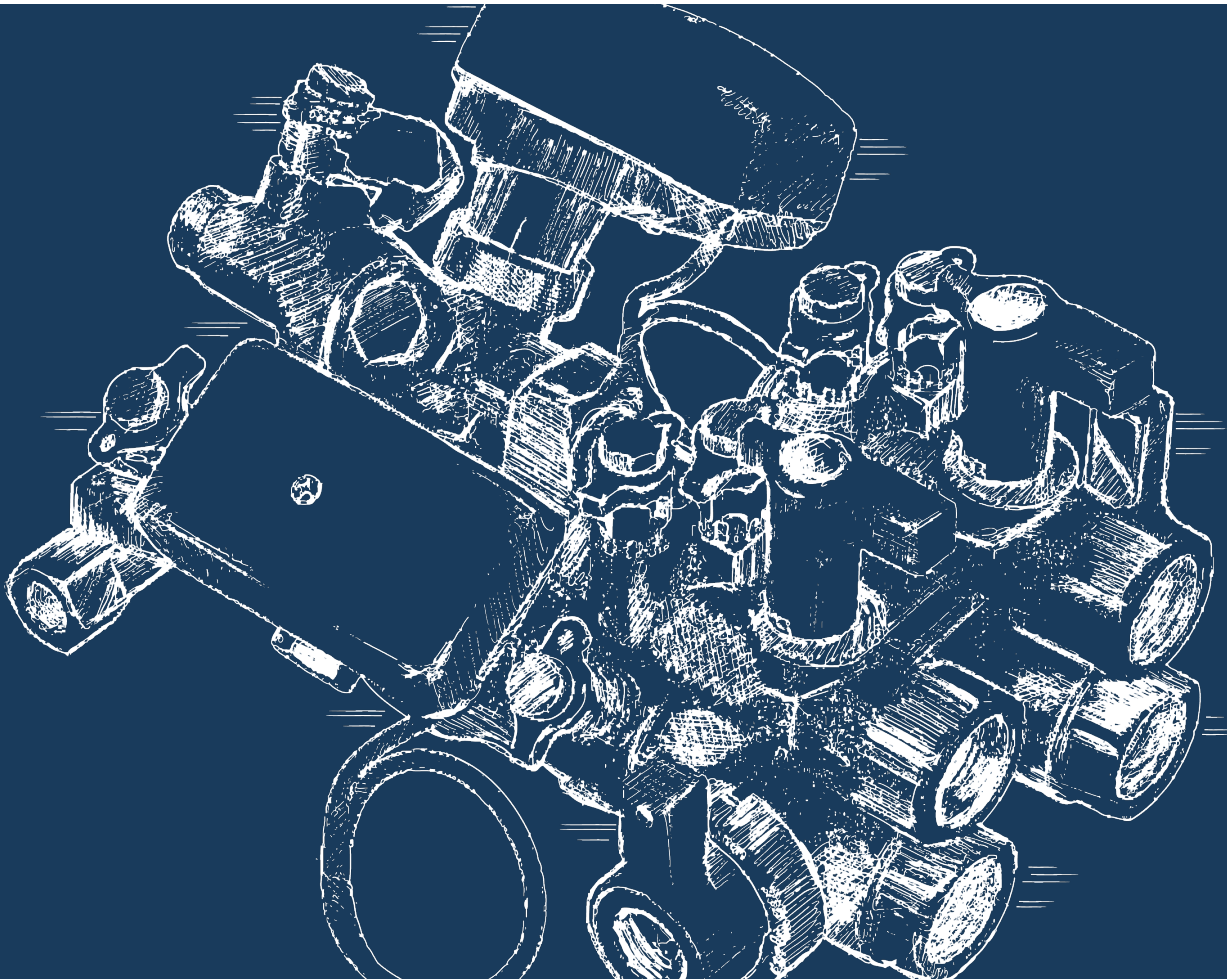


# Commercial Product Guide

Edition 1



[altecnic.co.uk](http://altecnic.co.uk)

**altecnic**  
Caleffi group

**Authentic  
Accredited  
Altecnic**



# Altecnic is the UK's largest plumbing products supplier and has been providing the heating and plumbing industry with the highest quality systems and components for over 30 years.

The company has for many years worked closely with major boiler manufacturers, partnering with them from concept design through to manufacturing. This close relationship combined with the value-added services Altecnic provides enables manufacturers to deliver reliable solutions for their customers.

Altecnic's products and services are often the first choice of trade merchants, original equipment manufacturers, plumbing and heating engineers and specifiers. The company's breadth and range of products, backed by all relevant certification and approvals, means customers can be confident when selecting Altecnic solution.

Established near Stafford in 1987, Altecnic has built its reputation on supplying products that its customers currently need to meet the industry's demands while the company's dedicated technical team works on what the market will need in the future. Development

work by Altecnic's European parent Caleffi continually anticipates new regulations and market trends.

While Altecnic's image has changed over those three decades to reflect the increasing dynamism and growth of the company, its core beliefs and values remain the same: to offer market leading quality products to the plumbing and heating industry, delivered throughout the UK and Southern Ireland.

Altecnic is dedicated to quality and service and is proud to be ISO 9001:2015, ISO 14001:2015 and OHSAS 18001:2007 certified.

The company continues to work with its in-house technical designers to keep the whole product range compliant with current and anticipated legislation. Altecnic is also a CarbonNeutral® company the first in the industry.



## Please Note

The WRAS Approved Product  
[www.wras.co.uk](http://www.wras.co.uk)



The Buildcert  
[www.buildcert.com](http://www.buildcert.com)



The DTC  
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AltecnicLtd



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Altecnic

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For thirty years, Altecnic has supported the UK plumbing and HVAC industry with the best advice and market leading products from our parent company Caleffi S.p.A.

Caleffi was founded in 1961 to provide high quality heating and plumbing components.

Based near Milan in Northern Italy, Caleffi has maintained its principles and grown rapidly to include global sales based out of three core factories within a few miles of each other.

Caleffi is the largest manufacturer of hydronic components in Italy and from these factories produces stamped brass and thermo plastics, core materials for its ranges, ensuring the very highest quality control.



## Recent milestones include:

- 2000** Caleffi has 600 employees and turnover in excess of 100 million euros.
- 2002** Altecnic becomes part of the Caleffi family.
- 2003** Caleffi introduces market leading separators and deaerators.
- 2007** Offices open in USA.
- 2008** The iconic CUBOROSSO research and testing facility is completed. Caleffi has always had a comprehensive quality control process but the CUBOROSSO is it's heart.
- 2010** An innovative vertical warehouse is built to provide global stock support enabling fast delivery wherever you are.
- 2010** Japanese offices open.
- 2016** Caleffi has more than 1,000 employees in 12 companies and over 70 active markets.
- 2016** Caleffi group consolidated turnover exceeds 300 million euros.
- 2017** Caleffi acquires CRISTINA Rubinetteria entering the market of taps and fittings to ensure continuity and future growth for the CRISTINA and SILFRA trademarks.

**For over 30 years Altecnic has been a leader in the supply of quality, accredited plumbing and heating products.**

Backed by our parent company Caleffi we pride ourselves on the ability to keep ahead of market needs by anticipating new technologies and developing new products.

Supporting our focus on continued development and product innovation we have also developed a range of CIBSE approved, Continued Professional Development (CPD), seminars. For further information about our CPD's and other available training courses please contact us.

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Details of the range of products approved can be found in the Water Fittings and Materials

Online Directory - [www.wras.co.uk](http://www.wras.co.uk)



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All dimensions are in millimetres (mm) unless otherwise stated.

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# System Balancing

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# System Balancing

The hydronic circuits serving space heating and air conditioning systems must be balanced. This means that they must be constructed and controlled in such a way as to guarantee the design flow rates of the thermal medium are achieved at the terminal units. The building must be designed and built to ensure the comfort of its occupants.

In addition, the building must be constructed with the aim of achieving fundamental goals including reduced energy demand and environmental protection, with reduced CO2 emissions.

Controlling the climate of a confined space means creating the necessary conditions to guarantee the thermal comfort of the occupants.

## Design

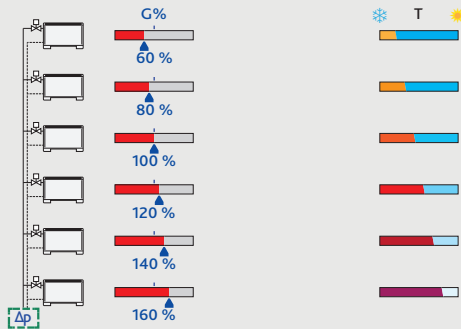
The consultant, depending upon the size and function of each space/room within the building, specifies the temperature requirement for the comfort of the occupants and the type of equipment to be used.

To heat, cool or provide DHW this can include:

- heat interface units
- fancoils
- air handling units
- radiant panels
- chilled beams
- radiators

Flow around the system and to the terminal units should never be left unbalanced otherwise the system may not meet environmental demands and would be extremely inefficient.

Example of the resultant flow rate and temperature in an unbalanced circuit.



# Types of Control/Balancing Valves

To overcome these problems, it is normal practice to install various balancing devices:

## Static Balancing Valves

**Manual Balancing Valves** - these are conventional valves suitable for use in constant flow rate circuits frequently in conjunction with 3-port valves or downstream of the DPCVs in variable volume systems.

130 Series Manual Balancing Valve



## Dynamic Balancing Valves

**Constant Flow Regulators** - modern automatic devices which respond to changes in differential pressure to maintain the design flow rate of the internal flow regulating cartridge.

FLOWCAL® 120 Series Automatic Flow Control Valve



**Differential Pressure Control Valves (DPCV)** – DPCVs are adjustable and respond to changes in differential pressure automatically, adjusting to maintain a stable differential pressure between the capillary insertion point and the valve body.

140 Series Differential Pressure Control Valve



**Pressure Independent Control Valves (PICV)** PICVs control differential pressure across themselves, allowing a stable flow rate to be set on the valve regardless of any differential pressure changes upstream of the valve. The addition of a control head, ON/OFF or modulating allows the valve to become the terminal unit control valve."

The designer of the system calculates the flow rate required to each terminal unit and selects the type and size of the balancing valve to control the flow based on the type of pumping system utilised (constant or variable speed).

FLOWMATIC® 145 Series - Pressure Independent Control Valve



Variable speed pumps are more common today, due to their ability to vary the flow rate to meet demand. Thereby reducing flow rates around the system, reducing system heat losses, reducing pumping costs, thereby increasing system delta-T and system efficiency.

# System Balancing

Water always takes the path of least resistance so, with identical circuits, the one nearest the pump will receive a much higher percentage of the design flow rate than the one furthest away.

This means in a heating circuit the room nearest the pump receiving the most water will be uncomfortably hot whilst the one furthest away will be uncomfortably cool.

If the circuits are identical, the difference in actual flow rate against design flow rate will be proportional, as shown previously (Diagram - page 0.01).

Unbalanced systems may have high energy consumption since the total flow rate may be higher than the total of the design flow rates.

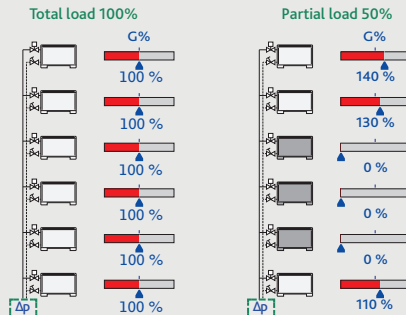
Increased flow rates lead to greater pump energy usage, reduced system delta T's potential over heating or under heating, low occupancy satisfaction and dramatically reduced efficiency.

With a constant flow pumping system, the manual balancing valves will need to be set by a commissioning engineer to balance the flows across the circuits and ensure design flow rates to the terminal units. This can be a difficult and time consuming operation. Once complete, the flow rates will be set and the system is balanced under these conditions.

As the plant-room pump is running at a constant speed, the system stays in balance at all times.

Using manual balancing valves with variable speed pumping systems is not to be recommended, unless they are installed downstream of a DPCV. Without the DPCV installed, the differential pressure will change, as the pump changes speed. If the differential pressure changes, the flow rate through the manual balancing valve will also change and the result will be over and underflows to the terminal units. With manual balancing valves, the system is balanced only under a single set of conditions.

Example of a system with manual balancing and the changes in terminal unit flow rate under changing demand conditions without three-port bypass valves.



As the terminal units vary the flow rate they require, the three-port valve varies its position to alter the flow rate around the bypass and therefore keep the system in balance.

With a variable speed pumping system, the change in pump speed alters the differential pressure around the system and therefore the flow rate through the manual valve. Variable speed systems need a different control valve methodology.

With variable speed systems, there are a number of valve types that can be utilised to keep the system under control.

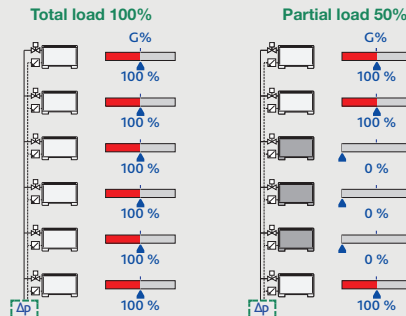
Utilising differential Pressure Control Valves, ensures that the differential pressure downstream of the DPCV remains stable regardless of the pump speed. Therefore, installing a DPCV on a branch leg, allows normal manual balancing valves to be installed on the terminal units. As the pump speed changes, the DPCV will adjust and the differential pressure the manual valve 'sees' will remain constant.

Alternatively, automatic balancing valves (ABVs) such as Caleffi FlowCal, are dynamic devices that automatically adjust to keep the flow rate constant, under changing differential pressure conditions. There's no need to install the DPCV when utilising automatic balancing valves.

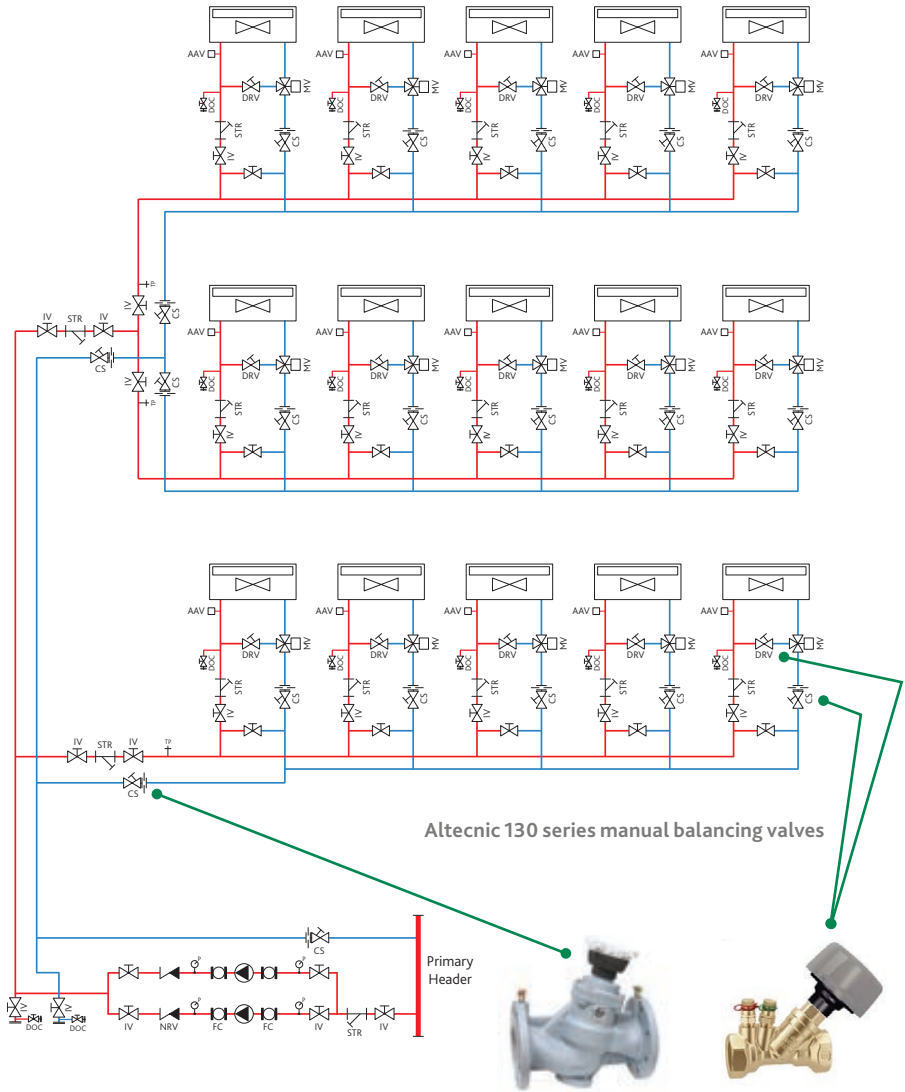
Lastly, Pressure Independent Control Valves (PICVs) are a relatively new method for controlling variable speed systems. The PICV is, in effect, a combination valve, featuring a DPCV and a control valve. The valve holds a stable differential pressure across itself thereby allowing the flow rate from the valve to be set and remain stable, regardless of changes in differential pressure. The addition of a control head to the valve, allows the valve to operate as the terminal unit control valve.

**Altecnic provides CIBSE approved CPD seminars on system balancing and other topics. Please contact us for further details.**

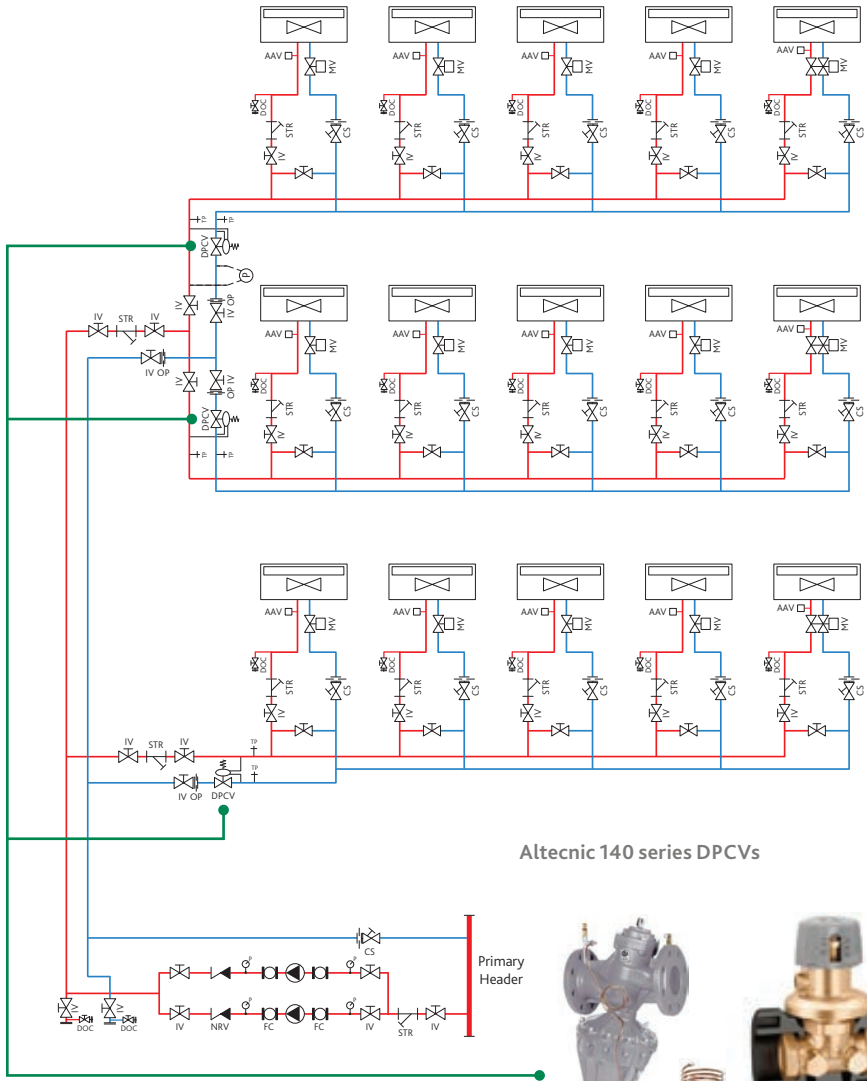
Example of a variable speed system under full and part load. The flow to each terminal unit never exceeds the design flow rate.



## Example of a constant speed system



## Example of variable speed pumping with differential pressure control

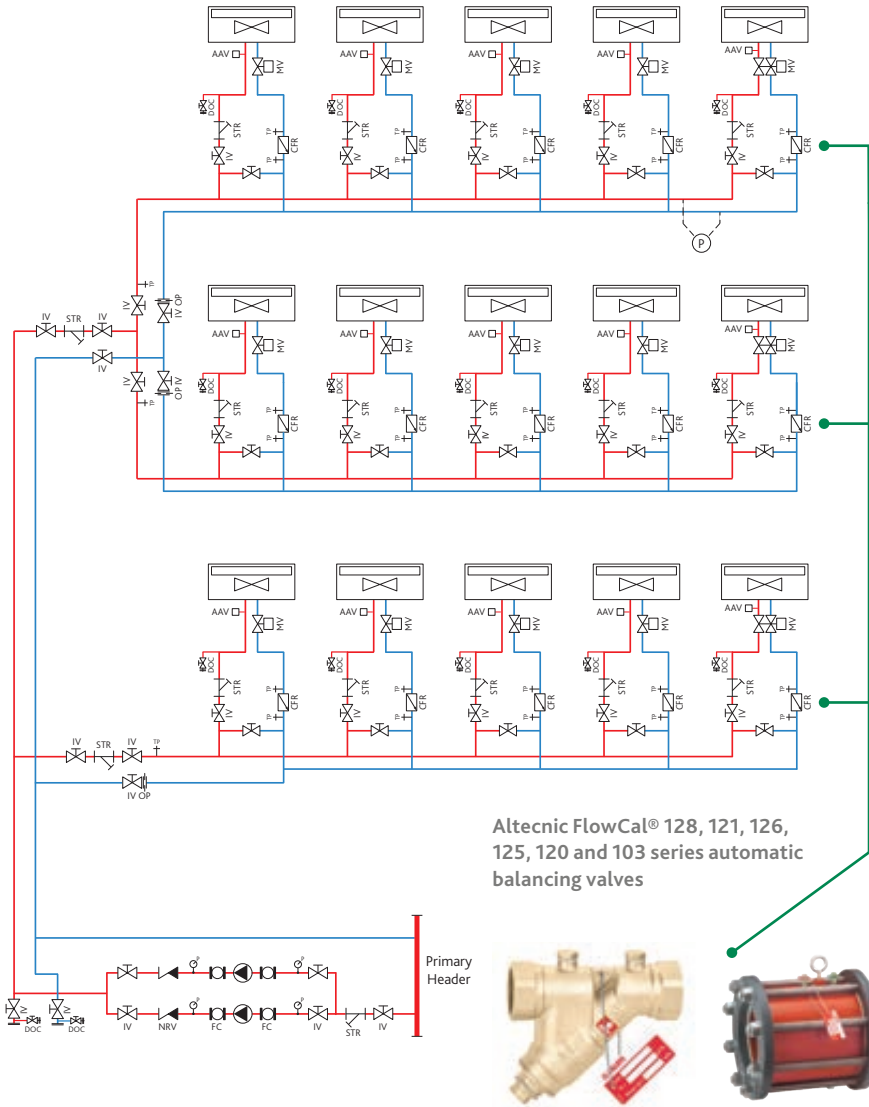


Altecnic 140 series DPCVs

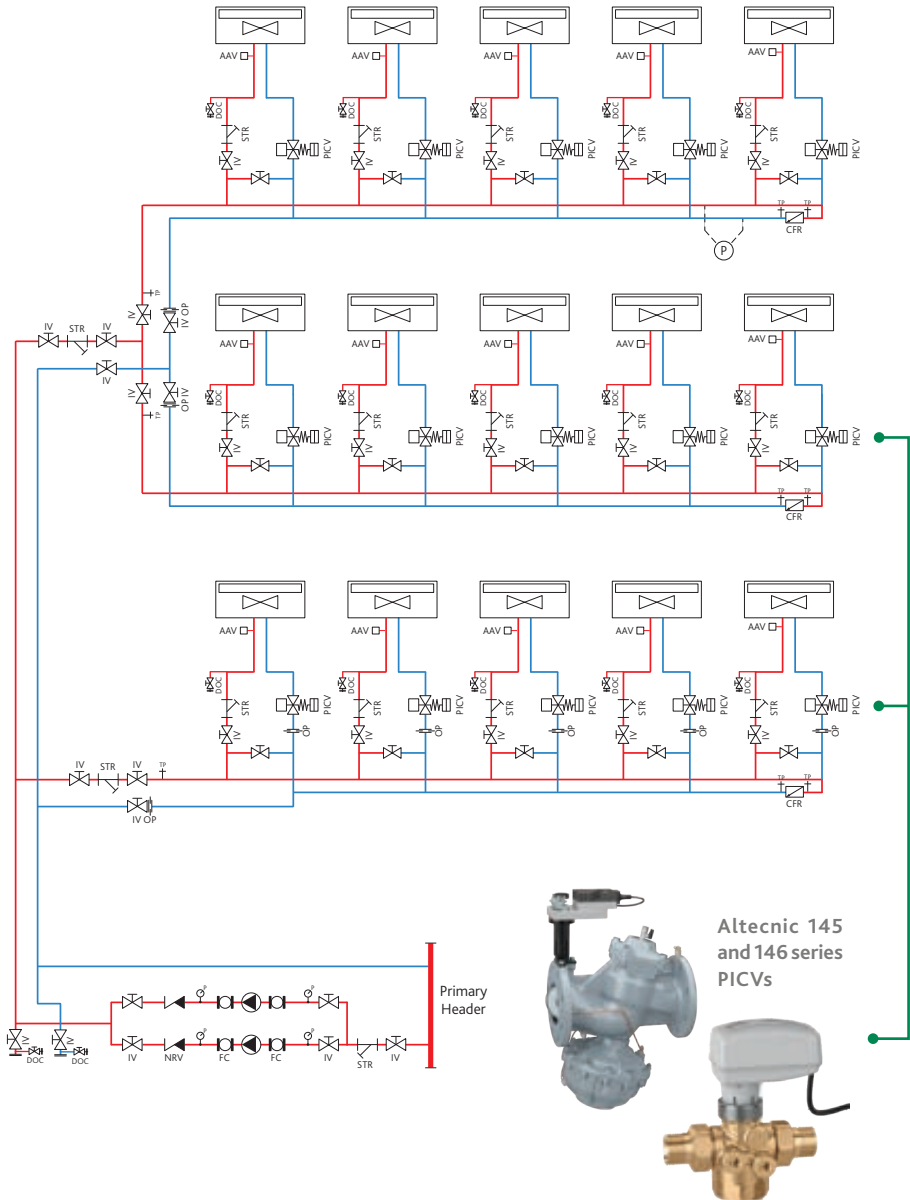




## Example of variable speed pumping with automatic balancing valves



## Example of a variable speed pumping system with pressure independent control valves





01

Heat Networks

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# Heat Networks

Efficient, reliable and compact, the next generation of SmartSat® intelligent heat interface units for central plant systems.

The drive to conserve finite fossil energy stores and reduce the carbon footprint of buildings to meet latest regulations, has pushed the modern building services engineer to create specific central plant designs.

This allows for the easy and efficient integration of renewable energy sources, such as CHP, solar, heat pumps etc. A central plant system needs to offer a reliable and efficient way of producing hot water, controlling the heating and metering of each individual flat, apartment or house. Altecnic's range of SmartSat® Heat Interface Units (HIUs), consumer modules and metering products, do just that.

The extensive range, includes products for systems with centralised domestic water storage, instantaneous apartment based domestic water generation and apartment based combined cylinders and exchange units.

The latest SmartSat® intelligent heat interface units, the SATK range, take apartment heat interface units to the next level. Utilising electronic control, it enables many significant features not found on other units, for example, modulating primary heating circuit flow temperatures on both direct and indirect heating versions, return temperature limitation, primary flow rate limitation, remote Modbus control, configurable preheat, remote unit isolation, via the internet and a safety pump bypass. Their compact size and insulated enclosure mean that they're easy to locate and extremely efficient.

Each SmartSat® HIU can be installed with a variety of energy meters, all MID approved and capable of communicating by MBus or radio for remote data collection and billing. Altecnic also offers an apartment control module and remote metering module intended for installation outside of the apartment and containing all the necessary meters, strainers and isolation equipment required to monitor and control individual apartments.



**Altecnic can provide a CIBSE approved Continued Professional Development (CPD) seminar on District Heating.**

**For further information about our CPD's and other available training courses please contact us.**

# SATK32 INDIRECT WITH NETWORK PROTECTION AND INTEGRAL ROOM CONTROLLER



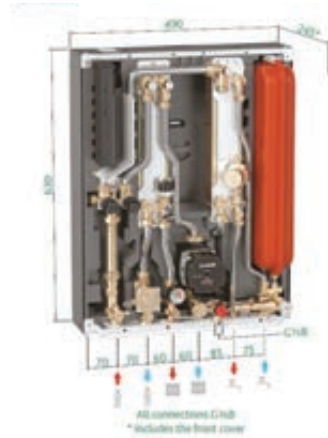
## Technical Data

Maximum static working pressure:	16 bar - primary 3 bar - secondary
Max primary differential pressure:	600kPa
Max. percentage of glycol:	30%
Min. differential pressure:	45 kPa
Maximum temperature:	90°C
Medium:	Water
Min flow rate to activate sensor:	1.5 ltr/min
Complete with configurable room controller/thermostat	
Connections:	male thread BSP (G)

## Materials

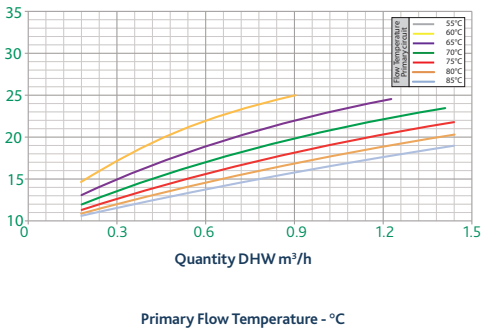
Component	Material	Grade
Frame	Painted steel	EN 12165 CW602N
Cover	Steel	
Expansion vessel (7ltrs)	Steel	
Clamshell insulation		EPP 0.04 W/mK
Connecting pipework	Stainless steel	
Pump		UPM3 15-70
Electronic controller		230 V - 50 Hz

## Dimensions



## Domestic hot water output

SATK32105  
DHW PHE performance chart - DHW 10 to 48°C



Ref no	Heating Temp. Range	DHW Output	Kg
ALT - SATK32103	25 — 75°C	50 kW	34
ALT - SATK32105	25 — 75°C	75 kW	35

Ref no	Height	Width
ALT-SATK32103	630	490
ALT-SATK32105	630	490

## SATK30 INDIRECT

### Technical Data

Maximum static working pressure:	6 bar - primary
	3 bar - secondary
	10 bar - DHW
Maximum differential pressure:	165 kPa
Optionally available:	600 kPa
Min. differential pressure:	35 kPa
Maximum temperature:	85°C
Medium:	Water
Min flow rate to activate DHW:	2.7 l/min
Connections:	male thread BSP (G)



ALT-SATK30105HE

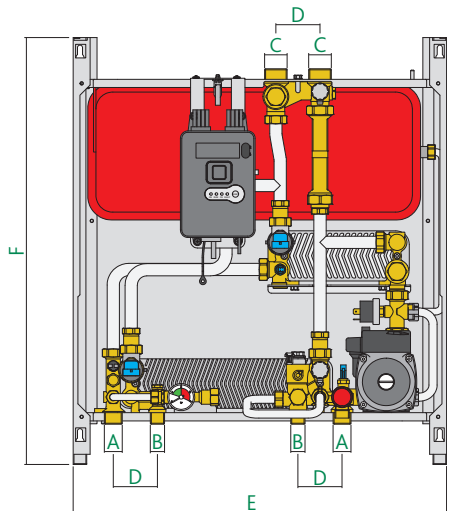


SATK30103HE

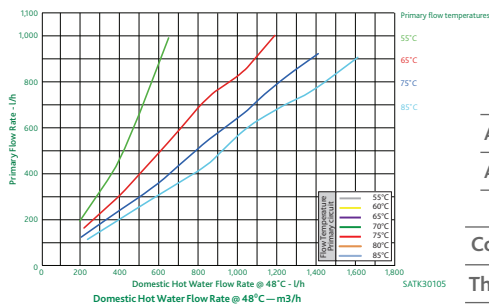
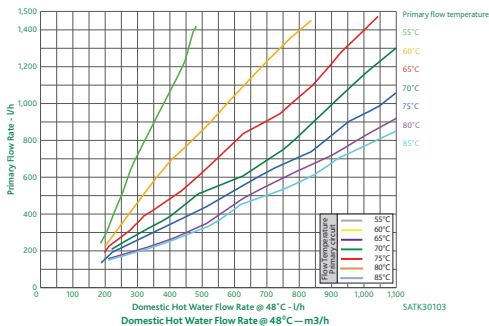
### Materials

Component	Material	Grade
Frame	Painted steel	EN 12165 CW602N
Front cover	EPP	0.04 W/mK
Expansion vessel	Steel	
Connecting pipework	Stainless steel	
Pump		UPM3 15 — 70
Electronic controller		230 V-50 Hz

### Dimensions



### Domestic hot water output



Ref No	Heat Temp. Range	DHW Capacity	Kg
ALT-SATK30103HE	25 — 75 °C	50 kW	25
ALT-SATK30105HE	25 — 75 °C	75 kW	27

Connection	A	B	C	D	E	F	Depth inc. Cover
Thread	¾"	½"	1"	65	550	630	265

## SATK22 INDIRECT



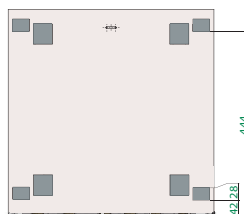
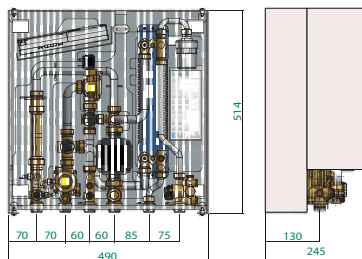
### Technical Data

Max. percentage of glycol:	30%
Max. temperature:	85°C
Max. static working pressure: Primary	10 bar
Secondary	10 bar
Domestic hot water	10 bar
Max. differential pressure:	600kPa
Min. flow rate to activate domestic flow sensor:	1.5 l/min
Power supply:	230 V (ac) ± 10% 50 Hz
Pump:	UPM3 15-70
Safety relief valve setting:	3 bar
Min differential pressure:	45kPa

### Materials

Components	Brass EN 12165 CW617N
Pipes	Stainless steel
Frame	RAL 9010 sprayed steel
Heat Exchanger	Brazed stainless steel
<b>Insulation</b>	
Clamshell cover	EPP 0.04 W/mK

### Dimensions



Code	Heating Temp. Range	DHW Output
SATK22103	25 — 45°C	50 kW
SATK22105	25 — 45°C	60 kW
SATK22203	45 — 75°C	50 kW
SATK22205	45 — 75°C	60 kW
SATK22303	Max 90°C	50 kW
SATK22305	Max 90°C	60 kW
SATK22403*	Max 90°C	50 kW
SATK22405*	Max 90°C	60 kW

(\* ) with primary pump



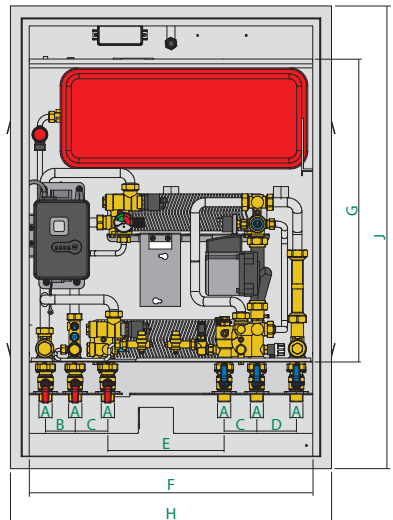
## SATK60 INDIRECT

### Technical Data

Max. percentage of glycol:	30%
Maximum temperature:	85°C
Maximum static working pressure:	16 bar - primary 3 bar - secondary 10 bar - DHW
Nom. heating exchanger capacity:	15 kW
Nom. DHW exchanger capacity:	50 kW
Max differential pressure:	90kPa
Min. differential pressure:	35 kPa
Electrical supply:	230 V (ac) ±10% 50 Hz
Pump:	UPM3 15-70
Safety relief valve setting:	3 bar
Expansion vessel:	7 l
Mounting bracket:	order 794960 (depth 120 mm)
Min flow rate to activate DHW:	2.7 l/min
Connections:	male thread BSP (G)



### Dimensions

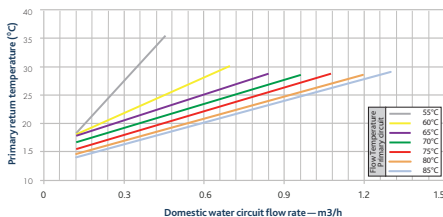


### Materials

Component	Material	Grade
Frame:	Painted steel	RAL 9010
Components	Brass	EN12165 CW617N
Connecting pipework	Steel	RAL 9010
Heat exchanger	Brazed stainless steel	

### Domestic hot water output

SATK50 - SATK60 series domestic hot water performance table  
DHW10—48°C, maximum differential pressure 30 kPa



Ref No	A	B	C	D	E	F	G	H	I	Kg
ALT-SATK60103	¾"	59	65	79	232	570	590	625	890	22

## SATK20 DIRECT

### Technical Data

Max. percentage of glycol:	30%
Maximum temperature:	85°C
Maximum static working pressure:	10 bar - primary 10 bar - secondary
Nom. DHW exchanger capacity:	50 kW
Maximum differential pressure:	90 kPa
Electrical supply:	230 V ac, 50 Hz
Pump:	UPM3 15-70
Min flow to activate DHW:	2.7 l/min
Min differential pressure:	35 kPa
Connections:	male thread BSP (G)



ALT-SATK20103

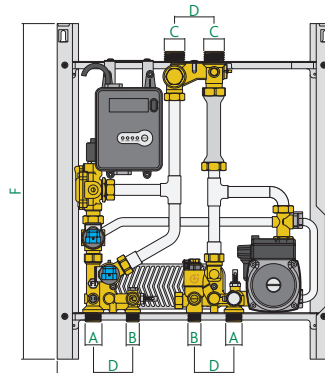


ALT-SATK20303

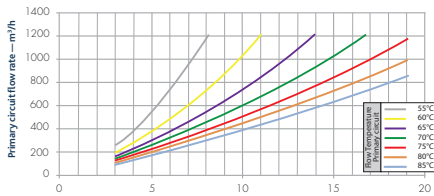
### Materials

Component	Material	Grade
Components	Brass	BS EN 12165 CW617N
Pipes	Steel	
Frame	Painted steel	RAL 9010
Protective shell	EPP	0.04 W/mK
Heat exchanger	Copper brazed Stainless steel	

### Dimensions



### SATK20103, 20203 and 20403 DHW performance chart



Domestic water circuit flow rate — m³/h

Ref no	A	B	C	D	E	F	Depth inc. Cover	Kg
ALT-SATK20103 HE	¾"	1/2"	1"	65	450	550	265	15 — 19

Ref No	Description
ALT-SATK20103 HE	Low temperature w/secondary DPCV (UFH)
ALT-SATK20203HE	Medium temperature w/secondary DPCV (Radiators)
ALT-SATK20303	High temperature w/secondary DPCV (Radiators)
ALT-SATK20403HE	High temperature, pumped w/secondary DPCV (Radiators)

## SATK50 DIRECT - RECESS MOUNTED HIU

### Technical Data

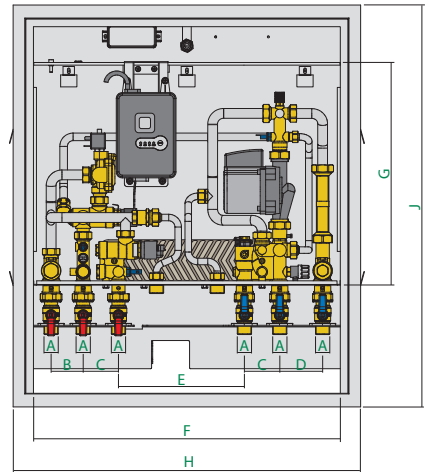
Max. percentage of glycol:	30%
Maximum temperature:	85°C
Maximum static working pressure:	10 bar - primary 10 bar - secondary
Nom. DHW exchanger capacity:	50 kW
DHW circuit max. flow rate:	20 l/min
Min. flow to activate domestic flow meter:	2.7 l/min ±0.3
Max. differential pressure:	90 kPa
Electrical supply:	230 V (ac) ±10% 50 Hz
Pump:	UPM3 15-70
Mounting bracket:	Order 794950
Connections:	male thread BSP (G)



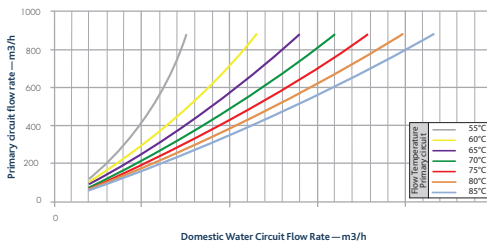
### Dimensions

### Materials

Component	Material	Grade
Frame	Painted steel	RAL 9010
Components	Brass	EN12165 CW617N
Connecting pipework	Steel	
Heat exchanger	Brazed stainless steel	



### SATK 50 Series - DHW performance chart



Code	A	B	C	D	E	F	G	H	F	Kg
SATK 50	1"	59	65	79	232	570	410	600	700	14 — 16

Ref No	Description
ALT-SATK50103HE	Low temperature (UFH)
ALT-SATK50203HE	Medium temperature (Radiators)
ALT-SATK50303	High temperature (Radiators)

## SATK40 INDIRECT - FOR USE WITH INDIRECT HOT WATER CYLINDERS

### Technical Data

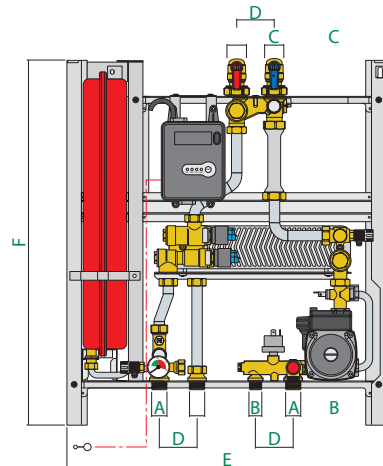
Max. percentage of glycol:	30%
Maximum temperature:	85°C
Maximum static working pressure:	16 bar - primary 3 bar- secondary
Primary differential pressure capability ( $\Delta p$ ):	165 kPa
Optionally available ( $\Delta p$ ):	600 kPa
Min.differential pressure ( $\Delta p$ ):	35 kPa
Nominal heat exchanger capacity:	15 kW
Power supply:	230 V (ac) $\pm$ 10% 50 Hz
Pump:	UPM3 15 — 70
Safety relief valve setting:	3 bar
Expansion vessel:	7.0 l
Connections:	male thread BSP (G)



### Materials

Component	Material	Grade
Components	Brass	BS EN12165 CW617N
Fitting pipes	Stainless steel	
Frame	Painted steel	RAL 9010
Protective shell cover	EPP	0.04 W/mK
Heat exchanger	Brazed stainless steel	

### Dimensions



Ref No	A	B	C	D	E	F	Depth inc. Cover	Kg
ALT-SATK40103HE	¾"	¾"	1"	65	550	630	265	24

## SATK102 DHW ONLY HIU

### Technical Data

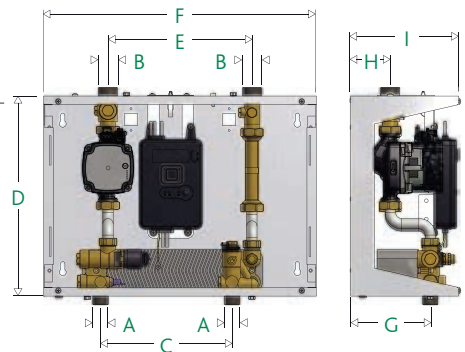
Max. static working pressure:	
Primary:	10 bar
Domestic hot water:	10 bar
Primary differential pressure capability:	90 kPa
Medium:	Water
Max. percentage of glycol:	30%
Maximum temperature:	85°C
Power supply:	230 V (ac) ±10% 50 Hz
Pump:	UPM3 15 — 70 (SATK1020.HE)
Weight:	13 — 15 Kg
Min flow rate for DHW:	2.7 l/min
Connections:	male thread BSP (G)



