

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 three 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 7 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	Version		
	90C-1	90C-2	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		●	●
PID control	●	●	●
Manual operation override	●	●	●
Working angle 90°/180°/270° (preset 90°)	●	●	●
Working angle offset/limitation	●	●	●
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	Version		
	90C-1	90C-2	90C-3
Power supply cable (230V), 1.5 m	●	●	●
Pump / Heat source power supply cable (230V), 1.5 m	●	●	●
Sensor box	1	2	2
max. no. of input sources	5	6	7
max. no. of output sources	1	3	3
Flow pipe sensor, 1.5 m cable	●	●	●
Universal sensor, 1.0 m cable (pcs)		2	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 VRG200
- Series VRG300
- Series VRB100
- Series MG
- Series G
- Series 3F
- Series BIV
- Series TM
- Series 3H, 3HG and 4HG

LINKAGE KITS

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

If required, separate adaptor kits can be ordered as follows.
Art. No.

1605 37 00 _____ ESBE valve series VRG, VRB
1605 32 00 _____ ESBE valve series MG, G, F, BIV, TM, H, HG

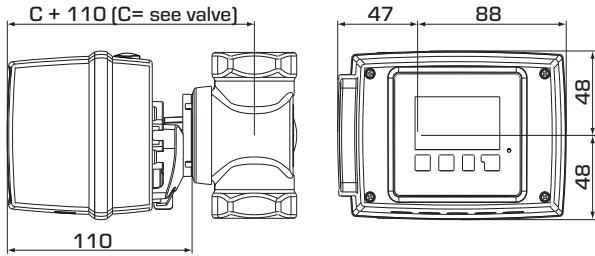
Adaptor kits for other mixing valves and valves built-into boilers are available as follows:

Art. No.
1605 35 00 _____ BRV
1605 16 00 _____ Centra ZR, DR, DRG, DRU(≤DN50)
1605 17 00 _____ Centra Kompakt DRK/ZRK
1605 36 00 _____ BRV, Meibes, Oventrop, Watts
1605 13 00 _____ Sauter MH32...H42...
1605 25 00 _____ Siemens VBG31, VBI31, VBF21, VCI31
1605 14 00 _____ TA-VTR, TA-STM
1605 15 00 _____ Viessmann (all nominal diameters)
1605 18 00 _____ WITA

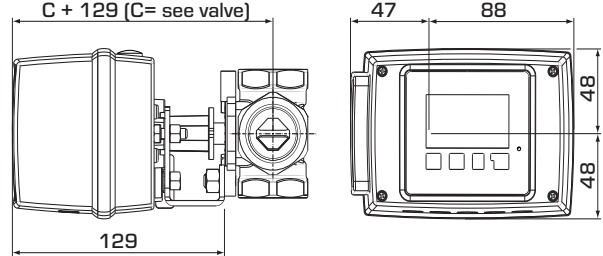
OPTIONAL EQUIPMENT

Room sensor CRS231 _____ Art. No. 1705 07 00
Flow pipe sensor CRS211 _____ Art. No. 1705 08 00
Universal sensor CRS213 _____ Art. No. 1705 09 00
High temperature sensor CRS215 _____ Art. No. 1705 11 00

CONTROLLER SERIES 90C



Installation dimensions for Controller Series 90C with ESBE VRG100, VRG200, VRG300 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	Note
1260 11 00	90C-1A	5	1	•			1)
1260 12 00	90C-1B						1)
1260 13 00	90C-1C			•	•		1)

SERIES 90C-2

Art. No.	Reference	No. of input sources	No. of output sources	Sensor cable enclosed	Room sensor enclosed	Universal sensor	Note
1260 21 00	90C-2A	6	3	•		2	
1260 22 00	90C-2B						
1260 23 00	90C-2C			•	•		

SERIES 90C-3

Art. No.	Reference	No. of input sources	No. of output sources	Sensor cable enclosed	Room sensor enclosed	Universal sensor	Note
1260 31 00	90C-3A	7	3	•		3	
1260 32 00	90C-3B						
1260 33 00	90C-3C			•	•		

Note 1) Replaces 1260 01 00 (95C)

TECHNICAL DATA

Basic unit: _____ Actuator controller with plastic housing,
 _____ prewired for supply and sensors
 Dimensions (HxVxT): _____ 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 ø5mm, 1.5m _____ 0 to +105°C
 Room sensor CRS231 _____ +10 to +30°C
 High temperature sensor CRS215 _____ -50 to +550°C

Weight: _____ 0.9 kg

CE LVD 2006/95/EC
 EMC 2004/108/EC
 RoHS 2002/95/EC

CONTROLLER SERIES 90C

NUMEROUS APPLICATION POSSIBILITIES.

