



Catalogue Rotary Motorized Valves



Motorized valves for secure regulation of indoor climate












Each heating, hot water and air-conditioning facility requires its own components and system. There can be no compromise in order to achieve safe, reliable function, and optimum energy efficiency under varying operating conditions. We have the solutions your applications require – and because of this, ESBE is experiencing major successes all over the world. Our broad product range covers the requirement for effective, worry-free control of water-borne systems in properties both large and small.

Our broad range of mixing valves for regulation of heating/cooling systems is available in a number of different designs. We also offer a range of actuators for simple and compact assembly onto the valves. These can be supplied as complete control units, thus guaranteeing safe and problem-free operation year after year.

So, you have everything to gain by choosing ESBE motorized valves.



<p>Select the suitable mixing valve</p> <p>4-6</p>	 <p>ESBE 3 MG, 4 MG</p> <p>8-9</p>	 <p>ESBE 3 G, 3 F</p> <p>10-11</p>	 <p>ESBE 4 G, 4 F</p> <p>12-13</p>
	 <p>ESBE 4-way mixing valve type T/TM</p> <p>14-15</p>	 <p>ESBE mixing valves type H and HG</p> <p>16</p>	 <p>ESBE mixing valve type BIV</p> <p>17</p>
<p>Select the suitable actuator</p> <p>7</p>	 <p>ESBE actuator Series 60 for ESBE mixing valves DN 15-50</p> <p>18-19</p>	 <p>ESBE actuator Series 90 for ESBE mixing valves DN 15-150</p> <p>20-21</p>	 <p>ESBE regulator Series 90K is designed for constant control of flow temperature within an adjustable range</p> <p>22-23</p>

*ESBE 3-way or 4-way mixing valves, sizes DN 15–150, for heating and cooling systems in buildings.
ESBE 3-way mixing valves are usually connected as a mixing valve, but it may also be used as a changeover valve or diverting valve. ESBE 4-way mixing valves are used when higher return water temperature to the boiler is required.*

Fields of application

- 1) Control of (fluid) water based systems for heating and cooling: radiator heating, floor heating and other surface heating and cooling systems.
- 2) Changeover or diverting valve (only 3-way valves).
Make sure that the nominal pressure, the differential pressure as well as the leak rate are within acceptable values. This information are stated for each valve.

Material/Media

Valves series 3 MG are made of a special brass alloy (DZR) and therefor also suitable for domestic water installations. ESBEs other series of mixing valves may only be used in closed systems where the water is not oxygenated. Maximum 50% glycol for freezing protection and oxygen absorbing compounds are allowed as additives.

How to select a rotary mixing valve

If you require high return temperature (mostly solid fuel installations) you shall choose a 4-way mixing valve. In all other applications/installations a 3-way valve is preferred. In systems with two heat sources or storage cylinders, the BIV-valve helps to prioritise the cheapest energy source and keeps a good separation in the cylinder.

Selection of mixing valve size

Each size of mixing valve has a Kvs-value (capacity in m³/h at a pressure drop of 1 bar) stated. It is the Kvs-value as well as the system the valve shall serve that decides which valve to choose. You find suitable Kvs-values in the graph to the right.

For a radiator system $\Delta t = 20^{\circ}\text{C}$ usually is choosen and for under floor heating $\Delta t = 5^{\circ}\text{C}$.

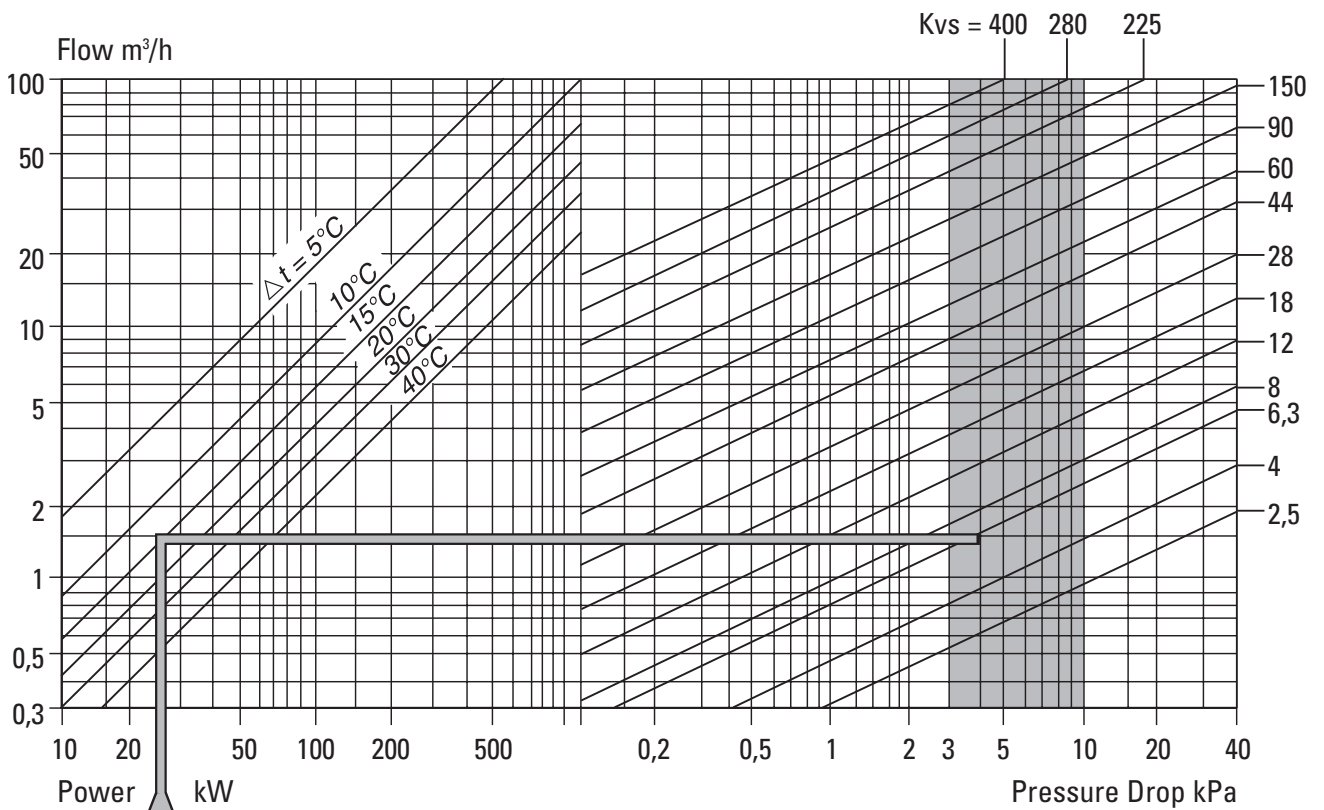
Suitable pressure drop should be in the range 3–10 kPa.

As a rule of thumb, the lowest Kvs-value is chosen, if there are two alternatives within the pressure drop range.

