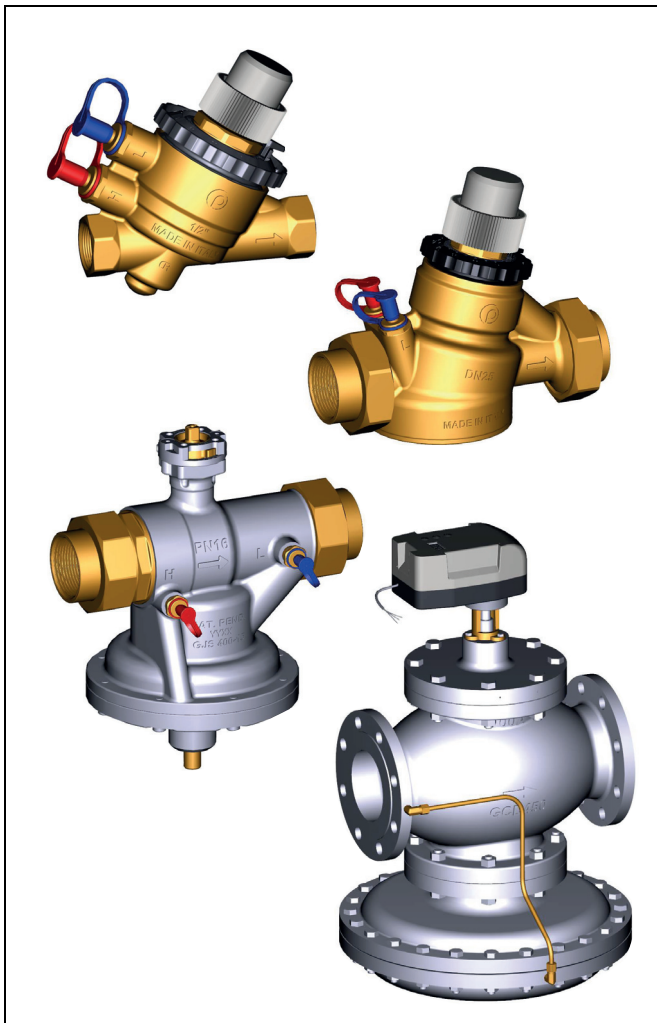


V5004T

Kombi-QM

Pressure Independent Balancing and Control Valve

Product specification sheet



Application

The V5004T Kombi-QM is a Pressure Independent Control Valve (PICV). It combines a flow controller and a full stroke, full authority temperature controller in one valve.

Equipped with an actuator Kombi-QM provides a full stroke modulating temperature control.

It is suitable for use in variable and constant flow systems. They may be used as constant flow limiter in constant flow systems (without an actuator) or as a Pressure Independent Control Valve in variable flow systems.

V5004T Kombi-QM is typically used for balancing and temperature control of fan coil units, air handling units, chilled ceilings and one-pipe heating systems.

Special Features

- Automatic pressure independent balancing and control
 - Precise pressure independent flow performance
 - Highest energy saving potential due to efficient energy transfer and minimized pump speed
 - Integrated measuring possibility to find the optimal setpoint for the pump
 - Reduced movements of actuators as pressure fluctuations do not influence the required temperature
 - No complex calculation needed for selection
 - No balancing method needed for commissioning
- Wide range of application
 - Sizes DN15 up to DN150
 - Various versions to support standard flow rates as well as low flow and high flow needs
 - Covers two functions in one valve which reduces mounting costs
- Easy commissioning
 - Pre-setting with visual flow scale at the valve
 - Pre-setting by hand without the need of tools
 - Pre-setting possible even when the system is running and an actuator is already mounted
 - Can balance a system even if only parts of a building are in operation
- Maintenance friendly
 - Emergency shutoff function with plastic cap – not for permanent use
 - Measuring possibility for problematic applications

Valve Efficiency

	low				high
Energy efficiency	●	●	●	●	●
Commissioning Effort	●	●	○	○	○
Calculation effort	●	●	●	○	○

Content

Application	1
Special Features	1
Valve Efficiency	1
Technical Data	2
Construction	2
Materials	2
Method of Operation	2
Valve Identification	2
Overview	3
Dimensions	4
Ordering Information	5
Flow Data	6
Flow Rates	7
Control Characteristic	8
Accessories	9

