

**CRANE**<sup>®</sup>

FLUID SYSTEMS

ISSUE 2

# Connected SOLUTIONS

FOR SMART BUILDING APPLICATIONS



INTRODUCING THE **NEW**  
**Dominator<sup>®</sup>**  
**Energy** ⚡

OUR GENIUS IS VALVES

**CRANE**<sup>®</sup>

BUILDING SERVICES & UTILITIES

# SMART BUILDINGS

Architectural styles have changed over time with appearance and modern materials such as glass and steel taking the lead. This created challenges when addressing the buildings comfort system, meaning technological innovation was required to give building owners the same level of comfort and safety.

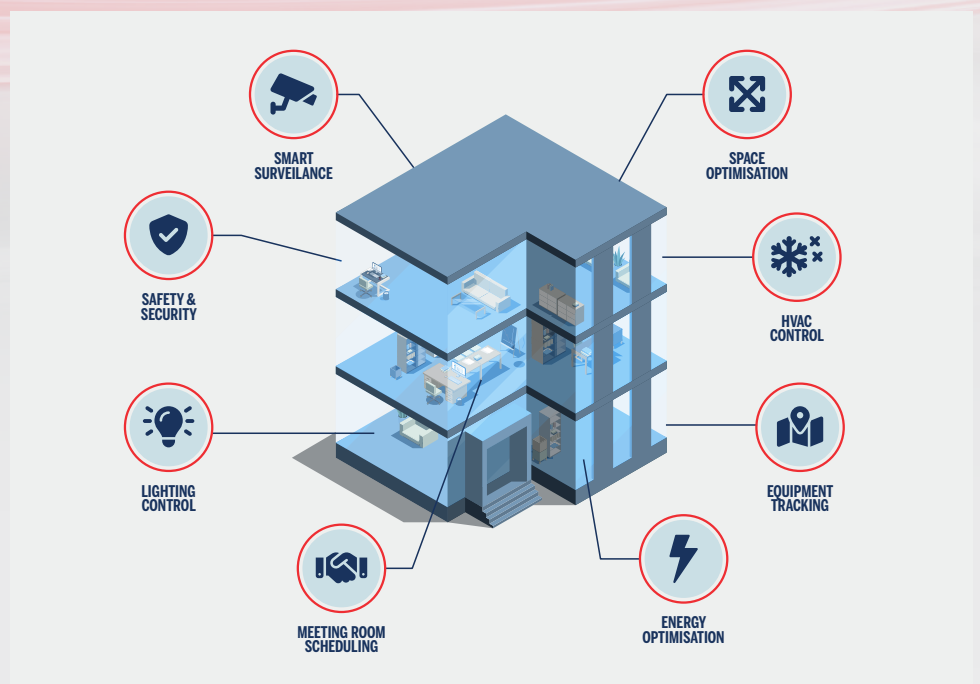
Smart buildings utilise technology to control systems such as HVAC, fire safety, security, lights, escalators and lifts to optimise their operation, saving energy whilst improving occupant comfort and safety.



A System Integrator is responsible for combining all of these traditional physical control systems, in order to optimise them as one system, this is typically known as a Building Management System (BMS). Environmental performance, space utilisation, security, productivity and occupant wellbeing are addressed by Smart Buildings, by utilising digital smart devices, applications, platforms and data analytics all managed via the BMS.

## BMS

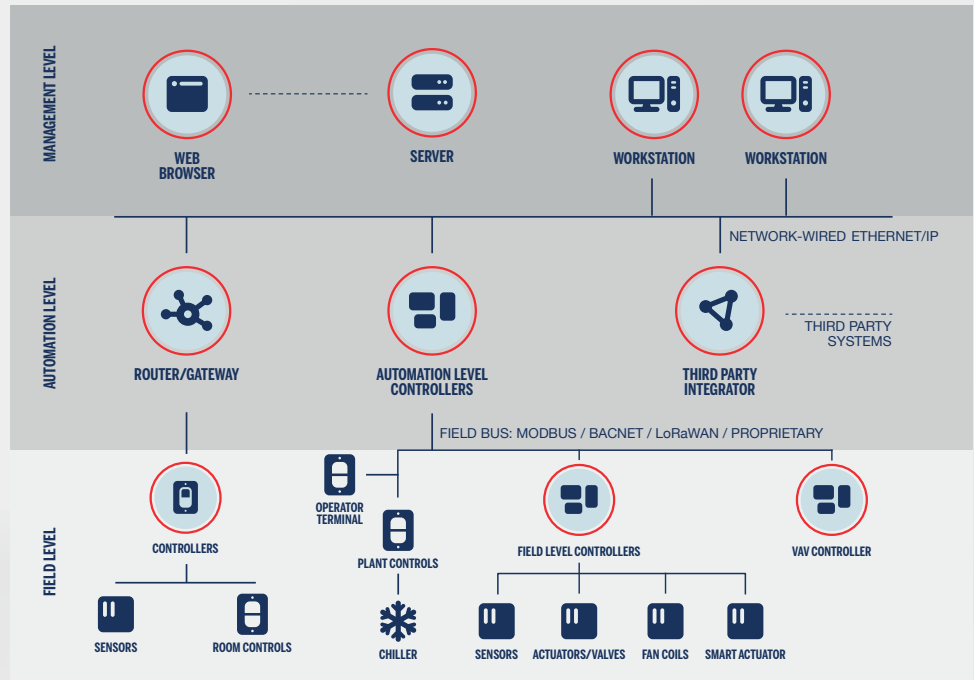
The building management system (BMS) is an overarching control system that is responsible for the automatic regulation and control of the building's mechanical and electrical subsystems. It maintains predefined parameters and the control of their performance. It allows the operator to monitor and control its systems such as heating, ventilation, air conditioning, lighting, alarms, access control or energy supply management systems.





## Field Devices

Field devices are typically physical components connected to BMS controllers at field level. These components are responsible for data acquisition and relaying or enacting commands (monitoring & control) such as sensors, transducers, thermostats and actuators. Field devices can be found throughout Smart Buildings, from inside occupied areas or near terminal equipment, right through to the plant rooms.



## Our Solution...

Crane Fluid System's Connected Solutions combine a rich heritage of mechanical valve design and manufacturing with electronic control functionality for smart building applications and BMS integration.

Supporting building owners and operators to reduce energy consumption and carbon emissions, through enhanced control and data availability from Crane Valves.

Helping to deliver projects faster with remote digital commissioning of HVAC systems and simplified connectivity for Systems Integrators.



**40mm Dominator  
Energy Eco**



**80mm Dominator  
Energy**



**Dominator Eco  
with Modbus**



**D997F**

# INTRODUCING *Dominator*<sup>®</sup> *Energy* ⚡

Enhance energy efficiency and streamline plant operations with the Dominator Energy. This compact, all-in-one solution integrates SMART technology to deliver precise Delta T and thermal power management, including temperature and power control functionalities. With seamless BACnet or Modbus integration, it supports advanced data analytics and

remote configuration via BMS or Crane configurator software significantly reducing commissioning and installation time. Factory-tested for performance and reliability, it features integrated sensors, pressure-tested valves, and accurate differential pressure control - making it ideal for both new installations and retrofit applications.





## TACKLING LOW DELTA-T SYNDROME FOR SMARTER, GREENER BUILDINGS

### Unlocking Efficiency with Smarter HVAC Solutions

Low Delta-T Syndrome is a major challenge for systems integrators, consultants, building owners, and facilities managers, contributing to higher energy consumption, increased carbon emissions, and shortened equipment lifespan.

This issue typically arises from poor hydronic balancing, caused by inaccurate valve settings, oversized or underperforming components, and insufficient monitoring of critical system parameters such as flow rates, return temperatures, and pressure levels. The result? Chillers, boilers, and pumps overwork, leading to skyrocketing operational costs and reduced overall efficiency.



### Smart Technology: The Key to Optimised Performance

The solution lies in the Dominator Energy, equipped with integrated sensors and real-time analytics. These intelligent controls autonomously optimise system performance, ensuring precise hydronic balancing to mitigate Low Delta-T Syndrome—without manual intervention.

By incorporating data-driven automation, these next-generation valves:

- Improve HVAC efficiency, reducing energy consumption
- Extend equipment lifespan by minimising strain on critical components
- Support sustainability efforts by lowering carbon footprints
- Enable real-time performance monitoring for proactive maintenance and diagnostics



## Designed for Industry Leaders

Whether you're optimising HVAC systems, managing building operations, or designing future-proof solutions, smart valves provide the technology to drive lasting efficiencies:

- Systems Integrators ensuring seamless HVAC performance and sustainability.
- Building Owners & Facilities Managers seeking to cut costs and improve system longevity.
- Consultants & Engineers designing optimised, energy-conscious solutions for modern infrastructures.
- Technicians & Contractors responsible for installation and long-term maintenance.

## Shaping a Smarter, Greener Future

With growing demand for intelligent, high-efficiency buildings, overcoming Low Delta-T Syndrome is essential to achieving cost-effective, sustainable operations.

By leveraging advanced smart valve technology, professionals can take a proactive approach to energy management, ensuring enhanced comfort, optimised system reliability, and measurable savings.



## Z8801P

Dominator Energy with PICV & Drain

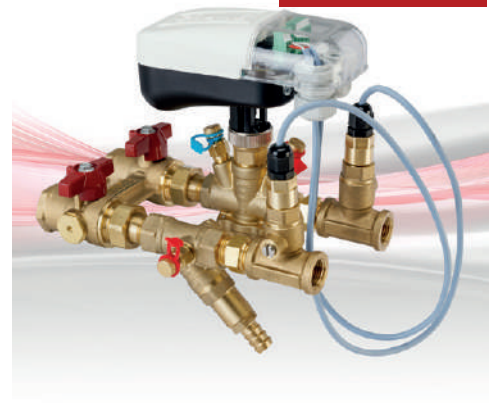
## Z8801PF

Dominator Energy with PICV, Drain & FMD

PN16

**Dominator**  
Energy

Z8801P/Z8801PF



BALANCING VALVES

### Features & Benefits

- Save energy and optimise plant efficiency through automatic Delta T and thermal power management
- Crane FS Dominator combined with cutting edge SMART technology enables: Delta T limitation, temperature control, temperature limitation, power control and power limitation functionality within a single compact unit
- Supports further data analytics through enhanced data harvesting via Modbus or BACnet integration to the BMS
- Reduced commissioning time and costs due to remote valve setting via the BMS or Crane configurator
- Reduced installation time and wiring costs thanks to a fully assembled & factory tested unit, integrated temperature sensor pockets and pre-wired temperature sensors
- Assured performance due to all valves being both pressure tested in accordance with BS EN 12266-1, as well as flow limitation tested in accordance to BSRIA BTS1
- Available in 400kPa & 800kPa rated variants
- PICV and ACTCS1 actuator provide accurate differential pressure control as well as indicated flow rate back to the BMS or via integral flow measurement on the DE40B valve

Controllable via 0-10v signal following configuration using Crane configurator software, ideal for retrofit applications.

### Actuator Technical Specification

| CHARACTERISTIC                    |                         | DESCRIPTION                                    |
|-----------------------------------|-------------------------|------------------------------------------------|
| Power Supply                      |                         | 24Vac/dc $\pm$ 10%                             |
| Speed (configurable via Modbus)   |                         | 5 s/mm (default) or 3 s/mm                     |
| Force                             |                         | 300N                                           |
| Cable                             | Power supply            | 3m, 3 wire                                     |
|                                   | BACnet/Modbus           | 1.5m, 3 wire, 22AWG                            |
|                                   | Temp sensors            | 3m, 2 wire, NTC 10kOhm ( $\beta$ @25°C = 3435) |
| Weight                            |                         | 0.5kg                                          |
| Protection degree                 |                         | IP54                                           |
| Feedback signal                   |                         | via BACnet / Modbus                            |
| Charging time for supercapacitors |                         | ~45 sec                                        |
| Speed in emergency positioning    |                         | 3 s/mm                                         |
| Transformer sizing                |                         | 30VA                                           |
| Consumption                       | Supercapacitor charging | 12W                                            |
|                                   | Moving                  | 6W                                             |
|                                   | Holding Position        | 1.5W                                           |
| Manual override                   |                         | with 3mm hex key                               |
| Actuator operating temperature    |                         | -5°C to 55°C                                   |
| Reference Directive and Standards |                         | EMC 2014/30/UE according to EN 61326-1:2013    |

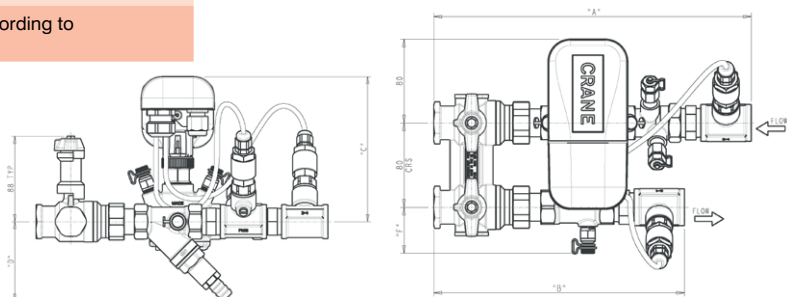
### Valve Materials

| PART                 | MATERIAL  | SPECIFICATION        |
|----------------------|-----------|----------------------|
| Bypass H-Body        | DZR Brass | BS EN 12165 (CW602N) |
| D299P Strainer Drain |           |                      |
| D995 PICV            |           |                      |
| D901/D902 FMD        |           |                      |
| Tailpiece            |           | BS EN 12164 (CW602N) |

### Dimensions

| SIZE (DN) | A (mm) | B (mm) | C (mm) | D (mm) | F (mm) |
|-----------|--------|--------|--------|--------|--------|
| DN15x15   | 275    | 218    | 144    | 76     | 43     |
| DN20x15   | 293    | 236    | 144    | 76     | 43     |
| DN20x20   | 303    | 240    | 150    | 82     | 44     |
| DN25x20   | 303    | 240    | 150    | 82     | 44     |

### Dimensional Drawings



### PICV Pressure & Temperature Rating

|                                             |                                                                |
|---------------------------------------------|----------------------------------------------------------------|
| TEMPERATURE (°C)                            | 0°C to 90°C                                                    |
| PRESSURE (BAR)                              | 16 Bar                                                         |
| OPERATING PRESSURE RANGE ACROSS VALVE (kPa) | 20 - 400 (DN15 LF)<br>20 - 400 (DN15 SF)<br>40 - 400 (DN15 HF) |

**PRESSURE RATING:** PN16

**TEMPERATURE RATING:** 0 to 90°C

**END CONNECTIONS:**

Flushing By-pass body - BSP Taper,  
Strainers & Tailpieces - BSP Taper

**SPECIFICATION** DZR Brass fan-coil & terminal unit valve assembly, set with temperature probe pockets to be a pre-assembled unit, supplied with a SMART actuator, pre-wired temperature sensors, and integral sensor pockets, by a single manufacturer. Unit to include a flushing bypass with integral isolation valves, PICV, Venturi style FMD, strainer, drain & pressure test points as and where specified. Extended handles will be fitted for Chilled Water applications. Connections to be BSP Taper for both the Flushing Bypass body and Strainers & tailpieces. Unit to be manufactured from DZR Brass to BS EN 12164/5 CW602N. SMART actuator will have Modbus, BACnet and analogue control along with integrated thermal management algorithms. Valve assembly will be labelled to include the terminal unit reference number, service and flow rate. As per Crane FS Z8801P & Z8801PF Dominator Energy.

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## DDE40B DN15/15

**Dominator**  
Energy



Dominator Energy with BSRIA Flushing  
Drains & FMD

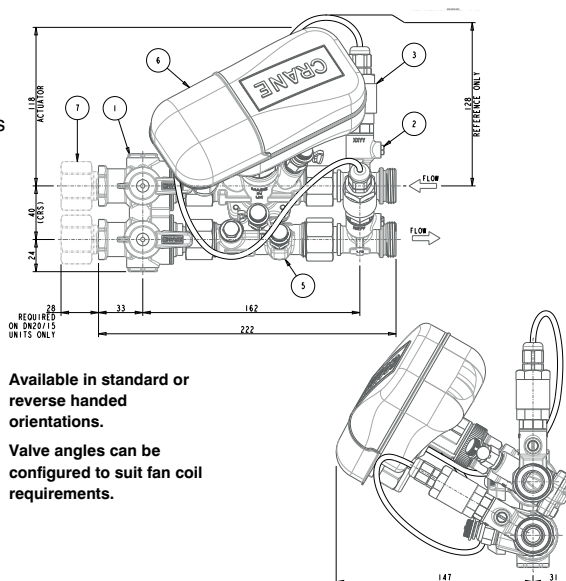
PN16

### Features and benefits

- Save energy and optimise plant efficiency through automatic Delta T and thermal power management
- Crane FS Dominator combined with cutting edge SMART technology enables: Delta T limitation, temperature control, temperature limitation, power control and power limitation functionality within a single compact unit
- Supports further data analytics through enhanced data harvesting via Modbus or BACnet integration to the BMS
- Reduced commissioning time and costs due to remote valve setting via the BMS or Crane configurator
- Reduced installation time and wiring costs thanks to a fully assembled & factory tested unit, integrated temperature sensor pockets and pre-wired temperature sensors
- Assured performance due to all valves being both pressure tested in accordance with BS EN 12266-1, as well as flow limitation tested in accordance to BSRIA BTS1
- PICV and ACTCS1 actuator provide accurate differential pressure control as well as indicated flow rate back to the BMS (DE40B enables flow rate verification by FMD)
- Available in 800kPa rated variants
- Controllable via 0-10v signal following configuration using Crane configurator software, ideal for retrofit applications.



### Dimensional Drawings



Available in standard or  
reverse handed  
orientations.

Valve angles can be  
configured to suit fan coil  
requirements.

### Actuator Technical Specification

| CHARACTERISTIC                    |                         | DESCRIPTION                                    |
|-----------------------------------|-------------------------|------------------------------------------------|
| Power Supply                      |                         | 24Vac/dc $\pm$ 10%                             |
| Speed (configurable via Modbus)   |                         | 5 s/mm (default) or 3 s/mm                     |
| Force                             |                         | 300N                                           |
| Cable                             | Power supply            | 3m, 3 wire                                     |
|                                   | BACnet/Modbus           | 1.5m, 3 wire, 22AWG                            |
|                                   | Temp sensors            | 3m, 2 wire, NTC 10kOhm ( $\beta$ @25°C = 3435) |
| Weight                            |                         | 0.5kg                                          |
| Protection degree                 |                         | IP54                                           |
| Feedback signal                   |                         | via BACnet / Modbus                            |
| Charging time for supercapacitors |                         | ~45 sec                                        |
| Speed in emergency positioning    |                         | 3 s/mm                                         |
| Transformer sizing                |                         | 30VA                                           |
| Consumption                       | Supercapacitor charging | 12W                                            |
|                                   | Moving                  | 6W                                             |
|                                   | Holding Position        | 1.5W                                           |
| Manual override                   |                         | with 3mm hex key                               |
| Operating temp                    |                         | -5°C to 55°C                                   |
| Reference Directive and Standards |                         | EMC 2014/30/UE according to EN 61326-1:2013    |

### PICV Pressure & Temperature Ratings

|                                             |                                                                |
|---------------------------------------------|----------------------------------------------------------------|
| TEMPERATURE (°C)                            | 0°C to 90°C                                                    |
| PRESSURE (BAR)                              | 16 Bar                                                         |
| OPERATING PRESSURE RANGE ACROSS VALVE (kPa) | 20 - 400 (DN15 LF)<br>25 - 400 (DN15 SF)<br>40 - 400 (DN15 HF) |



### Materials

| NO. | DESCRIPTION                                                                                                                                                     | MATERIAL                                        | QTY |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-----|
| 1   | H-Body Assembly                                                                                                                                                 | DZR Brass BS EN 12165 (CW602N)                  | 1   |
| 2   | DN15 PICV<br>- Male Ended Low Flow 0.008 - 0.080/s<br>DN15 PICV<br>- Male Ended Std Flow 0.060 - 0.200/s<br>DN15 PICV<br>- Male Ended High Flow 0.100 - 0.370/s | A DZR Brass<br>B BS EN 12165<br>C (CW602N)      | 1   |
| 3   | DN15 - High Flow FMD 4.6Kvs<br>DN15 - Std Flow FMD 1.6Kvs<br>DN15 - Low Flow FMD 0.62Kvs<br>DN15 - Ultra Low Flow FMD 0.24Kvs                                   | H S L U<br>DZR Brass<br>BS EN 12165<br>(CW602N) | 1   |
| 4   | DN15 Flushing Valve                                                                                                                                             | DZR Brass BS EN 12165 (CW602N)                  | 2   |
| 5   | Compression Adaptor                                                                                                                                             | A DZR Brass BS EN 12165 (CW602N)                | 2   |
|     | Solder Adaptor                                                                                                                                                  | B DZR Brass BS EN 12165 (CW602N)                | 2   |

NOTE: Sealing gasket and O-rings material are EPDM

**PRESSURE RATING:** PN16

**SYSTEM TEMPERATURE RATING:** 0 to 90°C

**END CONNECTIONS:**

H-Body - BSP Taper

Terminal end - Compression/Solder

**SPARES:** Gasket 0J00889J

**WEIGHT:** 2.5kg

**SPECIFICATION** DZR Terminal unit valve set with temperature probe pockets to be a pre-assembled unit, supplied with a SMART actuator and pre-wired temperature sensors and integral temperature sensor pockets, by a single manufacturer. Unit to include a flushing bypass with integral isolation valves, PICV, Venturi style FMD and flushing valves to comply to BG29 guidelines. Flow rate to be adjustable between 0.008 – 0.37l/s, dependent on variant. Connections to be flat face union connections between components with female BSPT on system side and compression/solder on terminal side. Unit to be manufactured from DZR Brass to BS EN 12164/5 CW602N. SMART actuator will have Modbus, BACnet and analogue control along with integrated thermal management algorithms. Valve assembly will be labelled to include the terminal unit reference number, service and flow rate. As per Crane FS Dominator Energy.

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## DEE40B DN15/15

Dominator Energy Eco with  
BSRIA Flushing Drains

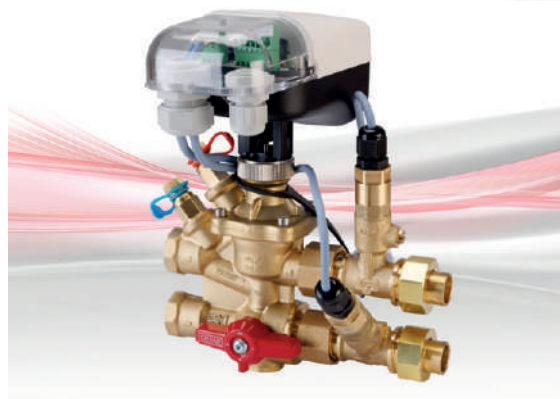
**Dominator**  
Energy



PN16

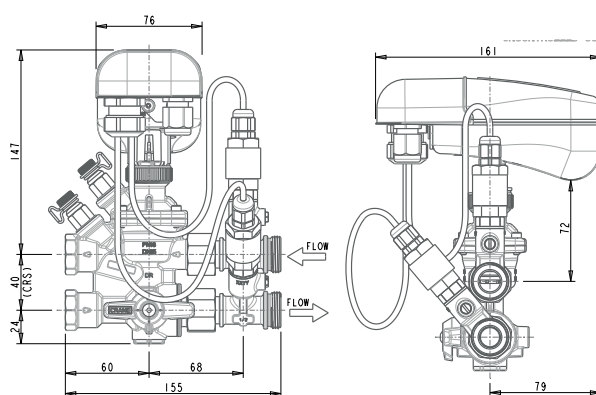
### Features and benefits

- Save energy and optimise plant efficiency through automatic Delta T and thermal power management
- Crane Dominator Eco combined with cutting edge SMART technology enables: Delta T limitation, temperature control, temperature limitation, power control and power limitation functionality within a single compact unit
- Supports further data analytics through enhanced data harvesting via Modbus or BACnet integration to the BMS
- Reduced commissioning time and costs due to remote valve setting via the BMS or Crane configurator
- Reduced installation time and wiring costs thanks to a fully assembled & factory tested unit, integrated temperature sensor pockets and pre-wired temperature sensors
- Assured performance due to all valves being both pressure tested in accordance with BS EN 12266-1, as well as flow limitation tested in accordance to BSRIA BTS1
- PICV and ACTCS1 actuator provide accurate differential pressure control as well as indicated flow rate back to the BMS or via integral flow measurement on the DE40B valve
- Controllable via 0-10v signal following configuration using Crane configurator software, ideal for retrofit applications



**bsria**

### Dimensional Drawings



Available in standard or reverse handed orientations.