Valves

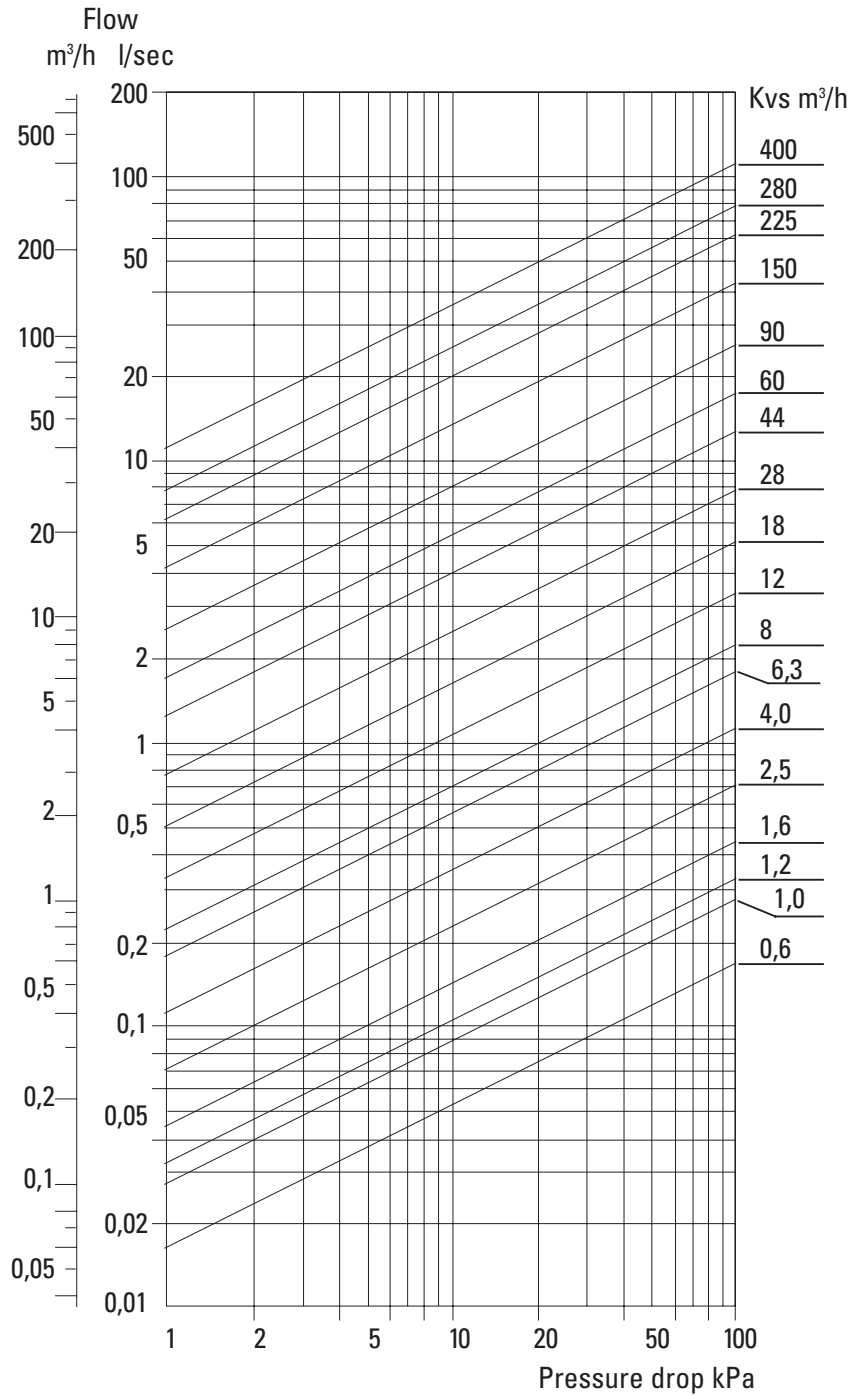
Selection of valve sizes

Selection of valve sizes of mixing valves for radiator heating systems. Start with the boiler in kW (ex. 25 kW) move vertically to the chosen Δt (ex. 15°C), then move horizontally to the shaded field (pressure drop of 3-10 kPa) and select the nearest Kvs-value (ex. 6.3).



Valves Flow chart

For regulating/mixing valves
 The Kvs-value applies to flow
 in one direction only.
 For 4-way valves the actual ΔP
 is twice value shown on chart.



Actuators

Select the suitable actuator

ESBE actuators (control motors) is specially developed for operating ESBE mixing valves. This series offers easy and compact design and a reliable function.

Select the suitable Actuator

Two main questions when choosing an actuator are, the type of controller and the size of valve. Below you have some help to select a suitable ESBE actuator.

Type of signal	Running Time	Voltage 24V AC		Voltage 230V AC	
		ESBE valve max DN 50	ESBE valve max DN 150	ESBE valve max DN 50	ESBE valve max DN 150
3-point	15 s	91 or 91M*		94 or 94M*	
	60 s		92 or 92M*	65 or 65M	95 or 95M*
	120 s	62 or 62M		66 or 66M	95-2 or 95-2M*
	240 s	63 or 63M	93 or 93M*	67 or 67M	96 or 96M*
	480 s			69 or 69M	
	1200 s			67-20	
0-10V, 2-10V, 0-20 mA, 4-20 mA	Adjustable 60-90- 120 s	62P	92P or 92P2***)		
On-Off	15 s			97*	
	60 s			68 or 68M	98*
	120 s	62R			
Constant flow temperature	15-70°C	15 s		94K2*	
	15-70°C	60 s			99K2*

M = One auxiliary switch fitted

*) Can be fitted also to other rotary valves by using special linkage kits specified on pages 20-23.

**) 92P for 90° rotation and 92P2 for 180° rotation.



Series 60



Series 90



Series 90K



Valves

3- and 4-way mixing valves type MG

3 MG, DN 15–32, DZR brass, PN 10. Three types of connections; Internal thread, external thread or with compression fittings. 4 MG, brass, DN 15–32, PN 10. Internal or external thread.

Operation

The ESBE MG is a compact mixing valve made of brass in sizes from 15 to 32 mm for use in heating and cooling installations.

The MG is normally equipped with a knob for manual operation and is also suitable for automatic control.

This is a simple operation when using the ESBE actuator Series 60.

The MG has female threads (ISO 7/1 Rp) 15 to 32 mm and in the 3-way version compression fittings for 22 and 28 O.D. pipes as well as with male threads 20 to 32 mm.

Valves series 3 MG are made of a special brass alloy (DZR) and therefore also suitable for domestic water installations.

Service and maintenance

All major parts are replaceable. Two O-rings, one of which can be replaced without the need for draining down the system or dismantling the valve.

