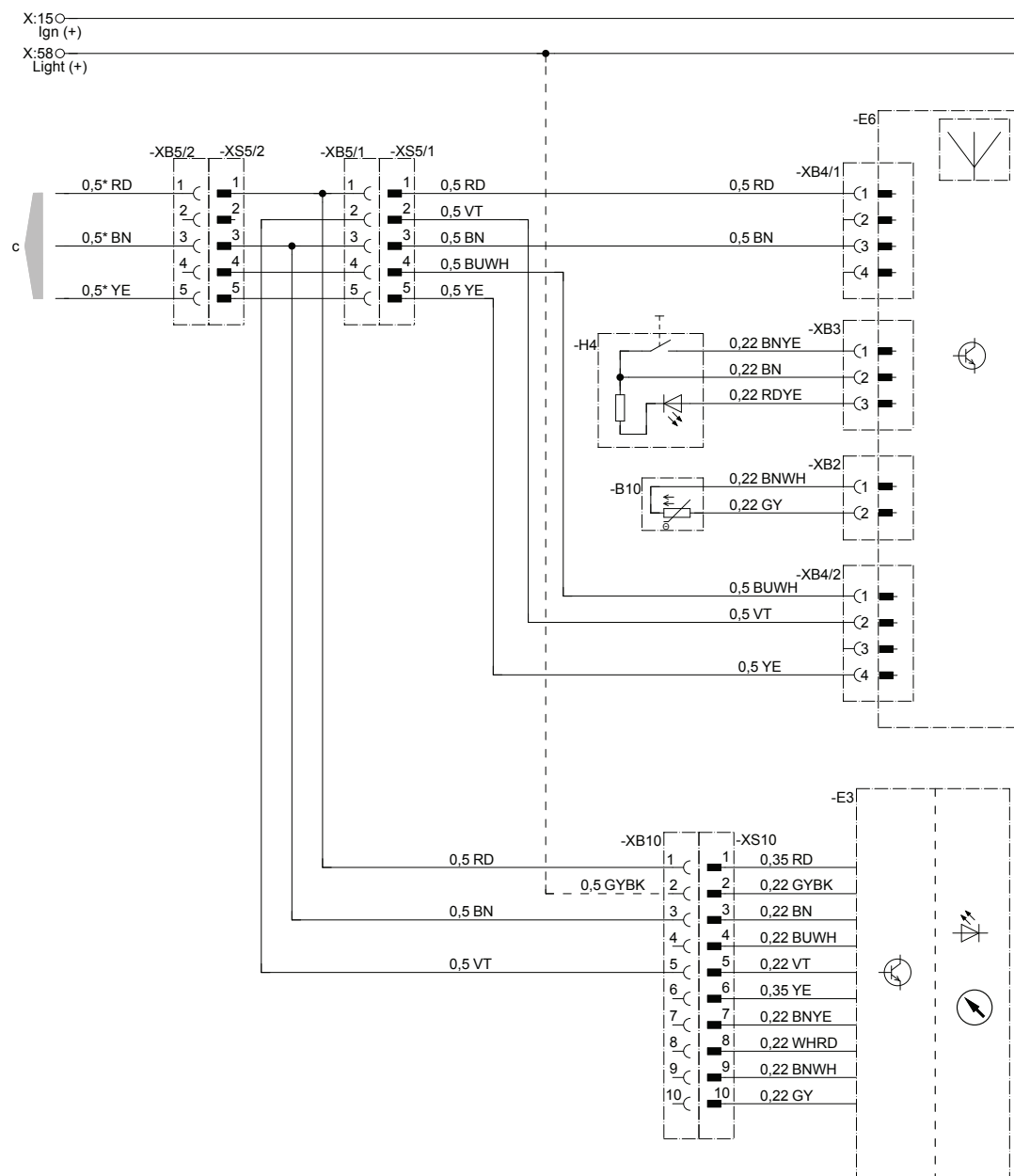
#### Cable colours

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

**Combination of EasyStart Web and EasyStart Timer via switch-on signal S+**

Hydronic I, Hydronic II, Hydronic II Comfort, Hydronic M II, Hydronic L II

**Note**

 Set operating mode 3 – [see page 21](#).