### Actuator Technical Specification

| CHARACTERISTIC                    |                         | DESCRIPTION                                    |
|-----------------------------------|-------------------------|------------------------------------------------|
| Power Supply                      |                         | 24Vac/dc $\pm$ 10%                             |
| Speed (configurable via Modbus)   |                         | 5 s/mm (default) or 3 s/mm                     |
| Force                             |                         | 300N                                           |
| Cable                             | Power supply            | 3m, 3 wire                                     |
|                                   | BACnet/Modbus           | 1.5m, 3 wire, 22AWG                            |
|                                   | Temp sensors            | 3m, 2 wire, NTC 10kOhm ( $\beta$ @25°C = 3435) |
| Weight                            |                         | 0.5kg                                          |
| Protection degree                 |                         | IP54                                           |
| Feedback signal                   |                         | via BACnet / Modbus                            |
| Charging time for supercapacitors |                         | ~45 sec                                        |
| Speed in emergency positioning    |                         | 3 s/mm                                         |
| Transformer sizing                |                         | 30VA                                           |
| Consumption                       | Supercapacitor charging | 12W                                            |
|                                   | Moving                  | 6W                                             |
|                                   | Holding Position        | 1.5W                                           |
| Manual override                   |                         | with 3mm hex key                               |
| Operating temp                    |                         | -5°C to 55°C                                   |
| Reference Directive and Standards |                         | EMC 2014/30/UE according to EN 61326-1:2013    |

### Materials

| DESCRIPTION                                                                                                            | MATERIAL                       | QTY |
|------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|
| Male Ended Low Flow 0.010 - 0.080l/s<br>Male Ended Std. Flow 0.025 - 1.170l/s<br>Male Ended High Flow 0.110 - 0.290l/s | DZR Brass BS EN 12165 (CW602N) | 1   |
| Drain Tee Assembly – Male Captive                                                                                      | DZR Brass BS EN 12165 (CW602N) | 2   |
| End Connection Sub-Assembly                                                                                            | DZR Brass BS EN 12165 (CW602N) | 2   |
| Drain Tail Piece                                                                                                       | DZR Brass BS EN 12165 (CW602N) | 2   |

NOTE: Sealing gasket and O-rings material are EPDM

### PICV Pressure & Temperature Rating

|                                             |                                                                |
|---------------------------------------------|----------------------------------------------------------------|
| TEMPERATURE (°C)                            | 0°C to 90°C                                                    |
| PRESSURE (BAR)                              | 16 Bar                                                         |
| OPERATING PRESSURE RANGE ACROSS VALVE (kPa) | 20 - 400 (DN15 LF)<br>20 - 400 (DN15 SF)<br>40 - 400 (DN15 HF) |



**PRESSURE RATING:** PN16

**SYSTEM TEMPERATURE RATING:** 0 to 90°C

**WEIGHT:** 1.6kg

**END CONNECTIONS:**

Valve body - BSP Taper  
Terminal end - Compression/Solder  
(15mm only)

**SPARES:** Refer to IOM

**SPECIFICATION** DZR Terminal unit valve set with temperature probe pockets to be a pre-assembled unit, supplied with a SMART actuator and pre-wired temperature sensors, and integral temperature sensor pockets, by a single manufacturer. Unit to include a flushing bypass with integral isolation valves, Pressure Independent Commissioning Unit (PICU) and flushing valves to comply to BG29 guidelines. Flow rate to be measurable using integral test points as per BS 7350. Flow rate to be adjustable between 0.010-0.290l/s, dependent on variant. Connections to be flat face unions between components with female BSPT on system side and compression/solder on terminal side. Unit to be manufactured from DZR Brass to BS EN 12164/5 CW602N. SMART actuator will have Modbus, BACnet and analogue control along with integrated thermal management algorithms. Valve assembly will be labelled to include the terminal unit reference number, service and part number as per Dominator Eco Energy.

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# MODBUS ACTUATOR

The ACTMDBUS actuator provides remote and intelligent valve setting, modulating control and indicated flowrate feedback through a fast and reliable Modbus communication protocol for HVAC applications.

The ACTMDBUS is compatible with Crane Fluid System's range of D995 Peak Pro PICVs from DN15 up to DN50 as well as the Dominator Eco.

Setting and commissioning the valve via the BMS is achieved due to the integrated library of Crane FS PICV products. The user can select the model and size that the actuator is installed on, allowing the flow rate to be set electronically, significantly reducing onsite commissioning and working within tight spaces or at height.

Once set, the valve can be controlled using flow rate via the BMS, whilst feeding back indicated flow rate data. The built-in failsafe function protects the system in case of power failure by automatically moving the valve to either a fully open or fully closed position. The actuator can be retrofitted to any compatible Crane valve. The prewiring makes efficient connection to power supply and BMS systems.



**ACTMDBUS**

## BENEFITS

### Consultant

The ACTMDBUS actuator provides high configurability and easy integration into a variety of BMS driven HVAC systems. The actuator is capable of sharing indicated flow rate data to the BMS, enabling operational insight, leading to improved system efficiency and reduced operating costs.

### Contractor

The ACTMDBUS is easy to install within retro fit and new build projects. With the ability to daisy chain between actuators, reducing the number of cable runs and therefore offering both labour and material cost savings.

The integrated valve library and positional control allows remote commissioning, limiting the requirement for access to confined spaces and working at height resulting in faster commissioning time scales for a project, speeding up overall installation, setup and handover phases.

## System Integrator

The ACTMDBUS prewired Modbus actuator offers an easy, reliable and fast connection to the BMS and other Modbus actuators.

Highly configurable, simple to install and with the option of being daisy chained results in reduced cabling and installation costs. The actuator is capable of sharing indicated flow rate data to the BMS, enabling operational insight, leading to improved system efficiency and reduced operating costs.

Remote digital commissioning via the BMS reduces the amount of labour-hours to commission a system resulting in cost savings and less time pressure at the end of projects.

## FEATURES

- Integrated valve library, allowing the valve to be commissioned and set via the BMS or Crane FS configurator tool.
- Indicated flow rate and position feedback communicated through Modbus connection, allowing system optimisation.
- Daisy chaining between actuators reduces installation labour and cabling costs.
- Error feedback via the BMS as well as integrated LED indication for clear visibility of operating status, errors and diagnostic functions, reduces downtime.
- Fast responding actuator optimises system efficiency and user comfort.
- Fail-safe function which can be configured as fully open or fully closed to protect critical applications.
- Isolation function with Class IV leakage when paired with Crane FS D995 PICV and Dominator Eco.
- Configurable control characteristic to suit different applications with linear and Equal Percentage Control.



**D995 PICV  
with Modbus**



**Dominator Eco  
with Modbus**



**40mm Peak Pro**

# E-PICV & E-PICV+ DN65-150

Crane Fluid System's Electronic Pressure Independent Control Energy Valve (E-PICV+) controls the heat transfer, optimises delta T and automatically regulates flow, regardless of pressure fluctuations in the system, through the use of pressure transducers, temperature sensors and a high-speed actuator. This combination with the addition of Modbus connectivity also allows for energy monitoring and data exchange with the BMS.



**E-PICV+**

The E-PICV has no diaphragm so flow is regulated independently from pressure electronically, utilising the integrated pressure transducers. The E-PICV is capable of sharing indicated flow rate data with the BMS, the E-PICV+ gives the additional benefit of Delta T and power management as well as energy monitoring. This enhanced data and functionality enables operational insight, leading to improved system efficiency and reduced operating costs.

The user can set the flow rate and commission the valve via the BMS, significantly reducing onsite commissioning.

## BENEFITS

### Consultant

The E-PICV+ enables energy monitoring, thermal power control and  $\Delta T$  maximisation functions to optimise system efficiency. The E-PICV & E-PICV+ is easily integrated into a variety of BMS driven HVAC systems. Capable of sharing indicated flow rate data to the BMS, enabling operational insight, leading to improved system efficiency and reduced operating costs.

Feedback allows for rapid fault-finding and preventative maintenance, ensuring reduced downtime, increased efficiency and cost savings to the building operator.

### Contractor

The E-PICV & E-PICV+ are easy to install within retro fit and new build projects. With the ability to daisy chain between valves, reducing the number of cable runs and therefore offering both labour and material cost savings.

The preconfigured valve setting, and positional control allows remote commissioning, resulting in a much faster commissioning time.



## System Integrator

The E-PICV & E-PICV+ are prewired for an easy, reliable and fast connection to BMS and other Modbus valves. Reduced cabling due to daisy chaining capabilities of the Modbus communication protocol, resulting in material and installation labour cost savings.

Each E-PICV comes complete with valve, actuator, pressure transducers and temperature sensors (E-PICV+) and is preconfigured to reduce set up times.

Remote digital commissioning via BMS reduces the amount of labour required to commission a system resulting in less time pressure at the end of projects.

Built in diagnostic tools for easy fault finding.

Complete range from DN65 to DN150, provides a more expansive choice of Crane FS products for a one-stop shop solution for your entire variable flow control valve needs.

## FEATURES

- Energy monitoring, thermal power control and  $\Delta T$  maximisation functions to optimise system efficiency (E-PICV+)
- Remote commissioning via the BMS, reduces commissioning time and costs.
- Stable head output by maintaining a flow rate regardless of  $\Delta P$  via pressure sensors.
- System optimisation using the indicated flow rate and position feedback via Modbus.
- Daisy chaining between actuators reduces installation labour and cabling costs.
- Reduced downtime due to error feedback via the BMS.
- Optimised system efficiency and user comfort due to fast responding actuator.
- Isolation function with Class IV leakage up to 800kPa.



**D997F**



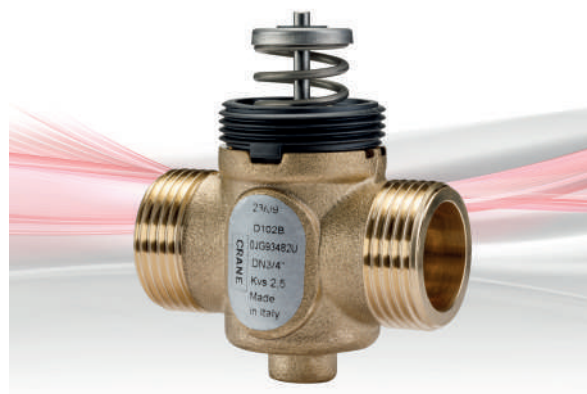
**D996F**



**D996F Sensors**

## 2, 3 AND 4 PORT CONTROL VALVES DN15-200

Crane FS PN16 rated control valves offer a compact and lightweight solution for a variety of variable flow and constant flow applications. Designed in Europe to the highest quality and precision you expect from Crane. The 2 port control valve (D102B & D102F) can be installed to provide zone control and plant isolation. Whilst 3 port control valve (D103B & D103F) or 4 port control valve (D104B) allow for easy mounting onto main plant through to terminal units for heat output control as well as end of line pipework solutions for minimum pump turndown. This improves water treatment circulation, leading to better heat or chilled response times, whilst still offering energy savings.



**D102B**

Crane FS 2, 3 & 4 port valves can be combined with a variety of Crane actuators to suit all applications for fast and reliable BMS connection and control of variable flow systems.

### BENEFITS

#### Consultant

Crane FS 2, 3 & 4 port control valves offer a total package for installing within a variable flow or constant flow system. Engineered to the highest standards ensuring repeatability of operation, to meet the demands of your system.

The 2 port control valve offers maximum energy savings at the point of application. Whilst the 3 and 4 port offers effective heat output control whilst delivering critical chilled / heat response to your terminal units.

Combining with Crane FS modulating, or thermic actuators ensures the correct controls strategy can be delivered for your site requirements.

#### Contractor

Easy to install within retro fit and new build projects. For assisting with tight void space installations, Crane FS actuators can be fitted to the valve after the valve body is installed. Actuators connect to the valve via finger tight threaded connections and are prewired for simple and quick connectivity to power and BMS.

Stocked and readily available, manufactured in Europe giving high quality and short lead times for large projects.

Assured compatibility with Crane FS ACT range of actuators for modulating or on/off control.

## System Integrator

The 2, 3 & 4 port control valves provide efficient control and cost savings by reacting to system demand.

The valves are designed to work with either the Crane FS range of ACT actuators. Available as a Low (24v) or line (230v) option, all of which offer a simple and quick prewired solution for easy connection to and control from the BMS.

Combining both valve and actuator offers precise control for a variety of system functions such as zonal, end of line and minimum pump turndown solutions. By combining these products with our extensive variable flow portfolio, Crane FS delivers a one-stop shop solution for all your control valve needs.

## FEATURES

- Offers zone, terminal bypass and end of line applications.
- Simple integration into the BMS using the Crane FS Modulating (ACT991M, ACT993 & ACT996), 3 Point (ACT991TP) and Thermic (ACT992TH 140N) actuators.
- Easy mounting to pipework or terminal units in confined spaces due to the compact and lightweight design.
- Isolation function with Class IV leakage up to 225kPa.
- PN16 rated product, suitable for building services applications and services with up to 30% Glycol.



**D103B with  
ACT991M**



D102F

## ACTMDBUS

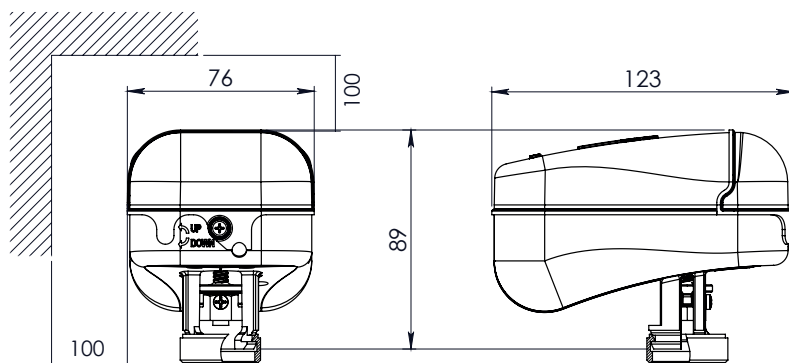
Modulating actuator with Modbus

### Features & Benefits

- Reduced commissioning time and costs due to remote commissioning via the BMS or Crane configurator tool
- System optimisation using the indicated flow rate and position feedback
- Reduced installation labour and cabling costs due to daisy chaining between actuators
- Reduced downtime due to error feedback via the BMS
- Optimised system efficiency and user comfort due to fast responding actuator
- Isolation function with Class IV leakage when paired with Crane FS D995 PICV and DE40
- Linear and Equal Percentage Control – configurable control characteristic to suit different applications



### Dimensions



### Technical Specification

| CHARACTERISTIC                    |                         | DESCRIPTION                                 |
|-----------------------------------|-------------------------|---------------------------------------------|
| Power Supply                      |                         | 24Vac/dc $\pm 10\%$                         |
| Speed (configurable via Modbus)   |                         | 5 s/mm (default) or 3 s/mm                  |
| Force                             |                         | 300N                                        |
| Cable                             |                         | 5 wires, 1.5m (CEI 20-22/II)                |
| Weight                            |                         | 0.4kg                                       |
| Protection degree                 |                         | IP54                                        |
| Feedback signal                   |                         | via Modbus                                  |
| Charging time for supercapacitors |                         | ~45 sec                                     |
| Speed in emergency positioning    |                         | 3 s/mm                                      |
| Transformer sizing                |                         | 30VA                                        |
| Consumption                       | Supercapacitor charging | 12W                                         |
|                                   | Moving                  | 6W                                          |
|                                   | Holding Position        | 1.5W                                        |
| Manual override                   |                         | with 3mm hex key                            |
| Operating temp                    |                         | -5°C to 55°C                                |
| Storage temp                      |                         | 25°C to 65°C                                |
| Reference Directive and Standards |                         | EMC 2014/30/UE according to EN 61326-1:2013 |

#### SPECIFICATION:

The actuator shall be supplied with Modbus interface for full integration with BMS system. Have an integrated library of manufacturers valves and the ability to set by flow rate, provide back indicated flow rate and position feedback of each device, available via manufacturer software or through BMS. Selectable speed of 5s/mm or 3s/mm and connection to valve to be made via a M30x1.5 thread with no tools or adaptors required. Shall be provided with 24V power supply. As per Crane FS ACTMDBUS.

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# D997F

## E-PICV+ DN65-DN150

Electronic Pressure Independent  
Control Energy Valve

PN16

### Description

E-PICV+ controls the heat transfer, optimises delta T and automatically regulates flow, regardless of pressure fluctuations in the system, through the use of pressure transducers, temperature sensors and a high-speed actuator. This combination with the addition of Modbus connectivity also allows for energy monitoring and data exchange with the BMS.

### Features & Benefits

- Energy monitoring, thermal power control and  $\Delta T$  maximisation functions to optimise system efficiency.
- Precise flow control using integrated pressure transducers.
- BMS connectivity through Modbus RTU for control and data collection.
- Configurable control method via Modbus or voltage to suit application.
- Able to track position, flow and  $\Delta P$  through feedback signals.
- Quick and easy maintenance using diagnostic functions and LED behaviour indicating operating status and any errors.
- Accurate over wide  $\Delta P$  range to 800kPa.
- Class IV leakage.

### Materials

| DESCRIPTION | MATERIAL        | SPECIFICATION |
|-------------|-----------------|---------------|
| Body        | Grey Iron       | EN GJL-250    |
| End Cap     | Grey Iron       | EN GJL-250    |
| Plug        | Brass           | CB 491K       |
| Seat        | Grey Iron       | EN GJL-250    |
| Stem        | Stainless Steel | AISI-303      |

### Dimensions & Weights

| SIZE<br>(DN) | L<br>(mm) | H<br>(mm) | h<br>(mm) | D<br>(mm) | b<br>(mm) | a<br>(mm) | f<br>(mm) | HOLES | WGT<br>(kg) | Qmin*<br>(l/s) | Qmax*<br>(l/s) |
|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------|-------------|----------------|----------------|
| 65           | 290       | 320       | 175       | 185       | 20        | 145       | 18        | 4     | 18          | 3.3            | 10.3           |
| 80           | 310       | 330       | 186       | 200       | 22        | 160       | 18        | 8     | 28          | 6.9            | 16.4           |
| 100          | 350       | 341       | 206       | 220       | 24        | 180       | 18        | 8     | 32          | 12.5           | 21.4           |
| 125          | 400       | 364       | 255       | 250       | 26        | 210       | 22        | 8     | 45          | 16.9           | 32.8           |
| 150          | 480       | 382       | 275       | 285       | 26        | 240       | 25        | 8     | 60          | 22.2           | 49.2           |

\*Note: Flow rates displayed are min/max for settable flow rate  
i.e. flow at 100% or 10V signal.

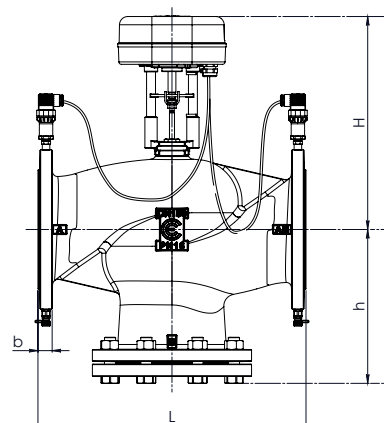
### Technical Specification

| CHARACTERISTIC               | DESCRIPTION                                                                |
|------------------------------|----------------------------------------------------------------------------|
| Fluid temperature            | -10°C - 110°C                                                              |
| Ambient temperature          | -10°C - 50°C                                                               |
| Protection                   | Actuator IP54                                                              |
|                              | Pressure Sensors IP65                                                      |
|                              | Temp Sensors IP65                                                          |
| Valve connections            | Flanged PN16                                                               |
| Max close off pressure       | 800kPa                                                                     |
| Operational $\Delta P$ range | 35kPa – 800kPa                                                             |
| Supply voltage               | 24Vac/dc / 230Vac variants available                                       |
| Control signal               | 0-10Vdc, 2-10Vdc, 0-5/2-6Vdc and 4-20mA<br>or 0-100% Modbus control signal |
| Output signal                | 2-10Vdc (0-100%); max load 2mA or<br>0-100% Modbus signal                  |
| Pressure sensors             | Pressure range 0 - 16 bar                                                  |
|                              | Temperature range -15°C - 125°C                                            |
|                              | Output signal 0-10 Vdc                                                     |
|                              | Power supply 16Vdc (supplied from actuator)                                |
|                              | Valve connection 1/8"                                                      |
| Temp sensors                 | Type NTC 10 kOhm ( $\beta$ @ 25°C = 3435)                                  |
|                              | Temperature Range -50°C - 120°C                                            |
| Max. power consumption       | 21VA / 11W                                                                 |

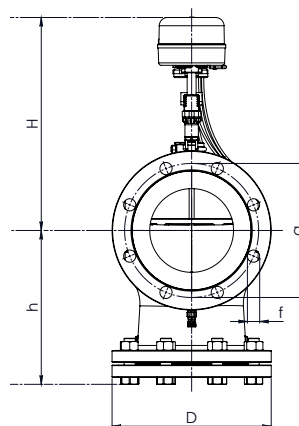
 $\Delta T$ 

### Dimensional Drawings

Front



Side



**PRESSURE RATING:** PN16

**MEDIUM:** Group 2 Liquids

**END CONNECTIONS:** Flanges to BS EN 1092-2 PN16

**SPECIFICATION:** The E-PICV+ shall control flow rates at differential pressures up to 800kPa, manage Delta T and Power. Flow rate adjustable through 0-10V or 0-100% Modbus signal. Shall send indicative flow rate, delta T and Power data via Modbus connection. Shall come complete with pressure and temperature sensors. Shall be manufactured from Grey Iron, with Brass plug and Stainless Steel springs. Shall be rated to PN16 and operate at temperatures to 110°C.

When installing this product, it is vital that environmental conditions are considered. It is recommended that the product is installed inside or, if outside installation cannot be avoided, that the product is fully lagged, to ensure that it is fully protected from the external environmental conditions. This is particularly important where the outdoor installation is in, for example, urban and industrial atmospheres, where moderate sulphur dioxide pollution is present or in coastal or semi-coastal regions with low salinity. Where internal installation is carried out, this is likely to be in an environment such as a plant room with high humidity and some air pollution and, in such instances, the product should also be fully lagged. If the product is installed inside but not lagged, this should be limited to, for example, unheated buildings where condensation is likely to occur, or heated buildings. Where there is doubt, please refer your question(s) to the Crane Technical Support Team.

