

LOAD VALVE SERIES VTC300

The thermic valve series ESBE VTC300 is used to protect boilers up to 30 kW from too low return temperatures. ESBE series VTC300 also efficiently loads accumulation tanks.

OPERATION

The ESBE series VTC300 is a thermic 3-way valve designed to protect the boiler from return temperatures that are too low. Maintaining a high and stable return temperature means a higher level of boiler efficiency, reduced tarring and increased life span of the boiler. The VTC300 valve is used in heating applications up to 30 kW where solid fuel boilers are used to feed storage tanks. The valve is installed either in the return pipe to the boiler (45°C, 55°C, 60°C, 70°C or 80°C) or in the accumulation tank feeding pipe (70°C or 80°C). The first option is recommended as it offers a simpler pipe layout for expansion (see installation examples).

FUNCTION

The valve regulates on two ports, which makes it easy to install and does not require any adjustment valve in the bypass pipe.

The function of the valve is independent of its assembly position.

The valve contains a thermostat which begins to open connection A at an outgoing mixed water temperature in connection AB of 45°C, 55°C, 60°C, 70°C or 80°C. Connection B is fully closed when the temperature in connection A exceeds the nominal opening temperature with 10°C.

MEDIA

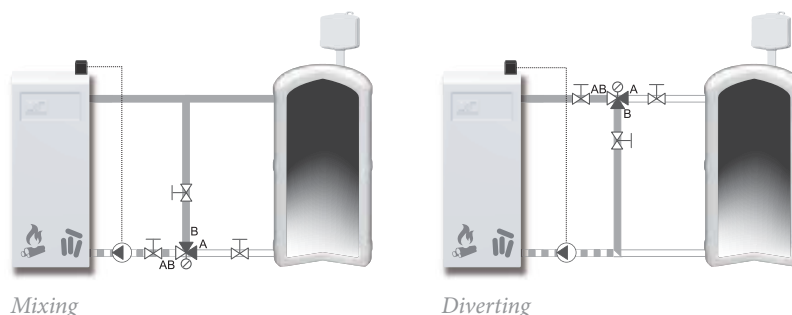
Maximum 50% glycol for freezing protection and oxygen absorbing compounds are allowed as additives. As both the viscosity and the thermal conduction are affected when glycol is added to the system water, this fact has to be considered when dimensioning the valve. When 30 - 50 % glycol is added, the maximum output effect of the valve is decreased by 30 - 40 %. A lower concentration of glycol may be disregarded.

SERVICE AND MAINTENANCE

We recommend equipping the valve connections with shut-down devices to facilitate future service.

The load valve does not need any maintenance under normal conditions. However thermostats are available and are easy to replace if necessary.

INSTALLATION EXAMPLES



LOAD VALVE VTC300 DESIGNED FOR

- | | |
|--|--|
| ☒ Heating | ☐ Ventilation |
| ☐ Comfort Cooling | ☐ Zone |
| ☐ Potable water | ☐ District Hot Water |
| ☐ Floor heating | ☐ District Heating |
| ☒ Solar heating | ☐ District Cooling |

OPTIONS

Thermostat 45°C	Art. No. 5700 01 00
Thermostat 55°C	Art. No. 5700 02 00
Thermostat 60°C	Art. No. 5700 03 00
Thermostat 70°C	Art. No. 5700 04 00
Thermostat 80°C	Art. No. 5700 05 00

TECHNICAL DATA

Pressure class: _____ PN 10
 Temperature of medium: _____ max 100°C
 _____ min 0°C
 Max. differential pressure: _____ Mixing, 100 kPa [1.0 bar]
 Max. differential pressure: _____ Diverting, 30 kPa [0.3 bar]
 Leakrate A - AB: _____ Tight sealing
 Leakrate B - AB: _____ max 3% of Kvs
 Rangeability Kv/Kv^{min}: _____ 100
 Connections: _____ Internal thread, EN 10226-1
 _____ External thread, ISO 228/1

Material

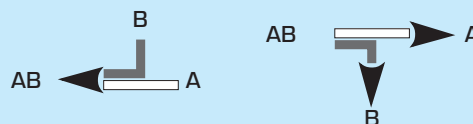
Valve housing and other metal parts with fluid contact:
 _____ Brass DZR, CW 602N, resistant to dezincification

PED 97/23/EC, article 3.3

Pressure Equipment in conformity with PED 97/23/EC, article 3.3 (sound engineering practice).