\* Hydronic L 1,0

22.1000 34 97 70

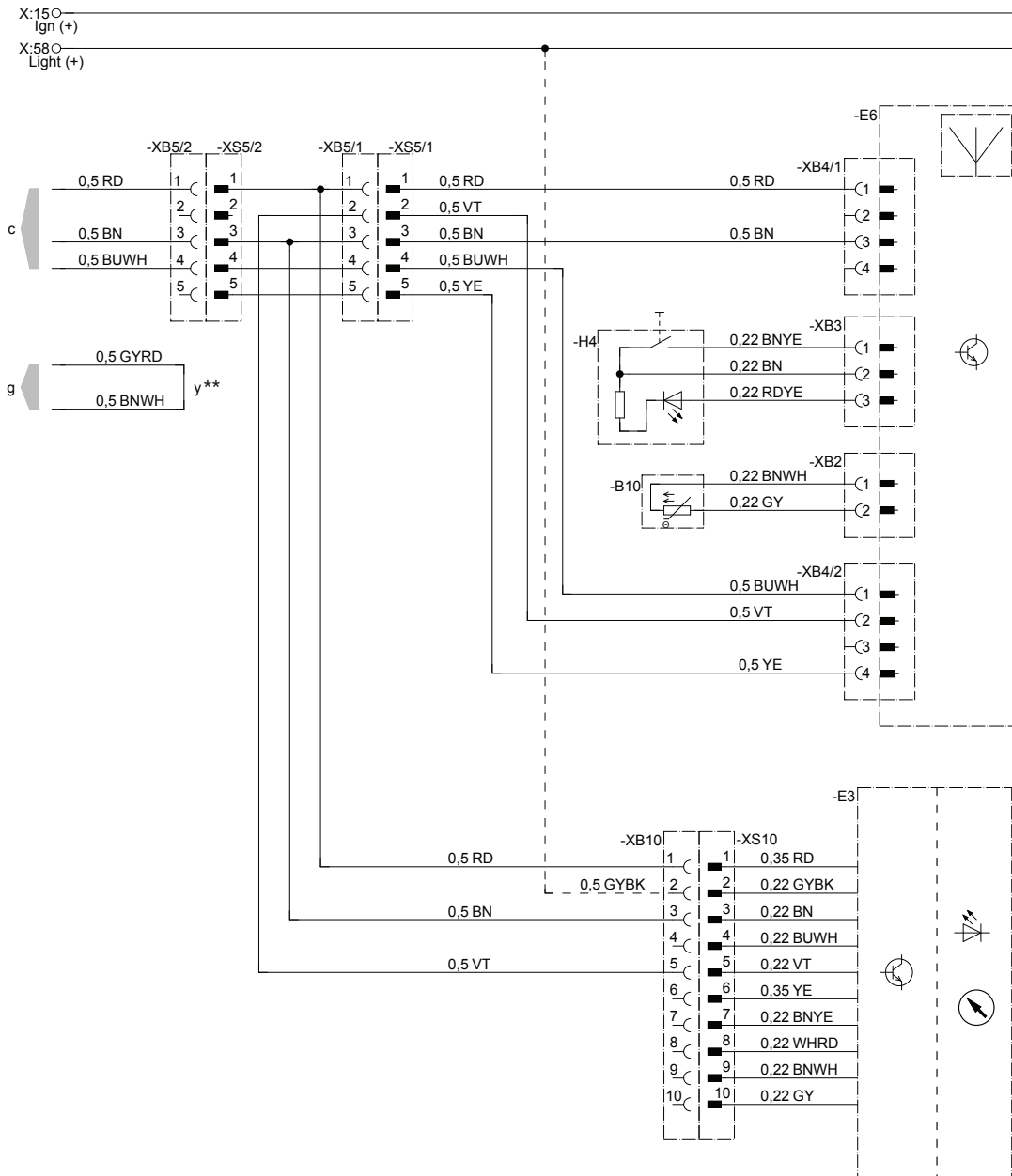
- c to the heater
- H4 EasyStart Web button
- B10 Sensor, interior temperature
- E3 EasyStart Timer
- E6 EasyStart Web

**Cable colours**

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

### Combination of EasyStart Web and EasyStart Timer

Airtronic, Airtronic 2, Airtronic 3



\*\* Not applicable to Airtronic 2, Airtronic 3

22.1000.34.9772

- c to the heater
- g to the heater
- y Connect cables and insulate
- H4 EasyStart Web button
- B10 Sensor, interior temperature
- E3 EasyStart Timer
- E6 EasyStart Web

