CONTROLLERS
CONTROLLER
SERIES 90C

The ESBE series 90C is a complete weather-compensating control unit. Simply mount it on an ESBE 3-way valve for excellent regulating performance, or mount it on a VRB140 for even more advanced functionality. Available in different versions to suit the demands of a wide variety of system layouts.

OPERATION

The series 90C comes in two different versions, all equipped with full graphic displays for easy handling and 1,5 m power supply cables for instant setup.

The tables below show the many different systems for which the 90C is suitable as a control unit. At the same time as the 90C controls a mixing valve, it can also handle up to 6 different sources of data input and has 3 possibilities of output control, which makes the 90C versatile and able to control a number of heat circuits and system components with high accuracy. The 90C is preset to control a normal household heating system, but the options for further fine tuning of the system are many and the settings easy to alter. This of course means taking the high level of comfort even higher.

FUNCTIONS
● = included, ○ = option

Functions	90C-1	90C-3
Daily / Weekly program	●	●
Heating curve limitation, max./min.	●	●
Valve exercising	●	●
Pump control, on/off	●	●
Pump control, secondary circuit		●
Boiler control		●
Auxiliary heat source - valve position control	●	●
Auxiliary heat source - temperature sensor control		●
Solar control		●
Load pump control		●
Manual operation override	●	●
Frost protection	●	●
CRS231 Economy mode, 10°C indoor temperature	○	○
Constant flow temperature control	●	●
Constant flow temperature sequence control, 14 days	●	●
Domestic hot water control		●
Temperature difference control		●
Set-up wizard	●	●
Operation statistics	●	●

HARDWARE
● = included, ○ = option

Hardware	90C-1	90C-3
Power supply cable (230V), 1,5 m	●	●
Pump / Heat source power supply cable (230V), 1,5 m	●	●
Sensor box	1	2
max. no. of input sources	3	6
max. no. of output sources	1	3
Flow pipe sensor, 1,5 m cable	●	●
Universal sensor, 1,0 m cable (pcs)		3
Outdoor sensor (without cable)	●	●
Room sensor (without cable)	○	○
Sensor cable, 20m	○	○

SUITABLE MIXING VALVES

The series 90C is supplied with adaptor kits for easy mounting on all ESBE rotary mixing valves.

● Series VRG100   ● Series MG*
● Series VRG200   ● Series G
● Series VRG300   ● Series 3F
● Series VRH100   ● Series BIV
● Series VRB100   ● Series TM
                   ● Series 3H, 3HG and 4HG
                   * Not 5MG

ADAPTOR KITS

Adaptor kits for easily fitting onto an ESBE rotary mixing valve is supplied with each controller.

If required, separate adaptor kits can be ordered as follows.
Art. No.
16053700 _____ESBE valve series VRG, VRB, VRH

Adaptor kits for other mixing valves and valves built-into boilers are available as follows:
Art. No.
16053600 _____ BRV, Meibes, Oventrop, Watts
16053900 _ Honeywell Centra ZR, DR, DRG, DRU DN15–50)
16051700 _____Honeywell Centra Kompakt DRK/ZRK
16052600 _____ Schneider Electric TRV / TAC-TRV
16052500 _____ Siemens VBG31, VBI31, VBF21, VCI31
16051400 _____ TA–VTR, TA–STM
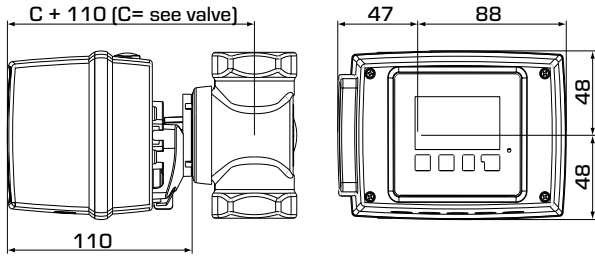16051500 _____ Viessmann (DN20–25)

OPTIONAL EQUIPMENT
Art. No.
17050700 _____ Room sensor CRS231
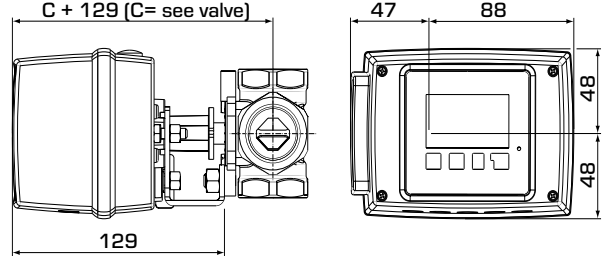17050800 _____ Flow pipe sensor CRS211
17050900 _____Universal sensor CRS213
17051100 _____ High temperature sensor CRS215