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# D996F

## DN65-DN150

Electronic Pressure Independent Control valve

PN16

### Description

E-PICV uses pressure transducers combined with a high-speed actuator to automatically regulate flow, regardless of pressure fluctuations in the system.

### Features & Benefits

- Reduced commissioning time and costs due to the preconfigured actuator settings, via the BMS or Crane configurator tool
- Stable head output by maintaining a flow rate regardless of  $\Delta P$  via pressure sensors
- System optimisation using the indicated flow rate and position feedback via Modbus
- Reduced installation labour and cabling costs due to daisy chaining between Modbus actuators
- Reduced downtime due to error feedback via the BMS
- Optimised system efficiency and user comfort due to fast responding actuator
- Isolation function with Class IV leakage up to 800kPa

### Materials

| DESCRIPTION | MATERIAL        | SPECIFICATION |
|-------------|-----------------|---------------|
| Body        | Grey Iron       | EN GJL-250    |
| End Cap     | Grey Iron       | EN GJL-250    |
| Plug        | Brass           | CB 491K       |
| Seat        | Grey Iron       | EN GJL-250    |
| Stem        | Stainless Steel | AISI-303      |

### Dimensions & Weights

| SIZE (DN) | L (mm) | H (mm) | h (mm) | D (mm) | b (mm) | a (mm) | f (mm) | HOLES | WGT (kg) | Qmin (l/s) | Qmax (l/s) |
|-----------|--------|--------|--------|--------|--------|--------|--------|-------|----------|------------|------------|
| 65        | 290    | 320    | 175    | 185    | 20     | 145    | 18     | 4     | 18       | 3.3        | 10.3       |
| 80        | 310    | 330    | 186    | 200    | 22     | 160    | 18     | 8     | 28       | 6.9        | 16.4       |
| 100       | 350    | 341    | 206    | 220    | 24     | 180    | 18     | 8     | 32       | 12.5       | 21.4       |
| 125       | 400    | 364    | 255    | 250    | 26     | 210    | 22     | 8     | 45       | 16.9       | 32.8       |
| 150       | 480    | 382    | 275    | 285    | 26     | 240    | 25     | 8     | 60       | 22.2       | 49.2       |

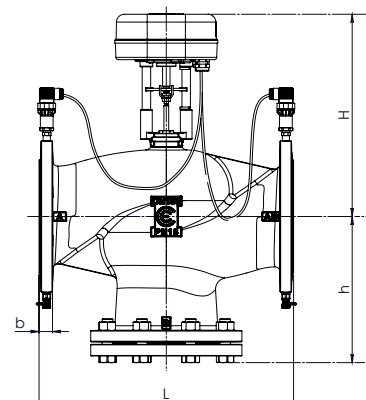
### Technical Specification

| CHARACTERISTIC               |                   | DESCRIPTION                                                             |
|------------------------------|-------------------|-------------------------------------------------------------------------|
| Fluid temperature            |                   | -10°C - 110°C                                                           |
| Storage temperature          |                   | -10°C - 50°C                                                            |
| Protection                   | Actuator          | IP54                                                                    |
|                              | Pressure Sensors  | IP65                                                                    |
| Valve connections            |                   | Flanged PN16                                                            |
| Max close off pressure       |                   | 800kPa                                                                  |
| Operational $\Delta P$ range |                   | 35kPa – 800kPa                                                          |
| Supply voltage               |                   | 24Vac/dc / 230Vac variants available                                    |
| Control signal               |                   | 0-10Vdc, 2-10Vdc, 0-5/2-6Vdc and 4-20mA or 0-100% Modbus control signal |
| Output signal                |                   | 2-10Vdc (0-100%); max load 2mA or 0-100% Modbus signal                  |
| Pressure sensors             | Pressure range    | 0 - 16 bar                                                              |
|                              | Temperature range | -15°C - 125°C                                                           |
|                              | Output signal     | 0-10 Vdc                                                                |
|                              | Power supply      | 16Vdc (supplied from actuator)                                          |
|                              | Valve connection  | 1/8"                                                                    |
| Max. power consumption       |                   | 21VA / 11W                                                              |

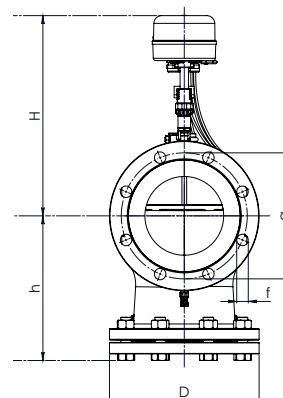


### Dimensional Drawings

Front



Side



**PRESSURE RATING:** PN16

**MEDIUM:** Group 2 Liquids

**END CONNECTIONS:** Flanges to BS EN 1092-2 PN16

**SPECIFICATION:** The E-PICV shall consist of a two-port characterised control valve with equal percentage control set through the actuator. Shall maintain flow rates, through integral pressure sensors, at differential pressures up to 800kPa. Flow rate adjustable through 0-10V or 0-100% Modbus signal, with feedback of % position, through 0-10V signal, and indicated flow rate based on valve position to be made available. Shall be manufactured from Grey Iron, with Brass plug and Stainless-Steel springs. Shall be rated to PN16 and operate at temperatures to 110°C. As per Crane FS D996F

When installing this product, it is vital that environmental conditions are considered. It is recommended that the product is installed inside or, if outside installation cannot be avoided, that the product is fully lagged, to ensure that it is fully protected from the external environmental conditions. This is particularly important where the outdoor installation is in, for example, urban and industrial atmospheres, where moderate sulphur dioxide pollution is present or in coastal or semi-coastal regions with low salinity. Where internal installation is carried out, this is likely to be in an environment such as a plant room with high humidity and some air pollution and, in such instances, the product should also be fully lagged. If the product is installed inside but not lagged, this should be limited to, for example, unheated buildings where condensation is likely to occur, or heated buildings. Where there is doubt, please refer your question(s) to the Crane Technical Support Team.

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## D102B/D103B/D104B DN15/DN20

2/3/4 Port Valve

PN16

### Features & Benefits

- Offers zone, terminal bypass and end of line applications
- Simple integration into the BMS using the Crane FS Modulating (ACT991M), 3 Point (ACT991TP) and Thermic (ACT992TH 140N) actuators
- Easy mounting to pipework or terminal units in confined spaces due to the compact and lightweight design
- Isolation function with Class IV leakage up to 225kPa
- PN16 rated product, suitable for building services applications and services with up to 30% Glycol

### Dimensions D102B

| PART NO   | KVS (m³/h) | CLOSE OFF (kPa) | a  | b    | c    | d    | e    | f  |
|-----------|------------|-----------------|----|------|------|------|------|----|
| QJG93477X | 0.25       | 225             | 52 | 1/2" | 22.5 | 27   | 15.6 | 65 |
| QJG93478Y | 0.4        |                 |    |      |      |      |      |    |
| QJG93479A | 0.6        |                 |    |      |      |      |      |    |
| QJG93480S | 1.0        |                 |    |      |      |      |      |    |
| QJG93481T | 1.6        |                 |    |      |      |      |      |    |
| QJG93482U | 2.5        |                 | 56 |      | 23.6 | 25.8 |      |    |
| QJG93605M | 4          | 150             | 78 | 3/4" | 20.5 | 41   | 15.6 | 71 |
| QJG93606N | 6          |                 |    |      |      |      |      |    |

### Dimensions D103B

| PART NO   | KVS DIRECT WAY (m³/h) | KVS ANGLE WAY (m³/h) | CLOSE OFF (kPa) | a  | b    | c    | d    | e    | f    |  |  |
|-----------|-----------------------|----------------------|-----------------|----|------|------|------|------|------|--|--|
| 0JG93483V | 0.25                  | 0.25                 | 225             | 52 | 1/2" | 25   | 27   | 15.6 | 65   |  |  |
| 0JG93484W | 0.4                   | 0.4                  |                 |    |      |      |      |      |      |  |  |
| 0JG93485X | 0.6                   | 0.6                  |                 |    |      |      |      |      |      |  |  |
| 0JG93486Y | 1.0                   | 0.6                  |                 |    |      |      |      |      |      |  |  |
| 0JG93487A | 1.6                   | 1.0                  |                 |    |      |      |      |      |      |  |  |
| 0JG93488B | 2.5                   | 1.6                  | 150             | 56 | 3/4" | 34   | 25.8 | 15.6 | 75.4 |  |  |
| 0JG93618S | 4                     | 2.5                  |                 | 78 |      | 35.5 | 41   |      | 92.1 |  |  |
| 0JG93619T | 6                     | 4                    |                 |    |      |      |      |      |      |  |  |

### Dimensions D104B

| PART NO   | KVS DIRECT WAY (m³/h) | KVS ANGLE WAY (m³/h) | CLOSE OFF (kPa) | a  | b    | c  | d    | e    | f    |
|-----------|-----------------------|----------------------|-----------------|----|------|----|------|------|------|
| 0JG93490U | 0.25                  | 0.25                 | 225             | 52 | 1/2" | 40 | 27   | 15.6 | 88.4 |
| 0JG93491V | 0.4                   | 0.4                  |                 |    |      |    |      |      |      |
| 0JG93492W | 0.6                   | 0.6                  |                 |    |      |    |      |      |      |
| 0JG93493X | 1.0                   | 0.6                  |                 |    |      |    |      |      |      |
| 0JG93494Y | 1.6                   | 1.0                  |                 |    |      |    |      |      |      |
| 0JG93495A | 2.5                   | 1.6                  | 150             | 56 | 3/4" | 50 | 25.8 | 15.6 | 98.4 |

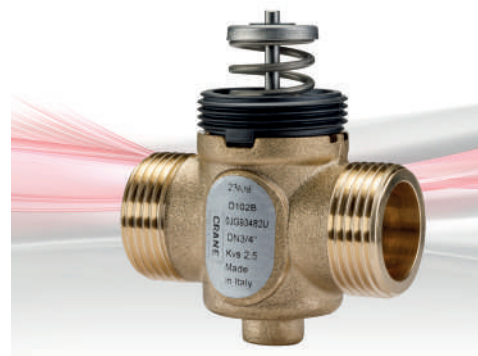
**PRESSURE RATING:** PN16

**MEDIUM:** Group 2 Liquids

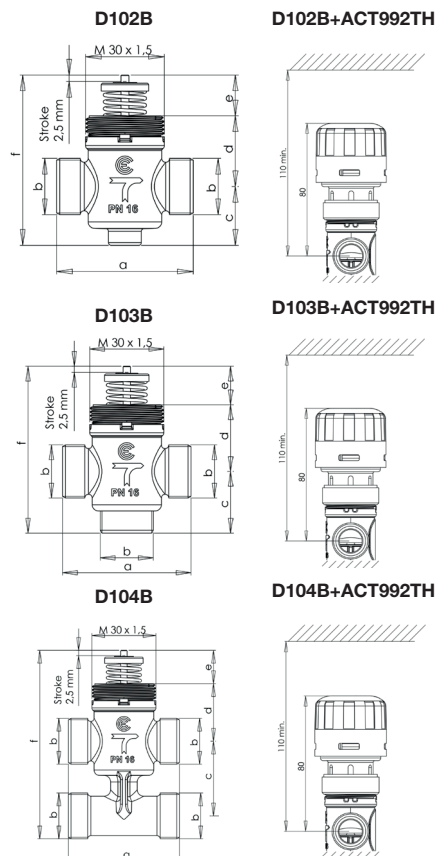
**END CONNECTIONS:** BSP Male Parallel Thread ISO-228

0JG93556V 1/2" BSP x15mm & 0JG93662W 3/4" BSP x15mm solder adaptors are available when female end connection is required

**SPECIFICATION:** The control valve shall consist of a two / three / four-port characterised control valve. Shall provide Class IV leakage during isolation function up to at least 225kPa. Valve position to be controlled through a compatible actuator of the same manufacturer as the control valve, typically by a M30x1.5 threaded connection. Shall be manufactured from Brass, with PPS plug and Stainless-Steel springs. Shall be rated to PN16 and operate at temperatures to 95°C. As per Crane FS D102B / D103B / D104B.



### Dimensional Drawings



### Materials

| DESCRIPTION | MATERIAL                 |
|-------------|--------------------------|
| Body        | Brass CW617N             |
| Bonnet      | Reinforced technopolymer |
| Plug        | Fortron                  |
| Stem        | Stainless steel          |
| O-rings     | EPDM                     |

### Pressure/Temperature Ratings

|                  |             |
|------------------|-------------|
| TEMPERATURE (°C) | 5°C to 95°C |
| PRESSURE (BAR)   | 16 Bar      |

## D102B & D103B DN20/DN50

2 & 3 Port Valve

PN16

### Features & Benefits

- Offers zone, terminal bypass and end of line applications
- Simple integration into the BMS using the Crane FS Modulating (ACT993M), 3 Point (ACT993TP) and Failsafe (ACT993FS) actuators
- Easy mounting to pipework or terminal units in confined spaces due to the compact and lightweight design
- Isolation function with Class IV leakage up to 225kPa
- PN16 rated product, suitable for building services applications and services with up to 30% Glycol

### Dimensions

#### D102B ¾ - 2"

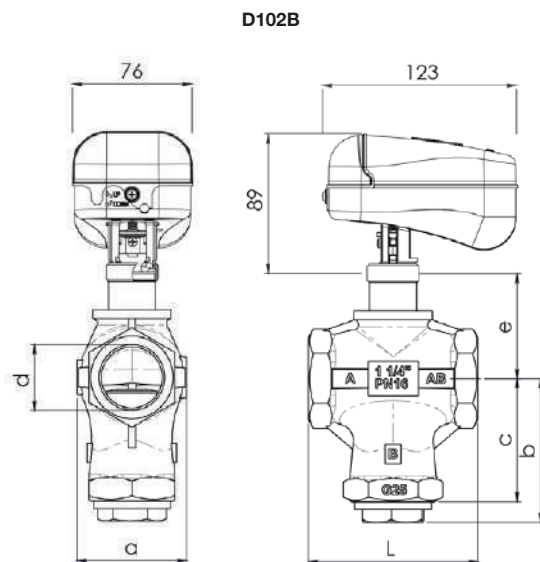
| PART NO   | KVS (m³/h) | CLOSE OFF (kPa) | L   | d      | a  | b   | e  | Weight (kg) |
|-----------|------------|-----------------|-----|--------|----|-----|----|-------------|
| 0JG93607P | 6.3        | 900             | 85  | 3/4"   | 54 | 79  | 58 | 1.1         |
| 0JG93608Q | 10         | 550             | 95  | 1"     | 62 | 83  | 63 | 1.5         |
| 0JG93609R | 14         | 350             | 108 | 1 1/4" | 70 | 90  | 67 | 2           |
| 0JG93610J | 18         | 250             | 120 | 1 1/2" | 81 | 98  | 75 | 2.7         |
| 0JG93611K | 25         | 190             | 142 | 2"     | 97 | 111 | 78 | 4           |

#### D103B ¾ - 2"

| PART NO   | KVS DIRECT WAY (m³/h) | KVS ANGLE WAY (m³/h) | CLOSE OFF (kPa) | L   | d      | a  | c    | e  | Weight (kg) |
|-----------|-----------------------|----------------------|-----------------|-----|--------|----|------|----|-------------|
| 0JG93620L | 6.3                   | 5.5                  | 900             | 85  | 3/4"   | 54 | 67.5 | 58 | 1.1         |
| 0JG93621M | 10                    | 9                    | 550             | 95  | 1"     | 62 | 72.5 | 63 | 1.5         |
| 0JG93622N | 14                    | 11                   | 350             | 108 | 1 1/4" | 70 | 78.5 | 67 | 2           |
| 0JG93623P | 18                    | 12                   | 250             | 120 | 1 1/2" | 81 | 85.5 | 75 | 2.7         |
| 0JG93624Q | 25                    | 17                   | 190             | 142 | 2"     | 97 | 97   | 78 | 4           |



### Dimensional Drawings



### Materials

| DESCRIPTION | MATERIAL   |
|-------------|------------|
| Body        | Cast Iron  |
| Plug        | Brass      |
| Stem        | CrNi steel |
| O-rings     | EPDM       |

### Pressure/Temperature Ratings

|                  |             |
|------------------|-------------|
| TEMPERATURE (°C) | 5°C to 95°C |
| PRESSURE (BAR)   | 16 Bar      |

**PRESSURE RATING:** PN16

**MEDIUM:** Group 2 Liquids

**END CONNECTIONS:** BSP Female Parallel ISO-228

**SPECIFICATION:** The control valve shall consist of a two / three port characterised control valve. Shall provide Class IV leakage during isolation function. Valve position to be controlled through a compatible actuator of the same manufacturer as the control valve typically by a M30x1.5 threaded connection. Shall be manufactured from Cast Iron, with Brass plug and NiCR stem. Shall be rated to PN16 and operate at temperatures to 95°C. As per Crane FS D102B / D103B.

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## D102F/D103F DN65/DN200

2 & 3 port flanged valves

PN16

### Features & Benefits

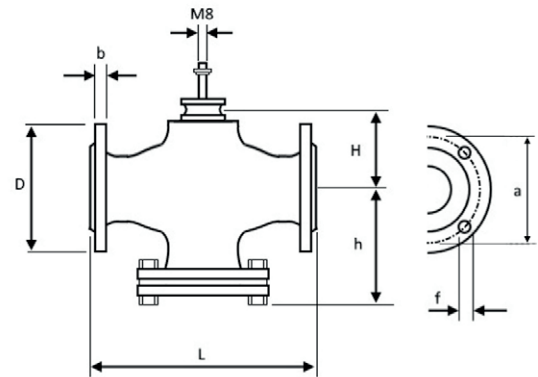
- Crane 2 & 3 port flanged valves are ideally suited for fluid control of hydronic systems, including civil and industrial applications
- Low seat leakage rate (0.03%) to EN 1349
- Equal percentage control characteristics to give linear control when used with typical heat exchangers (direct way on 3-port valves only)
- High close off pressures (dependent on actuator selection)
- Rated to 150°C max temperature suitable for overheated water or steam applications



### Materials

| PART             | MATERIAL                            |
|------------------|-------------------------------------|
| Body             | Grey cast iron (EN-GJS-250 EN 1561) |
| Seat             | Grey cast iron (EN-GJS-250 EN 1561) |
| Stem             | Stainless Steel                     |
| Balancing gasket | Viton O-ring + Teflon O-ring        |
| Stem Packing     | EPDM                                |

### Dimensional Drawing



### D102 Flanged Dimensions & Weights

| PART NO   | DN  | KVS<br>(m³/h) | L<br>(mm) | h<br>(mm) | H<br>(mm) | D<br>(mm) | b<br>(mm) | a<br>(mm) | HOLES | WEIGHT<br>(Kg) | STROKE<br>(mm) |
|-----------|-----|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-------|----------------|----------------|
| OJG93612L | 65  | 63            | 290       | 84        | 175       | 185       | 20        | 145       | 4     | 18             | 25             |
| OJG93613M | 80  | 100           | 310       | 94        | 186       | 200       | 22        | 160       | 8     | 28             | 45             |
| OJG93614N | 100 | 130           | 350       | 105       | 206       | 220       | 24        | 180       | 8     | 32             | 45             |
| OJG93615P | 125 | 200           | 400       | 128       | 255       | 250       | 26        | 210       | 8     | 45             | 45             |
| OJG93616Q | 150 | 300           | 480       | 146       | 275       | 285       | 26        | 240       | 8     | 60             | 45             |
| OJG93617R | 200 | 500           | 600       | 275       | 334       | 340       | 30        | 295       | 12    | 160            | 45             |

### D103 Flanged Dimensions & Weights

| PART NO   | DN  | KVS<br>(m³/h) | L<br>(mm) | h<br>(mm) | H<br>(mm) | D<br>(mm) | b<br>(mm) | a<br>(mm) | HOLES | WEIGHT<br>(Kg) | STROKE<br>(mm) |
|-----------|-----|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-------|----------------|----------------|
| OJG93625R | 65  | 63            | 290       | 84        | 145       | 185       | 20        | 145       | 4     | 18.8           | 25             |
| OJG93626S | 80  | 100           | 310       | 94        | 155       | 200       | 22        | 160       | 8     | 23.8           | 45             |
| OJG93627T | 100 | 130           | 350       | 105       | 175       | 220       | 22        | 180       | 8     | 32             | 45             |
| OJG93628U | 125 | 200           | 400       | 128       | 200       | 250       | 24        | 210       | 8     | 45.6           | 45             |
| OJG93629V | 150 | 300           | 480       | 146       | 240       | 285       | 24        | 240       | 8     | 61.2           | 45             |

**PRESSURE RATING:** PN16

**MEDIUM:** Group 2 Liquids

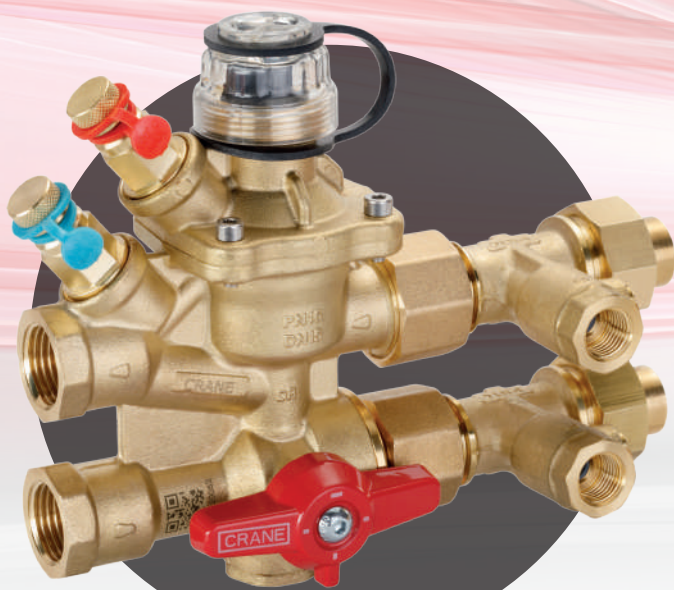
**END CONNECTIONS:** PN16 flanges

# PICV & DOMINATOR

FOR VARIABLE FLOW SYSTEMS

---

CREATING COMFORT IN  
ENERGY EFFICIENCY





# Qatar National Rail Scheme, Qatar

The Rail Doha scheme consists of a 300-kilometre metro network with four lines (red, gold, green & blue) with 80 stations; and light rail networks serving residential developments, such as Lusail, Education City and West Bay. The Lusail LRT (Light Rail) project consist of four lines totalling 30km, 8 underground stations and 25 at-grade stations. Red Line North will extend approximately 13 km northward from Musherib station, and has 7 underground stations. Two parallel tunnels will be excavated for a length of about 11.6 km and an internal diameter of 6.17 metres. Red Line South has 12 km long underground sections between Doha City Centre and the Airport. Green Line, has 15 km long underground sections which run north-south through the city. An over-ground extension to the underground tunnel section will have a total length of 3.2 km, of which 2.7 km will be a bridge from prefabricated components.

## LOCATION

Qatar

## CLIENT

Qatar Railways Development Company

## CONSULTANTS

Jacobs Engineering, Louis Berger, Egis, Hill Int'l, Italferr SpA, WSP Parsons, Brinckerhoff, Astad, Atkins.

## CHANNEL PARTNER

AlRiyadh Trading & Contracting

## CONTRACTORS

ANEL MEP, Redco Int'l, Abantia, ALYSJ joint venture, Saudi Bin Laden Group/Porr/HBK JV, TCS.

## SPECIFICATION

Crane FS Pressure Independent Control Valves PICV, Balancing Valves & a wide selection of General Valves and Strainers.