#### Cable colours

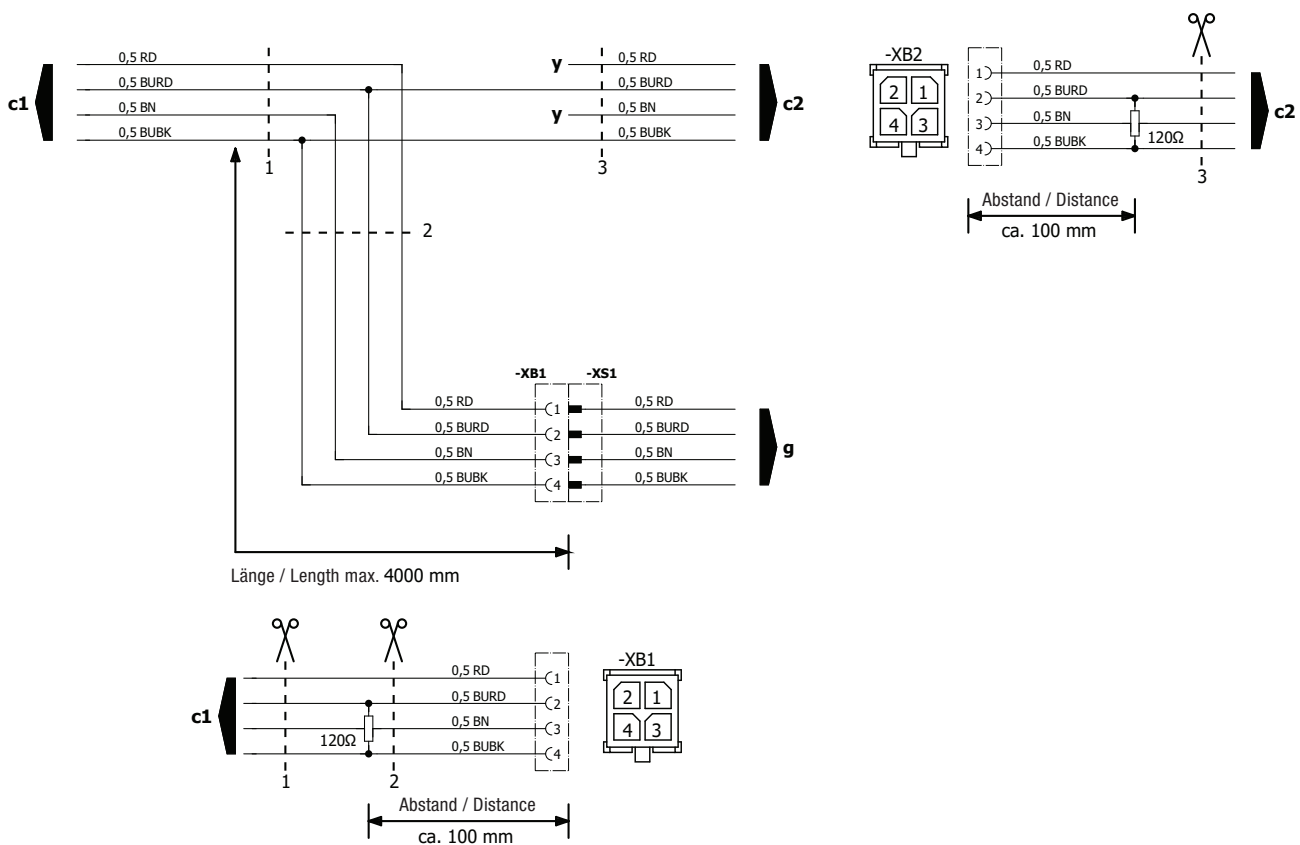
RD	red	GY	grey	BK	black
BU	blue	YE	yellow	GN	green
WH	white	VT	violet	BN	brown

**Combination of two CAN heaters with one CAN control unit (EasyStart Web / EasyStart Pro)**

Airtronic 2, Airtronic 3, Hydronic S3 CS

**Note**

- The terminating resistors of the heater cable harness are located approx. 100 mm in front of the CAN control unit connector and must be removed.
- Connect the CAN-Hi (0.5 BURD) and CAN-Lo (0.5 BUBK) cables to each other between the heaters.
- CAN cables must be twisted.
- To simplify assembly when using this combination, it is possible to use the modular cable harness system as an alternative, please see Product information catalogue (Chapter "Electrical Parts").

