

# Overflow and safety valves



ISO 228-1

## Overflow valve female/female BSP threaded FKM inlet nozzle - 3 pressure ranges

**Model 58991** 0.5 - 2.5 bar

**Model 58993** 2 - 12 bar

**Model 58994** 12 - 20 bar



### Specifications

**Dimensions:** DN10 to DN50 (3/8" to 2")

**Connections:** BSP female threading in accordance with ISO 228-1

**Pressure:** 3 pressure ranges

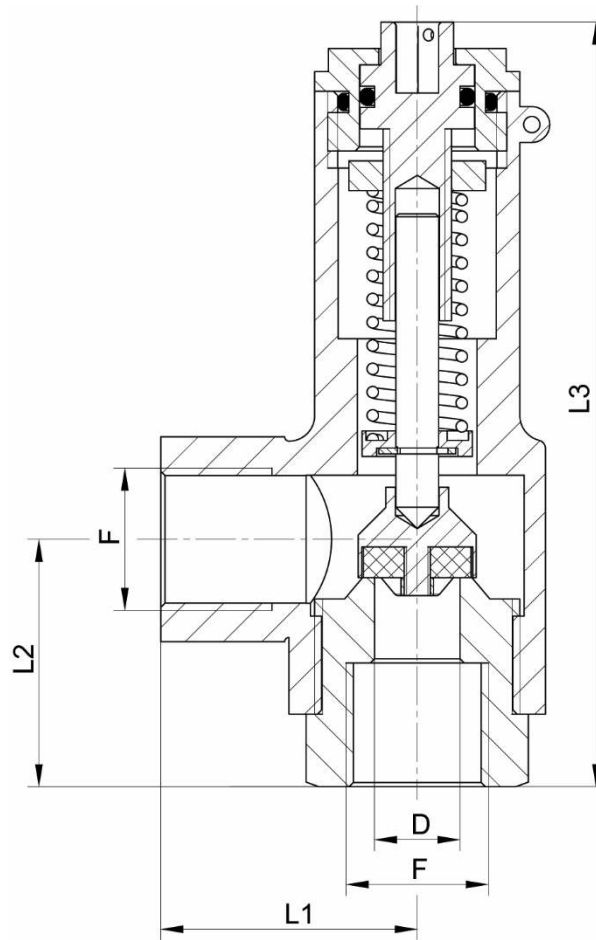
**Temperature:** from - 20°C to +200°C

**Material:** 1.4408 stainless steel - FKM inlet nozzle (for the parts in contact with the fluid)

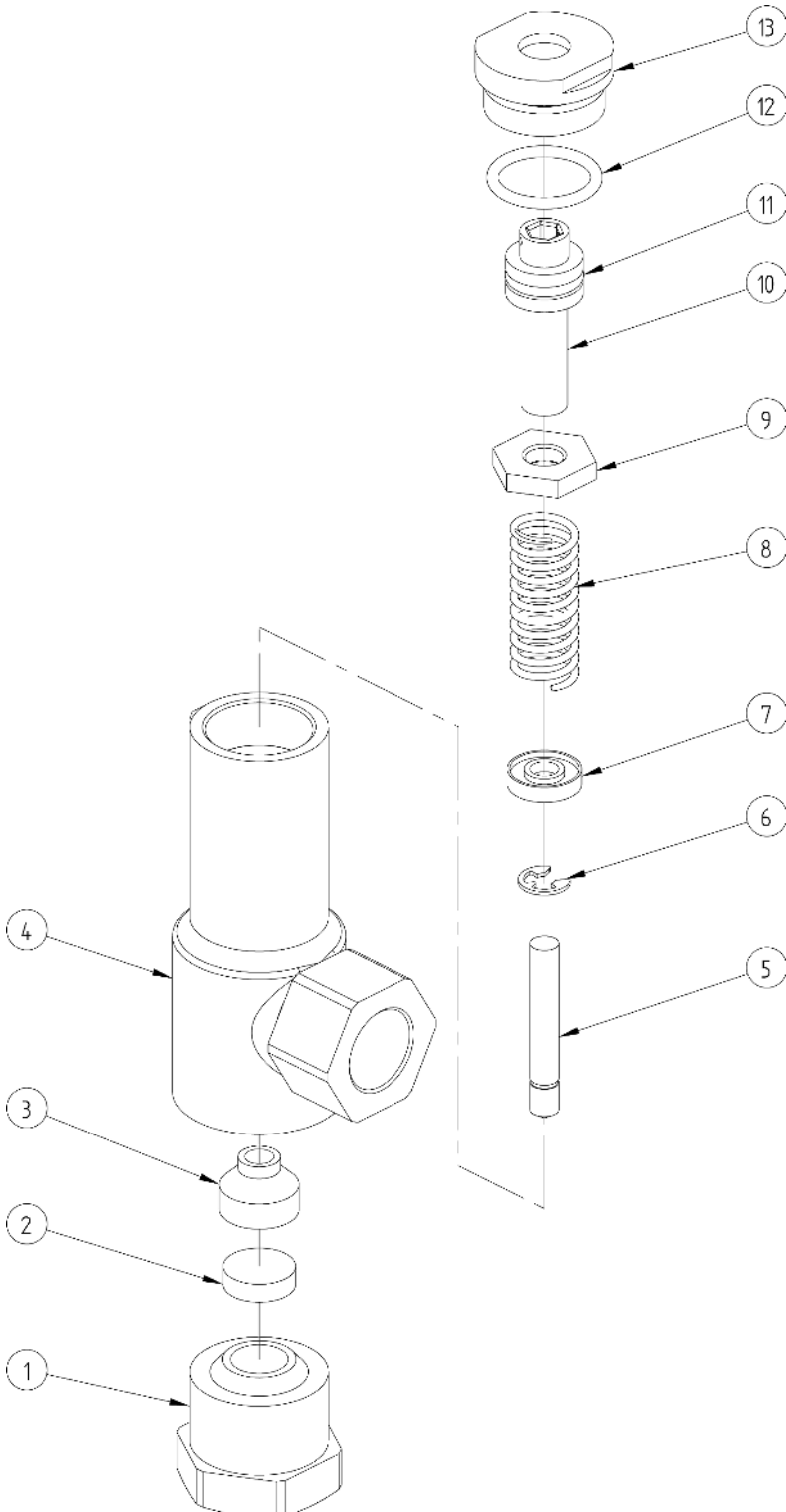


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Technical information, illustrations and photographs are provided for information only, they are not contractual. Some may vary according to the tolerances accepted in the profession and the applicable standards. All instructions for use, disassembly and maintenance are recommendations only. These could also vary depending on product usage conditions, its installation environment and purchaser requirements – of which the purchaser alone is responsible for their definition.