### Dimensions

### Materials

Component	Material	Grade
Components	Brass	BS EN 12165 CW617N
Frame	Galvanised steel	RAL 9010
Connecting pipework	Stainless steel	
Cover	Steel	



Connection	A	B	C	D	E	F	G	H	I
Thread	3/4"	1"	230	350	252	476	139	70	188

Ref no	Pump	DHW PHE kW
ALT-SATK10203HE	Y	40 kW
ALT-SATK10204HE	Y	70 kW
ALT-SATK10205HE	Y	80 kW
ALT-SATK10253	N	40 kW
ALT-SATK10254	N	70 kW
ALT-SATK10255	N	80 kW

## PROCYL COMBINED HIU AND STORAGE CYLINDER

### Technical Data

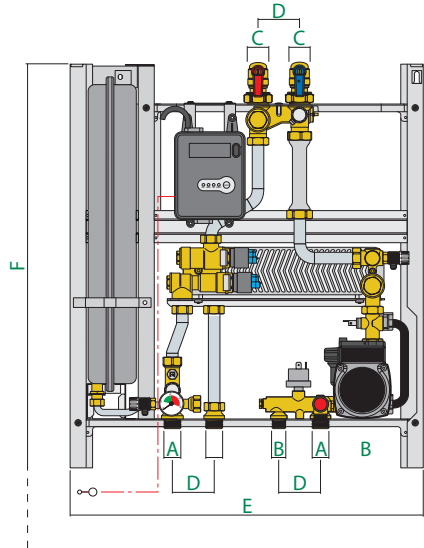
Medium:	water
Max. percentage of glycol:	30%
Maximum temperature:	85°C
Maximum static working pressure:	16 bar - primary 3 bar - secondary
Primary differential pressure capability ( $\Delta p$ ):	165 kPa
Optionally available ( $\Delta p$ ):	600 kPa
Nominal DHW exchanger capacity:	15 kW
Min.differential pressure ( $\Delta p$ ):	35 kPa
Power supply:	230 V (ac) $\pm$ 10% 50 Hz
Pump:	UPM3 15 — 70
Safety relief valve setting:	3 bar
Expansion vessel:	7.0 l



### Materials

Component	Material	Grade
Components	Brass	BS EN12165 CW617N
Fitting pipes	Stainless steel	
Frame	Painted steel	RAL 9010
Protective shell cover	EPP	0.04 w/mk
Heat exchanger	Brazed stainless steel	
Shroud	Painted steel	

### Dimensions



Ref no	Cylinder Volume	F	E	Depth	C	D
ProCyl90HE	90	1560	550	650	1"	65
ProCyl150HE	150	1910	550	650	1"	65
ProCyl200HE	200	2340	550	650	1"	65

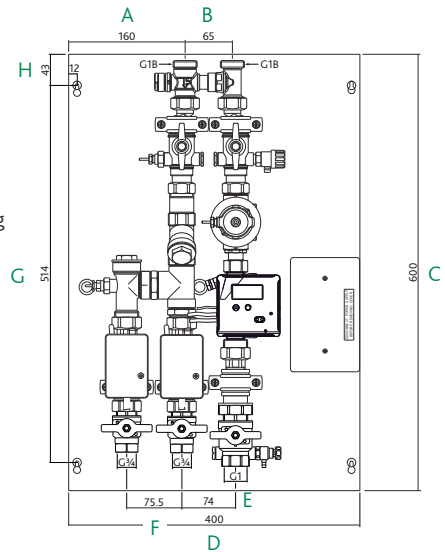
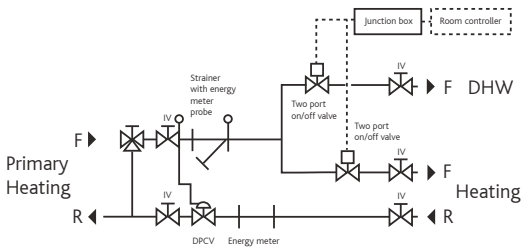
## APARTMENT CONTROL MODULE

### Technical Data

Tenant distribution module
For heating and indirect hot water cylinders
Direct hydraulic connection with a common return
Two Integral two port motorised valves and wiring centre
Integral DPCV
Integral isolation valves and strainer
Optional landlord shut off valve
Optional energy meter
Dimensions (H x W x D) 600 x 400 x 185mm



### Dimensions

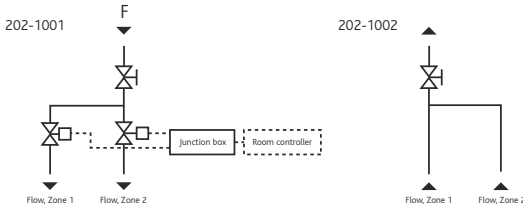


Ref no	Description
201-2001	Tenant interface module for heating and cylinder connection
TBC	Landlord control pack

A	B	C	D	E	F	G	H
160	65	600	400	74	75.5	514	43

## TWO ZONE HEATING PACK FOR HIU MODELS WITH HEATING

Ref no	Description
202-1001	Flow manifold heating pack
202-1002	Return manifold heating pack



## DIGITAL PROGRAMMABLE ROOM CONTROLLERS

Ref no	Description
501-0007	Digital programmable room thermostat - wired
501-0006	Digital programmable room thermostat - wireless

- Power supply 3V - 2x1.5AA alkaline
- LCD 3" display
- 1 potential-free changeover contact output: 8(2)A/250Va.c.
- ON/OFF operation with adjustable differential switch 0.2 — 2°C
- 5 pre-set programs + 1 free
- Temperature levels 3 + anti-freeze
- Temperature adjustable by 0.5°C sets
- Consumption counter
- Minimum programming 30 minutes
- Temporary/permanent manual operation
- System irregularity signalling
- Interruption button for cleaning operations
- Telephone control input
- Intelligent operation
- SUM/WIN control
- Holiday program
- Pump activation program
- Temperature setting lock
- Dimensions (LxWxH) 120 x 27.6 x 82



## HEAT NETWORK BYPASS ASSEMBLY

Ref no	Description
TBA	Heat network bypass valve assembly, 3/4", 10 — 60 kPa and automatic balancing valve (flow rate to be selected) inc' isolation
TBA	Heat network bypass valve assembly, 1 1/4" 10 — 60 kPa and automatic balancing valve (flow rate to be selected) inc' isolation
TBA	Heat network bypass valve assembly, 3/4", 100 — 400 kPa and automatic balancing valve (flow rate to be selected) inc' isolation

- Heat network bypass assembly
- Avoids wasted energy use and assists in holding low return temperatures
- Adjustable differential pressure bypass valve
- Autoflow, automatic balancing valve (flow rate to be selected)
- Including isolation valves
- Can be used on phased projects to ensure flexible bypass control







## FIRST FIX MOUNTING RAIL FOR SATK32

Ref no	Description
789020	First fix mounting rail for SATK20
789030	First fix mounting rail for SATK30 - SATK40
789023	First fix mounting rail for SATK 32

- First fix mounting rail for the SATK20, SATK30 and SATK32 HIU's
- Includes isolation valves and air vents
- Stainless steel pipework
- Makes all pipework bottom entry



## 'H' PATTERN FLUSHING BY-PASS

Ref no	Description
789100	Primary flushing bypass to suit SATK20, SATK30 and SATK40
789110	SATK 32 and SATK22

- H' pattern flushing bypass
- Three-port valve to open or isolate the bypass
- For use with straight pattern isolation valves (included with HIU)



## COLD WATER CONNECTION KIT

Ref no	Description
794540	Cold water connection kit with water meter spacer piece.

- Cold water meter pipework
- Integral isolation valves
- Water meter sold separately



## HOT WATER RECIRCULATION AND COLD WATER KIT

Ref no	Description
794530	Hot water recirculation and cold water connection kit for DHW only HIU's. Second non-return valve to be installed upstream of the circulator.

- Combined cold water meter and hot water recirculation connection
- Integral isolation valves and check valve
- Water meter sold separately (see 'Metering')
- Suitable for DHW only HIU's



## STRAIGHT PATTERN SECONDARY ISOLATION BALL VALVE SET

Ref no	Description
ALT-BVHIU01	SATK20 ball valve set
ALT-BVHIU03	SATK30 ball valve set
ALT-BVHIU04	SATK40 ball valve set
ALT-BVHIU05	SATK32 ball valve set



## PLANT-ROOM BUFFER VESSELS

Ref no	Description	Capacity (litre)
HV1000Y	LTHW buffer vessel	1000
HV1500Y	LTHW buffer vessel	1500
HV2000Y	LTHW buffer vessel	2000
HV2500Y	LTHW buffer vessel	2500

- 1000 to 2500 litre vessels include insulation as standard

Ref no	Description	Capacity (litre)
HV3000Y	LTHW buffer vessel	3000
HV4000Y	LTHW buffer vessel	4000
HV5000Y	LTHW buffer vessel	5000

- For LTHW storage
- Maximum operating pressure 6 bar
- Maximum operating temperature 95°C
- Red, powder coated exterior



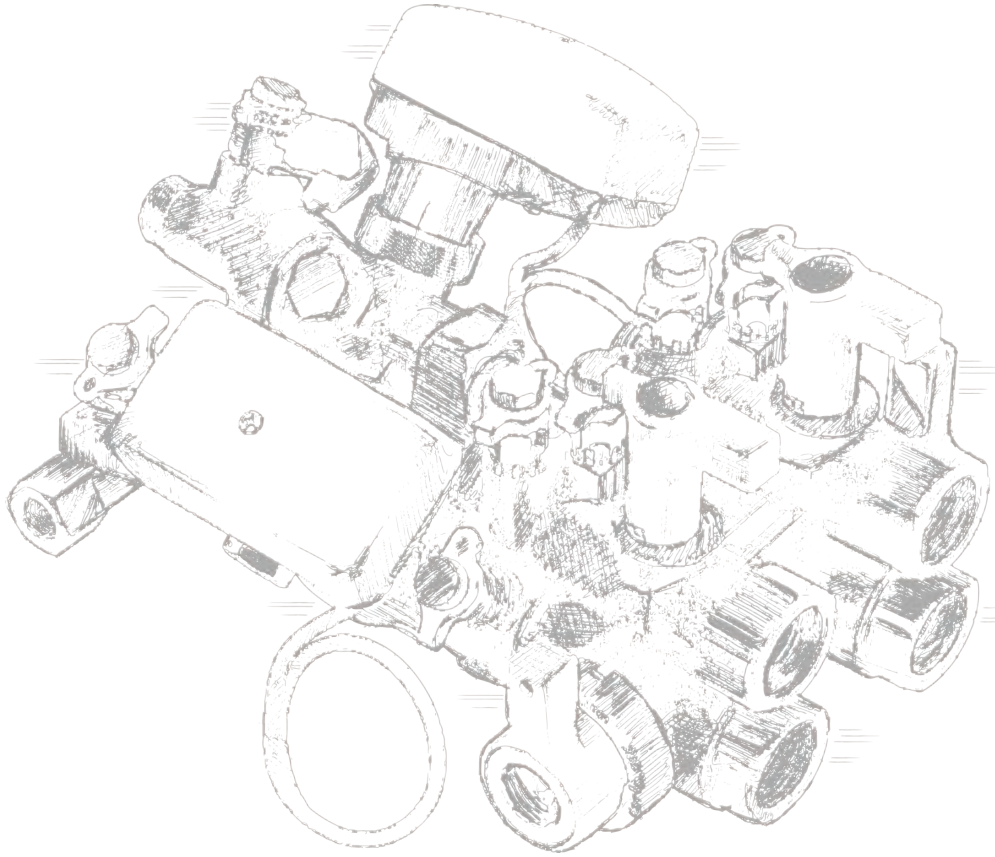
## BUFFER VESSEL INSULATION

Ref no	Description
HVA3000A	3000 litre vessel insulation
HVA4000A	4000 litre vessel insulation
HVA5000A	5000 litre vessel insulation

- Thermal insulation to suit the buffer vessels
- 90mm thick, 'soft' PU insulation
- Includes white PUF foil coat

## BUFFER VESSEL OPTIONS

Capacity (litre)	Vessel	Insulation Foam
300	ST300E	N/A
500	ST500E	N/A
800	ST800E	N/A
1000	ST1000E	N/A
1500	ST1500E	N/A
2000	ST2000E	N/A
3000	ST3000F	ST3000W
4000	ST4000F	ST4000W
5000	ST5000F	ST5000W



02

Fan Coil Connection  
Kits

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# Fan Coil Connection Kits

The Caleffi 149 series, the compact pre-assembled kits for terminal units, include all of the devices needed to ensure correct operations on a hydronic system, and have been designed for ease of commissioning and maintenance.

The dynamic balancing of the fan coil connection kits is ensured by Caleffi diaphragm-type PICV 145 series, that can be equipped with an ON/OFF or a modulating 0-10 V actuator. The inner dynamic element can easily be replaced to ensure long life to the whole assembly.

The Caleffi PICV features equal percentage control and full stroke modulation. In addition, a unique feature is that the valve does not drop authority even at setting different than 100% open position, thanks to its special internal configuration.

Two three-way valves allow for easy periodic flushing of the system and an integrated cartridge strainer will protect the terminal unit, to ensure maximum performance is maintained. Such valves can be also used for bypass or isolation of the unit.

A calibrated Venturi flow measurement device allows for an easy and precise commissioning phase, thanks also to the user-friendly setting of Caleffi PICV 145 series.

The multiple-size connections (1/2", 3/4", 1", 1 1/4") and the huge available range of PICV make Caleffi 149 series suitable for all systems. The possibility of adding flexible hoses, increases its flexibility of installation.

Care has been taken in the design and development of the units to use the minimum number of joints in order to avoid any potential for water leakages.

All of the levers and ports are installed on the side of the kit in order to make it symmetrical for universal installation (the kit can be reversed, so that it always matches the pipe configuration of the unit).



# 149 SERIES - 40MM CENTRES FANCOIL CONNECTION AND REGULATION KIT FOR HVAC TERMINAL UNITS

40MM  
CENTRES

## Technical Data

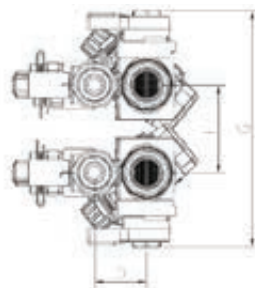
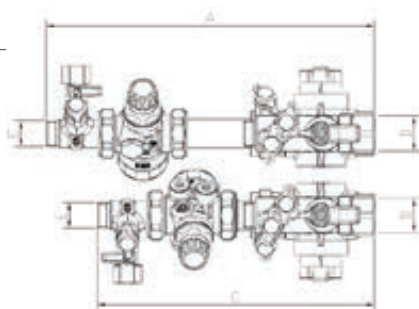
Medium:	water, glycol solutions
Maximum percentage of glycol:	50%
Max. working pressure:	25 bar
Max. differential pressure with actuator code 145014 and 656 series thermo-electric actuator	5 bar
Working temperature range:	-10 — 120°C
Ambient temperature range:	0 — 50°C
Nominal Dp control range:	25 — 400 kPa
Flow rate regulation range:	0,2 — 1,2 m <sup>3</sup> /h
Strainer mesh size:	800 µm



## Materials

Component	Material	Grade
Body	dezincification resistant alloy	EN12165 CW602N
Strainer Mesh	AISI 304	
Shut-off valve knobs	PA6G30	
PICV headwork	dezincification resistant alloy	EN12165 CW602N
Control stem and piston	Stainless Steel	EN 10088-3 (AISI 303)
Obturator seat	PTFE or Stainless Steel	EN 10088-3 (AISI 303)
Obturator	EPDM	
Pressure regulator membrane	EPDM	
Springs	Stainless Steel	EN 10270-3 (AISI 302)
Seals	EPDM	
Seals	non-asbestos fibre	
Pre-adjustment indicator	PA6G30	
Knob	PA6	

## Dimensions



Ref no.	B	E	A	C	D	F	G
ALT-010	Ø15	Ø15	276	223	40	66	177
ALT-020	3/4"	3/4"	276	223	40	66	177

	B	E
ALT-010	15	15
ALT-020	3/4"	3/4"

### Cooling side & heating side

Code	DN	Connections	Flow rate range	Kv Venturi (m <sup>3</sup> /h)
TBA	20	3/4" euroconus	0,20 — 0,40 m <sup>3</sup> /h	1,10
TBA	20	3/4" euroconus	0,40 — 0,80 m <sup>3</sup> /h	2,25
TBA	20	3/4" euroconus	0,60 — 1,20 m <sup>3</sup> /h	3,90
TBA	20	Ø15	0,20 — 0,40 m <sup>3</sup> /h	1,10
TBA	20	Ø15	0,40 — 0,80 m <sup>3</sup> /h	2,25
TBA	20	Ø15	0,60 — 1,20 m <sup>3</sup> /h	3,90

### One line installation



### Two line installation



## 149 SERIES - 80MM CENTRES FAN COIL CONNECTION KIT

80MM  
CENTRES

### Technical Data

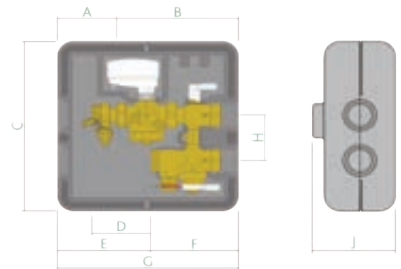
Medium:	potable water
Maximum percentage of glycol:	50%
Max. working pressure:	25 bar
Max. differential pressure with actuator:	1 bar
Working temperature range:	-10 — 120°C
Ambient temperature range:	0 — 50°C
Nominal differential pressure control range:	25 — 400 kPa
Flow rate regulation range:	0.2 — 3 m <sup>3</sup> /h
Max. flow rate with 656 thermo-electric actuator fitted	0.2 — 1.2 m <sup>3</sup> /h reduce by: 20% 1.8 — 3 m <sup>3</sup> /h reduce by: 25%
Strainer mesh size:	800 µm
<b>Insulation</b>	
Density	30 kg/ m <sup>3</sup>
Thermal conductivity	0.037 W/(m-k) at 10°C
Reaction to fire:	class HBF
Connections:	terminal unit side: male thread



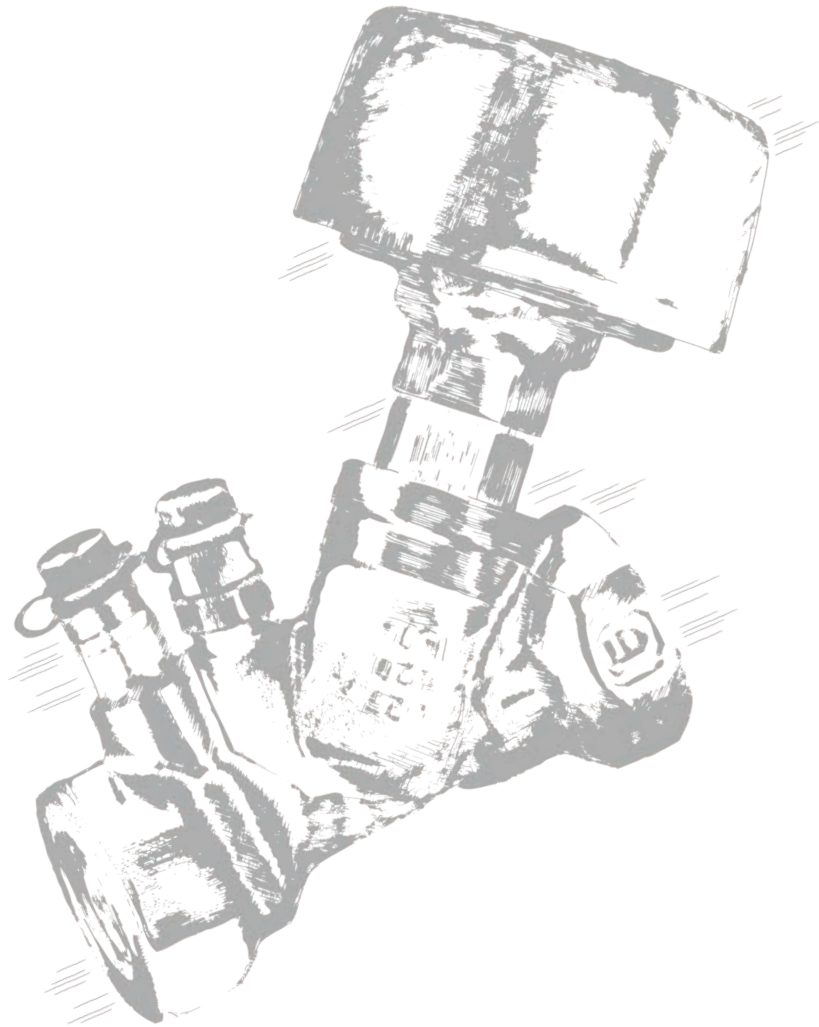
### Materials

Component	Material	Grade
Body	DZR	BS EN 12165 CW602N
Strainer mesh	Stainless steel	AISI 304
Isolating valve knob	Nylon	PA6G30
PICV		
Headwork	DZR	BS EN 12165 CW602N
Control stem	Stainless steel	BS EN 10088-3 AISI 304
Piston	Stainless steel	
Obturator seat	PTFE	0.02 to 1.2 m <sup>3</sup> /h
	Stainless Steel	1.8 to 3 m <sup>3</sup> /h BS EN 10088-3 AISI 303
Obturator	EPDM	
Pressure regulating membrane	EPDM	
Springs	Stainless steel	BS EN 10270-3 AISI 302
Seals	Non asbestos fibre	
Pre-adjustment indicator	Nylon reinforced	PA6G30 PA6G30
Knobs	Nylon	PA6

### Dimensions



Size	A	B	C	D	E	F	G	H	J	Kg
DN15	109	191	300	83	150	150	300	80	137	2.4
DN20	109	191	300	4	154	146	300	80	137	2.5
DN25	100	200	300	109	154	146	300	80	137	3.0





**03**

## Balancing Valves

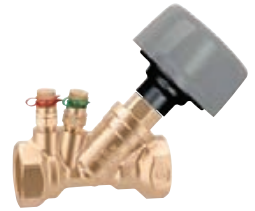
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# Balancing Valves

On complex hydronic systems with main or boosted supplies, the branch and terminal lines have to be kept in balance to maintain the required flow rates to ensure environmental comfort. Caleffi balancing valves are manufactured to the highest standards to provide the balancing solutions that designers need.

## Manual balancing valves

Ideal for constant flow systems or downstream of a DPCV, manual balancing valves use a proportional method of flow reduction to maintain the set flow rate.



## Differential pressure control valves (DPCVs)

Variable volume systems allow designers to increase the efficiency of hydronic systems but require a more intelligent control system. Differential pressure control valves (DPCVs) maintain the pressure across sub-branches in a system preventing downstream components from being subject to excessive, and/or varying differential pressure which can cause damage failure. The Caleffi range of DPCVs have been tried and tested to deliver the control and reliability needed in the most demanding systems.



## FlowCal®

To enhance the efficiency of heating and cooling systems, FlowCal® reduces issues associated with over-pressure including system noise and variable room temperatures. FlowCal® allows faster, easier commissioning and help to ensure control valves authority while reducing the space required for installation.

FlowCal® is dynamic and adjusts to maintain a steady flow rate regardless of differential pressure (within its pressure range).



## Pressure independent control valves (PICVs)

Pressure Independent Control Valves (PICVs) are a combination valve consisting of a diaphragm and flow control device. The valve holds a stable differential pressure across itself, allowing the flow setting to be maintained. Ideal for use in any control system, PICVs help to prevent heating or cooling systems from hunting for a stable temperature. The addition of an ON/OFF or modulating control head allows the valve to be used as a two port control valve.



## 132 SERIES - MANUAL BALANCING VALVE WITH FLOW METER



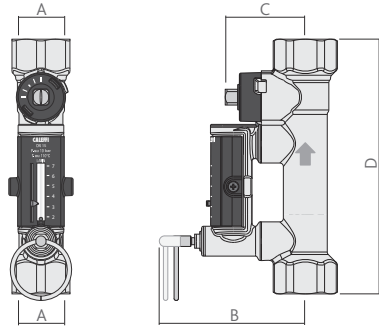
### Technical Data

Medium:	water, glycol solution
Max. percentage of glycol:	50%
Max. working pressure:	10 bar
Working temperature range:	-10 — 110°C
Unit of measurement:	l/min
Accuracy:	±10%
Rotation of ball valve:	90°
Operating wrench: 1/2" — 1 1/4"	9 mm
1 1/2" and 2"	12 mm
Connections:	female BSP (G)

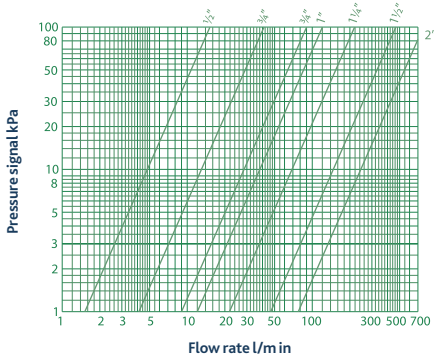
### Materials

Component	Material	Grade
<b>Valve</b>		
Body	Brass	BS EN 12165 CW617N
Ball	Brass	BS EN 12164 CW614N
Ball control stem	Brass - chrome plated	BS EN 12164 CW614N
Ball seat	PTFE	
Position indicator	PSU	
Seals	EPDM	
<b>Flow Meter</b>		
Body	Brass	BS EN 12165 CW617N
Caps	Brass	BS EN 12164 CW614N
Disc - stem	Brass - chrome plated	BS EN 12164 CW614N
Spring	Stainless steel	
Seals	EPDM	
Flow meter float	PSU	
Indicator cover	PSU	

### Dimensions



### Kv value and flow rates



### With insulation

Ref no	A	B	C	D	Flow rate	KVs	Kg
					l/min	m <sup>3</sup> /h	
132402	1/2"	84	46	145	2—7	0.9	0.80
132512	3/4"	84	46	145	5—13	2.5	0.74
132522	3/4"	84	46	145	7—28	5.4	0.74
132602	1"	85	47	158	10—40	7.2	0.96
132702	1 1/4"	88	50	164	20—70	13.1	1.19
132802	1 1/2"	91	57	171	30—120	27.8	1.47
132902	2"	97	62	177	50—200	46.4	2.00

## 132 SERIES - MANUAL BALANCING VALVE WITH FLOW METER - FLANGED

### Technical Data

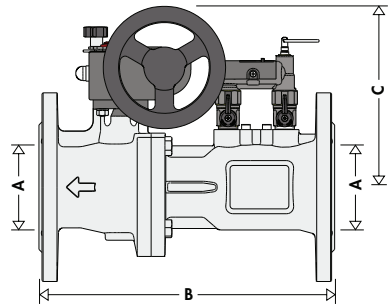
Medium:	water, glycol solution
Max. percentage of glycol:	50%
Max. working pressure:	10 bar
Working temperature range:	-10 — 110°C
Unit of measurement:	l/min
Accuracy:	±10%
Rotation of ball valve:	90°
Operating wrench:	with dial/wheel
Connections:	flanged PN 16



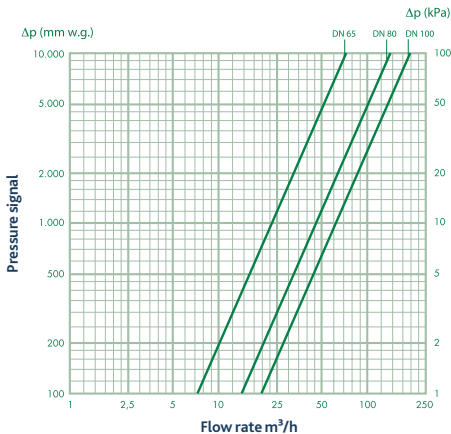
### Materials

Component	Material	Grade
<b>Valve</b>		
Body	Cast iron	GJL250 EN 1561
Ball	Chrome Plated	EN 12164 CW614N
Ball control stem	Brass	EN 12164 CW614N
Ball seat	R-PTFE	
Seals	EPDM	
<b>Flow Meter</b>		
Body	Brass	BS EN 12165 CW617N
Caps	Brass	BS EN 12164 CW614N
Disc - stem	Brass - chrome plated	BS EN 12164 CW614N
Spring	Stainless steel	
Seals	EPDM	
Flow meter float	PSU	
Indicator cover	PSU	

### Dimensions



### Kv value and flow rates



### Flanged

Ref no	A	B	C	Kg	Flow rate	l/s	Kvs
					m³/h		
132060	DN 65	290	177	14.6	6 — 24	2.27 — 7.95	75.4
132080	DN 80	310	185	17.8	8 — 32	2.87 — 11.21	141.4
132100	DN 100	350	201	24.4	12 — 48	4.16 — 15.91	209

Kvs value when fully open

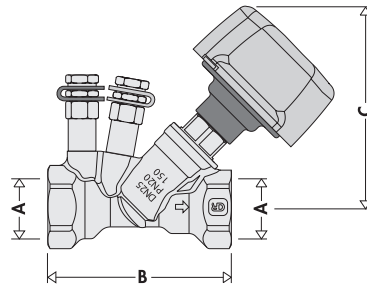
## 130 SERIES - MANUAL BALANCING VALVE

### Technical Data

Medium:	water, glycol solution
Max. percentage of glycol:	50%
Max. working pressure:	16 bar
Working temperature range:	-20 — 120°C
Accuracy:	±10%
Connections:	female thread BSP (G)



### Dimensions



### Materials

Component	Material	Grade
Body	DZR brass alloy	EN 12165 CW602N
Cover	DZR brass alloy	EN 12165 CW511L
Control stem	DZR brass alloy	EN 12164 CW724R
Obturator	Stainless steel (AISI 303)	
Seal seat	DZR	EN 12165 CW602N
Hydraulic seals	EPDM	
Obturator seal	PTFE	
Dial/wheel	PAGG30	
Pressure test ports	brass body with EPDM seal elements	

For commissioning valve selection please contact Altecnic with the flow rate and line size required.

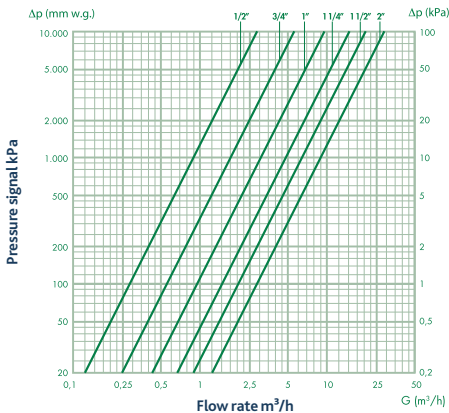
Ref no	DN	A	B	C	Kg	Kvs
130400	15	½"	77	104	0.57	3.17
130500	20	¾"	82	104	0.61	4.46
130600	25	1"	97	107	0.75	7.63
130700	32	1 ¼"	115	114	1.05	12.10
130800	40	1 ½"	129	120	1.27	17.00
130900	50	2"	152	132	1.85	26.30

Kvs values when fully open

Pre-formed insulation for 130 Series threaded balancing valves

Ref no	Size
CBN130400	½"
CBN130500	¾"
CBN130600	1"
CBN130700	1 ¼"
CBN130800	1 ½"
CBN130900	2"

### Kv value and flow rates (fully open)



# 130 SERIES - MANUAL BALANCING VALVE - FLANGED

## Technical Data

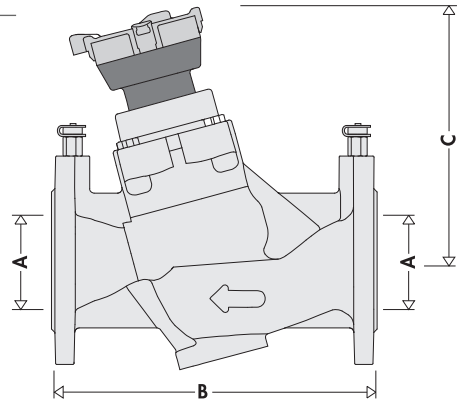
Medium:	water, glycol solution
Max. percentage of glycol:	50%
Max. working pressure:	16 bar
Working temperature range: DN 65-200	-10 — 140°C
DN 250-300	-10 — 120°C
Connections:	flanged PN 16



## Materials

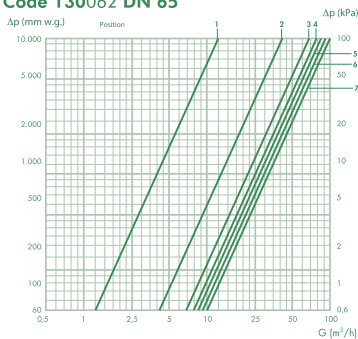
Component	Material	Grade
Body	Grey cast iron	EN GJL 250
Cover	Grey cast iron	EN GJL 250
Control stem	Brass	EN 12164 CW614N
Obturator	PPS	
Seal seat	Grey cast iron	EN GJL 250
Hydraulic seals	EPDM	
Obturator seal	EPDM	
Dial/wheel	DN 65-80-100-200-250-300: PA DN 125 and DN 150: stamped steel	
Pressure test ports	Brass body with EPDM seal elements	

## Dimensions



## Kv value and flow rates

### Code 130062 DN 65



	Position							Kvs
DN 65	1	2	3	4	5	6	7	100
Kv (m³/h)	12,6	42,5	69	80	85,5	94,9		

For commissioning valve selection please contact Altecnic with the flow rate and line size required.

Ref no	A	B	C	Kg	Kvs
130062	DN 65	290	230	17.7	100
130082	DN 80	310	242	19.9	111.9
130102	DN 100	350	280	26.0	155
130122	DN 125	400	390	36.0	268.4
130152	DN 150	480	415	64.9	486
130202	DN 200	600	480	114.5	710
130250	DN 250	730	525	159.0	1188
130300	DN 300	850	535	210.5	1504

Kvs value when fully open

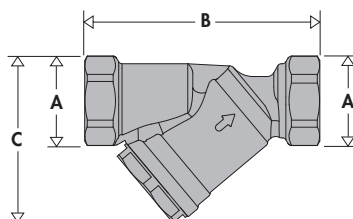
## FLOWCAL® 128 SERIES - AUTOMATIC CONTROL VALVE

### Technical Data

Medium:	water, glycol solution
Max. percentage of glycol:	50%
Max. working pressure:	16 bar
Working temperature range:	0 — 100°C
Accuracy:	±10% (0.02-0.06 m³/h ±15)
Δp range:	15–200 kPa (0.02—0.06m³/h 20—200 kPa)
Flow rates:	½" 0.02—1.2 m³/h
	¾" 0.02—1.4 m³/h
Connections:	female thread BSP (G)



### Dimensions



### Materials

Component	Material	Grade
Body	Brass	EN 12420 CW617N
Plug	Brass	EN 12164 CW617N
Cartridge	High-resistance polymer	
Spring	Stainless steel	EN 10270-3 (AISI 302)
Seal	EPDM	

Ref no	A	B	C	Kv (m³/h)	Flow rate (m³/h)	Kg
128141...	½"	90	62	6.69	0.02—1.2	0.260
128151...	¾"	92	65	7.58	0.02—1.4	0.285

### Spare part cartridge

Flow rate (m³/h)	Cartridge Code	Flow rate (m³/h)	Cartridge Code
0.02	02M02 XXL	0.40	02M40 XXL
0.04	02M04 XXL	0.50	02M50 XXL
0.06	02M06 XXL	0.60	02M60 XXL
0.085	02M08 XXL	0.70	02M70 XXL
0.12	02M12 XXL	0.80	02M80 XXL
0.15	02M15 XXL	0.90	02M90 XXL
0.20	02M20 XXL	1.00	021M0 XXL
0.25	02M25 XXL	1.20	021M2 XXL
0.30	02M30 XXL	1.40	021M4 XXL
0.35	02M35 XXL		

## FLOWCAL® 121 SERIES - AUTOMATIC BALL VALVE

### Technical Data

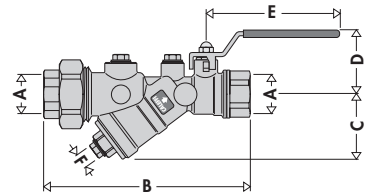
Medium:	water, glycol solution
Max. percentage of glycol:	50%
Max. working pressure:	25 bar
Working temperature range:	-20 — 100 °C
Accuracy:	±10%
Δp range:	15–200 kPa
Flow rates:	0.085—11.0 m <sup>3</sup> /h
Connections:	female thread BSP (G) with union x F



### Dimensions

### Materials

Component	Material	Grade
Body	DZR brass alloy	EN 12165 CW602N
Cartridge	½"-1 ¼" 1 ½" and 2"	high resistance polymer stainless steel and high resistance polymer
Spring	Stainless steel	
Hydraulic seals	EPDM	
Ball	Brass	EN 12165 CW614N
Ball seat	PTFE	
Control stem seal	PTFE	
Lever	Special galvanised steel	
Pressure port plugs	DZR	EN 12165 CW602N



Ref no	A	B	C	D	E	F	Kg
121141...	½"	156.5	52.5	50	100	¼"	1.00
121151...	¾"	159.5	52.5	50	100	¼"	1.00
121161...	1"	218.5	68	66	120	½"	1.85
121171...	1 ¼"	220.5	68	66	120	½"	1.87
121181...	1 ½"	253	84	88	140	½"	4.60
121191...	2"	253	84	88	140	½"	4.60

### Flow rates tables

For selection of correct valve please call with code and flow rate required

Ref no	Kv 0.01 (l/h)	Δp (kPa) minimum working	Δp range (kPa)	Flow rates (m <sup>3</sup> /h)
121141	690	15	15–200	0.085—1.2
121151	773	15	15–200	0.085—1.6
121161	1.800	15	15–200	0.5—5.0
121171	1.850	15	15–200	0.5—5.0
121181	4.724	15	15–200	5.5—11.0
121191	4.889	15	15–200	5.5—11.0



## FLOWCAL® 126 SERIES - AUTOMATIC FLOW CONTROL VALVE



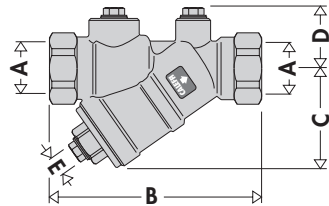
### Technical Data

Medium:	water, glycol solution
Max. percentage of glycol:	50%
Max. working pressure:	25 bar
Working temperature range:	-20 — 100°C
Accuracy:	±10%
Δp range:	15–200 kPa
Flow rates:	0.085—11.0 m <sup>3</sup> /h
Connections:	female thread BSP

### Materials

Component	Material	Grade
Body	DZR brass alloy	EN 12165 CW602N
Cartridge	½"–1 ¼" 1 ½" and 2"	high resistance polymer stainless steel and high resistance polymer
Spring	Stainless steel	
Hydraulic seals	EPDM	
Pressure port plugs	DZR	EN 12165 CW602N

### Dimensions



Ref no	A	B	C	D	E	Kg
126141...	½"	101	52.5	30	¼"	0.45
126151...	¾"	106	52.5	30	¼"	0.48
126161...	1"	140.5	102	33.5	½"	1.36
126171...	1 ¼"	148	102	33.5	½"	1.24
126181...	1 ½"	177	105	38.5	½"	2.25
126191...	2"	179	105	38.5	½"	2.45

### Flow rates tables

Ref no	Kv <sub>0.01</sub> (l/h)	Δp (kPa) minimum working	Δp range (kPa)	Flow rates (m <sup>3</sup> /h)
126141...	669	15	15–200	0.085—1.2
126151...	758	15	15–200	0.085—1.6
126161...	1.400	15	15–200	0.5—5.0
126171...	1.450	15	15–200	0.5—5.0
126181...	3.472	15	15–200	5.5—11.0
126191...	3.738	15	15–200	5.5—11.0

## FLOWCAL® 127 SERIES - AUTOMATIC BALANCING VALVE

### Technical Data

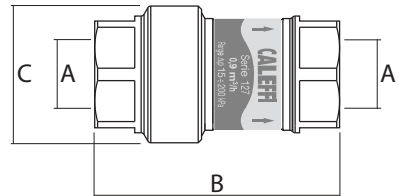
Medium:	water, glycol solution
Max. percentage of glycol:	50%
Max. working pressure:	16 bar
Working temperature range:	0 — 100°C
Δp range:	15–200 kPa
Flow rates:	0,085–1,4 m³/h
Accuracy:	±10%
Connections:	female thread BSP



### Materials

Component	Material	Grade
Body	Brass	BS EN 12164 CW614N
Cartridge	Polymer	
Spring	Stainless steel	BS EN 10270-3 (AISI 302)
Seals	EPDM	

### Dimensions



Ref no	A	B	C	Kg
127141...	Rc½"	74	41	0.24
127151...	Rc¾"	74	41	0.25

### Flow rates tables for 127 Series

Ref no	Δp (kPa) min working	Δp range (kPa)	Flow rates (l/s) (m³/h)															
			0.12	0.15	0.2	0.25	0.3	0.35	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.2		
127141...	15	15–200	0.12	0.15	0.2	0.25	0.3	0.35	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.2		
127151...	15	15–200	0.12	0.15	0.2	0.25	0.3	0.35	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.4	1.6

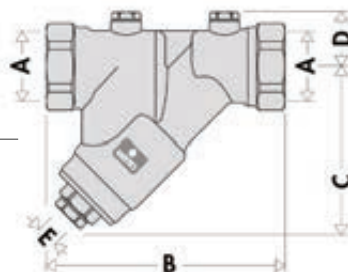
## FLOWCAL® 125 SERIES - AUTOMATIC FLOW CONTROL VALVE

### Technical Data

Medium:	water, glycol solution
Max. percentage of glycol:	50%
Max. working pressure:	25 bar
Working temperature range:	-20 — 110°C
Accuracy:	±5%
Δp range:	7–100 kPa
	22–220 kPa
	35–410 kPa
Flow rates:	0.12–17.0 m³/h
Connections:	female thread BSP (R)



### Dimensions



### Materials

Component	Material	Grade
Body	DZR brass alloy	EN 12165 CW602N 1/2" - 3/4", CC770S 1" - 2 1/2"
Cartridge	Stainless steel	
Spring	Stainless steel	
Hydraulic seals	EPDM	
Pressure port plugs	DZR brass alloy	EN 12165 CW602N

For selection of correct valve please call with code and flow rate required

Ref no	A	B	C	D	F	Kg	Δp range (kPa)	Flow rates (m³/h)	Code
125141 ...	½"	101	52.50	30	¼"	0.55	7 — 100	0.45 — 1.0	S
125141 ...	½"	101	52.50	30	¼"	0.55	22 — 220	0.12 — 1.8	L
125141 ...	½"	101	52.50	30	¼"	0.55	35 — 410	0.25 — 2.75	H
125151 ...	¾"	106	52.50	30	¼"	0.58	7 — 100	0.45 — 1.0	S
125151 ...	¾"	106	52.50	30	¼"	0.58	22 — 220	0.12 — 1.8	L
125151 ...	¾"	106	52.50	30	¼"	0.58	35 — 410	0.25 — 2.75	H
125161 ...	1"	140.50	102	33.50	½"	1.02	7 — 100	0.7 — 1.0	S
125161 ...	1"	140.50	102	33.50	½"	1.02	22 — 220	0.7 — 4.25	L
125161 ...	1"	140.50	102	33.50	½"	1.02	35 — 410	2.5 — 6.0	H
125171 ...	1¼"	148	102	33.50	½"	1.06	22 — 220	0.7 — 4.25	L
125171 ...	1¼"	148	102	33.50	½"	1.06	35 — 410	2.5 — 6.0	H
125181 ...	1½"	177	105	38.50	½"	2.25	22 — 220	2.75 — 11.0	L
125181 ...	1½"	177	105	38.50	½"	2.25	35 — 410	3.0 — 15.5	H
125191 ...	2"	176	105	38.50	½"	2.45	22 — 220	2.75 — 11.0	L
125191 ...	2"	176	105	38.50	½"	2.45	35 — 410	3.0 — 15.5	H
125101 ...	2½"	230	133	48.50	½"	4.36	22 — 220	9.0 — 17.0	L
125101 ...	2½"	230	133	48.50	½"	4.36	35 — 410	6.5 — 11.0	H