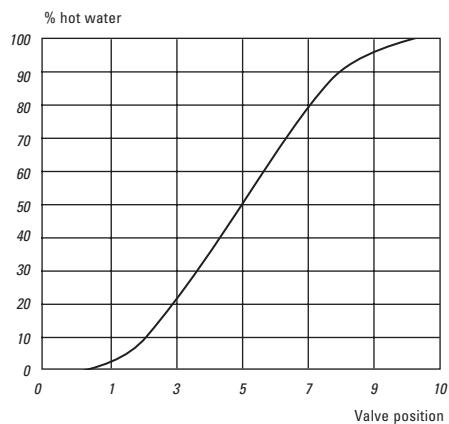
Material

3MG valve body, spindle and slide:Brass DZR, CW 602N
 4MG valve body, spindle and slide:Brass CW 614N
 Bushing:Plastic
 Cover plate:Zinc
 O-rings:EPDM

Technical Data

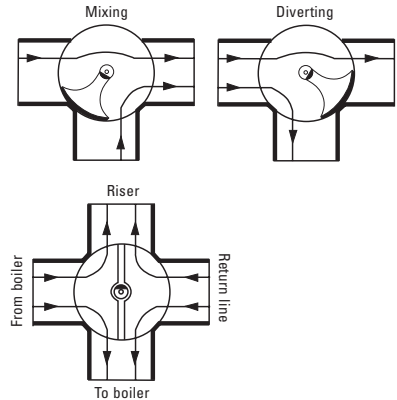
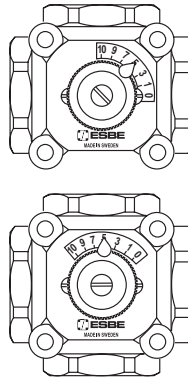
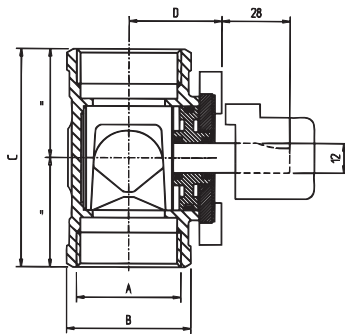
Max. static pressure:10 bar (1 MPa)
 Max. temperature:130°C
 Min. temperature:-10°C
 Max. differential pressure drop:100 kPa
 Torque:Max. 3 Nm
 Leakrate:See page 9
 Rangeability 3 MG (Kvs/Kv min.):100

Valve Characteristic



Valves

3- and 4-way mixing valves type MG



Dimensions, type 3-way

Art. No.	Reference	Kvs*	A	B	C	D	Let-by in % of flow by		Weight kg
							mixing	diverting	
121-01	3 MG 15	0.6	1/2" BSP female	35	72	33	0.1	0.1	0.7
121-02	3 MG 15	1	1/2" BSP female	35	72	33	0.1	0.1	0.7
121-03	3 MG 15	1.2	1/2" BSP female	35	72	33	0.1	0.1	0.7
121-04	3 MG 15	1.6	1/2" BSP female	35	72	33	0.05	0.1	0.7
121	3 MG 15	2.5	1/2" BSP female	35	72	33	0.05	0.03	0.7
122	3 MG 20	4	3/4" BSP female	35	72	33	0.05	0.03	0.6
123	3 MG 20	6.3	3/4" BSP female	35	72	33	0.05	0.03	0.7
123 AG	3 MGA 25	6.3	1" BSP male		82	33	0.05	0.03	0.7
124	3 MG 25	8	1" BSP female	42	72	33	0.05	0.03	0.7
125	3 MG 22	6.3	22 mm compr. fittings	32	102	33	0.05	0.03	0.8
126	3 MG 28	8	28 mm compr. fittings	41	104	33	0.05	0.03	1.0
127	3 MG 25	12	1" BSP female	42	88	37	0.05	0.01	1.0
127 AG	3 MGA 25	12	1 1/4" BSP male		93	33	0.05	0.01	1.0
128	3 MG 32	18	1 1/4" BSP female	50	88	37	0.05	0.01	1.0
128 AG	3 MGA 32	18	1 1/2" BSP male		99	37	0.05	0.01	1.1

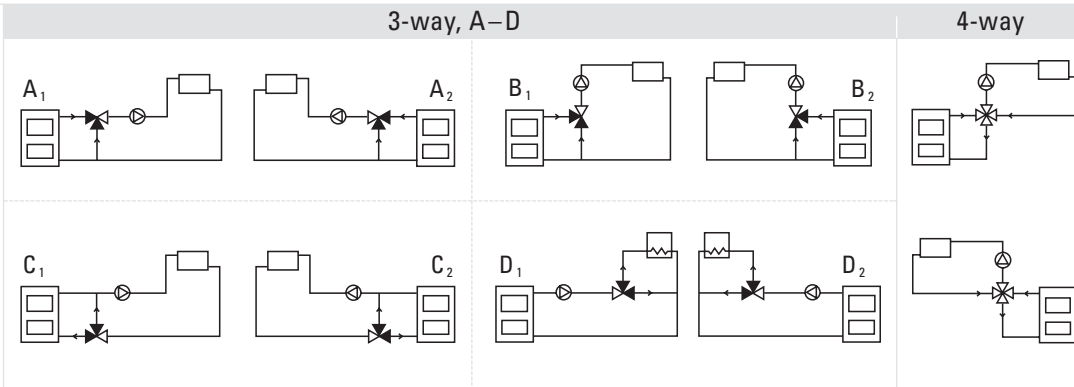
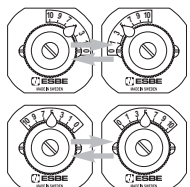
Dimensions, type 4-way

Art. No.	Reference	Kvs*	A	B	C	D	Let-by in % of flow		Weight kg
221	4 MG 15	2.5	1/2" BSP female	35	72	33		1.1	0.9
222	4 MG 20	4	3/4" BSP female	35	72	33		1.1	0.8
223	4 MG 20	6.3	3/4" BSP female	35	72	33		1	0.8
223 AG	4 MGA 20	6.3	1" BSP male		35	72	33	1	0.7
224	4 MG 25	8	1" BSP female	42	72	33		1	0.9
227	4 MG 25	12	1" BSP female	42	88	37		1	1.1
228	4 MG 32	18	1 1/4" BSP female	50	88	37		1	1.2

* Kvs-value in m³/h at at pressure drop of 1 bar. See also flow chart on page 6.

Example of installations

All the examples of installations can be reversed. The valve position plate is graduated on both sides and shall at the installation be fitted in the correct position as shown in the instruction for installation.





Valves

3-way mixing valves type G and F

3 G, DN 20–50, cast iron, PN 6. Internal thread. 3 F, DN 20–150, cast iron, PN 6. Flange.

Operation

The ESBE 3-way valve is intended for use in heating and cooling systems to control and distribute the medium to the different radiator groups.

The required system temperature is obtained by adding a suitable proportion of return water to the boiler flow.

The mixing proportions are adjusted manually or, in automatically controlled plants, by means of an actuator.

The scale is graduated on both sides and can be turned, allowing a choice of mounting positions. The valve is usually connected as a mixing valve, but it may also be used as a diverting valve, see examples. Operation angle = 90°.

Service and maintenance

All major parts are replaceable. Two O-rings, one of which can be replaced without the need for draining down the system or dismantling the valve.

Required actuator torque

The figures below are only as a recommendation for ordinary installations. In some applications the valve may require even more actuator torque.