Technical Data

Nominal size	DN15 – DN25	DN20 – DN32	DN40 – DN65	DN50 – DN150
Housing	Dezincification-resistant brass	Dezincification-resistant brass	Ductile iron	Ductile iron
Medium	Water or water-glycol mixture, quality to VDI 2035 (up to 50% Glycol)			
pH-value	8...9.5			
Operating temperature	-10...120°C (25...248°F)			
kvs (cvs)-value	see table on page 6			
Operating pressure (PN)	max. 25 bar (363 psi)		max. 16 bar (232 psi)	
Differential pressure range	see table on page 6			
- Δp_{min}	400 kPa (4 bar)			
- Δp_{max}	see table on page 6			
Flow values	see table on page 6			
Leakage	According to Class IV IEC 60534-2-3			

Construction

The V5004TY Kombi-QM (DN15 - DN25) consists of:

- Valve housing with internal threads to DIN EN 10226-1 for threaded pipe and two G1/4" equipped with SafeCon™ pressure test valves
- Handwheel with scale for pre-setting the valve
- Valve insert with diaphragm assembly
- Plastic cover cap to protect actuator connection. Can be used as emergency shutoff function (not permanent)
- Installation and setup instructions

The V5004TY Kombi-QM (DN20 - DN32) consists of:

- Valve housing with internal threaded connection sets to DIN EN 10226-1 for threaded pipe and two G1/4" equipped with SafeCon™ pressure test valves
- Handwheel with scale for pre-setting the valve
- Valve insert with diaphragm assembly
- Plastic cover cap to protect actuator connection. Can be used as emergency shutoff function (not permanent)
- Installation and setup instructions

The V5004TY Kombi-QM (DN40 - DN65) consists of:

- Valve housing with internal threaded connection sets to DIN EN 10226-1 for threaded pipe and two G1/4" equipped with SafeCon™ pressure test valves
- Valve insert with diaphragm assembly
- Installation and setup instructions

The V5004TF Kombi-QM (DN50 - DN150) consists of:

- Valve housing with flanges to EN 1092-2
- Actuator included in the delivery
 - Pre-setting of the valve can be done at the actuator
- Installation and setup instructions

Materials

V5004TY Kombi-QM (DN15 - DN25)

- Valve housing made of dezincification-resistant brass
- Sealings made of EPDM
- Pre-setting parts made of high resistant polymer and brass
- Inner parts made of brass, stainless steel, high resistant polymer and EPDM

V5004TY Kombi-QM (DN20 - DN32)

- Valve housing made of dezincification-resistant brass
- Sealings made of EPDM
- Pre-setting parts made of high resistant polymer and brass
- Inner parts made of brass, stainless steel, high resistant polymer and EPDM

V5004TY Kombi-QM (DN40 - DN65)

- Valve housing made of ductile iron
- Sealings made of EPDM
- Pre-setting parts made of dezincification-resistant brass
- Inner parts made of brass, stainless steel, high resistant polymer and EPDM

V5004TF Kombi-QM (DN50 - DN150)

- Valve housing made of ductile iron
- Sealings made of EPDM
- Pre-setting parts made of high resistant polymer and dezincification-resistant brass
- Inner parts made of brass, stainless steel, high resistant polymer and EPDM

Method of Operation

The V5003T Kombi-QM combines the functionality of a dynamic balancing valve and a control valve in one product. The dynamic balancing function maintains a constant differential pressure over the control valve. The control valve regulates the flow by means of a variable orifice which is controlled by the actuator. The constant differential pressure across the control valve ensures accurate control and full valve authority, independent of the pressure conditions in the system.