## FLOWCAL® 120 SERIES - AUTOMATIC FLOW CONTROL VALVE

### Technical Data

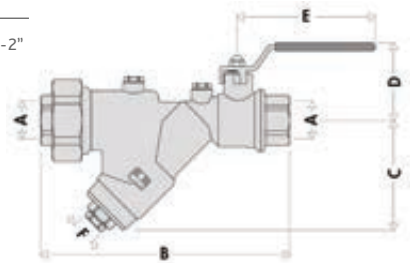
Medium:	water, glycol solution
Max. percentage of glycol:	50%
Max. working pressure:	25 bar
Working temperature range:	0 — 110°C
Accuracy:	±5%
Δp range:	7–100 kPa
	22–220 kPa
	35–410 kPa
Flow rates:	0.12–15.5 m <sup>3</sup> /h
Connections:	female thread BSP (R)



### Materials

Component	Material	Grade
Body	DZR brass alloy	EN 12165 CW602N 1/2" - 3/4", CC770S 1" - 2"
Cartridge	Stainless steel	
Spring	Stainless steel	
Hydraulic seals	EPDM	
Ball	Brass	EN 12165 CW614N
Ball seat	PTFE	
Control stem seal	PTFE + EPDM	
Lever	Special galvanised steel	
Pressure port plugs	DZR brass alloy	EN 12164 CW602N

### Dimensions



For selection of correct valve please call with code and flow rate required

Ref no	A	B	C	D	E	F	Kg	Δp range (kPa)	Flow rates (m <sup>3</sup> /h)	Code
120141...	1/2"	156.50	52.50	50	100	1/4"	1.10	7—100	0.45—1.0	S
120141...	1/2"	156.50	52.50	50	100	1/4"	1.10	22—220	0.12—1.8	L
120141...	1/2"	156.50	52.50	50	100	1/4"	1.10	35—410	0.25—2.75	H
120151...	3/4"	159.50	52.50	50	100	1/4"	1.10	7—100	0.45—1.0	S
120151...	3/4"	159.50	52.50	50	100	1/4"	1.10	22—220	0.12—1.8	L
120151...	3/4"	159.50	52.50	50	100	1/4"	1.10	35—410	0.25—2.75	H
120161...	1"	218.50	68	66	120	1/2"	2.30	7—100	0.7—1.0	S
120161...	1"	218.50	68	66	120	1/2"	2.30	22—220	0.7—4.25	L
120161...	1"	218.50	68	66	120	1/2"	2.30	35—410	1.6—6.0	H
120171...	1 1/4"	220.50	68	66	120	1/2"	2.30	22—220	0.7—4.25	L
120171...	1 1/4"	220.50	68	66	120	1/2"	2.30	35—410	1.6—6.0	H
120181...	1 1/2"	253	84	88	140	1/2"	4.60	22—220	2.75—11.0	L
120181...	1 1/2"	253	84	88	140	1/2"	4.60	35—410	3.0—15.5	H
120191...	2"	253	84	88	140	1/2"	4.60	22—220	2.75—11.0	L
120191...	2"	253	84	88	140	1/2"	4.60	35—410	3.0—15.5	H

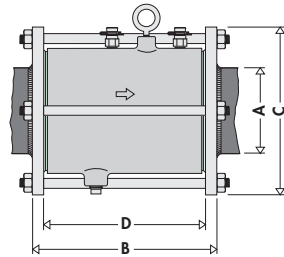
## FLOWCAL® 103 SERIES - AUTOMATIC FLOW CONTROL VALVE

### Technical Data

Medium:	water, glycol solution
Max. percentage of glycol:	50%
Max. working pressure:	16 bar
Working temperature range:	-20 — 110°C
Flow rates:	9 — 4400 m <sup>3</sup> /h
Accuracy:	±5%
Δp range:	22 - 210 kPa
	40 - 390 kPa
	55 - 210 kPa
Pressure test port:	¼" BSP (F)
Connections:	flanged PN 16



### Dimensions



### Materials

Component	Material
Body	Cast iron
Cartridge	Stainless steel

For selection of correct valve please call with code and flow rate required

Ref no	A	B	C	D	Kg	Δp range (kPa)	Flow rates (m <sup>3</sup> /h)	Code
103111...	DN 65	208	185	172	7.50	22—210	9—17	1
103113...	DN 65	208	185	172	7.50	40—390	18—22	3
103121...	DN 80	212	200	172	11.58	22—210	9—17	1
103123...	DN 80	212	200	172	11.58	40—390	18—22	3
103131...	DN 100	216	220	172	12.38	22—210	9—17	1
103133...	DN 100	216	220	172	12.38	40—390	18—22	3
103141...	DN 125	271	250	223	16.55	22—210	18—34	1
103143...	DN 125	271	250	223	16.55	40—390	23—45	3
103151...	DN 150	271	285	223	24.11	22—210	40—68	1
103153...	DN 150	271	285	223	24.11	40—390	40—91	3
103161...	DN 200	287	360	223	41.62	22—210	80—119	1
103163...	DN 200	287	360	223	41.62	40—390	80—159	3
103171...	DN 250	295	425	223	58.09	22—210	110—187	1
103173...	DN 250	295	425	223	58.09	40—390	110—250	3
103181...	DN 300	319	515	223	93.27	22—210	150—255	1
103183...	DN 300	319	515	223	93.27	40—390	150—341	3
103191...	DN 350	311	555	223	108.17	22—210	160—580	1
103193...	DN 350	311	555	223	108.17	40—390	190—730	3

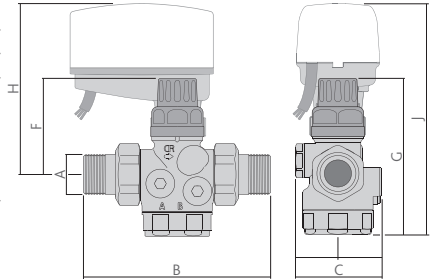
# FLOWMATIC® 145 SERIES - PRESSURE INDEPENDENT CONTROL VALVE

## Technical Data

Medium:	water, glycol solution
Max. percentage of glycol:	50%
Max. working pressure:	16 bar
Max. differential pressure with code 145014 actuator and 656 series	
Thermo-electric actuators:	5 bar
Working temperature range:	-20 — 120 °C
Accuracy:	±15%
Max. flow rate with 656 series thermo-electric actuator fitted reduced by	20%
Nominal $\Delta p$ control range:	25 — 400 KPa
Connections:	male thread BSP (G)



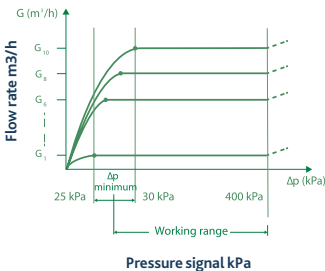
## Dimensions



## Materials

Component	Material	Grade
Body	DZR brass alloy	BS EN 12165 CW602N
Headworks	DZR brass alloy	BS EN 12164 CW602N
Control stem and piston	Stainless steel	BS EN 10088-3 (AISI 303)
Body seat	PTFE	
Disc facing	EPDM	
Pressure regulating diaphragm	EPDM	
Springs	Stainless steel	BS EN 10270-3 (AISI 302)
Gasket	Non-asbestos fibre	

## Differential Pressure Range



Ref no	A	B	C	F	G	H	J	Kg	Flow rates (m³/h)
145434 H20	1/2"	110	51	55	95	96	132	0.57	0.02 — 0.20
145430 H40	3/8"	108	51	55	95	96	132	0.53	0.08 — 0.4
145430 H80	3/8"	108	51	55	95	96	132	0.53	0.08 — 0.8
145440 H40	1/2"	110	51	55	95	96	132	0.57	0.08 — 0.4
145440 H80	1/2"	110	51	55	95	96	132	0.57	0.08 — 0.8
145550 H40	3/4"	123	51	55	95	96	132	0.70	0.08 — 0.4
145550 H80	3/4"	123	51	55	95	96	132	0.70	0.08 — 0.8
145550 1H2	3/4"	123	51	55	95	96	132	0.70	0.12 — 1.2
145550 1H8	3/4"	159	66	63	114	100	151	0.77	0.18 — 1.8
145560 H40	1"	132	51	55	95	96	132	0.77	0.08 — 0.4
145560 H80	1"	132	51	55	95	96	132	0.77	0.08 — 0.8
145560 1H2	1"	132	51	55	95	96	132	0.77	0.12 — 1.2
145660 1H8	1"	169	66	63	114	100	151	1.50	0.18 — 1.8
145660 3H0	1"	169	66	63	114	100	151	1.50	0.3 — 3.0
145770 1H8	1 1/4"	167	66	63	114	100	151	1.60	0.18 — 1.8
145770 3H0	1 1/4"	167	66	63	114	100	151	1.60	0.3 — 3.0
145552 H40*	3/4"	68	51	55	95	96	132	0.47	0.08 — 0.4
145552 H80*	3/4"	68	51	55	95	96	132	0.47	0.08 — 0.8
145552 1H2*	3/4"	68	51	55	95	96	132	0.47	0.12 — 1.2

\*EUROCONS male connection

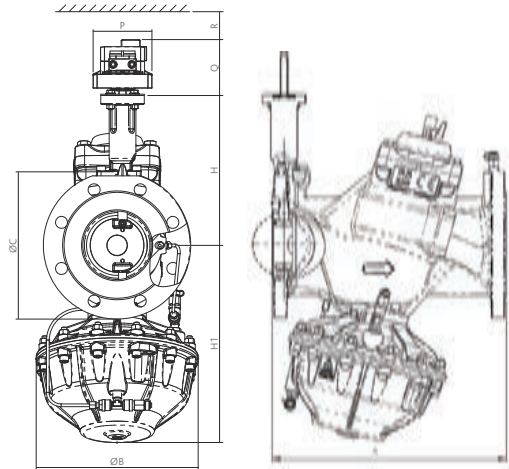
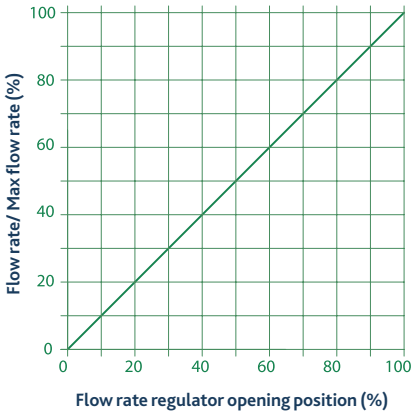
## 146 SERIES - PRESSURE INDEPENDENT CONTROL VALVE

### Technical Data

Medium:	water, glycol solution
Max. percentage of glycol:	50%
Max. static pressure:	16 bar
Max. differential pressure:	4 bar
Working temperature range:	-10 — 120°C
$\Delta p$ range:	30—400 kPa
Face to face:	BS EN 558-1
Design:	S EN 12516
Connections:	flanged PN 16



### Dimensions



Ref no	DN	A	B	H1	H	C	Q	R	P	Flow rates (m <sup>3</sup> /h)
146060	65	290	200	217	205	185	84	>100	100	6—26
146080	80	310	242	281	214	200	84	>100	100	8—36
146100	100	350	242	295	224	220	84	>100	100	16—82.5
146120	125	400	242	317	272	250	84	>100	100	20—125
146150	150	480	242	341	301	285	84	>100	100	27—160

Actuators and manual actuators also available. Further details are available within the product data sheet available at [www.altecnic.co.uk](http://www.altecnic.co.uk)

## PICV OPERATING HEADS FOR 145 SERIES AND KIT SERIES 149

### 6565 THERMO-ELECTRIC ACTUATOR FOR CONTROL VALVE SERIES 145 AND KIT SERIES 149



#### Technical Data

Electric supply:	24 V (ac)/(dc)
Power consumption:	1.2 W
Starting current:	0 – 10 V
Ambient temperature range:	0 – 60°C
Ambient temperature range:	IP 54
Cable length:	1 m
Feedback signal:	1 m
Connections:	M30 p1.5

#### Dimensions



A	B	C	D	E
63.5mm	61.8mm	44.1mm	59.9mm	8.3mm

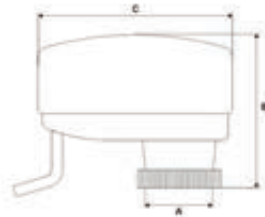
### FLOWMATIC® 145 SERIES - PICV ACTUATORS



#### Technical Data

Supply:	24 V (ac/dc)
Ambient temperature range:	0 – 50°C
Protection class:	IP 43
Cable length:	1.5 m

#### Dimensions



A	B	C	Kg
M30 x 1.5	72	80	0.21

Ref no	Title	Type
145014	145 PICV Actuators	24 V Modulating
656102	T-E Actuators	230 V ON/OFF
656104	T-E Actuators	24 V ON/OFF
656112	T-E Actuators	230 V ON/OFF c/w Microswitch
656114	T-E Actuators	24 V ON/OFF c/w Microswitch



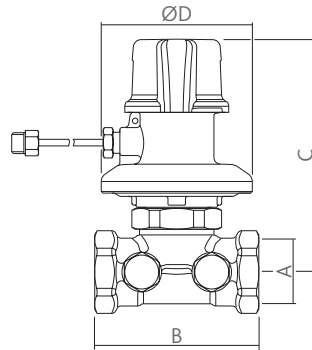
# 140 SERIES - DIFFERENTIAL PRESSURE CONTROL VALVE

## Technical Data

Medium:	water, glycol solution
Max. percentage of glycol:	50%
Max. working pressure:	140 — ½", ¾", 1" 16 bar
	140 — 1¼", 1½", 2" 10 bar
Working temperature range:	-10 — 120°C
Diaphragm max. differential pressure:	½", ¾", 1" 6 bar
	1¼", 1½", 2" 2.5 bar
Accuracy:	±15%
Capillary pipe:	Ø3 mm x 1.5m
Connections:	female thread BSP (G)



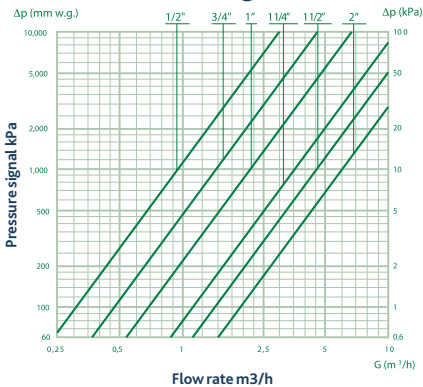
## Dimensions



## Materials

Component	Material	Grade
Body - DPCV		
½", ¾", 1"	DZR brass alloy	BS EN 12165 CW602N
1¼", 1½", 2"	DZR brass alloy	BS EN 1982 CC770S
DPCV - diaphragm	EPDM	
DPCV - spring	Stainless steel	AISI 302
Seals	EPDM	
Cap	Polymer	PA6G30
Capillary pipe	Copper	

## 140 series Kvs diagram



Ref no		A	B	C	D	Kg	Δp kPa
Non-insulated	Insulated						
140342	140340	½"	65	107	69	0.79	5—30
140442	140440	½"	65	107	69	0.79	25—60
140352	140350	¾"	75	107	69	0.92	5—30
140452	140450	¾"	75	107	69	0.92	25—60
140362	140360	1"	85	113	69	1.18	5—30
140462	140460	1"	85	113	69	1.18	25—60
140372	140370	1¼"	95	173	139	2.98	5—30
140472	140470	1¼"	95	173	139	2.98	25—60
140382	140380	1½"	100	176	139	3.31	5—30
140482	140480	1½"	100	176	139	3.31	25—60
140392	NA	2"	120	176	139	4.21	5—30
140492	NA	2"	120	176	139	4.21	25—60

## 140 SERIES - DIFFERENTIAL PRESSURE CONTROL VALVE

### Technical Data

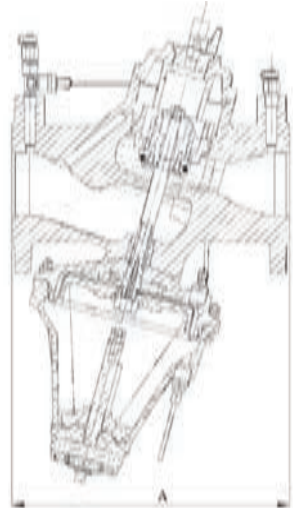
Medium:	water, glycol solution
Max. percentage of glycol:	50%
Max. working pressure:	16 bar
Working temperature range:	-10 — 120°C
Accuracy:	±15%
Connections:	flanged PN 16



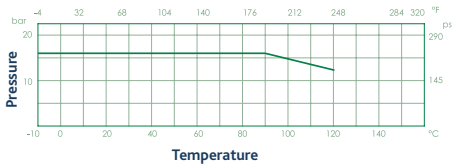
### Materials

Component	Material	Grade
Body	Grey cast iron	EN 1651 EN GJL 250
Spring seat	Aluminium	UNI 3054 G
Control stem	Brass	EN 12164 CW617N
Obturator	Aluminium	63 UNI 3569
Anticorrosal		
$\Delta p$ regulator membrane	EPDM	
$\Delta p$ regulator spring	Stainless steel	AISI 302
Seal	EPDM	
Cap	Polymer	PA6G30
Capillary pipe	Copper	

### Dimensions



### Pressure - temperature chart



Ref no	Size	A	H	H1	B	C	F	n x ø D	Kg	$\Delta p$ (kPa)
140506	DN 65	290	170	310	200	185	145	4X18	21.6	20 — 80
140606	DN 65	290	170	310	200	185	145	4X18	21.6	80 — 160
140508	DN 80	310	182	400	242	200	160	8X18	28.1	20 — 80
140608	DN 80	310	182	400	242	200	160	8X18	28.1	80 — 160
140510	DN 100	350	200	414	242	220	180	8X18	33.6	20 — 80
140610	DN 100	350	200	414	242	220	180	8X18	33.6	80 — 160
140512	DN 125	400	275	436	242	250	210	8X18	46.4	20 — 80
140515	DN 150	480	300	460	242	285	240	8X18	75.4	20 — 80

## 142 SERIES - FLOW CONTROL PARTNER VALVE FOR DPCV

### Technical Data

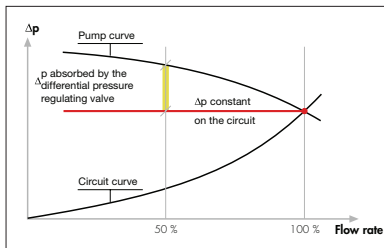
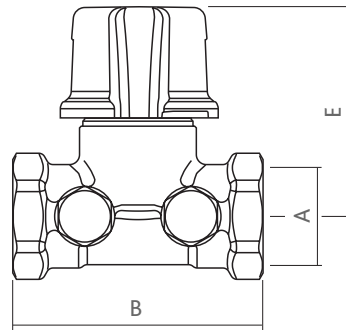
Medium:	water, glycol solution
Max. percentage of glycol:	50%
Max. working pressure:	16 bar
Working temperature range:	-10 — 120 °C
Pressure test port:	¼"
Connections:	female thread BSP (G)



### Materials

Component	Material	Grade
<b>Body - Partner</b>		
½", ¾", 1"	DZR brass alloy	BSEN 12165 CW602N
1¼", 1½"	DZR brass alloy	BSEN 1982 CC770S
2"	DZR brass alloy	BSEN 1982
		CuZn21Si3Pb BSEN 1982 CW724R
Seal	EPDM	
Cap	Polymer	PA6G30

### Dimensions



Ref no		A	B	E	Kg	Kvs (m³/h)
Non-insulated	Insulated					
142240	142140	½"	65	64	0.43	0.32 — 2.96
142250	142150	¾"	75	64	0.52	0.47 — 4.35
142260	142160	1"	85	64	0.67	0.88 — 6.52
142270	142170	1¼"	95	83	1.04	1.29 — 11.29
142280	142180	1½"	100	86	1.36	1.76 — 14.49
142290	N/A	2"	120	86	1.75	1.99 — 19.00

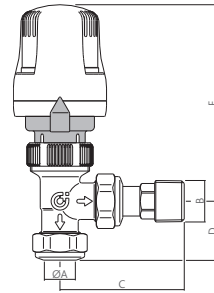
## ECOCAL® THERMOSTATIC RADIATOR VALVE



### Technical Data

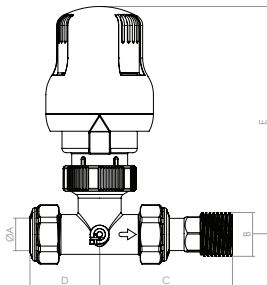
Medium:	water, glycol solution
Max. percentage of glycol:	30%
Max. working pressure:	10 bar
Working temperature range:	5-100°C
<b>TRV Specification:</b>	
Max. differential pressure:	1 bar*
Scale of adjustment:	⊗ - V
Frost setting:	7°C
Temperature range:	7 - 28°C
Max. ambient temperature:	50°C
Positive isolation:	
ECOCAL® head:	TELL accredited
*The angled ECOCAL® is only suitable for use as a reverse flow valve when the differential pressure across the valve does not exceed 0.3 bar.	
The straight pattern valve body is single direction flow only.	
Connections:	male thread BSP (G)

### Dimensions



### Materials

Component	Material	Grade
Body	Brass	BSEN 12165 CW617N
Union nut	Brass	BSEN 12164 CW617N
Tailpiece	Brass	BSEN 12164 CW614N
Olive	Brass	
Δp regulator membrane	DZR brass alloy	
Seals - O - rings	EPDM	
TRV insert assembly	Brass with EPDM disc facing	
Lockshield insert	Brass	BSEN 12164 CW614N



Ref no	A	B	C	D	E	kg
CA-200428MS	8	1/2"	55—63	29.5	100	0.55
200420 LTC	10	1/2"	55—63	30	100	0.36
200425 LTC	15	1/2"	55—63	30	100	0.34

Ref no	A	B	C	D	E	kg
CA-201010 (w)	10	1/2"	57—64	33	104	0.36
200465 LTC (w)	15	1/2"	57—64	33	104	0.35
CA-201013 (c)	10	1/2"	57—64	33	104	0.35
CA-201011 (c)	15	1/2"	57—64	33	104	0.35

(w) White head (c) Chrome head

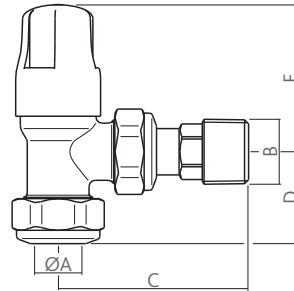
## ECOCAL® TWIN PACKS



### Technical Data

Medium:	water, glycol solution
Max. percentage of glycol:	30%
Max. working pressure:	10 bar
Working temperature range:	5 — 100°C
<b>TRV Specification:</b>	
Max. differential pressure:	1 bar*
Scale of adjustment:	※ - V
Frost setting:	7°C
Temperature range:	7 — 28°C
Max. ambient temperature:	50°C
Positive isolation:	
ECOCAL® head:	TELL accredited
*The angled ECOCAL® is only suitable for use as a reverse flow valve when the differential pressure across the valve does not exceed 0.3 bar.	
The straight pattern valve body is single direction flow only.	
Connections:	male thread BSP (R)

### Dimensions

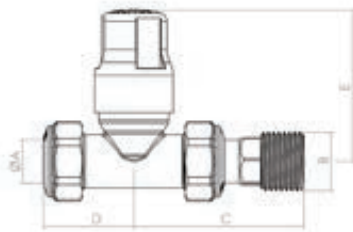


### Materials

Component	Material	Grade
Body	Brass	BS EN 12165 CW617N
Union nut	Brass	BS EN 12164 CW617N
Tailpiece	Brass	BS EN 12164 CW614N
Olive	Brass	
Seals - O - rings	EPDM	
TRV insert assembly	Brass with EPDM disc facing	
Lockshield insert	Brass	BS EN 12164 CW614N

Ref no	A	B	C	D	E	kg
200440 LTC (w)	10	½"	54 — 62	26.5	48	0.55
200445 LTC (w)	15	½"	54 — 62	27	48	0.58
CA-200456 (c)	10	½"	54 — 62	26.5	48	0.55
200455 LTC (c)	15	½"	54 — 62	27	48	0.59

(w) White head (c) Chrome head



Ref no	Lockshield valve dimensions					
	A	B	C	D	E	kg
CA-200478 (w)	10	½"	54 — 62	33	48	0.34
200475 LTC (w)	15	½"	54 — 62	33	48	0.63
CA-200477 (c)	10	½"	54 — 62	33	48	0.62
200485 LTC (c)	15	½"	54 — 62	33	48	0.63

(w) White head (c) Chrome head

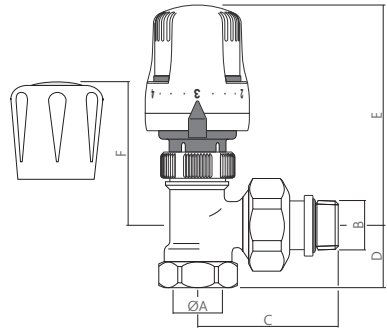
## COMMERCIAL PRE-SETTABLE THERMOSTATIC RADIATOR VALVE - NON-REVERSIBLE

### Technical Data

Medium:	water, glycol solution
Max. percentage of glycol:	30%
Max. working pressure:	10 bar
Working temperature range:	5 — 100°C
<b>Optional TRV Specification:</b>	
Max. differential pressure:	1 bar
Scale of adjustment:	0 to V
Temperature range:	7 — 28°C
Frost setting:	7°C
Max. ambient temperature:	50°C
Liquid filled element:	
*Thermostatic head not included, order with CA-200000 for ECOCAL® standard head and collar	
Connections:	threaded BSP (R)



### Dimensions

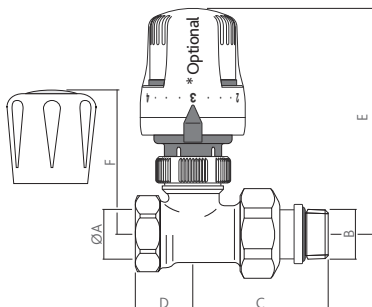


Ref no	A	B	C	D	E	F	kg
421402*	½"	½"	53.5	23	100	51.5	0.242

\*Body only

### Materials

Component	Material	Grade
Body	Brass	BSEN 12165 CW617N
Union nut	Brass	BSEN 12164 CW617N
Tailpiece	Brass	BSEN 12164 CW614N
Stem	Stainless Steel	
Seals - O - rings	EPDM	
TRV insert assembly	Brass with EPDM disc facing	
Manual operator	Thermoplastic	ABS (RAL 9010) ABS - chrome finish
TRV controller cover	Thermoplastic	ABS (RAL 9010) ABS - chrome finish
Body finish	Chrome plated	



Ref no	A	B	C	D	E	F	kg
422402*	½"	½"	52	22	103	55	0.242

\*Body only

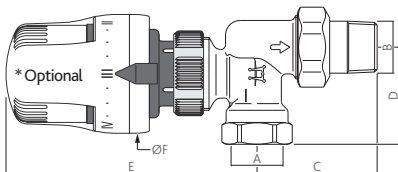
## COMMERCIAL THERMOSTATIC RADIATOR VALVE NON-REVERSIBLE

### Technical Data

Medium:	water, glycol solution
Max. percentage of glycol:	30%
Max. working pressure (static):	10 bar
Max. temperature:	100°C
Certified to:	BS EN 215
Ecocal head*:	TELL accredited
<b>Optional TRV Specification:</b>	
Max. differential pressure:	1 bar
Scale of adjustment:	0 to V
Temperature range:	5 — 28°C
Frost setting:	7°C
Max. ambient temperature:	50°C
Liquid filled element:	
*TRV head not included and is available to order on code CA-200000	
Connections:	threaded BSP (Rp) and (R)

### Materials

Component	Material	Grade
Body	Brass	BS EN 12165 CW617N
Union nut	Brass	BS EN 12164 CW617N
Tailpiece	Brass	BS EN 12164 CW614N
Stem	Stainless Steel	
Seals - O - rings	EPDM	
TRV insert assembly	Brass with EPDM disc facing	
Manual operator	Thermoplastic	ABS (RAL 9010) ABS - chrome finish
TRV controller cover	Thermoplastic	ABS (RAL 9010) ABS - chrome finish
Body finish	Chrome plated	

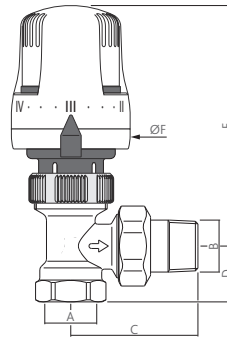


Ref no	A	B	C	D	E	F	kg
224402*	1/2"	1/2"	51	40	104	48	0.275

Note: components marked \* are approved under the CEN Keymark scheme for thermostatic radiator valves

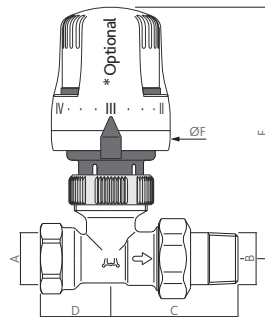


### Dimensions



Ref no	A	B	C	D	E	F	kg
220402*	1/2"	1/2"	54	23	100	48	0.25
220500*	3/4"	3/4"***	62	26	100	48	

Note: components marked \* are approved under the CEN Keymark scheme for thermostatic radiator valves \*\*Without rubber seal



Ref no	A	B	C	D	E	F	kg
221402*	1/2"	1/2"	54	29	104	48	0.24
221500*	3/4"	3/4"***	62	35	104	48	

Note: components marked \* are approved under the CEN Keymark scheme for thermostatic radiator valves \*\*Without rubber seal

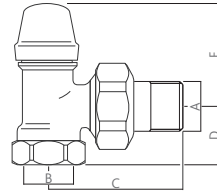
## 400 SERIES - RADIATOR VALVE NON-REVERSIBLE

### Technical Data

Medium:	water, glycol solution
Max. percentage of glycol:	30%
Max. working pressure (static):	10 bar
Temperature range:	5 °C — 100 °C
Connections:	threaded BSP (G)

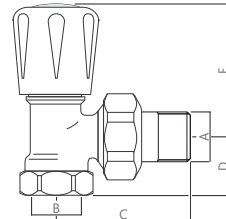


### Dimensions



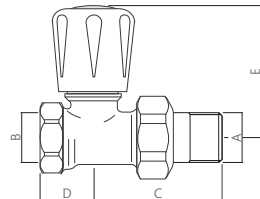
Ref no	A	B	C	D	E	Kg
431402	1/2"	1/2"	53.5	23	38	0.24
431503 *	3/4"	3/4"	62.5	25	47	0.36

\*Without rubber seal



Ref no	A	B	C	D	E	Kg
401402	1/2"	1/2"	53.5	51.5	100	0.25
401500 *	3/4"	3/4"	62.5	60.5	108	0.39

\*Without rubber seal

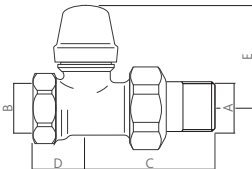


Ref no	A	B	C	D	E	Kg
402402	1/2"	1/2"	52	22	103	0.25
402500 *	3/4"	3/4"	59.5	30	112	0.39

\*Without rubber seal

### Materials

Component	Material	Grade
Body	Brass	BS EN 12165 CW617N
Union nut	Brass	BS EN 12164 CW617N
Tailpiece	Brass	BS EN 12164 CW614N
Seals - O - rings	EPDM	
Handwheel	ABS (RAL 9010)	
Lockshield Cover	ABS (RAL 9010)	
Body finish	Chrome plated	



Ref no	A	B	C	D	E	Kg
432402	1/2"	1/2"	52	22	44.5	0.25
432503 *	3/4"	3/4"	59.5	30	49.5	0.39

\*Without rubber seal



## ECLIPSE MANUAL RADIATOR VALVE

### Technical Data

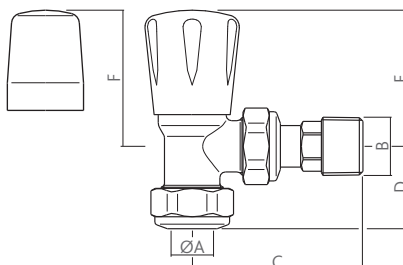
Medium:	water, glycol solution
Max. percentage of glycol:	30%
Max. working pressure (static):	10 bar
Max. temperature:	100 °C
Valves comply with:	BS 2767
Connections:	male thread BSP (R)



### Materials

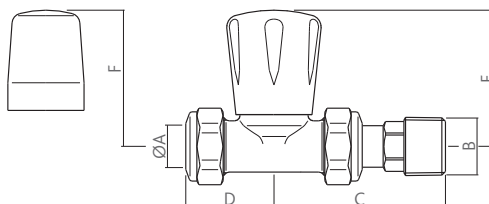
Component	Material	Grade
Body	Brass	BS EN 12165 CW617N
Union nut	Brass	BS EN 12164 CW617N
Tailpiece	Brass	BS EN 12164 CW614N
Seals - O - rings	EPDM	
Gland seal	PTFE	
Handwheel	ABS (RAL 9010)	
Lockshield Cover	ABS (RAL 9010)	
Body finish	Chrome plated (by model)	

### Dimensions



Ref no	A	B	C	D	E	F	kg
CA-410408	8	1/2"	55—63	29	48	48	0.23
410410 LTC	10	1/2"	55—63	29	48	48	0.23
410415 LTC	15	1/2"	55—63	29	48	48	0.22
CA-410425*	15	1/2"	55—63	29	48	48	0.45

\*Chrome head



Ref no	A	B	C	D	E	F	kg
CA-406408	8	1/2"	55—63	32	54	54	0.23
CA-406410	10	1/2"	55—63	32	54	54	0.23
406415 LTC	15	1/2"	55—63	32	54	54	0.23
CA-406425*	15	1/2"	55—63	32	54	54	0.46

\*Chrome head

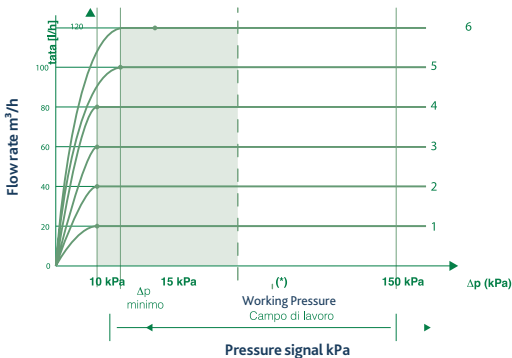
# DYNAMICAL® PRESETTABLE THERMOSTATIC RADIATOR VALVE - NON-REVERSIBLE

## Technical Data

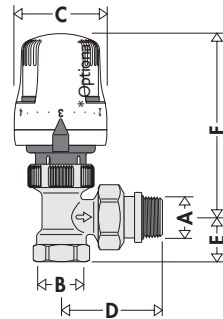
Medium:	water, glycol solution
Max. percentage of glycol:	30%
Max. working pressure (static):	10 bar
Working temperature range:	5 – 95°C
Scale of adjustment $\Delta p$ :	(reg. 1–4) 10–150 kPa (reg. 5–6) 15–150 kPa
<b>Optional TRV Specification:</b>	
Max. differential pressure:	1.5 bar
Temperature range:	7 – 28°C
Frost setting:	7°C
Positive isolation:	
ECOAL® head*:	TELL accredited
Thermostatic head not included, order with CA-200000 for ECOAL® standard head and collar	
Connections:	threaded BSP (G)

## Materials

Component	Material	Grade
Body	Brass	BS EN 12165 CW617N
Union nut	Brass	BS EN 12165 CW617N
Tailpiece	Brass	BS EN 12164 CW614N
Seals - O - rings	EPDM	
TRV insert assembly	Brass with EPDM disc facing	

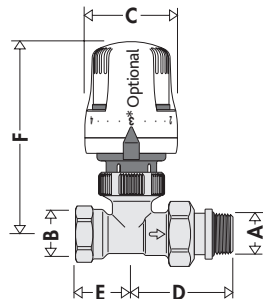


## Dimensions



Ref no	A	B	C	D	E	F
230402	1/2"	1/2"	48.0	52.5	23.0	103.0
230500	3/4"***	3/4"	48.0	62.0	26.0	103.0

\*\*\*Without rubber seal



Ref no	A	B	C	D	E	F
231402	1/2"	1/2"	48.0	52.5	29.0	106.0
231500	3/4"***	3/4"	48.0	62.0	35.0	106.0

\*\*\*Without rubber seal

## 431 & 432 SERIES - LOCKSHIELD VALVES

### Technical Data

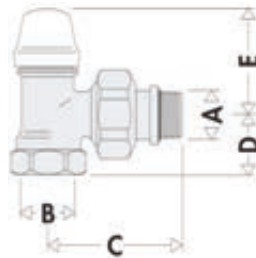
Medium:	water, glycol solutions
Max. percentage of glycol:	30%
Max working pressure:	10 bar
Temperature range:	5 — 100°C
Connections:	threaded BSP (G)



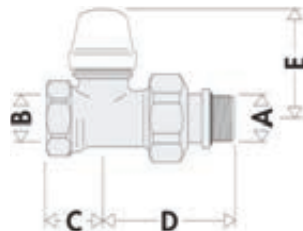
### Materials

Component	Material	Grade
Body	Brass chrome plated	EN 12165 CW617N
Cover	Brass	EN 12165 CW617N
Stem	Brass	
Diaphragm	EPDM	
Spring	PTFE	
Control Knob and cap	ABS (RAL 9010)	

### Dimensions



Ref no	A	B	C
431503	¾"	¾"	62.5
431603	1"	1"	70.5



Ref no	A	B	C
432503	¾"	¾"	30
432603	1"	1"	38

## DYNAMICAL® - TWIN PACKS

### Technical Data

#### TRV Specification:

Medium:	water, glycol solution
Max. percentage of glycol:	30%
Max. working pressure:	10 bar
Working temperature range:	5 – 95°C
Scale of adjustment $\Delta P$ :	(reg. 1-4) 10-150 kPa (reg. 5-6) 15-150 kPa

#### Lockshield Specification:

Medium:	water, glycol solution
Max. percentage of glycol:	30%
Max. working pressure:	10 bar
Temperature range:	5 – 100°C

#### Optional TRV Head Specification:

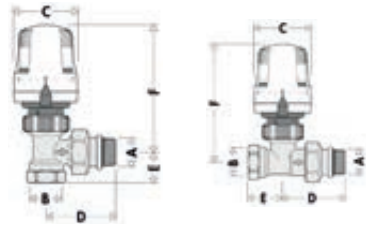
Max. differential pressure:	1.5 bar
Temperature range:	7 – 28°C
Frost Setting:	7°C

#### Positive isolation:

ECOCAL head:	TELL Accredited
Connections:	threaded BSP (G)



### Dimensions

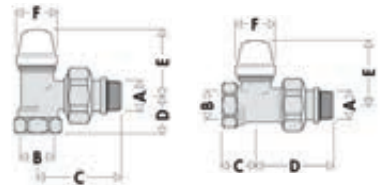


#### TRV dimensions

Ref no	Description	A	B	C	D	E	F
105-1513	1/2" Angled twinpack	1/2"	1/2"	48	48	20	103
105-1514	1/2" Straight twinpack	1/2"	1/2"	48	52.5	29	106
105-2205	3/4" Angled twinpack	3/4"	3/4"	48	62	26	103
105-2206	3/4" Straight twinpack	3/4"	3/4"	48	62	35	106

### Materials

Component	Material	Grade
TRV		
Body	Brass chrome plated	BS EN 12165 CW617N
Unit Nut	Brass	BS EN 12165 CW617N
Tailpiece	Brass	BS EN 12164 CW614N
Seals-O rings	EPDM	
TRV insert assembly	Brass with EPDM disc facing	
Lockshield		
Body	Brass	EN 12165 CW617N
Obturator	Brass	EN 12165 CW614N
Hydraulic Seals	EPDM	
Gland	PTFE	
Control knob and cap	ABS (RAL 9010)	



#### Lockshield dimensions

Ref no	Description	A	B	C
105-1513	1/2" Angled twinpack	1/2"	1/2"	53.3
105-1514	1/2" Straight twinpack	3/4"		38
105-2205	3/4" Angled twinpack	3/4"	3/4"	62.5
105-2206	3/4" Straight twinpack	3/4"	3/4"	30



## SCREWED IRON THERMOSTATIC RADIATOR VALVE

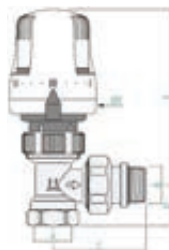
### Technical Data

#### Technical Specification:

Medium:	water, glycol solution
Max percentage of glycol:	30%
Certified to:	BS EN 215
Keypmark company identity number :	48
Max. working pressure (static):	10 bar
Max. temperature:	100 °C
TRV Specification:	
Max. differential pressure:	1 bar
Scale of adjustment:	0 to V
Temperature range:	7 to 28°C
Frost setting:	7°C
Max. ambient temperature:	50°C
Liquid filled element:	
Connections:	threaded BSP (G)



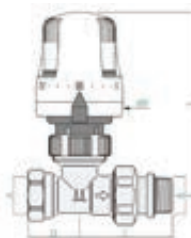
### Dimensions



### Materials

Component	Material	Grade
Body	Brass	BSEN 12165 CW617N
Union nut	Brass	BSEN 12164 CW617N
Tailpiece	Brass	BSEN 12164 CW614N
Stem	Stainless Steel	
Seals 'O' rings	EPDM	
TRV insert assembly	Brass with EPDM disc facing	
Manual operator	Thermoplastic	ABS (RAL 9010)
ABS	Chrome finish	
TRV controller cover	Thermoplastic	ABS (RAL 9010)
ABS	Chrome finish	
Body finish	Chrome Plated	

Ref no	A	B	C	D	E	F
105-1501	Rp1/2"	R1/2"	54	23	100	48
105-2201	Rp3/4"	R3/4"	62	26	100	48



Ref no	A	B	C	D	E	F
105-1502	Rp1/2"	R1/2"	54	29	104	48
105-2202	Rp3/4"	R3/4"	62	35	104	48

## SCREWED IRON LOCKSHIELD RADIATOR VALVE

### Technical Data

**Technical Specification:**

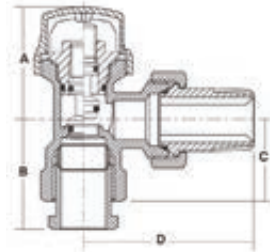
Medium:	water, glycol solution
Max percentage of glycol:	30%
Max working pressure:	10 bar
Max. Temperature:	100°C
Connections:	male thread BSP (R)



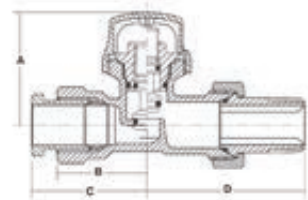
### Materials

Component	Material	Grade
Body	Brass (Chrome Plated)	BS EN 12165 CW617N
Lockshield Assembly	Brass	BS EN 12164 CW614N
Lockshield Cap	Thermoplastic	ABS
Tailpiece Ring	Brass	BS EN 12164 CW617N
Tailpiece	Brass	BS EN 12164 CW617N
Compression Olive	Brass	BS EN 12164 CW602N
Compression	Brass	BS EN 12164 CW614N
Adaptor		
Hydraulic Seals	Rubber	EDPM

### Dimensions



Ref no	Size	A	B	C	D	Kg
105-1503	1/2" Angled	36.5	38.5	27.5	58	0.232
105-2203	3/4" Angled	40.5	39.5	30.5	66	0.387



Ref no	Size	A	B	C	D	Kg
105-1504	1/2" Straight	43	34	44	60	0.232
105-2204	3/4" Straight	44	40	51	65	0.387

# IRON THERMOSTATIC RADIATOR VALVE TWIN PACK

## Technical Data

### Technical Specification:

Medium: water, glycol solution

Max percentage of glycol: 30%

Certified to: BS EN 215

Keymark company identity number: 48

Max. working pressure (static): 10 bar

Max. temperature: 100 °C

### TRV Head Specification:

Max. differential pressure: 1 bar

Scale of adjustment: 0 to V

Temperature range: 0 to 28°C

Frost setting: 7°C

Max. ambient temperature: 50°C

Liquid filled element:

### Lockshield Specification:

Medium: water, glycol solution

Max percentage of glycol: 30%

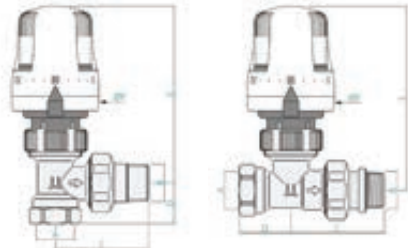
Max working pressure: 10 bar

Max. Temperature: 100°C

Connections: threaded BSP (Rp) and (R)



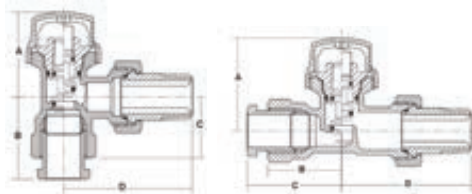
## Dimensions



Ref no	Size	A	B	C	D	E	F
105-1505	1/2" Angled Twin Pack	Rp1/2	R1/2	54	23	100	48
105-1506	1/2" Straight Twin Pack	Rp1/2	R1/2	54	29	104	48
105-2205	3/4" Angled Twin Pack	Rp3/4	R3/4	62	26	100	48
105-2206	3/4" Straight Twin Pack	Rp3/4	R3/4	62	35	104	48

## Materials

Component	Material	Grade
Body	Brass	BS EN 12165 CW617N
Union nut	Brass	BS EN 12164 CW617N
Tailpiece	Brass	BS EN 12164 CW614N
Stem	Stainless Steel	
Seals 'O' rings	EPDM	
TRV insert assembly	Brass with EPDM disc facing	
Manual operator	Thermoplastic	ABS (RAL 9010)
ABS	Chrome finish	
TRV controller cover	Thermoplastic	ABS (RAL 9010)
ABS	Chrome finish	
Body finish	Chrome Plated	
Lockshield		
Body	Brass (Chrome Plated)	BS EN 12165 CW617N
Lockshield Assembly	Brass	BS EN 12164 CW614N
Lockshield Cap	Thermoplastic	ABS
Tailpiece Ring	Brass	BS EN 12164 CW617N
Tailpiece	Brass	BS EN 12164 CW617N
Compression Olive	Brass	BS EN 12164 CW602N
Compression		
Adaptor	Brass	BS EN 12164 CW614N
Hydraulic Seals	Rubber	EDPM



Ref no	Description	A	B	C	D
105-1505	1/2" Angled Twin Pack	36.5	38.5	27.5	58
105-1506	1/2" Straight Twin Pack	43	34	44	60
105-2205	3/4" Angled Twin Pack	40.5	39.5	30.5	66
105-2206	3/4" Straight Twin Pack	44	40	51	65

## ECOPAS 519 SERIES - DIFFERENTIAL BY-PASS VALVE



### Technical Data

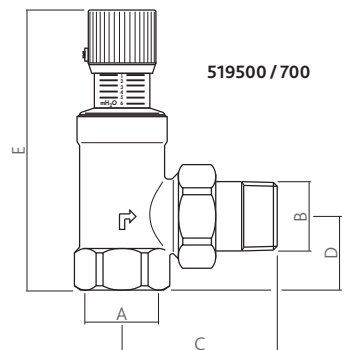
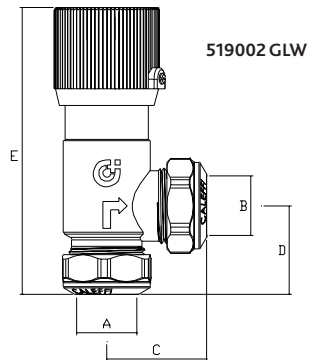
Medium:	water, glycol solution
Max. percentage of glycol:	30%
Working temperature range:	0 — 110 °C
Max. working pressure:	10 bar
Setting range:	1 — 6 m head
	10 — 60 kPa
Connections:	male thread BSP (G)



### Materials

Component	Material	Grade
Body	Brass	BS EN 12165 CW617N
Disc	Brass	BS EN 12164 CW614N
Disc facing	EPDM	
O - rings	EPDM	
Union joint gasket	Asbestos free NBR	
Control Dial/wheel	ABS polymer	
Spring	Stainless steel	

### Dimensions



Ref no	A	B	C	D	E	Kg
519002 GLW	Ø 22	Ø 22	38	36	113	0.45
519500	¾"	¾"	59	26	104	0.45
519700	1¼"	1¼"	89	41	158	1.19



## FLOWCAL® CODE BUILDER

### Method of coding Flowcal® 121-126-127-128 series

For correct identification of the device, fill in the form indicating: series, size, flow rate and  $\Delta p$  range.