Valve size up to	DN 25	actuator torque	3 Nm
	DN 50		.5 Nm
	DN 80		.10 Nm
	DN 150		.15 Nm

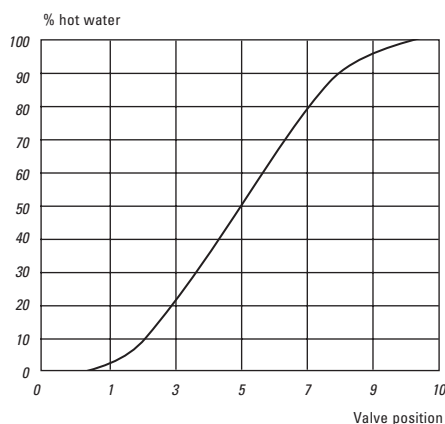
Material

Valve body:	Cast iron EN-JL 602N
Slide:	Brass CW 614N
Bushing:	Plastic
Cover plate:	Zinc
O-rings:	EPDM

Technical Data

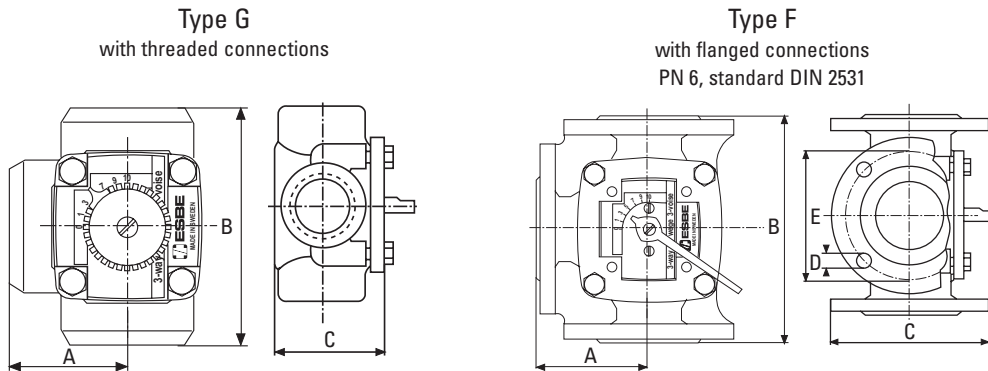
Max. static pressure:	.600 kPa (6 bar)
Max. temperature:	.110°C
Min. temperature:	-.10°C
Max. pressure drop Type G:	.50 kPa
Max. pressure drop Type F, DN 20–40:	.50 kPa
Max. pressure drop Type F, DN 50–150:	.30 kPa
Leakrate in % of flow:	Mixing max. 1,5%
	Diverting max. 0,5%
Rangeability (Kvs/Kv min.):	.100

Valve characteristic



Valves

3-way mixing valves type G and F



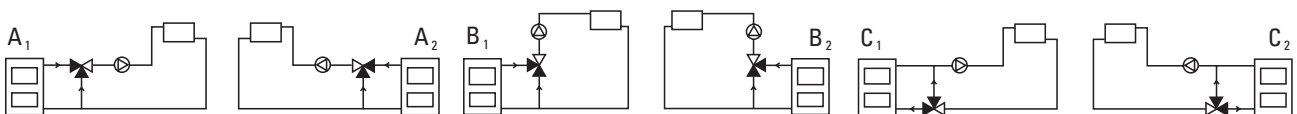
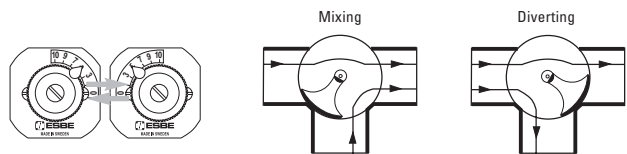
Dimensions

Art. No.	Reference	Kvs*	Connections	A	B	C	D	E	Weight kg
101	3 G 20	8	3/4" BSP	52.5	105	66	—	—	1.6
102	3 G 25	12	1" BSP	54	108	66	—	—	1.8
103	3 G 32	18	1 1/4" BSP	57.5	115	70	—	—	2.2
104	3 G 40	28	1 1/2" BSP	60	120	74	—	—	2.5
105	3 G 50	44	2" BSP	78	156	93	—	—	4.4
110S	3 F 20	12	20 mm Flange	70	140	90	4x11.5	65	3.5
111S	3 F 25	18	25 mm Flange	75	150	100	4x11.5	75	4.0
112S	3 F 32	28	32 mm Flange	80	160	120	4x15	90	5.9
113S	3 F 40	44	40 mm Flange	87.5	175	130	4x15	100	6.8
114S	3 F 50	60	50 mm Flange	97.5	195	140	4x15	110	9.1
115S	3 F 65	90	65 mm Flange	100	200	160	4x15	130	10.0
116S	3 F 80	150	80 mm Flange	120	240	190	4x18	150	16.2
117S	3 F 100	225	100 mm Flange	132.5	265	210	4x18	170	21.0
118S	3 F 125	280	125 mm Flange	150	300	240	8x18	200	27.0
119S	3 F 150	400	150 mm Flange	175	350	265	8x18	225	37.0

* Kvs-value in m³/h at a pressure drop of 1 bar. Flow chart see page 6.

Example of installations

All the examples of installations can be reversed. The valve position plate is graduated on both sides and shall at the installation be fitted in the correct position as shown in the instruction for installation.





Valves

4-way mixing valves type G and F

4 G, DN 20–50, cast iron, PN 6. Internal thread. 4 F, DN 32–150, cast iron, PN 6. Flange.

Operation

The ESBE 4-way valve has a double mixing function, i.e. part of the hot water supplied by the boiler is added to the return water. This results in a higher return water temperature than can be achieved with a normal 3-way mixing valve, reducing the risk for corrosion and assuring a longer life of the boiler. The required flow water temperature is obtained by mixing boiler hot water with a suitable proportion of the return water. The mixing proportions are adjusted manually or, automatically controlled plants, by means of an actuator. The scale is graduated on both sides allowing a choice of mounting positions.

Service and maintenance

All major parts are replaceable. Two O-rings, one of which can be replaced without the need for draining down the system or dismantling the valve.

Required actuator torque

The figures below are only as a recommendation for ordinary installations. In some applications the valve may require even more actuator torque.

Valve size up to	DN 25	. . .actuator torque	3 Nm
.	DN 50	. . . . .	.5 Nm
.	DN 80	. . . . .	.10 Nm
.	DN 150	. . . . .	.15 Nm

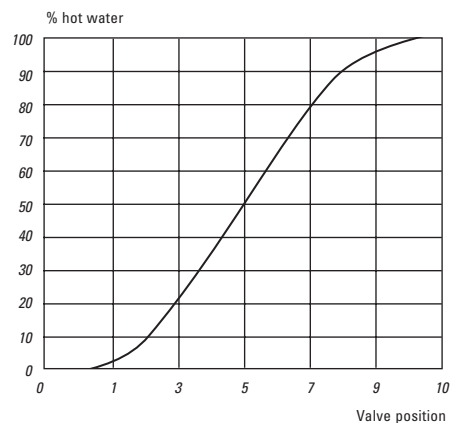
Material

Valve body:	Cast iron EN-JL 602N
Slide:	Brass CW 614N
Bushing:	Plastic
Cover plate:	Zinc
O-rings:	EPDM

Technical Data

Max. static pressure: . . . . .	.600 kPa (6 bar)
Max. temperature: . . . . .	.110° C
Min. temperature: . . . . .	.-10° C
Max. pressure drop Type G: . . . . .	.50 kPa
Max. pressure drop Type F, DN 20–40: . . . . .	.50 kPa
Max. pressure drop Type F, DN 50–150: . . . . .	.30 kPa
Leakrate in % of flow: . . . . .	.max. 1,5%