DN (mm)	NB (inches)	D (mm)	F (inches)	L1 (mm)	L2 (mm)	L3 (mm)	Weight (kg)	Part number 0.5 - 2.5 bar	Part number 2 - 12 bar	Part number 12 - 20 bar
10	3/8"	10	3/8"	30	29	60	0.30	458991-10	458993-10	458994-10
15	1/2"	13	1/2"	34	33	69	0.40	458991-15	458993-15	458994-15
20	3/4"	19	3/4"	40	36	86	0.70	458991-20	458993-20	458994-20
25	1"	25	1"	46	48	101	1.20	458991-25	458993-25	458994-25
32	1"1/4	30	1"1/4	50	52	118	1.90	458991-32	458993-32	458994-32
40	1"1/2	38	1"1/2	61	60	139	2.50	458991-40	458993-40	458994-40
50	2"	50	2"	67	66	149	3.80	458991-50	458993-50	458994-50



N°	Part Name	Material
1	INLET NOZZLE	1.4401
2	CHECK VALVE SEAT	FKM / PTFE*
3	CHECK VALVE SUPPORT	1.4404
4	BODY	1.4408
5	SHAFT	1.4404
6	RETAINING RING	1.4310
7	SPRING SUPPORT	1.4404
8	SPRING	1.4310
9	LOCKNUT	1.4404
10	SET PRESSURE ADJUSTMENT SCREW	1.4404
11	GASKET (SCREW)	FKM
12	GASKET (CAP)	FKM
13	CAP	1.4408