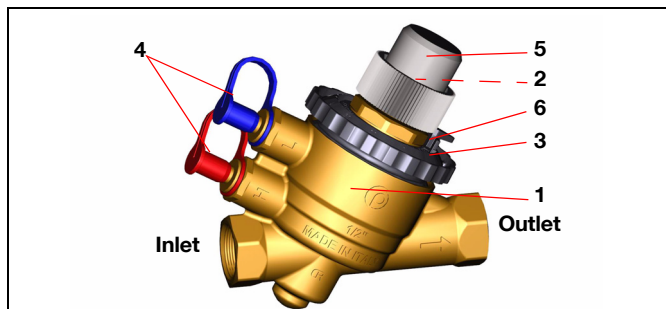
Valve Identification

Each valve is marked as follows:

- OS-Number
- DN size
- PN rating
- Flow arrows
- Serial number/date code

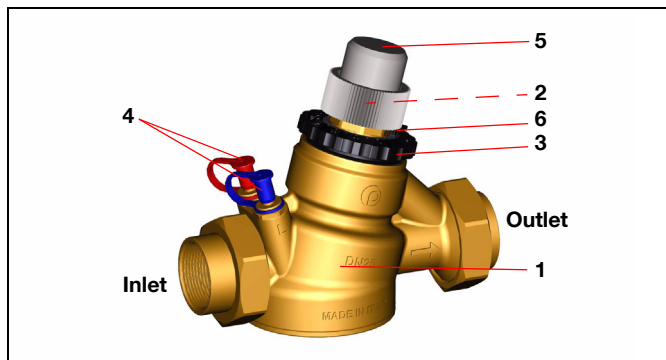
Overview

V5004TY Kombi-QM (DN15 - DN25)



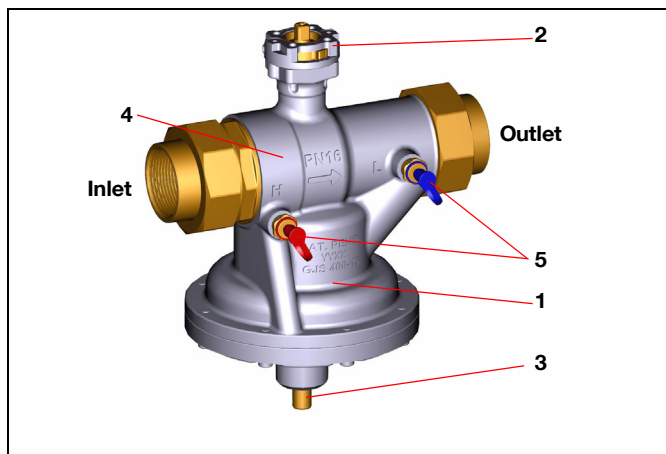
- 1 Differential pressure regulator
- 2 Interface for connection of Honeywell linear actuators
- 3 Flow pre-setting knob with scale from 0% to 100%
Pre-setting without tools possible
- 4 SafeCon™ pressure test valve with colour marked protection cap
- 5 Grey protection cap - can be used as emergency shutoff knob
- 6 Lockable pre-setting

V5004TY Kombi-QM (DN20-DN32)



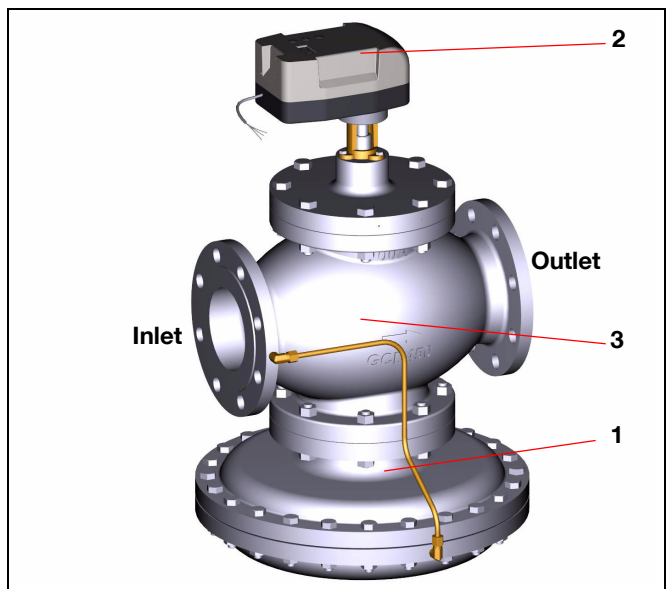
- 1 Differential pressure regulator
- 2 Interface for connection of Honeywell linear actuators
- 3 Flow pre-setting knob with scale from 0% to 100%
Pre-setting without tools possible
- 4 SafeCon™ pressure test valve with colour marked protection cap
- 5 Grey protection cap - can be used as emergency shutoff knob
- 6 Lockable pre-setting