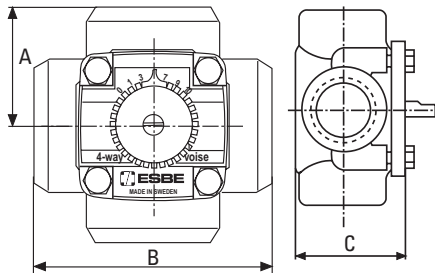
Valve characteristic



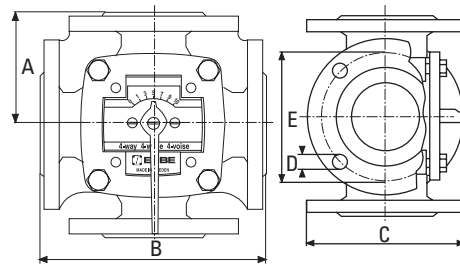
Valves

4-way mixing valves type G and F

Type G
with threaded connections



Type F
with flanged connections
PN 6, standard DIN 2531



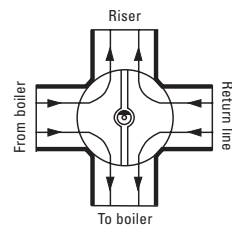
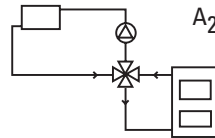
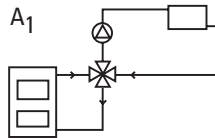
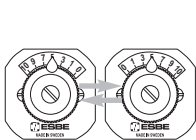
Dimensions

Art. No.	Reference	Kvs*	Connections	A	B	C	D	E	Weight kg
201	4 G 20	8	3/4" BSP	52.5	105	66	—	—	1.7
202	4 G 25	12	1" BSP	54	108	66	—	—	2.0
203	4 G 32	18	1 1/4" BSP	57.5	115	70	—	—	2.4
204	4 G 40	28	1 1/2" BSP	60	120	74	—	—	3.0
205	4 G 50	44	2" BSP	78	156	93	—	—	5.0
210	4 F 32	28	32 mm Flange	80	160	120	4x15	90	7.0
211	4 F 40	44	40 mm Flange	87.5	175	130	4x15	100	8.2
212	4 F 50	60	50 mm Flange	97.5	195	140	4x15	110	11.0
213	4 F 65	90	65 mm Flange	100	200	160	4x15	130	12.2
214	4 F 80	150	80 mm Flange	120	240	190	4x18	150	20.0
215	4 F 100	225	100 mm Flange	132.5	265	210	4x18	170	25.0
216	4 F 125	280	125 mm Flange	150	300	240	8x18	200	35.0
217	4 F 150	400	150 mm Flange	175	350	265	8x18	225	45.0

* Kvs-value in m³/h at a pressure drop of 1 bar. Flow chart, see page 6.

Installation

All the examples of installations can be reversed. The valve position plate is graduated on both sides and shall at the installation be fitted in the correct position as shown in the instruction for installation.





Valves

4-way mixing valves type T and TM

ESBE 4-way valves type T/TM are specially designed for factory fitting to boilers. 4 TM, DN 20, brass, PN 10. External thread or with compression fittings. 4 T, DN 20–32, cast iron, PN 6. Internal thread.

Application

The T/TM valves have the two ports for the boiler side in a single flange. The riser and return from the radiator system have female threads connections for the T-Type and male threads or compression fittings for the TM version. Suitable flanges for welding to the boiler are also available.

The T/TM valves have a double mixing function, i.e. a proportion of the hot water supplied from the boiler is mixed with the return water. This results in a higher return water temperature reducing the risk of corrosion and assuring a longer life for the boiler. They are designed to provide good control characteristics and reliability in operation.

For automatic control ESBE actuator Series 60 is recommended.

Service and maintenance

All vital parts are easy to replace. Two O-rings, one of which can be replaced without the need for draining down the system or dismantling the valve.

Typical installation

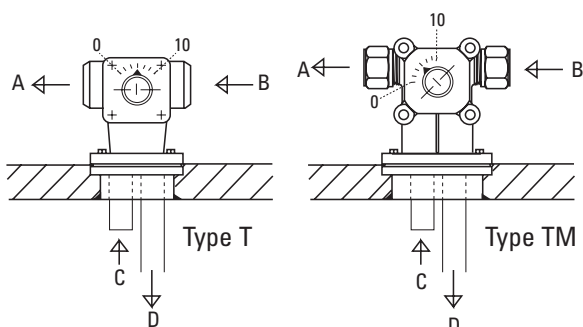
A = riser

C = hot water from the boiler

B = return

D = return to boiler

The scale plate is printed on both sides allowing inverted installation.



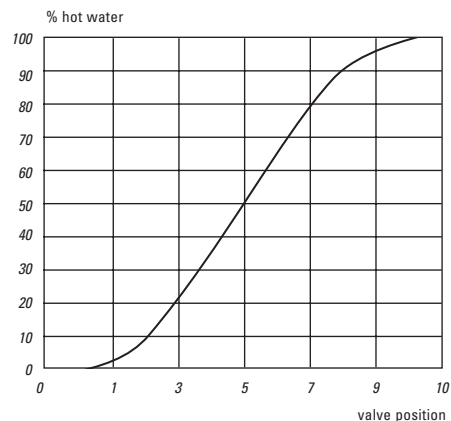
Material

	Type T	Type TM
Body	Cast iron EN-JL 602N	Brass CW 614N
Slide/Spindle	Brass CW 614N	Brass CW 614N
Bushing:	Plastic	Plastic
Cover plate:	Zinc	Zinc
O-rings:	EPDM	EPDM

Technical Data

Max. static pressure:	Type T: 6 bar, Type TM: 10 bar
Max. working temperature:	110°C
Operation angle:	90°
Torque:	.3 Nm (Type TM) .5 Nm (Type T)
Leakrate in % of flow:	Max. 1,5%

Valve characteristic



Valves

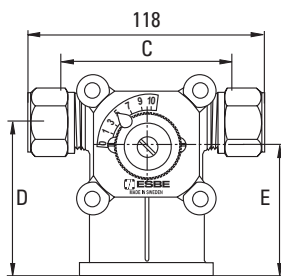
4-way mixing valves type T and TM

Dimensions

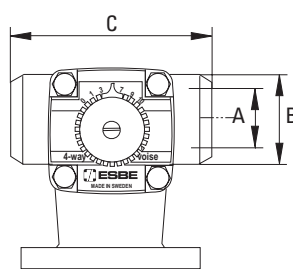
Art. No.	Reference	Kvs*	A	B	C	D	E	F	G	Weight kg
340	TM 20	5.5	G 3/4	—	105	75	64	—	—	0.90
340 M	TM 20	5.5	22 mm	—	105	75	64	—	—	0.95
341	T 20	8	3/4" female BSP	42	115	86	80	20	35	2.7
342	T 25	10	1" female BSP	50	115	86	80	25	35	2.7
343	T 32	14	1 1/4" female BSP	65	125	82	80	32	42	3.0

* Kvs-value in m³/h at a pressure drop of 1 bar. Flow chart, see page 6.