ESBE
NO.1 IN HYDRONIC SYSTEM CONTROL

CONTROLLER
SERIES 90C

Installation dimensions for Controller Series 90C with ESBE VRG100, VRG200, VRG300, VRH100 and VRB100 mixing valves

Installation dimensions for Controller Series 90C with ESBE series MG, G, F, T/TM, H/HG and BIV mixing valves

SERIES 90C-1

Art. No.	Reference	No. of input sources	No. of output sources	Sensor cable enclosed	Room sensor enclosed	Universal sensor	Remark	Replaces
12601500	90C-1A-90			●				12601100
12601600	90C-1B-90	3	1				Operating range 90°	12601200
12601700	90C-1C-90			●	●			12601300

SERIES 90C-3

Art. No.	Reference	No. of input sources	No. of output sources	Sensor cable enclosed	Room sensor enclosed	Universal sensor	Remark	Replaces
12603600	90C-3B-90	6	3			3	Operating range 90°	12602200, 12603200
12603700	90C-3C-90			●	●			12602300, 12603300

TECHNICAL DATA

Basic unit: _____ Actuator controller with plastic housing, _____ prewired for supply and sensors
Dimensions (HxWxT): _____ approx. 95x135x85 mm
Display: _____ fully graphical display 128x64 dots
Light emitting diode: _____ polychrome / multicolour
Operation: _____ input keys

Power supply: _____ 230 ±10% VAC, 50/60 Hz
Power consumption: _____ ca 5,0 VA
Total switching capacity of the relay output 1-3: _____ 2(0,8)A 250 VAC (circulation pump 185W)
Enclosure rating: _____ IP 54 as per DIN 40050 CE
Protection class: _____ II

Ambient temperature: _____ 0° to 40°C max.
Ambient atmospheric humidity: _____ max. 85% RH at 25°C

Actuator: _____ Running time 120 s/90°
Torque: _____ 15 Nm

Sensors: _____ Temperature sensor type PT1000
Sensor cable: _____ 4x0,38mm², max. length 30m
Temperature range:
  Flow pipe sensor CRS211, 1,5m _____ 0 to +105°C
  Outdoor sensor CRS214 _____ –50 to +70°C
  Universal sensor CRS213 ⌀5mm, 1,5m _____ 0 to +105°C
  Room sensor CRS231 _____ +10 to +30°C
  High temperature sensor CRS215 _____ –50 to +550°C

90C-1A; 90C-1B; 90C-3B versions
ErP Temperature controls class: _____ III
Energy efficiency contribution: _____ 1,5 %

90C-1C; 90C-3C versions
ErP Temperature controls class: _____ VII
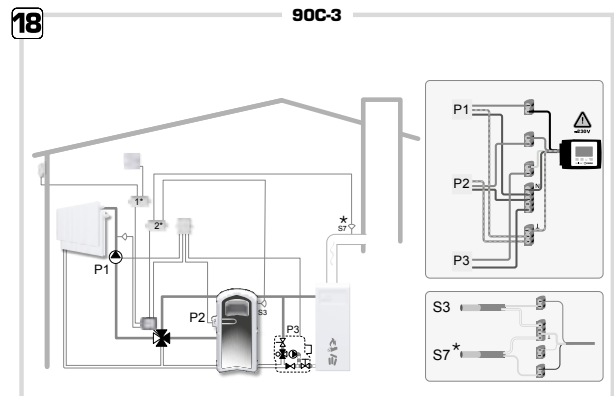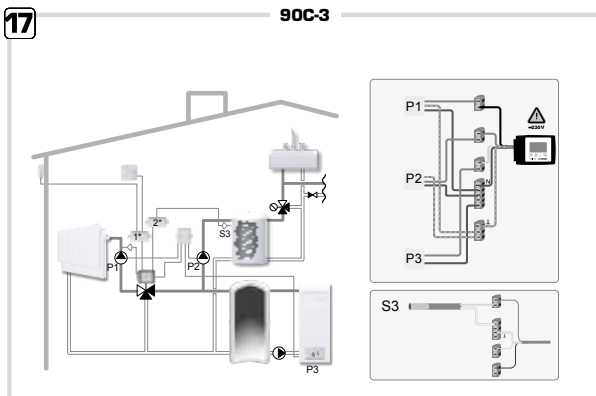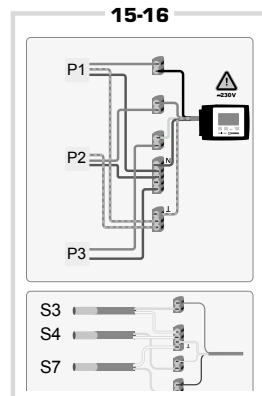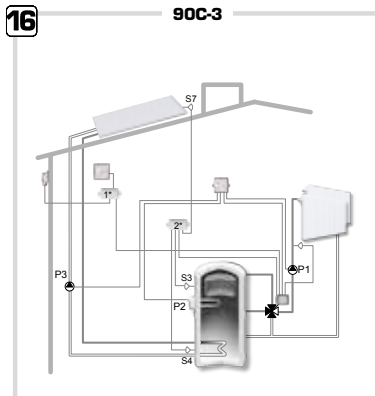Energy efficiency contribution: _____ 3,5 %

