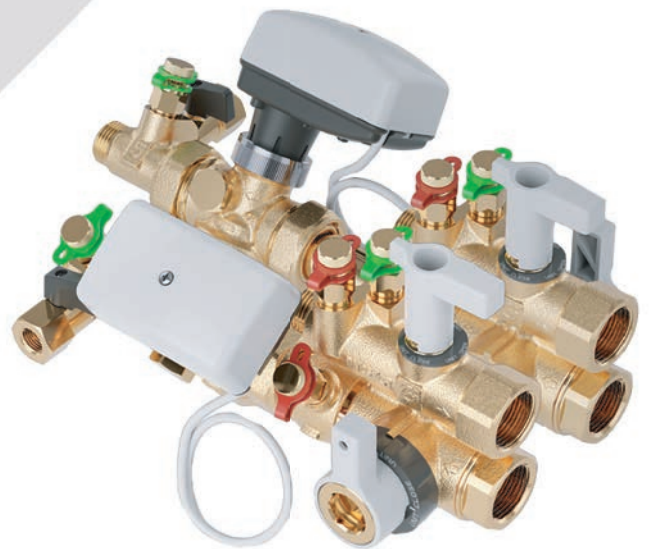
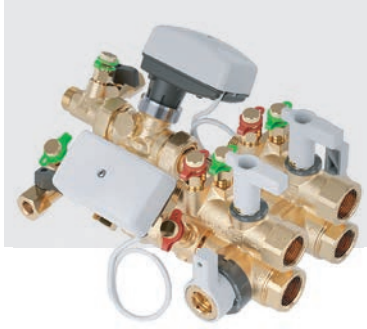


# Series 149 - 40mm centres

fan coil connection  
& regulation kit



# Series 149 - 40mm centres fan coil connection & regulation kit



## Introduction

The Altecnic Series 149 with 40mm centres fan coil connection and regulation kit is a collection of components assembled into flow and return units.

The unit connects the main distribution pipework to the terminal unit in heating and air-conditioning systems easily and quickly.

The 149 unit allows hydraulic balancing of the circuit and adjustment of the flow rate to the terminal unit.

Circuit balancing is maintained by the pressure independent control valve (PICV), a valve comprising an automatic flow rate regulator and a control valve with an actuator.

The PICV can adjust the flow rate and keep it constant in the presence of changing differential pressure conditions of the circuit.

The flow rate is adjusted in two different ways:

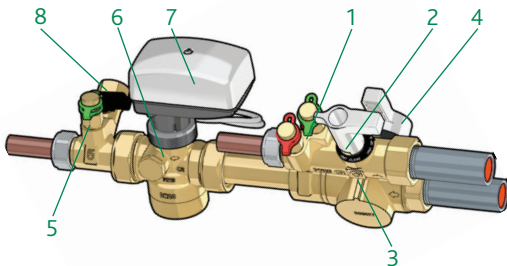
- manually on the automatic flow rate regulator, to restrict the maximum value
- automatically by the control valve in combination with a proportional (0 to 10 V) or ON/OFF actuator, in accordance with the thermal load requirements of the circuit of the system to be controlled.

Maximum differential pressure of the PICV is 5 bar.

The unit is easy to commission using the venturi device and the integral test ports to measure the flow rate.

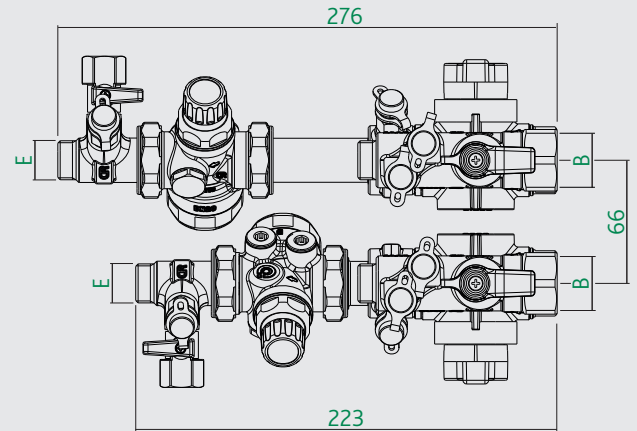
The unit has an internal filter and can be used to flush the terminal unit and adjacent pipework.

## Components

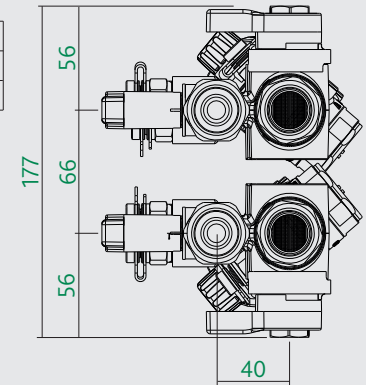


- Venturi with connections for pressure test points
- Three way isolating valve
- Bypass
- Isolating valve with integral strainer
- Pressure test port
- Pressure independent control valve - PICV
- Actuator - optional
- Fill/drain cock

## Dimensions



	B	E
ALT-010	Ø15	Ø15
ALT-020	¾"	¾"