# WHY CHOOSE THE CRANE FS PICV?

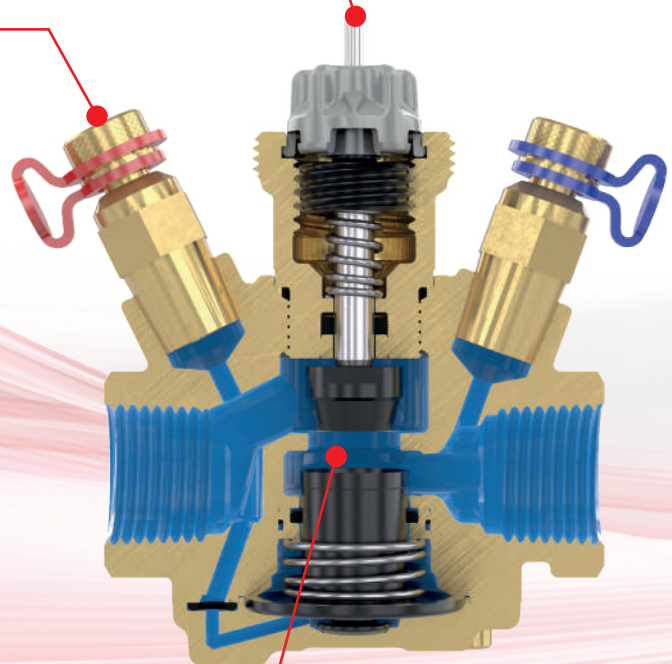
## SIMPLE FLOW SETTING DIAL

- Easy to set by hand for commissioning purposes
- Quick fit actuator connection - no tools required

## FLOW CONTROL

- Accurate over a wide  $\Delta P$  range – up to 800 kPa
- Guaranteed performance & repeatability – hassle free commissioning
- Linear or equal percentage control available through actuator offering flexibility on site
- Class IV leakage
- Flow range 0.008-1.730l/s

**Note:** Applicable to DN15 only.



## QUALITY

- These valves have been categorised in accordance with the PED (The fluid to be transported is limited to group 2 liquids i.e. non-hazardous. On no account must these valves be used on any group 1 liquids, group 1 gases or group 2 gases.)
- Comprehensive testing undertaken for each valve – pressure tested to BS EN 12266-1 and performance tested in accordance with BSRIA BTS01 (10,000 cycles test which is equal to a design life of 15 years)
- Pressure tested to BS EN 12266-1
- Performance tested in accordance with BSRIA BTS01







## PRESSURE INDEPENDENT CONTROL VALVE

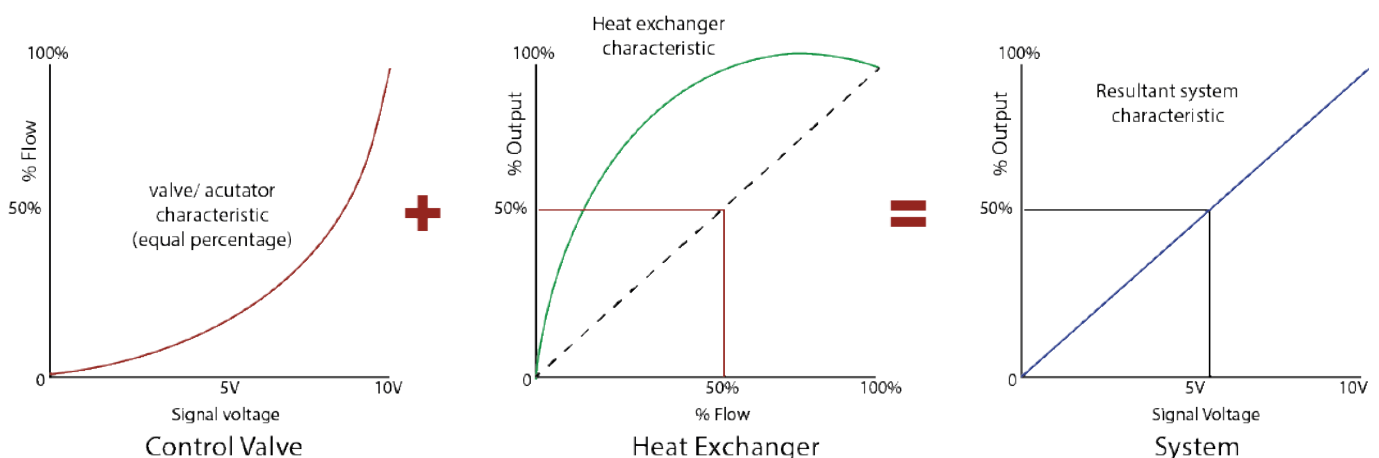
In modern Building Services projects, the desire for energy efficiency is a primary consideration for designers, installers, manufacturers, and end users. HVAC systems offer an excellent opportunity for energy savings if the correct products are specified, selected and installed and the use of these products is clearly understood. For installations incorporating items such as fan coil units (FCU) or chilled beams, the Crane Fluid Systems PICV offers an excellent solution for control of water flow rates, and therefore comfort control and energy savings when used as part of a variable volume system design. For the installer, we offer a range of solutions which are easy to select, install and commission.

Developed in the UK, tested to BSRIA PICV standards and utilising high-quality materials, these valves can provide equal percentage performance which delivers optimum control valve authority. Crane FS go further to give you the flexibility, offering various actuator options and measuring points, along with a wide differential pressure and flow rate range available.

All these factors combine to ensure our product will help you to design, deliver and maintain a system, which closes the performance gap and enables energy and cost reduction over its lifetime.

### Control Characteristics

The D995 Peak Pro PICV is designed with a linear control characteristic to ensure good control over the flow rate at all settings. Our intelligent actuator controls the linear valve characteristics to an equal percentage characteristic at all valve settings.

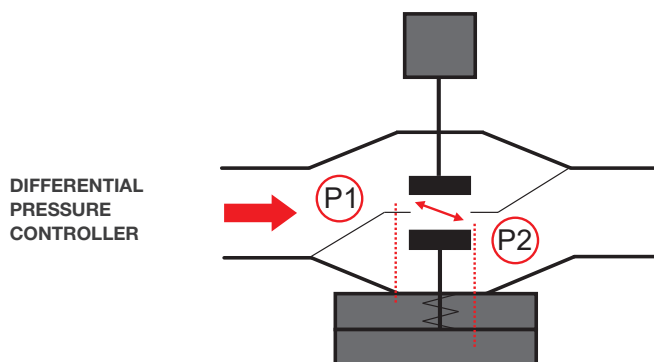


# HOW DOES THE CRANE FS PICV WORK?

## 1. Differential Pressure Control

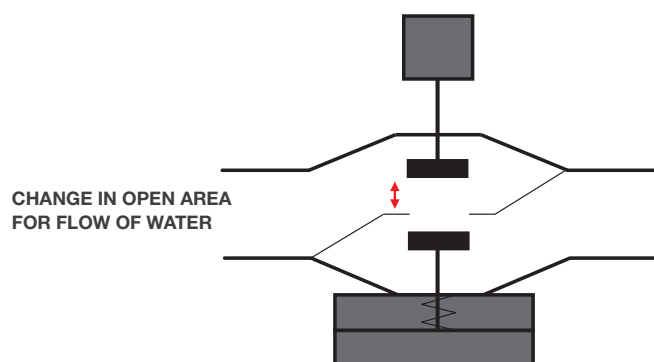
As the flow rates in the distribution pipework fluctuate to match demand, the available pressure at individual terminal units varies. This variation in available pressure has the effect of changing the flow rate through the terminal sub-circuit, i.e. an increase in pressure gives an increased flow rate.

To negate these fluctuating pressures, the PICV maintains a constant pressure drop across its seat P1 to P2, therefore maintaining a constant flow rate to the terminal.



## 2. Flow Regulation

By changing the open space, through which the water flows within the valve, the flow rate can be adjusted and set. The pressure across the seat of the PICV is held constant by the differential pressure controller. Whilst setting, the open area around the disk will change, resulting in a change to the flow rate. The new set flow rate recreates the constant seat differential pressure P1 to P2. Having set a new flow rate, it will stay constant at the new set value.

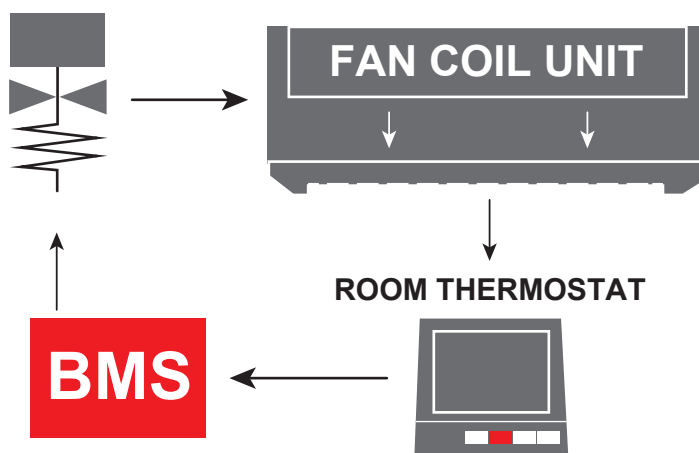


## 3. Comfort Control

The use of a PICV, as with all 2 port control valves, allows for the variation of the flow rate to vary the heat output of the terminal unit. The PICV is an integral part of the control loop.

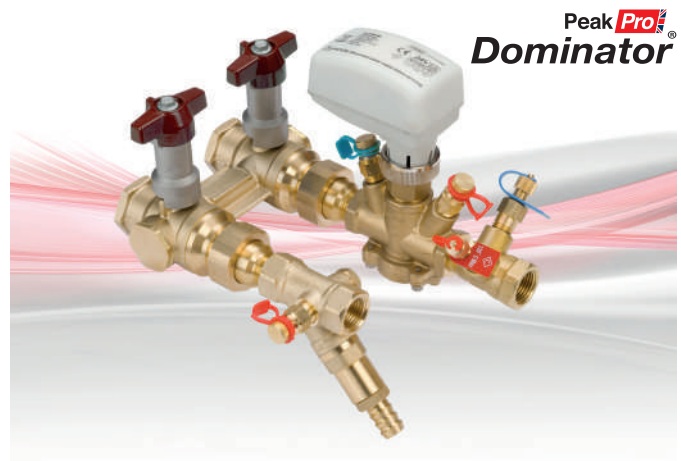
## 4. Thermostat, BMS, PICV & Terminal Unit

By varying the flow rate we can control the heat output of the terminal. For PICVs with an equal percentage characteristic, there is a direct relationship between valve position and heat output, i.e. half open = half heat output.



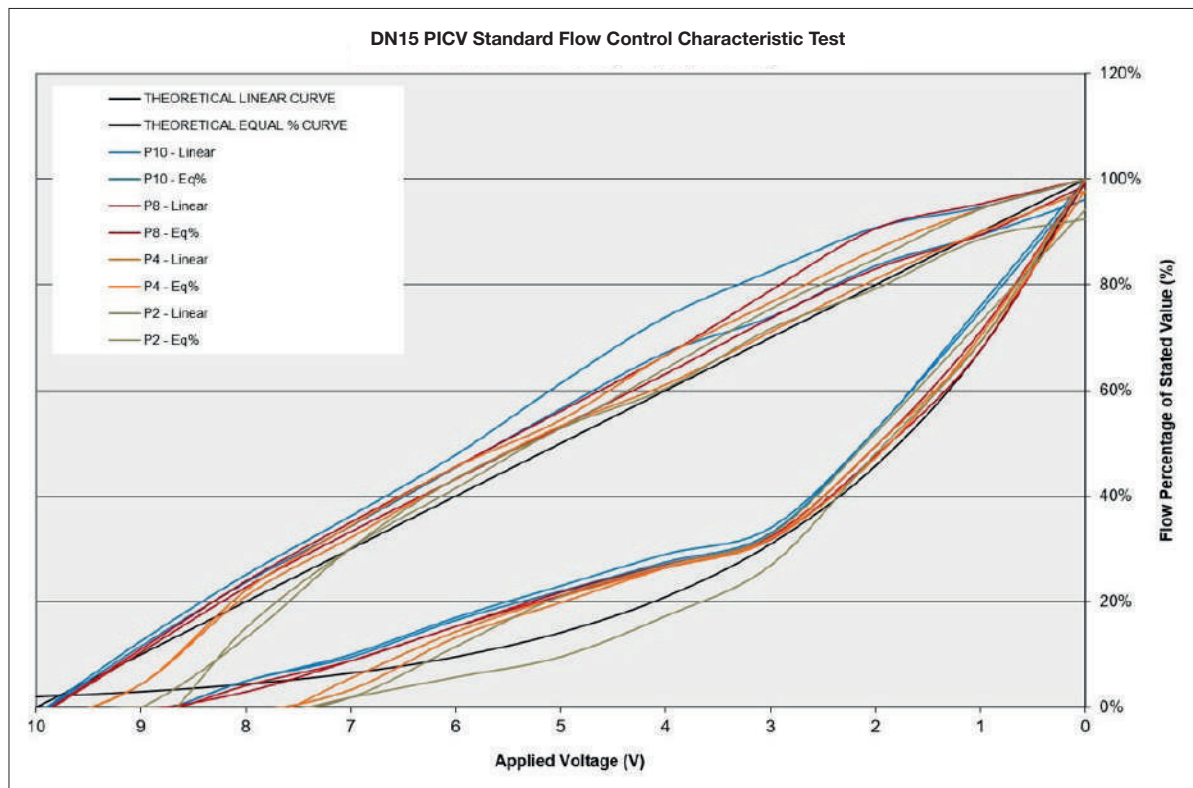
# TECHNICAL DESCRIPTION SUMMARY

| APPLICATION                                                                                                                                                                                                                                                                                | DIFFERENTIAL PRESSURE   |    |        | VARIANTS / FLOW RANGE     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|----|--------|---------------------------|
| Heating and cooling hydronic systems.                                                                                                                                                                                                                                                      | Activation up to 800kPa |    |        | <b>Peak Pro PICV</b>      |
| <b>FUNCTIONS:</b><br>Flow Control <ul style="list-style-type: none"> <li>- Equal percentage control characteristics (default)</li> <li>- Linear control characteristic</li> <li>- Both available with position Feedback signal</li> <li>- Multiple control signal compatibility</li> </ul> | Activation              |    |        | DN15                      |
|                                                                                                                                                                                                                                                                                            | DN15                    | LF | 20 kPa | LF 0.008 – 0.080 l/s      |
|                                                                                                                                                                                                                                                                                            |                         | SF | 25 kPa | SF 0.060 – 0.200 l/s      |
|                                                                                                                                                                                                                                                                                            |                         | HF | 50 kPa | HF 0.010 – 0.370 l/s      |
|                                                                                                                                                                                                                                                                                            | DN20                    | SF | 27kPa  | DN20                      |
|                                                                                                                                                                                                                                                                                            |                         | HF | 40kPa  | SF 0.070-0.350 l/s        |
|                                                                                                                                                                                                                                                                                            |                         |    |        | HF 0.075-0.420 l/s        |
| <b>LEAKAGE RATE:</b><br>Class IV to EN 1349 0.01% of stated max flow<br>LF Class III (0.1% of Kv Max)<br>SF Class IV (0.01% of Kv Max)<br>HF Class IV (0.01% of Kv Max)                                                                                                                    | DN25                    | SF | 40kPa  | DN25                      |
|                                                                                                                                                                                                                                                                                            |                         | HF | 70kPa  | SF 0.120-0.600 l/s        |
|                                                                                                                                                                                                                                                                                            |                         |    |        | HF 0.360-0.850 l/s        |
|                                                                                                                                                                                                                                                                                            | DN32                    | SF | 65kPa  | DN32                      |
|                                                                                                                                                                                                                                                                                            |                         | HF | 70kPa  | SF 0.52-1.35 l/s          |
|                                                                                                                                                                                                                                                                                            |                         |    |        | HF 0.63-1.73 l/s          |
|                                                                                                                                                                                                                                                                                            | DN40                    | SF | 50kPa  | DN40                      |
|                                                                                                                                                                                                                                                                                            | DN50                    | SF | 40kPa  | SF 0.39-3.00 l/s          |
|                                                                                                                                                                                                                                                                                            |                         |    |        | DN50                      |
|                                                                                                                                                                                                                                                                                            |                         |    |        | SF 0.69-3.80 l/s          |
| <b>TEMPERATURE RANGE:</b><br>0°C to 90°C                                                                                                                                                                                                                                                   |                         |    |        | <b>Dominator Peak Pro</b> |
|                                                                                                                                                                                                                                                                                            |                         |    |        | DN15 X DN15               |
|                                                                                                                                                                                                                                                                                            |                         |    |        | DN20 X DN20               |
|                                                                                                                                                                                                                                                                                            |                         |    |        | DN25 X DN25               |

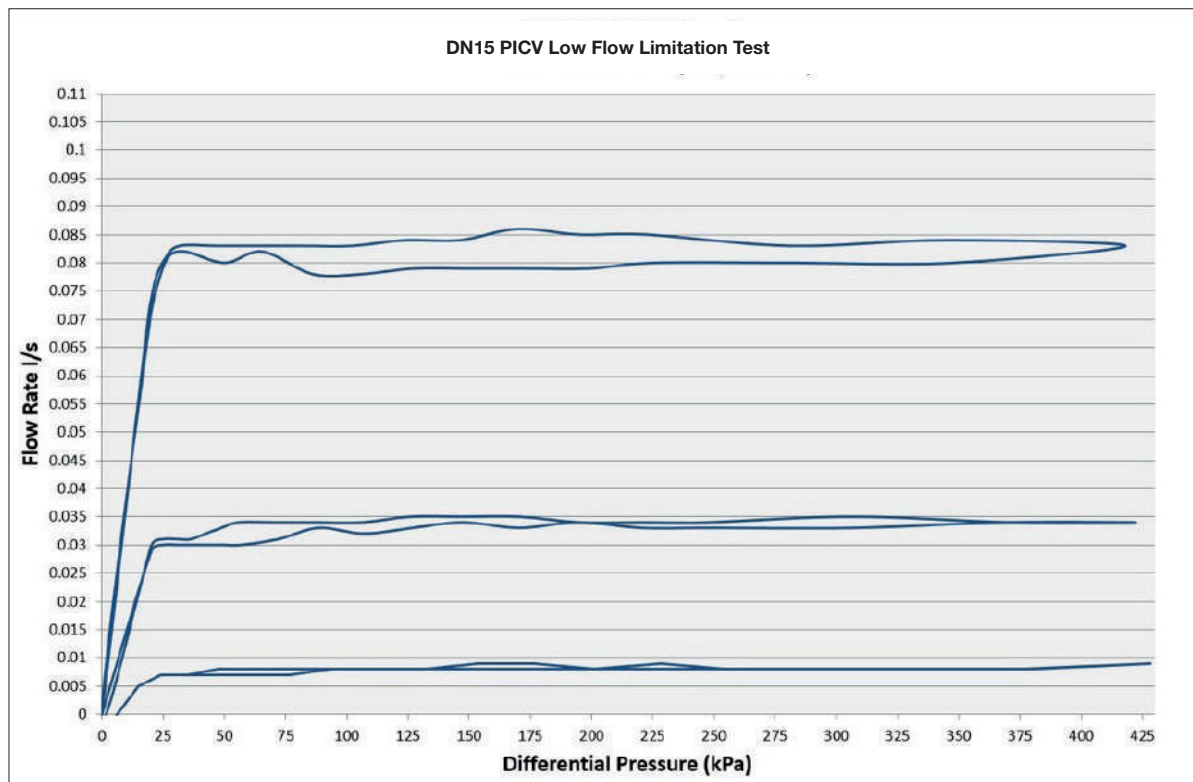


# EXAMPLE FLOW PERFORMANCE GRAPHS

## Peak Pro Pressure Independent Control Valve



## Control Characteristics Test Data





# D995 DN15-20-25

**Peak *Pro***™

## Pressure Independent Control Valve

**PN25**

### Features & Benefits

**ProBalance**

- Comprehensive flow range available, allowing for cost effective valve selections. The PICV Peak Pro has up to 70% higher max flow compared to the previous model
- Accurate over a wide  $\Delta P$  range - available in both 400 and 800kPa variants
- Class IV leakage\*
- PN25 rated product, suitable for high pressure applications
- Design validation testing to BSRIA BTS01. As per Cyclic Testing requirements, valve subjected to 10,000 cycles (equivalent to 15 years\*\* of typical service)
- Comprehensive testing undertaken for each valve - pressure tested to BS EN 12266-1
- Integral test points for verification of  $\Delta P$  and valve performance
- Built in convoluted integral diaphragm
- Smaller and lighter design suits applications with a small footprint


**bsria**

### Materials

| No. | Part           | Material                       |
|-----|----------------|--------------------------------|
| 1   | Body           | DZR Brass BS EN 12165 (CW602N) |
| 2   | Bonnet         | DZR Brass BS EN 12165 (CW602N) |
| 3   | End Cap        | DZR Brass BS EN 12165 (CW602N) |
| 4   | P84 Test Point | DZR Brass BS EN 12165 (CW602N) |
| 5   | Setting Dial   | Nylon 6                        |
| 6   | DP Controller  | Stainless Steel 303            |
| 7   | Springs        | Stainless Steel 302            |
| 8   | Diaphragm      | EPDM                           |
| 9   | O-Rings        | EPDM                           |
| 10  | O-Ring Insert  | DZR Brass BS EN 12165 (CW602N) |
| 11  | Stem           | Stainless Steel 303            |

\*DN15 LF Class 3 \*\*based on two full stroke cycles per day

### Dimension & Weights

|      | A (mm) | B (mm) | C (mm) | C2 (mm) | D (mm) | End Connections                      | Weight (kg) |
|------|--------|--------|--------|---------|--------|--------------------------------------|-------------|
| DN15 | 74     | 36     | 63     | 120     | 27     | ½" BSP Female Taper to BS EN 10226-2 | 0.52        |
| DN20 | 90     | 47     | 75     | 130     | 30     | ¾" BSP Female Taper to BS EN 10226-2 | 0.82        |
| DN25 | 112    | 63     | 75     | 130     | 51     | 1" BSP Female Taper to BS EN 10226-2 | 1.55        |

### Flow Range

|      | Low Flow (l/s) | STD Flow (l/s) | High Flow (l/s) |
|------|----------------|----------------|-----------------|
| DN15 | 0.008-0.080    | 0.060 - 0.200  | 0.10 - 0.370    |
| DN20 | -              | 0.070 - 0.350  | 0.075 - 0.420   |
| DN25 | -              | 0.120 - 0.600  | 0.360 - 0.850   |

### Pressure/Temperature Ratings

|                  |             |
|------------------|-------------|
| Temperature (°C) | 0°C to 90°C |
| Pressure (Bar)   | 25 Bar      |

**PRESSURE RATING:** PN25

**MEDIUM:** Group 2 Liquids

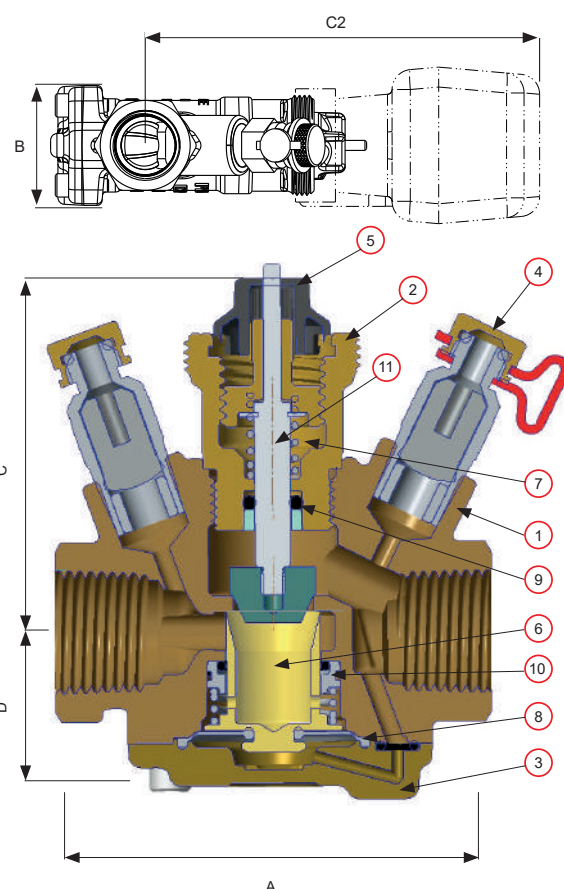
**END CONNECTIONS:**

BSP Female Taper to BS EN 10226-2

**SPECIFICATION:** The PICV shall have a constant control characteristic at all flow settings and control flow rates at differential pressures up to 800kPa. Flow rates will be externally adjustable, and set point recordable. Integral test points will be fitted to verify setting pressure allowing pumps to be set at optimum speed to maximise energy savings. Shall be manufactured from DZR Brass, with Stainless Steel springs, and an EPDM diaphragm. Shall be rated to PN25 and operate at temperatures to 90°C. As per Crane FS Peak Pro (Fig D995).

