

FLOWMATIC®

Pressure independent control valves



145 series

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Application

The FLOWMATIC® pressure independent control valve (PICV) combines an automatic differential pressure regulator and a control valve with optional actuator. The PICV automatically adjusts flow rate and keeps it constant under changing circuit differential pressure conditions where it is installed.

Flow rate is adjusted either:

- manually on the automatic differential pressure regulator, to restrict the maximum value, or
- automatically by the control valve in utilizing a separately purchased and field installed proportional (0–10 V) or ON/OFF actuator.

The (PICV) is supplied complete with upstream and downstream pressure test ports for measuring operating conditions.

The FLOWMATIC PICV is designed for use in hydronic heating and cooling systems and has tight shutoff to minimize energy loss.

Typical Specification

Furnish and install on the plans and described herein, a Caleffi FLOWMATIC 145 series pressure independent control valve (PICV) as manufactured by Caleffi. Each valve must be designed with combined automatic differential pressure regulator and control valve with optional actuator. The valve design must include a DZR corrosion-resistant brass body and bonnet, stainless steel AISI 303 control stem and piston, peroxide-cured EPDM valve plug, differential pressure regulator diaphragm and seals, with polyamide nylon PA6. Provide with optional actuators, separately purchased and installed: code 145013: 0 to 10 volt proportional actuator, 24 V AC/DC supply, fail-in-place; code 145018, 0 to 10 volt proportional actuator, 24 V AC/DC supply, NC/NO; code 656504: On/Off thermo-electric actuator, 24 V AC/DC supply, NC; code 656524: 0 to 10 volt proportional thermo-electric actuator, 24 V AC/DC supply, NC.

Each valve shall be Caleffi model 145 series or approved equal. (See product instructions for specific installation information.)

Technical specifications

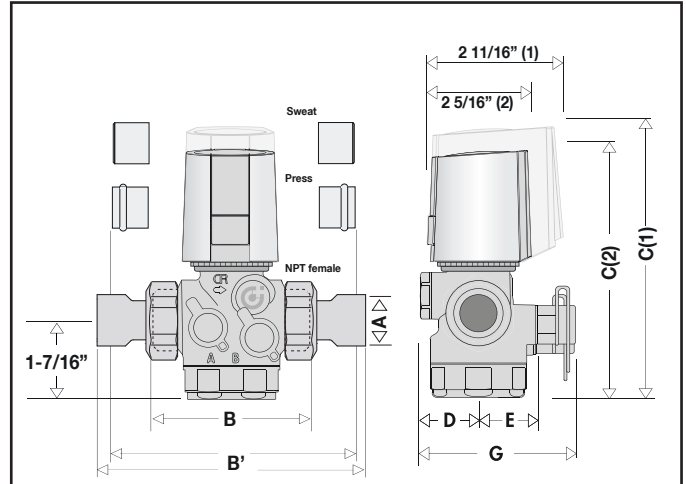
Materials

Body:	DZR corrosion-resistant brass CW602N
Bonnet:	DZR corrosion-resistant brass CW602N
Control stem and piston:	stainless steel EN 10088-3 (AISI 303)
Valve plug seat:	
- (G90):	DZR corrosion-resistant brass CW602N
- (1G8, 3G5 and 5G3):	PTFE
- (7G9, 13G and 16G) :	stainless steel EN 10088-3 (AISI 303)
Valve plug:	peroxide-cured EPDM
Differential pressure regulator diaphragm:	peroxide-cured EPDM
Springs:	stainless steel EN 10270-3 (AISI 302)
Seals:	peroxide-cured EPDM
Pre-adjustment indicator:	Glass Fiber Reinforced PA6G30
Protective knob:	Polyamide Nylon PA6

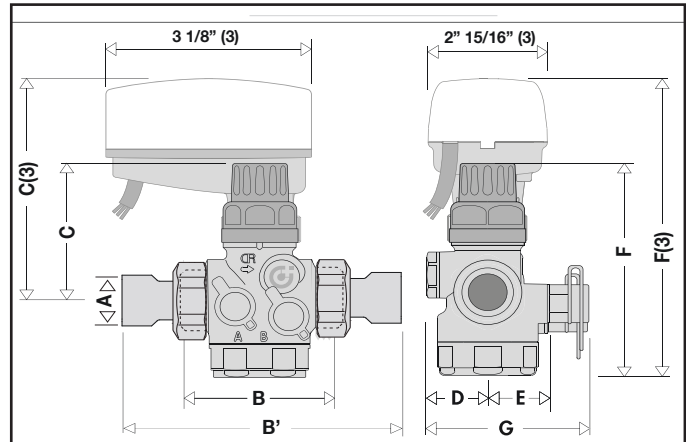
Connections

- main inlet/outlet: 1/2", 3/4", 1" NPT female, sweat, press union
- for actuators: M30 x 1.5
- pressure test ports: 1/4" F (ISO 228-1)

Dimensions



(1) Actuator code 656524; (2) Actuator code 656504



(3) Actuator codes 145013 and 145018

See page 2 for dimensions.

Performance

Medium:	water, glycol solutions
Max. percentage of glycol:	50%
Max. working pressure:	360 psi (25 bar)
Max. differential pressure:	58 psi (4 bar)
Working temperature range:	-4 to 248 °F (-20 to 120 °C)
Nominal differential pressure control range:	3.6 to 58 psid (0.25 to 4 bar)

Flow rate regulation range:	(G90): 0.09-0.90 gpm (0.34–3.4 l/min)
	(1G8): 0.35-1.75 gpm (1.3–6.6 l/min)
	(3G5): 0.35-3.5 gpm (1.3–13.2 l/min)
	(5G3): 0.53-5.3 gpm (2.0–20 l/min)
	(7G9): 0.79-7.9 gpm (3.0–30.3 l/min)
	(13G): 1.3-13 gpm (5.0–50 l/min)
	(16G): 1.6-16 gpm (6.25–62.5 l/min)

Accuracy:	± 5% of the set-point
Leakage:	0.01%: class V in accordance with EN 60534-4, equivalent to ISA/FCI Class VI

Dimensions

Code	A	B	B'	C	C(1)	C(2)	C(3)	D	E	F	F(1)	F(2)	F(3)	G	Wt (lb/kg)											
145443A G90	1/2" FNPT	2 3/4"	5- 1/4"	2- 5/16"	5- 1/16"	4- 5/8"	3- 3/4"	3	1"	3- 3/4"	5"	4- 5/8"	5- 3/16"	3"	1.0/ 0.45											
145443A 1G8																										
145443A 3G5																										
145553A G90	3/4" FNPT	2 3/4"	5- 1/2"																							
145553A 1G8																										
145553A 3G5																										
145553A 5G3	1" FNPT	2- 3/16"	6"																							
145663A 13G																										
145663A 16G																										
145449A G90	1/2" Sweat	2 3/4"	5- 3/8"	2- 5/16"	5- 1/16"	4- 5/8"	3- 3/4"	3	1"	3- 3/4"	5"	4- 5/8"	5- 3/16"	3"	1.0/ 0.45											
145449A 1G8																										
145449A 3G5																										
145559A G90	3/4" Sweat	2 3/4"	5"																							
145559A 1G8																										
145559A 3G5																										
145559A 5G3	1" Sweat	2- 3/16"	6"																							
145669A 13G																										
145669A 16G																										
145446A G90	1/2" press*	2 3/4"	5- 1/4"												2- 5/16"	5- 1/16"	4- 5/8"	3- 3/4"	3	1"	3- 3/4"	5"	4- 5/8"	5- 3/16"	3"	1.0/ 0.45
145446A 1G8																										
145446A 3G5																										
145556A G90	3/4" press*	2 3/4"	5- 15/16"																							
145556A 1G8																										
145556A 3G5																										
145556A 5G3	1" press*	2 3/16"	6- 13/16"																							
145666A 7G9																										
145666A 13G																										
145666A 16G																										

(1) Actuator code 656524; (2) Actuator code 656504; (3) Actuator codes 145013 and 145018

*Press connection lay lengths:
 size 1/2 inch: 3 1/2"
 size 3/4 inch: 3 1/4"
 size 1 inch: 4 13/16"

We reserve the right to change our products and their relevant technical data, contained in this publication, at any time and without prior notice. Contractors should request production drawings if prefabricating the system

Job name _____	Size _____
Job location _____	Quantity _____
Engineer _____	Approval _____
Mechanical contractor _____	Service _____
Contractor's P.O. No. _____	Tag No. _____
Representative _____	Notes _____