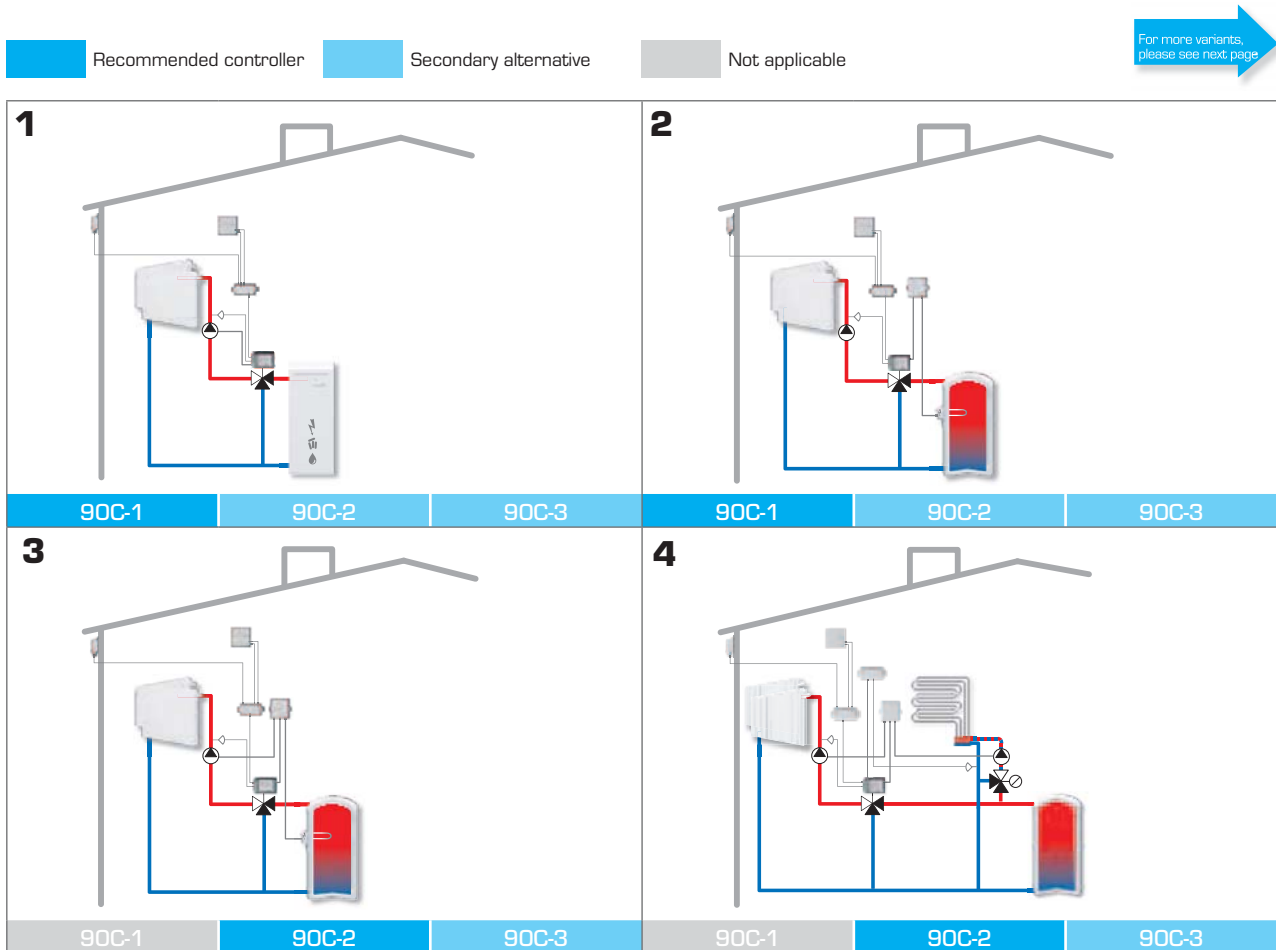
MAKE UP YOUR MIND ABOUT WHICH VERSION TO CHOOSE FOR THE ACTUAL APPLICATION.

At the same time as the 90C controls a mixing valve, it can also handle up to 7 different sources of data input and has 3 possibilities of output control. This makes the 90C versatile and able to control a number of heat circuits and system components with high accuracy.

The version 90C-1 is very well suited for basic applications, but there are lots of additional application possibilities. For this reason the ESBE Controller series 90C is available in three different versions to suit the demands of a wide variety of systems.