**SPARES:** Isolating cap part number 0ED13666H.

### Dimensional Drawings



### Differential Pressure Range

|      | Low Flow (kPa)   | STD Flow (kPa)   | High Flow (kPa)  |
|------|------------------|------------------|------------------|
| DN15 | 20-400<br>20-800 | 25-400<br>20-800 | 40-400<br>40-800 |
| DN20 | -<br>-           | 27-400<br>27-800 | 40-400<br>40-800 |
| DN25 | -<br>-           | 40-400<br>40-800 | 70-400<br>70-800 |

Please request max  $\Delta P$  on order

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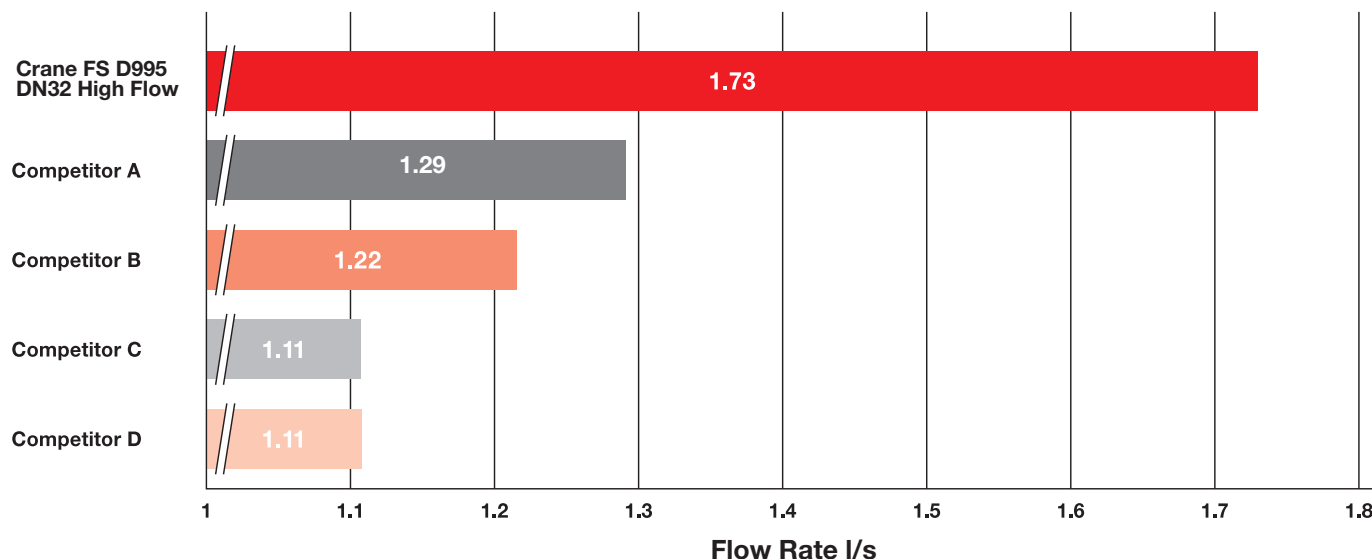
Valid as of 260418

# Next Generation PICV D995 DN32

**Peak Pro**

High performance valve  
with greater flow rates.

## BEST IN CLASS - FLOW RATE vs SIZE<sup>1</sup>



## FEATURES & BENEFITS

- Low activation & low hysteresis are consistent across the operating range. The PICV responds quickly to maintain a consistent flow which improves pump efficiency, resulting in energy savings & lower running costs.
- Excellent performance coverage from the DN32 ensures smaller pipework can be specified, compared to using larger sized valves. A real saving for the contractor & end user.
- Reductions in weight and footprint allow the valves to be used within smaller voids.
- Available with a range of actuators to suit fan coil units and chilled beam applications.



**Made in Britain**

### FLOW MEASUREMENT

- The PICV Peak Pro has up to 80% higher max flow compared to the previous model
- Accurate over a wide  $\Delta P$  range - up to 800kPa

- Comprehensive testing undertaken for each valve - pressure tested to BS EN 12266-1
- PN16 rated product
- Flow Range  
Standard Flow: 0.53 - 1.35 l/s  
High Flow: 0.62 - 1.73 l/s

- Design validation testing to BSRIA BTS01. As per cyclic testing requirements, valve subjected to 10,000 cycles (equivalent to 15 years<sup>2</sup> of typical service)
- Integral test points for verification of  $\Delta P$  and valve performance

### PERFORMANCE

### DESIGN

<sup>1</sup>Data sourced from published competitor flow rates as of February 2021.

<sup>2</sup>Based on two full stroke cycles per day

# D995 DN32

**Peak Pro™**

## Pressure Independent Control Valve

**PN16**

### Features & Benefits

**ProBalance**

- Comprehensive flow range available, allowing for cost effective valve selections. The PICV Peak Pro has up to 80% higher max flow compared to the previous model
- Accurate over a wide  $\Delta P$  range - up to 800kPa
- Class IV leakage
- PN16 rated product, suitable for high pressure applications
- Design validation testing to BSRIA BTS01. As per Cyclic Testing requirements, valve subjected to 10,000 cycles (equivalent to 15 years\* of typical service)
- Comprehensive testing undertaken for each valve - pressure tested to BS EN 12266-1
- Integral test points for verification of  $\Delta P$  and valve performance
- Built in convoluted integral diaphragm
- Smaller and lighter design suits applications with a small footprint

\*based on two full stroke cycles per day

### Materials

| No. | Part           | Material                       |
|-----|----------------|--------------------------------|
| 1   | Body           | DZR Brass BS EN 12165 (CW602N) |
| 2   | Bonnet         | DZR Brass BS EN 12165 (CW602N) |
| 3   | End Cap        | DZR Brass BS EN 12165 (CW602N) |
| 4   | P84 Test Point | DZR Brass BS EN 12165 (CW602N) |
| 5   | Setting Dial   | Nylon 6                        |
| 6   | DP Controller  | Stainless Steel 303            |
| 7   | Springs        | Stainless Steel 302            |
| 8   | Diaphragm      | EPDM                           |
| 9   | O-Rings        | EPDM                           |
| 10  | O-Ring Insert  | DZR Brass BS EN 12165 (CW602N) |
| 11  | Stem           | Stainless Steel 303            |

### Dimension & Weights

|      | A (mm) | B (mm) | C (mm) | C2 (mm) | D (mm) | End Connections  | Weight (kg) |
|------|--------|--------|--------|---------|--------|------------------|-------------|
| DN32 | 135    | 100    | 76     | 135     | 56     | 1-1/4" BSP Taper | 2.3         |

### Flow Range

|      | STD Flow (l/s) | High Flow (l/s) |
|------|----------------|-----------------|
| DN32 | 0.52-1.35      | 0.63-1.73       |

### Pressure/Temperature Ratings

|                  |             |
|------------------|-------------|
| Temperature (°C) | 0°C to 90°C |
| Pressure (Bar)   | 16 Bar      |

**PRESSURE RATING:** PN16

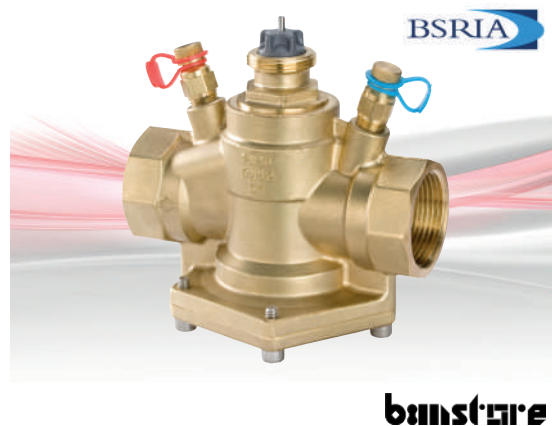
**MEDIUM:** Group 2 Liquids

**END CONNECTIONS:**

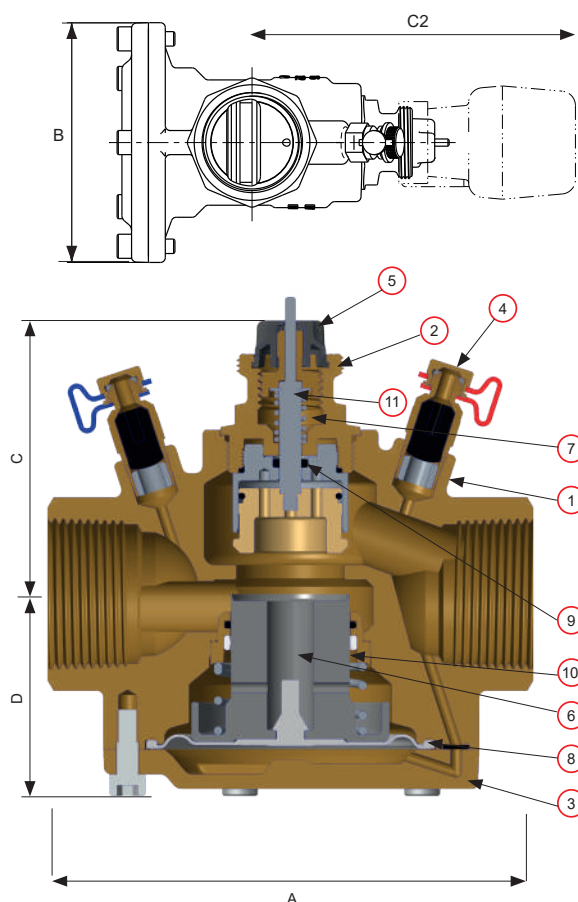
BSP Female Taper to BS EN 10226-2

**SPECIFICATION:** The PICV shall have a constant control characteristic at all flow settings and control flow rates at differential pressures up to 800kPa. Flow rates will be externally adjustable, and set point recordable. Integral test points will be fitted to verify setting pressure allowing pumps to be set at optimum speed to maximise energy savings. Shall be manufactured from DZR Brass, with Stainless Steel springs, and an EPDM diaphragm. Shall be rated to PN16 and operate at temperatures to 90°C. As per Crane FS Peak Pro (Fig D995).

**SPARES:** Isolating cap part number 0ED13666H.



### Dimensional Drawings



### Differential Pressure Range

|      | STD Flow (kPa) | High Flow (kPa) |
|------|----------------|-----------------|
| DN32 | 65-800         | 70-800          |

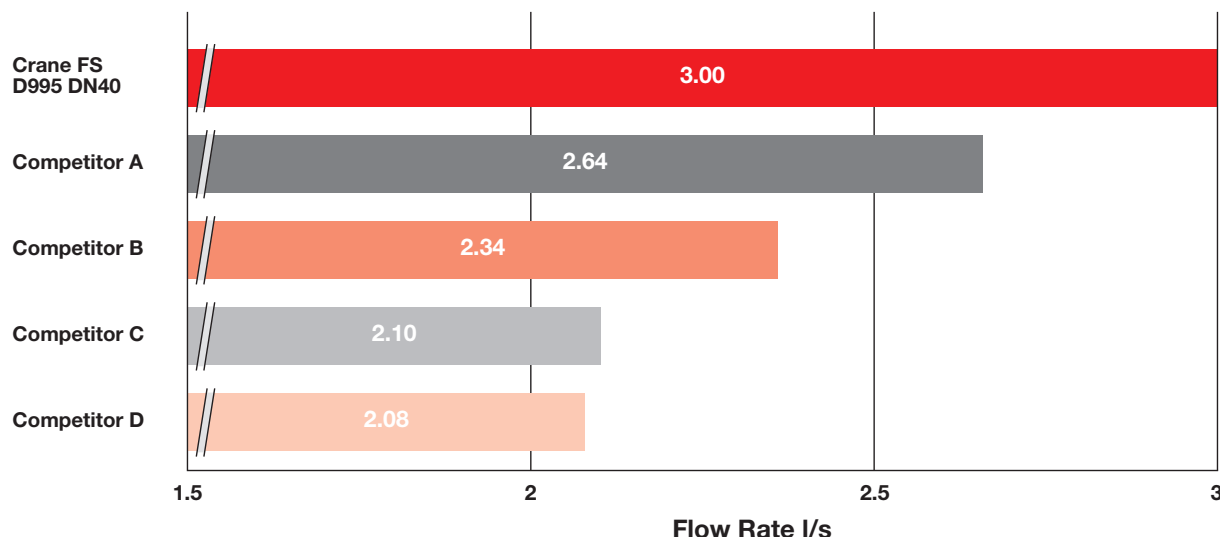
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Valid as of 100221

# Next Generation PICV D995 DN40 & DN50

## DN40 BEST IN CLASS - FLOW RATE vs SIZE<sup>1</sup>



## FEATURES & BENEFITS

### Low Activation

The PICV responds very quickly to maintain a consistent flow, ultimately improving pump efficiency, helping reduce energy usage across the system, resulting in energy savings and lower running costs.

### Low Hysteresis & Great Control

The impact of high hysteresis can result in an inefficient systems that can cause a time delay in temperature settings that will affect the environment that you are in.

With low hysteresis and great control the PICV ensures the system can respond quickly and efficiently resulting in a comfortable environment for the end user and ultimately reducing energy consumption.

### Compact Design, Better For The Planet

The new D995 Peak Pro PICV DN40 & DN50 are lighter than the previous models, reducing its carbon footprint (Scope3 emissions), but offers higher maximum flow rates.

- DN40 - 20% weight reduction
- DN50 - 37% weight reduction

Less raw materials, eco-friendly packaging and lower freight impact all contribute to limit CO2 emissions.



<sup>1</sup>DN40 Data sourced from published competitor flow rates as of September 2021.

<sup>2</sup>Based on two full stroke cycles per day



# D995 DN40 & DN50

## Pressure Independent Control Valve

**PN16**

### Features & Benefits

- Comprehensive flow range available, allowing for cost effective valve selections. The PICV Peak Pro has up to 25% higher max flow compared to the previous model
- Accurate over a wide  $\Delta P$  range - up to 800kPa
- Class IV leakage
- PN16 rated product, suitable for high pressure applications
- Design validation testing to BSRIA BTS01. As per Cyclic Testing requirements, valve subjected to 10,000 cycles (equivalent to 15 years\* of typical service)
- Comprehensive testing undertaken for each valve - pressure tested to BS EN 12266-1
- Integral test points for verification of  $\Delta P$  and valve performance
- Built in convoluted integral diaphragm
- Smaller and lighter design suits applications with a small footprint

\*based on two full stroke cycles per day

### Materials

| No. | Part           | Material                       |
|-----|----------------|--------------------------------|
| 1   | Body           | Bronze BS EN 1982 (CC491K)     |
| 2   | Bonnet         | Bronze BS EN 1982 (CC491K)     |
| 3   | End Cap        | Bronze BS EN 1982 (CC491K)     |
| 4   | P84 Test Point | DZR Brass BS EN 12165 (CW602N) |
| 5   | Setting Dial   | Nylon 6                        |
| 6   | DP Controller  | Stainless Steel 303            |
| 7   | Springs        | Stainless Steel 302            |
| 8   | Diaphragm      | EPDM                           |
| 9   | O-Rings        | EPDM                           |
| 10  | O-Ring Insert  | Stainless Steel 303S           |
| 11  | Stem           | Stainless Steel 303S           |

### Dimensions & Weights

| Size (DN) | A (mm) | B (mm) | C1 (mm) | C2 (mm) | D (mm) | E (mm) | End Connections                        | Weight (kg) |
|-----------|--------|--------|---------|---------|--------|--------|----------------------------------------|-------------|
| DN40      | 137.1  | 118    | 94      | 145     | 104    | 72     | 1 1/2" BSP Female Taper to BS EN 10226 | 3.60        |
| DN50      | 161.5  | 118    | 99      | 150     | 106.5  | 78     | 2" BSP Female Taper to BS EN 10226     | 4.25        |

### Flow Range

| Size (DN) | Flow (l/s)  |
|-----------|-------------|
| DN40      | 0.39 - 3.00 |
| DN50      | 0.69 - 3.80 |

### Differential Pressure Range

| Size (DN) | Flow (kPa)   |
|-----------|--------------|
| DN40      | 50 - 800 kPa |
| DN50      | 40 - 800 kPa |

**PRESSURE RATING:** PN16

**END CONNECTIONS:**  
BSP Female Taper to BS EN 10226-2

**MEDIUM:** Group 2 Liquids

**SPECIFICATION:** The PICV shall have a constant control characteristic at all flow settings and control flow rates at differential pressures up to 800kPa. Flow rates will be externally adjustable, and set point recordable. Integral test points will be fitted to verify setting pressure allowing pumps to be set at optimum speed to maximise energy savings. Shall be manufactured from Bronze (CC491K), with Stainless Steel springs, and an EPDM diaphragm. Shall be rated to PN16 and operate at temperatures to 90°C. As per Crane FS Peak Pro (Fig D995).

**SPARES:** Isolating cap part number 0ED13666H

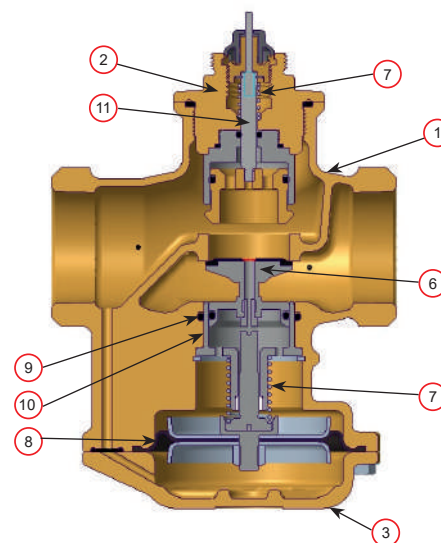
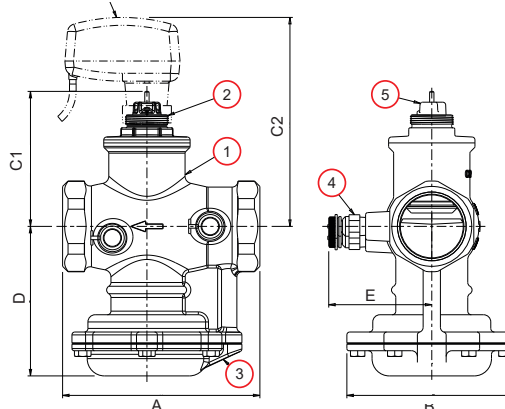
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**Peak Pro**  
**PICV**

**bsria**

### Dimensional Drawing

Actuator shown for reference only (supply separately)



### Pressure/Temperature Ratings

|                  |             |
|------------------|-------------|
| Temperature (°C) | 0°C to 90°C |
| Pressure (Bar)   | 16          |







# 103 Colmore Row, Birmingham

103 Colmore Row is Birmingham's tallest office building at 105.5 metres (346 feet) high and with the apex to stand 246 metres above sea level, the new tower and is the tallest in the UK outside London. Designed by Doone Silver Architects. Comprising 223,631 sq ft of BREEAM Excellent Grade A office space, the 26 storey building, boasts a four storey winter garden, along with a two storey top floor restaurants and a ground floor café.

As part of Birmingham City Council's climate change strategy, 103 Colmore is the first commercial office development in Birmingham's central business district to benefit from the city's new District Energy Scheme which aims to cut CO<sub>2</sub> emissions by 60 per cent by 2027.

In line with the buildings strategy for reduced energy consumption and to keep CO<sub>2</sub> emissions low, principal contractor BAM selected Dominator Peak Pro Units to be installed throughout the building. By selecting the

Dominator, this ensures a perfect working environment for all users of the building.

Dominator Peak Pro is a lightweight and modular valve system that includes the Peak Pro Pressure Independent Control Valve for accurate flow, temperature and pressure control. By utilising the Crane FS Peak Pro PICV, the project has been provided the best opportunity to realise operational cost savings and increased energy efficiency. The PICV has excellent accuracy and hysteresis, which helps maintain the set flow rate and limit the occurrences of overflow.

The use of the Crane FS Gap Detection actuator allowed for further operational cost savings by giving excellent valve authority and controllability at all valve settings. This ensures that a change in valve position translates into a change in flow rate/pump speed and therefore realised energy savings.

## LOCATION

Birmingham

## SECTOR

Commercial

## CLIENT

Rockspring Property Investment Managers LLP  
and Sterling Property Ventures

## ARCHITECTS

Doone Silver Kerr

## CONTRACTORS

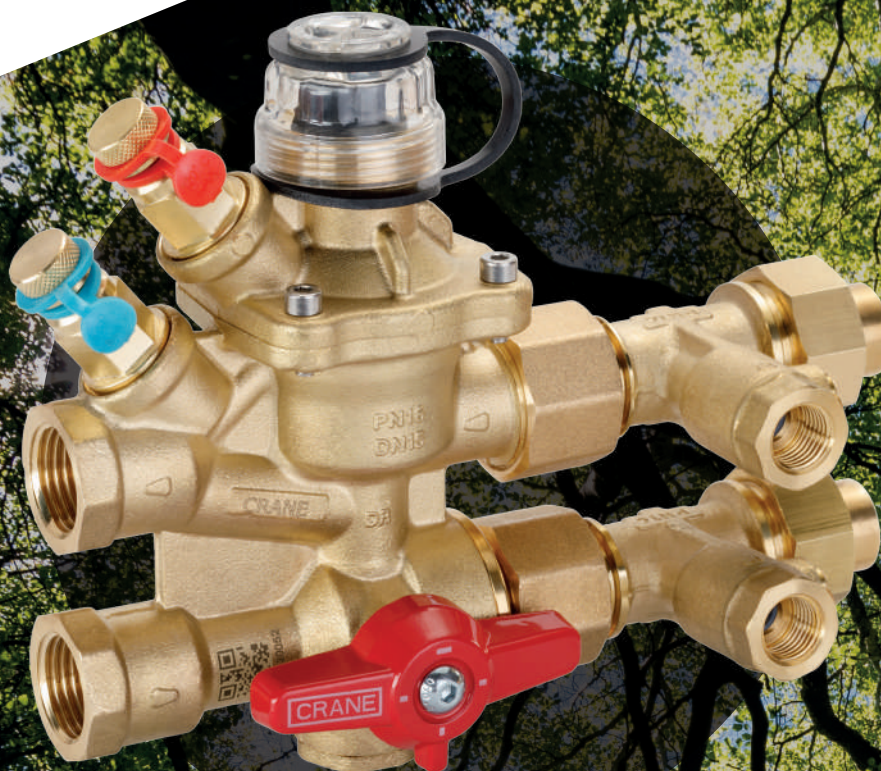
BAM

## DISTRIBUTOR

BSS



# Dominator<sup>®</sup> Eco



## Focused on sustainability

### 2030 TARGETS



**10%** ↓

Reduction in water consumed  
per direct labour hour by 2030.