Complete code

1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>
			1		1			
} Series			} Size		} Flow rate - $\Delta p$ range			

**Series**      1<sup>st</sup>   2<sup>nd</sup>   3<sup>rd</sup>      The first three digits indicate the series

**Size**            5<sup>th</sup>                      The fifth digit indicate the size

**Flow rate -  $\Delta p$  range**      7<sup>th</sup>   8<sup>th</sup>   9<sup>th</sup>      The last three digits indicate the available flow rate

121	Flowcal® regulator and ball valve
126	Flowcal® regulator
127	Flowcal® compact regulator
128	Flowcal® compact regulator

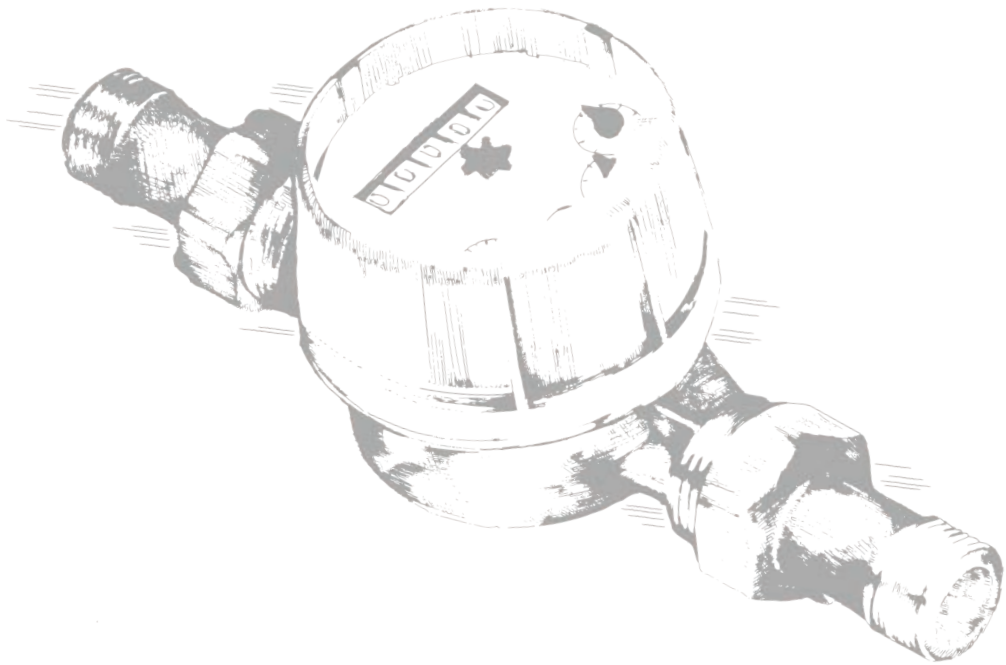
<b>Size</b>	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
<b>Digit</b>	4	5	6	7	8	9

#### $\Delta p$ range 20/200 kPa

m <sup>3</sup> /h	digit	m <sup>3</sup> /h	digit	m <sup>3</sup> /h	digit
0,02	M02	0,04	M04	0,06	M06

#### $\Delta p$ range 15-200 kPa

m <sup>3</sup> /h	digit	m <sup>3</sup> /h	digit	m <sup>3</sup> /h	digit	m <sup>3</sup> /h	digit	m <sup>3</sup> /h	digit	m <sup>3</sup> /h	digit
0,085	M08	0,40	M40	1,20	1M2	2,75	2M7	4,50	4M5	7,50	7M5
0,12	M12	0,50	M50	1,40	1M4	3,00	3M0	4,75	4M7	8,00	8M0
0,15	M15	0,60	M60	1,60	1M6	3,25	3M2	5,00	5M0	8,50	8M5
0,20	M20	0,70	M70	1,80	1M8	3,50	3M5	5,50	5M5	9,00	9M0
0,25	M25	0,80	M80	2,00	2M0	3,75	3M7	6,00	6M0	9,50	9M5
0,30	M30	0,90	M90	2,25	2M2	4,00	4M0	6,50	6M5	10,0	10M
0,35	M35	1,00	1M0	2,50	2M5	4,25	4M2	7,00	7M0	11,0	11M



04

Metering

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# Metering

Altecnic provides unique solutions to your metering requirements.

Altecnic offer a complete range of water meters, single and multi-jet type with wet and dry dial or liquid filled sealed counter, as well as full bore helix Woltmann-type meters with interchangeable or fixed mechanism, to suit the needs of practically any end user.

Our range of water meters are EEC approved in classes Class A, B C dependant on model - in accordance with EEC directive No. 75/33.



Altecnic energy meters ensure that your installations are monitored in the most efficient manner for billing purposes.

Our range offers a comprehensive range with output formats ranging from pulsed through RS-232 to GPRS for maximum flexibility.



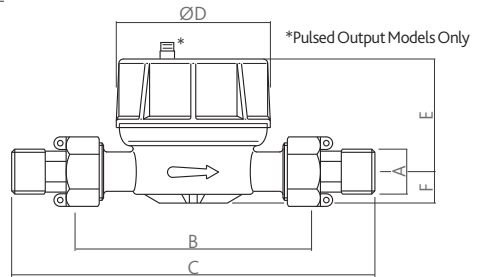
## VOLUMETRIC COLD WATER METERS

### Technical Data

Single jet turbine water meter:	
Super dry dial:	
Temperature class:	T30 — T50
Measuring range:	R80
Dial range:	0 — 100,000 m <sup>3</sup>
May be installed in any position:	
U0-D0 -Straight pipe not required upstream or downstream of meter MID approved according to European Directive 2004/22/CE (module B + D)	
In compliance with:	BS EN 14154 OIML R49/200
Connections:	male thread BSP (G)



### Dimensions



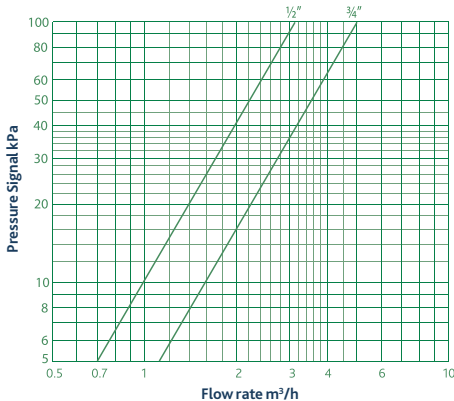
### Pulsed

Size	Size A	B	C	D	E	F	Kg
CG-USLF15P1	½"	110	190	72	70	16	0.66
CG-USLF20P1	¾"	130	228	72	74	19	0.84

### Non-pulsed

Ref no	Size A	B	C	D	E	F	Kg
CG-3003F13	½"	110	190	72	70	16	0.66
CG-3005F20	¾"	130	228	72	74	19	0.84

### Flow chart - Q4



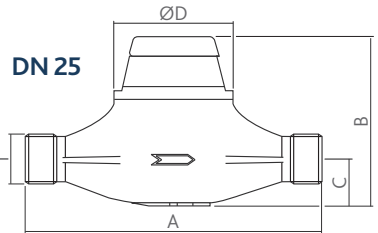
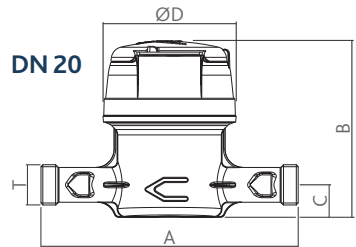
## MID COLD WATER METERS

### Technical Data

Nominal Diameter DN:	20 mm	25 mm	
	¾"	1"	
Register type:	TVM	TSN/TVN	
Dynamic range MID (R) - all positions:	R160	R350	
Permanent flow rate:	Q3	4 m³/h	6.3 m³/h
Standard ratio:	Q3/Q1	160	160
Minimum flow rate:	Q1	25 l/h	39 l/h
Transitional flow rate:	Q2	40 l/h	63 l/h
Overload flow rate:	Q4	5 m³/h	7.9 m³/h
Pressure loss class at:	Q3	<0.63 bar	<0.63 bar
Pressure loss at:	Q4	MAP	<1 bar
Maximum admissible pressure (MAP):	MAP	16 bar	16 bar
Maximum admissible temperature:	MAP	0.1 — 50 °C	0.1 — 30 °C
Operating temperature:	MAP	0.1 — 50 °C	5 — 55 °C
Starting flow rate:		2 l/h	4 l/h
Connections:		male thread BSP (G)	



### Dimensions



### Materials

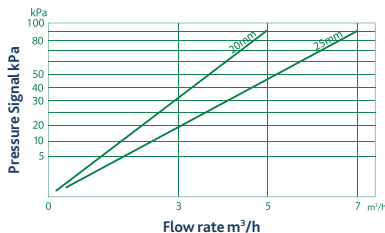
Hermetically sealed IP68 register TVM (Copper can/mineral glass enclosure) to face all site situations.

Plastic register TSN equipped with wiper to ensure readability in high humidity conditions, optional for DN 25.

Maximum admissible working pressure is 16 bar

Register	Size DN	T	A	B	C	D	Kg
TVM	20	1"	190	143	20	88	1.5
TSN/TVM	25	1¼"	260	156/142	44	110	3.2/3.5

### Heatloss chart



Ref no	Description
PS-100002	¾" - DN 20 water meter
PS-100004	1" - DN 25 water meter
PS-P00002	¾" - DN 20 water meter with pulse output
PS-P00003	1" - DN 25 water meter with pulse output

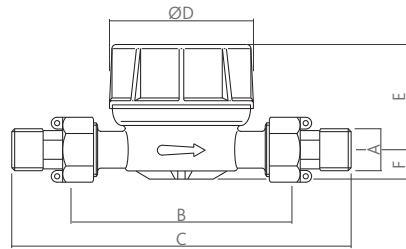
## VOLUMETRIC HOT WATER METERS

### Technical Data

Single jet turbine water meter:	
Super dry dial:	
360° rotating dial for easy reading in any position	
Temperature class:	T70—T90
Measuring range:	R80
Dial range:	0 — 100,000 m <sup>3</sup>
May be installed in any position	
U0-D0 -Straight pipe not required upstream or downstream of meter	
MID approved according to European Directive 2004/22/CE (module B + D)	
In compliance with:	BS EN 14154 OIML R49/200
Connections:	male thread BSP (G)

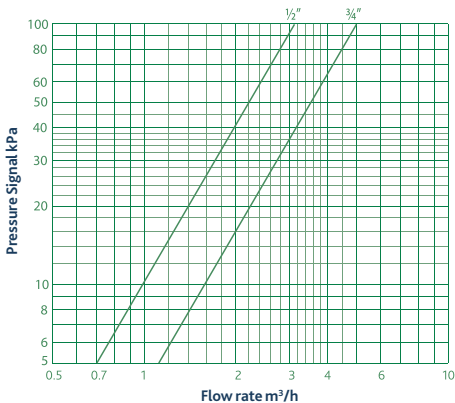


### Dimensions



Ref no	Size A	B	C	D	E	F	Kg
GG-3003C13	½"	110	185	72	70	16	0.66
GG-3005C20	¾"	130	228	72	74	19	0.84

### Flow chart - Q4



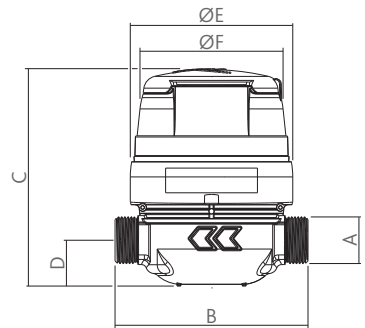
## COMPOSITE COLD PULSE/NON-PULSE OPTION

### Technical Data

MID Metrology Class (R):	all positions 50 min - 400 max (*)
MID Type Approval Number LNE:	13636
Nominal flow rate (Q3) m³/h:	1.6 — 2.5
Standard Ratio (Q3/Q1):	100 — 160
Minimum Flow Rate (Q1) l/h:	16 — 15.6
Transitional Flow Rate (Q2) l/h:	25.6 — 25
OverLoad Flow Rate (Q4) m³/h:	2 3.12
Typical Starting Flow Rate l/h:	< 1
Accuracy ± 5% l/h:	4
Accuracy ± 2% l/h:	8
Pressure Loss Class at Q3 bar:	0.25 — 0.63
Maximum Admissible Pressure (MAP) bar:	16
Testing pressure bar:	25
Maximum Operating Temperature (MAT)°C:	50
Climatic Environment°C:	5 — 55
Indication Range m³:	99999.999
Minimum Scale Interval L:	0.02
Connections:	male thread BSP (G)



### Dimensions

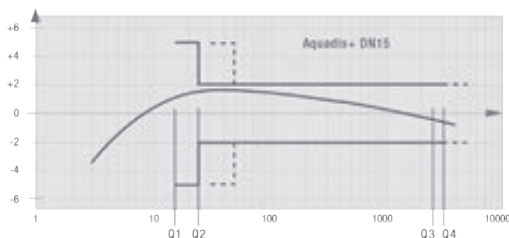


### Materials

- The Aquadis+ has a composite case made from a special thermoplastic material with the highest mechanical characteristics suitable for replacing the traditional brass or bronze materials, without any restrictions in metrology or resistance to pressure.
- Large numbered rollers with good contrast for easy reading.
- Maximum admissible working pressure is 16 bar.
- Supplied with male union connections.

Nom. Size	A	B	C	D	E	F	Kg
15	¾"	134	123	26	92	82	0.49

### Typical accuracy curve according with R160 mid channel



Ref no	Size	Description
PS-100001	½"	cold water - non pulsed
PS-P00001	½"	cold water - pulsed



## ENERGY METERS

### ITRON C F ECHO II ENERGY METER

Ref no	Size	Power	Output
204-1...	15 — 150 mm	- Mains - Battery	- M-Bus - Pulsed - Radio - GPRS - RS232



### ITRON COMPACT ENERGY METER - ULTRAMAX

Ref no	Size	Power	Output
204-2...	15 — 20 mm	- Mains - Battery	- M-Bus - Pulsed - Radio



### ZENNER ZELSIUS C5-G¾B METER

Ref no	Size	Power	Output
204-8001	15 — 20 mm	- Mains - Battery	- M-Bus - Radio



### HYDROMETER ENERGY METER

Ref no	Size	Power	Output
204-6...	15 — 20 mm	- Mains - Battery	- M-Bus - Pulsed - Radio - GPRS - RS232



### KAMSTRUPP ENERGY METER

Ref no	Size	Power	Output
204-4...	15 — 20 mm	- Mains - Battery	- M-Bus - Pulsed - Radio - GPRS - RS232



## LOGGERS



## DATA CONCENTRATOR

Ref no	Description
205-1003	Suitable for up to 128 energy meters
205-1004	Suitable for up to 256 energy meters

- 128 and 256 meters
- Extendable network up to 1000 meters
- Local data reading via USB/RS232
- Can be easily upgraded with an infra-red GPRS modem for remote meter reading

## GPRS MODEM

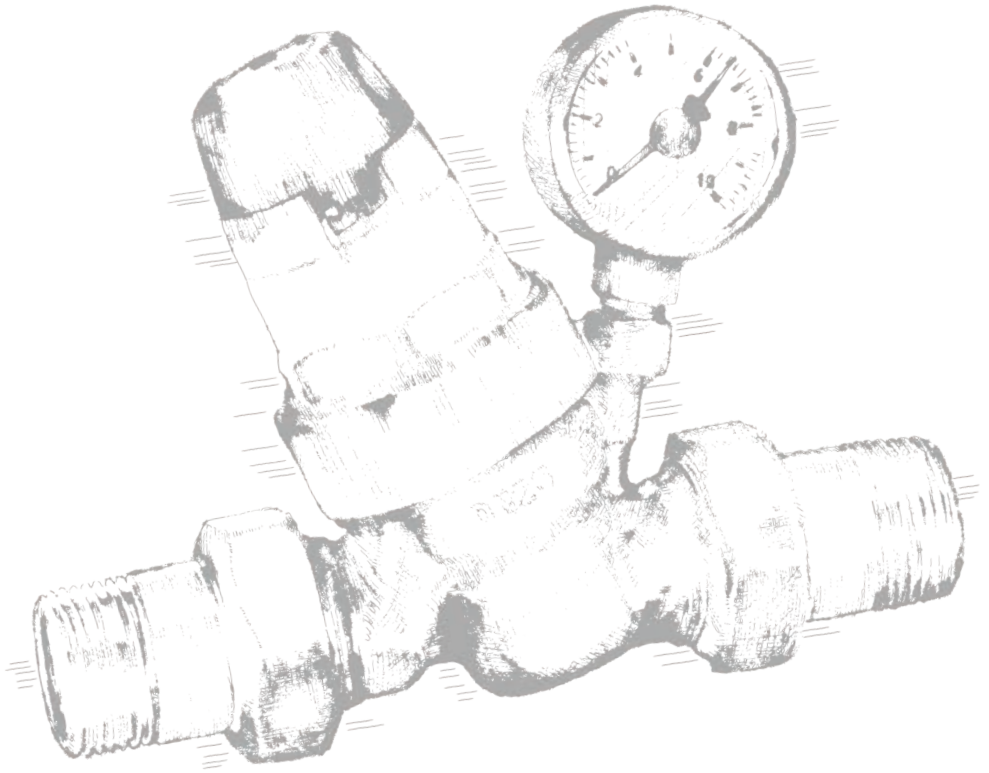
Ref no	Description
204-7010	GPRS modem

- GPRS modem
- Automatically sends meter usage data via email or text message
- Requires sim card
- Optional mounting box available on request

## PREPAYMENT SYSTEM WITH A DEDICATED CONTROL UNIT, INDEPENDENT TENANT DISPLAY FOR EASY INSTALLATION

Ref no	Description
205-1011	Pre-payment system

- Secure credit management for landlords
- Smarter budgeting and payment options for tenants
- Graphical and easy to read tenant screen, is connected wirelessly to the prepayment unit. This screen can be located conveniently within the apartment for the tenant to better manage their balance and account.
- Secure online payment portal for the tenant to top-up with credit or debit cards and local top-up facilities with PayPoint 26,700 retail points across the country
- Wireless Smart metering of heat and hot water, avoiding the need for cabling and building M-Bus systems for data collection. The screen can provide a messaging capability to each tenant; events, key dates, marketing opportunities.
- The system is remote changeable between a prepayment and traditional credit system.
- The system is compliant with ENE3 Code for Sustainable Homes



**05**

Pressure Reducing  
Valves

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# Pressure reducing valves (PRVs)

Caleffi pressure reducing valves (PRVs) are renowned for their quality and reliability to limit the incoming pressure from a mains supply or a boosted supply within a building.

Manufactured in Caleffi's own plant in Northern Italy, the 535, 536 and 300 range of PRVs limit high-pressure water that can seriously damage components in a heating and potable water system.

Caleffi PRVs provide reliable, consistent control for both static and dynamic pressure.



## Static pressure

Static pressure is the pressure in a body of water when that water is at rest. Static pressure control is, the maintenance of a set pressure within a system when there is no demand i.e. no flow. This is particularly useful for single point of use outlets, especially where protection is required due to low pressure rating of, for example, washing machines and showers.

## Dynamic pressure

Dynamic pressure is the static pressure of the body of water but it also includes the momentum of the fluid in motion. Dynamic pressure control is the maintenance of a set pressure within a system when the water is moving. Typically these sorts of valves are used on multi-point installations such as whole houses or buildings where there is likely to be a more constant demand.

The key difference is that a dynamic pressure reducing valve will only control the pressure when water is moving. If there is no demand the pressure can creep up without regulation. Static control on the other hand will keep pressure constant even when downstream demand increases.



# PRESCAL® 533H SERIES - HIGH PERFORMANCE PRESSURE REDUCING VALVE - COMPRESSION



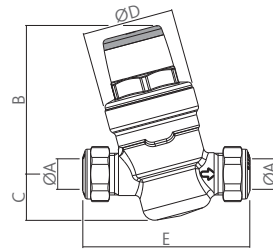
## Technical Data

Medium:	potable water
Max. upstream pressure:	16 bar
Outlet pressure setting range:	1 — 5.5 bar
Working temperature range:	80°C
Factory setting:	3 bar
Pressure gauge connection:	G 1/4"
Certification:	BS EN 1567
Max. reduction ratio:	3:1
Operation type:	dynamic control
Connections:	compression ends

## Materials

Component	Material	Grade
Body	DZR chrome plated	BS EN 12165 CW602N
Cover	Nylon Polymer	PA6630
Control stem	Stainless steel	AISI 303
Cartridge	Polymer	PPSG40
Internal components	Polymer	PSU
Diaphragm	EPDM	
Seals	EPDM	
Strainer screen	Stainless steel	AISI 304

## Dimensions

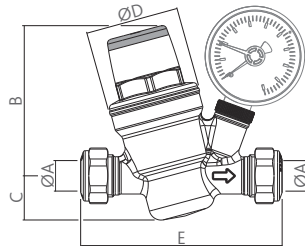
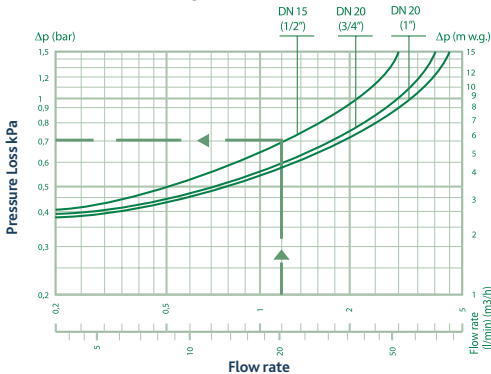


Ref no	A	B	C	D	E	Kg
533641H	Ø15	74.5	23	46	84	0.41
533651H	Ø22	74.5	23	46	94	0.44

## Recommended Flow rates

Diameter	15 mm	22 mm	28 mm
Flow rate (l/min)	21.16	37.83	37.83

## Pressure Drop



Ref no	A	B	C	D	E	Kg
533741H	Ø15	74.5	22	46	100	0.41
533841H*	Ø15	74.5	22	46	100	0.50
533751H	Ø22	74.5	22	46	109	0.45
533851H*	Ø22	74.5	22	46	109	0.52
533761H	Ø28	74.5	22	46	115	0.56
533861H*	Ø28	74.5	22	46	115	0.61

\*With pressure gauge

# PRESCAL® 533H SERIES - HIGH PERFORMANCE PRESSURE REDUCING VALVE - THREADED



## Technical Data

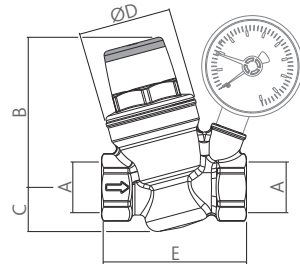
Medium:	potable water
Max. inlet pressure:	16 bar
Outlet pressure setting range:	1 — 5.5 bar
Max. working temperature:	80°C
Factory setting:	3 bar
Pressure gauge connection:	G ¼"
Pressure gauge scale:	0 — 10 bar
Certification:	BS EN 1567
Operation type:	dynamic control
Connections:	female thread BSP (G)



## Materials

Component	Material	Grade
Body	DZR chrome plated	BS EN 12165 CW602N
Cover	Nylon Polymer	PA6G30
Control stem	Stainless steel	AISI 303
Cartridge	Polymer	PPSG40
Internal components	Polymer	PSU
Diaphragm	EPDM	
Seals	EPDM	
Strainer screen	Stainless steel	AISI 304

## Dimensions



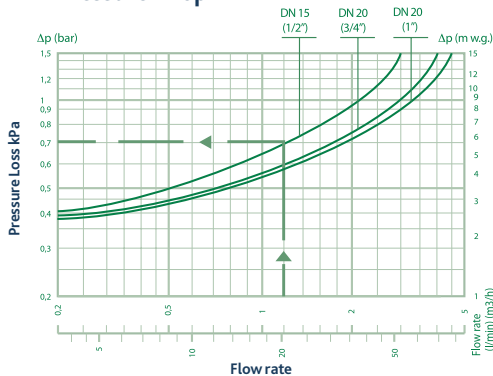
## Recommended flow rates

Valve Size	½"	¾"	1"
l/min maximum	21.16	37.83	37.83

Ref no	A	B	C	D	E	Kg
533441H LTC	½"	74.5	22	46	70	0.40
533241H LTC*	½"	74.5	22	46	70	0.46
533451H LTC	¾"	74.5	22	46	72	0.41
533251H LTC*	¾"	74.5	22	46	72	0.47
533461H LTC	1"	74.5	22	46	87	0.56

\*With pressure gauge

## Pressure Drop



# PRESCAL® 5350H SERIES - HIGH PERFORMANCE DIAL UP PRESSURE REDUCING VALVE - COMPRESSION ENDS

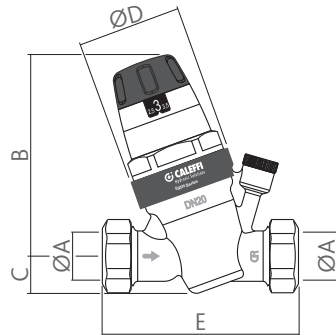


## Technical Data

Medium:	potable water	
Max. inlet pressure:	16 bar	
Outlet pressure setting range:	1 — 6 bar	
Max. working temperature:	80°C	
Factory setting:	3 bar	
Pressure gauge connection:	G 1/4"	
Certification:	BS EN 1567	
Acoustic group:	15 — 28	II
Strainer mesh size:	15 — 28	0.51 mm
Max. reduction ratio:	3:1	
Operation type:	static control	
Connections:	compression ends	



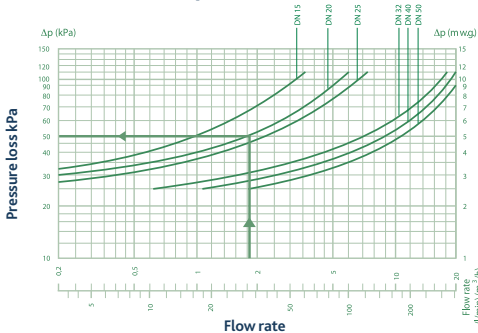
## Dimensions



## Materials

Component	Material	Grade
Body	DZR brass alloy	BS EN 12165 CW724R
Cover	Nylon	PA 66M40/1
Control stem	Stainless steel	AISI 303
Cartridge	Polymer	PPSG40
Moving components	DZR	BS EN 12165 CW724R
Diaphragm	EPDM	
Seals	EPDM	
Strainer screen	Stainless steel	AISI 304

## Pressure Drop



- Reference conditions: Upstream pressure = 8 bar  
Downstream pressure = 3 bar

Ref no	A	B	C	D	E	Kg
535015H	Ø15	115	20.5	60	101	0.69
535022H	Ø22	115	20.5	60	109	0.74
535028H	Ø28	115	20.5	60	115	0.79

## Flow rates

Water flow rates corresponding to each diameter are shown below, for an average velocity of 2 m/s, in accordance with the specifications of the standard EN 1567.

Diameter	15	22	28
Flow rate (m³/h)	1.27	2.27	3.6



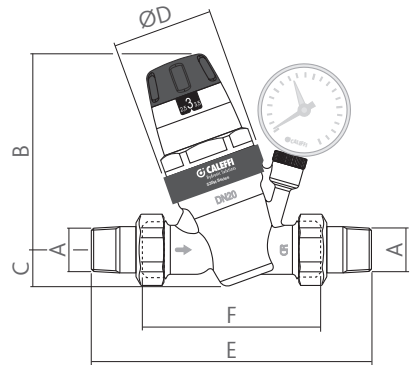
# PRESICAL® 5350H SERIES - HIGH PERFORMANCE DIAL UP PRESSURE REDUCING VALVE - THREADED



## Technical Data

Medium:	potable water	
Max. inlet pressure:	16 bar	
Outlet pressure setting range:	1—6 bar	
Max. working temperature:	80°C	
Factory setting:	3 bar	
Pressure gauge connection:	G 1/4"	
Pressure gauge scale:	0—10 bar	
Certification:	BS EN 1567	
Acoustic group:	1/2" — 1 1/4"	II
Strainer mesh size:	1/2" — 1"	0.51 mm
	1 1/4" — 2"	0.65 mm
Max. reduction ratio:	3:1	
Operation type:	static control	
Connections:	male thread BSP (R)	

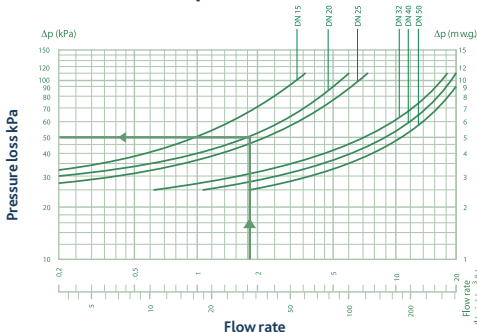
## Dimensions



## Materials

Component	Material	Grade
Body	DZR brass alloy	BS EN 12165 CW724R
Cover	Nylon Polymer	PA6630
Control stem	Stainless steel	AISI 303
Cartridge	Polymer	PPSG40
Moving components	DZR	BS EN 12165 CW724R
Diaphragm	EPDM	
Seals	EPDM	
Strainer screen	Stainless steel	AISI 304

## Pressure Drop



- Reference conditions: Upstream pressure = 8 bar  
Downstream pressure = 3 bar

Ref no	A	B	C	D	E	F	Kg
535040H	1/2"	115	20.5	60	140	76	0.86
535041H*	1/2"	115	20.5	60	140	76	0.96
535050H	3/4"	115	20.5	60	160	90	1.02
535051H*	3/4"	115	20.5	60	160	90	1.12
535060H	1"	115	20.5	60	180	95	1.31
535061H*	1"	115	20.5	60	180	95	1.41
535070H	1 1/4"	178	40	78	200	110	2.78
535071H*	1 1/4"	178	40	78	200	110	2.88
535080H	1 1/2"	178	40	78	220	120	3.30
535081H*	1 1/2"	178	40	78	220	120	3.40
535090H	2"	178	40	78	250	130	4.41
535091H*	2"	178	40	78	250	130	4.51

\*With pressure gauge 0—10 bar

## Flow rates

Water flow rates corresponding to each diameter are shown below, for an average velocity of 2 m/s, in accordance with the specifications of the standard EN 1567.

Diameter	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Flow rate (m³/h)	1.27	2.27	3.6	5.8	9.1	14

# PRESCAL® 536 SERIES - PRESSURE REDUCING VALVE



## Technical Data

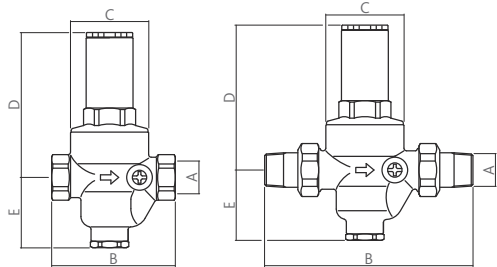
Max. inlet pressure:	25 bar
Outlet pressure setting range:	0.5 — 6 bar
Max. working temperature:	80°C
Factory setting:	3 bar
Optional pressure gauge range:	0 — 10 bar
Max. reduction ratio:	3:1
Operation type:	static control
Connections:	male thread BSP (R)



## Materials

Component	Material	Grade
Body	DZR brass alloy	BS EN 1982 CB752S
Cover	DZR brass alloy	BS EN 12165 CW617N
Seat	Stainless steel	AISI 304
Diaphragm	Nitrile rubber	
Seals	Nitrile rubber	
Strainer screen	Stainless steel	AISI 304

## Dimensions

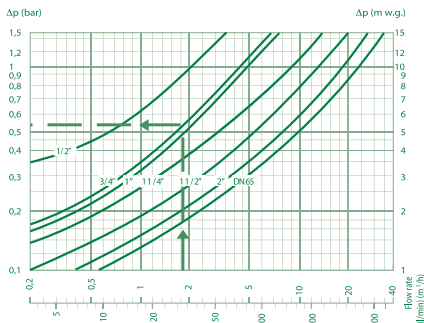


## Flow rates

BS EN 1567 recommends an average flow velocity of 2 m/s.  
When sizing pressure reducing valves the flow velocity should be between 1 — 2 m/s.

Velocity	Size	1/2"	3/4"	1"	1 1/4"	1 1/2"
1 m/s	Flow rate m <sup>3</sup> /h	0.064	1.13	1.8	2.9	4.55
2 m/s	Flow rate m <sup>3</sup> /h	1.27	2.27	3.61	5.8	9.1

## Kv value and flow rate



Reference conditions: Upstream pressure = 8 bar  
Downstream pressure = 3 bar

Ref no	A	B	C	D	E	Kg
<b>FxF Connection</b>						
536241*						
536240	1/2"	81	51	90	54	1.1
CA-536251*						
536250	3/4"	95	60	112	54	1.52
536261*						
536260	1"	100	60	112	54	1.53
<b>MxM Connection</b>						
536041*						
536040	1/2"	140	51	90	54	1.2
536051*						
536050	3/4"	160	60	112	54	1.6
536061*						
536060	1"	180	60	112	54	1.9
536071*						
536070	1 1/4"	200	72	126	63	3.04
536081*						
536080	1 1/2"	220	72	126	63	3.54

\*With 10 bar pressure gauge

## PRESCAL® 5365 SERIES - PRESSURE REDUCING VALVE

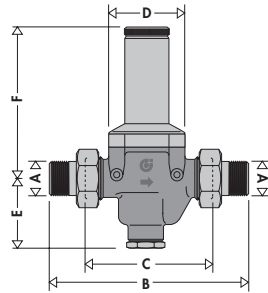


### Technical Data

Max. inlet pressure:	25 bar
Outlet pressure setting range:	0.5 — 6 bar
Max. working temperature:	80°C
Factory setting:	3 bar
Optional pressure gauge range:	0 — 10 bar downstream 0 — 25 bar upstream
Max. Reduction ratio:	3:1
Operation type:	static control
Connections:	male thread BSP (R)



### Dimensions



### Materials

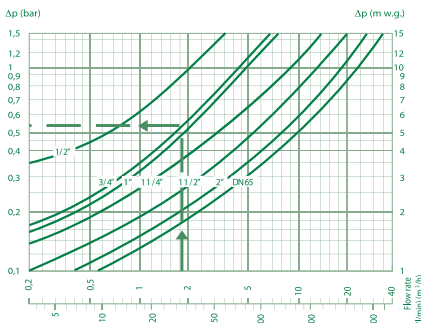
Component	Material	Grade
Body	bronze	EN1982 CB499K
Cover	brass	EN1982 CB753S
Seat	Stainless steel	AISI 304
Diaphragm	Nitrile rubber	
Seals	Nitrile rubber	
Strainer screen	Stainless steel	AISI 304

### Flow rates

BS EN 1567 recommends an average flow velocity of 2 m/s.  
When sizing pressure reducing valves the flow velocity should be between 1—2 m/s.

Velocity	Size	1/2"	3/4"	1"	1 1/4"	1 1/2"
1m/s	Flow rate m <sup>3</sup> /h	0.064	1.13	1.8	2.9	4.55
2m/s	Flow rate m <sup>3</sup> /h	1.27	2.27	3.61	5.8	9.1

### Kv value and flow rate



Reference conditions: Upstream pressure = 8 bar  
Downstream pressure = 3 bar

Ref no	DN*	A**	B	C	D	E	F	Kg
536580	40	1 1/2"	260	160	110	97	201	9.2
536590	50	2"	280	180	110	94	204	10.4
536801***	40	1 1/2"	260	160	110	97	201	9.2
5365901***	50	2"	280	180	110	94	204	10.4

\* Valve body \*\* Connections \*\*\* with gauge

## PRESCAL® 5366 SERIES - PRESSURE REDUCING VALVE



### Technical Data

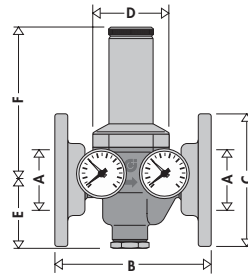
Max. inlet pressure:	16 bar
Outlet pressure setting range:	0.5 — 6 bar
Max. working temperature:	80°C
Factory setting:	3 bar
Optional pressure gauge range:	0 — 10 bar downstream 0 — 25 bar upstream
Max. Reduction ratio:	3:1
Operation type:	static control
Connections:	flanged PN 16



### Materials

Component	Material	Grade
Body	Bronze	EN 1932 CBH99K
Cover	Brass	EN 1982 CB753S
Seat	Stainless steel	AISI 304
Diaphragm	Nitrile rubber	
Seals	Nitrile rubber	
Strainer screen	Stainless steel	AISI 304

### Dimensions



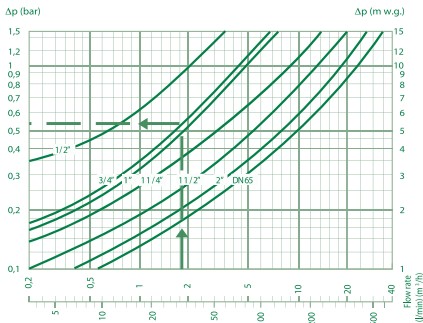
### Flow rates

BS EN 1567 recommends an average flow velocity of 2 m/s.  
When sizing pressure reducing valves the flow velocity should be between 1 — 2 m/s.

Velocity	Size	1/2"	3/4"	1"	1 1/4"	1 1/2"
1 m/s	Flow rate m³/h	0.064	1.13	1.8	2.9	4.55
2 m/s	Flow rate m³/h	1.27	2.27	3.61	5.8	9.1

Ref no	A	B	C	D	E	F	Kg
<b>536660</b>	DN 65	225	Ø185	110	94	204	14.9

### Kv value and flow rate



Reference conditions: Upstream pressure = 8 bar  
Downstream pressure = 3 bar

## PRESCAL® 300 SERIES - PRESSURE REDUCING VALVE WITH FLANGED CONNECTIONS

### Technical Data

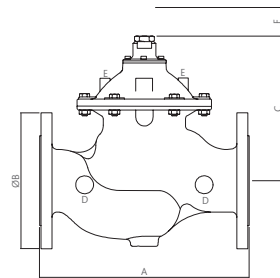
Medium:	potable water
Max. working pressure:	16 bar
Max. temperature:	80°C
Face to face:	BSEN558
Reduction ratio:	3:1
Operation type:	dynamic control
Connections:	flanged PN 16



### Materials

Component	Material
Body	Ductile iron
Body seat	Stainless steel
Disc	Ductile iron
Diaphragm disc	Ductile iron
Spring	302 stainless steel

### Dimensions

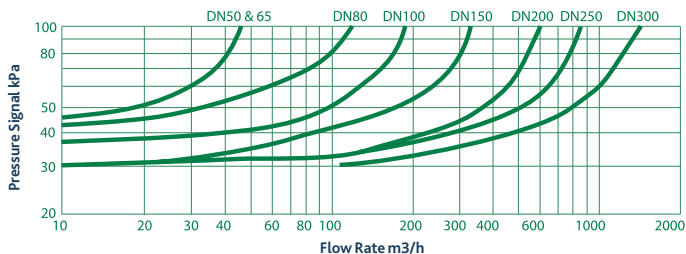


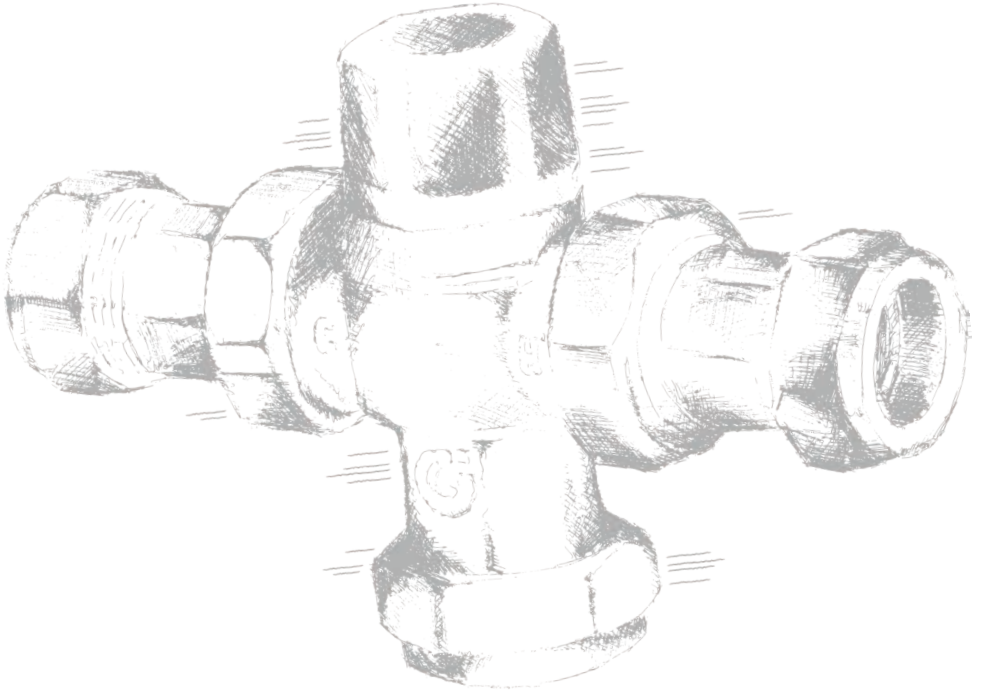
Ref no	DN	A	B	C	D NPT	E NPT	F*
FL-30050	50	230	165	185	½"	¼"	140
FL-30065	65	292	185	185	½"	¼"	140
FL-30080	80	310	200	230	½"	¼"	170
FL-300100	100	350	220	240	½"	¼"	180

Ref no	DN	A	B	C	D NPT	E NPT	F*
FL-300150	150	480	285	330	½"	¼" and ½"	230
FL-300200	200	600	345	390	½"	½"	300
FL-300250	250	730	410	520	½"	½"	390
FL-300300	300	850	460	635	½"	½"	450

\* F = Minimum clearance for service

### Hydraulic characteristics of pressure reducing valve





06

Thermostatic  
Mixing Valves

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# Thermostatic Mixing Valves

The Merchant failsafe thermostatic mixing valve has been specifically designed and manufactured to meet the requirements of the latest national health service model engineering specification - D08 and BS 7942 for use in care homes.