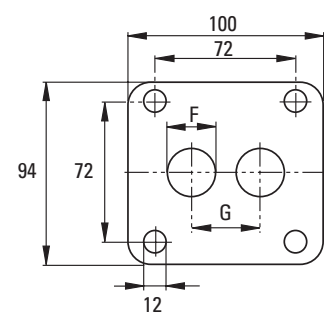
Type TM



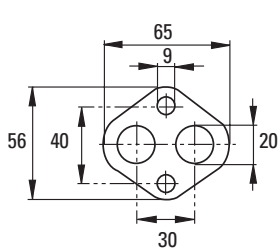
Type T



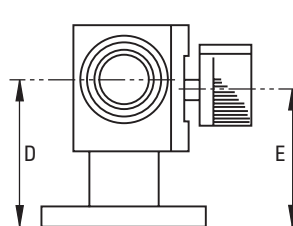
Flange type T



Flange type TM



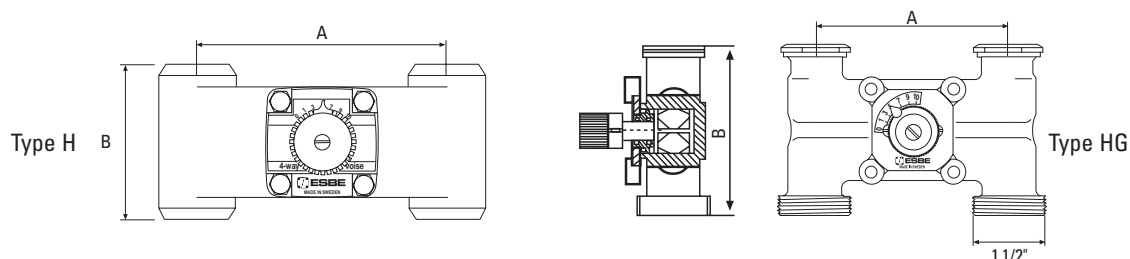
Type T





Valves

Mixing valves type H and HG



*ESBE mixing valves type H/HG are for installations where space is limited.
Type HG are designed for 3- or 4-way operation with optional integral bypass. 3HG/4 HG,
DN 25, cast iron, PN 10. Union connections. 4 H, DN 20–50, cast iron, PN 10. Internal thread.*

Operation

ESBE Mixing Valve type H/HG have connections in an H configuration. The upward connections are for radiator circuits and the downward connections are for boiler connection. The H series valves are equipped with female screw connections and the HG series have union connections. The integrated bypass has an adjustable flow with a maximum 50% total capacity of the valve (especially suitable for floor heating installations).

Service and maintenance

All major parts are replaceable. Two O-rings, one of which can be replaced without the need for draining down the system or dismantling the valve.

Material

	H DN 20–25 / HG	H DN 32–50
Body	.Cast iron EN-JL 602N	.Cast iron EN-JL 602N
Slide/Spindle	.Brass CW 614N	.Brass CW 614N and Stainless steel
Bushing:	.Plastic	.Plastic
Cover plate:	.Zinc	.Zinc
O-rings:	.EPDM	.EPDM

Technical Data

Max. static pressure:	.10 bar
Max. temperature:	.110°C
Max. differential pressure drop:	.50 kPa
Torque:	.5 Nm
Leakrate in % of flow:	.Type H max. 1,5%
	.Type HG max. 1%

Dimensions

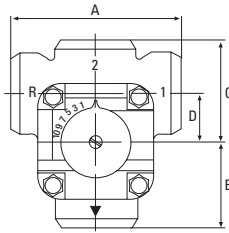
Art. No.	Reference	Dimension	Function	A	B	Kvs*	Weight kg
239	3HG25–125	25	3-way	125	110	10	2.0
242	3HG25–125	25	3-way with by-pass	125	110	10	2.2
231	4HG25–90	25	4-way	90	110	8	1.5
232	4HG25–125	25	4-way	125	110	6,3	1.8
240	4HG25–125	25	4-way	125	110	10	2.0
241	4HG25–125	25	4-way with by-pass	125	110	10	2.2
244	H20 3/4" BSP	20	4-way	160	100	10	3.0
245	H25 1" BSP	25	4-way	160	100	12	3.0
245-3	H25 1" BSP	25	3-way	160	100	13	3.0
249-3	H32 1 1/4" BSP	32	3-way	160	140	22	5.3
250-3	H40 1 1/2" BSP	40	3-way	160	140	30	5.6
249-4	H32 1 1/4" BSP	32	4-way	160	140	22	5.6
250-4	H40 1 1/2" BSP	40	4-way	160	140	30	6.3
248	H50 2" BSP	50	4-way	200	140	35	6.8

* Kvs-value in m³/h at a pressure drop of 1 bar. Flow chart, see page 6.



Valves

Mixing valve type BIV



ESBE mixing valves type BIV are intended for heating systems with two alternative sources. BIV, DN 20, DZR, PN 10. With compression fittings. BIV, DN 25, cast iron, PN 10. Internal thread.

Operation

ESBE valves Type BIV are intended for heating systems with two alternative heat sources. The valve should be set to give priority to the most economic heat source. The valve may be controlled manually or by a compensated temperature regulator.

Function

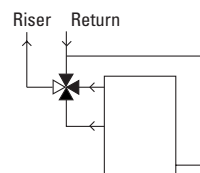
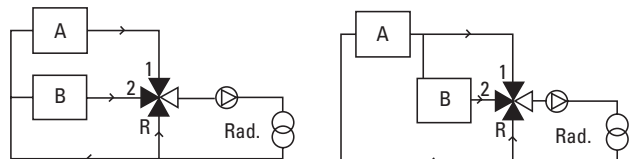
The BIV valve has two inlets to which the heat sources can be connected either in parallel or in series. The primary, i.e. the low cost heat source should be connected to port 1 and the secondary to port 2. When no heat is needed, both ports 1 and 2 are closed. When heat is needed, the supply from port 1 is used as long as the required temperature can be maintained. When this is no longer the case the valve provides initially a mixed flow from ports 1 and 2. Finally port 2 is fully open and port 1 closed. (The function is like a 3-way valve but with two inlets instead of one.)

The BIV valve may also be used on water storage cylinders where two outlets from the tank are required. One outlet at the top of the tank and one half way down the tank serve the valve and the return line from the heating system is connected to the bottom of the cylinder. With this arrangement the warmer water from the top of the cylinder will be used in conjunction with the cooler water drawn from the mid position.

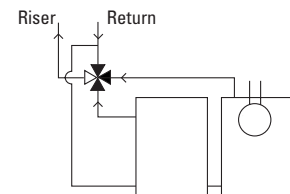
Technical Data

Max. static pressure:10 bar
 Max. temperature:110°C
 Operation angle:90°
 Torque:5 Nm
 Leakrate in % of flow:Max. 1%
 Max. differential pressure dropDN 20 = 50 kPa
DN 25 = 30 kPa

Material	DN 20	DN 25
Body	Brass CW 602N	Cast iron EN-JL 602N
Slide/Spindle	Brass CW 602N	Brass CW 614N
Bushing:	Plastic	Plastic
Cover plate:	Zinc	Zinc
O-rings:	EPDM	EPDM



Storage cylinder with two outlets



Two storage cylinders

Dimensions

Art. No.	Reference	Dimension	A	B	C	D	Kvs*	Weight kg
174**	BIV 22	22 mm	112	56	56	7	4	1.0
171	BIV 25	1" BSP	105	53	62	30	12	2.0

*Kvs-value in m³/h at a pressure drop of 1 bar. Flow chart, see page 6.