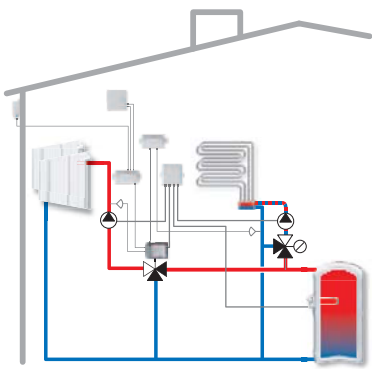
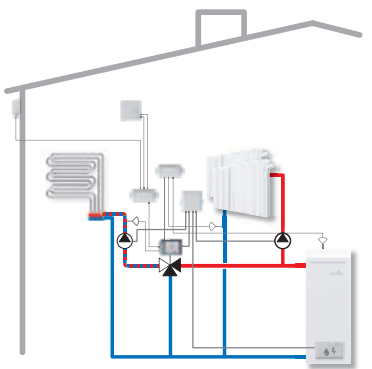
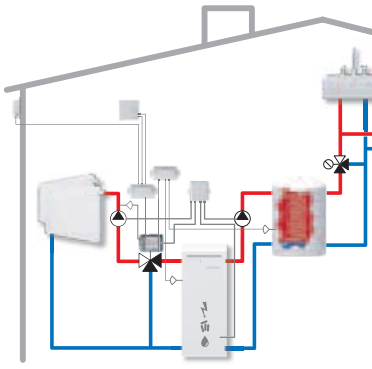
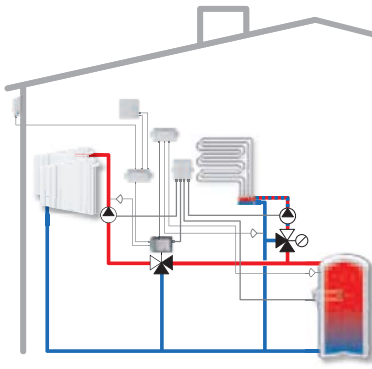
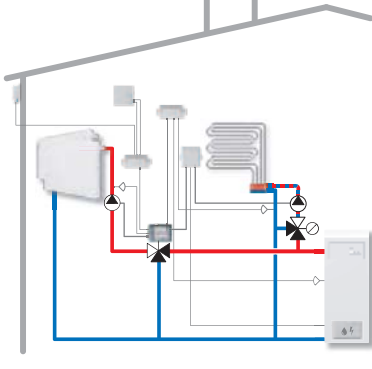
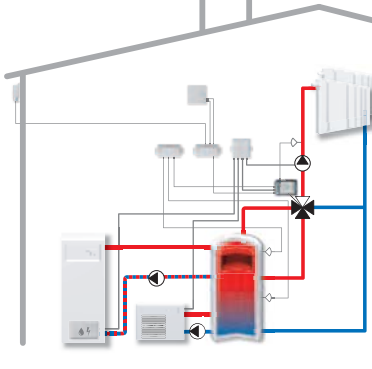
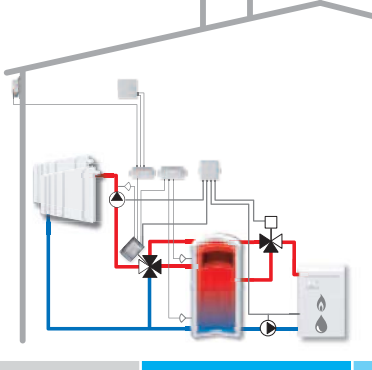
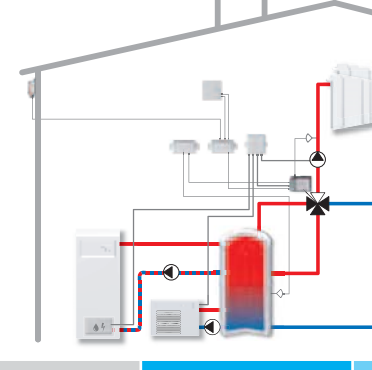
CONTINUOUS IMPROVEMENTS

The technical evolution always moves on, and so the 90C evolves with it. Additional features and improvements have been added during the development of the series 90C. For instance the 90C-2 can now handle many more applications than we have expressed in our application examples earlier. The added possibilities goes also for the 90C-3 which now will be able to handle applications such as culvert controlling, secondary tank energy transfer and solar loading.



For more variants, please see next page

CONTROLLER SERIES 90C

	Recommended controller	Secondary alternative	Not applicable
5			
	90C-1	90C-2	90C-3
6			
	90C-1	90C-2	90C-3
7			
	90C-1	90C-2	90C-3
8			
	90C-1	90C-2	90C-3
9			
	90C-1	90C-2	90C-3
10			
	90C-1	90C-2	90C-3
11			
	90C-1	90C-2	90C-3
12			
	90C-1	90C-2	90C-3

CONTROLLER SERIES 90C

Recommended controller
Secondary alternative
Not applicable

13		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #A9A9A9;">90C-1</td> <td style="background-color: #A9A9A9;">90C-2</td> <td style="background-color: #0070C0; color: white;">90C-3</td> </tr> </table>	90C-1	90C-2	90C-3
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14		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #A9A9A9;">90C-1</td> <td style="background-color: #A9A9A9;">90C-2</td> <td style="background-color: #0070C0; color: white;">90C-3</td> </tr> </table>	90C-1	90C-2	90C-3
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90C-1	90C-2	90C-3			
18	<p style="text-align: right; font-size: small; margin-top: 5px;">Addition of High temperature sensor CRS215 necessary.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #A9A9A9;">90C-1</td> <td style="background-color: #A9A9A9;">90C-2</td> <td style="background-color: #0070C0; color: white;">90C-3</td> </tr> </table>	90C-1	90C-2	90C-3
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