A tempering valve is used in systems where the water in the storage cylinder can reach temperatures significantly above 60°C for example, if heated by solar heating. They are used with multiple outlets and frequently as part of a circulating domestic hot water system. In the event of failure of the hot or cold water supplies the 5218 series will automatically shut down in line with the BS EN 15092 test standard.

Thermostatic mixing valves are used to maintain the domestic hot water supplied to the user at a constant and safe temperature, when variations in the hot and cold water supply conditions and draw off flow rates occur.

The Mixcal III range has been designed primarily for single user outlets including basins, showers, baths and bidets but is also suitable for multiple outlet use.

The Mixcal Careflo range has been designed for use in care homes and other premises required to provide a duty of care, especially to the young and elderly. The valve is designed primarily for single user outlets including wash basins, showers, baths and bidets but is also suitable for multiple outlet use.

The mixcal mixpro® range has been designed especially for centralised systems which demand high flow rates, for example with multiple outlets such as shower and wash basins.

				
Merchant Mixing Valves - Art 5213	✓	✓	✓	
DTC 45-65° tempering valve - Art 5218				✓
Mixcal III thermostatic failsafe mixing valve - Art 5211	✓	✓		
Mixcal Mixpro® - Art 5231	✓			
Mixcal III group thermostatic mixing valve - Art 5219	✓	✓		
OEM thermostatic mixing valve - Art 5219	✓	✓		
Careflo thermostatic failsafe mixing valve - Art 5212	✓		✓	
L-Pattern Thermostatic Mixing Valve - Art 5200	✓	✓		
Mixcal Mixpro 5230	✓	✓		
116 Series Thermostatic Regulator	✓			



## 5213 SERIES - MERCHANT THERMOSTATIC MIXING VALVE

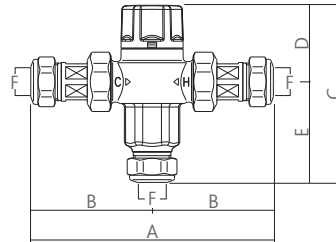
### Technical Data

Max. working pressure:	10 bar - Static
Min. working pressure:	0.2 bar - Dynamic
Max. inlet temperature:	85°C
Inlet temperature range - DO8/BS 7942	
- hot supply	52 — 65°C
- cold supply	0.5 — 20°C
DO8/BS 7942 working pressure:	
- low pressure	0.2 — 1.0
- high pressure	1.0 — 5.0
Max. inlet pressure ratio (H/C or C/H):	5:1
Accuracy:	±2°C
Setting range:	30 — 50°C
Min. temperature difference between Inlet hot water and outlet mixed water	10°C
Min. flow for stable operation:	4 l/min
Connections:	compression ends

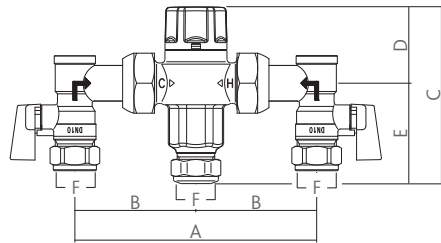


### Dimensions

CA-100822 and CA-100824



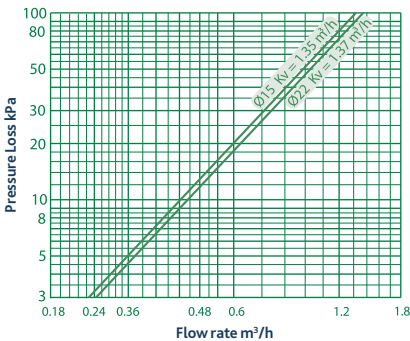
CA-100827 and CA-100828



### Materials

Component	Material	Grade
Body	DZR chrome plated	BS EN 12165 CW602N
Springs	Stainless steel	
Seals	EPDM	

### Kv value and flow rate



Ref no	A	B	C	D	E	F	Kg
CA-100822	141	67.5	99	43	56	15	0.5
CA-100824	150	75	100	43	57	22	0.6
CA-100827	120	60	99	43	56	15	0.65
CA-100828	136	68	100	43	57	22	0.75

# MIXCAL MIXPRO® 5231 SERIES - THERMOSTATIC MIXING VALVE



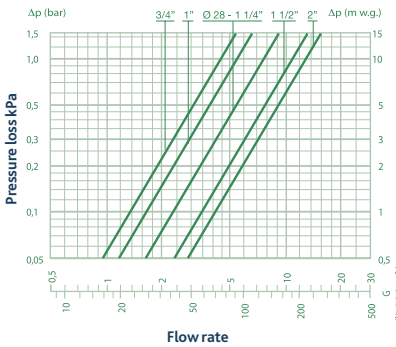
## Technical Data

Max. working pressure:	14 bar - Static 5 bar - Dynamic
Min. working pressure:	0.2 bar
Max. inlet temperature:	90°C
Max. inlet pressure ratio (H/C or C/H):	2:1
Accuracy:	±2°C
Setting Range:	35 — 65°C
Thread:	BSP (R)
Connections:	compression ends Ø28 male thread BSP (R)

## Materials

Component	Material	Grade
Body	DZR brass alloy	BS EN 1982 CC770S
Shutter	Polymer	PPS G40
Springs	Stainless steel	
Diaphragm disc	EPDM	
Cap	Polymer	ABS

## Kv value and flow rate

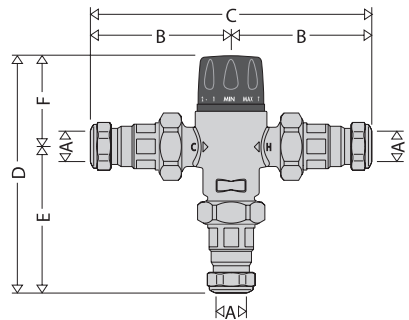
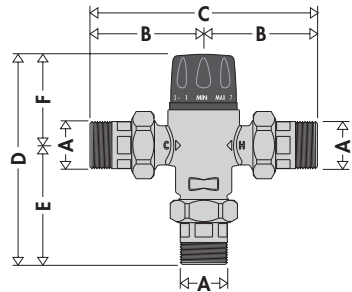


Recommended FLOW RATES to ensure stable operation and accuracy of ±2°C (balanced Hot/Cold pressures)

DN	Size	Kv (m³/h)	Size	Minimum (m³/h)	Minimum* (m³/h)
20	¾"	4.5	¾"	0.6	5.5
25	1"	5.5	1"	0.8	6.7
32	Ø28 - 1¼"	7.6	Ø28 - 1¼"	1.0	9.3
40	1½"	11.0	1½"	1.5	13.5
50	2"	13.3	2"	2.0	16.3

\* Δp=1.5 bar

## Dimensions



Ref no	DN	A	B	C	D	E	F	Kg
523140	15	¾"	78.5	157	169	95.5	73.5	1.1
523150	20	¾"	78.5	157	169	95.5	73.5	1.35
523160	25	1"	104.5	209	195.5	109	86.5	2.5
523170	32	1¼"	104.5	209	195.5	109	86.5	2.47
523180	40	1½"	121	242	219.5	129	90.5	3.81
523190	50	2"	131	262	234.5	139	95.5	5.58
523162*	32	Ø28	121	242	212	125.5	86.5	2,70

# MIXCAL MIXPRO® 5230 SERIES - THERMOSTATIC MIXING VALVE

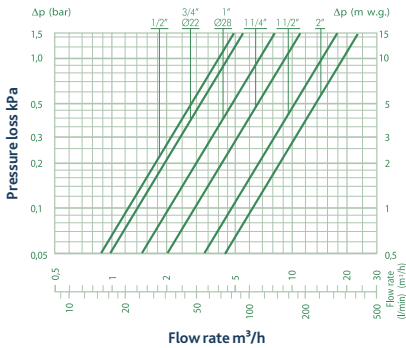
## Technical Data

Max. working pressure:	14 bar - Static 5 bar - Dynamic
Max. inlet temperature:	85°C
Max. inlet pressure ratio (H/C or C/H):	2:1
Accuracy:	±2°C
Setting Range:	½" - 1¼" 1½" and 2" 30 — 65°C 22 and 28 mm 30 — 65°C
Connections:	compression ends male thread BSP (R)

## Materials

Component	Material	Grade
Body	Brass	BS EN 12165 CW617N
Cartridge and Shutter	Brass	BS EN 12165 CW614N
Springs	Stainless steel	
Seals	EPDM	

## Kv value and flow rate



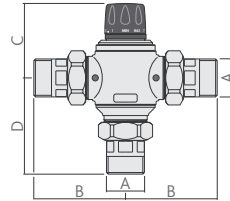
Recommended FLOW RATES to ensure stable operation and an accuracy of ±2°C

	Kv (m³/h)	Size	Minimum (m³/h)	Minimum* (m³/h)
½"	4.0	½"	0.4	4.9
¾" — Ø 22	4.5	¾" — Ø 22	0.5	5.5
1" — Ø 28	6.9	1" — Ø 28	0.8	8.5
1 ¼"	9.1	1 ¼"	1.0	11.2
1 ½"	14.5	1 ½"	2.8	17.7
2"	19.0	2"	3.0	23.2

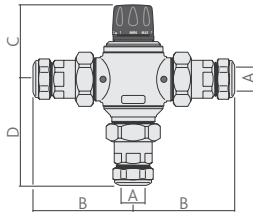
\* Δp = 1.5 bar



## Dimensions



Ref no	A	B	C	D	Check Valve	Kg
523040	½"	85	74	95	N	1.65
523050	¾"	85	74	95	N	1.68
523060	1"	101	88	107	N	3.07
523070	1¼"	101	88	107	N	3.09
523080	1½"	129	108	135	N	8.00
523090	2"	129	108	135	N	8.24
523043	½"	91	74	101	Y	1.69
523053	¾"	91	74	101	Y	1.72
523063	1"	111	88	114	Y	3.20
523073	1¼"	111	88	114	Y	3.22



Ref no	A	B	C	D	Check Valve	Kg
523052	Ø 22	92	74	102	Y	1.80
523062	Ø 28	116	88	119	Y	3.31

## MIXCAL III 5211 SERIES - THERMOSTATIC MIXING VALVE



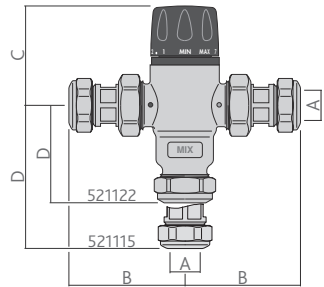
### Technical Data

Complies with:	BS EN 1287:1999
Max. working pressure:	14 bar - Static 5 bar - Dynamic
Max. inlet temperature:	85°C
Max. inlet pressure ratio (H/C or C/H):	2:1
Accuracy:	±2°C
Setting Range:	30 — 65°C
Min. temperature difference between inlet hot water and outlet	
Mixed water:	15°C
Min. flow rate for stable temperature:	5 l/min
MX valves complete with isolation valve, check valve, filter and test port also available.	
Connections:	compression ends

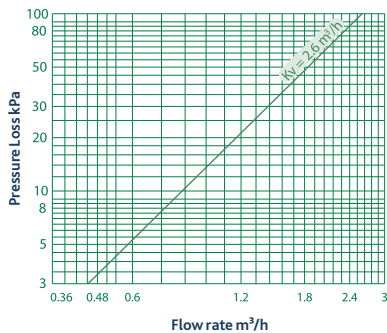
### Dimensions

### Materials

Component	Material	Grade
Body	DZR chrome plated	BS EN 12165 CW602N
Controlling Element	PPO thermoplastic	
Springs	Stainless steel	
Seals	EPDM	



### Kv value and flow rate



Ref no	A	B	C	D	Kg
521115	Ø 15	79	65.5	98	1.30
521122	Ø 22	80.5	65.5	66.5	1.42

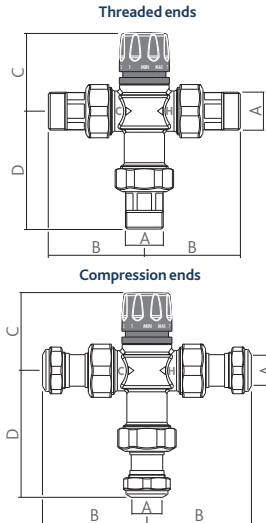
## 5218 SERIES - THERMOSTATIC MIXING VALVE



### Technical Data

Max. working pressure:	10 bar - Static
	5 bar - Dynamic
Max. inlet temperature:	90°C
Max. inlet pressure ratio (H/C or C/H):	2:1
Min. temperature difference between hot water inlet and mixed water outlet for best performance	15°C
Temperature setting range:	45 — 65°C
BS EN 15092 set temperature range:	45 — 65°C
Accuracy:	±2°C
Min. flow rate for stable temperature:	
1/2", Ø15, 3/4" and Ø22 sizes	4 l/min
1" and Ø28 sizes	6 l/min
In the UK to comply with the requirements of the UK Water Supply (Water Fitting) Regulations 1999 G18.3 and with Part G of the Building regulations clause 3.63 tempering valves must be set to operate at a mixed water outlet temperature of between 55 and 60°C.	
Certified to standard:	BS EN 15092 and DTC scheme
Designation:	Type 2- adjustable
Connections:	compression ends male thread BSP (G)

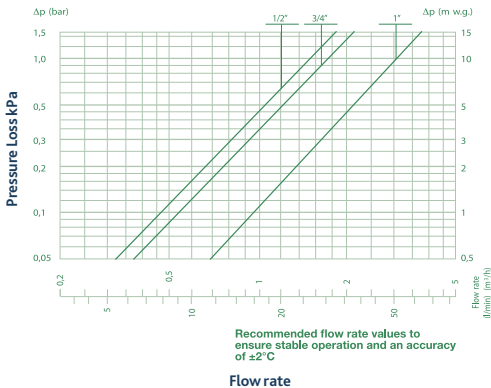
### Dimensions



### Materials

Component	Material	Grade
Body	DZR chrome plated	BS EN 12165 CW602N
Controlling Element	PSU	
Springs	Stainless steel	
Seals	EPDM	
Cover	ABS	

### Kv value and flow rate



Ref no	A	B	C	D	Check Valve	Kg
521814*	1/2"	62.5	54	82	N	0.64
521815*	3/4"	67	55	82	N	0.81
521816*	1"	83.5	72	100	N	1.20
521817	Ø15	67.5	54	87	Y	0.70
521818	Ø22	75.5	55	90.5	Y	0.91
521819	Ø28	99.5	72	117	Y	1.40

\*WRAS Approved DTC Approved

## MIXCAL CAREFLO 5212 SERIES - THERMOSTATIC MIXING VALVE

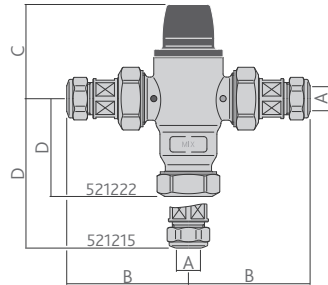


### Technical Data

Complies with:	BS 7942:2000
Max. working pressure:	10 bar - Static
Min. working pressure:	0.2 bar - Dynamic
D08 working pressure range:	0.2 — 1.0 bar — Low 1.0 — 5.0 bar — High
Max. inlet temperature:	85°C
Max. inlet pressure ratio (H/C or C/H):	5:1
Accuracy:	±2°C
Setting range:	30 — 50°C
Min. temperature difference between inlet hot water and outlet mixed water	10°C
Complete with check valve and strainer in the inlet tailpieces. MX valves complete with isolation valve, check valve, filter and test port also available.	
Connections:	compression ends



### Dimensions

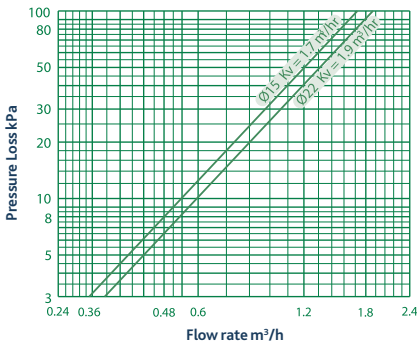


### Materials

Component	Material	Grade
Body	DZR chrome plated	BS EN 12165 CW602N
Cartridge and Shutter	Brass	BS EN 12165 CW614N
Springs	Stainless steel	
Seals	EPDM	

Ref no	A	B	C	D	Kg
521215	Ø 15	79	61	98	1.10
521222	Ø 22	80.5	61	67	1.06

### Kv value and flow rate



## 5200 SERIES - "L" PATTERN THERMOSTATIC MIXING VALVE

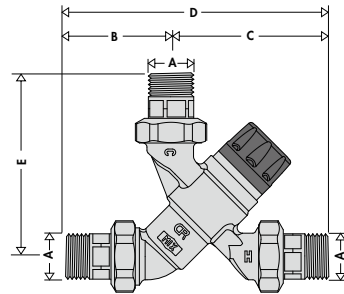


### Technical Data

Adjustment temperature range:	35 — 65°C
Accuracy:	±2°C
Max. working pressure (static):	10 bar
Max. working pressure (dynamic):	5 bar
Max. inlet temperature:	90°C
Max. inlet pressure ratio (H/C or C/H):	2:1
Minimum temperature difference between hot water inlet and mixed water outlet, to ensure thermal shut-off function	15°C
Min. flow rate for stable operation:	4 l/min (DN 15 and DN 20) 6 l/min (DN 25)
Connections:	compression ends male thread BSP (G)



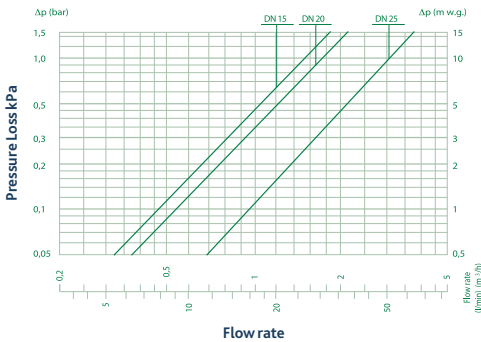
### Dimensions



### Materials

Component	Material	Grade
Body	DZR brass alloy	EN 1982 CC768S
Obturator	PSU	
Springs	stainless steel	EN 10270-3 (AISI 302)
Seals	EPDM	

### Kv value and flow rate



Ref no	A	B	C	D	E	Kg
101-2001	∅ 15	65	90	155	108	0.708
101-2002	∅ 22	71	91	169	112	0.869
520040	½"	58.5	87.5	146	102.5	0.783
520050	¾"	59.5	88.5	148	103.5	0.900
520060	1"	76.5	115.5	192	133.5	1.708

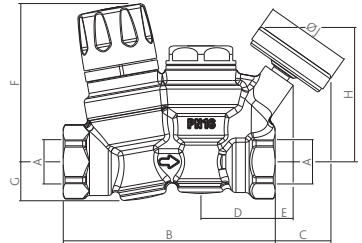
# 116 SERIES - THERMOSTATIC REGULATOR FOR HOT WATER RECIRCULATION

## Technical Data

Kv maximum (m <sup>3</sup> /h):	1.8
Kv disinfection (m <sup>3</sup> /h):	1.0
Kv minimum at 58°C (DN 20):	0.120±20%
Kv minimum at 58°C (DN 15):	0.100±20%
Kv (Δt = 5K) (m <sup>3</sup> /h):	0.45
Max. working pressure:	16 bar
Max. differential pressure:	1 bar
Temperature adjustment range:	35 — 60°C
Factory setting:	52°C
Disinfection temperature:	70°C
Closing temperature:	75°C
Temperature gauge (code 116010):	Scale 0 — 80°C
	Ø 40 mm
Connections:	female thread BSP (Rp)



## Dimensions

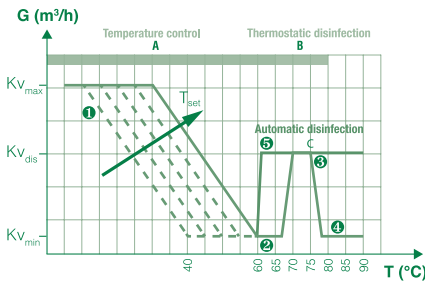


## Materials

Component	Material	Grade
Body	DZR brass alloy	BS EN 12165 CW724R
Adjustable cartridge	PSU polymer	EPDM
Seals	Elastomer	EN 10270-3 (AISI 302)
Adjustment Dial/wheel	ABS polymer	
Spring	Stainless steel	BS EN 10270-3 AISI 302

Ref no	A	B	C	D	E	F	G	H	J	Gauge	Kg
116240	½"	100	27	35	9	74.5	18.5	63.5	41	Yes	0.75
116140	½"	100	27	35	9	74.5	18.5	63.5	41	Port Only	0.75
116250	¾"	100	27	35	9	74.5	18.5	63.5	41	Yes	0.70
116150	¾"	100	27	35	9	74.5	18.5	63.5	41	Port Only	0.70

## Regulating characteristics



The graph shows the variation of the Kv value depending on the device configuration (A, B, C) and on the inlet temperature of the domestic hot water.

### Function A - Temperature control

Kvmax (m<sup>3</sup>/h) = 1.8

### Function B - Thermostatic thermal disinfection

Kvdis (m<sup>3</sup>/h) = 1 (maximum flow rate for a disinfection process with a temperature of 70°C)  
Kvmin (m<sup>3</sup>/h) = 0.2 (minimum flow rate with the module of the main regulator closed)

### Function C - Controlled thermal disinfection

Kvdis (m<sup>3</sup>/h) = 1 (flow rate through the valve by means of a cartridge with thermo-electric actuator, with by-pass completely open)



# LEGIOMIX® 2.0 6000 SERIES - HYBRID ELECTRONIC MIXING VALVE



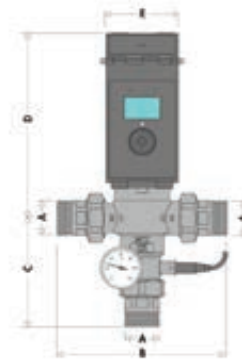
## Technical Data

Temperature gauge scale:	0-120°C
Electric Supply:	230 V (ac) 50/60Hz
Adjustment temp range:	35-65°C
Disinfection temp range:	50-85°C
Max. working pressure (static):	10 bar
Max. inlet temperature:	90°C
Protection class:	IP 54
Connections:	male thread BSP (R)
PATENT PENDING	

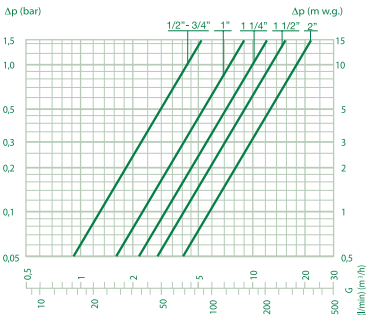
## Materials

Component	Material	Grade
Valve Body	DZR	EN 1982 CC770S
Obturator	PPSG40	
Hydraulic Seals	EPDM	
Spring	Stainless Steel	EN 10270-3 (AISI 302)
Actuator Housing/ Covers	PAGG30 anti UV-black	
Temperature Probe	Stainless Steel	

## Dimensions



## Hydraulic characteristics



Ref no	DN	A	B	C	D	E	kg
600045	15	1/2"	157	130.5	217	88	3.0
600055	20	3/4"	157	130.5	217	88	3.0
600065	25	1"	209	134	220.5	88	4.1
600075	32	1 1/4"	209	134	220.5	88	4.7
600085	40	1 1/2"	242	159	224.5	88	5.5
600095	50	2"	262	179	229.5	88	6.2

Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Kv (m³/h)	4.3	4.3	7.6	10.0	13.0	18.0

Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Min (m³/h)	0.6	0.6	1.2	1.5	1.5	2.0
Max (m³/h)	5.3	5.3	9.3	12.5	16.0	22.1

# LEGIOMIX 6000 SERIES - ELECTRONIC MIXING VALVE WITH PROGRAMMABLE THERMAL DISINFECTION

## Technical Data

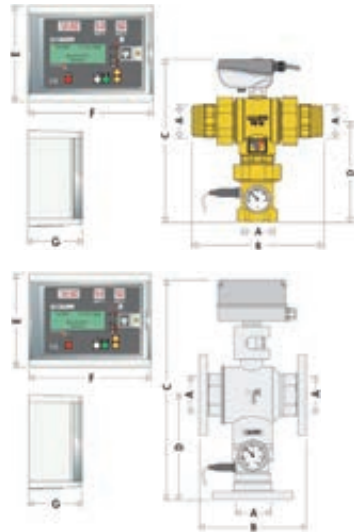
Supply - threaded version:	230 V - 50/60 Hz - (6,5+6) VA
Supply flanged version:	230V - 50/60 Hz - (6,5 + 10) VA
Adjustment temperature range:	20–85°C
Disinfection temperature range:	40–85°C
Max. working pressure (static):	10 bar
Max. inlet temperature:	100°C
Protection class:	IP 65 (actuator)
Connections:	flanged PN 16 male thread BSP (R)



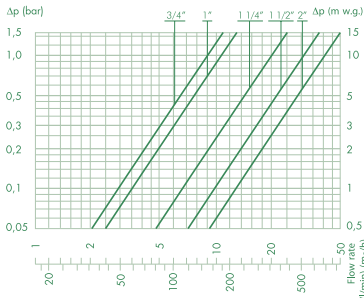
## Materials

Component	Material	Material
Valve body	Brass (threaded version) Brass chrome plated (flanged version)	EN 12165 CW617N
Ball		
3/4" - 1 1/4"	Brass, chrome plated	EN 12165 CW614N
1 1/2" - 2"	Brass, chrome plated, POM	EN 12165 CW614N
Flanged versions	Stainless Steel	AISI 316
Hydraulic seals		
Threaded versions	EPDM	
Flanged versions	NBR	
Digital Regulator		
Housing	Self-extinguishing ABS	
Cover	Self-extinguishing SAN	

## Dimensions



## Hydraulic characteristics



Size	3/4"	1"	1 1/4"	1 1/2"	2"
Kv (m³/h)	8.4	10.6	21.2	32.5	41

Size	3/4"	1"	1 1/4"	1 1/2"	2"
Min (m³/h)	0.6	0.6	1.2	1.5	2.0
Max (m³/h)	5.3	5.3	9.3	12.5	22.1

Ref no	Description	A	B	C	D	E	F	G	Kg
600051	Threaded	3/4"	135	216	102.5	145	180	105	2.4
600061	Threaded	1"	159	237	106.5	145	180	105	3.3
600071	Threaded	1 1/4"	184	257	113.5	145	180	105	3.7
600081	Threaded	1 1/2"	232	306	181	145	180	105	9.5
600091	Threaded	2"	240	311	186	145	180	105	9.7
600006	Flanged	DN 65	235	600	275	145	180	105	28
600008	Flanged	DN 80	235	600	275	145	180	105	30.4

\* Δp=1.5 bar

## MIXCAL III GROUP THERMOSTATIC MIXING VALVE - ART 5219 (INC. CHECK VALVES)



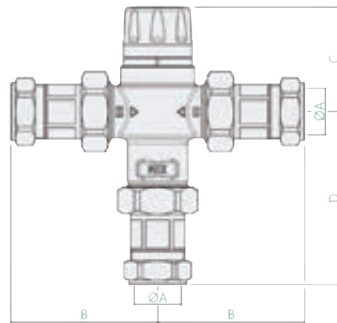
### Technical Data

Max. working pressure:	10 bar - Static 5 bar - Dynamic
Max inlet temperature:	90°C
Max inlet pressure ratio (H/C or C/H):	2:1
Accuracy:	±2°C
Setting Range:	35 to 65°C
Kv:	7.6m <sup>3</sup> /h
Connections:	compression ends

### Materials

Component	Material	Grade
Body	DZR chrome plated	BS EN 12165 CW602N
Controlling Element	PSU	
Springs	Stainless steel	
Seals	EPDM	
Cover	ABS	

### Dimensions



Ref no	A	B	C	D
521928	Ø28	95.0	68.0	113.0

## OEM THERMOSTATIC MIXING VALVE - ART 5213



### Technical Data

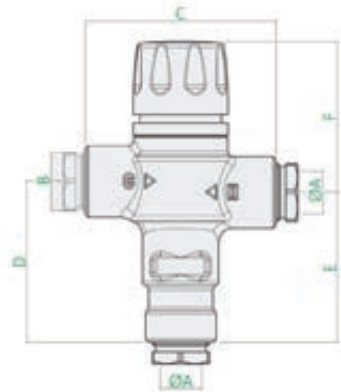
Complies with:	BSEN 1287:1999
Max working pressure:	10 bar - static
Max inlet temperature:	85°C
Max inlet pressure ratio (H/C or C/H):	2:1
Accuracy:	±2%
Setting range:	30 to 65°C
Min temp difference between inlet hot water and outlet mixed water	15°C
Min flow rate for stable temperature:	5 l/m
Connections:	female thread BSP (G) compression ends



### Materials

Component	Material	Grade
Body	Brass - chrome plated	BS EN 12165 CW617N
Internal components	Brass - chrome plated	BS EN 12165 CW614N
Seals	EPDM	
Setting Knob	Nylon	
Compression screw	Brass - chrome plated	BS EN 12165 CW614N
Olive	Brass	PPS G40

### Dimensions



Ref no	Size	Connection	Type
521331 CST	G1½"/15mm	f x f x f/copper	pre-set at 61°C
521332 CST	G1½"/15mm	f x f x f/copper	pre-set at 51°C
521931 CST	G1½"/15mm	f x f x f/copper	adjustable 35 - 65°C

Ref no	A	B	C	D	E	F
521331 CST	Ø15	G1/2	70	113	55	55-59
521332 CST	Ø15	G1/2	70	113	55	55-59
521931 CST	Ø15	G1/2	70	113	55	53



**07**

Dirt and Air  
Separation

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# Dirt and air separation

Contamination in a system can cause seal and pump damage, excessive noise, reduce accuracy of control valves and the performance of heating and cooling equipment.



## Y-strainers

- Metal mesh baskets and filter and collects dirt. The mesh size indicating the minimum dimensions of the particles captured. A strainer with mesh size 0.4mm (400  $\mu\text{m}$ ) is able to capture dirt particles from that size.



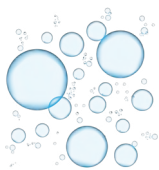
## Dirt separators

- Allow gravity precipitation of dirt particles into a collection chamber. Net like surfaces in Caleffi's DIRTMAG<sup>®</sup> offer lower resistance to water flow than separators while removing impurities larger than 5  $\mu\text{m}$ .



## Magnetic dirt separators

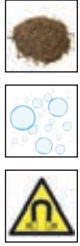
- DIRTMAG<sup>®</sup> adds an external magnetic collection ring with larger surface area than simple probes, collecting ferromagnetic particles preventing recirculation.



## Air

- Our automatic air vents are WRAS approved products in compliance with the Water Supply (Water Fittings) Regulations or Scottish Byelaws and accepted by every major water supplier. Importantly automatic air vents allow the release air as the system is being filled with water and then automatically isolating, preventing water loss and wastage from the system.

# 5453 DIRTMAG IQ™ PRIME MAGNETIC DIRT SEPARATOR



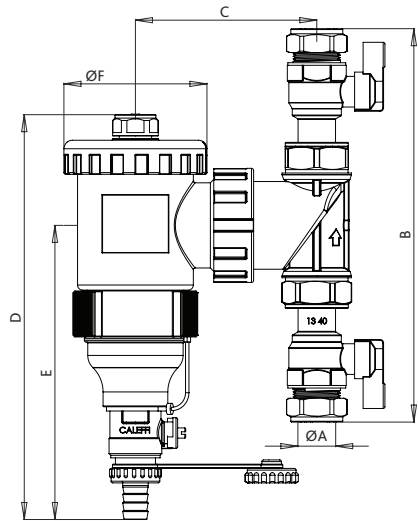
## Technical Data

Medium:	water, glycol solution
Max. percentage of glycol:	30%
Max. working pressure:	3 bar
Working temperature range:	0 — 90°C
Ring system magnetic induction:	2 x 0.3 T
Connections:	compression ends

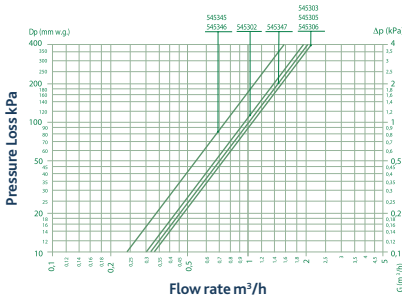
## Materials

Component	Material	Grade
Body		PA66G30
Adjustable cartridge		PA66G30
Top plug	Brass	EN 12164 CW614N
Drain screw	Brass	EN 12164 CW614N
Tee fitting		PPSG40
Locking nut for tee fitting		PA66G30
Internal element		HDPE
Hydraulic seals		EPDM
Drain cock with hose connection	Brass	EN 12165 CW617N
Drain valve	Brass	EN 12165 CW617N

## Dimensions



## Pressure loss chart



DN	20			25		32
Connections	Ø22	¾"	¾"	Ø28	1"	1 ¼"
Code	545302	545305	545345	545303	545306	545346
Kv (m3/h)	9.5	10.3	7.5*	10.6	10.5	7.5*
					7.5*	9.9*

Ref no	A	B	C	D	E	F	kg
545342 LTC	Ø22	224	106.5	238	172.5	84	1.67
545343 LTC	Ø28	232	106.5	238	172.5	84	1.76

\*with shut-off valves

The maximum recommended speed of the medium at the device connections is ~ 1.2 m/s. The following table gives the maximum flow rates to meet this condition.

DN	L/min	m³/h
DN 20	21.67	1.3
DN 25	21.67	1.3
DN 32	35	2.1



# 5453 DIRTMAG IQ™ QUATTRO MAGNETIC DIRT SEPARATOR

## Technical Data

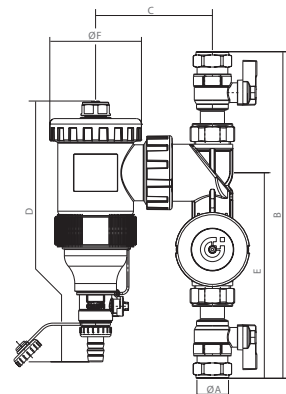
Medium:	water, glycol solution
Max. percentage of glycol:	30%
Max. working pressure:	3 bar
Working temperature range:	0 — 90°C
Ring system magnetic induction:	2 x 0.3 T
Volume:	0.4 ltr
Connections:	compression ends



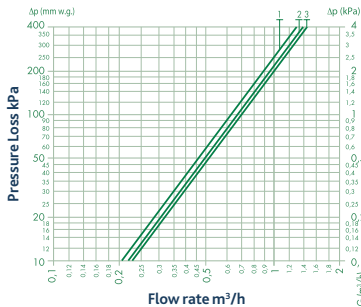
## Materials

Component	Material	Grade
Device body		PA66G30
Dirt separator cover		PA66G30
Top plug	Brass	EN 12164 CW614N
Drain screw	Brass	EN 12164 CW614N
Locking nut for tee fitting		PPSG40
Internal element		HDPE
Impurity collector		POM
Strainer	POM - Stainless steel	EN 10088-2 (AISI 304)
Hydraulic seals		EPDM
Drain cock with hose connection	Brass	EN 12165 CW617N
Shut-off valves	Brass	EN 12165 CW617N

## Dimensions



## Pressure loss chart



		DN 20 — 25
1	Device with blue strainer (supplied)	Kv (m³/h) = 6.3
2	Device with grey strainer (supplied)	Kv (m³/h) = 6.7
3	Device without strainer	Kv (m³/h) = 7.0

The maximum recommended flow velocity of the medium at the device connections is ~1 m/s. The following table shows the maximum flow rates in order to meet this requirement.

DN	L/min	m³/h
20 — 25	18.8	1.13

Ref no	A	B	C	D	E	F	Kg
545372 LTC	Ø 22	298	106.5	238	187.5	84	1.5
545373 LTC	Ø 28	304	106.5	238	190.5	84	1.6

## 5468 DIRTMAG® - MAGNETIC DIRT SEPARATOR



### Technical Data

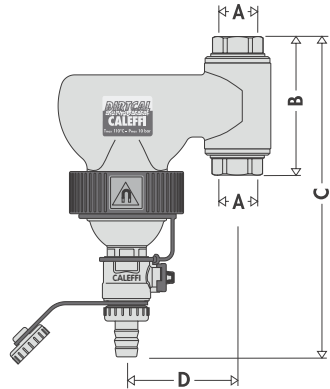
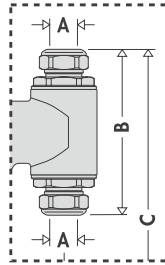
Medium:	water, glycol solution
Max. percentage of glycol:	50%
Max. working pressure:	10 bar
Working temperature range:	0 — 110°C
Ring system magnetic induction:	2 x 0.3 T
Connections:	compression ends female thread BSP (G)

### Materials

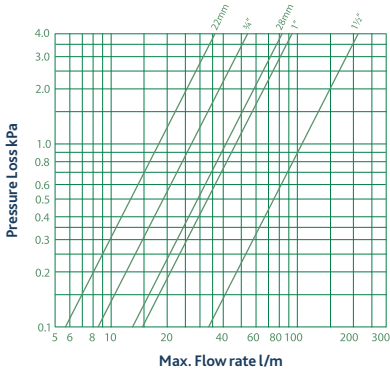
Component	Material	Grade
Body	Brass	EN 1982 CB753S
Dirt collection chamber	Brass	BS EN 12165 CW617N
Top plug	Brass	BS EN 12164 CW617N
Internal element	Stainless steel	
Seals	EPDM	
Drain valve	Brass	BS EN 12165 CW617N
Magnet	2600 G	

### Dimensions

\*



### Pressure loss chart



Size	22 mm	28 mm	¾"	1"
Kv - m³/h	10.7	24.7	13.8	18.2

The maximum recommended flow velocity inside the pipe is 1.2 m/s.  
The following shows the maximum flow rates to meet this requirement.

Size	Ø22	Ø28	¾"	1"
l/m	22.7	35.18	22.7	35.18

### Compression ends connection\*

Ref no	A	B	C	D	Kg
546802	Ø 22	121	80	232.5	1.95
546803	Ø 28	121	80	242	1.95

### Female connection

Ref no	A	B	C	D	Kg
546805	¾"	102	80	223	1.95
546806	1"	107	80	226	1.95

## 5463 DIRTMAG® - MAGNETIC DIRT SEPARATOR

### Technical Data

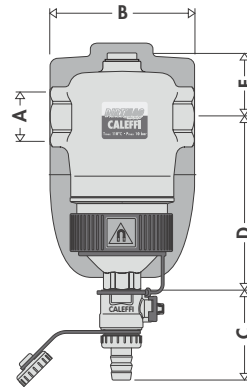
Medium:	water, glycol solution
Max. percentage of glycol:	50%
Max. working pressure:	10 bar
Working temperature range:	0 – 110°C
Ring system magnetic induction:	2 x 0.3 T
Particle separation rating down to	5µm
Connections:	female thread BSP (G)



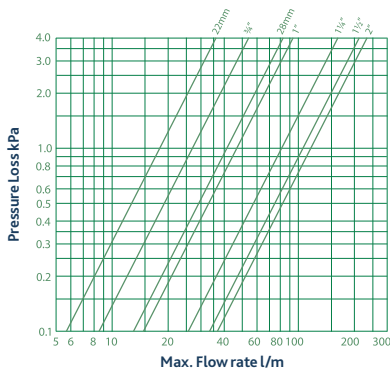
### Materials

Component	Material	Grade
Body	Brass	EN 1982 CB753S
Dirt collection chamber	Brass	BS EN 12165 CW617N
Top plug	Brass	BS EN 12164 CW617N
Internal element	PA66G30	
Seals	EPDM	
Drain valve	Brass	BS EN 12165 CW617N
Magnet	2600 G	
<b>Insulation</b>		
Insulation		Closed-cell PE-X
Material		PE-X
Thickness		10 mm
Density	- inner part	30 Kg/m <sup>3</sup>
	- outer part	80 Kg/m <sup>3</sup>
Coefficient of resistance to water vapour (DIN 52615)		> 1.300
Working temperature range		0 – 110°C
Resistance to fire (DIN 4102)		class B2

### Dimensions



### Pressure loss chart



Based on BS EN 1057 copper tube and BS EN 10255 steel pipe.

Ref no	A	B	C	D	E	Kg	Insulation
546305	¾"	110	67.5	131.5	49	1.90	No
546306	1"	110	67.5	131.5	49	1.90	No
546307	1¼"	124	67.5	151.5	49	2.25	No
546308	1½"	124	67.5	151.5	49	2.25	No
546309	2"	127	67.5	145.5	55	2.39	No
546315	¾"	110	67.5	131.5	49	1.90	Yes
546316	1"	110	67.5	131.5	49	1.90	Yes
546317	1¼"	124	67.5	151.5	49	2.25	Yes
546318	1½"	124	67.5	151.5	49	2.25	Yes
546319	2"	127	67.5	145.5	55	2.39	Yes
ALT-546322	22	170	67.5	131.5	49	2.20	No
ALT-546328	28	186	67.5	131.5	49	2.40	No

## 5466 DIRTMAG® - STEEL DIRT SEPARATOR XL MAGNETIC - FLANGED



### Technical Data

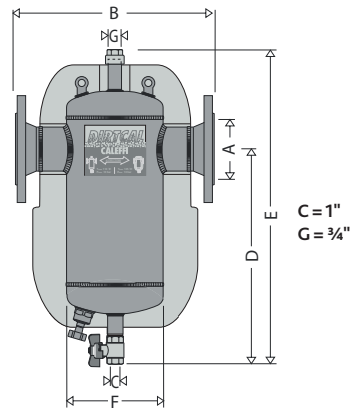
Medium:	water, non-hazardous glycol solutions excluded from the guidelines of directive 67 / 548 / EC.
Max. percentage of glycol:	50%
Max. working pressure:	10 bar
Working temperature range:	0 — 100°C
Magnetic induction of magnet:	
DN 50 and DN 65:	7 x 0.475 T
DN 80 - DN 150:	12 x 0.475 T
Temperature probe connection:	½" F
Particle separation rating down to 5µm	
Connections:	flanged PN 16



### Materials

Component	Material	Grade
Body	Steel - epoxy coated	
Internal Element	Stainless steel	BS EN 10088-3
Drain valve	Brass	BS EN 12165 CW617N
Drain valve seal	Non asbestos fibre	
<b>Insulation</b>		
Material	Rigid closed cell expanded polyurethane foam	
Thickness		60 mm
Density		45 Kg/m³
	(DN50 - DN100)	
	inner part - 30 Kg/m³ (DN125 - DN150)	
	outer part - 80 Kg/m³ (DN125 - DN150)	
Thermal conductivity (ISO 2581)		0.023 W/(m·K)
Working temperature range		
DN 50—DN 100		0—105°C
DN 125—DN 150		0—100°C
DN 50 - DN 100 - Head Covers		
Heat moulded material		PS

### Dimensions



### Max. flow rate

The maximum recommended speed of the medium inside the pipe is 1.2 m/s. The following table shows the maximum flow rates in order to meet this requirement.