V5004TY Kombi-QM (DN40-DN65)



- 1 Differential pressure regulator
- 2 Interface for connection with rotating Honeywell actuators
- 3 Additional manual shut-off device
- 4 Regulating part
- 5 SafeCon™ pressure test valve with colour marked protection cap

V5004TF Kombi-QM (DN50-DN150)

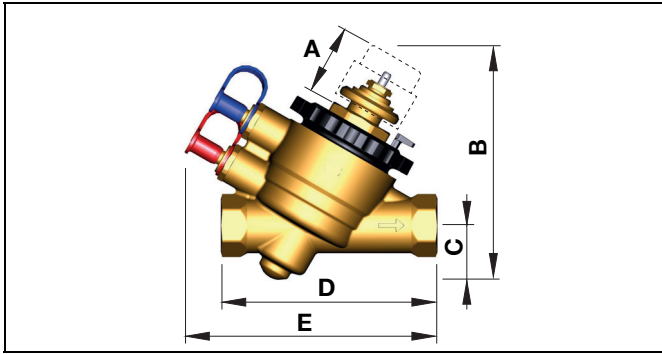


- 1 Differential pressure regulator
- 2 Regulating actuator
- 3 Regulating part
- 4 SafeCon™ pressure test valve with colour marked protection cap

EN0H-2327GE23 R1 01/4 • Subject to change

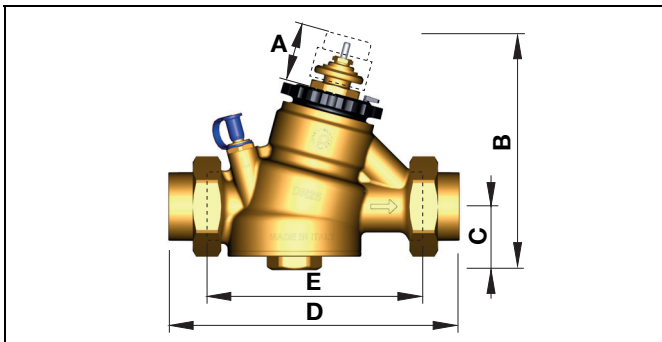
Dimensions

V5004TY Kombi-QM (DN15-DN25)



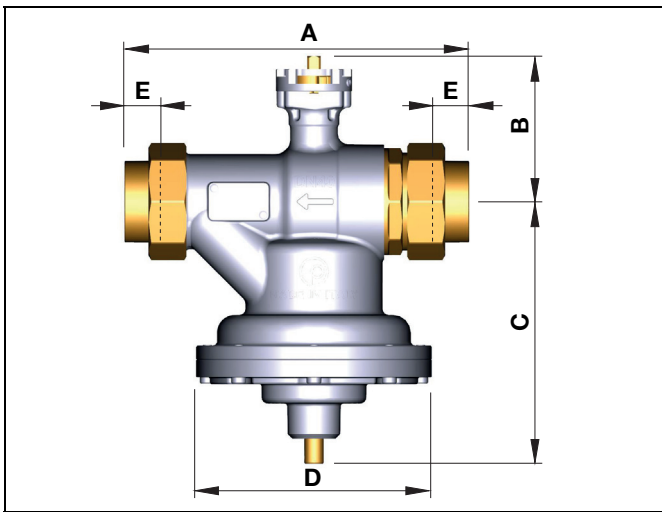
DN	Thread	A	B	C	D	E
15	Rp1/2"	32	100	25	99	116
20	Rp3/4"					
25	Rp1"					

V5004TY Kombi-QM (DN20-DN32)