## Technical Specification

### Performance

Medium:	water, glycol solution
Max. percentage of glycol:	50%
Max. working pressure:	25 bar
Max. differential pressure with actuator:	5 bar
Working temperature range:	-20 to 120°C
Ambient temperature range:	0 to 50°C
Normal $\Delta p$ control range:	25 to 400 kPa
Flow rate regulation range:	3.33 to 20 l/m
Strainer mesh size:	800 $\mu$
Weight:	2 kg

### Connections

For electro-thermal actuators:	M30 x 1.5
For pressure test ports:	¼" female BS EN ISO 228-1

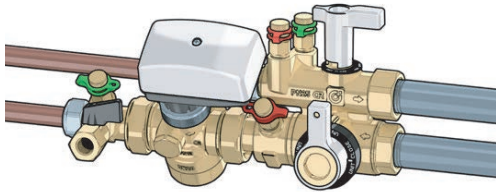
### 14514 Proportional Linear Actuator

Electrical supply:	24 V ac/dc
Power consumption:	2.5 W ac 1.5 W dc
Control signal:	0-10 V
Protection class:	IP 43
Ambient temperature range:	0 to 50°C
Supply cable length:	1.5m
Connection:	M30 x 1.5

# Series 149 - 40mm centres fan coil connection & regulation kit

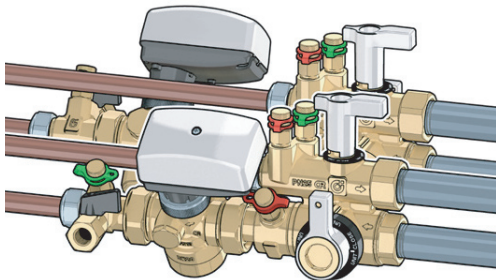
## Product Codes

### One line installation



Prod Code	Size DN	Connections to System	Flow Range l/s	Venturi Kvs
ALT-010E ELF	20	¾" F	0.006 to 0.022	0.15
ALT-010E ULF	20	¾" F	0.022 to 0.056	0.5
ALT-010E LF	20	¾" F	0.056 to 0.111	1.10
ALT-010E NF	20	¾" F	0.111 to 0.222	2.25
ALT-010E HF	20	¾" F	0.222 to 0.333	3.90
ALT-010C ELF	20	Ø15	0.006 to 0.022	0.25
ALT-010C ULF	20	Ø15	0.022 to 0.056	0.25
ALT-010C LF	20	Ø15	0.056 to 0.111	1.10
ALT-010C NF	20	Ø15	0.111 to 0.222	2.25
ALT-010C HF	20	Ø15	0.222 to 0.333	3.90

### Two line installation



## Cooling side

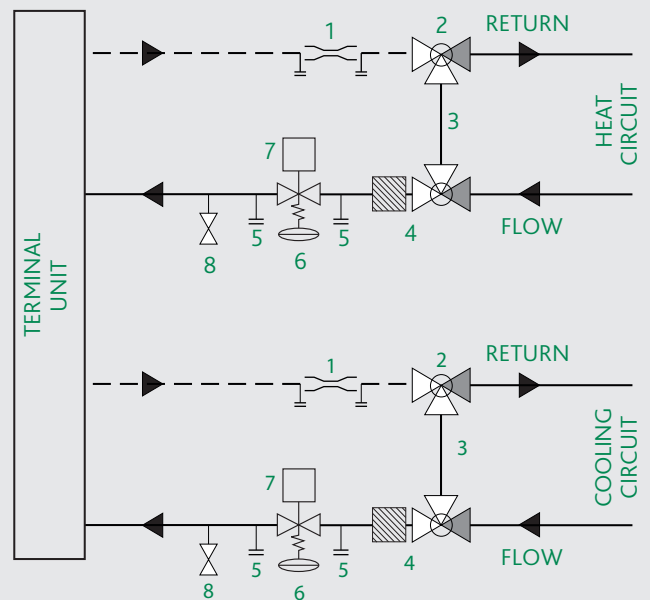
Prod Code	Size DN	Connections to System	Flow Range l/s	Venturi Kvs
ALT-010E ELF	20	¾" F	0.006 to 0.022	0.15
ALT-010E ULF	20	¾" F	0.022 to 0.056	0.5
ALT-010E LF	20	¾" F	0.056 to 0.111	1.10
ALT-010E NF	20	¾" F	0.111 to 0.222	2.25
ALT-010E HF	20	¾" F	0.222 to 0.333	3.90
ALT-010C ELF	20	Ø15	0.006 to 0.022	0.25
ALT-010C ULF	20	Ø15	0.022 to 0.056	0.25
ALT-010C LF	20	Ø15	0.056 to 0.111	1.10
ALT-010C NF	20	Ø15	0.111 to 0.222	2.25
ALT-010C HF	20	Ø15	0.222 to 0.333	3.90