DN	Connections	l/min	m³/h
50	-	141.2	8.47
65	-	238.6	14.32
80	-	361.5	21.69
100	-	564.8	33.89
125	-	980.0	58.8
150	-	1436.6	86.2

Ref no	A	B	D	E	F	Kg
546650	DN 50	350	425	620	169	13
546660	DN 65	350	425	620	169	15
546680	DN 80	466	500	740	219	23
546610	DN 100	470	500	740	219	25
546612	DN 125	635	600	900	324	52
546615	DN 150	635	600	900	324	54

## 5466 DIRTMAG® SERIES - STEEL DIRT SEPARATOR XL MAGNETIC - FLANGED



### Technical Data

Medium:	water, non-hazardous glycol solutions excluded from the guidelines of directive 67 / 548 / EC.
Max. percentage of glycol:	50%
Max. working pressure:	10 bar
Working temperature range:	0 — 100°C
Minimum particle size:	5 µm
Magnetic induction of magnet:	
DN 80 - DN 300:	12 x 0.475 T - - D3 x 17
Temperature probe connection:	½" F
Connections:	flanged PN 10



### Materials

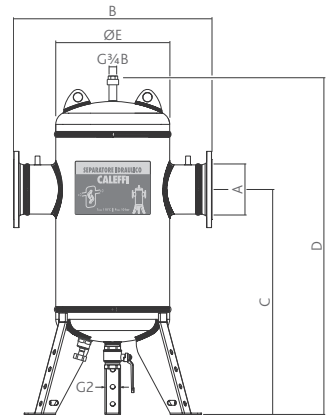
Component	Material	Grade
Body	Steel - epoxy coated	
Internal Element	Stainless steel	BS EN 10088-3
Drain valve	Brass	BS EN 12165 CW617N
Drain valve seal	Non asbestos fibre	

### Max. flow rate

The maximum recommended speed of the medium inside the pipe is 1.2 m/s. The following table shows the maximum flow rates in order to meet this requirement.

DN	l/min	m³/h
200	2433.0	146.0
250	3866.0	232.0
300	5416.0	325.0

### Dimensions



Ref no	A	B	C	D	E	Kg
546620	DN 200	900	1,090	1,560	508	152
546625	DN 250	1,060	1,230	1,770	660	280
546630	DN 300	1,180	1,360	1,970	762	395

## 5469 DIRTCAL® - DIRT SEPARATOR



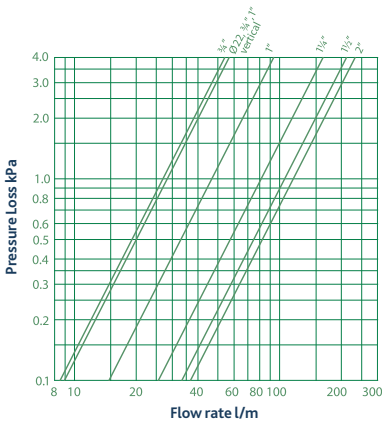
### Technical Data

Medium:	water, non-hazardous glycol solutions excluded from the guidelines of directive 67 / 548 / EC.
Max. percentage of glycol:	50%
Max. working pressure:	10 bar
Working temperature range:	0 — 110°C
Thread:	BSP (G)
Connections:	compression ends female thread BSP (G)

### Materials

Component	Material	Grade
Body	Brass	EN 1982 CB753S
Dirt collection chamber	Brass	BS EN 12165 CW617N
Internal element	Stainless steel	
Seals	EPDM	
Drain valve seal	Brass	BS EN 12165 CW617N

### Pressure loss chart



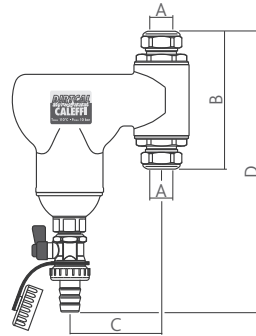
Size	3/4"	Ø22, 3/4"-1" Vertical	1"	1 1/4"	1 1/2"	2"
Kv - m³/h	16.2	17.0	28.1	48.8	63.2	70.0

The maximum recommended flow velocity inside the pipe is 1.2 m/s. The following shows the maximum flow rates to meet this requirement.

Size	3/4"	Ø22	1"	1 1/4"	1 1/2"	2"
l/m	26.5	27.8	42.4	73.6	99.7	159.4

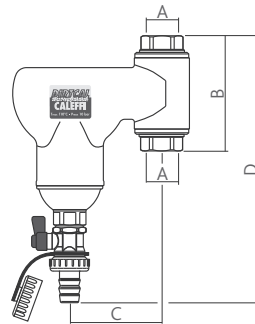
Based on BS EN 1057 copper tube and BS EN 10255 steel pipe.

### Dimensions



### Compression ends connection

Ref no	A	B	C	D	Kg
546902	Ø 22	121	80	233	1.95



### Female connection

Ref no	A	B	C	D	Kg
546905	3/4"	102	80	223	1.95
546906	1"	107	80	226	1.95

## Technical Data

Medium:	water, non-hazardous glycol solutions excluded from the guidelines of directive 67 / 548 / EC.
Max. percentage of glycol:	50%
Max. working pressure:	10 bar
Working temperature range:	0 — 110°C
Particle separation rating down to 5µm	
Connections:	female thread BSP (G)



## Materials

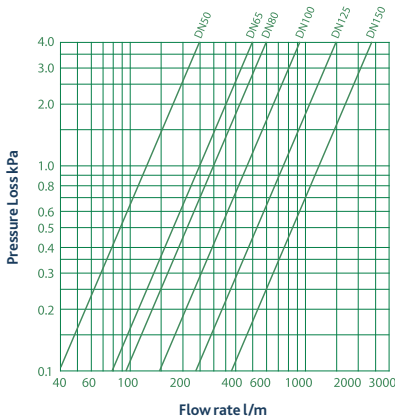
Component	Material	Grade
Body	Brass	EN 1982 CB753S
Dirt collection chamber	Brass	BS EN 12165 CW617N
Internal element		PA 66 G 30
Seals	EPDM	
Drain valve seal	Brass	BS EN 12165 CW617N
Blanking plug	Brass	BS EN 12164 CW614N

## Dimensions

## Optional insulation jackets

CBN546205	Fits 546205-6
CBN546207	Fits 546207-8
CBN546209	Fits 546209

## Pressure loss chart

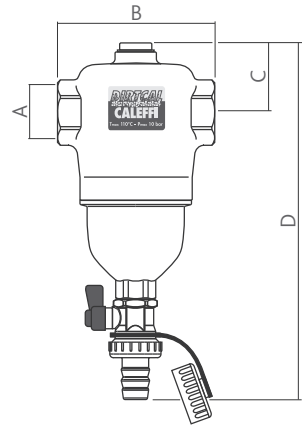


Size DN	50	65	80	100	125	150
Kv - m <sup>3</sup> /h	75	150	180	280	450	720

The maximum recommended flow velocity inside the pipe is 1.2 m/s. The following shows the maximum flow rates to meet this requirement.

Size DN	50	65	80	100	125	150
l/m	159	267	369	624	951	1362

Based on BS EN 10255 steel pipe.



## Female connection

Ref no	A	B	C	D	Kg
546205	¾"	110	49	237	1.87
546206	1"	110	49	237	1.87
546207	1¼"	124	49	257	2.22
546208	1½"	124	49	257	2.22
546209	2"	127	55	257	2.36

## 5465 DIRTCAL® - DIRT SEPARATOR - FLANGED



### Technical Data

Medium:	water, non-hazardous glycol solutions excluded from the guidelines of directive 67 / 548 / EC.
Max. percentage of glycol:	50%
Max. working pressure:	10 bar
Working temperature range:	0 — 100°C
Connections:	flanged PN 16

### Materials

Component	Material	Grade
Body	Steel - epoxy coated	
Automatic air vent body	Brass	BS EN 12165 CW617N
Internal element	Stainless steel	EN 10088-3
Spring	Stainless steel	
Seals	EPDM	
Drain valve	Brass	BS EN 12165 CW617N

### Dimensions

#### Technical Specification of Insulation Shell DN 50 - DN 100 - Insulation

Material	DN 50 to DN 100	rigid closed cell expanded polyurethane foam
Material	DN 125 to DN 150	closed cell expanded PE-X
Thickness		60 mm
Density		45 Kg/m <sup>3</sup>
Thermal conductivity (ISO 2581)		0.023 W/(m·K)
Working temperature range		0 — 105°C

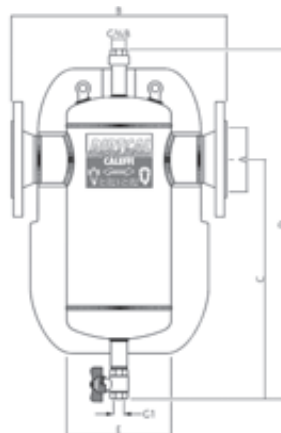
#### DN 50 - DN 100 - Head Covers

Heat moulded material		PS
<b>DN 125 and DN 150 - Insulation</b>		
Material		Closed cell expanded PE-X
Thickness		60 mm
Density	- inner part	30 Kg/m <sup>3</sup>
	- outer part	80 Kg/m <sup>3</sup>
Thermal conductivity (ISO 2581)	at 0°C	0.038W/(m·K)
	at 40°C	0.045W/(m·K)

Coefficient of resistance to water vapour (DIN 52615)	> 1.300
Working temperature range	0 — 100°C
Resistance to fire (DIN 4102)	class B2

#### External Layer - all sizes

Material	embossed unfinished aluminium
Thickness	0.7 mm
Resistance to fire (DIN 4102)	class 1
Connection	PN 16



Ref no	A	B	C	D	E	Kg	Litre
546550	50	350	425	620	169	13	7
546560	65	350	425	620	169	15	7
546580	80	466	500	740	219	23	18
546510	100	470	500	740	324	25	18
546512	125	635	600	900	324	52	52
546515	150	635	600	900	324	54	52



## 546 DIRTCALDIRT® - DEAERATORS - DIRT SEPARATORS

### Technical Data

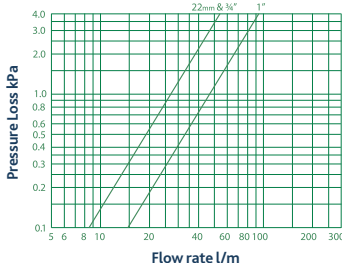
Medium:	water, glycol solutions.
Max. percentage of glycol:	50%
Max. working pressure:	10 bar
Max. discharge pressure:	10 bar
Working temperature range:	0 — 110°C
Thread:	BSP (G)
Connections:	compression ends, threaded female BSP (G)

### Materials

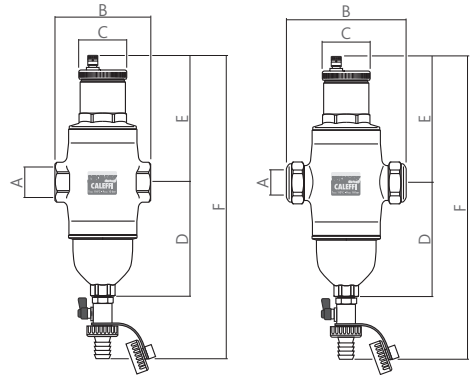
Component	Material	Grade
Body	Brass	BS EN 12165 CW617N
Dirt collection chamber	Brass	BS EN 12165 CW617N
Automatic air vent body	Brass	BS EN 12165 CW617N
Internal element	Polyamide 66	PA 66 G 30
Float	Polypropylene	
Float guide	Brass	BS EN 12164 CW614N
Stem	Brass	BS EN 12165 CW614N
Float lever	Stainless steel	BS EN 10270-3
Spring	Stainless steel	BS EN 10270-3
Seals	EPDM	
Drain valve	Brass	BS EN 12165 CW617N
<b>Insulation</b>		
Material		closed cell expanded PE-X
Thickness		10 mm
Density:	inner part	30 Kg/m <sup>3</sup>
	outer part	80 Kg/m <sup>3</sup>
Thermal conductivity (ISO 2581)		- a 0°C: 0,038 W/(m·K) - a 40°C: 0,045 W/(m·K)
Coefficient of resistance to water vapour (DIN 52615)		> 1.300
Working temperature range		0 — 110°C
Reaction to fire (DIN 4102)		class B2

Ref	Description
CBN546002	suitable for 546002, 546005, 546006
CBN645007	suitable for 546007

### Pressure loss chart



### Dimensions



### Female or 22 mm compression

Ref no	A	B	C	D	E	F	Kg
546002	Ø 22	127	55	128	141	325	3.0
546005	¾"	105	55	128	141	325	2.9
546006	1"	105	55	128	141	325	2.9

The maximum recommended flow velocity inside the pipe is 1.2 m/s. The following shows the maximum flow rates to meet this requirement.

Size	Ø22	¾"	1"
Kv — m <sup>3</sup> /h	16.2	16.2	28.1
l/m	22.7	22.7	35.18

Based on BS EN 1057 copper tube and BS EN 10255 steel pipe.

## 546 DIRTCALDIRT® - DEAERATORS - DIRT SEPARATORS - FLANGED WITHOUT INSULATION



### Technical Data

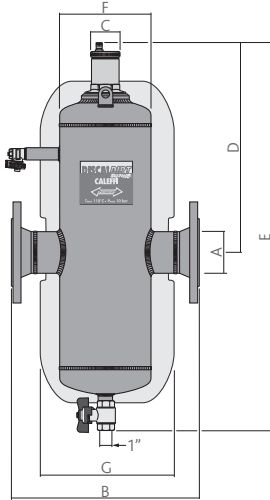
Medium:	water, non-hazardous glycol solutions excluded from the guidelines of directive 67 / 548 / EC.
Max working pressure:	10 bar
Max. discharge pressure:	10 bar
Working temperature range:	0 — 10°C
Connections:	flanged PN 16

### Materials

Component	Material	Grade
Body	Steel - epoxy coated	
Automatic air vent body	Brass	BS EN 12165 CW617N
Internal element	Stainless steel	
Float	Polypropylene	
Float guide	Brass	BS EN 12164 CW614N
Stem	Brass	BS EN 12165 CW614N
Float lever	Stainless steel	
Spring	Stainless steel	
Seals	EPDM	
Drain valve	Brass	BS EN 12165 CW617N
<b>Insulation</b>		
Material		closed cell expanded PE-X
Thickness		DN 50 — DN 100 60 mm DN 125 and DN 150 50 mm
Thermal conductivity (ISO 2581)	at 0°C	0.038W/(m·K)
	at 40°C	0.045W/(m·K)
Resistance to fire (DIN 4102)		class 1
Density	inner part	30 Kg/m <sup>3</sup>
	outer part	80 Kg/m <sup>3</sup>
Coefficient of resistance to water vapour (DIN 52615)		> 1.300
Resistance to fire (DIN 4102)		class B2
<b>External Layer - all sizes</b>		
Outer material		embossed unfinished aluminium
Thickness		0.7 mm

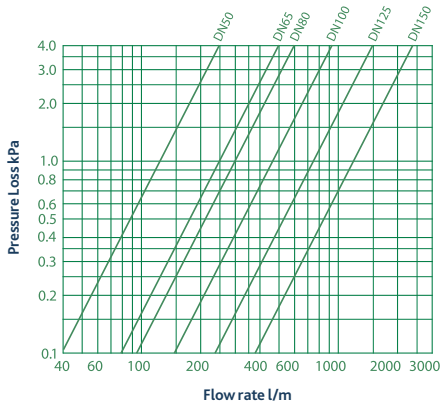
Further technical specification overleaf >

## Dimensions



Ref no	A	B	C	D	E	F	G	Kg
546052	DN 50	350	55	374	775	169	300	18
546062	DN 65	350	55	374	775	169	300	19
546082	DN 80	466	55	436	912	219	370	33
546102	DN 100	470	55	436	912	219	370	35
546122	DN 125	635	55	541	1245	324	480	82
546152	DN 150	635	55	541	1245	324	480	85

## Pressure loss chart



Size DN	50	65	80	100	125	150
Kv - m <sup>3</sup> /h	75	150	180	280	450	720

The maximum recommended flow velocity inside the pipe is 1.2 m/s.  
The following shows the maximum flow rates to meet this requirement.

Size DN	50	65	80	100	125	150
l/m	141.2	238.6	631.5	564.8	980.0	1436.6

Based on BS EN 10255 steel pipe.

# 546 DIRTCALDIRT® - DEAERATORS - DIRT SEPARATORS - SOCKET ENDS WITH INSULATION



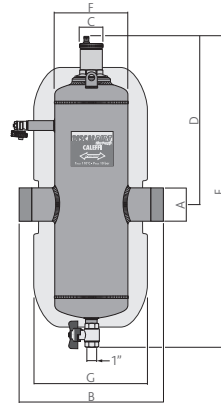
## Technical Data

Medium:	water, non-hazardous glycol solutions excluded from the guidelines of directive 67 / 548 / EC.
Max discharge pressure:	10 bar
Working temperature range:	0 — 110°C
Connections:	weld ends

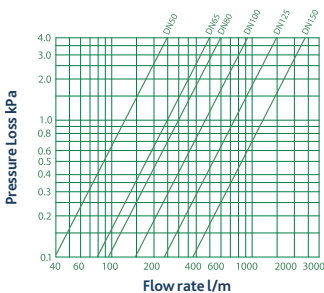
## Materials

Component	Material	Grade
Body	Steel - epoxy coated	
Automatic air vent body	Brass	BS EN 12165 CW617N
Internal element	Stainless steel	
Float	Poly propylene	
Float guide	Brass	BS EN 12164 CW614N
Stem	Brass	BS EN 12165 CW614N
Float lever	Stainless steel	BS EN 10270-3
Spring Seals	Stainless steel	BS EN 10270-3
Seals	EPDM	
Drain valve	Brass	BS EN 12165 CW617N
<b>Insulation</b>		
Material	closed cell expanded PE-X	
Thickness	DN 50 — DN 100 60 mm DN 125 and DN 150 50mm	
Thermal conductivity (ISO 2581)	at 0°C 0.038W/(m·K) at 40°C 0.045W/(m·K)	
Resistance to fire (DIN 4102)	class 1	
Density	inner part 30 Kg/m <sup>3</sup> outer part 80 Kg/m <sup>3</sup>	
Coefficient of resistance to water vapour (DIN 52615)	> 1.300	
<b>External Layer - all sizes</b>		
Outer material	embossed unfinished aluminium	
Thickness	0.7 mm	

## Dimensions



## Pressure loss chart



Ref no	A	B	C	D	E	F	G	Kg
546053	DN 50	260	55	374	775	169	300	13
546063	DN 65	260	55	374	775	169	300	13
546083	DN 80	366	55	436	912	219	370	25
546103	DN 100	366	55	436	912	219	370	25
546123	DN 125	525	55	541	1245	324	480	70
546153	DN 150	525	55	541	1245	324	480	70

The maximum recommended flow speed at the device connections is ~ 1,2 m/s. The following table shows the maximum flow rates in order to meet this requirement.

DN	50	65	80	100	125	150
l/min	141.2	238.6	361.5	564.8	980	1436.6
m <sup>3</sup> /h	8.47	14.32	21.69	33.89	58.8	86.2

# 546 DIRTCALDIRT® AND AIR - SEPARATOR - FLANGED WITHOUT INSULATION

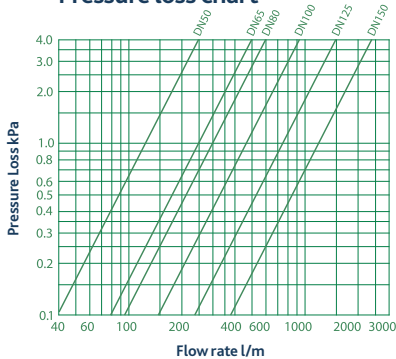
## Technical Data

Medium:	water, non-hazardous glycol solutions excluded from the guidelines of directive 67 / 548 / EC.
	EN 1092-1
Working temperature range:	0-110°C
Max discharge pressure:	10 bar
Minimum particle size:	5 µm
Connections:	flanged PN 16

## Materials

Component	Material	Grade
Body	Steel - epoxy coated	
Automatic air vent body	Brass	BS EN 12165 CW617N
Internal element	Stainless steel	
Float	Poly propylene	
Float Guide	Brass	BS EN 12164 CW614N
Stem	Brass	BS EN 12164 CW614N
Float Lever	Stainless steel	BS EN 10270-3
Spring Seals	Stainless steel	BS EN 10270-3
Seals	EPDM	
Drain valve	Brass	BS EN 12165 CW617N

## Pressure loss chart



Size - DN	50	65	80	100	125	150
Kv — m³/h	75	150	180	280	450	720

The maximum recommended flow velocity inside the pipe is 1.2 m/s. The following shows the maximum flow rates to meet this requirement.

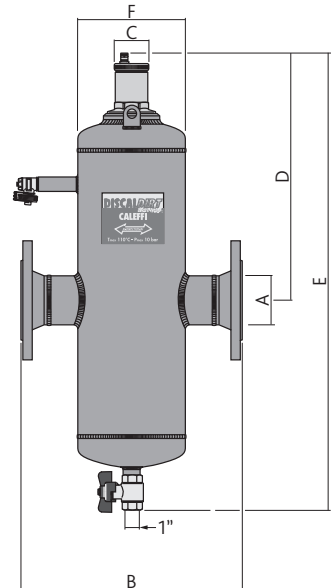
Size - DN	50	65	80	100	125	150
l/m	141.2	238.6	361.5	564.8	980	1463.6

Based on BS EN 10255 steel pipe.



Image with optional insulation

## Dimensions



Ref no	A	B	C	D	E	F	Kg
546050	DN 50	350	55	374	775	169	18
546060	DN 65	350	55	374	775	169	19
546080	DN 80	466	55	436	912	219	33
546100	DN 100	470	55	436	912	219	35
546120	DN 125	635	55	541	1245	324	82
546150	DN 150	635	55	541	1245	324	85

# 546 DIRTCAIDIRT® AND AIR - DEAERATORS - SOCKET ENDS WITHOUT INSULATION

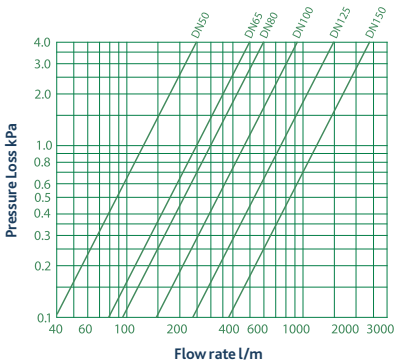
## Technical Data

Medium:	water, non-hazardous glycol solutions excluded from the guidelines of directive 67 / 548 / EC.
Max working pressure:	10 bar
Working temperature range:	0 — 110°C
Connections:	weld ends

## Materials

Component	Material	Grade
Body	Steel - epoxy coated	
Automatic air vent body	Brass	BS EN 12165 CW617N
Internal element	Stainless steel	
Float	Polypropylene	
Float Guide	Brass	BS EN 12164 CW614N
Stern	Brass	BS EN 12164 CW614N
Float Lever	Stainless steel	BS EN 10270-3
Spring Seals	Stainless steel	BS EN 10270-3
Seals	EPDM	
Drain valve	Brass	BS EN 12165 CW617N

## Pressure loss chart



Size - DN	50	65	80	100	125	150
Kv — m³/h	75	150	180	280	450	720

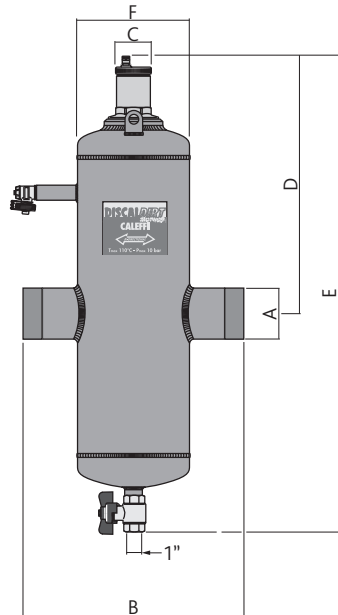
The maximum recommended flow velocity inside the pipe is 1.2 m/s. The following shows the maximum flow rates to meet this requirement.

Size - DN	50	65	80	100	125	150
l/m	141.2	238.6	361.5	564.8	980	1463.6

Based on BS EN 10255 steel pipe.



## Dimensions



Ref no	A	B	C	D	E	F	Kg
546051	DN 50	260	55	374	775	169	18
546061	DN 65	260	55	374	775	169	19
546081	DN 80	366	55	436	912	219	33
546101	DN 100	366	55	436	912	219	35
546121	DN 125	525	55	541	1245	324	82
546151	DN 150	525	55	541	1245	324	85



# 551 DISCAL® - AUTOMATIC DEAERATORS - COMPACT VERSION

## Technical Data

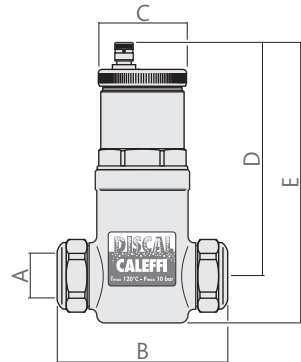
Medium:	water, non-hazardous glycol solutions excluded from the guidelines of directive 67 / 548 / EC.
Max. percentage of glycol:	50%
Max. working pressure:	10 bar
Max. discharge pressure:	10 bar
Working temperature range:	0 – 110°C
Thread:	BSP (G)
Connections:	compression ends threaded female



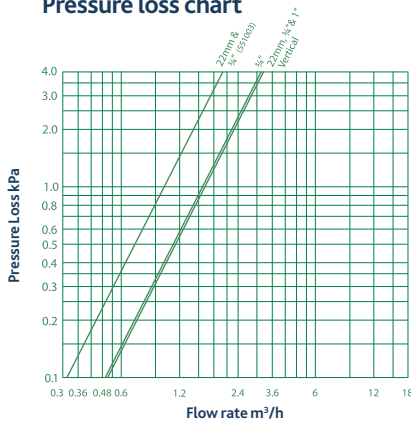
## Materials

Component	Material	Grade
Body	Brass	BS EN 12165 CW617N
Internal Element	Stainless steel	
Float	Poly propylene	
Float Guide	Brass	BS EN 12164 CW614N
Stem	Brass	BS EN 12164 CW614N
Float Lever	Stainless steel	BS EN 10270-3
Spring Seals	Stainless steel	BS EN 10270-3
Seals	EPDM	

## Dimensions



## Pressure loss chart



Size	22 & 3/4"	3/4"
Kv — m³/h	10	16.2

The maximum recommended flow velocity inside the pipe is 1.2 m/s. The following shows the maximum flow rates to meet this requirement.

Size	Ø22	3/4"
l/min	22.7	22.7

Based on BS EN 1057 copper tube and BS EN 10255 steel pipe.

## Compression and female connection

Ref no	A	B	C	D	E	Kg
551002	Ø 22	97	55	143	162	0.9
551003	3/4"	78	55	143	162	0.9

## 551 DISCAL® AUTOMATIC DEAERATORS



### Technical Data

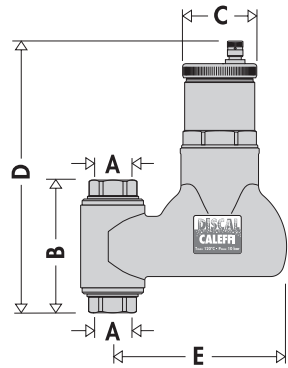
Medium:	water, non-hazardous glycol solutions excluded from the guidelines of directive 67 / 548 / EC.
Max. percentage of glycol:	50%
Max. working pressure:	10 bar
Max. discharge pressure:	10 bar
Working temperature range:	0 — 110°C
Thread:	BSP (G)
Connections:	compression ends female thread BSP (G)



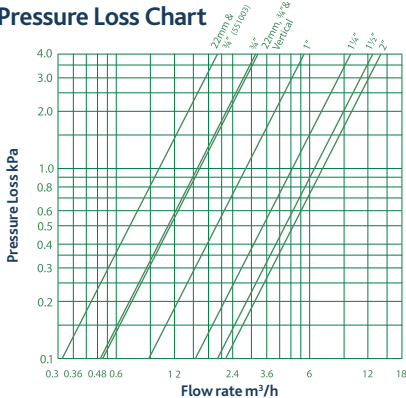
### Materials

Component	Material	Grade
<b>Threaded</b>		
Body	Brass	BS EN 12165 CW617N
Internal Element	Stainless steel	
Float	Polypropylene	BS EN 12164 CW614N
Float Guide	Brass	BS EN 12164 CW614N
Stem	Brass	BS EN 12164 CW614N
Float Lever	Stainless steel	BS EN 10270-3
Spring Seals	Stainless steel	BS EN 10270-3
Seals	EPDM	

### Dimensions



### Pressure Loss Chart



Size	22 & 3/4"	3/4"	All Vertical	1"
Kv — m³/h	10	16.2	17	28.1

The maximum recommended flow velocity inside the pipe is 1.2 m/s. The following shows the maximum flow rates to meet this requirement.

Size	Ø22	Ø28	3/4"	1"
l/min	22.7	35.18	22.7	35.18

### Female and 22 mm compression \*

Ref no	A	B	C	D	E	Kg
551702*	Ø22	113	216.5	141.5	92	2.28
551703*	Ø28	116	218	141.5	92	2.11
551705	3/4"	96	208	141.5	92	2.05
551706	1"	140.6	230	141.5	92	2.38

Based on BS EN 1057 copper tube and BS EN 10255 steel pipe.





## 551 DISCAL® - AUTOMATIC DEAERATORS

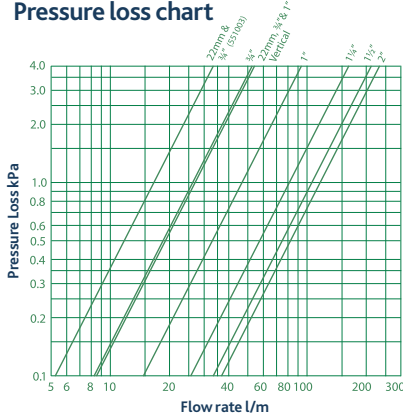
### Technical Data

Medium:	water, non-hazardous glycol solutions excluded from the guidelines of directive 67 / 548 / EC.
Max. percentage of glycol:	50%
Max. working pressure:	10 bar
Max. discharge pressure:	10 bar
Working temperature range:	0 — 110°C
Connections:	female thread BSP (G)

### Materials

Component	Material	Grade
<b>Threaded</b>		
Body	Brass	BS EN 12165 CW617N
Internal Element	Polyamide 66	PA 66 GF 30
Float	Polypropylene	
Float Guide	Brass	BS EN 12164 CW614N
Stem	Brass	BS EN 12164 CW614N
Float Lever	Stainless steel	BS EN 10270-3
Spring Seals	Stainless steel	BS EN 10270-3
Seals	EPDM	

### Pressure loss chart



Size	Ø22 & ¾"	¾"	Ø 22 - Ø 28 - 3/4" - 1"	1"	1¼"	1½"	2"
Kv — m³/h	10	16.2	17	28.1	48.8	63.2	70

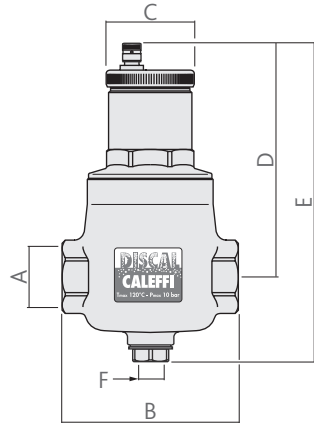
The maximum recommended flow velocity inside the pipe is 1.2 m/s. The following shows the maximum flow rates to meet this requirement.

Size	Ø22	Ø28	¾"	1"	1¼"	1½"	2"
l/min	22.7	35.18	22.7	35.18	57.85	90.33	136.6

Based on BS EN 1057 copper tube and BS EN 10255 steel pipe.



### Dimensions



### Female connection with drain

Ref no	A	B	C	D	E	F	Kg
551005	¾"	110	55	146	205	½"	1.7
551006	1"	110	55	146	205	½"	1.7
551007	1¼"	124	55	166	225	½"	2.2
551008	1½"	124	55	166	225	½"	2.2
551009	2"	130	55	160	225	½"	2.2

For insulation jackets order CBN551005, CBN551007, CBN551009 to fit appropriate size.

## 548 SERIES - HYDRAULIC SEPARATOR - INSULATED

### Technical Data

Medium:	water, non-hazardous glycol solutions excluded from the guidelines of directive 67 / 548 / EC.
Max. percentage of glycol:	30%
Max. working pressure:	10 bar
Working temperature range:	0 — 100°C
Connections:	female thread BSP (G) - union

### Materials

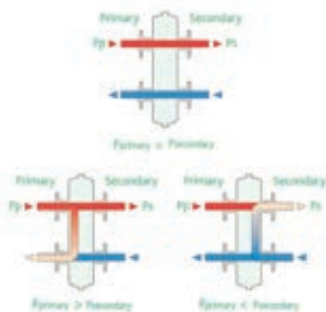
Component	Material	Grade
<b>Threaded</b>		
Separator body	Carbon steel	epoxy coated
Automatic air vent body	Brass	BS EN 12165 CW617N
	Chrome plated	
Automatic air vent float	Polypropylene	
Automatic air vent seals	EPDM	
Drain valve body	Brass	BS EN 12165 CW617N

### Insulation Materials

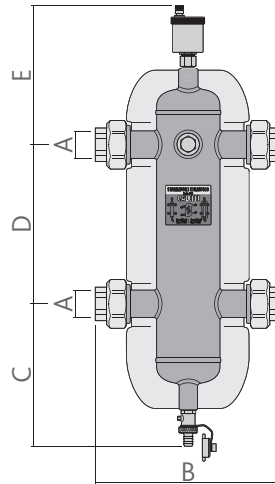
#### Inner part

Material		closed cell expanded PE-X
Thickness	threaded	20 mm
Density:	inner part	30 Kg/m <sup>3</sup>
	outer part	50 Kg/m <sup>3</sup> (threaded)
Thermal conductivity (ISO 2581)		at 0°C: 0,038 W/(m·K)
		at 40°C: 0,045 W/(m·K)
Coefficient of resistance to water vapour (DIN 52615)		> 1.300
Working temperature range		0 — 100°C
Reaction to fire (DIN 4102)		class B2

### Operating principles



### Dimensions



Ref no	A	B	C	D	E	max flow rate (m <sup>3</sup> /h)	Kg
548006	1"	225	195	220	204	2.5	2.7
548007	1¼"	248	225	240	214	4.0	3.8
548008	1½"	282	235	260	224	6.0	5.7
548009	2"	315	281	300	230	8.5	11.8

# 548 SERIES - HYDRAULIC SEPARATOR - FLANGED INSULATED

## Technical Data

Medium:	water, non-hazardous glycol solutions excluded from the guidelines of directive 67 / 548 / EC.
Max. percentage of glycol:	50%
Max. working pressure:	10 bar
Working temperature range:	0 - 105°C DN50 - DN100 0 - 100°C DN125 - DN150
Temperature probe connection:	½" F
Connections:	flanged PN 16

## Materials

Component	Material	Grade
<b>Flanged</b>		
Separator body	Carbon steel	epoxy coated
Automatic air vent body	Brass	BS EN 12165 CW617N
Automatic air vent float	Stainless steel	
Automatic air vent seals	Viton	
Drain valve body	Brass	BS EN 12165 CW617N
Shut-off valve body	Brass	BS EN 12165 CW617N chrome plated

## Insulation Materials

### DN 50 to DN 100

#### Inner part

Material	rigid closed cell polyurethane foam
Thickness	60 mm
Density:	45 Kg/m <sup>3</sup>
Thermal conductivity (ISO 2581)	0.023 W/(m·K)
Working temperature range	0—105°C

#### External cover

Material	rigid closed cell polyurethane foam
Thickness	0.7 mm

Reaction to fire (DIN 4102): class 1

#### Head covers

Heat moulded material PS

### DN125-DN150

#### Inner part

Material	closed cell expanded PE-X
Thickness	flanged 60 mm
Density	inner part 30 Kg/m <sup>3</sup> outer part 80 Kg/m <sup>3</sup> (flanged)
Thermal conductivity (ISO 2581)	at 0°C: 0.038 W/(m·K) at 40°C: 0.045 W/(m·K)

Coefficient of resistance to water vapour (DIN 52615)

> 1.300

Working temperature range

0—100°C

Reaction to fire (DIN 4102)

class B2

#### External cover

Material embossed unfinished aluminium

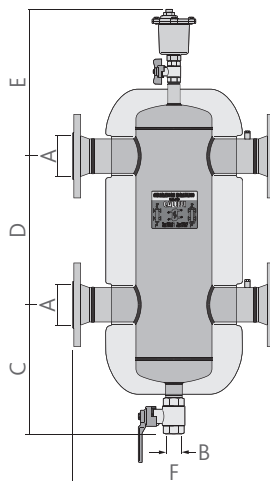
Thickness 0.7 mm

Reaction to fire (DIN 4102)

class 1



## Dimensions



Ref no	A	B	C	D	E	F	max flow rate (m <sup>3</sup> /h)	Kg
<b>548052</b>	DN 50	1¼"	341	330	398	460	9	34.5
<b>548062</b>	DN 65	1¼"	341	330	398	460	18	39
<b>548082</b>	DN 80	1¼"	389	450	440	526	28	51
<b>548102</b>	DN 100	1¼"	389	450	440	529	56	55
<b>548122</b>	DN 125	1¼"	374	560	499	670	75	104
<b>548152</b>	DN 150	1¼"	374	560	499	670	110	108

## 548 SERIES - HYDRAULIC SEPARATOR - FLANGED

### Technical Data

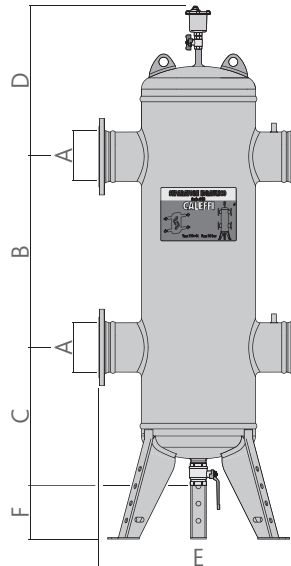
Medium:	water, non-hazardous glycol solutions excluded from the guidelines of directive 67 / 548 / EC.
Max. percentage of glycol:	50%
Max. working pressure:	10 bar
Working temperature range:	0 — 110°C
Temperature probe connection:	½" F
Connections:	flanged PN 10



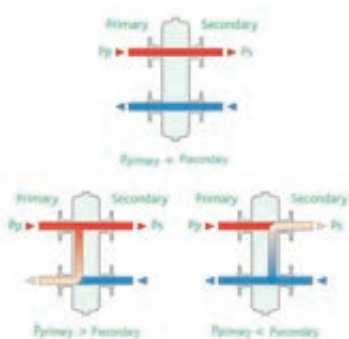
### Materials

Component	Material	Grade
<b>Flanged</b>		
Separator body	Carbon steel	epoxy coated
Automatic air vent body	Brass	BS EN 12165 CW617N
Automatic air vent float	Stainless steel	
Automatic air vent seals	Viton	
Drain valve body	Brass	BS EN 12165 CW617N
Shut-off valve body	Brass	BS EN 12165 CW617N

### Dimensions



### Operating Principles



Ref no	A	B	C	D	E	F	max flow rate (m <sup>3</sup> /h)	Kg
548200	DN 200	1000	610	400	900	250	180	255
548250	DN 250	1100	660	460	1060	250	300	410
548300	DN 300	1200	710	500	1180	250	420	600

## SEP4™ - COMBINATION HYDRAULIC SEPARATOR

### Technical Data

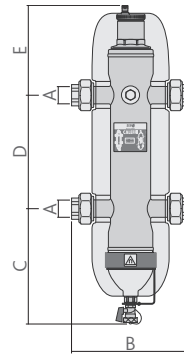
Medium:	water, non-hazardous glycol solutions excluded from the guidelines of directive 67 / 548 / EC.
Max. percentage of glycol:	50%
Max. working pressure:	10 bar
Max. operating temp:	0 — 110° C
	with insulated
Connections:	female thread BSP (G) - union



### Materials

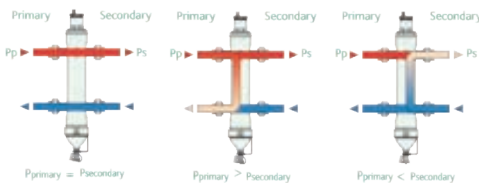
Component	Material	Grade
Separator body	Carbon steel	epoxy coated
Union nuts Threaded	Steel	Galvanised
Solder	Brass	
Automatic air vent body	Brass	BS EN 12165 CW617N
Automatic air vent float	Polypropylene	
Automatic air vent seals	EPDM	
Air vent float linkage	Stainless steel	
Air vent float guide pin	Stainless steel	
Drain valve body	Brass	BS EN 12165 CW617N
Magnet	Neodymium rare-earth	

### Dimensions



### Operating Principles

Three possible hydraulic balance situations are possible:



The multifunction hydraulic separator should be sized in accordance with the maximum recommended flow rate value at the inlet. The selected value should be the sum of the primary circuit flow rates or the sum of the secondary circuit flow rates, whichever is greater.

Size	DN 25 (1)	DN 32 (1 1/4")	DN 40 (1 1/2")	DN 50 (2")
Flow rate (m/h)	2.5	225	168	220

### Dimensions - Threaded

Ref no	A	B	C	D	E	Kg
549506A	1"	225	168	220	154	4
549507A	1 1/4"	248	168	240	144	5
549508A	1 1/2"	282	168	260	180	10
549509A	2"	315	162	300	184	14

### Dimensions - Welded

Ref no	A	B	C	D	E	Kg
549596A	Ø 28	225	168	220	154	4
549597A	Ø 35	248	168	240	144	5
549598A	Ø 42	282	168	260	180	10
549599A	Ø 54	315	162	300	184	14

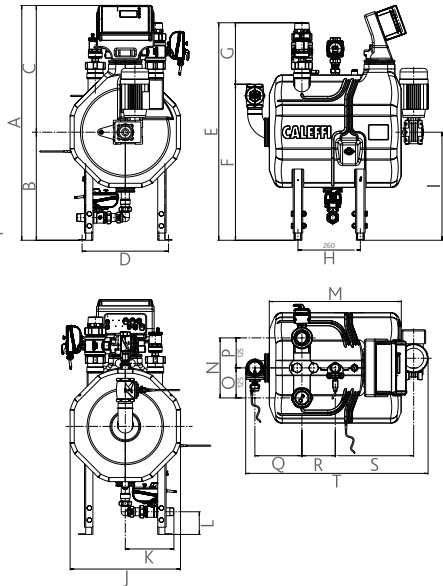
# DIRTMAGCLEAN® - SELF-CLEANING DIRT SEPARATOR FILTER WITH MAGNET

## Technical Data

Medium:	water, glycol solutions
Max. percentage of glycol:	50%
Working temperature range:	5-85°C
Hydraulic characteristics:	Kv = 45 m3/h
Water content:	5 l
Strainer mesh size Ø:	30 µm
Particle separation rating:	down to 2 µm
DHW inlet minimum dynamic pressure for 3 bar wash	
Motor noise:	< 60 dB
Volume of water drained during washing:	100 litres with p = 3 bar
Motor noise:	< 60 dB
Connections:	< 60 dB
- in circuit inlet:	2" M with captive nut
- in circuit outlet:	2" F
- filled for cleaning:	1" F
- drain:	1" M with captive nut
- additive pouring cap:	1" F



## Dimensions



## Materials

Component	Material	Grade
Body-pipes and support feet:	Stainless steel	AISI 10088-2 (AISI 304)
Internal filtering elements:	Polyester	
<b>Inlet and drain valves</b>		
Body:	Brass	BS EN 12165 CW617N
Ball:	Brass, chrome plated	BS EN 12165 CW617N
Ball seal:	PTFE with EPDM O-Ring	
Control stem seal:	Double EPDM O-Rings	
Union seal:	EPDM O-Ring	
<b>Loading and cleaning valve</b>		
Body:	Brass	BS EN 12165 CW617N
Seals:	EPDM	
<b>Circuit return valve with clapet retainer</b>		
Body:	Brass	BS EN 12165 CW617N
Seals:	EPDM	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
978	450	528	360	906	650	256	260	450	460	202.5	94.5	550	250	125	125	196	139	326	758
1028	500	528	360	956	700	256	260	500	460	202.5	144.5	550	250	125	125	196	139	326	758
1078	550	528	360	1006	750	256	260	550	460	202.5	194.5	550	250	125	125	196	139	326	758
1128	600	528	360	1056	800	256	260	600	460	202.5	244.5	550	250	125	125	196	139	326	758



08

Expansion Vessels

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## Expansion vessels

Any complex hydronic system will experience volume variance in normal operation. Variable flow-rate systems are particularly prone to changes and when this is combined with fluctuations in medium temperature the need for expansion vessels obvious.

