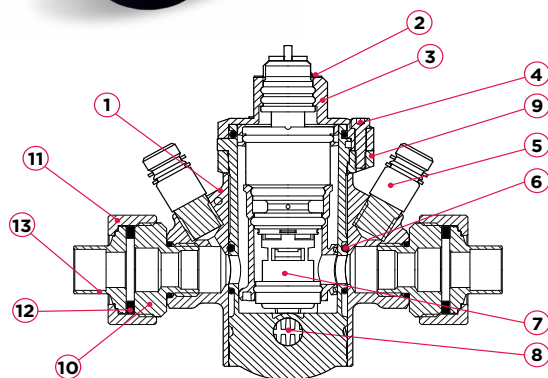




The Apollo® 1600 Pressure Independent Control Valve (PICV) series is designed for the automatic balancing of sections of pipe work and equipment in Hydronic and potable water applications. By incorporating a combined pressure-independent flow limiter and control valve, the valve operates independently of changes in system pressure in water-based HVAC systems.

Equipped with Fast-Flush™ technology, offering a built-in integrated flushing bypass and in-line isolation in a single control valve. Fast-Flush™ technology ensures thorough system cleansing and eliminates debris contamination during commissioning. Eliminate the need for cartridge removal and save time, while also preventing future maintenance issues.



job name	
job location	
engineer	
contractor	
tag	
PO#	
rep	
wholesaler dist	

features

- DZR brass body rated to 250 psi (145 psi static)
- for line-sizes 1/2” through 1”
- operating temperature +14°F to 194°F
- clear setting indication, with or without an actuator fitted
- M30 x 1.5 mm actuator mount with 100% BMS (Building Management System) override
- ideal for heating and cooling applications
- integral “Apollo” Fast-Flush™ technology
- integral isolation mode, no need for inline ball valves
- selectable bypass & dynamic functions
- double-union configuration is standard and comes with both NPT & solder tailpiece connections
- NSF/ANSI/CAN 61 water quality
- NSF/ANSI/CAN 372 lead free

no.	component	material
1	body	DZR lead free brass (CW511L)
2	indicator	stainless steel (AISI 304)
3	cap	DZR lead free brass (CW511L)
4	socket screw	stainless steel (AISI 304)
5	test point	DZR brass (CW602N)
6	o-ring	EPDM
7	cartridge	polyphenylene sulphide (PPS)
8	locking peg	polyoxymethylene (POM)
9	clamp	DZR lead free brass (CW511L)
10	union adapter	DZR lead free brass (CW511L)
11	union nut	brass (C36000)
12	washer	nitrile
13	tailpiece	DZR lead free brass (C27451)

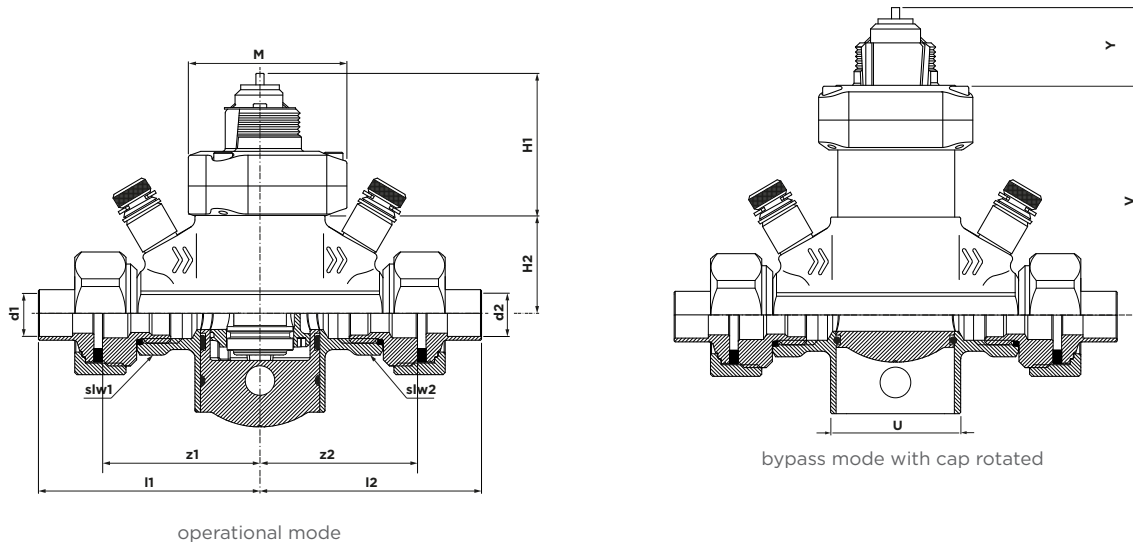
specification

The Pressure Independent Control Valve (PICV) for line-sizes ½” - 1” shall be a DZR brass, 250 psi CWP rated, “Dynamic” valve. The PICV shall incorporate an M30 x 1.5mm actuator mount with 100% BMS valve override authority. The PICV shall incorporate a built-in “Fast-Flush™” full-flow integrated flushing bypass and an integral in-line isolation feature that are separate from the dynamic PICV cartridge. The bypass & dynamic functions shall be individually selectable and independently lockable via a rotating quarter turn action. The selected function shall be visible on the rotation sleeve. The PICV set point shall be permanently visible with the actuator mounted. The PICV shall be available with numerous connection options for heat-free pipework installation when required.