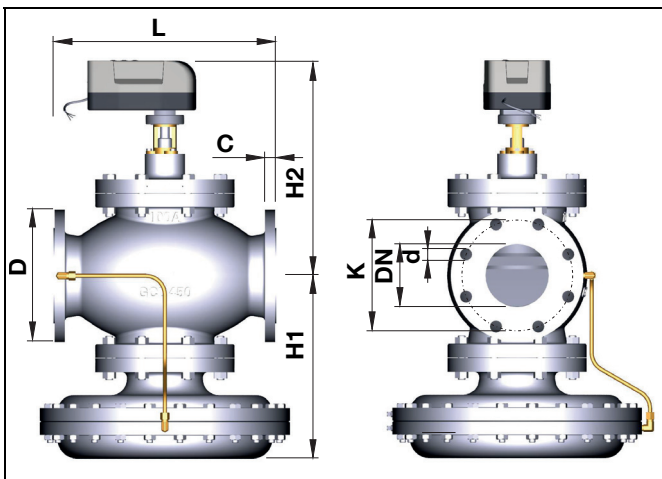
DN	Thread	A	B	C	D	E
20	Rp3/4"	34	133	38	176	135
25	Rp1"				184	
32	Rp1 1/4"				209	

V5004TY Kombi-QM (DN40-DN65)



DN	Thread	A	B	C	D	E
40	Rp1 1/2"	257	82	221	198	23.6
50	Rp2"	264	82	221	198	28
65	Rp2 1/2"	-	-	-	-	-

V5004TF Kombi-QM (DN50-DN150)



DN	Thread	H1	H2	L	D	K	d	C
50	Rp2"	219	267	254	165	125	19	19
65	Rp2 1/2"	234	282	276	185	145	19	19
80	Rp3"	239	290	298	200	160	19	19
100	Rp4"	285	309	352	220	180	19	19
125	Rp5"	310	334	400	250	210	19	19
150	Rp6"	350	379	451	285	240	23	19

NOTE: All dimensions in mm unless stated otherwise.

Ordering Information

Available versions and OS-Nos (OS=Ordering Specification)

Order text	DN size	Flow range		Differential pressure range		Weight [kg]	OS-No.
		Min. flow* [l/h]	$k_{vs}(C_{vs})$ -value = Max. flow* [l/h]	Δp_{min} * [kPa]	Δp_{max} [kPa]		
Linear valve V5004 Kombi-QM with internal threads to DIN EN 10226-1 (ISO7)	DN15	45	150	20	400	0.88	V5004TY10150150
	DN15	60	600	25		0.88	V5004TY10150600
	DN15	78	780	35		0.88	V5004TY10150780
	DN20	100	1000	30		0.95	V5004TY10201000
	DN20	450	1500	35		0.95	V5004TY10201500
	DN25	450	1500	35		0.95	V5004TY10251500
Linear valve V5004 Kombi-QM with internal threads to DIN EN 10226-1 (ISO7)	DN20	220	2200	25	400	2.30	V5004TY10202200
	DN20	270	2700	25		2.30	V5004TY10202700
	DN25	220	2200	25		2.40	V5004TY10252200
	DN25	270	2700	25		2.40	V5004TY10252700
	DN32	270	2700	25		2.60	V5004TY10322700
	DN32	300	3000	35		2.60	V5004TY10323000
Rotating valve V5004 Kombi-QM with internal threads to DIN EN 10226-1 (ISO7)	DN40	2700	9000	25	400	15.30	V5004TY10409000
	DN50	3600	12000	30		15.50	V5004TY10501200
	DN50	5400	18000	35		15.50	V5004TY10501700
	DN65	5400	18000	35		-	V5004TY10651800
Flanged valve V5004 Kombi-QM with flanges to EN1092-2	DN50	2000	20000	30	400	38.00	V5004TF1050
	DN65	3000	30000	30		48.00	V5004TF1065
	DN80	4000	40000	30		60.00	V5004TF1080
	DN100	5500	55000	30		102.00	V5004TF1100
	DN125	8000	80000	30		126.00	V5004TF1125
	DN150	15000	150000	50		162.00	V5004TF1150