Altecnic's Reflex range of German engineered expansion vessels are the market leader with a unique nitrogen fill that almost eliminates corrosion in the vessel. This is why Altecnic can offer the UK's leading 5-year warranty on Reflex expansion vessels.

Heating only vessels are available with capacities from 8-5,000L and WRAS approved potable vessels are also offered in either vertical or horizontal formats. For more specialised applications the Flow Through range from 2L up to 10,000L includes a shaped internal baffle that reduces the risk and build-up of low-flow areas that can be a home to bacteria.



## HEATING EXPANSION VESSELS 8 — 140 LITRES



### Technical Data

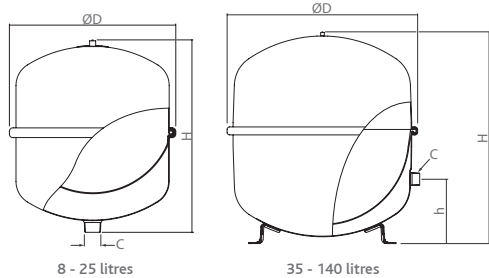
Max. working pressure:	8 — 35 litres — 3 bar
	50 — 140 litres — 6 bar
Test pressure:	1.5 x max working pressure
Max. vessel operating temperature:	70° C
Factory pre-charge:	1.5 bar - nitrogen
Connections:	male thread BSP (R)



### Materials

Component	Material
Shell	Carbon steel
Connections	Carbon steel
Diaphragm	Synthetic rubber compound
Coating	Powder Epoxy

### Dimensions



### Wall mounted

Ref no	Capacity (L)	Ø D	H	C	Kg
HV8C	8	206	305	¾"	1.7
HV12C	12	272	313	¾"	2.2
HV18C	18	308	361	¾"	2.9
HV25C	25	308	481	¾"	3.6

### Accessories

Ref. no	Description
RS-MB2	Potable vessel mounting bracket 8 litre - 12 litre
RS-MB24	Potable vessel mounting bracket 18 — 25 litre (2 straps)
CA-100700	Potable vessel bracket 33 litre only

### With legs

Ref no	Capacity (L)	Ø D	H	h	C	Kg
HV35C	35	376	465	130	¾"	5.0
HV50C	50	441	487	175	¾"	7.5
HV80C	80	512	558	172	1"	9.9
HV100C	100	512	669	172	1"	11.2
HV140C	140	512	890	172	1"	14.5

## HEATING EXPANSION VESSELS 200 - 800 LITRES



### Technical Data

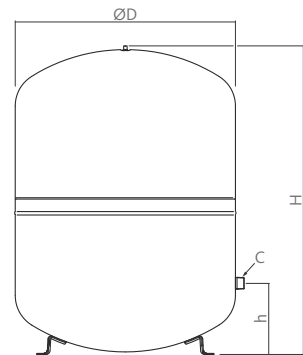
Max. working pressure:	6 bar
Max. vessel operating temperature:	70°C
Factory pre-charge:	1.5 bar — nitrogen
Connections:	male thread BSP (R)



### Materials

Component	Material
Shell	Carbon steel
Connections	Carbon steel
Diaphragm	Synthetic rubber compound
Coating	Powder Epoxy

### Dimensions



### With legs

Ref no	Capacity (L)	Ø D	H	h	C	Kg
HV200W	200	634	758	205	1"	37
HV250W	250	634	890	205	1"	45
HV300W	300	634	1090	235	1"	52
HV400W	400	740	1066	245	1"	65
HV500W	500	740	1290	245	1"	79
HV600W	600	740	1530	245	1"	85
HV800W	800	740	1995	245	1"	103

## POTABLE WATER EXPANSION VESSELS

### Technical Data

Max. working pressure:	10 bar
Max. vessel operating temperature:	70°C
Factory pre-charge:	4.0 bar – nitrogen
Connections:	male thread BSP (R)

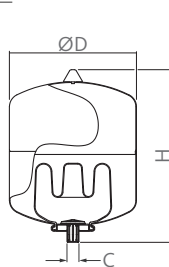


CE marked

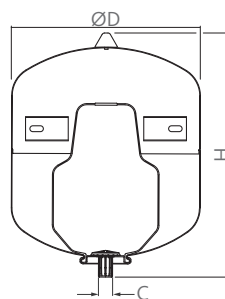
### Materials

Component	Material
Shell	Carbon steel
Connections	Stainless steel
Bladder	Butyl
Coating	Powder Epoxy

### Dimensions



2 to 25 litres



33 litres - with wall bracket

Ref no	Capacity (L)	Ø D	H	C	Kg
PV2W	2	132	260	¾"	1.0
PV8W	8	206	335	¾"	1.7
PV12W	12	280	307	¾"	2.4
PV18W	18	280	410	¾"	2.8
PV25W	25	280	520	¾"	3.7
PV33W	33	354	454	¾"	5.7

## HORIZONTAL POTABLE WATER EXPANSION VESSELS 25 - 100 LITRES

### Technical Data

Max. working pressure:	10 bar
Max. vessel operating temperature:	70°C
Factory pre-charge:	2.0 bar — nitrogen
Replaceable bladder:	50 — 100 litre sizes
Connections:	male thread BSP (R)

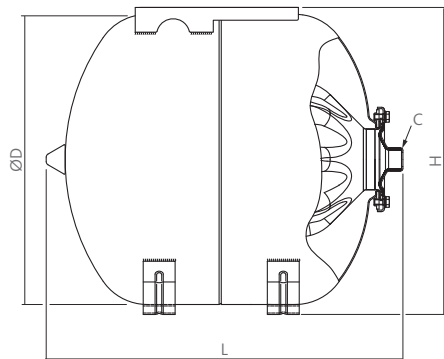


CE marked

### Materials

Component	Material
Shell	Carbon steel
Connections	Stainless steel
Bladder	Butyl
Coating	Powder Epoxy

### Dimensions



### With legs

Ref no	Capacity (L)	Ø D	L	H	C	Kg
PVH25W	25	280	520	293	¾"	5.5
PVH50W	50	409	503	433	1"	15
PVH60W	60	409	573	433	1"	16
PVH80W	80	480	595	504	1"	18
PVH100W	100	480	705	504	1"	21

## VERTICAL POTABLE WATER EXPANSION VESSELS 50 - 1000 LITRES

### Technical Data

Max. working pressure:	10 bar
Max. operating temperature:	70°C
Factory pre-charge:	4.0 bar — nitrogen
Replaceable bladder - sizes:	50 litres and larger except 140 litres size
Connections:	male thread BSP (G) *male thread BSP (R) 140ltr only

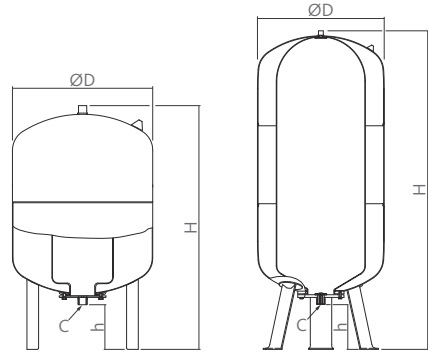


CE marked

### Dimensions

### Materials

Component	Material
Shell	Carbon steel
Connections	Stainless steel
Bladder	Fixed Butyl
Coating	Powder Epoxy



50 to 500 litres

600 and 1000 litres

### With legs

Ref no	Capacity (L)	Ø D	H	C	Kg
PV50W	50	409	605	1"	9.50
PV60W	60	409	734	1"	11
PV80W	80	480	745	1"	14
PV100W	100	480	850	1"	16
PV140W*	140	480	1015	1"	29
PV200W	200	634	963	1 ¼"	37
PV300W	300	634	1267	1 ¼"	42
PV400W	400	740	1245	1 ¼"	73
PV500W	500	740	1475	1 ¼"	103
PV600W	600	740	1860	1 ½"	128
PV800W	800	740	2325	1 ½"	176
PV1000W	1000	740	2604	1 ½"	214

## FLOW THROUGH POTABLE WATER EXPANSION VESSELS 8 - 33 LITRES

### Technical Data

Max. working pressure:	10 bar
Max. operating temperature:	70°C
Factory pre-charge:	4.0 bar — nitrogen
Connections:	male thread BSP (G)

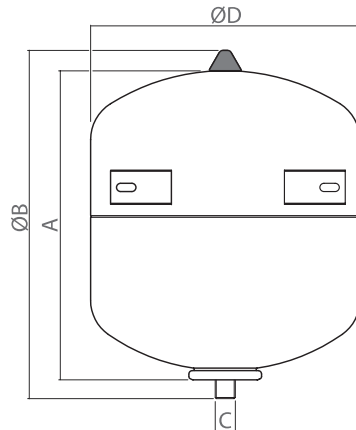


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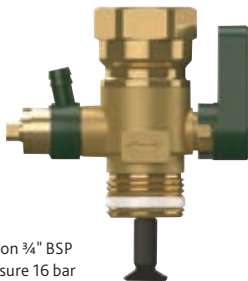
### Materials

Component	Material
Shell	Carbon steel
Connections	Stainless steel
Bladder	Butyl
Coating	Powder Epoxy

### Dimensions



### Flowjet valve

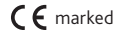


PVACC1

Connection 3/4" BSP  
Max Pressure 16 bar

Ref no	Capacity (L)	Ø D	H	C	Kg
PVA8G	8	206	345	3/4"	1.7
PVA12G	12	280	318	3/4"	2.0
PVA18G	18	280	420	3/4"	2.5
PVA25G	25	280	530	3/4"	3.3
PVA33G	33	354	468	3/4"	5.8

## FLOW THROUGH - POTABLE WATER EXPANSION VESSELS



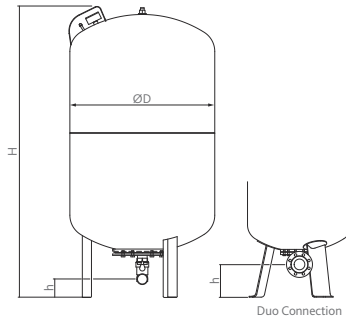
### Technical Data

Max. working pressure:	10 bar
Max. operating temperature:	70 °C
Factory pre-charge:	4.0 bar — nitrogen
Non Replaceable bladder:	
System water connection thread:	1¼" female parallel to BS EN 10266
System water flanged connection:	PN 16 - BS EN 1092-1
Connections:	female thread BSP (Rp) flanged PN 16

### Materials

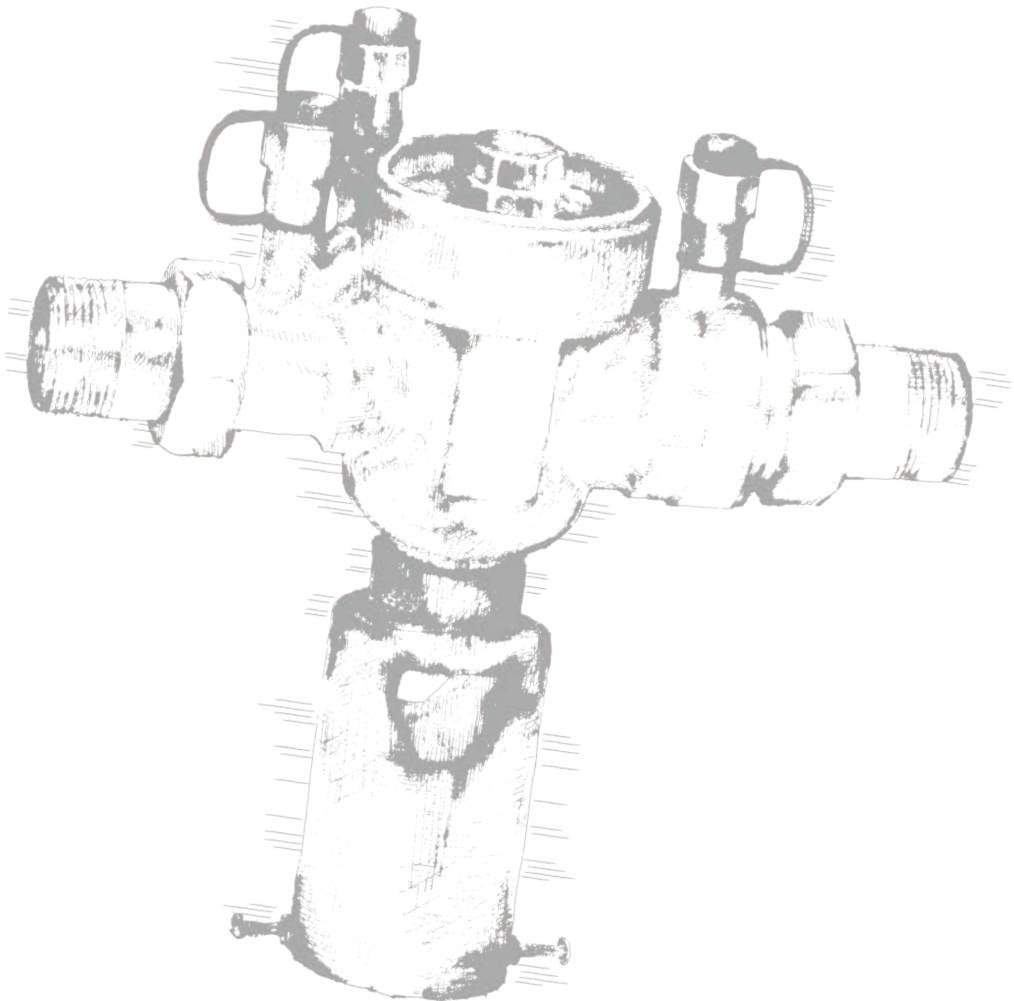
Component	Material
Shell	Carbon steel
Connections	Stainless steel
Bladder	Butyl
Coating	Powder Epoxy

### Dimensions



Ref no	Capacity (L)	Ø D	H	h	C	Kg
PVA60G	60	409	766	80	1¼"	15
PVA80G	80	480	765	65	1¼"	16.5
PVA100G	100	480	870	65	1¼"	18.6
PVA200G	200	634	975	80	1¼"	37
PVA300G	300	634	1275	80	1¼"	43.5
PVA400G	400	740	1245	70	1¼"	73
PVA500G	500	740	1475	70	1¼"	69
PVA600G	600	740	1860	235	DN 50	164
PVA800G	800	740	2325	235	DN 50	204
PVA1000G	1000	740	2805	235	DN 50	244





09

Backflow Prevention  
Devices

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# Check Valves and Backflow Preventer Valves

Altecnic help system designers to comply with the legal requirements regulating water installations in domestic, commercial and health care premises.

These requirements sometimes make it a criminal offense for any person, whether the owner or occupier, to allow the wholesome water supply system within their premises to become:

- Contaminated
- Wasted
- Misused
- Unduly consumed

Of particular concern to system designers is the risk of contaminated water backflowing into the water undertakings distribution system. Connections between wholesome and unwholesome water systems can create a serious risk to public health where backflow from cross connection results in contamination of the wholesome water supply system.

Persons with the responsibility for the water installation within their premises should make themselves familiar with the appropriate legislation and the risks that can occur from the backflow and back siphonage of a contaminate.

The Altecnic range of check valves and backflow prevention devices prevent the contamination of the wholesome water supply system, especially when installed at or near to all points where water is to be drawn off for use.



## 570 SERIES - RPZ VALVE

### Technical Data

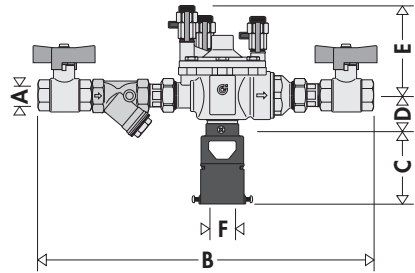
Medium:	Potable water
Max. working temperature:	65°C
Max. Working pressure:	10 bar
Discharge opening differential pressure:	14 kPa
Connections:	female thread BSP (G)



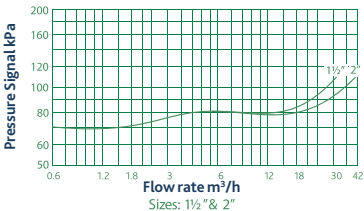
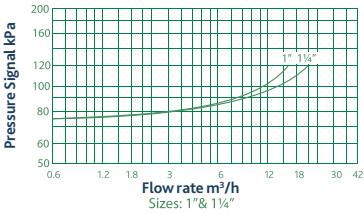
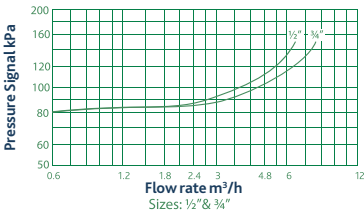
### Materials

Component	Material
Body and cover	DZR EN 12165 CW724R (¾" and 1") EN 1982 CB752S (½" and 1 ¼") Bronze EN 1982 CB499K (1 ½" and 2")
Check valve spindle	Stainless steel EN 10088-3 (AISI 303)
Discharge valve seat	DZR EN 12165 CW724R (½", ¾" and 1") Stainless steel EN 10088-3 (AISI 303) (1 ¼"—2")
Springs	Stainless steel EN 10270-3 (AISI 302)
Diaphragm	EPDM (½", ¾", 1" and 1 ¼") NBR (1 ½"—2")
Hydraulic seals	NBR

### Dimensions



### Flow characteristic



### Female connection

Ref no	A	B	C	D	E	F	Kg
570004	½"	354	130	44.5	103	Ø 40—60	3.0
570005	¾"	390	130	44.5	103	Ø 40—60	3.6
570006	1"	430	162	72.5	99.5	Ø 40—60	5.4
570007	1 ¼"	540	162	72.5	99.5	Ø 40—60	6.2
570008	1 ½"	670	221	103.4	129.6	Ø 40—60	14.4
570009	2"	735	221	103.4	129.6	Ø 40—60	16.5

## 574 SERIES - RPZ VALVE

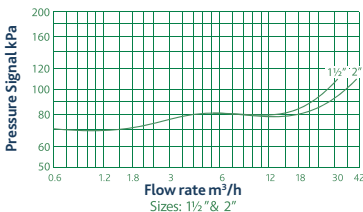
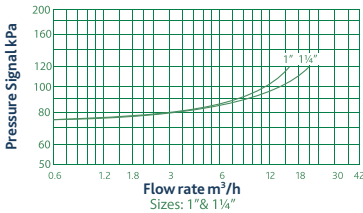
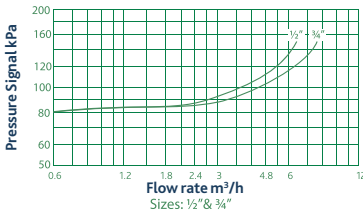
### Technical Data

Medium:	Potable water
Max. Working pressure:	PN 10
Max. working temperature:	65 °C
Connections:	male thread BSP (R)

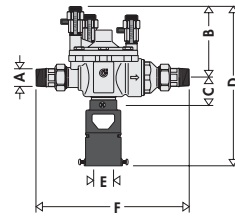
### Materials

Component	Material
Body and cover	DZR
	EN 12165 CW724R (½", ¾")
	EN 1982 CC770S (1", 1 ¼")
Check valve spindle	Bronze EN 1982 CB499K (1 ½" and 2")
	Stainless steel EN 10088-3 (AISI 303)
Discharge valve seat	DZR
Springs	EN 12165 CW724R (½", ¾")
	Stainless steel EN 10088-3 (AISI 303) (1"-2")
Diaphragm	Stainless steel EN 10270-3 (AISI 302)
Diaphragm	EEPDM (½", ¾", 1" and 1 ¼")
	NBR (1 ½"—2")
Hydraulic seals	NBR

### Flow characteristic

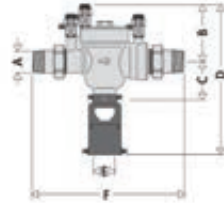


### Dimensions

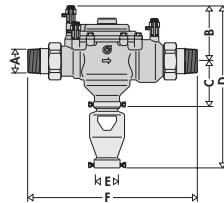


### Male union connection

Ref no	A	B	C	D	E	F	Kg
574040	½"	103	44.5	263	40—60	227	2.9
574050	¾"	103	44.5	263	40—60	227	2.9



Ref no	A	B	C	D	E	F	Kg
574600	1"	100	74.5	292	40—60	280	4.7
574700	1 ¼"	100	74.5	292	40—60	280	4.7



### Male union connection

Ref no	A	B	C	D	E	F	Kg
574800	1 ½"	130	108.5	382	50	387	11.3
574900	2"	130	108.5	382	50	395	11.4

## 575 SERIES - RPZ VALVE



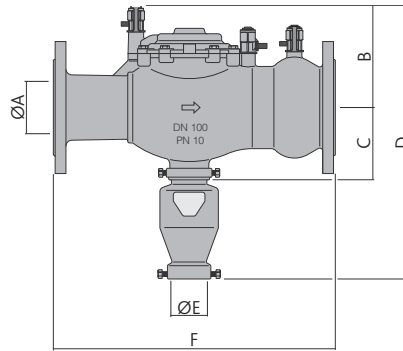
### Technical Data

Medium:	Potable water
Max. pressure:	10 bar
Max. working temperature:	65°C
Connections:	flanged PN 16

### Materials

Component	Material
Body and cover	Bronze EN 1982 CB499K
Check valve spindle	Stainless steel EN 10088-3 (AISI 303)
Discharge valve seat	Stainless steel EN 10088-3 (AISI 303)
Springs	Stainless steel EN 10270-3 (AISI 302)
Diaphragm	NBR
Hydraulic seals	NBR

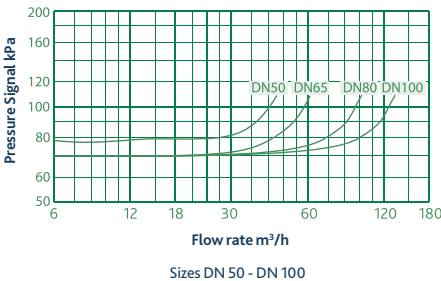
### Dimensions



### Flanged connection

Ref no	A(DN)	B	C	D	E	F	Kg
575005	50	129	109	382	50	302	13.20
575006	65	133	109	385	50	305	17
575008	80	170	115	484	80	470	26.50
575010	100	170	115	484	80	470	28

### Flow characteristic





## ALT-SCV SINGLE CHECK VALVE

### Technical Data

Max. Temperature:	90°C
Max. Pressure:	10 bar
End Connections:	BS EN 10226
Connections:	compression ends threaded female BSP (R)

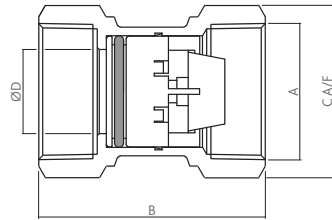


### Materials

Component	Material	Grade
Body	DZR alloy	BS EN 12165 CW602N
Check valve cartridge	Polypropylene	
O - ring	EPDM	

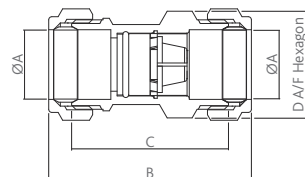
### Dimensions

Threaded



Ref no	A	B	C	D	Kg
ALT-SCV015	½"	42	24	12.50	0.06
ALT-SCV020	¾"	50	32	17	0.13
ALT-SCV025	1"	60	38	22	0.17
ALT-SCV032	1¼"	79	46	24	0.33
ALT-SCV040	1½"	84	53	30	0.53
ALT-SCV050	2"	101	64	38	0.85

Compression



Ref no	A	B	C	D	Kg
BI-100034	Ø 15	61	45.5	22	0.10
BI-100522	Ø 22	65	50	31.5	0.18
BI-100528	Ø 28	72	56.5	39	0.29



## 903 DZR DOUBLE CHECK VALVE

### Technical Data

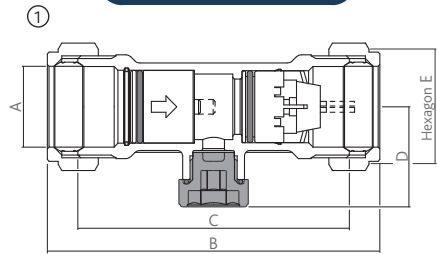
Max inlet pressure:	10 bar
Min inlet pressure:	0.2 bar
Max continuous temperature	85°C
Conforms to:	BS EN 13959
Connections:	female thread (G) *female thread BSP (Rc)

### Materials

Component	Material	Grade
Body	DZR copper alloy	BS EN 12420 CW602N
Cartridge	POM	
Cartridge Retaining Clip	Stainless steel	AISI 302
Test Plug	Nylon/Brass	
①	Nylon	
②	Brass	BS EN 12164 CW617N
O - ring	Nitrile/EPDM rubber	
Compression Nut	Brass	BS EN 12165 CW617N
Olive	Brass	EN 12449 CW508LM



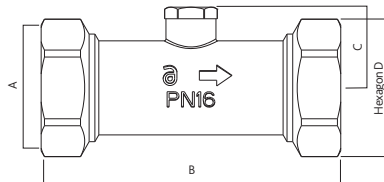
### Dimensions



### Compression connection

Ref no	A	B	C	D	E	Kg
AI-903215	∅ 15	79	61.5	24.50	24	0.15
AI-903222	∅ 22	92	75	27.50	31.50	0.19
AI-903228	∅ 28	106	89	30.50	39	0.29

②



### Female connection

Ref no	A	B	C	D	Kg
AI-903015	1/2"	64	18	24	0.15
AI-903020	3/4"	78	21	32	0.24
AI-903025	1"	77	25	38	0.36
AI-903032	1 1/4"	118	33.5	46	0.40
AI-903040	1 1/2"	131.5	37.5	53	0.50
AI-903050	2"	181	37.5	64	0.60



## NON RETURN VALVE

### Technical Data

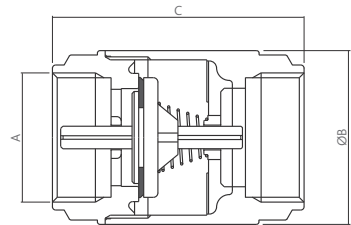
Max. Temperature:		110°C
Max. Pressure:	¼"	16 bar
	— 1"	
	1¼" — 2"	10 bar
	2½" — 4"	8 bar
Min. Opening Pressure:		0.02 bar
End connections:		BS EN ISO 228
Connections:		female thread BSP (G)



### Materials

Component	Material	Grade
Body	Brass	BS EN 12165 CW617N
Disc		POM plastic
Retainer and guide	POM plastic	
Disc facing ring	NBR rubber	
Ring retainer	Brass	BS EN 12165 CW617N
Spring	Stainless steel	AISI 302

### Dimensions



Ref no	A	B	C	Kg
BA-300020	¼"	29	45	0.11
BA-300030	⅜"	29	45	0.09
BA-300040	½"	30	45	0.10
BA-300050	¾"	37	53	0.16
BA-300060	1"	44	59	0.23
BA-300070	1¼"	56	66	0.35
BA-300080	1½"	63	71	0.47
BA-300090	2"	78	80	0.71
BA-300100	2½"	104	93	1.26
BA-300110	3"	121	104	1.81
BA-300120	4"	156	119	3.10

## LV9666 TWIN DISC CHECK VALVE

### Technical Data

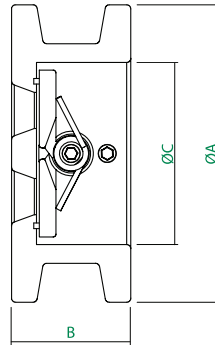
Designed to fit between PN16 flanges:	BS EN 1092-2
Face to face dimensions conform to:	BS EN558 series 50
Suitable for temperatures up to:	120°C



### Materials

Component	Material	Grade
Body	Cast iron	BS EN 1561 EN-JL1040
Disc	Stainless steel	AISI 304
Seat	EPDM	
Hinge pin	Stainless steel	AISI 420
Stop pin	Stainless steel	AISI 420
Pin retainer	Stainless steel	AISI 304
Spring	Stainless steel	AISI 304
Washer	PTFE	
Gasket	EPDM	

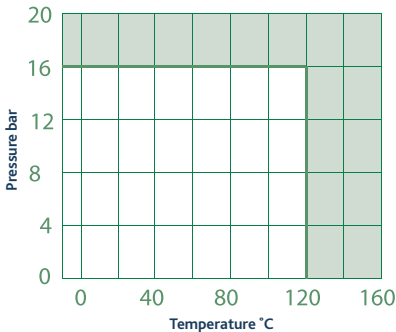
### Dimensions



Size	A	B	C	Kg
DN50	106	54	66	0.81
DN65	126	54	78	2.4
DN80	141	57	90	3.2
DN100	161	64	115	4.8
DN125	191	70	141	7.3
DN150	217	76	170	10
DN200	272	95	210	14.2
DN250	327	108	273	23.6
DN300	382	143	324	37.5
DN350	442	184	356	62
DN400	494	191	406	74
DN450	554	203	457	100
DN500	616	213	508	155
DN600	733	222	600	215

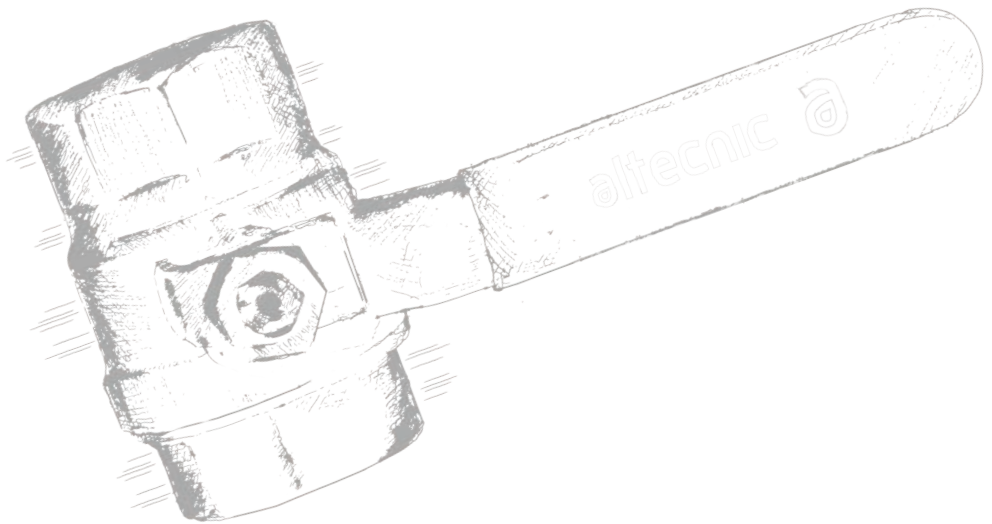
### Pressure - temperature rating

DN50 to DN600 PN16 from -10°C to 120°C



### Flow Direction

The valve must be installed in horizontal pipework or vertical pipework with flow in the upwards direction. The valves are uni-directional and the flow must be in the same direction as that indicated by the flow direction arrow on the body.



10

Ball Valves

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## Ball Valves

The Altecnic range of ball valves are available with compression BSP threaded ends and are the ideal isolation valve for use with any hydronic system.

Altecnic brass ball valves are available with either butterfly or lever operation with positive 90° operation and compatible with bi-directional flow.

Manufactured in hard chrome plate, the ball is designed for increases wear resistance.

Altecnic ball valves are compact design with PTFE body seats for reliable isolation and an anti-blow out stem for added security.

Our ball valves are designed for high flow rates with minimum pressure drops.

Available with compression ends, complying with BS EN 1252-2, for use with R250 (half hard) copper tube and either a red or blue lever for visual indication of hot or cold service.

Maximum full bore flow improves system efficiency and reduces wear and tear.



# INTABALL® LEVER BALL VALVES - BLUE HANDLE - THREADED FEMALE



## Technical Data

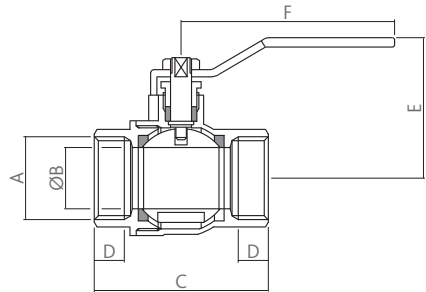
Medium:	Water
Conforms to:	CEN/TS 13547
Max. Temperature:	120°C
Max. Pressure:	Sizes ¼" — ½" 32 bar
	Sizes ¾" — 2" 25 bar
	Sizes 2½" — 4" 16 bar
PED directive classification Group 2 Liquids Sizes ¼" — 2" SEP, 2½" — 4" Cat I	
Anti blow-out stem:	
Connections:	female thread BSP (G)



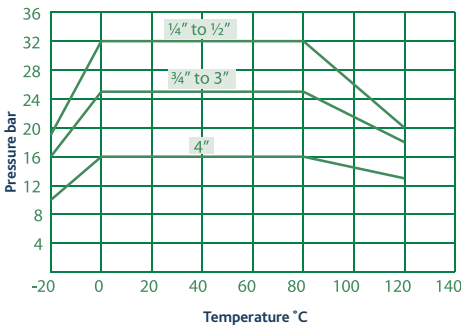
## Materials

Component	Material	Grade
Body	Brass - nickel plated	BS EN 12165 CW617N
End connection	Brass - nickel plated	BS EN 12165 CW617N
Ball seat	PTFE	
Ball	Brass - chrome plated	BS EN 12164 CW617N
Stem	Brass	BS EN 12164 CW617N
Gland packing	PTFE	

## Dimensions



## Pressure - temperature diagram



Ref no	A	B	C	D	E	F	Kg
AI-171B02	¼"	10	41.5	9.50	44	90	0.12
AI-171B03	⅜"	10	41.5	9.50	44	90	0.12
AI-171B04	½"	15	50.5	10.50	46.5	90	0.195
AI-171B05	¾"	20	61	12	50	90	0.285
AI-171B06	1"	25	71	13.5	62.5	115	0.485
AI-171B07	1¼"	32	83.5	15.5	72	130	0.80
AI-171B08	1½"	40	93	15.5	78	130	1.30
AI-171B09	2"	49	112	19	91.5	150	1.64
AI-171B10	2½"	60	138	26	116	203	3.06
AI-171B11	3"	74	161.5	27	132	280	4.80
AI-171B12	4"	94	181	28	150	280	7.80

# INTABALL® LEVER BALL VALVE - BLUE HANDLE



## Technical Data

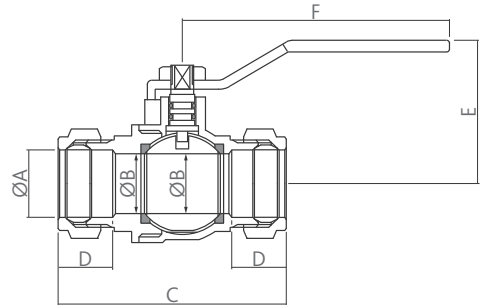
Medium:	Water
Conforms to:	CEN/TS 13547
Pressure / Temperature Rating:	BS EN 1254-2
Max. Temperature:	100°C
PED directive classification Group 2 Liquids SEP	
Anti blow-out stem:	
Connections:	compression ends



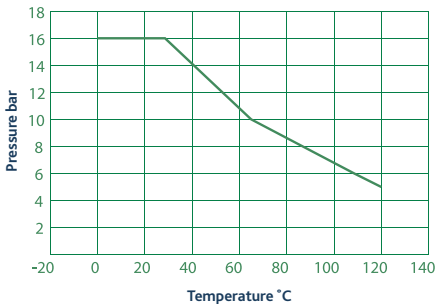
## Materials

Component	Material	Grade
Body	Brass - nickel plated	BS EN 12165 CW617N
End connection	Brass - nickel plated	BS EN 12165 CW617N
Ball seat	Virgin PTFE	
Ball	Brass - chrome plated	BS EN 12164 CW617N
Stem	Brass	BS EN 12164 CW617N
Gland O - ring	Nitrile rubber	
Compression nut	Brass	BS EN 12164 CW617N
Olive	Brass	BS EN 12449 CW508LM

## Dimensions



## Pressure - temperature diagram



Ref no	A	B	C	D	E	F	Kg
AI-373B15	Ø 15	15	68	17.5	43	90	0.21
AI-373B22	Ø 22	20	77.5	19	47	90	0.33
AI-373B28	Ø 28	25	91	21.5	61.5	115	0.54
AI-373B35	Ø 35	32	104	23.5	70.5	130	0.93
AI-373B42	Ø 42	40	116	25	77	130	1.29
AI-373B54	Ø 54	49	137	29.5	85	150	2.17

# INTABALL® LEVER BALL VALVE - RED HANDLE



## Technical Data

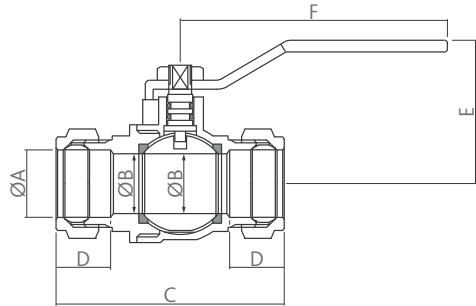
Medium:	Water
Conforms to:	CEN/TS 13547
Pressure / Temperature Rating:	BS EN 1254-2
Max. Temperature:	100°C
PED directive classification	Group 2 Liquids SEP
Anti blow-out stem:	
Connections:	compression ends



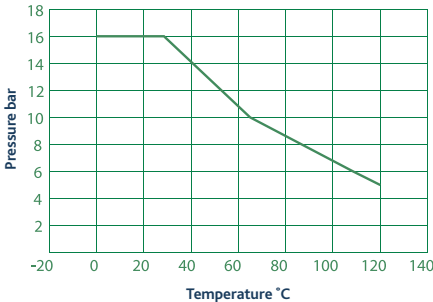
## Materials

Component	Material	Grade
Body	Brass - nickel plated	BS EN 12165 CW617N
End connection	Brass - nickel plated	BS EN 12165 CW617N
Ball seat	Virgin PTFE	
Ball	Brass - chrome plated	BS EN 12164 CW617N
Stem	Brass	BS EN 12164 CW617N
Gland O - ring	Nitrile rubber	
Compression nut	Brass	BS EN 12164 CW617N
Olive	Brass	BS EN 12449 CW508LM

## Dimensions



## Pressure - temperature diagram



Ref no	A	B	C	D	E	F	Kg
AI-373R15	Ø 15	15	68	17.5	43	90	0.21
AI-373R22	Ø 22	20	77.5	19	47	90	0.33
AI-373R28	Ø 28	25	91	21.5	61.5	115	0.54
AI-373R35	Ø 35	32	104	23.5	70.5	130	0.93
AI-373R42	Ø 42	40	116	25	77	130	1.29
AI-373R54	Ø 54	49	137	25.5	85	150	2.17



# INTABALL® LEVER BALL VALVE - RED HANDLE - THREADED FEMALE



## Technical Data

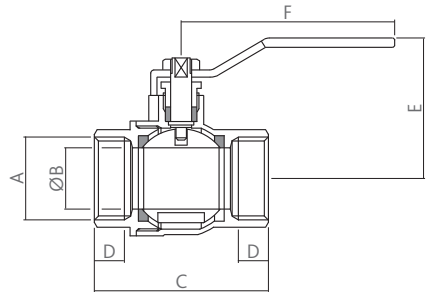
Medium:	Water	
Conforms to:	CEN/TS 13547	
Max. Temperature:	120°C	
Max. Pressure:	Sizes ¼" — ½"	32 bar
	Sizes ¾" — 2"	25 bar
	Sizes 2½" — 4"	16 bar
PED directive classification Group 2 Liquids Sizes ¼" — 2" SEP, 2½" — 4" Cat I		
Connections:	female thread BSP (G)	



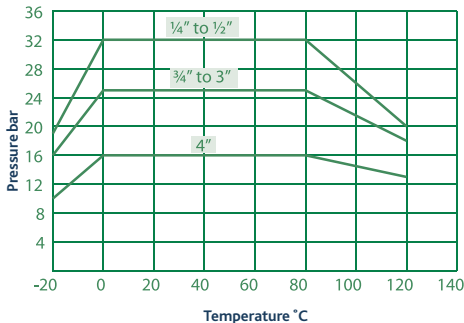
## Materials

Component	Material	Grade
Body	Brass - nickel plated	BS EN 12165 CW617N
End connection	Brass - nickel plated	BS EN 12165 CW617N
Ball seat	PTFE	
Ball	Brass - chrome plated	BS EN 12164 CW617N
Stem	Brass	BS EN 12164 CW614N
Gland packing	PTFE	

## Dimensions



## Pressure - temperature diagram



Ref no	A	B	C	D	E	F	Kg
AI-171R02	¼"	10	41.5	9.50	44	90	0.120
AI-171R03	⅜"	10	41.5	9.50	44	90	0.120
AI-171R04	½"	15	50.5	10.50	46.5	90	0.195
AI-171R05	¾"	20	61	12.50	50	90	0.285
AI-171R06	1"	25	71	13.5	62.5	115	0.485
AI-171R07	1½"	32	83.5	15.5	72	130	0.800
AI-171R08	2"	40	93	15.5	78	130	1.300
AI-171R09	2½"	50	112	19	91.5	150	1.640
AI-171R10	3"	60	138	26	116	203	3.060
AI-171R11	4"	74	161.5	27	132	280	4.800
AI-171R12	6"	94	181	28	150	280	7.800

# INTABALL® BALL VALVE - BLUE BUTTERFLY HANDLE



## Technical Data

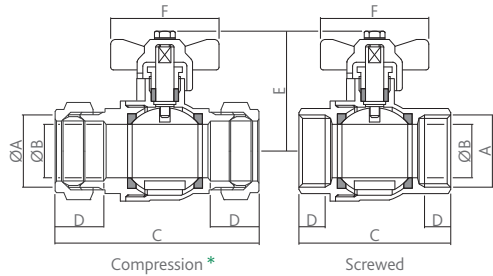
Medium:	Water
Conforms to:	CEN/TS 13547
Compression Press. / Temp. Rating:	BS EN 1254-2
Max. Temperature:	100°C
Screwed Max. Pressure: - Size 1/2"	32 bar
- Size 3/4"	25 bar
PED directive classification Group 2 Liquids SEP	
Anti blow-out stem	
Connections:	compression ends female threads BSP (G)



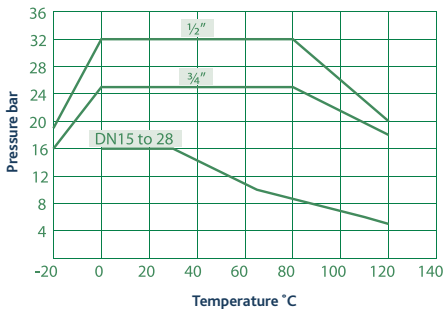
## Materials

Component	Material	Grade
Body	Brass - nickel plated	BS EN 12165 CW617N
End connection	Brass - nickel plated	BS EN 12165 CW617N
Ball seat	Virgin PTFE	
Ball	Brass - chrome plated	BS EN 12164 CW617N
Stem	Brass	BS EN 12164 CW614N
Stem retaining ring	Brass	BS EN 12164 CW617N
Gland 'O' packing	PTFE	
Compression nut	Brass	BS EN 12164 CW617N
Olive	Brass	BS EN 12449 CW508LM