\*FKM for models 58991 and 58993  
PTFE for model 58994

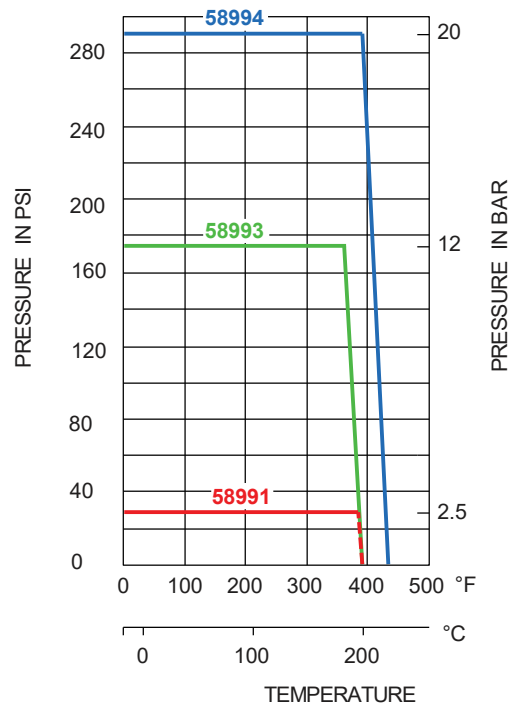
## Use



This valve is not a safety valve and does not fall within category IV of the European Pressure Equipment Directive (PED) 2014/68/EU (formerly 97/23/EC). So it must not be used as a safety or protective element, it can only be used as a regulation element.

## Pressure and temperature

For pressure/temperature ratings, see the graph below.



Warning: For usage temperatures above 60°C there is a risk of burns.

## Fluids

This overflow valve is suitable for non-abrasive and non-coagulable fluids, subject to the chemical compatibility of the parts in contact.

## Assembly and maintenance instructions

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### Installation

The overflow valve must be mounted vertically with the spring cap facing upwards.

Ensure that the intended location is sufficiently clear from obstructions for the valve to be able to open and overflow to take place correctly.

Make sure that the piping is perfectly aligned and its support structure sufficiently dimensioned so that the overflow valve is not subject to any external stresses. The support structure must support the pipes, not the overflow valve.

Flush the installation before assembling the overflow valve. If the installation is not cleaned well enough or if the overflow valve is incorrectly assembled this may lead to sealing defects.

Overflow valve installation:

Do not use the overflow valve body when you are tightening the assembly (this could damage the overflow valve).

Only use the hex nut wrench provided for this purpose.

It is recommended to use a flat gasket, model **5296**, to ensure correct sealing.



Do not over tighten or enter the connections too deeply as this may damage the device's seat.

### Adjustment

Overflow valves can be supplied with factory setting and sealing, or they can be supplied without a set pressure, but with the required adjustment range. When overflow valves have been set and sealed by the factory, they bear a marking that indicates the set pressure. No set pressure certificate will be supplied.

The set pressure for unsealed overflow valves can be adjusted within the spring's adjustment range limits.

To do this, proceed as described below:

Adjust the set pressure using an Allen key.

Turn clockwise to increase the set pressure and counter-clockwise to decrease the set pressure.

Flow coefficient at 1 bar over the set pressure																					
DN	10			15			20			25			32			40			50		
Set pressure range	0.5 - 2.5	2 - 12	12 - 20	0.5 - 2.5	2 - 12	12 - 20	0.5 - 2.5	2 - 12	12 - 20	0.5 - 2.5	2 - 12	12 - 20	0.5 - 2.5	2 - 12	12 - 20	0.5 - 2.5	2 - 12	12 - 20	0.5 - 2.5	2 - 12	12 - 20
bar	Air (Nm <sup>3</sup> /h)																				
0.5	83	-	-	147	-	-	209	-	-	375	-	-	717	-	-	847	-	-	1376	-	-
1	95	-	-	158	-	-	228	-	-	390	-	-	808	-	-	899	-	-	1546	-	-
1.5	101	-	-	173	-	-	257	-	-	433	-	-	901	-	-	1033	-	-	1734	-	-
2	111	48	-	180	86	-	287	159	-	462	302	-	977	233	-	1104	426	-	1904	788	-
2.5	119	50	-	202	89	-	306	168	-	495	311	-	1031	257	-	1205	447	-	1953	802	-
3	-	51	-	-	95	-	-	188	-	-	322	-	-	272	-	-	481	-	-	821	-
4	-	62	-	-	101	-	-	213	-	-	341	-	-	311	-	-	527	-	-	878	-
5	-	80	-	-	105	-	-	242	-	-	361	-	-	352	-	-	566	-	-	942	-
6	-	90	-	-	111	-	-	250	-	-	380	-	-	397	-	-	597	-	-	994	-
7	-	96	-	-	118	-	-	257	-	-	391	-	-	437	-	-	764	-	-	1050	-
8	-	114	-	-	117	-	-	316	-	-	347	-	-	492	-	-	910	-	-	1123	-
9	-	115	-	-	123	-	-	324	-	-	301	-	-	546	-	-	949	-	-	1187	-
10	-	122	-	-	133	-	-	331	-	-	288	-	-	600	-	-	1023	-	-	1280	-
11	-	121	-	-	138	-	-	339	-	-	274	-	-	569	-	-	1070	-	-	1358	-
12	-	126	96	-	138	112	-	354	221	-	261	305	-	538	594	-	1095	682	-	1480	1237
13	-	-	109	-	-	103	-	-	206	-	-	291	-	-	625	-	-	758	-	-	1277
14	-	-	116	-	-	94	-	-	166	-	-	282	-	-	656	-	-	834	-	-	1388
15	-	-	120	-	-	85	-	-	140	-	-	269	-	-	687	-	-	911	-	-	1499
16	-	-	122	-	-	76	-	-	132	-	-	257	-	-	716	-	-	987	-	-	1609
17	-	-	124	-	-	57	-	-	115	-	-	245	-	-	737	-	-	954	-	-	1821
18	-	-	129	-	-	56	-	-	84	-	-	233	-	-	758	-	-	922	-	-	2033
19	-	-	134	-	-	44	-	-	50	-	-	220	-	-	779	-	-	889	-	-	2245
20	-	-	140	-	-	36	-	-	45	-	-	208	-	-	801	-	-	851	-	-	2357