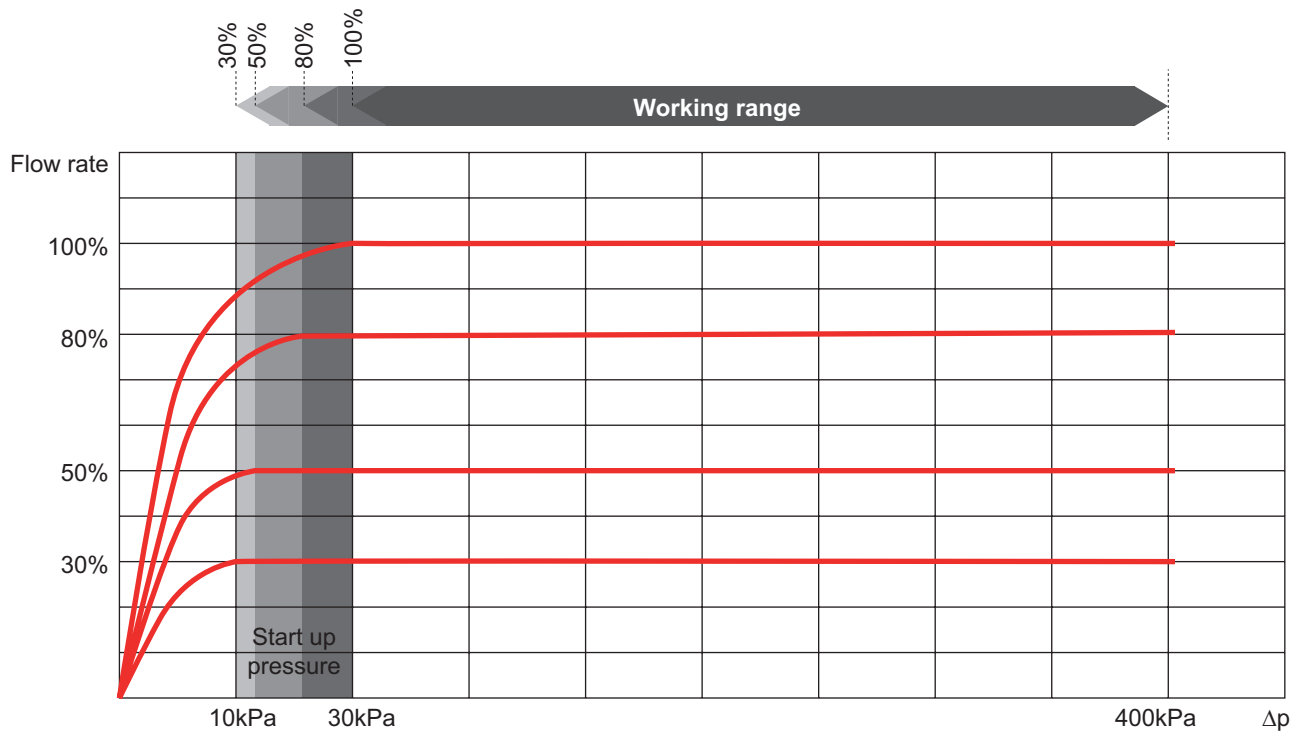
NOTE: * Valve is fully open / without actuator

Flow Data

Limits of flows and differential pressures

OS. No.	Flow [l/h]	Startup Pressure				Δp_{max} [kPa]
		Δp_{min} [kPa] at 30% flow	Δp_{min} [kPa] at 50% flow	Δp_{min} [kPa] at 80% flow	Δp_{min} [kPa] at 100% flow	
V5004TY10150150	45...150	8	11	16	20	400
V5004TY10150600	60...600	17	18	21	25	400
V5004TY10150780	78...780	23	25	30	35	400
V5004TY10201000	100...1000	10	14	24	30	400
V5004TY10201500	450...1500	14	17	25	35	400
V5004TY10251500	450...1500	14	17	25	35	400
V5004TY10202200	220...2200	16	17	22	25	400
V5004TY10202700	270...2700	17	20	22	25	400
V5004TY10252200	220...2200	16	17	22	25	400
V5004TY10252700	270...2700	17	20	22	25	400
V5004TY10322700	270...2700	17	20	22	25	400
V5004TY10323000	300...3000	18	25	30	35	400
V5004TY10409000	900...9000	21	25	31	35	400
V5004TY10501200	1200...12000	20	21	32	35	400
V5004TY10501700	1700...18000	15	19	30	35	400
V5004TY10651800	1800...18000	-	-	-	-	400
V5004TF1050	2000...20000	21	25	30	30	400
V5004TF1065	3000...30000	26	29	30	30	400
V5004TF1080	4000...40000	23	25	30	30	400
V5004TF1100	5500...55000	16	20	24	30	400
V5004TF1125	8000...80000	21	25	30	30	400
V5004TF1150	15000...150000	31	35	41	50	400