## Dimensions



## Pressure - temperature diagram



Ref no	A	B	C	D	E	F	Kg
*AI-373115	Ø 15	15	68	17.5	37.5	50	0.19
*AI-373222	Ø 22	20	77.5	19	41	50	0.31
*AI-373228	Ø 28	25	91	21.5	53	60	0.55
AI-171BB4	1/2"	15	50.5	10.5	38	50	0.17
AI-171BB5	3/4"	20	61	12	41	50	0.25

# INTABALL® BALL VALVE - RED BUTTERFLY HANDLE



## Technical Data

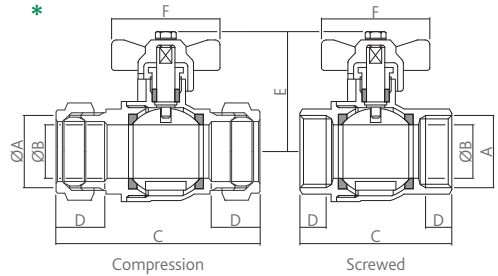
Medium:	Water
Conforms to:	CEN/TS 13547
Compression Press. / Temp. Rating:	BS EN 1254-2
Max. Temperature:	100°C
Screwed Max. Pressure:	32 bar
- Size 1/2"	
- Size 3/4"	25 bar
PED directive classification Group 2 Liquids SEP	
Anti blow-out stem	
Connections:	compression ends female threads BSP (G)



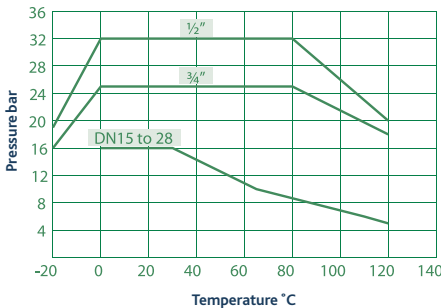
## Materials

Component	Material	Grade
Body	Brass - nickel plated	BS EN 12165 CW617N
End connection	Brass - nickel plated	BS EN 12165 CW617N
Ball seat	Virgin PTFE	
Ball	Brass - chrome plated	BS EN 12164 CW617N
Stem	Brass	BS EN 12164 CW614N
Stem retaining ring	Brass	BS EN 12164 CW617N
Gland 'O' packing	PTFE	
Compression nut	Brass	BS EN 12164 CW617N
Olive	Brass	BS EN 12449 CW508LM

## Dimensions



## Pressure - temperature diagram



Ref no	A	B	C	D	E	F	Kg
*AI-373RB5	∅ 15	15	68	17.5	37.5	50	0.19
*AI-373RB2	∅ 22	20	77.5	19	41	50	0.31
*AI-373RB8	∅ 28	25	91	21.5	53	60	0.55
AI-171RB4	1/2"	15	50.5	10.5	38	50	0.17
AI-171RB5	3/4"	20	61	12.5	41	50	0.25

## EN 331 APPROVED LEVER OPERATED BALL VALVE - FOR GAS - THREADED



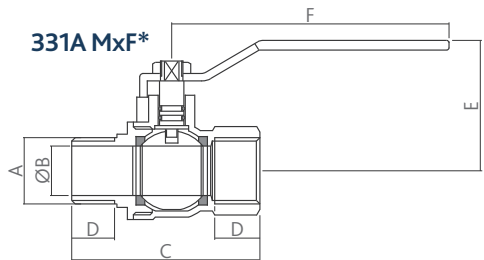
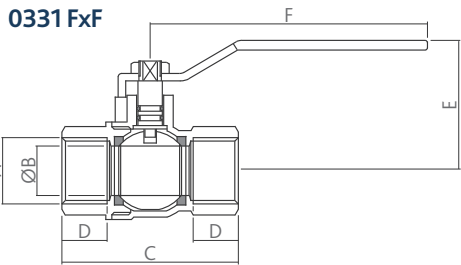
### Technical Data

Approved to:	BS EN 331:2015
Max. Temperature range:	-20 — 60°C
Max. Operating Pressure:	5 bar
PED directive classification	Group 1 Gas SEP.
Approved for gas families	1, 2 and 3
Intaball gas range of full bore valves has been designed and built to meet the requirements of BS EN 331:2015	
Connections:	m/f thread BSP (G)

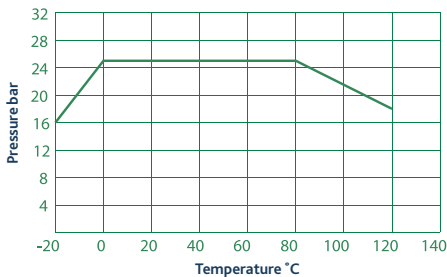
### Materials

Component	Material	Grade
Body	Brass - nickel plated	BS EN 12165 CW617N
End connection	Brass - nickel plated	BS EN 12165 CW617N
Ball seat	PTFE	
Ball	Brass - chrome plated	BS EN 12165 CW617N
Stem	Brass	BS EN 12164 CW617N
Gland O - ring	Viton rubber	

### Dimensions



### Pressure - temperature diagram



Ref no	A	B	C	D	E	F	Kg
AI-033103	3/8"	12	48	12	42.5	90	0.15
AI-033104	1/2"	15	62	17	44	90	0.23
AI-033105	3/4"	20	70	18.5	52.5	110	0.41
AI-033106	1"	25	82	21	57	110	0.58
AI-033107	1 1/4"	32	98	22	66	115	0.99
AI-033108	1 1/2"	40	109	22	73.5	115	1.43
AI-033109	2"	47	125	26	84	150	2.10
*AI-331A05	3/4"	20	79	18.5	57	115	0.41
*AI-331A06	1"	25	91.5	21	69	115	0.58

## EN 331 APPROVED INTABALL® LEVER BALL VALVE FOR GAS - COMPRESSION



### Technical Data

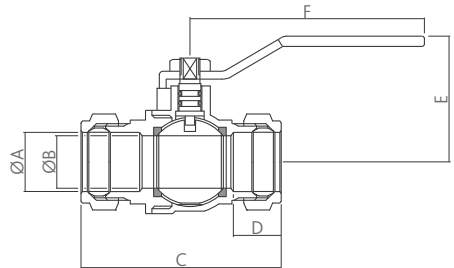
Approved to:	BS EN 331:2015
Pressure / Temperature Rating:	BS EN 1254-2
Max. Temperature range:	-20 — 60°C
PED directive classification Group 1 Gas	
SEP Approved for gas families 1, 2 and 3	
Intaball gas range of full bore valves has been designed and built to meet the requirements of BS EN 331:2015	
Connections:	compression ends



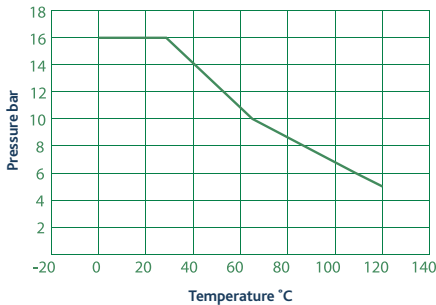
### Materials

Component	Material	Grade
Body	Brass - nickel plated	BS EN 12165 CW617N
End connection	Brass - nickel plated	BS EN 12165 CW617N
Ball seat	PTFE	
Ball	Brass - chrome plated	BS EN 12165 CW617N
Stem	Brass	BS EN 12164 CW617N
Gland O - ring	Viton rubber	
Compression nut	Brass	BS EN 12164 CW617N
Olive	Brass	BS EN 12449 CW508LM

### Dimensions



### Pressure - temperature diagram



Ref no	Size	A	B*	C	D	E	F	Kg
AI-331115	Ø 15	15	15	68	17.5	43	90	0.21
AI-331122	Ø 22	22	20	77.5	19	47	90	0.33
AI-331128	Ø 28	28	25	91	21.5	61.5	115	0.54
AI-331135	Ø 35	35	32	104	23.5	70.5	130	0.93
AI-331142	Ø 42	42	40	116	25	77	130	1.29
AI-331154	Ø 54	54	50	137	29.5	85	150	2.17

## 'Y' PATTERN STRAINERS - THREADED

### Technical Data

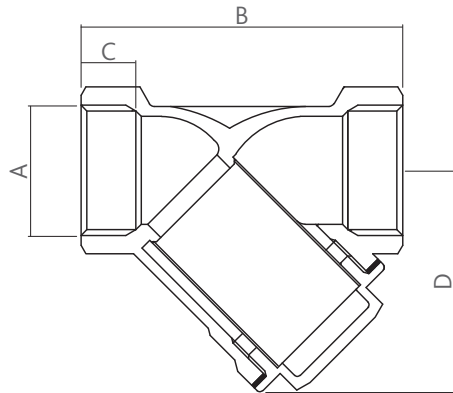
Threaded ends complying with:	BS EN ISO 228-1
Max. pressure:	Sizes ½" — 2" 10 bar
	Sizes 2½" — 4" 10 bar
Max. temperature:	110°C
Strainer mesh size:	½" — 1" 0.40 mm = 400 µm
	1¼" and 1½" 0.47 mm = 470 µm
	2" — 4" 0.53 mm = 530 µm
Connections:	female thread BSP (G)



### Materials

Component	Material	Grade	
Body	½" — 1"	Brass	BS EN 12165 CW617N
	1¼" — 4"	Bronze	1982 CB499K
Screen	Stainless steel	AISI 304	
Gasket	PTFE		
Cap	Brass	BS EN 12165 CW617N	

### Dimensions



Ref no	A	B	C	D	Kg
AI-500015	½"	54.5	12	38	0.13
AI-500022	¾"	59	13	42	0.18
AI-500025	1"	71	14	51	0.30
AI-500031	1¼"	98.5	17	73	0.70
AI-500038	1½"	109	17	80	0.86
AI-500050	2"	131	19	98	1.62
AI-500065	2½"	151	21	114	2.20
AI-500075	3"	172	21	130	3.44
AI-500100	4"	219	24	170	7.00

## 595 'Y' PATTERN STRAINERS - COMPRESSION



### Technical Data

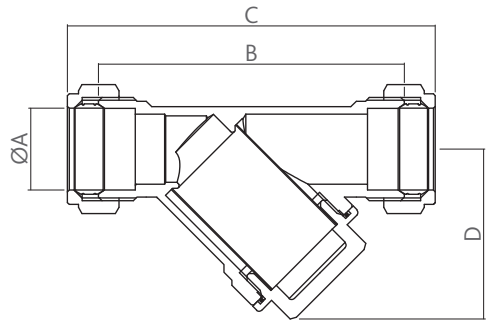
Compression ends complying with:	BS EN 1254-2
Max. temperature:	100°C
Pressure - Temperature rating:	6 bar from 2 to 30°C
	6.9 bar at 100°C
Strainer mesh size:	15 mm 0.1 mm = 100 µm
	22 and 28 mm 0.4 mm = 400 µm
* Use with R250 (half hard) Copper tube	
Connections:	compression ends



### Materials

Component	Material	Grade
Body	Brass DZR	BS EN 12165 CW602N
Screen	Stainless steel	AISI 304
O - Rings	Nitrile rubber	
Cap	Brass	BS EN 12165 CW617N
Olive	Brass	EN 12449 CW508LM
Compression Nut	Brass	BS EN 12165 CW617N

### Dimensions



Ref no	A	B	C	D	Kg
AI-595015	Ø 15	63.5	81	38	0.19
AI-595022	Ø 22	83	100	46	0.30
AI-595028	Ø 28	97	115	57	0.51

# CALFLOW PLUS® DOMESTIC WATER FLOW REGULATOR



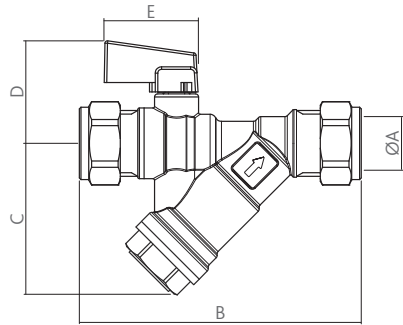
## Technical Data

Maximum static pressure:	15 bar
Maximum inlet pressure:	2 bar ( Flow regulator)
Maximum working temperature:	100°C
Start up differential pressure:	15 kPa
Differential pressure range:	15 — 200 kPa
Y-strainer mesh size:	400 μ — 0.4 mm
Connections:	compression ends

## Materials

Component	Material	Grade
Body	Brass	BS EN 1254-2
Cartridge	High resistance polymer	
Screen	316 Stainless Steel	
Seals	PTFE	
Ball	Chrome plated	
O-ring	Nitrile rubber	

## Dimensions



## CALFLOW PLUS®

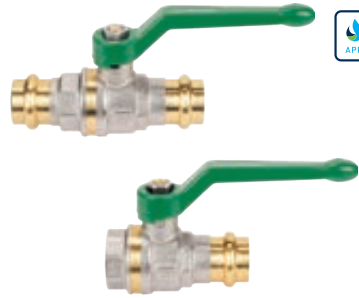
Ref no	Size	Flow rate scale	Connections	Body
AI-81121504	15 mm	4 l/min	Compression	Brass
AI-81121506	15 mm	6 l/min	Compression	Brass
AI-81121508	15 mm	8 l/min	Compression	Brass
AI-81121510	15 mm	10 l/min	Compression	Brass
AI-81121512	15 mm	12 l/min	Compression	Brass
AI-81121515	15 mm	15 l/min	Compression	Brass
AI-81121518	15 mm	18 l/min	Compression	Brass
AI-811222	22 mm	No flow regulator	Compression	Brass
AI-81122204	22 mm	4 l/min	Compression	Brass
AI-81122208	22 mm	8 l/min	Compression	Brass
AI-81122210	22 mm	10 l/min	Compression	Brass
AI-81122212	22 mm	12 l/min	Compression	Brass
AI-81122215	22 mm	15 l/min	Compression	Brass
AI-81122218	22 mm	18 l/min	Compression	Brass

## CALFLOW PLUS® - body only

Ref no	A	B	C	D	E	Kg
AI-811215	Ø 15	90	47	33	30	0.21
AI-811222	Ø 22	97	52.5	39.5	30	0.30



## INTABALL® PRESS FIT BALL VALVES



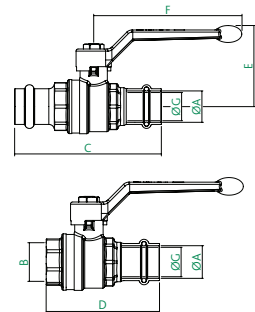
### Technical Data

In accordance with	BS EN 13547
Threaded connection to	BS EN 10226
PED directive classification	Group 2 Liquids SEP
Full bore design	
Anti blow out stem	
Lever opened through 90°, with bi-directional resistance	
PTFE body seats for reliable isolation	
The valves are designed for high flow rates with minimum pressure drops	
Suitable for use with R250 (half hard) copper tube in sizes DN15 to DN35 and R290 (hard) copper tube in sizes DN42 and DN54	

### Materials

Component	Material	Grade
Body	Brass	BS EN 12165 CW617N
End connection	Brass	BS EN 12165 CW617N
Ball seat	PTFE	
Ball	Brass-chrome plated	BS EN 12164 CW617N
Stem	Brass	BS EN 12164 CW617N
Stem seal	PTFE	
Stem 'O' ring	HNBR rubber	
Lever	Aluminium	
Press end 'O' ring	EPDM	

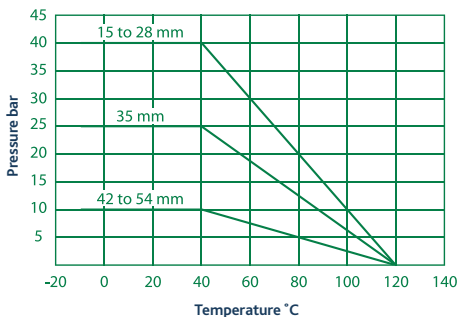
### Dimensions



Connection	A	B	C	D	E	F	G*
15 X 1/2"	15	Rc 1/2"	93.5	70	41	85	15
22 X 3/4"	22	Rc 3/4"	104	77	57	105	20
28 X 1"	28	Rc1"	110.5	86.5	61	105	25
35 X 1 1/4"	35	Rc1 1/4"	123.5	99	70	130	32
42 X 42	42		158.5		81	130	40
54 X 54	54		179		97	165	50

\* ØG is the minimum port diameter through the ball and exceeds the full bore diameter circle specified in BS EN 13547.

### Pressure - temperature diagram



Connection Sizes	Ref no	Connection Sizes	Ref no
15 X 15	124-8001	15 X 1/2"	124-8008
22 X 22	124-8003	22 X 3/4"	124-8010
28 X 28	124-8004	28 X 1"	124-8011
35 X 35	124-8005	35 X 1 1/4"	124-8012
42 X 42	124-8006		
54 X 54	124-8007		

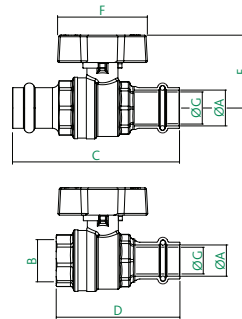
# INTABALL® PRESS FIT LEVER BALL VALVE WITH BUTTERFLY LEVER



## Technical Data

In accordance with	BS EN 13547
Threaded connection to	BS EN 10226
PED directive classification	Group 2 Liquids SEP
Full bore design	
Anti blow out stem	
Compact design with butterfly lever	
Lever operated through 90°, with bi-directional flow	
Hard chrome plated ball for increased wear resistance	
PTFE body seats for reliable isolation	
The valves are designed for high flow rates with minimum pressure drops	
Suitable for use with R250 (half hard) copper tube	

## Dimensions



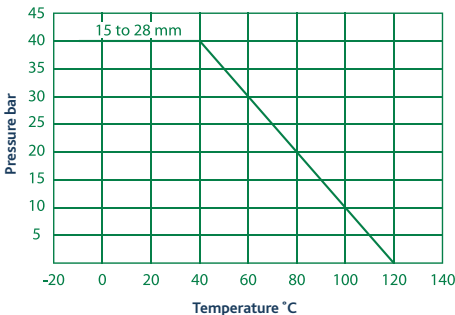
## Materials

Component	Material	Grade
Body	Brass	BS EN 12165 CW617N
End connection	Brass	BS EN 12165 CW617N
Ball seat	PTFE	
Ball	Brass-chrome plated	BS EN 12164 CW617N
Stem	Brass	BS EN 12164 CW617N
Stem seal	PTFE	
Stem 'O' ring	HNBR rubber	
Lever	Aluminium	
Press end 'O' ring	EPDM	

Connection	A	B	C	D	E	F	G*
15 X ½"	15	Rc ½"	93.5	70	38	47	15
22 X ¾"	22	Rc ¾"	104	77	46	56	20
28 X 1"	28	Rc 1"	110.5	86.5	46	56	15

\* ØG is the minimum port diameter through the ball and exceeds the full bore diameter circle specified in BS EN 13547.

## Pressure - temperature diagram



Connection Sizes	Ref no	Connection Sizes	Ref no
15 X 15	124-8013	15 X ½"	124-8017
22 X 22	124-8015	22 X ¾"	124-8019
28 X 28	124-8016	28 X 1"	124-8020

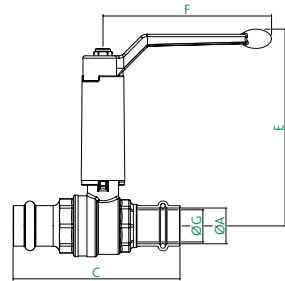
## INTABALL® PRESS FIT LEVER BALL VALVE WITH STEM EXTENSION

### Technical Data

In accordance with:	BS EN 13547
PED directive classification	Group 2 Liquids SEP
Full bore design:	
Anti blow out stem:	
Lever operated through 90°, with bi-directional flow	
Hard chrome plated ball for increased wear resistance	
PTFE body seats for reliable isolation	
The valves are designed for high flow rates with minimum pressure drops	
Suitable for use with R250 (half hard) copper tube	



### Dimensions



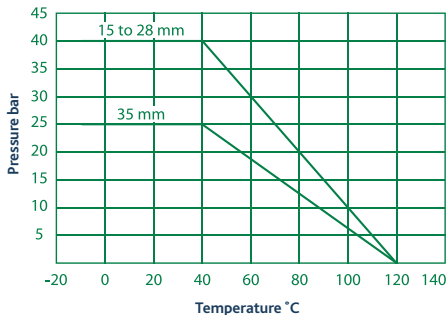
### Materials

Component	Material	Grade
Body	Brass	BS EN 12165 CW617N
End connection	Brass	BS EN 12165 CW617N
Ball seat	PTFE	
Ball	Brass-chrome plated	BS EN 12164 CW617N
Stem	Brass	BS EN 12164 CW617N
Stem seal	PTFE	
Stem 'O' ring	HNBR rubber	
Outer extension	Brass	BS EN 12164 CW617N
Extension stem	Brass	BS EN 12164 CW617N
Lever	Aluminium	
Press end 'O' ring	EPDM	

Connection	A	C	D	E	F	G*
15 X 15	15	93.5	70	41	85	15
22 X 22	22	104	77	57	105	20
28 X 28	28	110.5	86.5	61	105	25
35 X 35	35	123.5	99	70	130	32

\* ØG is the minimum port diameter through the ball and exceeds the full bore diameter circle specified in BS EN 13547.

### Pressure - temperature diagram



Connection Sizes	Ref no
15 X 15	124-8021
22 X 22	124-8023
28 X 28	124-8024
35 X 35	124-8025

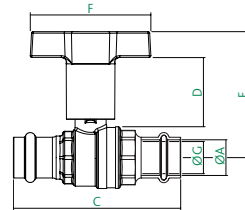
## INTABALL® PRESS FIT LEVER BALL VALVE WITH NYLON STEM EXTENSION

### Technical Data

In accordance with:	BS EN 13547
PED directive classification	Group 2 Liquids SEP
Full bore design:	
Anti blow out stem:	
The extension with integral Tee handle is condensation proof with high thermal insulation	
Hard chrome plated ball for increased wear resistance	
PTFE body seats for reliable isolation	
Supplied with 3 coloured caps for service identification	
Suitable for use with R250 (half hard) copper tube	
<b>Colour Coded Caps for the Extension</b>	
The service can be identified by fitting the appropriate cap, red for hot, blue for cold or green other services.	



### Dimensions



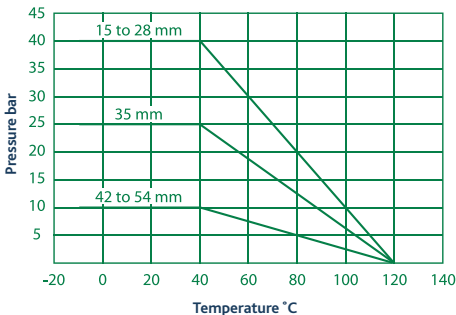
### Materials

Component	Material	Grade
Body	Brass	BS EN 12165 CW617N
End connection	Brass	BS EN 12165 CW617N
Ball seat	PTFE	
Ball	Brass-chrome plated	BS EN 12164 CW617N
Stem	Brass	BS EN 12164 CW617N
Stem seal	PTFE	
Stem 'O' ring	HNBR rubber	
Extension stem	Nylon	Polyamide PA6
Cap	Nylon	Polyamide PA6
Press end 'O' ring	EPDM	

Connection	A	C	D	E	F	G*
15 X 15	15	93.5	38.8	70.2	66.6	15
22 X 22	22	104	43.2	78.3	75	20
28 X 28	28	110.5	43.2	82.6	75	25
35 X 35	35	123.5	63.2	110	120	32
42 X 42	42	158.5	63.2	115.5	120	40
54 X 54	54	179	63.2	123	120	50

\* ØG is the minimum port diameter through the ball and exceeds the full bore diameter circle specified in BS EN 13547.

### Pressure - temperature diagram



Connection Sizes	Ref no
15 X 15	124-8026
22 X 22	124-8028
28 X 28	124-8029
35 X 35	124-8030
42 X 42	124-8031
54 X 54	124-8032

## INTABALL® COMBI BALL VALVE

### Technical Data

Max. pressure Cu x Cu:	16 bar
Max. temperature:	120°C
Strainer mesh size:	400 µ - 0.4mm
Drain port thread:	G¼
Connections:	compression ends female thread BSP (G)

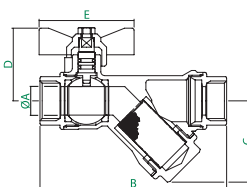


### Materials

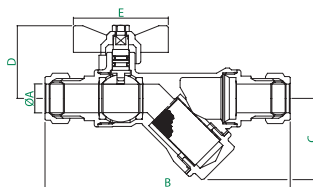
Component	Material	Grade
Body	DZR copper alloy	BS EN 12165 CW602N
End connections	DZR copper alloy	BS EN 12165 CW602N
Ball seat	PTFE	
Ball	Brass - chrome plated	BS EN 12165 CW617N
Stem	Brass	BS EN 12165 CW614N
Stem seal	Nitrile	
Strainer screen	Stainless steel	AISI 304

Ref no	Size	Connections	Drainport	Box Qty
Al-397004	½"	F x F BSP	No	20
Al-397104	¾"	F x F BSP	No	20
Al-397115	15mm	Compression	No	20
Al-397122	22mm	Compression	No	20
Al-397204	1"	F x F BSP	No	20
Al-401005	½" x ¾"	F BSP x swivel	No	20
Al-395004	½"	F x F BSP	Yes	20
Al-395104	¾"	F x F BSP	Yes	20
Al-395115	15mm	Compression	Yes	20

### Dimensions



Ref no	A*	B	C	D	E	Kg
Al-397004	15	98	43	39	50	0.35
Al-397104	15	98	43	39	50	0.35
Al-397204	20	125	51	43	50	0.67
Al-397004	15	98	43	39	50	0.35
Al-397104	15	98	43	39	50	0.35
Al-401005	15	112	43	39	50	0.40



Ref no	A*	B	C	D	E	Kg
Al-397115	15	129	43	39	50	0.40
Al-397104	20	148	51	43	50	0.69
Al-397204	15	129	43	39	50	0.40

\* ½" & ¾" and 15 & 22 exceeds the full bore and the 1" exceeds the reduced bore diameter circle specified in CEN/13547.

## 124-600 FILTER BALL VALVE

### Technical Data

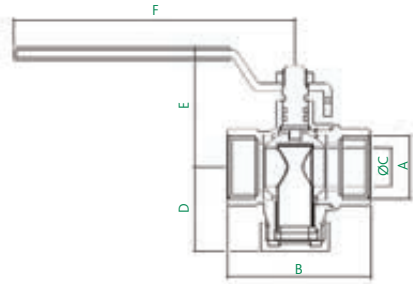
Max. pressure:	½" to 1" 30 bar 1¼" to 2" 20 bar
Max temperature:	140°C
Working temperature range:	-20 to 100°C
Strainer mesh size:	500µ — 0.5mm
Connections:	female threaded BSP (G)



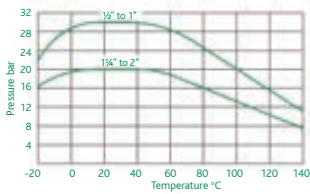
### Materials

Component	Material	Grade
Body	Brass - chrome plated	BS EN 12165 CW617N
End connections	Brass - chrome plated	BS EN 12165 CW617N
Ball seat	PTFE	
Ball	Brass - chrome plated	BS EN 12165 CW617N
Stem	Brass	BS EN 12164 CW614N
Stem Seals	NBR and FKM	
Filter	Stainless steel & nylon	AISI 304
Cap	Brass	BS EN 12164 CW614N
Cap seal	NBR	
Lever	Steel - zinc plated, plastic cover	

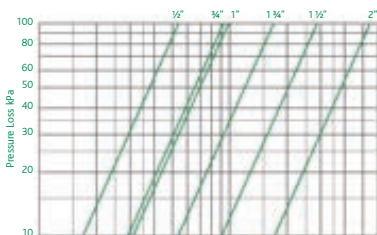
### Dimensions



Pressure - Temperature Diagram



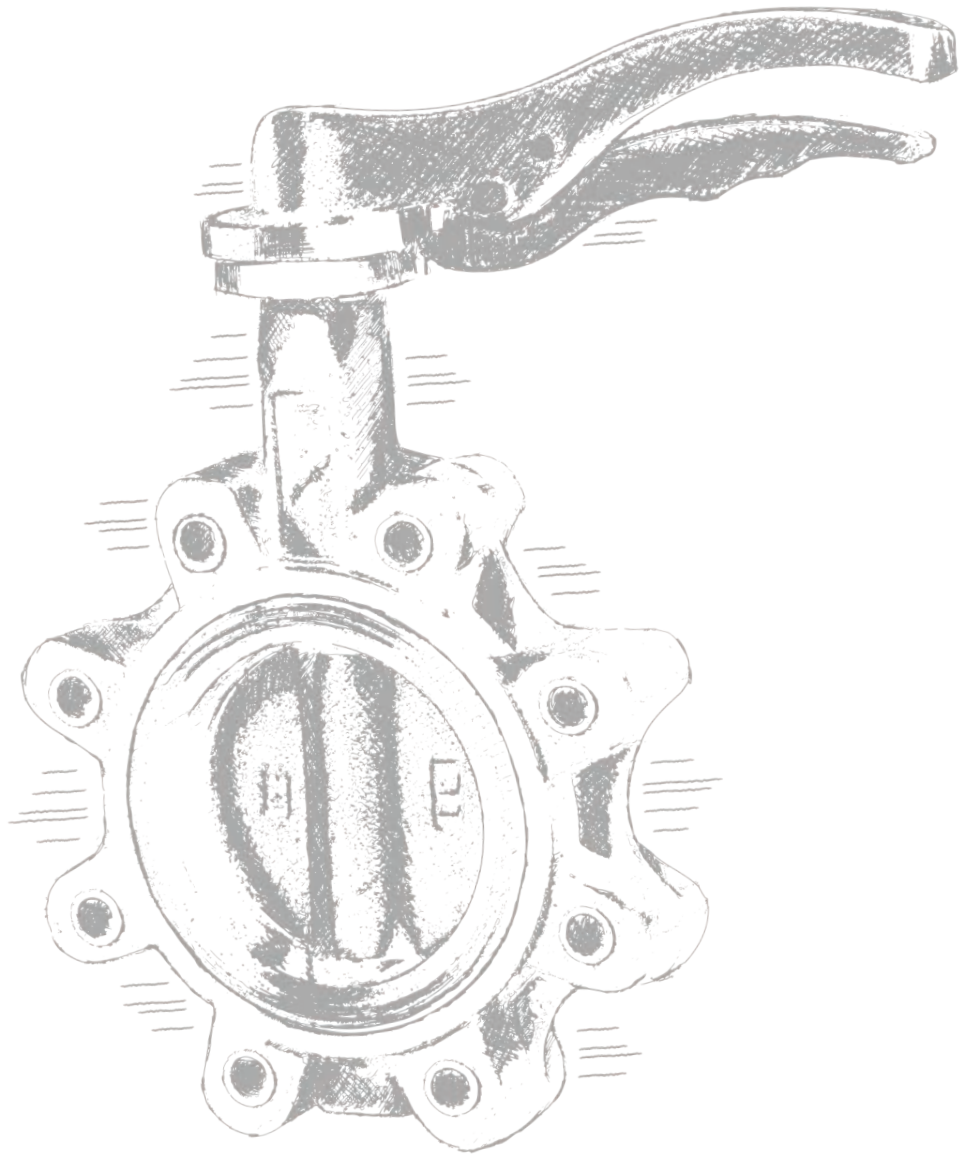
Pressure Loss Diagram



Prod Code	A	B	C*	D	E	F
124-6003 CST	G ½	50.7	12	31	44	100
124-6004 CST	G ¾	61.3	16	35	48	100
124-6005 CST	G 1	70	20	39	51	100
124-6006 CST	G 1¼	85	28	52	74	158
124-6007 CST	G 1½	98	36	58	80	158
124-6008 CST	G 2	117	46	69	89	158

\* ½" complies with the full bore and the other sizes exceeds the reduced bore diameter circle specified in BS EN 13547.

Size	½"	¾"	1"	1¼"	1½"	2"
Kv value	3.22	5.58	5.97	10.12	17.14	32.3



11

## Butterfly Valves

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# Butterfly Valves

The Altecnic range of butterfly valves are suitable for a wide variety of applications. In particular, they are suitable for a wide range of HVAC applications on both heating and chilled water systems.

The valves have stainless steel discs and operating shafts offering excellent corrosion resistance. The EPDM body liner and seals are suitable for temperatures up to 120°C.

The Altecnic range of butterfly valves are also WRAS approved products for use on potable services.

The valves can be used to regulate the flow with good control characteristics.



## LV9911 WAFER BUTTERFLY VALVE

### Technical Data

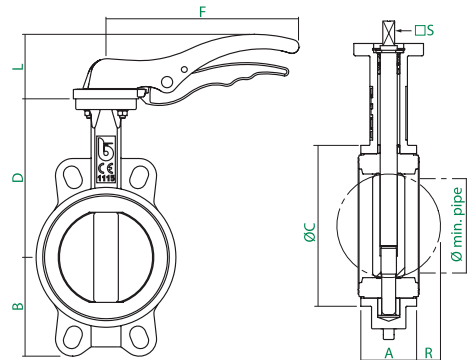
In accordance with:	BS EN 593:2009
Max. temperature:	120°C
Mounting flange to:	BS EN ISO 5211
Locking lever available for size up to:	DN250
Manual gear operator available for all sizes	
Connections:	flanged PN16 or PN10



### Materials

Component	Material
Body	Ductile iron
Disc	Stainless steel
Shafts	Stainless steel
Body liner	EPDM
Bush	PTFE
Circlip	Steel
Seals	Viton
Lever	Aluminium Up to DN150 Ductile iron DN200 to DN300

### Dimensions



### Test pressures - hydrostatic

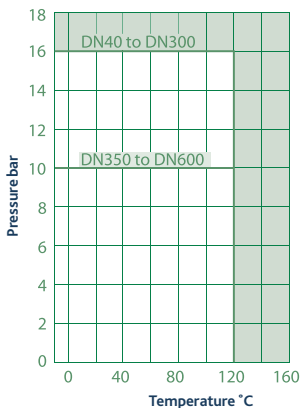
PN16 Shell = 24 bar Seat = 17.6 bar

PN10 Shell = 15 bar Seat = 11 bar

### Pressure - temperature rating

DN40 to DN300 PN16 from -10°C to 120°C

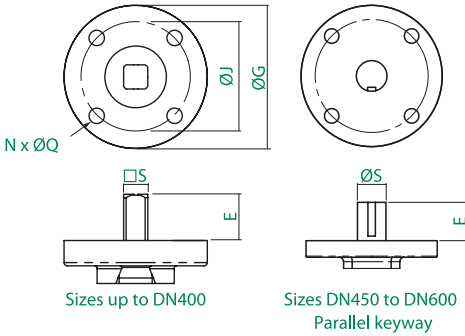
DN350 to DN600 PN10 from -10°C to 120°C



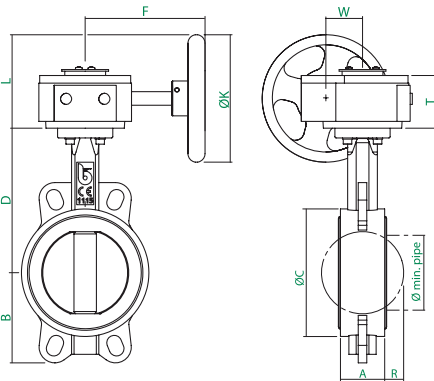
Size	A	B	C	D	F	L	R	S	Ø mm pipe	Mounting flange
DN40	33	63	82	116	170	50	5	9	27	F05
DN50	43	62	89	126	170	50	5	9	31	F05
DN65	46	69	102	136	170	50	9	9	45	F05
DN80	46	90	118	150	206	69	17	11	65	F05
DN100	52	106	150	170	206	69	26	11	90	F05
DN125	56	119	174	180	285	90	34	14	110	F07
DN150	56	131	205	200	285	90	50	14	146	F07
DN200	60	166	260	230	400	72	71	17	194	F10
DN250	68	202	318	266	530	72	91	17	241	F12

**Dimensions**

**BS EN ISO 5211 Flange and square details**



Size	ISO 5211	G	J	N	Q	S	E
DN40	F05	65	50	4	7	9	21
DN50	F05	65	50	4	7	9	21
DN65	F05	65	50	4	7	9	21
DN80	F05	65	50	4	7	11	21
DN100	F05	65	50	4	7	11	21
DN125	F07	90	70	4	9	14	27
DN150	F07	90	70	4	9	14	27
DN200	F10	125	102	4	11	17	27
DN250	F12	150	125	4	13	17	27
DN300	F12	150	125	4	13	27	27
DN350	F12	150	125	4	13	27	27
DN400	F12	150	125	4	13	27	27
DN450	F14	175	140	4	18	38	51
DN500	F14	175	140	4	18	41.2	64
DN600	F16	210	165	4	22	70.2	70



Size	A	B	C	D	F	K	L	R	T	W	Ø mm pipe	Mounting flange
DN40	33	63	82	116	170	150	102.5	5	65	45	27	F05
DN50	43	62	89	126	170	150	102.5	5	65	45	31	F05
DN65	46	69	102	136	170	150	102.5	9	65	45	45	F05
DN80	46	90	118	150	170	150	102.5	17	65	45	65	F05
DN100	52	106	150	170	170	150	102.5	26	65	45	90	F05
DN125	56	119	174	180	170	150	102.5	34	65	45	110	F07
DN150	56	131	205	200	170	150	102.5	50	65	45	146	F07
DN200	60	166	260	230	235	300	190	71	78	63	194	F10
DN250	68	202	318	266	226	300	190	91	80	81	241	F12
DN300	78	235	376	292	226	300	190	112	80	81	291	F12
DN350	78	257	406	335	226	300	190	128	80	81	324	F12
DN400	102	292	471	360	226	300	190	144	80	81	379	F12
DN450	114	318	539	422	216	285	183	163	80	80	428	F14
DN500	127	355	594	480	256	285	311	182	125	168	475	F14
DN600	154	444	695	562	285	385	386	219	136	293	573	F16



# LV9912 FULLY LUGGED BUTTERFLY VALVE

## Technical Data

In accordance with:	BS EN 593:2009
Fully threaded holes in the connection flange lugs	
Mounting flange to:	BS EN ISO 5211
Locking lever available for size up to:	DN250
Manual gear operator available for all sizes	
Complies with:	97/23CE (PED) Directive CE1115
Connections:	flanged PN16 or PN10



## Materials

Component	Material
Body	Ductile iron
Disc	Stainless steel
Shafts	Stainless steel
Body liner	EPDM
Bush	PTFE
Circlip	Steel
Seals	Viton
Lever	Aluminium Up to DN150 Ductile iron DN200 to DN300

## Test pressures - hydrostatic

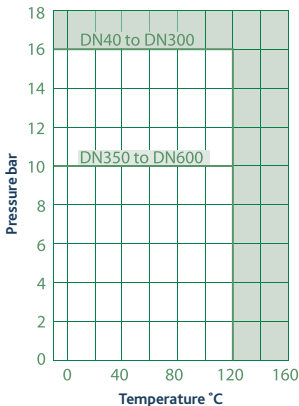
PN16 Shell = 24 bar Seat = 17.6 bar

PN10 Shell = 15 bar Seat = 11 bar

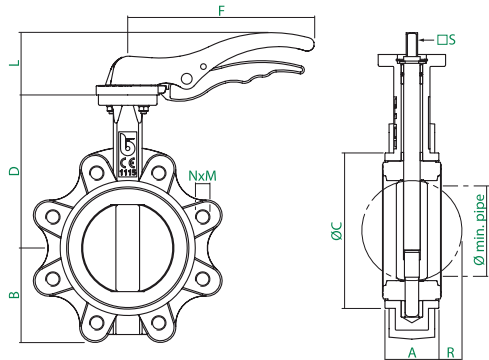
## Pressure - temperature rating

DN40 to DN300 PN16 from -10°C to 120°C

DN350 to DN600 PN10 from -10°C to 120°C



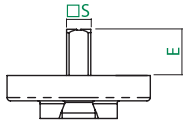
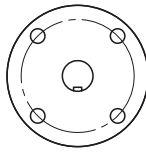
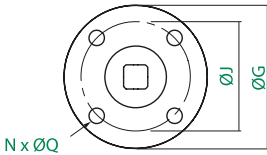
## Dimensions



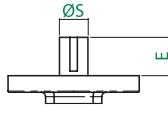
Size	A	B	C	D	F	L	R	S	NxM	Ø mm pipe	Mounting flange
DN40	33	63	82	116	170	50	5	9	4 x M16	27	F05
DN50	43	62	89	126	170	50	5	9	4 x M16	31	F05
DN65	46	69	102	136	170	50	9	9	4 x M16	45	F05
DN80	46	90	118	150	206	69	17	11	8 x M16	65	F05
DN100	52	106	150	170	206	69	26	11	8 x M16	90	F05
DN125	56	119	174	180	285	90	34	14	8 x M16	110	F07
DN150	56	131	205	200	285	90	50	14	8 x M20	146	F07
DN200	60	166	260	230	400	72	71	17	12 x M20	194	F10
DN250	68	202	318	266	530	72	91	17	12 x M24	241	F12

**Dimensions**

**BS EN ISO 5211 Flange and square details**

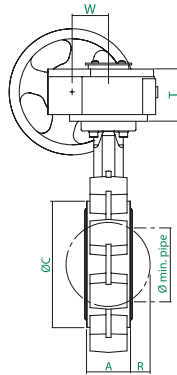
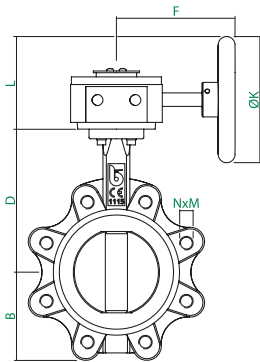


Sizes up to DN400



Sizes DN450 to DN600  
Parallel keyway

Size	ISO 5211	G	J	N	Q	S	E
DN40	F05	65	50	4	7	9	21
DN50	F05	65	50	4	7	9	21
DN65	F05	65	50	4	7	9	21
DN80	F05	65	50	4	7	11	21
DN100	F05	65	50	4	7	11	21
DN125	F07	90	70	4	9	14	27
DN150	F07	90	70	4	9	14	27
DN200	F10	125	102	4	11	17	27
DN250	F12	150	125	4	13	17	27
DN300	F12	150	125	4	13	27	27
DN350	F12	150	125	4	13	27	27
DN400	F12	150	125	4	13	27	27
DN450	F14	175	140	4	18	38	51
DN500	F14	175	140	4	18	41.2	64
DN600	F16	210	165	4	22	70.2	70



Size	A	B	C	D	F	K	L	R	T	W	N x M	Ø mm pipe	Mounting flange
DN40	33	63	82	116	170	150	102.5	5	65	45	4 x M16	27	F05
DN50	43	62	89	126	170	150	102.5	5	65	45	4 x M16	31	F05
DN65	46	69	102	136	170	150	102.5	9	65	45	4 x M16	45	F05
DN80	46	90	118	150	170	150	102.5	17	65	45	8 x M16	65	F05
DN100	52	106	150	170	170	150	102.5	26	65	45	8 x M16	90	F05
DN125	56	119	174	180	170	150	102.5	34	65	45	8 x M16	110	F07
DN150	56	131	205	200	170	150	102.5	50	65	45	8 x M20	146	F07
DN200	60	166	260	230	235	300	190	71	78	63	12 x M20	194	F10
DN250	68	202	318	266	226	300	190	91	80	81	12 x M24	241	F12
DN300	78	235	376	292	226	300	190	112	80	81	12 x M24	291	F12
DN350	78	257	406	335	226	300	190	128	80	81	16 x M24	324	F12
DN400	102	292	471	360	226	300	190	144	80	81	16 x M24	379	F12
DN450	114	318	539	422	216	285	183	163	80	80	20 x M24	428	F14
DN500	127	355	594	480	256	285	311	182	125	168	20 x M24	475	F14
DN600	154	444	695	562	285	385	386	219	136	293	20 x M27	573	F16

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ALT/PL/0417

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