

FlowCal™ and FlowCal+™ Y-body Automatic Balancing Valve

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128 series

Function



The FlowCal™ and FlowCal+™ 128 Series Y-body automatic flow balancing valve is pressure independent and maintains a fixed flow rate as differential pressures vary. It incorporates an exclusive flow cartridge made of an anti-scale, low noise polymer. Constructed of DZR low-lead brass, FlowCal and FlowCal+ 128 Series are ideally suited for flow rate balancing in plumbing applications such as hot water recirculation systems and can also be used in hydronic applications. The FlowCal+ 128 Series provides a built-in check valve to protect against circuit thermo-siphoning. The outlet temperature gauge (optional) verifies the fluid temperature in the circuit.

Product range

128 Series Y-body automatic balancing valve with polymer cartridge:

sizes 1/2", 3/4", 1"

Technical specifications

Materials

Body:	low lead brass
Flow cartridge:	anti-scale polymer
Seals:	peroxide-cured EPDM
Spring:	stainless steel
Pressure and temperature test port plugs:	low lead brass
Pressure and temperature test ports:	body and cap- low lead brass; core- EPDM
Drain port plug:	low lead brass

Performance

Cartridge flow rate range (see label for installed cartridge):	0.35 to 10 GPM
Flow accuracy:	+/- 10%
Medium:	Water, glycol solutions
Max. percentage of glycol:	50%
Max. working pressure:	400 psig (400 WOG)
Working temperature range:	32° to 212°F (0 to 100°C)

Connections:

dual unions, 1/2", 3/4", 1" MNPT, press, sweat, PEX crimp, PEX expansion	
PEX crimp:	ASTM F1807
PEX expansion:	ASTM F1960
Pressure and temperature test ports connections:	self closing fast-plug
Identification:	metal plate with ball chain stating installed cartridge flow rate

Certifications:

NSF/ANSI 372, California Health and Safety Code 116875 S.3874, Vermont Act 193, Maryland's Lead Free Law HB.372, certified by ICC-ES, file PMG-1360



SAFETY INSTRUCTION

This safety alert symbol will be used in this manual to draw attention to safety related instructions. When used, the safety alert symbol means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED! FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN A SAFETY HAZARD.**



WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warning.ca.gov.



CAUTION: All work must be performed by qualified personnel trained in the proper application, installation, and maintenance of systems in accordance with all applicable codes ordinances.



CAUTION: Over-tightening and breakage can occur with the use of Teflon® pipe joint compounds. Teflon® provides lubricity so that care must be exercised not to over-tighten joints. Failure to follow these instructions could result in property damage and / or personal injury.



CAUTION: System fluids under pressure or temperature can be hazardous. Be sure the pressure has been reduced to zero and the system temperature is below 100°F (38°C). Failure to follow these instructions could result in property damage and/or personal injury.



CAUTION: Clean the pipes of any debris, rust, incrustations, welding slag and any other contaminants. For optimal operation, air in the system must be removed.



CAUTION: If the FlowCal is not installed, commissioned and maintained properly, according to the instructions contained in this manual, it may not operate correctly and may endanger the user.



CAUTION: Make sure that all the connecting pipework is water tight.

Caleffi shall not be liable for damages resulting from stress corrosion, misapplication or misuse of its products..



CONSIGNE DE SÉCURITÉ

Ce symbole d'avertissement servira dans ce manuel à attirer l'attention sur la sécurité concernant instructions. Lorsqu'il est utilisé, ce symbole signifie. **ATTENTION! DEVENEZ ALERTE ! VOTRE SÉCURITÉ EST EN JEU ! NE PAS SUIVRE CES INSTRUCTIONS PEUT PROVOQUER UN RISQUE DE SECURITE.**



AVERTISSEMENT: Ce produit peut vous exposer à des produits chimiques comme le plomb, qui est connu dans l'État de Californie pour causer le cancer, dommages à la naissance ou autre. Pour plus d'informations rendez-vous www.P65Warnings.ca.gov.