**20%** ↓

Reduction in greenhouse gas emissions  
per direct labour hour by 2030.



**20%** ↓

Reduction in electricity consumed  
per direct labour hour by 2030.



**15%** ↓

Reduction in solid non-hazardous  
waste per direct labour hour by 2030.



## Reduced Embodied Carbon

The Dominator Eco's innovative design combines a PICV, H-body and FMD together. Not only does this make it shorter and lighter, it also uses less raw materials to produce, reducing CO<sub>2</sub> emitted into the atmosphere in the extraction, transportation and manufacturing processes.

## 100% Recyclable Packaging

Plastic packaging is a big problem globally, it can take up to 1000 years to degrade and ends up in oceans, lakes and environments where it causes pollution and kills wildlife. The all-cardboard packaging used when delivering the Dominator Eco is 100% recyclable, 100% biodegradable and FSC traceable to sustainable sources to support responsible forestry.

## Paperless

The paper industry remains one of the largest consumers of water in the world, and one sheet of A4 can take up to 20 litres to produce. The Dominator Eco is paperless, the digital datasheet and installation manual can be quickly accessed via QR code on the colour coded tags and also found on the website. This small change saves around 329kg of paper being used a year, or the weight of one Grizzly Bear!

## Smaller & Lighter

The Dominator Eco is 36% lighter and 28% shorter than the equivalent Dominator Peak Pro making it more efficient when shipping and transporting, you can fit more products on a single pallet.

## Carbon footprint reduction

One of the core values within Crane Co. businesses is the elimination of waste throughout the organisation. The Company also has a structured cadence and process to manage and measure progress of sustainability initiatives.



# DE40 DN15/15

## Dominator ECO Classic



**Dominator<sup>®</sup>**  
**Eco**

Made in  
Britain

PN16



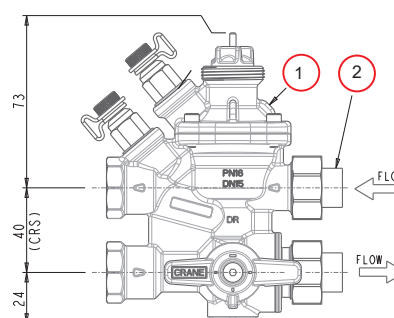
ProBalance

bmsstore

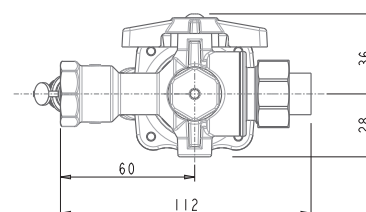
### Features & Benefits

- Reduced embodied carbon and simple installation by combining a PICV, H-body and FMD together, making the Dominator Eco lighter and shorter than our current Dominator Classic
- Innovative design - Unique differential pressure mechanism, ensuring accurate flow control and allowing the valve to be back flushed if required. Patent Pending
- Reliable flow measurement through the integral FMD in accordance to BS 7350
- Easily identifiable chilled and heating applications via the colour coded tags that also display the fan coil reference
- Paperless - Digital datasheet, IOM and commissioning tool can be quickly accessed via QR code on the colour coded tags
- Peace of mind - 100% of Dominator Ecos are tested before shipping. This involves pressure testing to BS EN 12266-1 and performance testing in accordance with BSRIA BTS01
- Direct mounting to FCUs – designed for easy access to components in confined spaces
- Flow regulation and  $\Delta P$  verification – Utilising setting dial and integrated test points
- Comprehensive flow range available, allowing for cost effective valve selections
- PN16 rated product, suitable for building services applications

### Dimensional Drawings



Available in standard or reverse handed orientations.



### Materials

| No. | Description                                                                                                            | Material                       | QTY |
|-----|------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|
| 1   | Male Ended Low Flow 0.010 - 0.080l/s<br>Male Ended Std. Flow 0.025 - 0.170l/s<br>Male Ended High Flow 0.110 - 0.290l/s | DZR Brass BS EN 12165 (CW602N) | 1   |
| 2   | End Connection Sub-Assembly                                                                                            | DZR Brass BS EN 12165 (CW602N) | 2   |

NOTE: Sealing gasket and O-rings material are EPDM

### PICU Pressure

|                    |                    |
|--------------------|--------------------|
| Operating Pressure | 20 - 400 (DN15 LF) |
| Range Across Valve | 20 - 400 (DN15 SF) |
| (kPa)              | 40 - 400 (DN15 HF) |

**PRESSURE RATING:** PN16

**TEMPERATURE RATING:** 0 to 90°C  
WEIGHT 1.1kg

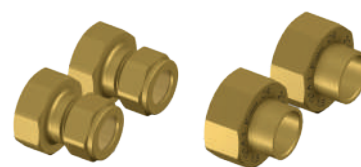
#### END CONNECTIONS:

Valve body - BSP Taper  
Terminal end - Compression/Solder

**SPARES:** Refer to IOM

**SPECIFICATION:** DZR Terminal unit valve set to be a pre-assembled unit as supplied by a single manufacturer. Unit to include a flushing bypass with integral isolation valves and Pressure Independent Commissioning Unit (PICU). Flow rate to be measurable using integral test points as per BS 7350. Flow rate to be adjustable between 0.010-0.290l/s, dependent on variant. Connections to be flat face unions between components with female BSPT on system side and compression/solder on terminal side. Unit to be manufactured from DZR Brass to BS EN 12164/5 CW602N. Valve assembly will be labelled to include the terminal unit reference number, service and part number as per Dominator Eco.

### End Connections



Compression

Solder\*

\*15mm only

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# DE40B DN15/15

**Dominator ECO with  
BSRIA Flushing Drains**



**Dominator<sup>®</sup>**  
**Eco**

**Made in  
Britain**  
**PN16**



## Features & Benefits

- Innovative design – Unique differential pressure mechanism, ensuring accurate flow control and allowing the valve to be back flushed if required. Patent Pending
- Reduced embodied carbon and simple installation by combining a PICV, H-body and FMD together, making the Dominator Eco 36% lighter and 28% shorter than our current 40mm Dominator alternative
- Reliable flow measurement through the integral FMD in accordance to BS 7350
- Easily identifiable chilled and heating applications via the colour coded tags that also display the fan coil reference
- Paperless – Digital datasheet, IOM and commissioning tool can be quickly accessed via QR code on the colour coded tags
- BSRIA BG29 compliant design – Full forward-flushing and back-flushing capabilities
- Peace of mind – 100% of Dominator Ecos are tested before shipping. This involves pressure testing to BS EN 12266-1 and performance testing in accordance with BSRIA BTS01
- Direct mounting to FCUs – Designed for easy access to components in confined spaces
- Flow regulation and  $\Delta P$  verification – Utilising setting dial and integrated test points
- Comprehensive flow range available, allowing for cost effective valve selections
- PN16 rated product, suitable for building services applications
- Increased functionality and reduced material requirement – Interchangeable test points and nozzles facilitate  $\Delta P$  measurement and flushing where required

## Materials

| No. | Description                                                                                                            | Material                       | QTY |
|-----|------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|
| 1   | Male Ended Low Flow 0.010 - 0.080l/s<br>Male Ended Std. Flow 0.025 - 1.170l/s<br>Male Ended High Flow 0.110 - 0.290l/s | DZR Brass BS EN 12165 (CW602N) | 1   |
| 2   | Drain Tee Assembly – Male Captive                                                                                      | DZR Brass BS EN 12165 (CW602N) | 2   |
| 3   | End Connection Sub-Assembly                                                                                            | DZR Brass BS EN 12165 (CW602N) | 2   |

NOTE: Sealing gasket and O-rings material are EPDM

## PICU Pressure

|                                                    |                                                                |
|----------------------------------------------------|----------------------------------------------------------------|
| <b>Operating Pressure Range Across Valve (kPa)</b> | 20 - 400 (DN15 LF)<br>20 - 400 (DN15 SF)<br>40 - 400 (DN15 HF) |
|----------------------------------------------------|----------------------------------------------------------------|

**PRESSURE RATING:** PN16

**TEMPERATURE RATING:** 0 to 90°C  
**WEIGHT** 1.6kg

### END CONNECTIONS:

Valve body - BSP Taper  
Terminal end - Compression/Solder

**SPARES:** Refer to IOM

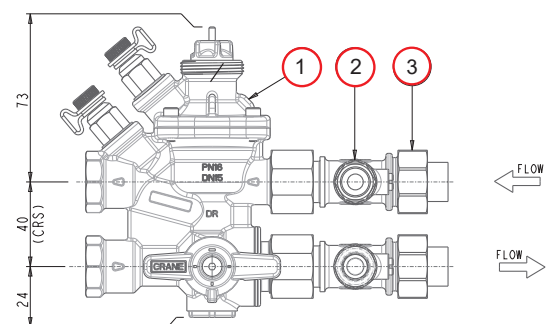
**SPECIFICATION:** DZR Terminal unit valve set to be a pre-assembled unit as supplied by a single manufacturer. Unit to include a flushing bypass with integral isolation valves, Pressure Independent Commissioning Unit (PICU) and flushing valves to comply to BG29 guidelines. Flow rate to be measurable using integral test points as per BS 7350. Flow rate to be adjustable between 0.010-0.290l/s, dependent on variant. Connections to be flat face unions between components with female BSPT on system side and compression/solder on terminal side. Unit to be manufactured from DZR Brass to BS EN 12164/5 CW602N. Valve assembly will be labelled to include the terminal unit reference number, service and part number as per Dominator Eco.



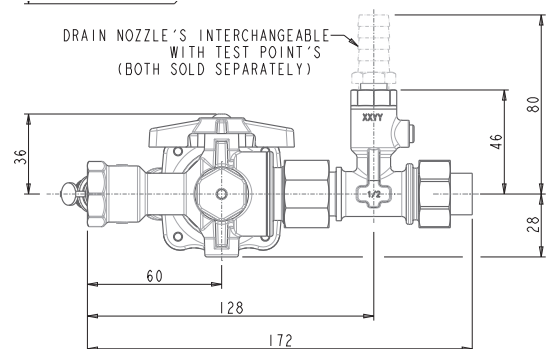
**toBalance**

**bunstore**

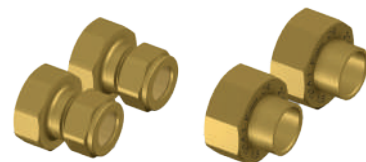
## Dimensional Drawings



Available in standard or reverse handed orientations.



## End Connections



**Compression**

**Solder\***

\*15mm only

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# DE40BS DN15/15

**Dominator Eco with  
BSRIA Flushing Strainer**



**Dominator<sup>®</sup>**  
**Eco**

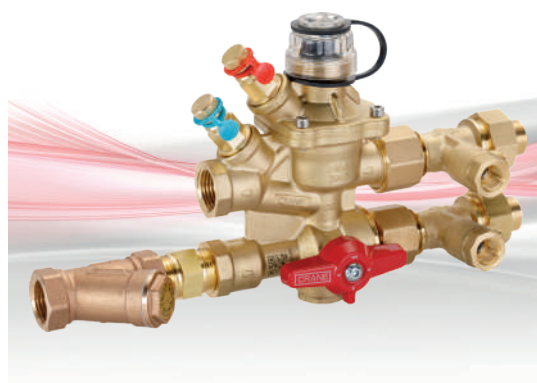
**Made in  
Britain**

**PN16**



## Features & Benefits

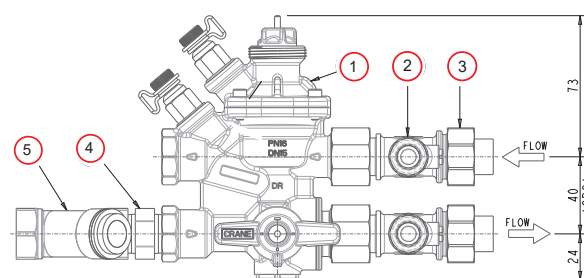
- Innovative design - Unique differential pressure mechanism, ensuring accurate flow control and allowing the valve to be back flushed if required. Patent Pending
- Reduced embodied carbon and simple installation by combining a PICV, H-body and FMD together, making the Dominator Eco 36% lighter and 22% shorter than our current 40mm Dominator alternative
- Reliable flow measurement through the integral FMD in accordance to BS 7350
- Easily identifiable chilled and heating applications via the colour coded tags that also display the fan coil reference
- Paperless - Digital datasheet, IOM and commissioning tool can be quickly accessed via QR code on the colour coded tags
- BSRIA BG29 compliant design - Full forward-flushing and back-flushing capabilities
- Peace of mind - 100% of Dominator Ecos are tested before shipping. This involves pressure testing to BS EN 12266-1 and performance testing in accordance with BSRIA BTS01
- Direct mounting to FCUs – designed for easy access to components in confined spaces
- Flow regulation and  $\Delta P$  verification – Utilising setting dial and integrated test points
- System performance maintained - Fitted strainer helps filter particles and impurities in the fluid maintaining system cleanliness (if cleaned regularly)
- Comprehensive flow range available, allowing for cost effective valve selections
- PN16 rated product, suitable for building services applications
- Increased functionality and reduced material requirement - Interchangeable test points and nozzles facilitate  $\Delta P$  measurement and flushing where required



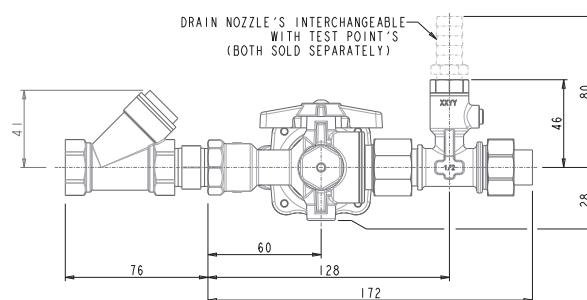
**ProBalance**

**bunstore**

## Dimensional Drawings



Available in standard or reverse handed orientations.



## Materials

| No. | Description                                                                                                            | Material                       | QTY |
|-----|------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|
| 1   | Male Ended Low Flow 0.010 - 0.080l/s<br>Male Ended Std. Flow 0.025 - 0.170l/s<br>Male Ended High Flow 0.110 - 0.290l/s | DZR Brass BS EN 12165 (CW602N) | 1   |
| 2   | Drain Tee Assembly – Male Captive                                                                                      | DZR Brass BS EN 12165 (CW602N) | 2   |
| 3   | End Connection Sub Assembly                                                                                            | DZR Brass BS EN 12164 (CW602N) | 2   |
| 4   | Nipple - 1/2" Part                                                                                                     | DZR Brass BS EN 12165 (CW602N) | 1   |
| 5   | PN16 Strainer - D298                                                                                                   | Bronze BS EN 1982 CC491K       | 1   |

NOTE: Sealing gasket and O-rings material are EPDM

**PRESSURE RATING:** PN16

**TEMPERATURE RATING:** 0 to 90°C  
**WEIGHT** 1.8kg

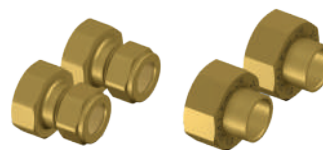
### END CONNECTIONS:

Valve body - BSP Taper  
Terminal end - Compression/Solder

**SPARES:** Refer to IOM

**SPECIFICATION:** DZR Terminal unit valve set to be a pre-assembled unit as supplied by a single manufacturer. Unit to include a flushing bypass with integral isolation valves, Pressure Independent Commissioning Unit (PICU), strainer and flushing valves to comply to BG29 guidelines. Flow rate to be measurable using integral test points as per BS 7350. Flow rate to be adjustable between 0.010-0.290l/s, dependent on variant. Connections to be flat face unions between components with female BSPT on system side and compression/solder on terminal side. Unit to be manufactured from DZR Brass to BS EN 12164/5 CW602N. Valve assembly will be labelled to include the terminal unit reference number, service and part number as per Dominator Eco.

## End Connections



**Compression**

**Solder**

\*15mm only

## PICU Pressure

|                                 |                    |
|---------------------------------|--------------------|
| <b>Operating Pressure</b>       | 20 - 400 (DN15 LF) |
| <b>Range Across Valve (kPa)</b> | 20 - 400 (DN15 SF) |
|                                 | 40 - 400 (DN15 HF) |

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# DE40BFP DN15/15

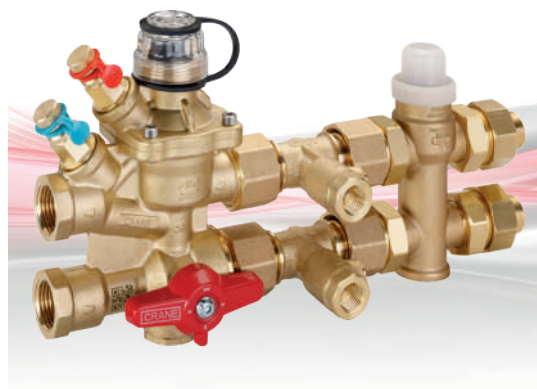
**Dominator Eco with BSRIA  
Flushing Drains & 4-Port**



**Dominator<sup>®</sup>**  
**Eco**

Made in Britain

PN16



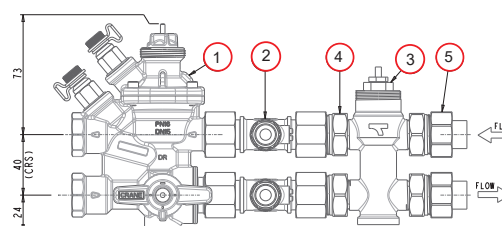
ProBalance

bunstore

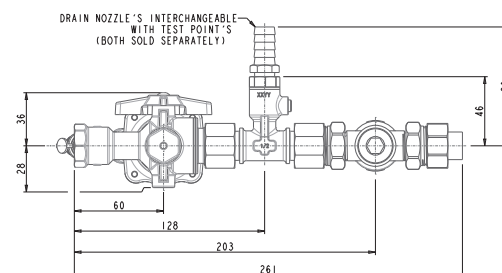
## Features & Benefits

- Innovative design - Unique differential pressure mechanism, ensuring accurate flow control and allowing the valve to be back flushed if required. Patent Pending
- Reduced embodied carbon and simple installation by combining a PICV, H-body and FMD together, making the Dominator Eco 33% lighter and 20% shorter than our current 40mm Dominator alternative
- Reliable flow measurement through the integral FMD in accordance to BS 7350
- Easily identifiable chilled and heating applications via the colour coded tags that also display the fan coil reference
- Paperless - Digital datasheet, IOM and commissioning tool can be quickly accessed via QR code on the colour coded tags
- BSRIA BG29 compliant design - Full forward-flushing and back-flushing capabilities
- Peace of mind - 100% of Dominator Ecos are tested before shipping. This involves pressure testing to BS EN 12266-1 and performance testing in accordance with BSRIA BTS01
- Direct mounting to FCUs – designed for easy access to components in confined spaces
- Flow regulation and  $\Delta P$  verification – Utilising setting dial and integrated test points
- Minimum flow protection - 4-Port valve included to provide a constant flow rate irrespective of load demand
- Comprehensive flow range available, allowing for cost effective valve selections
- PN16 rated product, suitable for building services applications
- Increased functionality and reduced material requirement - Interchangeable test points and nozzles facilitate  $\Delta P$  measurement and flushing where required

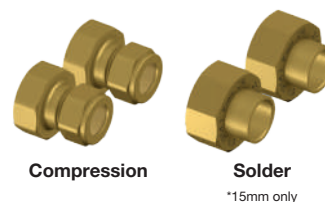
## Dimensional Drawings



Available in standard or reverse handed orientations.



## End Connections



## PICU Pressure

|                                             |                                                                |
|---------------------------------------------|----------------------------------------------------------------|
| Operating Pressure Range Across Valve (kPa) | 20 - 400 (DN15 LF)<br>20 - 400 (DN15 SF)<br>40 - 400 (DN15 HF) |
|---------------------------------------------|----------------------------------------------------------------|

## Materials

| No. | Description                                                                                                            | Material                       | QTY |
|-----|------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|
| 1   | Male Ended Low Flow 0.010 - 0.080l/s<br>Male Ended Std. Flow 0.025 - 0.170l/s<br>Male Ended High Flow 0.110 - 0.290l/s | DZR Brass BS EN 12165 (CW602N) | 1   |
| 2   | Drain Tee Assembly – Male Captive                                                                                      | DZR Brass BS EN 12165 (CW602N) | 2   |
| 3   | 4-Port Valve                                                                                                           | DZR Brass BS EN 12165 (CW602N) | 1   |
| 4   | Adaptor 4-Port                                                                                                         | DZR Brass BS EN 12165 (CW602N) | 4   |
| 5   | End Connection Sub Assembly                                                                                            | DZR Brass BS EN 12165 (CW602N) | 2   |

NOTE: Sealing gasket and O-rings material are EPDM

**PRESSURE RATING:** PN16

**TEMPERATURE RATING:** 0 to 90°C  
WEIGHT 2kg

### END CONNECTIONS:

Valve body - BSP Taper  
Terminal end - Compression/Solder

**SPARES:** Refer to IOM

**SPECIFICATION:** DZR Terminal unit valve set to be a pre-assembled unit as supplied by a single manufacturer. Unit to include a flushing bypass with integral isolation valves, Pressure Independent Commissioning Unit (PICU), 4-Port and flushing valves to comply to BG29 guidelines. Flow rate to be measurable using integral test points as per BS 7350. Flow rate to be adjustable between 0.010-0.290l/s, dependent on variant. Connections to be flat face unions between components with female BSPT on system side and compression/solder on terminal side. Unit to be manufactured from DZR Brass to BS EN 12164/5 CW602N. Valve assembly will be labelled to include the terminal unit reference number, service and part number as per Dominator Eco.