Example of valve's behaviour for different adjustment (30%, 50%, 80%, 100%)



Example for V5004TY10201000:

When the valve is set to 100% of nominal flow, the curve begins to remain constant at 30 kPa, therefore the working range at 100% setting is 30 - 400 kPa;

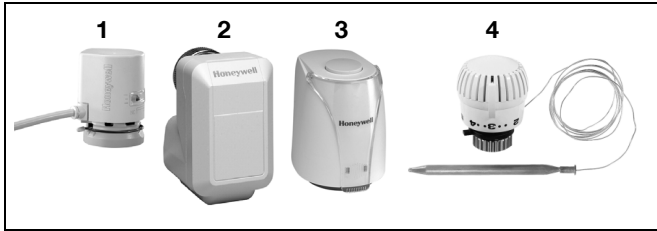
When the valve is set to 30% of nominal flow, the curve begins to remain constant at 10 kPa, therefore the working range at 30% setting is 10 - 400 kPa.

Flow Rates

OS. No.	Pre-setting	100%	90%	80%	70%	60%	50%	40%	30%	20%	10%
	Flow rate										
V5004TY10150150	[l/h]	150	135	120	105	90	75	60	45	-	-
	[l/s]	42	38	33	29	25	21	17	13	-	-
V5004TY10150600	[l/h]	600	540	480	420	360	300	240	180	120	60
	[l/s]	167	150	133	117	100	83	67	50	33	17
V5004TY10150780	[l/h]	780	702	624	546	468	390	312	234	156	78
	[l/s]	217	195	173	152	130	108	87	65	43	22
V5004TY10201000	[l/h]	1000	900	800	700	600	500	400	300	200	100
	[l/s]	278	250	222	194	167	139	111	83	56	28
V5004TY10201500	[l/h]	1500	1350	1200	1050	900	750	600	450	-	-
	[l/s]	417	375	333	292	250	208	167	125	-	-
V5004TY10251500	[l/h]	1500	1350	1200	1050	900	750	600	450	-	-
	[l/s]	417	375	333	292	250	208	167	125	-	-
V5004TY10202200	[l/h]	2200	1980	1760	1540	1320	1100	880	660	440	220
	[l/s]	611	550	489	428	367	306	244	183	122	61
V5004TY10202700	[l/h]	2700	2430	2160	1890	1620	1350	1080	810	540	270
	[l/s]	750	675	600	525	450	375	300	225	150	75
V5004TY10252200	[l/h]	2200	1980	1760	1540	1320	1100	880	660	440	220
	[l/s]	611	550	489	428	367	306	244	183	122	61
V5004TY10252700	[l/h]	2700	2430	2160	1890	1620	1350	1080	810	540	270
	[l/s]	750	675	600	525	450	375	300	225	150	75
V5004TY10322700	[l/h]	2700	2430	2160	1890	1620	1350	1080	810	540	270
	[l/s]	750	675	600	525	450	375	300	225	150	75
V5004TY10323000	[l/h]	3000	2700	2400	2100	1800	1500	1200	900	600	300
	[l/s]	833	750	667	583	500	417	333	250	167	83
V5004TY10409000	[l/h]	9000	8100	7200	6300	5400	4500	3600	2700	-	-
	[l/s]	2500	2250	2000	1750	1500	1250	1000	750	-	-
V5004TY10501200	[l/h]	12000	10800	9600	8400	7200	6000	4800	3600	-	-
	[l/s]	3333	3000	2667	2333	2000	1667	1333	1000	-	-
V5004TY10501700	[l/h]	18000	16200	14400	12600	10800	9000	7200	5400	-	-
	[l/s]	5000	4500	4000	3500	3000	2500	2000	1500	-	-
V5004TY10651800	[l/h]	-	-	-	-	-	-	-	-	-	-
	[l/s]	-	-	-	-	-	-	-	-	-	-
V5004TF1050	[l/h]	20000	18000	16000	14000	12000	10000	8000	6000	4000	2000
	[l/s]	5556	5000	4444	3889	3333	2778	2222	1667	1111	556
V5004TF1065	[l/h]	30000	27000	24000	21000	18000	15000	12000	9000	6000	3000
	[l/s]	8333	7500	6667	5833	5000	4167	3333	2500	1667	833
V5004TF1080	[l/h]	40000	36000	32000	28000	24000	20000	16000	12000	8000	4000
	[l/s]	11111	10000	8889	7778	6667	5556	4444	3333	2222	1111
V5004TF1100	[l/h]	55000	49500	44000	38500	33000	27500	22000	16500	11000	5500
	[l/s]	15278	13750	12222	10694	9167	7639	6111	4583	3056	1528
V5004TF1125	[l/h]	80000	72000	64000	56000	48000	40000	32000	24000	16000	8000
	[l/s]	22222	20000	17778	15556	13333	11111	8889	6667	4444	2222
V5004TF1150	[l/h]	150000	135000	120000	105000	90000	75000	60000	45000	30000	15000
	[l/s]	41667	37500	33333	29167	25000	20833	16667	12500	8333	4167