AVERTISSEMENT: Tous les travaux doivent être effectués par du personnel qualifié formé à la bonne application, installation et maintenance des systèmes conformément aux codes et règlements locaux.



AVERTISSEMENT: Un serrage excessif et une rupture peuvent survenir avec l'utilisation de Teflon® composés de joint de tuyau. Le Teflon® offre un pouvoir lubrifiant de sorte que les soins doivent être exercé pour ne pas trop serrer les joints. Non-respect de ces instructions pourrait entraîner des dommages matériels et / ou des blessures corporelles.



AVERTISSEMENT: Les liquides du système sont sous pression ou de la température peuvent être dangereux. Être sûr que la pression a été réduite à zéro et la température du système est inférieure à 100°F (38°C). Le non-respect de ces instructions peut entraîner des dommages matériels et/ou des blessures.



AVERTISSEMENT: Nettoyer les tuyaux de tout débris, roille, incrustations, scories de soudure et d'autres contaminants. Pour un fonctionnement optimal, de l'air dans le system doit être retiré.



AVERTISSEMENT: Si le FlowCal en Y, n'est pas installé, mis en service et Entretien correctement, selon les instructions contenues dans ce manuel, il Peut ne pas fonctionner correctement et peut mettre en danger l'utilisateur.



AVERTISSEMENT: S'assurer que tous les raccords sont étanches.

Caleffi ne pourra être tenue responsable des dommages résultant de la corrosion, d'une mauvaise utilisation ou d'une mauvaise utilisation des produits.

Installation:

Install the FlowCal automatic balancing valves on the circuit return pipe (either the domestic hot water recirculation return branch before the main return trunk or after the coil of an HVAC system). Make sure the flow direction arrows on the 128 body match the system's flow direction. It is important to allow easy access to the FlowCal for future inspection and maintenance.

Isolation valves

Isolation ball valves on both the inlet and outlet of the FlowCal balancing valve are highly recommended for easy servicing. The Caleffi 290030 isolation valve is convenient and compact; it fits between the FlowCal body and the union tailpieces.

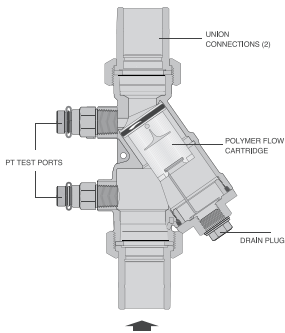
Flow verification

Factory-installed PT ports allow for differential pressure verification by balancing contractors. As long as the measured DP is within the range for the given cartridge, per the label, the flow rate will be equal to the GPM shown on the label.

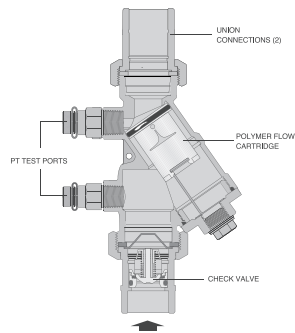
Polymer flow cartridge

The flow rate cartridge is made of an anti-scale polymer specially engineered for use in cooling, heating and domestic water systems, to prevent mineral buildup in a wide range of working temperatures. It features high resistance to the abrasion caused by continuous fluid flow, is insensitive to the deposit of scale and is fully compatible with glycols and additives used in circuits.

FlowCal 128...AF series



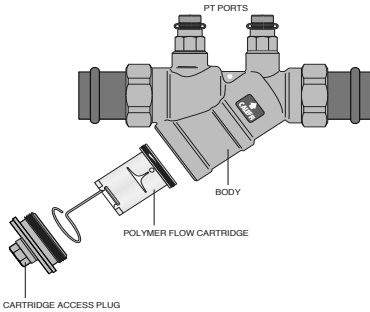
FlowCal+ 128...AFC series



FlowCal 128...AF and FlowCal+ 128...AFC series

FlowCal+ models come with a check valve in the inlet tailpiece to prevent reverse flow in domestic hot water recirculation applications. In addition, models are available with and without an outlet temperature gauge to verify water temperature when balancing the system. The standard FlowCal models do not include a check valve and are not available with the outlet temperature gauge. Either series can be used in domestic hot water or hydronic heating/cooling applications.