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# DE40BSFP STD DN15/15

**Dominator Eco with BSRIA  
Flushing Drain, Strainer & 4-Port**


**PN16**

## Features & Benefits

- Innovative design - Unique differential pressure mechanism, ensuring accurate flow control and allowing the valve to be back flushed if required. Patent Pending
- Reduced embodied carbon and simple installation by combining a PICV, H-body and FMD together, making the Dominator Eco lighter and shorter
- Reliable flow measurement through the integral FMD in accordance to BS 7350
- Easily identifiable chilled and heating applications via the colour coded tags that also display the fan coil reference
- Paperless - Digital datasheet, IOM and commissioning tool can be quickly accessed via QR code on the colour coded tags
- BSRIA BG29 compliant design - Full forward-flushing and back-flushing capabilities
- Peace of mind - 100% of Dominator Ecos are tested before shipping. This involves pressure testing to BS EN 12266-1 and performance testing in accordance with BSRIA BTS01
- Direct mounting to FCUs – designed for easy access to components in confined spaces
- Flow regulation and  $\Delta P$  verification – Utilising setting dial and integrated test points
- Minimum flow protection - 4-Port valve included to provide a constant flow rate irrespective of load demand
- System performance maintained - Fitted strainer helps filter particles and impurities in the fluid maintaining system cleanliness (if cleaned regularly)
- Comprehensive flow range available, allowing for cost effective valve selections
- PN16 rated product, suitable for building services applications
- Increased functionality and reduced material requirement - Interchangeable test points and nozzles facilitate  $\Delta P$  measurement and flushing where required

## Materials

| No. | Description                                                                                                            | Material                       | QTY |
|-----|------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|
| 1   | Male Ended Low Flow 0.010 - 0.080l/s<br>Male Ended Std. Flow 0.025 - 0.170l/s<br>Male Ended High Flow 0.110 - 0.290l/s | DZR Brass BS EN 12165 (CW602N) | 1   |
| 2   | Drain Tee Assembly – Male Captive                                                                                      | DZR Brass BS EN 12165 (CW602N) | 2   |
| 3   | 4-Port Valve                                                                                                           | DZR Brass BS EN 12165 (CW602N) | 1   |
| 4   | Adaptor 4-Port                                                                                                         | DZR Brass BS EN 12165 (CW602N) | 4   |
| 5   | End Connection Sub Assembly                                                                                            | DZR Brass BS EN 12165 (CW602N) | 2   |
| 6   | Nipple - 1/2" Part                                                                                                     | DZR Brass BS EN 12165 (CW602N) | 1   |
| 7   | PN16 Strainer - D298                                                                                                   | Bronze BS EN 1982 CC491K       | 1   |

NOTE: Sealing gasket and O-rings material are EPDM

**PRESSURE RATING:** PN16

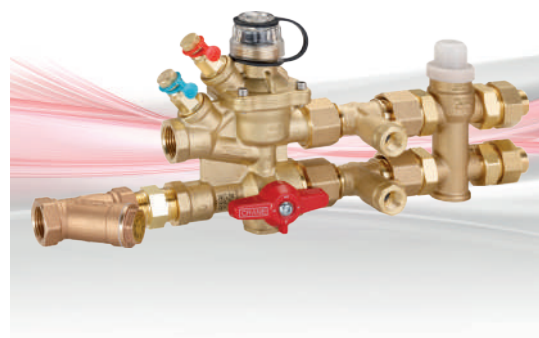
**TEMPERATURE RATING:** 0 to 90°C  
**WEIGHT** 2.2kg

### END CONNECTIONS:

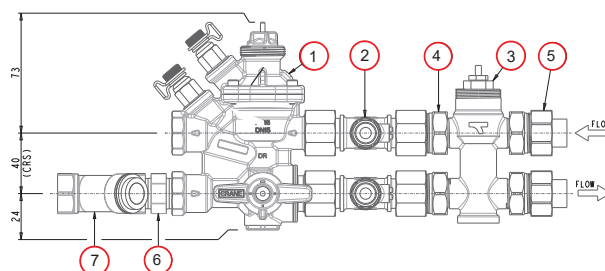
Valve body - BSP Taper  
Terminal end - Compression/Solder

**SPARES:** Refer to IOM

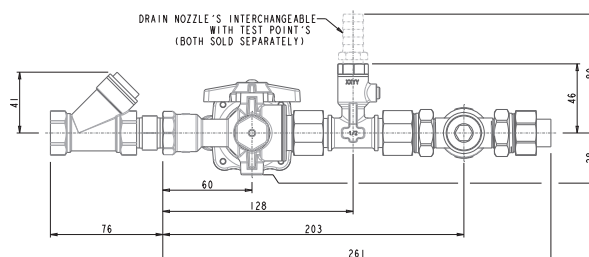
**SPECIFICATION:** DZR Terminal unit valve set to be a pre-assembled unit as supplied by a single manufacturer. Unit to include a flushing bypass with integral isolation valves, Pressure Independent Commissioning Unit (PICU), strainer, 4-port and flushing valves to comply to BG29 guidelines. Flow rate to be measurable using integral test points as per BS 7350. Flow rate to be adjustable between 0.010-0.290l/s, dependent on variant. Connections to be flat face unions between components with female BSPT on system side and compression/solder on terminal side. Unit to be manufactured from DZR Brass to BS EN 12164/5 CW602N. Valve assembly will be labelled to include the terminal unit reference number, service and part number as per Dominator Eco.


**Balance**
**bsria**

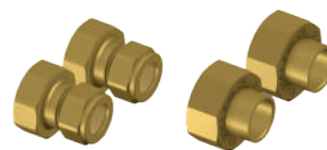
## Dimensional Drawings



Available in standard or reverse handed orientations.



## End Connections


**Compression**
**Solder\***

\*15mm only

## PICU Pressure

|                           |                    |
|---------------------------|--------------------|
| <b>Operating Pressure</b> | 20 - 400 (DN15 LF) |
| <b>Range Across Valve</b> | 20 - 400 (DN15 SF) |
| <b>(kPa)</b>              | 40 - 400 (DN15 HF) |



# Nine Elms

## London, UK

The Nine Elms N8 Tower development comprises of one, two & three-bedroom flats and penthouses, plus commercial & retail space on the lower levels.

Crane FS Dominator Peak Pro with PICV, BSRIA Flushing Drain & FMD along with a range of general valves were chosen for this modern mixed-use project.

### SECTOR

Mixed Development

### LOCATION

New Covent Garden Market, London

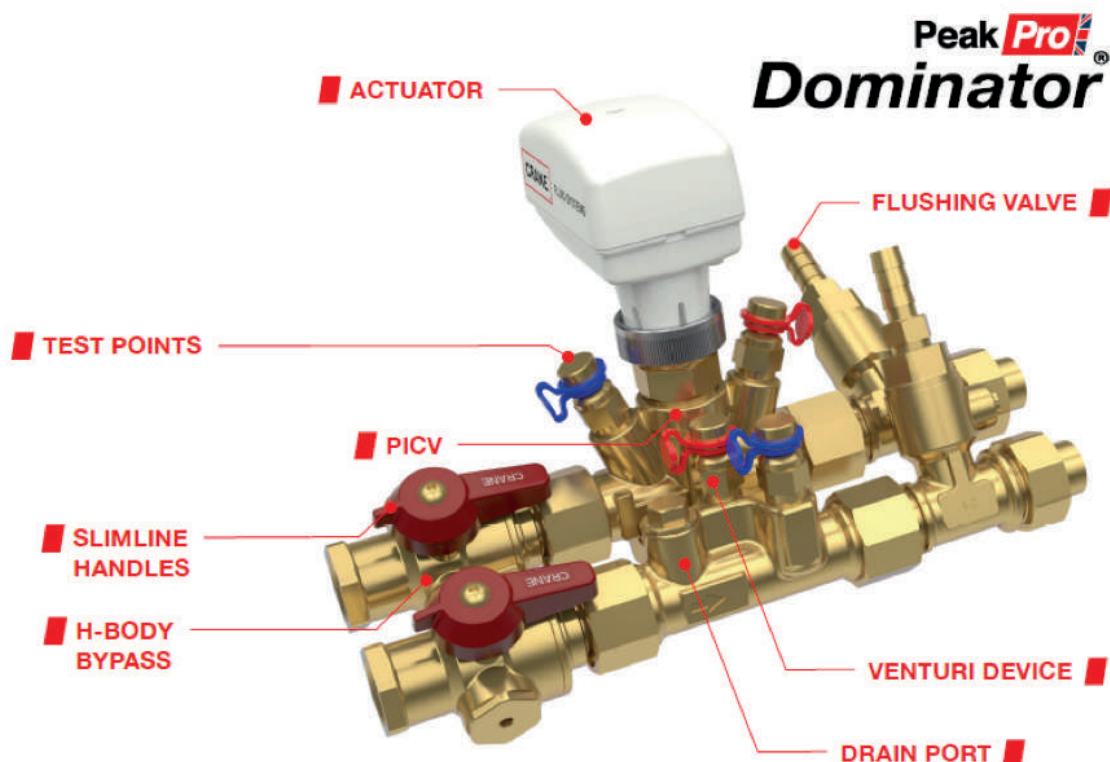
### CLIENT

St Modwen

### CHANNEL PARTNER

BSS

# WHY CHOOSE PEAK PRO DOMINATORS?



**The Dominator Peak Pro is a compact and modular valve system that combines the Peak Pro Pressure Independent Control Valve (D995) for accurate flow, temperature and pressure control.**

- 40/80mm pipe centres to fit Fan Coil Units & Chilled Beams
- Equal lengths for ease of fitting
- Highly configurable design to suit horizontal and vertical pipe arrangements
- Accommodates reduced drip tray length solder or compression adaptors 15 & 22mm
- BSRIA flushing version with full bore for effective flushing velocity

This lightweight unit is supplied with an integral Venturi metering station for an improved flow range, equal lengths through union connections and the ability to orientate the valve on-site for an easier and faster install.

The Dominator Peak Pro has been designed to deliver and maintain a system which closes the performance gap and enables energy and cost reduction over its lifetime. Every valve is subject to both a pressure test, in accordance with BS EN 12266-1, as well as a flow limitation test, in accordance to BSRIA BTS1.

Suitable for horizontal or vertical coil arrangements and available handed for 4 pipe systems. The Dominator Peak Pro not only saves installation time and reduces the product footprint but simplifies the ordering process, allows phased delivery direct to site if required and reduces the risk of failing joints.

The following pages show each available set up in the Dominator range to make sure that we cover you for every requirement possible.

# DD40BSR1B DN15/15

Dominator Peak Pro with PICV,  
FMD & Drain Port

Peak **Pro**

PN16

## Features & Benefits

**ProBalance**

- Compact design, with flow and return legs at equal lengths, for simple direct mounting onto terminal unit
- Fitted with Peak Pro with a wide range of settable flows to suit all applications
- Includes Venturi metering station for improved accuracy and pressure drop recovery
- All valves are subject to both a pressure test, in accordance with BS EN 12266-1, as well as a flow limitation test, in accordance to BSRIA BTS1. This provides reassurance of performance and accuracy within each valve
- Bypass unit with integrated 3-way isolation valves
- Integrated dial allowing for calibrated setting of the PICV with integrated test points allowing for  $\Delta P$  verification

## Dimensions & Weights

| NOM. SIZE | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | WEIGHT (kg) |
|-----------|--------|--------|--------|--------|--------|-------------|
| DN15      | 70     | 27     | 33     | 120    | 179    | 2.0         |

## Materials

| NO. | DESCRIPTION                                                                                                                                            | MATERIAL                                                                                                 | QTY |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----|
| 1   | H-Body Assembly                                                                                                                                        | DZR Brass BS EN 12165 (CW602N)                                                                           | 1   |
| 2   | DN15 PICV - Male Ended Low Flow 0.008 - 0.080/s<br>DN15 PICV - Male Ended Std Flow 0.060 - 0.200/s<br>DN15 PICV - Male Ended High Flow 0.100 - 0.370/s | A DZR Brass BS EN 12165 (CW602N)<br>B DZR Brass BS EN 12165 (CW602N)<br>C DZR Brass BS EN 12165 (CW602N) | 1   |
| 3   | DN15 - High Flow FMD 4.6Kvs<br>DN15 - Std Flow FMD 1.6Kvs<br>DN15 - Low Flow FMD 0.62Kvs<br>DN15 - Ultra Low Flow FMD 0.24Kvs                          | H S L U<br>DZR Brass BS EN 12165 (CW602N)                                                                | 1   |
| 4   | Compression Adaptor                                                                                                                                    | A DZR Brass BS EN 12165 (CW602N)                                                                         | 2   |
|     | Solder Adaptor                                                                                                                                         | B DZR Brass BS EN 12165 (CW602N)                                                                         | 2   |

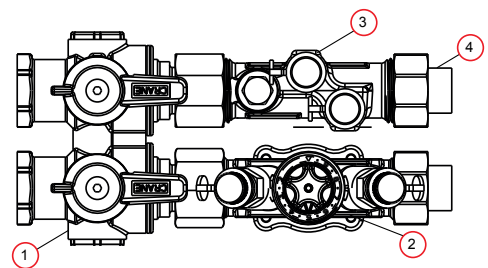
NOTE: Sealing gasket and O-rings material are EPDM

## PICV Pressure/Temperature Ratings

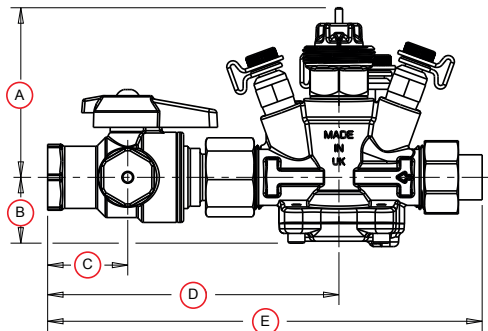
|                                             |                                                                |
|---------------------------------------------|----------------------------------------------------------------|
| TEMPERATURE (°C)                            | 0°C to 90°C                                                    |
| PRESSURE (BAR)                              | 16 Bar                                                         |
| OPERATING PRESSURE RANGE ACROSS VALVE (kPa) | 20 - 400 (DN15 LF)<br>25 - 400 (DN15 SF)<br>40 - 400 (DN15 HF) |

Example figure number guide

DD40 B S R 1 B  
FIG PICV FMD STD/REV TYPE END CXN



Available in standard or reverse handed orientations.  
Valve angles can be configured to suit fan coil requirements.



## Adaptors

## End Connections



R $\frac{1}{2}$ " to Rc  $\frac{3}{4}$ "  
Adaptor



Compression  
(A)



Solder  
(B)

**PRESSURE RATING:** PN16

**TEMPERATURE RATING:** 0 to 90°C

### END CONNECTIONS:

H-Body - BSP Taper  
Terminal end - Compression/Solder

**SPARES:** Gasket 0J00889J

**SPECIFICATION** DZR Terminal unit valve set to be a pre-assembled unit as supplied by a single manufacturer. Unit to include a flushing bypass with integral isolation valves, PICV and Venturi style FMD with integrated drain port. Flow rate to be adjustable between 0.008 – 0.37l/s, dependent on variant. Connections to be flat face union connections between components with female BSPT on system side and compression/solder on terminal side. Unit to be manufactured from DZR Brass to BS EN 12164/5 CW602N. Valve assembly will be labelled to include the terminal unit reference number, service and flow rate. As per Crane FS Dominator Peak Pro.

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# DD40BSR2B DN15/15

Dominator Peak Pro with PICV,  
BSRIA Flushing Drain & FMD

Peak **Pro**

BSRIA

PN16

## Features & Benefits

**ProBalance**

- Compact design, with flow and return legs at equal lengths, for simple direct mounting onto terminal unit
- Fitted with Peak Pro with a wide range of settable flows to suit all applications
- Includes Venturi metering station for improved accuracy and pressure drop recovery
- All valves are subject to both a pressure test, in accordance with BS EN 12266-1, as well as a flow limitation test, in accordance to BSRIA BTS1. This provides reassurance of performance and accuracy within each valve
- Bypass unit with integrated 3-way isolation valves
- Flushing valves on flow and return - in accordance with BSRIA BG29
- Integrated dial allowing for calibrated setting of the PICV with integrated test points allowing for  $\Delta P$  verification

## Dimensions & Weights

| NOM. SIZE | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | G (mm) | WEIGHT (kg) |
|-----------|--------|--------|--------|--------|--------|--------|--------|-------------|
| DN15      | 70     | 27     | 33     | 120    | 195    | 239    | 97     | 2.5         |

## Materials

| NO. | DESCRIPTION                                                                                                                                               | MATERIAL                                   | QTY |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----|
| 1   | H-Body Assembly                                                                                                                                           | DZR Brass BS EN 12165 (CW602N)             | 1   |
| 2   | DN15 PICV - Male Ended Low Flow 0.008 - 0.080l/s<br>DN15 PICV - Male Ended Std Flow 0.060 - 0.200l/s<br>DN15 PICV - Male Ended High Flow 0.100 - 0.370l/s | A DZR Brass BS EN 12165 (CW602N)<br>B<br>C | 1   |
| 3   | DN15 - High Flow FMD 4.6Kvs<br>DN15 - Std Flow FMD 1.6Kvs<br>DN15 - Low Flow FMD 0.62Kvs<br>DN15 - Ultra Low Flow FMD 0.24Kvs                             | H S L U DZR Brass BS EN 12165 (CW602N)     | 1   |
| 4   | DN15 Flushing Valve                                                                                                                                       | DZR Brass BS EN 12165 (CW602N)             | 2   |
| 5   | Compression Adaptor                                                                                                                                       | A DZR Brass BS EN 12165 (CW602N)           | 2   |
|     | Solder Adaptor                                                                                                                                            | B DZR Brass BS EN 12165 (CW602N)           | 2   |

NOTE: Sealing gasket and O-rings material are EPDM

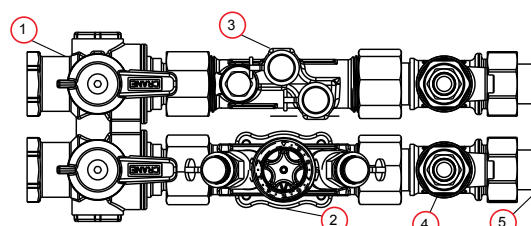
## PICV Pressure/Temperature Ratings

|                                             |                                                                |
|---------------------------------------------|----------------------------------------------------------------|
| TEMPERATURE (°C)                            | 0°C to 90°C                                                    |
| PRESSURE (BAR)                              | 16 Bar                                                         |
| OPERATING PRESSURE RANGE ACROSS VALVE (kPa) | 20 - 400 (DN15 LF)<br>25 - 400 (DN15 SF)<br>40 - 400 (DN15 HF) |

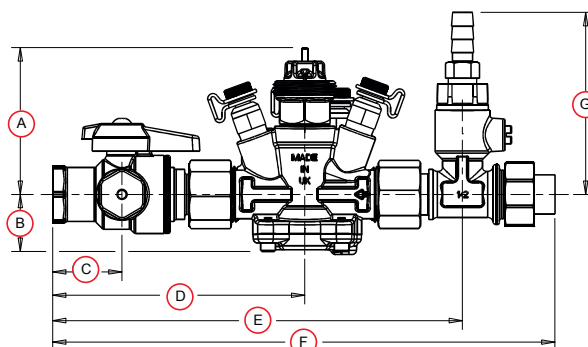
DD40 B S R 2 B  
FIG PICV FMD STD/REV TYPE END CX



## Dimensional Drawings

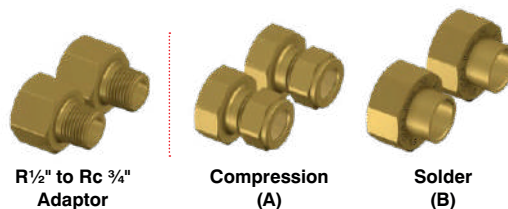


Available in standard or reverse handed orientations.  
Valve angles can be configured to suit fan coil requirements.



## Adaptors

## End Connections



**PRESSURE RATING:** PN16

**TEMPERATURE RATING:** 0 to 90°C

### END CONNECTIONS:

H-Body - BSP Taper  
Terminal end - Compression/Solder

**SPARES:** Gasket 0J00889J

**SPECIFICATION** DZR Terminal unit valve set to be a pre-assembled unit as supplied by a single manufacturer. Unit to include a flushing bypass with integral isolation valves, PICV, Venturi style FMD and flushing valves to comply to BG29 guidelines. Flow rate to be adjustable between 0.008 – 0.37l/s, dependent on variant. Connections to be flat face union connections between components with female BSPT on system side and compression/solder on terminal side. Unit to be manufactured from DZR Brass to BS EN 12164/5 CW602N. Valve assembly will be labelled to include the terminal unit reference number, service and flow rate. As per Crane FS Dominator Peak Pro.

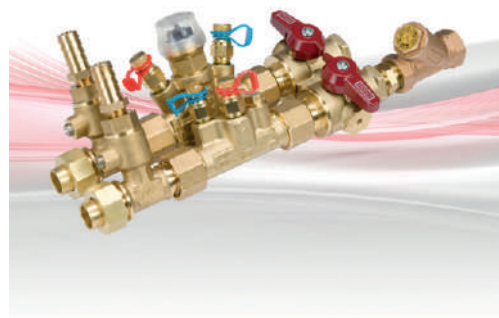
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Made in Britain

# DD40BSR2BS DN15/15

**Peak Pro**™

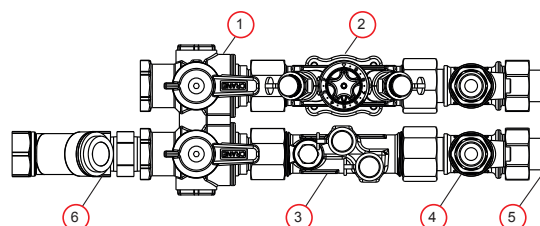
Dominator Peak Pro with PICV,  
BSRIA Flushing Drain, FMD & Strainer

**PN16**
**BSRIA**

**Balance**
**bimstore**

## Features & Benefits

- Compact design, with flow and return legs at equal lengths, for simple direct mounting onto terminal unit
- Fitted with Peak Pro with a wide range of settable flows to suit all applications
- Includes Venturi metering station for improved accuracy and pressure drop recovery
- All valves are subject to both a pressure test, in accordance with BS EN 12266-1, as well as a flow limitation test, in accordance to BSRIA BTS1. This provides reassurance of performance and accuracy within each valve
- Bypass unit with integrated 3-way isolation valves
- Flushing valves on flow and return - in accordance with BSRIA BG29
- Integrated dial allowing for calibrated setting of the PICV with integrated test points allowing for ΔP verification
- Fitted strainer makes a significant contribution to the reliability of a piping system, and ensures performance is maintained over the lifetime of the system (if cleaned regularly). The strainer filters particles and impurities in the fluid, protecting hydronic equipment such as pumps, control valves, heat exchangers etc.

## Dimensional Drawings



Available in standard or reverse handed orientations.  
Valve angles can be configured to suit fan coil requirements.

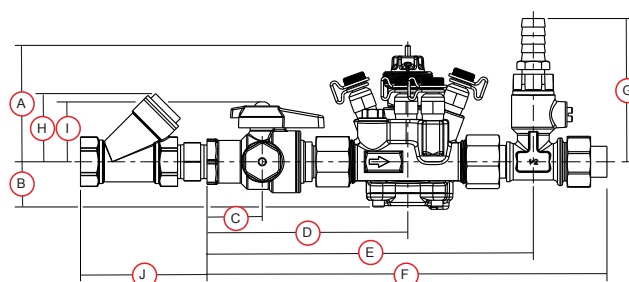
## Dimensions & Weights

| NOM. SIZE | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | G (mm) | H (mm) | I (mm) | J (mm) | WGT (kg) |
|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|
| DN15      | 70     | 27     | 33     | 120    | 195    | 239    | 97     | 41     | 36     | 76     | 2.8      |

## Materials

| NO. | DESCRIPTION                                                                                                                                               | MATERIAL                                   | QTY |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----|
| 1   | H-Body Assembly                                                                                                                                           | DZR Brass BS EN 12165 (CW602N)             | 1   |
| 2   | DN15 PICV - Male Ended Low Flow 0.008 - 0.080l/s<br>DN15 PICV - Male Ended Std Flow 0.060 - 0.200l/s<br>DN15 PICV - Male Ended High Flow 0.100 - 0.370l/s | A DZR Brass<br>B BS EN 12165 (CW602N)<br>C | 1   |
| 3   | DN15 - High Flow FMD 4.6Kvs<br>DN15 - Std Flow FMD 1.6Kvs<br>DN15 - Low Flow FMD 0.62Kvs<br>DN15 - Ultra Low Flow FMD 0.24Kvs                             | H S L U DZR Brass<br>BS EN 12165 (CW602N)  | 1   |
| 4   | DN15 Flushing Valve                                                                                                                                       | DZR Brass BS EN 12165 (CW602N)             | 2   |
| 5   | Compression Adaptor                                                                                                                                       | A DZR Brass BS EN 12165 (CW602N)           | 2   |
|     | Solder Adaptor                                                                                                                                            | B DZR Brass BS EN 12165 (CW602N)           | 2   |
| 6   | Strainer                                                                                                                                                  | Bronze BS EN 1982 (CC491K)                 | 1   |

NOTE: Sealing gasket and O-rings material are EPDM



## Adaptors



R1/2" to Rc 3/4"  
Adaptor

## End Connections



Compression  
(A)



Solder  
(B)

## PICV Pressure/Temperature Ratings

|                                             |                                                                |
|---------------------------------------------|----------------------------------------------------------------|
| TEMPERATURE (°C)                            | 0°C to 90°C                                                    |
| PRESSURE (BAR)                              | 16 Bar                                                         |
| OPERATING PRESSURE RANGE ACROSS VALVE (kPa) | 20 - 400 (DN15 LF)<br>25 - 400 (DN15 SF)<br>40 - 400 (DN15 HF) |



**PRESSURE RATING:** PN16

**TEMPERATURE RATING:** 0 to 90°C

### END CONNECTIONS:

H-Body - BSP Taper  
Terminal end - Compression/Solder

**SPARES:** Gasket 0J00889J

**SPECIFICATION** DZR Terminal unit valve set to be a pre-assembled unit as supplied by a single manufacturer. Unit to include a flushing bypass with integral isolation valves, PICV, Venturi style FMD and flushing valves to comply to BG29 guidelines. Flow rate to be adjustable between 0.008 – 0.37l/s, dependent on variant. Connections to be flat face union connections between components with female BSPT on system side and compression/solder on terminal side. Unit to be manufactured from DZR Brass to BS EN 12164/5 CW602N. Valve assembly will be labelled to include the terminal unit reference number, service and flow rate. As per Crane FS Dominator Peak Pro.