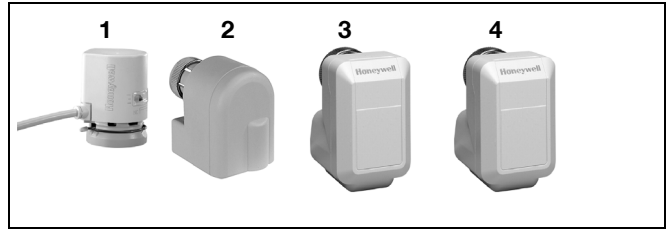
Accessories

V5004TY Kombi-QM (DN15-DN25)



No.	Description	Part No.
1	Actuator thermoelectric 2.7mm effective stroke, 90N, on/off	MT4-024-NO
		MT4-024-NO-2.5M
		MT4-024S-NO
		MT4-024-NC
		MT4-024-NC-2.5M
		MT4-024S-NC
		MT4-230-NO
		MT4-230-NO-2.5M
		MT4-230S-NO
		MT4-230-NC
		MT4-230-NC-2.5M
MT4-230S-NC		
2	Actuator 3-point 2.7mm effective stroke, 90N, floating	M7410A1001
		M7410A1001-3M
NOTE: By use of this actuator series the max. flow of the valve is reduced by 15%		
3	Actuator thermoelectric 0...10V 2.7mm effective stroke, 120N, modulating	MT010-N
		MT010-3MN
4	Radiator Thermostat Thera-2080WL with remote sensor for water and air	T750120

V5004TY Kombi-QM (DN20-DN32)



No.	Description	Part No.
1	Actuator thermoelectric 6.5mm effective stroke, 90N, on/off	MT8-024-NO
		MT8-024-NO-2.5M
		MT8-024S-NO
		MT8-024-NC
		MT8-024-NC-2.5M
		MT8-024S-NC
		MT8-230-NO
		MT8-230-NO-2.5M
		MT8-230S-NO
		MT8-230-NC
		MT8-230-NC-2.5M
MT8-230S-NC		
2	Actuator fast motorized 6.5mm effective stroke, 100N, on/off	M5410C1001
		M5410L1001
3	Actuator 3-point 6.5mm effective stroke, 180N, floating	M7410C1007
		M7410C1007-10M
		M6410C2023
		M6410C4029
		M6410L2023
M6410L4029		
4	Actuator 0/2...10V 6.5mm effective stroke, 180N, modulating	M7410E1002
		M7410E2026
		M7410E4022

V5004TY Kombi-QM (DN40-DN65)



No.	Description	Part No.
1	Actuator 3-point 90°, 10Nm, rotating, modulating	M7061E1012
2	Actuator 0/2...10V 90°, 10Nm, rotating, modulating	M6061A1013
		M6061L1019

Environmental and Combustion Controls

Honeywell GmbH

Hardhofweg

74821 MOSBACH

GERMANY

Phone: +49 (6261) 810

Fax: +49 (6261) 81393

<http://ecc.emea.honeywell.com>

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.

EN0H-2327GE23 R1014

Subject to change without notice

© 2014 Honeywell GmbH

Honeywell