** Brass version, compression fittings.



Actuator Series 60

ESBE actuator serie 60 for operating ESBE mixing valves DN 15–50 in applications with a required torque of max 5 Nm. This serie has fixed limit switches for an operating range of 90° and can easily be manually operated.

Application

The ESBE series 60 is a compact actuator designed for operating rotary mixing valves up to 2".

The motor is reversible with fixed limit switches for an operating range of 90°. The valve can be manually operated by the knob on the front of the actuator.

The series 60 is available for 24 or 230 VAC.
It is supplied with a 1,5 m connection cable attached.
An auxiliary switch is available fitted to the actuator (except the 62P version) and can be set in any position.

Actuator 62P is step motor driven, with power supply of 24 VAC 50/60 Hz or 24 VDC.

Signal operation: 0–10 V, 2–10 V, 0–20 mA, 4–20 mA.

Running time: 60 s, 90 s or 120 s.

The actuators are factory set at 0–10 V and 60 s and any adjustments are made by removal of front cover.

Technical Data

Ambient temperature range:max. +55°C

.min. - 15°C

Supply voltage:1,5 VA (62P 5 VA)

Enclosure rating: IP 41

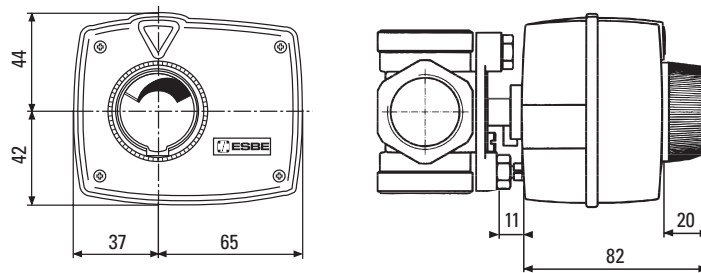
Protection class: II

Weight:0.4 kg

Linkage kits

The actuator supplies complete with an adaptor kit for easily fitting onto a ESBE rotary mixing valve.

Actuator Series 60



Art. No.	Auxiliary switch	Supply voltage	Timing 90°	Torque Nm	Operations
62	No	24,50 Hz	120 s	5	3-point SPDT
62M	Yes	24,50 Hz	120 s	5	3-point SPDT
62P	No	24,50 Hz or 24 VDC	60, 90 or 120 s	5	0-10 V, 2-10 V, 0-20 mA or 4-20 mA
62R	No	24,50 Hz	120 s	5	2-point* SPDT
63	No	24,50 Hz	240 s	5	3-point SPDT
63M	Yes	24,50 Hz	240 s	5	3-point SPDT
65	No	230,50 Hz	60 s	5	3-point SPDT
65M	Yes	230,50 Hz	60 s	5	3-point SPDT
66	No	230,50 Hz	120 s	5	3-point SPDT
66M	Yes	230,50 Hz	120 s	5	3-point SPDT
67	No	230,50 Hz	240 s	5	3-point SPDT
67M	Yes	230,50 Hz	240 s	5	3-point SPDT
67-20	No	230,50 Hz	1200 s	5	3-point SPDT
68	No	230,50 Hz	60 s	5	2-point* SPDT
68M	Yes	230,50 Hz	60 s	5	2-point* SPDT
69	No	230,50 Hz	480 s	5	3-point SPDT
69M	Yes	230,50 Hz	480 s	5	3-point SPDT

* Built-in relay.

Wiring

The motor should be preceded by a multi-pole contact breaker in the fixed installation.

Actuator, Art.No. 62-67, 69	Actuator with auxiliary switch, Art.No. 62M - 69M	Actuator with built-in relay, Art.No. 62R, 68	Actuator, Art.No. 62P												
<p>The motor should be preceded by a multi-pole contact breaker in the fixed installation.</p>	<p>The motors fitted with an auxiliary switch are supplied with a five-core cable. To set the switch position, remove the motor cover and turn the white cam sleeve to the desired position.</p>	<p>The direction of rotation is changed by a contact located under the cover.</p>	<p>The inputs are protected against wrong connections.</p> <table border="1"> <thead> <tr> <th>Description</th> <th>Function</th> <th>Wire colour</th> </tr> </thead> <tbody> <tr> <td>L</td> <td>24 V AC alt. +24 V DC</td> <td>Brown</td> </tr> <tr> <td>M</td> <td>Common terminal for control signal and power supply</td> <td>Blue</td> </tr> <tr> <td>Y</td> <td>Control signal</td> <td>Black</td> </tr> </tbody> </table>	Description	Function	Wire colour	L	24 V AC alt. +24 V DC	Brown	M	Common terminal for control signal and power supply	Blue	Y	Control signal	Black
Description	Function	Wire colour													
L	24 V AC alt. +24 V DC	Brown													
M	Common terminal for control signal and power supply	Blue													
Y	Control signal	Black													



Actuator Series 90

ESBE actuator series 90 for operating ESBE mixing valves DN 15–150 in applications with a required torque of max 15 Nm. This series is provided with adjustable cam discs to obtain an operating angle 30°–180° which make the serie very flexible.

Application

The ESBE Series 90 actuator is a compact actuator for operating rotary mixing valves. The actuator is reversible and is provided with limit switches which are actuated by cam discs. By adjusting the cam discs an operating angle from 30° to 180° can be obtained.

The ESBE Series 90 is available for 24 VAC, 50/60 Hz, or 230V, 50 Hz with different speeds as shown in the table.

The actuator is also available in a version (92P) for any of four different modulating signals:
0..10 V, 2..10 V, 0..20 mA and 4..20 mA.

An actuator 97 or 98 with built-in relay should be selected when the actuator is to be controlled by a SPST thermostat.

Technical Data

Operating temperature:max. +55°C
min. - 15°C
 Power consumption:3 VA (92P/92P2 5 VA)
 Enclosure rating:IP 54
 Protection class:II
 Torque:See table
 Weight:0.8 kg

Linkage kits

The actuator is supplied complete with an adaptor kit for easily fitting onto a ESBE rotary mixing valve.