 X:15  
Ign (+)  
X:58  
Light (+)


22.1000.35.9703

c1 to heater 1  
 c2 to heater 2  
 g to the CAN control unit (ES Web or ES Pro)  
 y Tie back and insulate cables

**Cable colours**

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

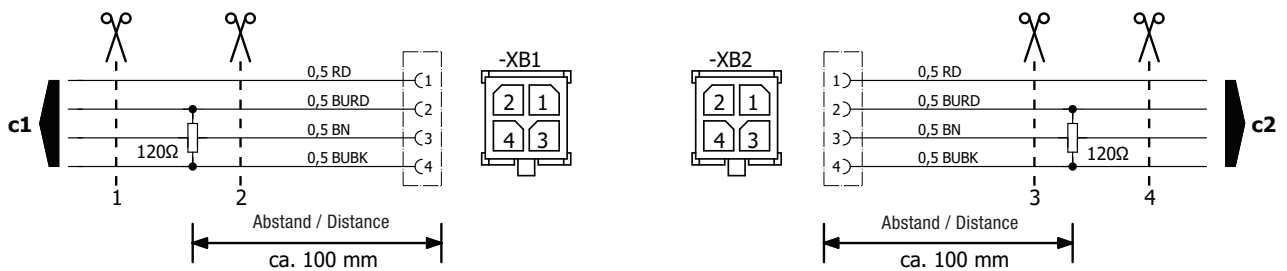
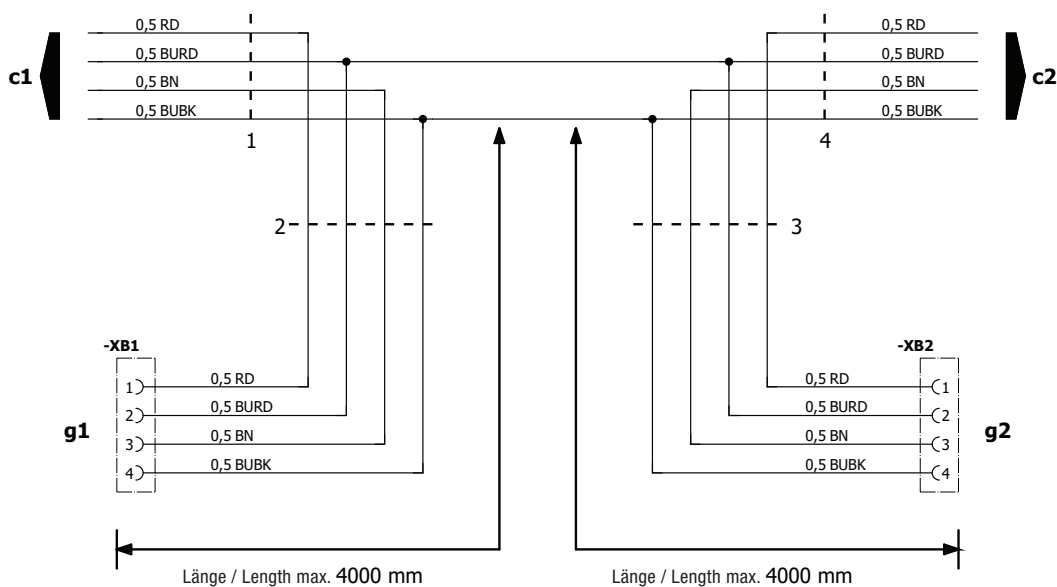
### Combination of two CAN heaters with two CAN control units (EasyStart Web / EasyStart Pro)

Airtronic 2, Airtronic 3, Hydronic S3 CS

**i Note**

- The terminating resistors of the heater cable harness are located approx. 100 mm in front of the CAN control unit connector and must be removed.
- Connect the CAN-Hi (0.5 BURD) and CAN-Lo (0.5 BUBK) cables to each other between the heaters.
- CAN cables must be twisted.
- Alternatively the g2 control unit can also be connected to connector XB1 using a Y-cable (Mat. No. 22.1000.35.2700).
- To simplify assembly when using this combination, it is possible to use the modular cable harness system as an alternative, please see Product information catalogue (Chapter "Electrical Parts").