Maintenance:



Serviceability

The Y-body style of the 128 Series FlowCal and FlowCal+ balancing valves allow the body to remain in the piping when accessing the cartridge which simplifies serviceability and cleaning.

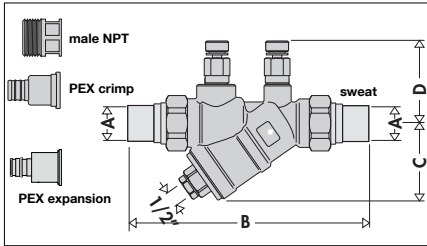
Pre-commissioning system flush

The cartridge can be easily removed for system flushing prior to commissioning. Remove the access plug and the flow cartridge, attach the cartridge to the body using a zip tie, and reinstall the cartridge after the system has been thoroughly cleaned.

Replaceable cartridge

The internal regulator is assembled in the form of a self-contained cartridge to permit easy removal from the body for inspection or replacement. It is equipped with a special wire mechanism for fast and safe positioning without tools. If the cartridge gets replaced with a new cartridge that has a different flow rate, be sure to apply the new matching body label.

Dimensions:

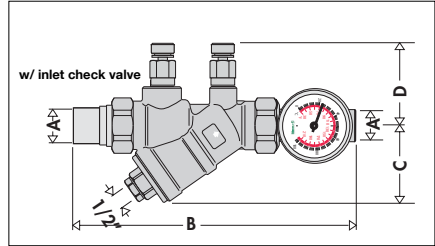


FlowCal and FlowCal+ with inlet check valve, no gauge

Code	A (union connections)	B	C	D	Wt (lb/kg)
128541AF ...	1/2" NPT male	4-11/16"	2"	2-13/16"	2.0/0.9
128542AF ...	1/2" PEX expansion	8-13/16"			2.0/0.9
128544AF ...	1/2" PEX crimp	7-13/16"			2.0/0.9
128546AF ...	1/2" press*	6-9/16"			2.0/0.9
128549AF ...	1/2" sweat	5-15/16"			1.8/0.8
128551AF ...	3/4" NPT male	4-5/8"			2.1/0.95
128552AF ...	3/4" PEX expansion	8-13/16"			2.1/0.95
128554AF ...	3/4" PEX crimp	7-13/16"			2.1/0.95
128556AF ...	3/4" press*	7-5/16"			2.1/0.95
128559AF ...	3/4" sweat	6-7/16"			2.0/0.9
128561AF ...	1" NPT male	7-3/16"			2.2/1.0
128562AF ...	1" PEX expansion	8-13/16"			2.2/1.0
128564AF ...	1" PEX crimp	8"			2.2/1.0
128566AF ...	1" press*	7-1/4"			2.2/1.0
128569AF ...	1" sweat	7-3/16"			2.2/1.0

*Lay length for press models

Size	128xxxAF	128xxxAF no outlet gauge	128xxxAF with outlet gauge
1/2 inch	5"	5-13/16"	8-1/16"
3/4 inch	5-7/16"	6"	8-1/4"
1 inch	5-7/16"	7"	9-1/4"



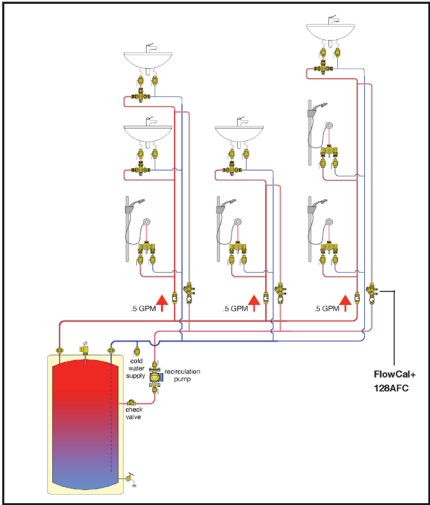
FlowCal+ with inlet check valve and gauge

Code	A (union connections)	B	C	D	Wt (lb/kg)
**128440AFC ...	1/2" NPT male	9-11/32"	2"	2-13/16"	2.0/0.9
128441AFC ...	1/2" NPT male	7-1/8"			1.8/0.8
**128443AFC ...	1/2" PEX expansion	11-1/16"			2.0/0.9
128442AFC ...	1/2" PEX expansion	8-13/16"			1.8/0.8
**128445AFC ...	1/2" PEX crimp	10-1/8"			2.0/0.9
128444AFC ...	1/2" PEX crimp	7-13/16"			1.8/0.8
**128447AFC ...	1/2" press*	9-11/16"			2.0/0.9
128446AFC ...	1/2" press*	7-1/2"			1.8/0.8
**128448AFC ...	1/2" sweat	8-13/16"			2.0/0.9
128449AFC ...	1/2" sweat	6-9/16"			1.8/0.8
**128450AFC ...	3/4" NPT male	9-1/4"			2.0/0.9
128451AFC ...	3/4" NPT male	7"			1.8/0.8
**128453AFC ...	3/4" PEX expansion	11-1/16"			2.0/0.9
128452AFC ...	3/4" PEX expansion	8-13/16"			1.8/0.8
**128455AFC ...	3/4" PEX crimp	10-1/16"			2.0/0.9
128454AFC ...	3/4" PEX crimp	7-13/16"			1.8/0.8
**128457AFC ...	3/4" press*	10-1/8"			2.0/0.9
128456AFC ...	3/4" press*	7-7/8"			1.8/0.8
**128458AFC ...	3/4" sweat	9-1/4"			2.0/0.9
128459AFC ...	3/4" sweat	7"			1.8/0.8
**128460AFC ...	1" NPT male	9-3/4"			2.0/0.9
128461AFC ...	1" NPT male	7-1/2"			1.8/0.8
**128463AFC ...	1" PEX expansion	11-1/16"			2.2/1.0
128462AFC ...	1" PEX expansion	8-13/16"			2.0/0.9
**128465AFC ...	1" PEX crimp	10-1/4"			2.2/1.0
128464AFC ...	1" PEX crimp	8"			2.0/0.9
**128467AFC ...	1" press*	11-1/8"			2.2/1.0
128466AFC ...	1" press*	8-13/16"			2.0/0.9
**128468AFC ...	1" sweat	9-7/16"			2.2/1.0
128469AFC ...	1" sweat	7-3/16"			2.0/0.9

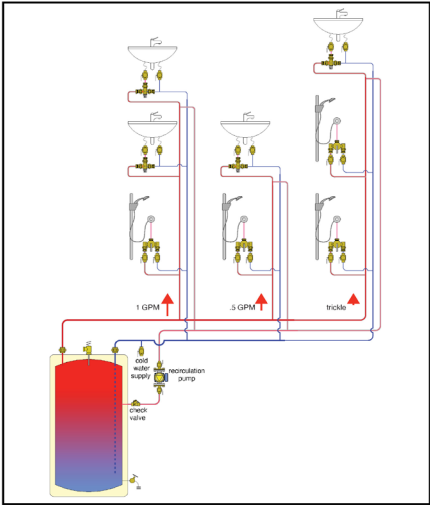
**with outlet temperature gauge

Hot Water Recirculation:

Balanced example



Unbalanced example



NOTES

LEAVE THIS MANUAL WITH THE USER.

Laissez ce manuel a la disposition de l'utilisateur.



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08-2022