Adaptor kits for other valves are available as follows:

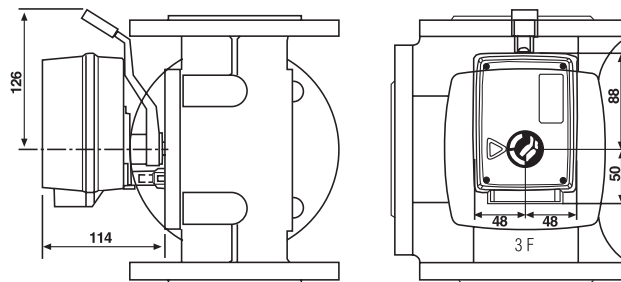
900ATA-VTR
 900BViessman
 900CCentra ZR, DR, DRU
 900DWITA
 900Sauter MH32...MH42...
 900CKCentra ZRK, DRK
 900KSiemens VBG 31, VBI 31, VBF 21, VCI 31

Option

The actuators art.no. 91 – 96 can be supplied
 with one auxiliary switchArt.No. 587

Actuator Series 90

Actuator Series 90 with ESBE 3- and 4-way mixing valves



Art. No.	Auxiliary switch factory mounted	Voltage Volts AC	Timing $\triangle 90^\circ$	Torque Nm	Operations
91	No	24	15 s	5	3-Point
91M	Yes	24	15 s	5	3-Point
92	No	24	60 s	15	3-Point
92M	Yes	24	60 s	15	3-Point
92-2	No	24	120 s	15	3-Point
92-2M	Yes	24	120 s	15	3-Point
92P	No	24 VAC/VDC	60/90/120 s for 90°	15	0-10 V, 2-10 V, 0-20 mA, 4-20 mA
92P2	No	24 VAC/VDC	120/180/240 s for 180°	15	0-10 V, 2-10 V, 0-20 mA, 4-20 mA
93	No	24	240 s	15	3-Point
93M	Yes	24	240 s	15	3-Point
94	No	230	15 s	5	3-Point
94M	Yes	230	15 s	5	3-Point
95	No	230	60 s	15	3-Point
95M	Yes	230	60 s	15	3-Point
95-2	No	230	120 s	15	3-Point
95-2M	Yes	230	120 s	15	3-Point
96	No	230	240 s	15	3-Point
96M	Yes	230	240 s	15	3-Point
97	No	230	15 s	5	2-Point*
98	No	230	60 s	15	2-Point*

* Built-in relay.

Wiring

The motor should be preceded by a multi-pole contact breaker in the fixed installation.

<p>Actuator, Art.No. 91-96</p>	<p>Actuator with auxiliary switch Art.No. 91M - 96M</p> <p>These actuators are supplied with one auxiliary switch. To set the switch position, remove the motor cover and turn the cam sleeve to the desired position.</p>	<p>Actuator with built-in relay, Art.No. 97 - 98</p> <p>The direction of rotation is changed by a contact located under the cover.</p>	<p>Actuator, Art.No. 92P/92P2</p>
--------------------------------	--	--	---------------------------------------



Regulator Series 90K

ESBE regulator serie 90K is designed for constant control of flow temperature within an adjustable range of 15–70°C. This serie is intended to be used with the ESBE 3-way mixing valve DN 15–150 in applications with a required torque of max 15 Nm.

Application

The ESBE 90K is an actuator for use with three port mixing or diverting valves with an integrated temperature regulator built into the actuator body. The unit is designed for constant control of flow temperature within an adjustable range of 15°C to 70°C and is intended to be used with the ESBE 3-way mixing valve.

Settings

The ESBE 90K regulator is fitted with two adjustment knobs:

Right hand knob:

for temperature setting, temperature range 15°C to 70°C.

Left hand knob:

for selection of dwell time for control signal, from 1 to 70 seconds (normally 30 seconds dwell time is suitable).

Technical Data

Operating temperature:max. +55°C
.min. - 15°C
Power consumption:4 VA
Enclosure rating:IP 54
Protection class:II
Torque:See table
Weight:0.8 kg

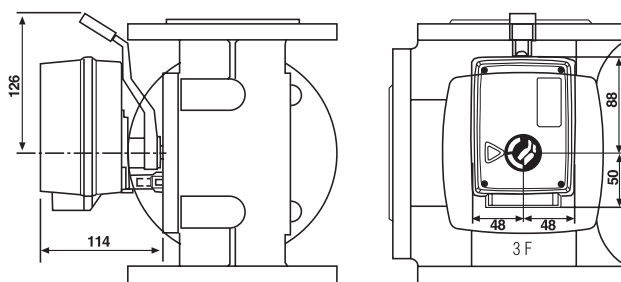
Mounting

The ESBE 90K integrated control motor supply complete with:

- Sensor with 1,5 metres of cable.
- An adaptor kit for easily fitting onto an ESBE three way rotary mixing valve.

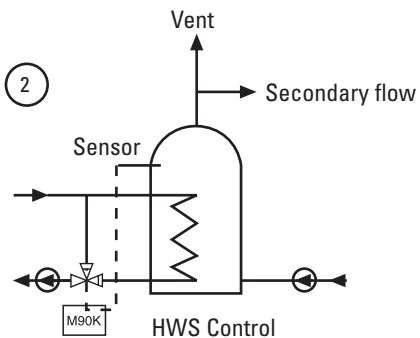
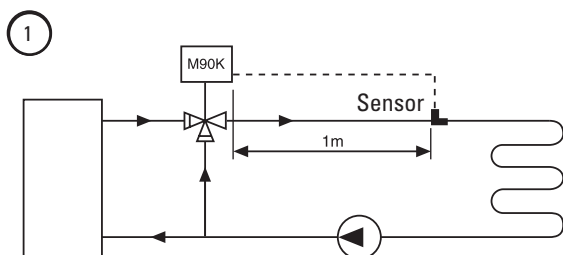
Regulator Series 90K

Regulator Series 90K with ESBE 3-way mixing valves



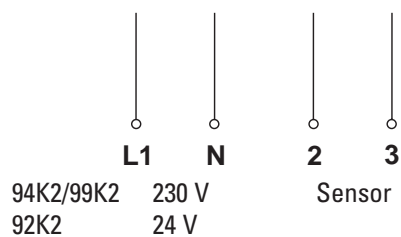
Art. No.	Voltage VAC	Temp. range	Torque Nm	Running time/90°	Operations
92K2	24	15–70°C	15	60 s	Termistor
94K2	230	15–70°C	5	15 s	Termistor
99K2	230	15–70°C	15	60 s	Termistor

Connecting examples



Wiring diagram

The motor should be preceded by a multi-pole contact breaker in the fixed installation.





ESBE company – Focusing on motorized valves

ESBE develops, manufactures and markets motorized valves for regulating hydronic systems in small and large buildings. By concentrating on a defined product line we can generate greater strength and increased competence within this field. This makes us specialists with unique knowledge of control units specifically for hydronic systems.

With more than 60 years of experience, we have sound knowledge of development and manufacture of products within heat regulation and our aim is to continually improve

both products and our company. We strive to offer solutions that provide maximum financial benefit and optimum energy efficiency.

Our attitude is that a product does not necessarily have to be ugly, unwieldy and difficult to handle just because it is tucked away in a corner somewhere. On the contrary, we focus on the design. We want to make the products both aesthetically pleasing and simple to use.



ESBE thermostatic valves

Our world-class thermostatic valves have been developed to satisfy the very highest design and performance demands. The valves are used in tap water, floor heating and solar heating systems, as well as other applications with high demands for safe and precise regulation.



ESBE linear motorized valves

Our linear valves with innovative and unique solutions are based on comprehensive development. In practice this leads to high regulating precision, with quiet, reliable function and efficient energy use. Together with our actuators this provides a complete, easy-to-install combination that is optimally suited to your application.

More info on ESBE's website

Find out more about us and our products on our website, www.esbe.se. Here you will find our product catalogues and quick guides plus contact information for all

our offices and representatives. You can also download tools such as ESBE Dimensions, our calculation program for determining the correct valve.



Headoffice

ESBE AB, Bruksgatan,
SE-330 21 Reftete, Sweden
Tel: +46 371 232 30
Fax: +46 371 204 00
Email: sales@esbe.se
www.esbe.se

Sender: