

Electrically Actuated Lug Style Butterfly Valve Type 144



General

The Type 144 electrically actuated lug style butterfly valve from GF Piping Systems is adaptable to a variety of conditions and applications. It is available in PVC, CPVC, PP, and PVDF materials. With the optional positioner, it goes from being a simple on/off valve to a precise flow control device integrated into systems controlled by PLCs and other computerized instrumentation.

Features

- Size: 2"–12"
- Voltage: 24 AC or DC, 100-230 AC
- Emergency manual override
- Outer body: Glass-filled PP with overmolded SS316 lugs
- Body materials: PVC, CPVC, PP and PVDF
- Stem: 316 stainless steel
- Seal: EPDM or FPM; PTFE seals available upon request
- Duty Cycle: 2"–6" 50%, 8"–12" 35%

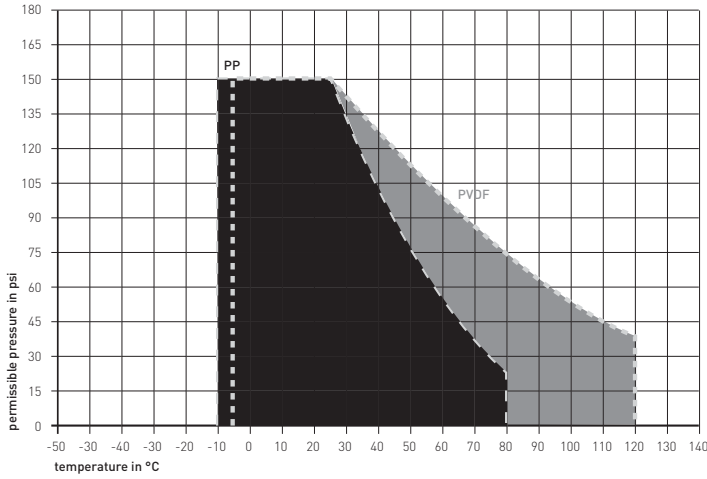
Optional Features

- Limit switches
- Positioner (voltage or current)
- Position feedback
- Fail safe return: Back-up battery pack
- Heating element
- Smart modules: Cycle monitoring, cycle counter, cycle extension, motor current monitoring

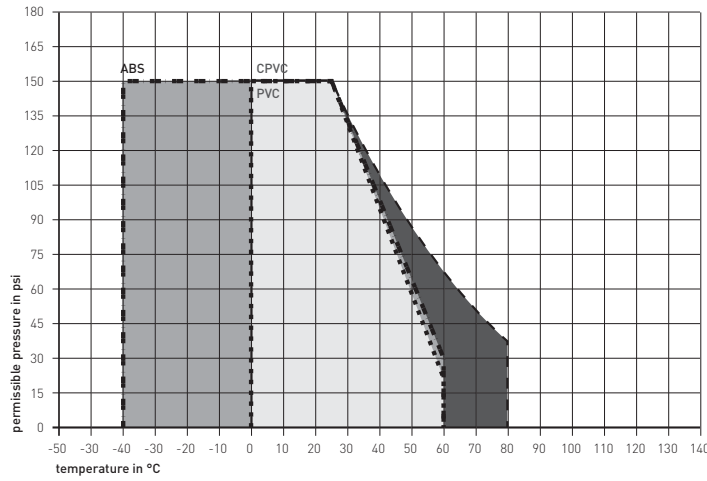
Technical Data

Pressure-temperature diagrams

PP, PVDF (useful life 25 years; medium water)



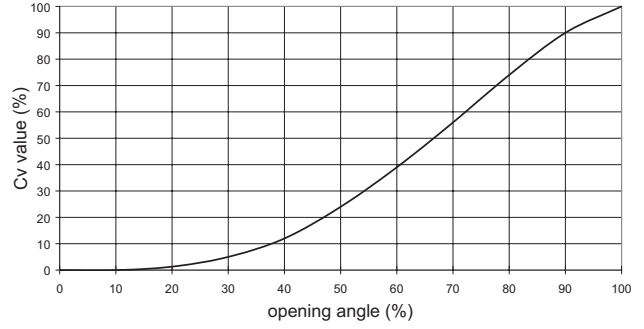
ABS, PVC, CPVC (useful life 25 years; medium water)



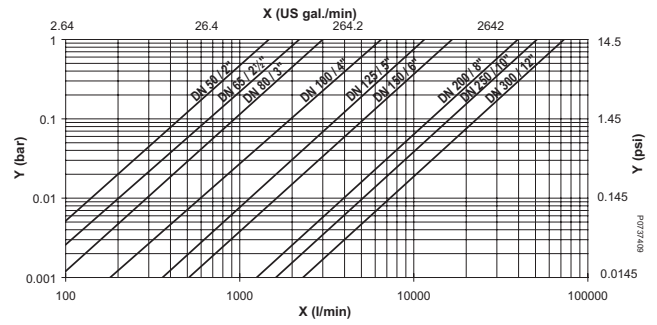
Cv values

DN mm	Inch	d mm	Cv 100 gal/min ($\Delta p = 1$ psi)
50	2	63	103
65	2½	75	154
80	3	90	210
100	4	110	455
125	5	140	805
150	6	160	1162
200	8	225	2772
250	10	280	3570
300	12	315	5110

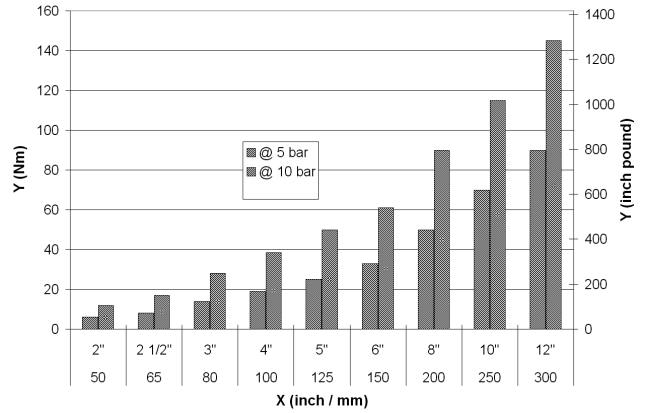
Flow characteristics



Pressure loss



Operating torque



For non-GF actuators, breakaway torques 2.5 to 4 times the value of the moving torque must be taken into consideration, depending on the application conditions (e.g. control time, medium, temperature, etc.).

Technical specifications

	EA 31	EA 42
Size	2"-6"	8"-12"
Nominal torque Mdn	60 Nm/530 in-lbs	100 Nm/885 in-lbs
Peak torque	120 Nm/1060 in-lbs	200 Nm/1770 in-lbs
Control time	15 s/90° at nominal torque	25 s/ 90° at nominal torque
Actuating angle	max. 180° set to 90°	max. 180° set to 90°
L/W/H (dimensions in mm)	150/122/190	150/122/208
Cycles at 68° and nominal torque	100,000	75,000
Flange pattern	F07	F07-F10
Housing materials	PP fiberglass reinforced, flame retardant, captive stainless steel screws externally	PP fiberglass reinforced, flame retardant, captive stainless steel screws externally
Position indicator	optical, integrated	optical, integrated
Emergency manual override	integrated	integrated
Rated voltage	100-230V, 50/60 Hz 24V = /24V, 50/60Hz	100-230V, 50/60 Hz 24V = /24V, 50/60 Hz
Rated voltage tolerance	± 10%	± 10%
Rated output	32 watts	42 watts
Direct impedance	230V, 100k 24V, 4k7	230V, 100k 24V, 4k7
Duty cycle	50%	35%
Protection class	IP 65 per EN 60529 ³ : CSA for interior use UL pending	IP 65 per EN 60529 ³ : CSA for interior use UL pending
Overload protection	current/time dependent (resting) ¹ , temperature dependent	current/time dependent (resting) ¹ , temperature dependent
Overvoltage category⁵	II	II
Electrical connections	connector plug 3 P+E per DIN EN 175301-03 (formerly DIN 43650), screw cable gland 20x1.5per ISO 724	connector plug 3 P+ E per DIN EN 175301-03 (formerly DIN 43650), screw cable gland M20x1.5 per ISO 724
Pollution grade⁵	2	2
Height over NN (UL/CSA)	<200m	<200m
Ambient temperature²	14° to +122°F	14° to +122°F
Allowable humidity⁴	max. 90% relative humidity, non-condensing	max. 90% relative humidity, non-condensing

¹ Overload protection of the motor is dimensioned so that the motor and the power supply board are protected. As soon as the load is in the torque range, the actuator runs again

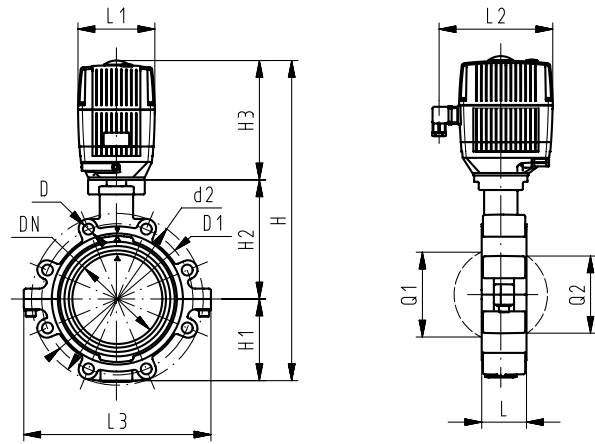
² At temperatures below 14°F and if there is condensation, the heating element No. 198 190 086 should be built in

³ Protection class IP67 for use of cable glands and vertical installation

⁴ Linear decrease up to 50% relative humidity at 104°F

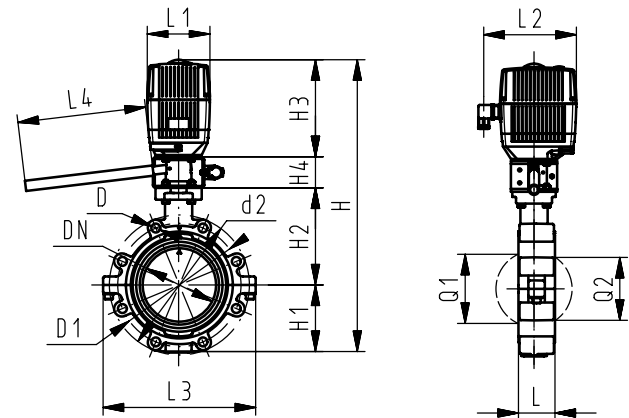
⁵ According to DIN EN 61010-1

Dimensions



Type 144 electrically actuated, without manual override

d inch	DN mm	Act. Type	d2 mm	D	D1 mm	H mm	H1 mm	H2 mm	H3 mm	L mm	L1 mm	L2 mm	L3 mm	Q1 mm	Q2 mm
2	50	EA 31	160	UNC 5/8	120.6	399	77	134	188	45	122	180	165	40	-
2½	65	EA 31	180	UNC 5/8	139.7	411	83	140	188	46	122	180	182	54	35
3	80	EA 31	195	UNC 5/8	152.4	423	89	146	188	49	122	180	210	67	50
4	100	EA 31	226	UNC 5/8	190.5	461	106	167	188	56	122	180	240	88	74
5	125	EA 31	258	UNC 3/4	215.9	490	121	181	188	64	122	180	272	113	97
6	150	EA 31	284	UNC 3/4	241.3	510	133	189	188	72	122	180	300	139	123
8	200	EA 42	341	UNC 3/4	298.4	577	159	210	208	73	122	180	360	178	169
10	250	EA 42	412	UNC 7/8	362.0	677	205	264	208	113	122	180	440	210	207
12	300	EA 42	482	UNC 7/8	431.8	727	234	285	208	113	122	180	510	256	253



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8	200	EA 42	341	UNC 3/4	298.4	577	159	210	208	60	73	122	180	360	250	178	169

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