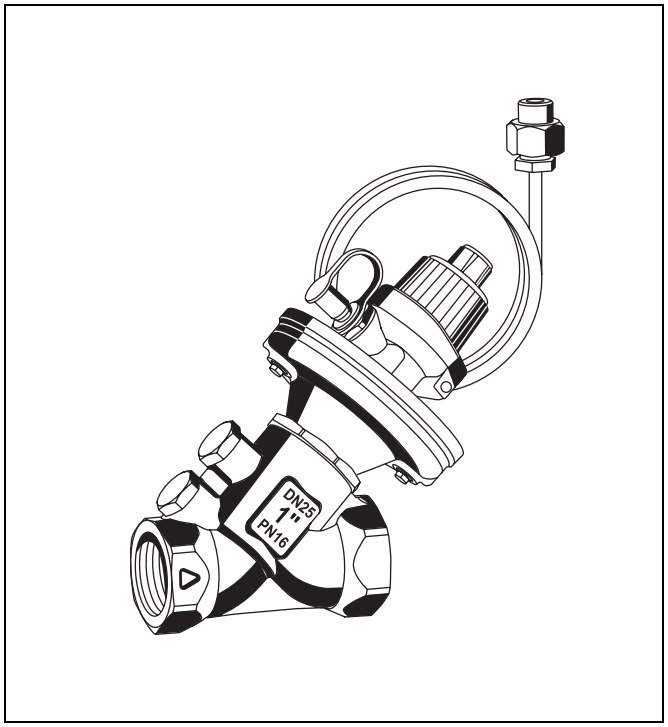
Honeywell

V5001P
Kombi-Auto

DIFFERENTIAL PRESSURE CONTROL VALVE

PRODUCT DATA



Design

The V5001P Kombi-Auto consists of:

- Valve housing DN15 to DN50 with internal threads to DIN2999 (ISO7) for threaded pipe and two G1/4" internal threads for installation of pressure test valves, equipped with blind stops
- Valve insert with diaphragm assembly and impulse tube connection
- Handwheel assembly with digital display of presetting value, locking ring and shutoff screw
- Impulse tube with compression fittings and adapter for connection to V5001S Kombi-S shutoff valve
- SafeCon TM pressure test valve with colour marked dust cap
- Insulation shell with DN size and Honeywell marking

Materials

- Valve housing made of red bronze, lead content <3%
- Blind stops made of brass
- Valve insert made of brass and stainless steel
- Handwheel assembly made of plastic and brass
- Pressure test valve made of brass

Application

The V5001P Kombi-Auto differential pressure control valve is used to maintain a hydronic balance in residential or commercial hydronic heating and cooling systems. It is installed in the return pipeline.

It is used in systems with variable volume flows, for example two-pipe heating systems, and creates a hydronic balance by keeping differential pressure over consumers at a constant preset level even under changing flow conditions, for example in part load states.

Hydronic balance is a significant requirement for efficient operation of a hydronic heating or cooling system. In an unbalanced system under- or oversupply of energy to individual circuits or heat exchangers can occur. Apart from correct selection of radiator valves, regulation of individual circuits is necessary and in some countries required by national standards or regulations.

Apart from pressure control the Kombi-Auto also provides shutoff function. Pressure sensing in supply is done by a Kombi-S stop valve. Compact body design allows installation under restricted space conditions.

Features

- **Rugged, robust design**
- **High flowrates**
- **Insulation shells included**
- **Wide presetting range for easy selection**
- **Easy presetting with stepless Δp-scale and without the need of tools**
- **Presetting lockable**
- **Easy, lockable presetting with external handwheel**
- **Supports flow measurement with Honeywell SafeCon™ quick connections**

Specifications

Medium	Water or water-glycol mixture, quality to VDI 2035 (up to 50% Glycol)
pH-value	8...9.5
Operating temperature	-20...130°C (68...266°F)
Operating pressure	max. 16 bar (232 psi)
Recommended pump pressure	min. Δpc + 200mbar max. 6 x Δpc
Differential pressure pre-setting range	50…350mbar
Factory setting	50mbar
Flow values	see table on page 3
Impulse tube	0.8m

Function

The V5001P Kombi-Auto is installed in the return pipeline. Based on required differential pressure at full load valve is preset to a certain value by turning handwheel clockwise (increase of differential pressure) or anticlockwise (decrease of differential pressure). Required preset value can be determined by using tables further below, by using a sizing tool as under www.honeywell-valvesizing.com, by measuring or directly from design documentation.
Required flow at full load is normally calculated in advance by a consultant or similar specialist and must be known for system balancing.