X:15 Ign (+)  
X:58 Light (+)



22.1000.35.9704

- c1 to heater 1
- c2 to heater 2
- g1 to the CAN control unit 1 (ES Web or ES Pro)
- g2 to the CAN control unit 2 (ES Web or ES Pro)

**Cable colours**

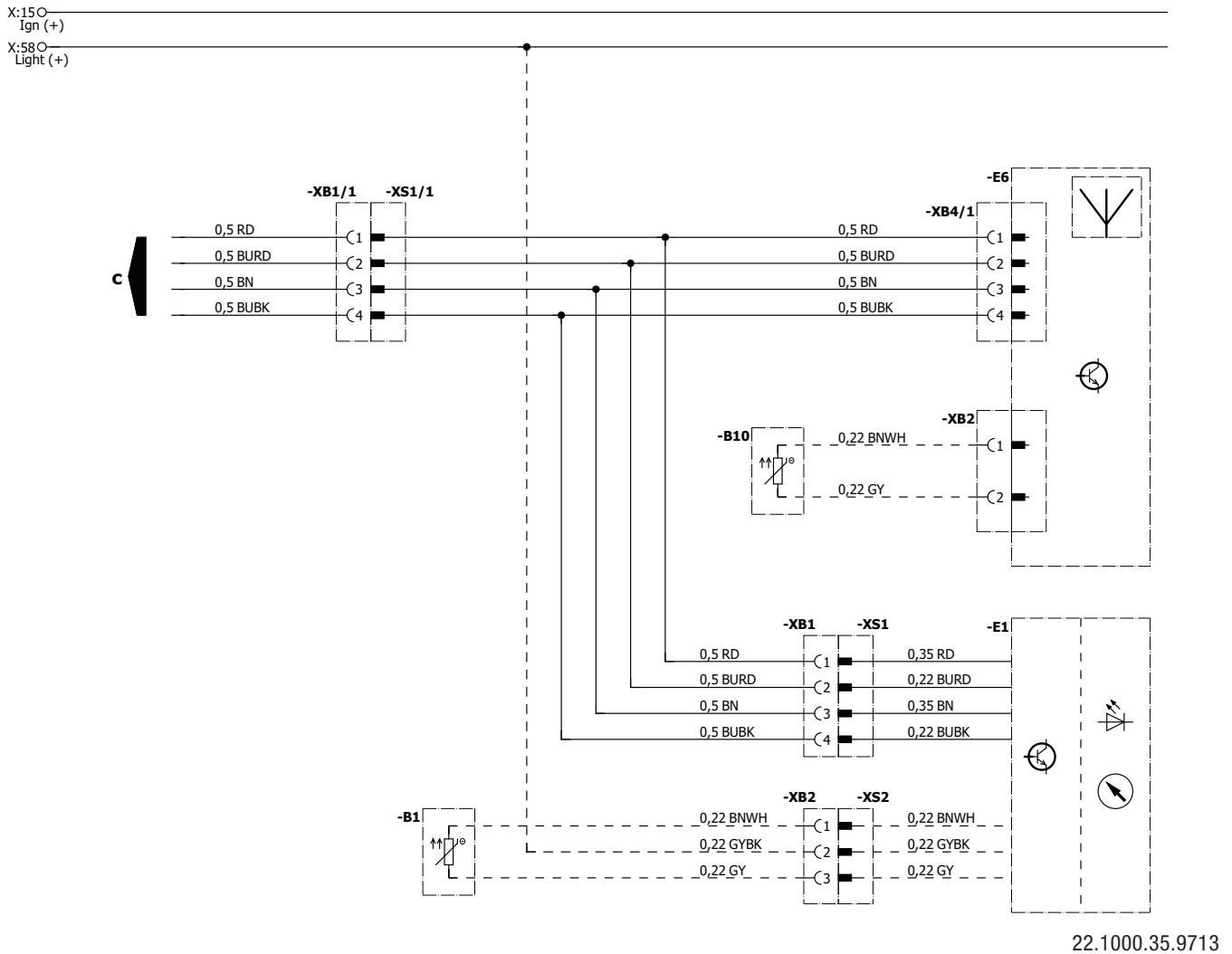
RD	red	GY	grey	BK	black
BU	blue	YE	yellow	GN	green
WH	white	VT	violet	BN	brown

### Combination of EasyStart Web and EasyStart Pro

Airtronic 2, Airtronic 3, Hydronic S3 CS

#### **i** Note

- Alternatively the g2 control unit can also be connected to connector XB1 using a Y-cable (Mat. No. 22.1000.35.2700).



c to the heater

- B1 EasyStart Pro temperature sensor (optional)
- B10 EasyStart Web temperature sensor (optional)
- E1 EasyStart Pro
- E6 EasyStart Web 7.1