Flow coefficient at 1 bar over the set pressure																					
DN	10			15			20			25			32			40			50		
Set pressure range	0.5 - 2.5	2 - 12	12 - 20	0.5 - 2.5	2 - 12	12 - 20	0.5 - 2.5	2 - 12	12 - 20	0.5 - 2.5	2 - 12	12 - 20	0.5 - 2.5	2 - 12	12 - 20	0.5 - 2.5	2 - 12	12 - 20	0.5 - 2.5	2 - 12	12 - 20
bar	Water (m3/h)																				
0.5	2.7	-	-	4.3	-	-	6.1	-	-	10.8	-	-	16.0	-	-	21.7	-	-	31.6	-	-
1	3.0	-	-	4.6	-	-	6.5	-	-	11.9	-	-	16.7	-	-	23.3	-	-	35.6	-	-
1.5	3.2	-	-	4.8	-	-	6.7	-	-	12.6	-	-	17.5	-	-	24.0	-	-	37.7	-	-
2	3.4	1.6	-	5.0	1.8	-	6.9	3.7	-	13.0	4.2	-	18.1	6.2	-	25.2	6.2	-	40.6	17.9	-
2.5	3.7	1.7	-	5.2	1.8	-	7.3	3.8	-	13.7	4.3	-	18.9	6.2	-	26.1	9.1	-	43.0	19.4	-
3	-	1.9	-	-	1.8	-	-	4.1	-	-	4.3	-	-	6.1	-	-	9.3	-	-	21.1	-
4	-	2.2	-	-	1.7	-	-	4.6	-	-	4.5	-	-	6.1	-	-	9.7	-	-	24.7	-
5	-	2.5	-	-	1.6	-	-	5.1	-	-	4.6	-	-	6.0	-	-	10.3	-	-	28.9	-
6	-	2.8	-	-	1.5	-	-	6.1	-	-	4.7	-	-	5.9	-	-	10.6	-	-	30.1	-
7	-	2.9	-	-	1.5	-	-	6.5	-	-	5.0	-	-	5.8	-	-	11.9	-	-	31.7	-
8	-	3.1	-	-	1.4	-	-	7.1	-	-	5.1	-	-	5.6	-	-	13.1	-	-	34.2	-
9	-	3.2	-	-	1.4	-	-	7.3	-	-	5.3	-	-	5.5	-	-	14.3	-	-	37.4	-
10	-	3.4	-	-	1.4	-	-	8.3	-	-	5.5	-	-	5.3	-	-	15.7	-	-	39.3	-
11	-	3.5	-	-	1.4	-	-	9.1	-	-	5.8	-	-	5.2	-	-	17.2	-	-	42.4	-
12	-	3.7	1.7	-	1.3	0.4	-	9.3	2.8	-	5.9	2.2	-	5.0	6.8	-	17.6	10.1	-	43.9	18.9
13	-	-	1.4	-	-	0.4	-	-	2.4	-	-	2.2	-	-	6.5	-	10.3	-	-	21.2	-
14	-	-	1.3	-	-	0.5	-	-	2.2	-	-	1.9	-	-	6.3	-	10.5	-	-	24.1	-
15	-	-	1.1	-	-	0.5	-	-	1.7	-	-	1.6	-	-	6.1	-	10.6	-	-	25.7	-
16	-	-	0.8	-	-	0.5	-	-	1.4	-	-	1.3	-	-	6.0	-	10.9	-	-	27.6	-
17	-	-	0.6	-	-	0.5	-	-	1.1	-	-	1.1	-	-	5.8	-	11.0	-	-	29.3	-
18	-	-	0.4	-	-	0.6	-	-	0.9	-	-	1.0	-	-	5.6	-	11.3	-	-	31.8	-
19	-	-	0.2	-	-	0.6	-	-	0.7	-	-	0.8	-	-	5.1	-	11.4	-	-	34.6	-
20	-	-	0.2	-	-	0.6	-	-	0.7	-	-	0.7	-	-	5.0	-	11.5	-	-	36.6	-

