KOMBI-9 SERIES

Pressure Independent Integrated Balancing Control Valve

- Integrated functions as linear temperature control, pressure independent and electric regulating into one valve
- Output the valve position signal to BAS for system variable differential pressure control of variable flow water system, ensure HVAC water system can always operate in the most energy-saving mode
- High control accuracy, strong anti-interference capacity
- Allow wide range of pressure fluctuation difference for the system
- Simple calculation in designing the pipeline system
- Easy installation
- Convenient for commissioning at site

Pressure Independent Integrated Balancing Control Valve

- Built-in common terminal equipment thermal output features database for high-precise linear temperature control of the terminal equipment
- Built-in pressure-independent characteristics database ensures the pressure-independent temperature and flow control
- All temperature and flow can be automatically regulated without any human interference
- Size of control valve can be set directly
- Stroke self-adaption function
- Max. flow can be preset easily according to the requirements of the terminal equipment
- Display of max. set flow
- Low energy consumption

APPLICATION

Honeywell Kombi-9 is designed for precise temperature control of terminal air-conditioning equipment in the HVAC system. It can maintain the flow regardless of variations in system differential pressure. With the valve position feedback ,the Building Automation System can always operate in the most energy-saving mode.

Control valve

- V5011P Series control valve for DN25-DN50
- V5328A Series control valve for DN65-DN80
- V5088A Series control valve for DN100-DN150
- Bronze valve body (DN25~DN50) resists corrosion and long service life
- Stainless steel plug and the metallic sealing ensures

Honeywell

Major Technical Parameters

Size range:	DN25～DN150
Flow control accuracy	±4%
Max. flow set range	60%～100%*Qr
Max. close-off pressure	10Bar/DN25,7Bar/DN32, 4.6Bar/DN40,2.6Bar/DN50 10Bar/DN65~DN150
Operating Pressure	
Difference Range	0~250kPa
Input control signal	0/2～10VDC 0/4～20mA
Feedback signal	2～10VDC
Supply voltage	24VAC(+15%,-10%),50/60Hz
Electric connection	1 m operating power cable
Valve rated pressure	PN16
Connection of valve	DN25~DN50: Female screw BSPT DN65~DN150: Flange (ISO7005-2)
Valve body Material	DN25~DN50: Bronze DN65~DN150:Control valve cast iron GG25
Media	Water, glycol solution
Media temperature	-5℃~120℃
Operating ambient	
Temperature	0 ~ 65°C
Atmosphere	Non-corrosive, non-explosive

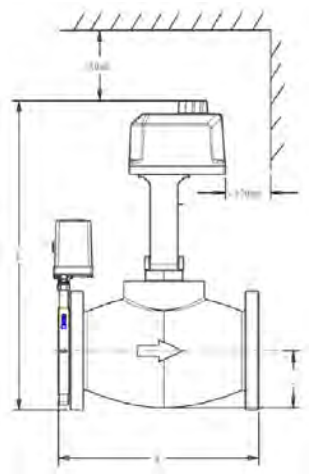
Selection

Size	Qr(m3/h)*	Kvs theor.**	Interface	Valve & pre-sensor OS#	Actuator & Sensor OS#	Power consumption (VA)
DN25	3.5	8.7	Threaded	V5011P1004-K9	ML7420A8088-SBU	6(Operation) 3.5(Standby)
DN32	6.0	15.0		V5011P1012-K9		
DN40	9.6	24.0		V5011P1020-K9		
DN50	16.1	40.2		V5011P1038-K9		
DN65	26.0	63.0		V5328A1179-K9		
DN80	40.0	100.0		V5328A1187-K9		

DN100	63.0	157.5		V5088A1005-K9	ML7421B8012-SBU	12(Operation) 2.6(Standby)
DN125	103.0	250.0		V5088A1013-K9		
DN150	137.0	342.5		V5088A1021-K9		

*: Qr is the maximum flow rate under pressure independent control mode
**: Theoretical Kvs value for pressure drop calculation

Dimension



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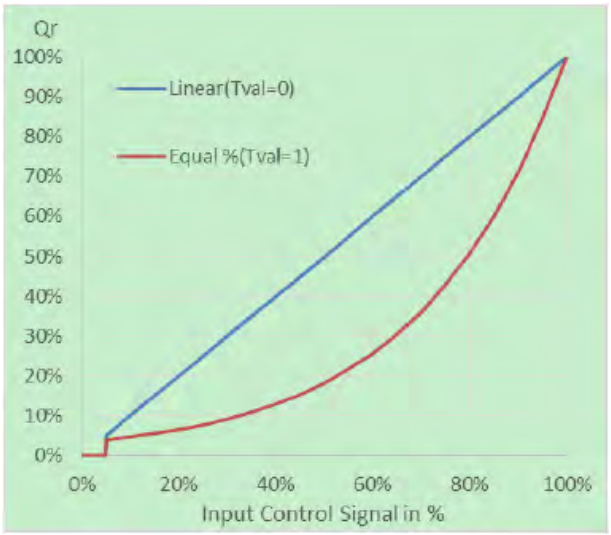
Dimension