Installation

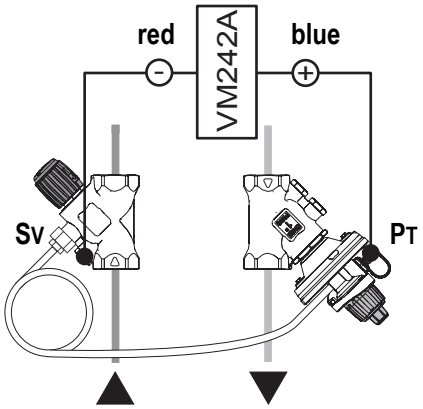
The Kombi-Auto is installed in the return pipeline with a partner valve in the supply pipeline, for example a Kombi-S shutoff valve. The Kombi-S provides impulse tube connection for the supply pressure signal and pressure test connection for differential pressure measuring devices if desired. The Kombi-Auto includes impulse tube and all fittings required to connect to a Kombi-S. The Kombi-S itself has to be ordered separately.

All valves must be installed in the right flow direction indicated by an arrow on each side of valve inlet.

Flow and pressure measurement

The Kombi-Auto is equipped with a SafeCon™ quick connect pressure test valve on the diaphragm housing and has two additional ports on the valve housing which can be retrofitted with SafeCon™ pressure test valves to allow measurements with a differential pressure measuring computer, for example Honeywell VM242 BasicMes-2. The following measurements are possible:

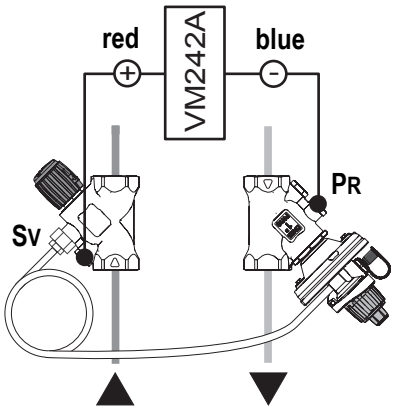
Flow



Requires pressure test connection in supply, e.g. Kombi-S with SafeCon™ pressure test valve

- Blue hose: connected to Kombi-Auto (P_T)
- Red hose: connected to Kombi-S (S_V)

Δp loop

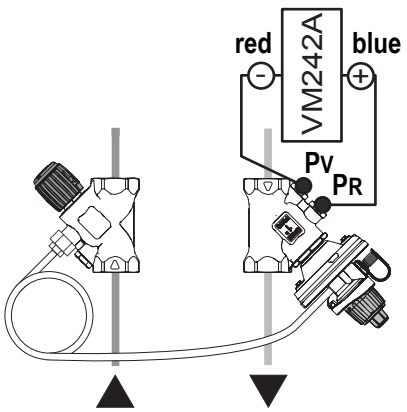


Requires connection in supply, e.g. Kombi-S with SafeCon™ pressure test valve

Requires SafeCon™ pressure test valve on upper connection of Kombi-Auto valve housing

- Red hose: connected to Kombi-S (S_V)
- Blue hose: connected to Kombi-Auto (P_R)

Δp valve



Requires SafeCon™ pressure test valves on both ports of Kombi-Auto

- Blue hose: connected to upper SafeCon™ pressure test valve (P_R)
- Red hose: connected to lower SafeCon™ pressure test valve (P_V)

SafeCon™ quick connect pressure test valves are available as accessory – see chapter ‘Accessories’ below. Depending on type of measurement desired they have to be fitted to the Kombi-Auto and/or Kombi-S supply valve (if used). If no Kombi-S is used other means for pressure testing and impulse tube connection must be provided.

The BasicMes-2 can directly connect to SafeCon™ pressure test valves for leakage free and quick measuring operations.