# DD40BSS4B DN15/15

Dominator Peak Pro with PICV,  
BSRIA Flushing Drain & 4-Port

Peak Pro™

BSRIA

PN16

## Features & Benefits

ProBalance

- Compact design, with flow and return legs at equal lengths, for simple direct mounting onto terminal unit
- Fitted with Peak Pro with a wide range of settable flows to suit all applications
- Includes Venturi metering station for improved accuracy and pressure drop recovery
- All valves are subject to both a pressure test, in accordance with BS EN 12266-1, as well as a flow limitation test, in accordance to BSRIA BTS1. This provides reassurance of performance and accuracy within each valve
- Bypass unit with integrated 3-way isolation valves
- Flushing valves on flow and return - in accordance with BSRIA BG29
- Integrated dial allowing for calibrated setting of the PICV with integrated test points allowing for ΔP verification

## Dimensions & Weights

| NOM. SIZE | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | G (mm) | H (mm) | I (mm) | WEIGHT (kg) |
|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------------|
| DN15      | 70     | 28     | 33     | 120    | 195    | 270    | 328    | 97     | 36     | 3.0         |

## Materials

| NO. | DESCRIPTION                                                                                                                                               | MATERIAL                                   | QTY |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----|
| 1   | H-Body Assembly                                                                                                                                           | DZR Brass BS EN 12165 (CW602N)             | 1   |
| 2   | DN15 PICV - Male Ended Low Flow 0.008 - 0.080l/s<br>DN15 PICV - Male Ended Std Flow 0.060 - 0.200l/s<br>DN15 PICV - Male Ended High Flow 0.100 - 0.370l/s | A DZR Brass<br>B BS EN 12165 (CW602N)<br>C | 1   |
| 3   | DN15 - High Flow FMD 4.6Kvs<br>DN15 - Std Flow FMD 1.6Kvs<br>DN15 - Low Flow FMD 0.62Kvs<br>DN15 - Ultra Low Flow FMD 0.24Kvs                             | H S L U DZR Brass BS EN 12165 (CW602N)     | 1   |
| 4   | DN15 Flushing Valve                                                                                                                                       | DZR Brass BS EN 12165 (CW602N)             | 2   |
| 5   | 4-Port Valve (Sized to suit specification)                                                                                                                | DZR Brass BS EN 12165 (CW602N)             | 1   |
| 6   | Compression Adaptor                                                                                                                                       | A DZR Brass BS EN 12165 (CW602N)           | 2   |
|     | Solder Adaptor                                                                                                                                            | B DZR Brass BS EN 12165 (CW602N)           | 2   |

NOTE: Sealing gasket and O-rings material are EPDM

|      |          |         |      |         |   |
|------|----------|---------|------|---------|---|
| DD40 | B        | S       | S    | 4       | B |
| FIG  | PICV FMD | STD/REV | TYPE | END CXN |   |

**PRESSURE RATING:** PN16

**TEMPERATURE RATING:** 0 to 90°C

**END CONNECTIONS:**

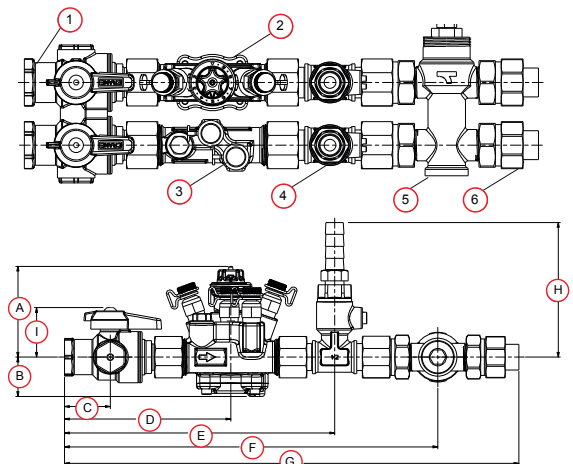
H-Body - BSP Taper  
Terminal end - Compression/Solder

**SPARES:** Gasket 0J00889J

**SPECIFICATION** DZR Terminal unit valve set to be a pre-assembled unit as supplied by a single manufacturer. Unit to include a flushing bypass with integral isolation valves, PICV, Venturi style FMD and flushing valves to comply to BG29 guidelines. Flow rate to be adjustable between 0.008 – 0.37l/s, dependent on variant. Connections to be flat face union connections between components with female BSPT on system side and compression/solder on terminal side. Unit to be manufactured from DZR Brass to BS EN 12164/5 CW602N. Valve assembly will be labelled to include the terminal unit reference number, service and flow rate. As per Crane FS Dominator Peak Pro.



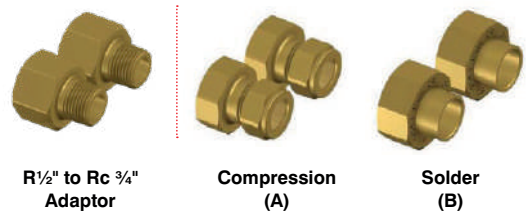
bimstore



Available in standard or reverse handed orientations.  
Valve angles can be configured to suit fan coil requirements.

## Adaptors

## End Connections



## PICV Pressure/Temperature Ratings

|                                             |                                                                |
|---------------------------------------------|----------------------------------------------------------------|
| TEMPERATURE (°C)                            | 0°C to 90°C                                                    |
| PRESSURE (BAR)                              | 16 Bar                                                         |
| OPERATING PRESSURE RANGE ACROSS VALVE (kPa) | 20 - 400 (DN15 LF)<br>25 - 400 (DN15 SF)<br>40 - 400 (DN15 HF) |



# Z9601PF

**Peak Pro**™

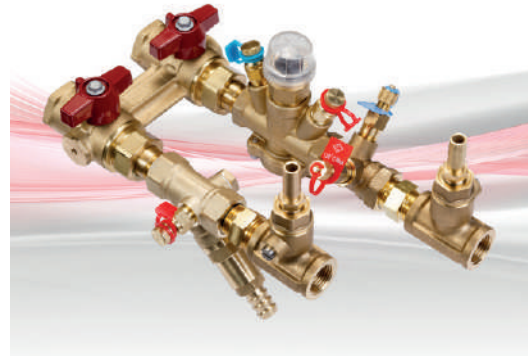
**Z9601PF**

Dominator Peak Pro with PICV,  
Strainer Drain, FMD & Flushing Drains

**PN16**
**ProBalance**

## Features & Benefits

- Compact, pre-fabricated unit – now available with Peak Pro PICV with a wide range of settable flows to suit all applications
- All valves are subject to both a pressure test, in accordance with BS EN 12266-1, as well as a flow limitation test, in accordance to BSRIA BTS1. This provides reassurance of performance and accuracy within each valve
- Provides accurate flow rates & differential pressure control as well as flow measurement (Z9601PF), system flushing and isolation
- DZR H Body tested to 3.1X Design Working Pressure (DWP) during development for design robustness and tested to EN12516-2 to comply with the Pressure Equipment Directive (PED)
- Fully assembled & factory tested unit reduces installation time, costs and specification risks
- The D995 PICV is available in 400kPa and 800kPa rated variants
- On-Off, modulating or feedback actuators are available separately to match specification



## Materials

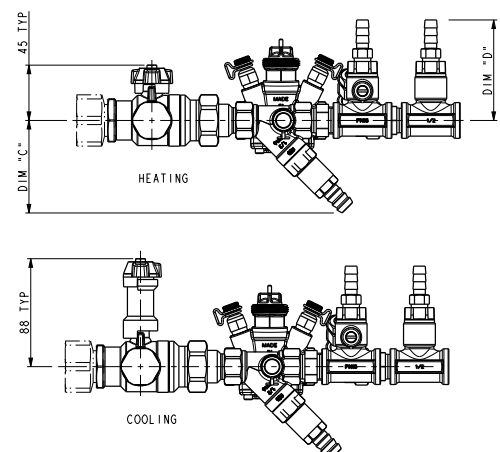
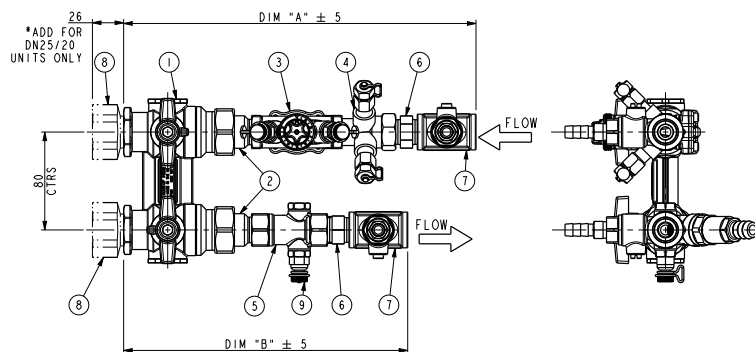
| ITEM | PART                 | MATERIAL  | SPECIFICATION        | QTY |
|------|----------------------|-----------|----------------------|-----|
| 1    | Bypass H-Body DN20   | DZR Brass | BS EN 12165 (CW602N) | 1   |
| 2    | Tailpiece            | DZR Brass | BS EN 12165 (CW602N) | 2   |
| 3    | D995 PICV            | DZR Brass | BS EN 12165 (CW602N) | 1   |
| 4    | D901 & D902 FMD      | DZR Brass | BS EN 12165 (CW602N) | 1   |
| 5    | D299P Strainer Drain | DZR Brass | BS EN 12165 (CW602N) | 1   |
| 6    | J44 Nipple           | DZR Brass | BS EN 12164 (CW602N) | 2   |
| 7    | Drain Tee            | DZR Brass | BS EN 12165 (CW602N) | 2   |
| 8    | DN20 to DN25 Adapter | DZR Brass | BS EN 12165 (CW602N) | 2   |
| 9    | P84 Test Points      | Brass     | BS EN 12164 (CW602N) | 1   |

## Dimensions & Weights

| SIZE (DN)       | A (mm) | B (mm) | C (mm) | D (mm) | VALVE WEIGHT (kg) |
|-----------------|--------|--------|--------|--------|-------------------|
| Z9601PF DN15/15 | 269    | 214    | 76     | 83     | 3.4               |
| Z9601PF DN20/15 | 288    | 232    | 76     | 83     | 3.8               |
| Z9601PF DN20/20 | 304    | 240    | 82     | 93     | 4.2               |
| Z9601PF DN25/20 | 330    | 266    | 82     | 93     | 4.2               |

\*See drawings below  
Note: LF variant only available in DN15

## Dimensional Drawings



**PRESSURE RATING:** PN16

**TEMPERATURE RATING:** -10 to 100°C

**END CONNECTIONS:**

Flushing By-pass body - BSP Taper,  
Strainers & Tailpieces - BSP Taper

**SPECIFICATION** DZR Brass (BS EN 12165 ) fan-coil valve/terminal unit valve assembly. Preassembled to the requirements of each individual terminal unit to include a flushing by-pass with integral isolation valve. Peak Pro Pressure Independent Control Valve (PICV), with options for low flow to high flow, flow measurement device, strainer, drain and pressure test points as and where specified. On-Off of modulating actuator is required to control the PICV. Valve assembly will be labelled to include the terminal reference number and flow rate. Generally as Crane Z9601PF Dominator Peak Pro system with PICV.

Valid as of 28/06/21

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## Z9701P

Dominator Peak Pro  
with PICV & Drain

Peak Pro™

Z9701P

## Z9701PF

Dominator Peak Pro  
with PICV, Drain and FMD

PN16

### Features & Benefits

ProBalance

- Compact, pre-fabricated unit – now available with Peak Pro PICV with a wide range of settable flows to suit all applications
- All valves are subject to both a pressure test, in accordance with BS EN 12266-1, as well as a flow limitation test, in accordance to BSRIA BTS1. This provides reassurance of performance and accuracy within each valve
- Provides accurate flow rates & differential pressure control as well as flow measurement (Z9701PF), system flushing and isolation
- DZR H Body tested to 3.1X Design Working Pressure (DWP) during development for design robustness and tested to EN12516-2 to comply with the Pressure Equipment Directive (PED)
- Fully assembled & factory tested unit reduces installation time, costs and specification risks
- Available with and without extension stems to suit customer specification
- Available in 400 kPa & 800 kPa rated variants
- On-Off, modulating or feedback actuators are available separately to match specification



Z9701PFEXT



### Materials

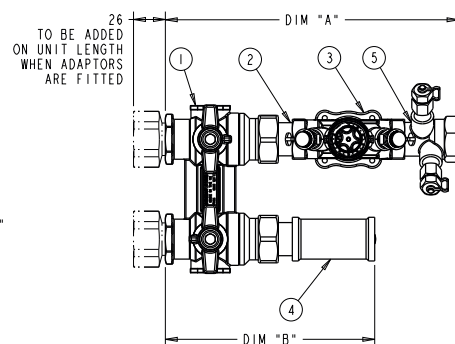
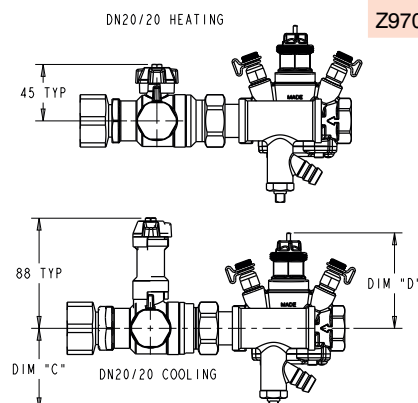
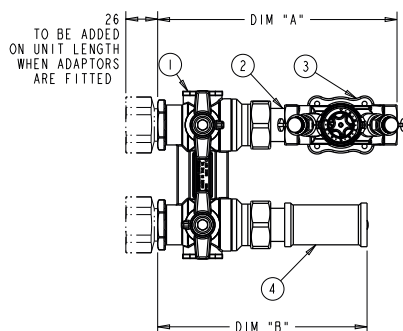
| NO. | PART           | MATERIAL  | SPECIFICATION        |
|-----|----------------|-----------|----------------------|
| 1   | Bypass H-Body  | DZR Brass | BS EN 12165 (CW602N) |
| 2   | Tailpiece      | DZR Brass | BS EN 12164 (CW602N) |
| 3   | D995 PICV      | DZR Brass | BS EN 12165 (CW602N) |
| 4   | D342 Drain     | Bronze    | BS EN 1982 (CC491K)  |
| 5   | D901/ D902 FMD | DZR Brass | BS EN 12164 (CW602N) |

### Dimensions & Weights

| SIZE (DN)     | A (mm) | B (mm) | C (mm) | D (mm) | VALVE WEIGHT (kg) |
|---------------|--------|--------|--------|--------|-------------------|
| Z9701P 15/15  | 160    | 138    | 60     | 67     | 2.0               |
| Z9701P 20/15  | 179    | 157    | 60     | 67     | 2.61              |
| Z9701P 20/20  | 192    | 168    | 66     | 77     | 2.98              |
| Z9701P 25/20  | 218    | 194    | 66     | 77     | 3.28              |
| Z9701P 25/25  | 254    | 218    | 67     | 77     | 4.53              |
| Z9701PF 15/15 | 204    | 138    | 60     | 67     | 2.2               |
| Z9701PF 20/15 | 223    | 157    | 60     | 67     | 2.75              |
| Z9701PF 20/20 | 236    | 168    | 66     | 77     | 3.21              |
| Z9701PF 25/20 | 262    | 194    | 66     | 77     | 3.58              |
| Z9701PF 25/25 | 303    | 218    | 67     | 77     | 4.86              |

### Dimensional Drawings

[Left-hand configuration shown, other configurations available on request]



**PRESSURE RATING:** PN16

**TEMPERATURE RATING:** -10 to 100°C

**END CONNECTIONS:**

Flushing By-pass body - BSP Taper,  
Strainers & Tailpieces - BSP Taper

**SPECIFICATION** DZR Brass (BS EN 12165) fan-coil valve/terminal unit valve assembly. Preamsembled to the requirements of each individual terminal unit to include a flushing by-pass with integral isolation valves, Peak Pro Pressure Independent Control Valve (PICV), with options for low flow to high flow, flow measurement device, drain and pressure test points as and where specified. Extended handles will be fitted for Chilled Water applications. On-Off, feedback or modulating actuator is required to control the PICV. Generally as Crane FS Z9701P & Z9701PF Dominator Peak Pro system with PICV.

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.

Valid as 0250920

## Z9801P

Dominator Peak Pro with PICV & Strainer Drain

Peak **Pro**

Z9801P

## Z9801PF

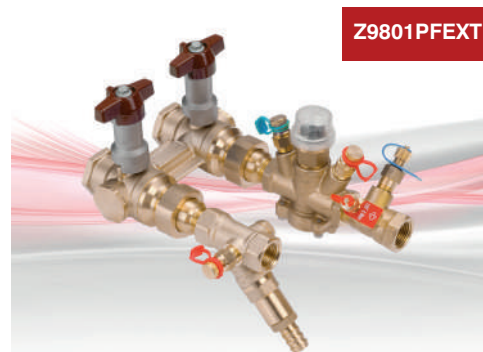
Dominator Peak Pro with PICV,  
Strainer Drain and FMD

PN16

### Features & Benefits

**ProBalance**

- Compact, pre-fabricated unit – now available with Peak Pro PICV with a wide range of settable flows to suit all applications
- All valves are subject to both a pressure test, in accordance with BS EN 12266-1, as well as a flow limitation test, in accordance to BSRIA BTS1. This provides reassurance of performance and accuracy within each valve
- Provides accurate flow rates & differential pressure control as well as flow measurement (Z9801PF), system flushing and isolation
- DZR H Body tested to 3.1X Design Working Pressure (DWP) during development for design robustness and tested to EN12516-2 to comply with the Pressure Equipment Directive (PED)
- Fully assembled & factory tested unit reduces installation time, costs and specification risks
- Available with and without extension stems to suit customer specification
- Available in 400kPa & 800kPa rated variants
- On-Off, modulating or feedback actuators are available separately to match specification



### Materials

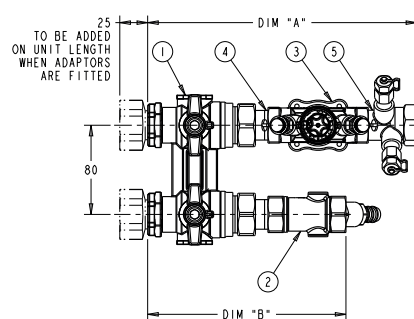
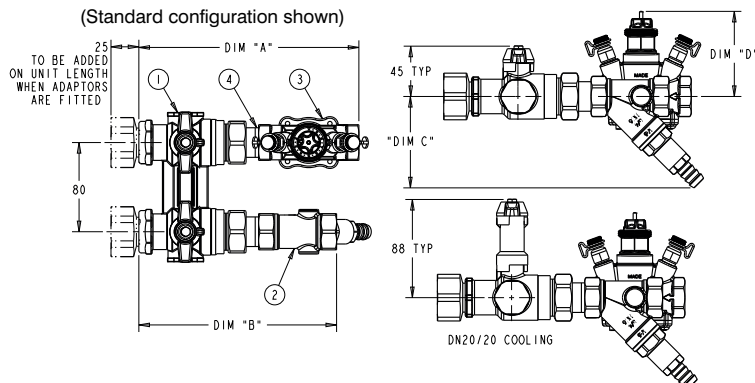
| NO. | PART                 | MATERIAL  | SPECIFICATION        |
|-----|----------------------|-----------|----------------------|
| 1   | Bypass H-Body        | DZR Brass | BS EN 12165 (CW602N) |
| 2   | D299P Strainer Drain | DZR Brass | BS EN 12165 (CW602N) |
| 3   | D995 PICV            | DZR Brass | BS EN 12165 (CW602N) |
| 4   | Tailpiece            | DZR Brass | BS EN 12164 (CW602N) |
| 5   | D901/ D902 FMD       | DZR Brass | BS EN 12164 (CW602N) |

### Dimensions & Weights

| SIZE (DN)     | A (mm) | B (mm) | C (mm) | D (mm) | VALVE WEIGHT (kg) |
|---------------|--------|--------|--------|--------|-------------------|
| Z9801P 15/15  | 160    | 148    | 76     | 67     | 2.15              |
| Z9801P 20/15  | 184    | 173    | 76     | 67     | 2.54              |
| Z9801P 20/20  | 197    | 178    | 82     | 77     | 2.91              |
| Z9801P 25/20  | 197    | 178    | 82     | 77     | 2.91              |
| Z9801P 25/25  | 248    | 224    | 89     | 77     | 4.22              |
| Z9801PF 15/15 | 204    | 148    | 76     | 67     | 2.35              |
| Z9801PF 20/15 | 229    | 173    | 76     | 67     | 2.75              |
| Z9801PF 20/20 | 241    | 178    | 82     | 77     | 3.21              |
| Z9801PF 25/20 | 261    | 198    | 82     | 77     | 3.51              |
| Z9801PF 25/25 | 298    | 224    | 89     | 77     | 4.55              |

### Dimensional Drawings

(Standard configuration shown)



**PRESSURE RATING:** PN16

**TEMPERATURE RATING:** -10 to 100°C

**END CONNECTIONS:**

Flushing By-pass body - BSP Taper,  
Strainers & Tailpieces - BSP Taper

**SPECIFICATION** DZR Brass (BS EN 12165) fan-coil valve/ terminal unit valve assembly. Preassembled to the requirements of each individual terminal unit to include a flushing by-pass with integral isolation valves, Peak Pro Pressure Independent Control Valve (PICV), with options for low flow to high flow, flow measurement device, strainer, drain and pressure test points as and where specified. Extended handles will be fitted for Chilled Water applications. On-Off or modulating actuator is required to control the PICV. Valve assembly will be labelled to include the terminal unit reference number and flow rate. Generally as Crane FS Z9801P & Z9801PF Dominator Peak Pro system with PICV.

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