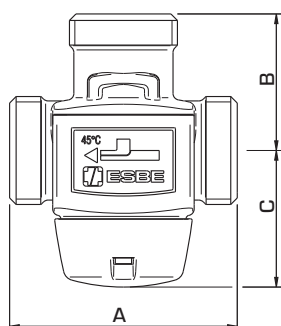
According to the directive the equipment shall not carry any CE-mark.

FLOW PATTERN

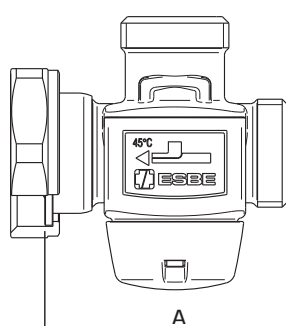
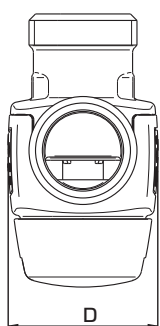


LOAD VALVE

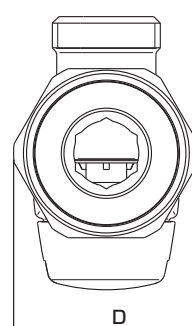
SERIES VTC300



VTC311, VTC312



VTC317, VTC318



SERIES VTC311, INTERNAL THREAD

Art. No.	Reference	DN	Kvs*	Connection	Temperature		A	B	C	D	Weight [kg]
					Opening	Mixed (AB)					
5100 01 00	VTC311	20	3.2	Rp 3/4"	45°C	47°C ± 2°C	70	42	42	46	0.53
5100 02 00					55°C	57°C ± 2°C					
5100 03 00					60°C	62°C ± 2°C					
5100 04 00					70°C	72°C ± 2°C					
5100 05 00					80°C	82°C ± 2°C					

SERIES VTC312, EXTERNAL THREAD

Art. No.	Reference	DN	Kvs*	Connection	Temperature		A	B	C	D	Weight [kg]
					Opening	Mixed (AB)					
5100 08 00	VTC312	15	2.8	G 3/4"	45°C	47°C ± 2°C	70	42	42	46	0.48
5100 09 00					55°C	57°C ± 2°C					
5100 10 00					60°C	62°C ± 2°C					
5100 11 00					70°C	72°C ± 2°C					
5100 12 00					80°C	82°C ± 2°C					
5100 15 00	VTC312	20	3.2	G 1"	45°C	47°C ± 2°C	70	42	42	46	0.51
5100 16 00					55°C	57°C ± 2°C					
5100 17 00					60°C	62°C ± 2°C					
5100 18 00					70°C	72°C ± 2°C					
5100 19 00					80°C	82°C ± 2°C					

SERIES VTC317, PUMP FLANGE AND EXTERNAL THREAD

Art. No.	Reference	DN	Kvs*	Connection	Temperature		A	B	C	D	Weight [kg]
					Opening	Mixed (AB)					
5100 22 00	VTC317	20	3.2	PF 1 1/2", G 1"	45°C	47°C ± 2°C	75	42	42	57	0.57
5100 23 00					55°C	57°C ± 2°C					
5100 24 00					60°C	62°C ± 2°C					
5100 25 00					70°C	72°C ± 2°C					
5100 26 00					80°C	82°C ± 2°C					

SERIES VTC318, ROTATING NUT AND EXTERNAL THREAD

Art. No.	Reference	DN	Kvs*	Connection	Temperature		A	B	C	D	Weight [kg]
					Opening	Mixed (AB)					
5100 29 00	VTC318	20	3.2	RN 1", G 1"	45°C	47°C ± 2°C	70	42	42	46	0.49
5100 30 00					55°C	57°C ± 2°C					
5100 31 00					60°C	62°C ± 2°C					
5100 32 00					70°C	72°C ± 2°C					
5100 33 00					80°C	82°C ± 2°C					

* Kvs-value in m³/h at a pressure drop of 1 bar. PF = Pump Flange RN = Rotating Nut