Dimensions

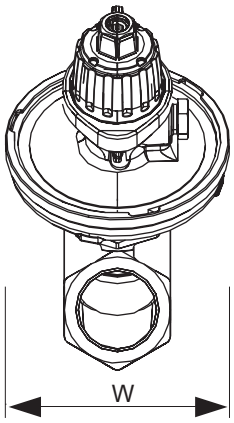


Fig. 1. Front view

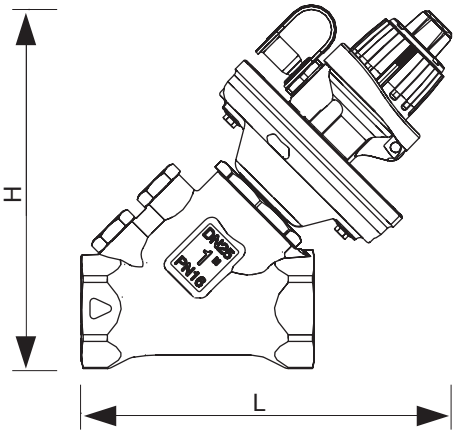


Fig. 2. Side view

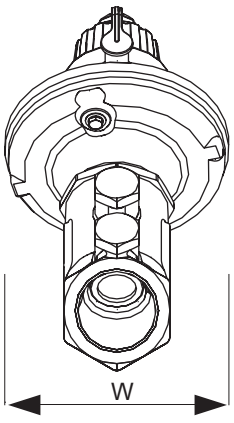


Fig. 3. Back view

Table 1. Dimensions

DN	Thread	Without insulation shell			With insulation shell			Weight
		Length	Width	Height	Length	Width	Height	
15	Rp1/2”	140	87	127	170	87	160	1.5kg
20	Rp3/4”	140	87	138	167	93	163	1.6kg
25	Rp1”	143	87	138	173	104	171	1.8kg
32	Rp1 1/4“	188	117	183	225	117	222	3.6kg
40	Rp1 1/2“	194	117	185	231	126	229	4.0kg
50	Rp2”	206	117	201	243	147	245	4.9kg

NOTE: All dimensions in mm unless stated otherwise.

Flow Data

Table 2. Flow data for Kombi-Auto 50…350mbar ∆p range

	Preset ∆p in mbar											
	50 mbar			100 mbar			150 mbar			200 mbar		
	Q_{min}	Q_{nom}	Q_{max}	Q_{min}	Q_{nom}	Q_{max}	Q_{min}	Q_{nom}	Q_{max}	Q_{min}	Q_{nom}	Q_{max}
DN	[l/h]											
15	40	750	1600	40	750	1600	40	780	1600	40	800	1600
20	60	1200	2100	60	1250	2150	60	1300	2400	60	1300	2450
25	100	1400	2500	100	1400	2650	100	1450	2800	100	1470	2850
32	150	1700	3600	150	2500	4200	150	3000	5500	150	3200	5700
40	200	3900	7500	200	3900	7700	200	4000	7900	200	4000	8250
50	450	5000	10500	450	5000	11000	500	5000	13000	500	6500	14000

	Preset ∆p in mbar								
	250 mbar			300 mbar			350 mbar		
	Q_{min}	Q_{nom}	Q_{max}	Q_{min}	Q_{nom}	Q_{max}	Q_{min}	Q_{nom}	Q_{max}
DN	[l/h]								
15	40	800	1600	40	800	1650	40	850	1700
20	60	1300	2500	60	1300	2550	60	1350	2600
25	100	1500	2900	100	1500	2950	100	1800	3000
32	150	3600	5900	150	3800	6100	150	4000	6500
40	200	4300	8500	200	4700	8750	200	5000	9000
50	500	8000	15000	500	10000	17000	500	12000	19000

Ordering Information

Table 3. Available versions and OS-Nos (OS=Ordering Specification)

Order text	DN size	Thread	ΔP range	k_{VS}-value	OS-No.
V5001P Kombi-Auto with internal threads to DIN2999 (ISO7)	DN15	Rp1/2”	50…350mbar	3.6	V5001PY1015
	DN20	Rp3/4”	50…350mbar	5.8	V5001PY1020
	DN25	Rp1”	50…350mbar	7.1	V5001PY1025
	DN32	Rp1 1/4”	50…350mbar	15.4	V5001PY1032
	DN40	Rp1 1/2”	50…350mbar	22.0	V5001PY1040
	DN50	Rp2”	50…350mbar	35.8	V5001PY1050

Valve Identification

Each valve is marked as follows:

- ‘Honeywell’ logo, OS-Number and DN size printed on top of handwheel
- ‘Honeywell’ logo, OS-Number and serial number on right side of valve housing
- DN size, inch size and PN rating on left side of valve housing
- Flow arrow on both sides of valve inlet

Scope of Delivery

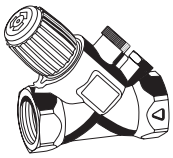
- Kombi-Auto differential pressure control valve
- Impulse tube with compression fittings and adapter for installation to a Kombi-S stop valve in the supply
- Insulation shell
- Installation and setup instructions