Flow coefficient at 1 bar over the set pressure																					
DN	10			15			20			25			32			40			50		
Set pressure range	0.5 - 2.5	2 - 12	12 - 20	0.5 - 2.5	2 - 12	12 - 20	0.5 - 2.5	2 - 12	12 - 20	0.5 - 2.5	2 - 12	12 - 20	0.5 - 2.5	2 - 12	12 - 20	0.5 - 2.5	2 - 12	12 - 20	0.5 - 2.5	2 - 12	12 - 20
bar	Steam (kg/h)																				
0.5	65	-	-	113	-	-	163	-	-	295	-	-	509	-	-	665	-	-	1100	-	-
1	74	-	-	125	-	-	181	-	-	313	-	-	553	-	-	724	-	-	1222	-	-
1.5	81	-	-	135	-	-	200	-	-	345	-	-	615	-	-	798	-	-	1345	-	-
2	86	40	-	143	73	-	221	126	-	373	218	-	642	194	-	862	311	-	1451	-	-
2.5	93	45	-	157	79	-	235	141	-	384	244	-	619	218	-	940	349	-	1535	663	-
3	-	43	-	-	80	-	-	156	-	-	258	-	-	223	-	-	387	-	-	698	-
4	-	53	-	-	79	-	-	160	-	-	308	-	-	244	-	-	428	-	-	670	-
5	-	66	-	-	82	-	-	176	-	-	322	-	-	283	-	-	455	-	-	740	-
6	-	75	-	-	88	-	-	200	-	-	326	-	-	323	-	-	518	-	-	859	-
7	-	81	-	-	93	-	-	198	-	-	298	-	-	363	-	-	635	-	-	816	-
8	-	89	-	-	96	-	-	190	-	-	279	-	-	402	-	-	645	-	-	916	-
9	-	89	-	-	98	-	-	193	-	-	250	-	-	441	-	-	707	-	-	1015	-
10	-	97	-	-	106	-	-	192	-	-	273	-	-	480	-	-	770	-	-	1002	-
11	-	94	-	-	106	-	-	189	-	-	262	-	-	472	-	-	833	-	-	1090	-
12	-	101	79	-	105	78	-	204	183	-	282	247	-	406	457	-	814	570	-	1179	987
13	-	-	84	-	-	68	-	-	174	-	-	189	-	-	489	-	-	610	-	-	1056
14	-	-	90	-	-	57	-	-	162	-	-	201	-	-	521	-	-	650	-	-	1125
15	-	-	95	-	-	54	-	-	123	-	-	213	-	-	552	-	-	590	-	-	1022
16	-	-	94	-	-	51	-	-	130	-	-	180	-	-	584	-	-	728	-	-	1261
17	-	-	99	-	-	46	-	-	110	-	-	142	-	-	615	-	-	768	-	-	1140
18	-	-	96	-	-	32	-	-	87	-	-	150	-	-	576	-	-	693	-	-	1399
19	-	-	101	-	-	28	-	-	61	-	-	105	-	-	604	-	-	606	-	-	1678
20	-	-	105	-	-	21	-	-	32	-	-	165	-	-	632	-	-	634	-	-	1537



## Maintenance

*The maintenance and removal/reassembly of the overflow valve must be carried out by personnel who are qualified and trained for this type of intervention.*



Warning: Before working on the overflow valve, check that the installation has been stopped and that the piping is empty and is not pressurised.

Warning: For usage temperatures above 60°C there is a risk of burns.

Warning: Be careful of hazardous materials - follow supplier usage instructions.

If the device is used as a pressure relief valve, the installation's operating pressure must be at least 5% lower than the valve's reseating pressure. This will mean that once overflow has occurred, the overflow valve will be able to close completely.

After a long period of shut-down, it is important to check the overflow valve is operating correctly.

## Standards and compliance

- Connection: BSP female thread in accordance with EN ISO 228-1
- Leakage testing in accordance with the EN 12266
- Complies with European Pressure Equipment Directive (PED) 2014/68/EU (formerly 97/23/EC)