Weight: _____ 0,9 kg

CE LVD 2014/35/EU
EMC 2014/30/EU
RoHS 2011/65/EU

ESBE

NO.1 IN HYDRONIC SYSTEM CONTROL

CONTROLLER
SERIES 90C

INSTALLATION EXAMPLES

1 90C-1 (90C-2 - 90C-3)

2 90C-1 (90C-2 - 90C-3)

3 90C-2 (90C-3)

4 90C-2 (90C-3)

5 90C-2 (90C-3)

6 90C-2 (90C-3)

7 90C-2 (90C-3)

8 90C-2 (90C-3)

9 90C-2 (90C-3)

10 90C-2 (90C-3)

11 90C-2 (90C-3)

6 -11

12 90C-3

13 90C-3

14 90C-3

13 - 14

15 90C-3

16 90C-3

15-16

17 90C-3

18 90C-3
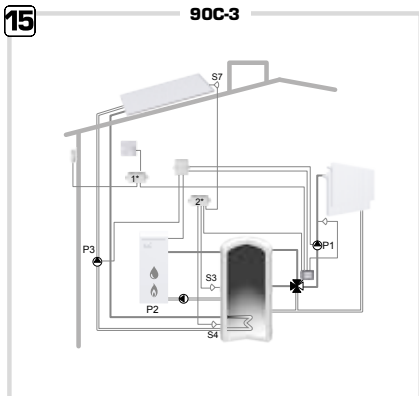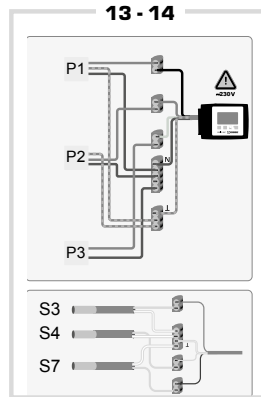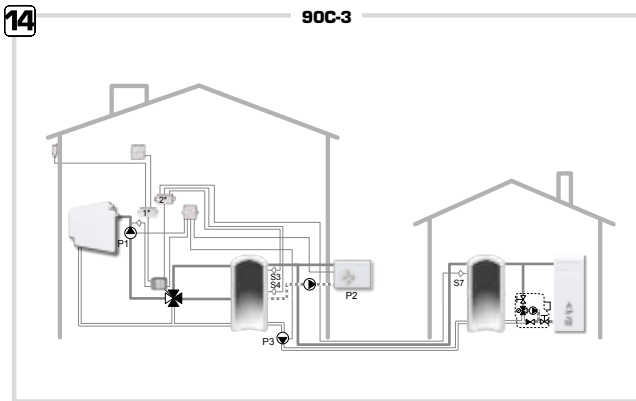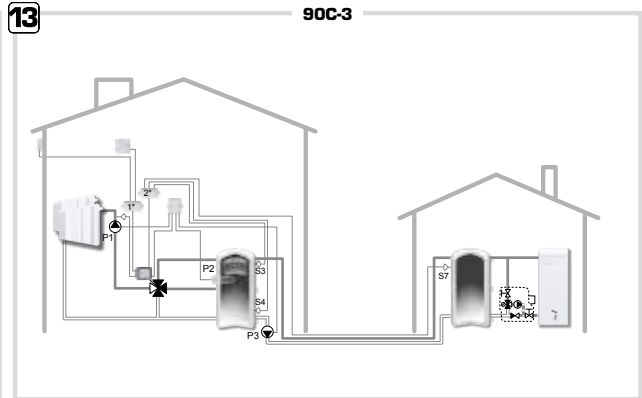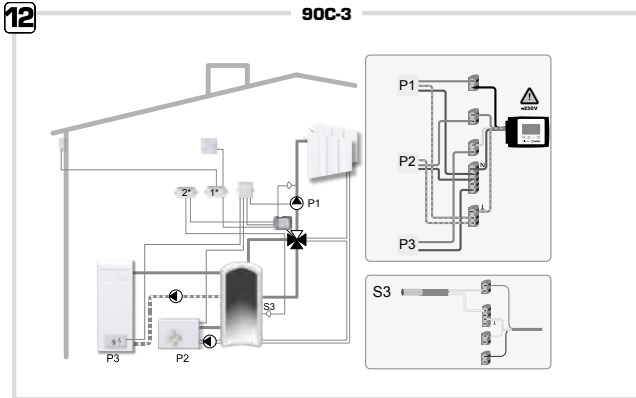
* Addition of High temperature sensor CRS215 necessary.

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