Accessories

VM242A BasicMes-2 handheld measuring computer

For all sizes. Computer is supplied with case and accessories — VM242A0101

V5001S Kombi-S stop valve



DN15	V5001SY2015
DN20	V5001SY2020
DN25	V5001SY2025
DN32	V5001SY2032
DN40	V5001SY2040
DN50	V5001SY2050

NOTE: For more information see data sheet ‘V5001S Kombi-S Stop Valve’

Spare set of 2 pressure test cocks G1/4"

For all sizes — VS2600C001

Shutoff valve for impulse tube

For all sizes — VS5501A008

Draining valve

For all sizes — VA3401A008

Spare parts

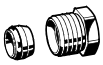
Replacement inserts

50…350mbar, for DN15	V5001PZ1015
50…350mbar, for DN20	V5001PZ1020
50…350mbar, for DN25	V5001PZ1025
50…350mbar, for DN32	V5001PZ1032
50…350mbar, for DN40	V5001PZ1040
50…350mbar, for DN50	V5001PZ1050

Replacement impulse tube

For all V5001P — VA2500CU04

Compression fittings for impulse tube



For copper pipe 4 x 1mm — VS5500A004

Insulation shells

For valves DN15	VA2510D015
For valves DN20	VA2510D020
For valves DN25	VA2510D025
For valves DN32	VA2510D032
For valves DN40	VA2510D040
For valves DN50	VA2510D050

Application Examples

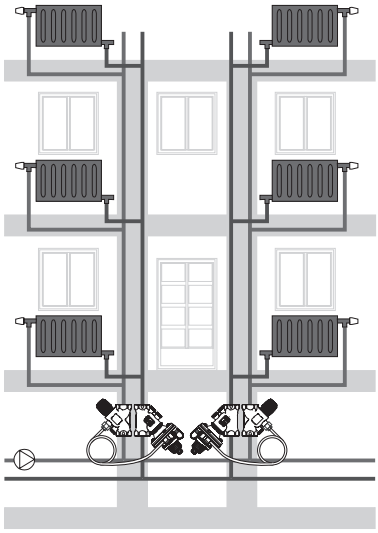


Fig. 4.

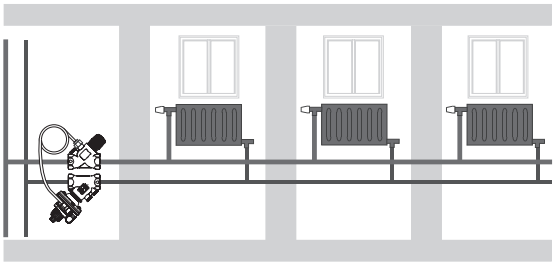


Fig. 5.

Control Characteristic

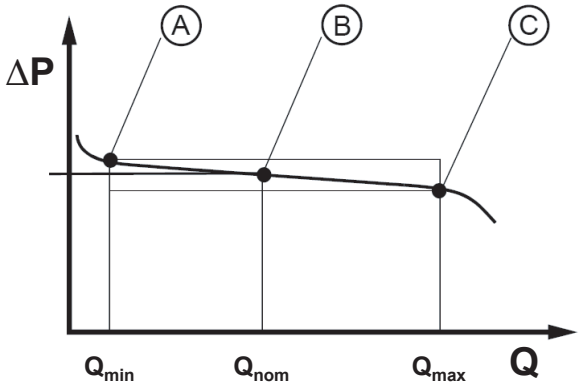


Fig. 6. Control characteristic

Legend

A – Q_{min}	Minimum flow where valve starts to control (Lowest control point)
B – Q_{nom}	Value where set Dp is in middle of hysteresis (Optimal control point)
C – Q_{max}	Maximum flow before flow curve drops off (Highest control point)

For more information on Honeywell Balancing and Pipeline Valves see www.honeywell-valvesizing.com.

Environmental and Combustion Controls
Honeywell GmbH
Hardhofweg
74821 Mosbach, Germany
Phone: +49 (6261) 810
Fax: +49 (6261) 81393
www.honeywell.com

EN0H-2325GE25 R0911
September 2011

Manufactured for and on behalf of the Environmental and Combustion Controls Division of Honeywell Technologies Sàrl, Z.A. La Pièce 16, 1180 Rolle, Switzerland or its Authorized Representative.

Honeywell