## Heating side

Prod Code	Size DN	Connections to System	Flow Range l/s	Venturi Kvs
ALT-020E ELF	20	¾" F	0.006 to 0.022	0.15
ALT-020E ULF	20	¾" F	0.022 to 0.056	0.5
ALT-020E LF	20	¾" F	0.056 to 0.111	1.10
ALT-020E NF	20	¾" F	0.111 to 0.222	2.25
ALT-020E HF	20	¾" F	0.222 to 0.333	3.90
ALT-020C ELF	20	Ø15	0.006 to 0.022	0.25
ALT-020C ULF	20	Ø15	0.022 to 0.056	0.25
ALT-020C LF	20	Ø15	0.056 to 0.111	1.10
ALT-020C NF	20	Ø15	0.111 to 0.222	2.25
ALT-020C HF	20	Ø15	0.222 to 0.333	3.90

## Operating Principle

The group schematic is shown below;



- 1 Venturi with connections for pressure test points
- 2 Three way isolating valve
- 3 Bypass
- 4 Isolating valve with integral strainer
- 5 Pressure test port
- 6 Pressure independent control valve - PICV
- 7 Actuator - optional
- 8 Fill/drain cock

The unit allows;

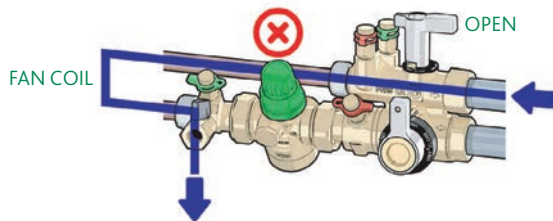
- adjust and maintain the flow rate to the terminal unit using the pressure independent control valve PICV (6) as the differential pressure conditions of the main circuit change
- isolate the terminal unit through the three-way shut-off valves (2 and 4)
- bypass the flow through the three-way shut-off valves (2 and 4) and the integrated by-pass (3)
- filter the inlet water to the terminal unit through the strainer located inside the shut-off valve (4);
- measure the flow rate unit using the Venturi and the pressure test ports (1)
- flush the circuit and drain the water through the drain cock (8)

# Series 149 - 40mm centres fan coil connection & regulation kit

## Normal Function

Normal operation involves positioning both valves to "OPEN".

Water passes through the strainer before entering in the terminal unit, protecting the unit against any residues and impurities present in the main circuit water.

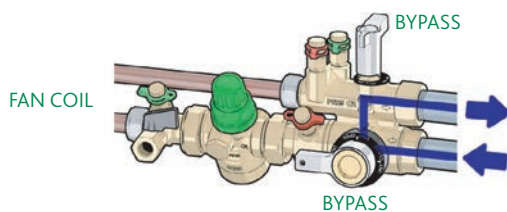


## Flushing Using Bypass

Flushing the main circuit with the exception of the single terminal unit.

Place both lever A and lever B to flush the main circuit, with the exception of the single terminal unit.

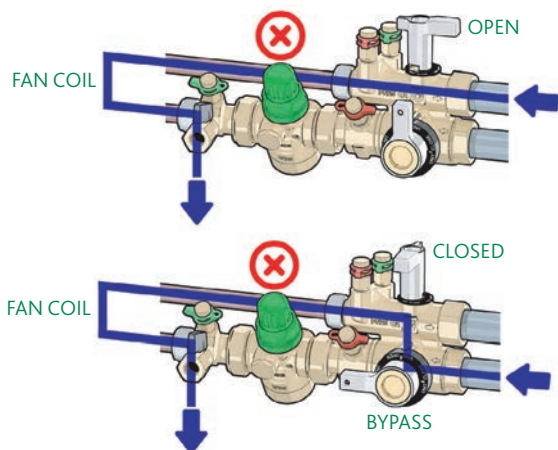
Place both lever A and lever B on "UNIT BY-PASS"



## Flushing the Terminal Unit

Position both levers to "UNIT OPEN", close the PICV using the knob and open the optional drain cock: in this way it is possible to flush the terminal unit using water coming from the main circuit without passing through the PICV.

In cases where it is necessary, it is possible to flush the terminal unit even with the configuration shown in fig.2B. In this case, set lever A to "UNIT BY-PASS" and lever B to "UNIT CLOSE" with the exception of the single terminal unit.



## Actuators



145

Proportional linear actuator  
for control valve 149 series  
Supply: 24 V (ac/dc)



656524

Proportional linear actuator  
for control valve 149 series  
Supply: 24V (ac/dc)



6565

Thermo-electric actuator  
Normally closed  
Quick coupling installation with  
clip adaptor  
for control valve 149 series  
Supply: 24 V (ac/dc) or 230 V (ac)

© Patents & Design Altecnic 2019

Altecnic Ltd retains all rights (including patents, designs and copyrights, trademarks and any other intellectual property rights) in relation to all information provided on or via the website, brochures or any other documents, including all texts, graphics and logos, contained on the website, in brochures or in any other documents published in the name of or on behalf of Altecnic Ltd in any form, without prior written consent of Altecnic Ltd.

Altecnic Ltd Mustang Drive, Stafford, Staffordshire ST16 1GW

T: +44 (0)1785 218200 E: sales@altecnic.co.uk

Registered in England No: 2095101

altecnic.co.uk

AL 319 30-09-19

E & O.E

© Altecnic Limited. 2019

ALTECNIC™

altecnic  
CALEFFI group