maximum pressure [CWP]	
operating pressure	test pressure shell
250	348

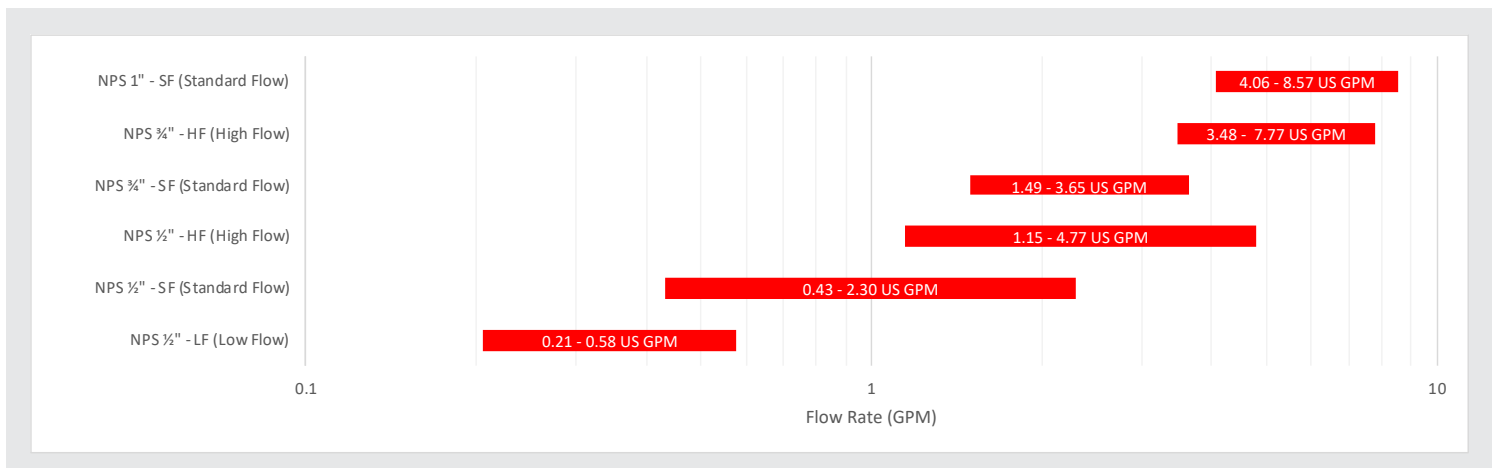
available connections

double-union configuration is standard and comes with both NPT & solder tailpiece connections



dimensions	item no.	weight lb	I1/I2	z1/z2	U [Ø]	V	Y	M	H1	H2	slw1/slw2
NPS ½" - LF (low flow)	1603LDDB	2.81 (1.27 kg)	3.10" (48 mm)	2.30" (29 mm)	1.93" (49 mm)	3.31" (84 mm)	1.22" (31 mm)	2.56" (65 mm)	3.54" (90 mm)	1.73" (44 mm)	1.06" (27 mm)
NPS ½" - SF (standard flow)	1603SDDB	2.81 (1.27 kg)	3.10" (48 mm)	2.30" (29 mm)	1.93" (49 mm)	3.31" (84 mm)	1.22" (31 mm)	2.56" (65 mm)	3.54" (90 mm)	1.73" (44 mm)	1.06" (27 mm)
NPS ½" - HF (high flow)	1603HDDB	2.81 (1.27 kg)	3.10" (48 mm)	2.30" (29 mm)	1.93" (49 mm)	3.31" (84 mm)	1.22" (31 mm)	2.56" (65 mm)	3.54" (90 mm)	1.73" (44 mm)	1.06" (27 mm)
NPS ¾" - SF (standard flow)	1604SDDB	4.00 (1.82 kg)	3.60" (52 mm)	2.50" (33 mm)	2.36" (60 mm)	4.21" (107 mm)	1.22" (31 mm)	2.99" (76 mm)	4.13" (105 mm)	2.28" (58 mm)	1.26" (32 mm)
NPS ¾" - HF (high flow)	1604HDDB	4.00 (1.82 kg)	3.60" (52 mm)	2.50" (33 mm)	2.36" (60 mm)	4.21" (107 mm)	1.22" (31 mm)	2.99" (76 mm)	4.13" (105 mm)	2.28" (58 mm)	1.26" (32 mm)
NPS 1" - SF (standard flow)	1605SDDB	5.00 (2.27 kg)	4.10" (52 mm)	2.50" (42 mm)	2.36" (60 mm)	4.21" (107 mm)	1.22" (31 mm)	2.99" (76 mm)	4.13" (105 mm)	2.28" (58 mm)	1.57" (40 mm)