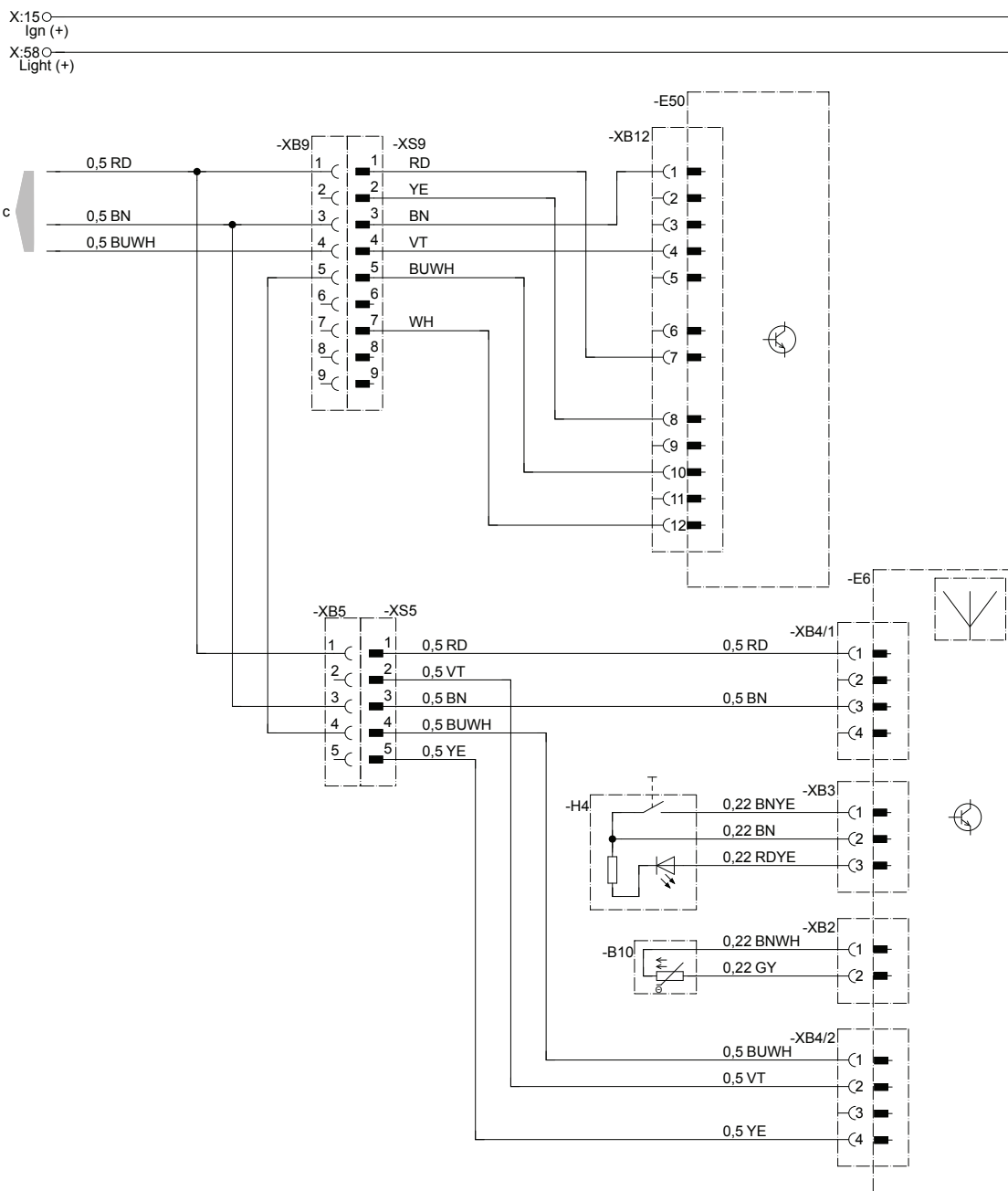
#### Cable colours

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



### EasyStart Web connection

Altitude sensor diagram



22.1000.34.9792

- c1 to the heater
- E50 Air pressure sensor
- H4 EasyStart Web button
- B10 Sensor, interior temperature
- E6 EasyStart Web