Size	A(mm)	B(mm)	C(mm)	Weight approx. (kg)
DN25	180	348.5	66.5	3.8
DN32	184	354.5	72.5	4.2
DN40	191	366	77	5.2
DN50	202	372.5	83.5	6.2
DN65	312	446.5	92.5	18.2
DN80	332	456	100	26.7
DN100	372	617	110	50
DN125	422	670	125	60.5
DN150	502	687.5	142.5	80.7

Flow Characteristics

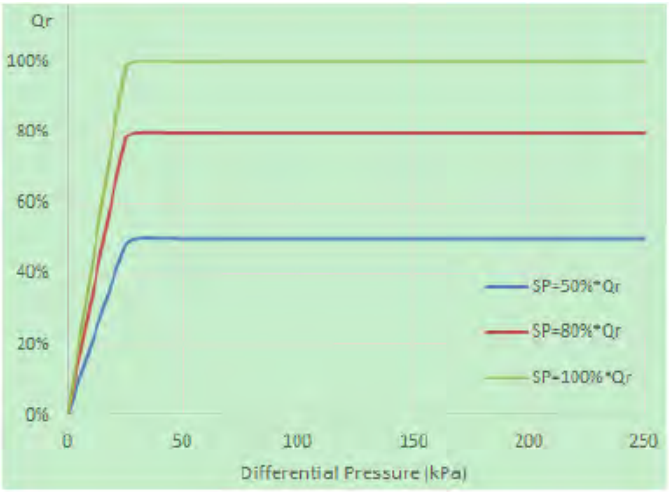
The Kombi-9 can be configured to work under equal percentage flow curve or linear flow curve. The input control signal can be 0~10V, 2~10V, 0~20mA or 4~20mA.

When control signal is less than 5% the valve will be fully-closed.



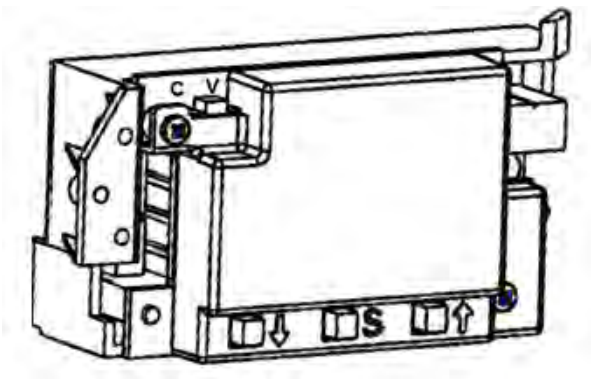
Pressure Independent Features

The Kombi-9 can maintain its flow according to input control signal, regardless of the pressure change of the system.



Parameter Display and Setting

The Kombi-9 has a control unit with LCD, switch and buttons to set and display parameters.



The switch in the upper left corner of the LCD is to select input control signal type: C for 0/4~20mA and V for 0/2~10V. Furthermore, selection should be done with buttons to set the minimum control signal (0 or higher).

Feedback

Kombi-9 provides a 2~10VDC feedback to the Building Automation System as valve position. The higher the feedback voltage the greater the system differential pressure, providing the input control signal remains unchanged. The BAS can reduce pump output and save energy by keeping the most unfavorable loop in full-open state.

The LCD and buttons can display and set parameters.

Parameters are displayed on several pages:

Parameter	Description
DN	Valve size: DN25, DN32, DN40, DN50, DN65, DN80, DN100, DN125, DN150. Default DN50
Si	Input control signal type: 0~10V, 2~10V, 0~20mA, 4~20mA. Default 0~10V
T	Adjustable max. flow rate: 60%~100%*Qr. Default 100%*Qr
P	Kp of PID control: 0~500. Default 50.
I	Ki of PID control: 0~500. Default 400.
D	Kd of PID control: 0~500. Default 0.
Rev	Actuator direction: 0 Direct, 1 Reverse. Default Direct.
Tval	Flow curve: 0 Linear, 1 Equal percentage. Default Equal percentage.
Pas	Bypass pressure independent control mode. 0 no bypass, 1 bypass. Default bypass.
code	Password to enter parameter setting mode. Default 68.
Qr	Max. flow rate under pressure independent control mode.
Kvs	Theoretical Kvs value for pressure drop calculation.
Qs	T*Qr
Pmin	Min. operating differential pressure.
Pmax	Max. operating differential pressure.
Vin	Input control signal in Volt.
Vout	Output control signal (Volt) to actuator.

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