dimensions	item no.	US GPM		l/s	
		min.	max.	min.	max.
NPS ½" - LF (low flow)	1603LDDB	0.21	0.58	0.013	0.036
NPS ½" - SF (standard flow)	1603SDDB	0.43	2.30	0.027	0.145
NPS ½" - HF (high flow)	1603HDDB	1.15	4.77	0.073	0.301
NPS ¾" - SF (standard flow)	1604SDDB	1.49	3.65	0.094	0.230
NPS ¾" - HF (high flow)	1604HDDB	3.48	7.77	0.220	0.490
NPS 1" - SF (standard flow)	1605SDDB	4.06	8.57	0.256	0.541



flow rate “Apollo” 1600 PICV



actuation

The “Apollo” actuation range provides application solutions, including standard on/off thermal actuation to fast acting motoric actuators.

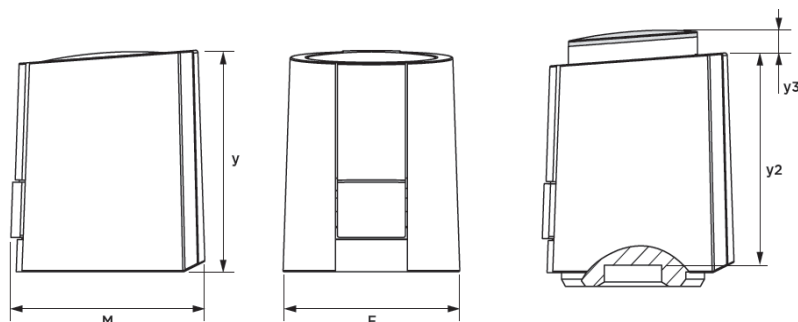
electro thermal actuation - on/off and modulating

Natural convection (passive) terminal units (i.e. passive chilled beams and underfloor heating) are designed to be less responsive to changes in room temperature than forced convection terminal units.

electro motoric actuation - floating and proportional

“Apollo” electro-motoric actuators can react to flow rate and heat output changes matching demand requirements rapidly, ensuring the perfect solution, suitable for convection terminal applications.

electro thermal actuation



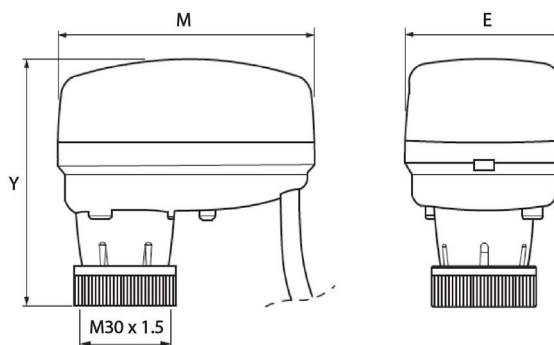
features- thermal actuator

- compact dimensions
- first-open function
- maintenance free
- noiseless
- low power consumption
- 360° installation position
- position indicator

features- motoric actuator

- fast acting
- double color LED
- removable cable
- direct acting

electro motoric actuation



actuator type	item no.	voltage	weight lb	E	M	y	y ²	y ³
electro thermal, on off (normally closed - NC)	15202	24VAC/DC, 2.3V A 1W	0.31 (0.14 kg)	1.73" (44 mm)	1.89" (48 mm)	2.05" (52 mm)	1.97" (50 mm)	0.28" (7 mm)
electric thermal, proportional (normally closed - NC)	15281	24V AC (10V DC), 3.1V A	0.31 (0.14 kg)	1.73" (44 mm)	1.89" (44 mm)	2.05" (52 mm)	1.97" (50 mm)	0.28" (7 mm)
electric motoric, modulating (normally open - NO)	18275	24V AC (0-10V DC), 2.5V A	0.44 (0.20 kg)	1.93" (49 mm)	3.15" (80 mm)	2.91" (74 mm)	-	-



accessories

setting key

for adjusting the desired flow setting on the cartridge



dimension	item no.
½" - 1" NPS	16075

*see installation guidelines “Apollo” 1600 PICV

locking pin and tether

replacement part for “Apollo” 1600 PICV



dimension	item no.
½" NPS	16076
¾" - 1" NPS	16077

cap

protects actuator mounting threads and cartridge head when actuator is not installed



dimension	item no.
½" - 1" NPS	16078

*see installation guidelines “Apollo” 1600 PICV

operating tool

easily rotates the cap for selecting dynamic, isolation or Fast-Flush™ bypass modes



dimension	item no.
½" NPS	16079
¾" - 1" NPS	16080

*see installation guidelines “Apollo” 1600 PICV

cartridge

replacement cartridges for “Apollo” 1600 PICV



dimension	item no.	color
½" NPS low flow	16070	white
½" NPS standard flow	16071	red
½" NPS high flow	16072	black
¾" NPS standard flow	16073	white
¾" NPS high flow / 1" NPS standard flow	16074	black