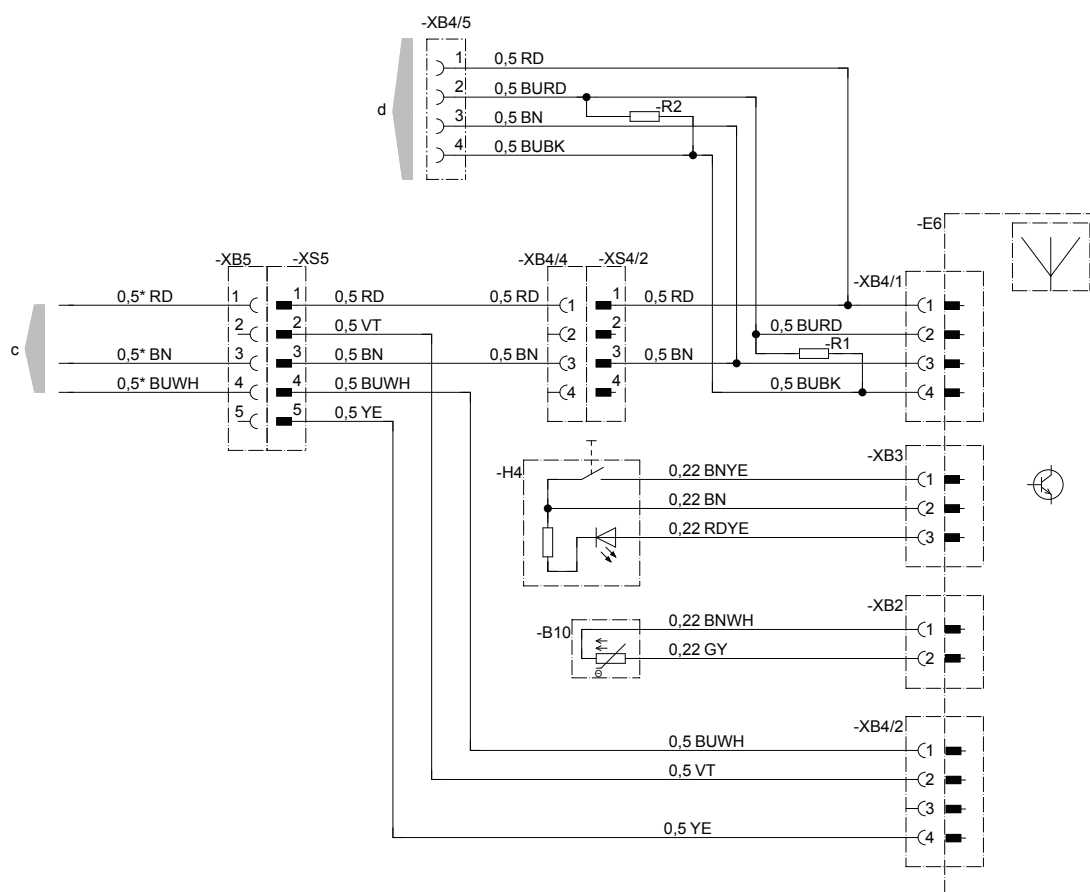
#### Cable colours

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

**EasyStart Web connection**

## EasyScan

 X:15  Ign (+)

 X:58  Light (+)


\* Hydronic MII 0,75

22.1000.34.9793

- c to the heater
- d EasyScan adapter cable
- H4 EasyStart Web button
- B10 Sensor, interior temperature
- E6 EasyStart Web

**Cable colours**

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

## Overview of the circuit diagrams

### 8.5 EasyStart Pro / Special functions

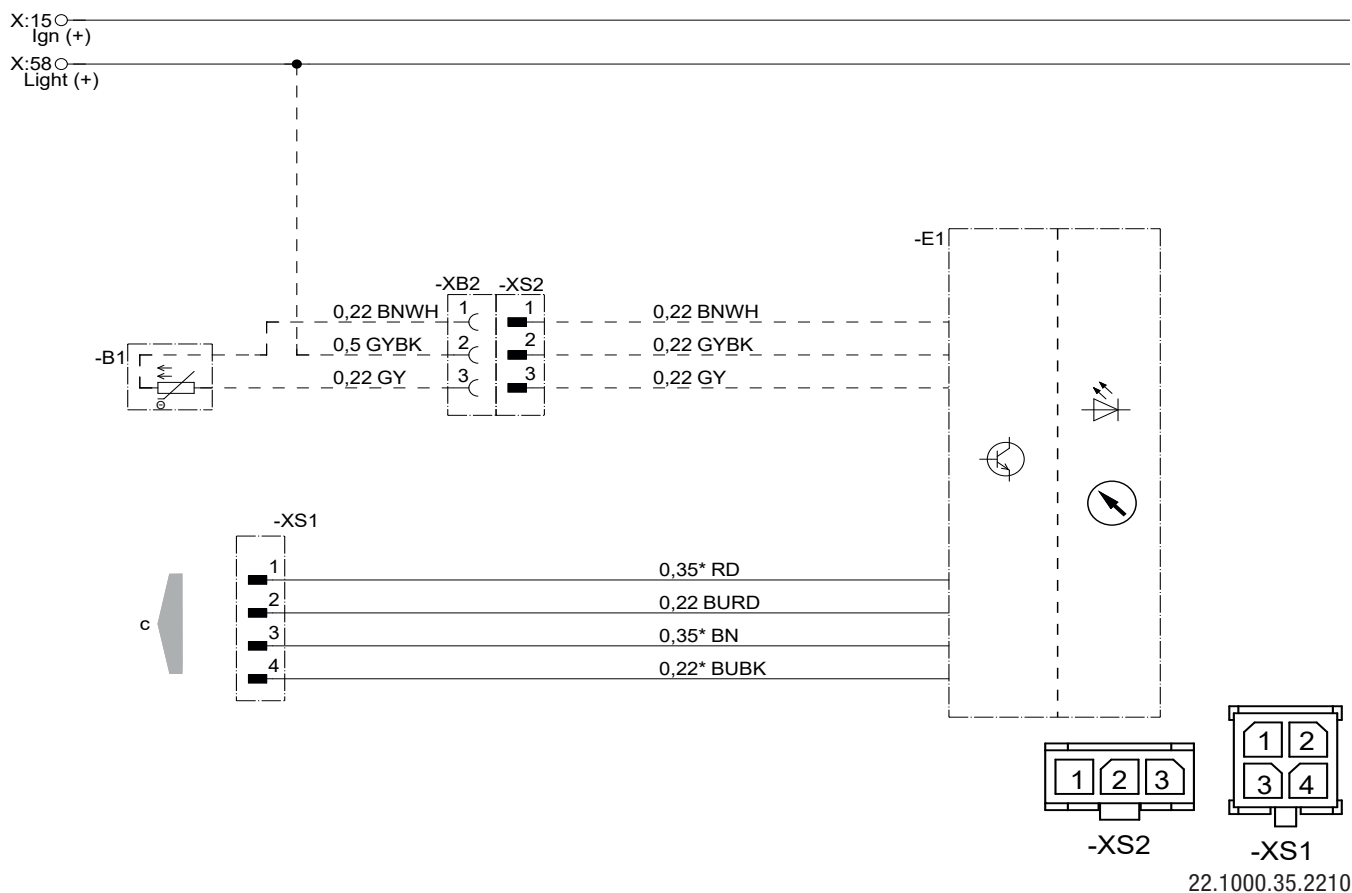
#### EasyStart Pro → 1 heater

Hydronic S3 CS (12V/24V), Airtronic 2 (12V), Airtronic 3 (12V)

[112](#)

**EasyStart Pro connection**

Hydronic S3 CS (12V/24V), Airtronic 2 (12V), Airtronic 3 (12V)



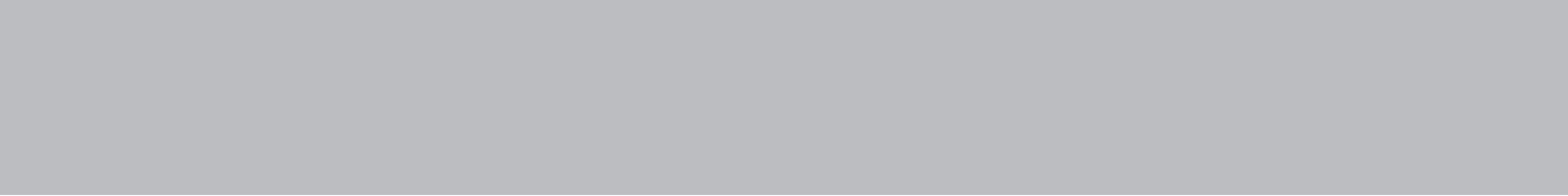
c to the heater  
 -E1 EasyStart Pro timer  
 -B1 Temperature sensor (optional)

**Cable colours**

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







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