

**Climate
Control**

IMI TA

CV216/316 RGA

– NPT threads



Standard control valves

2- or 3-way, DN 15-50, bronze

CV216/316 RGA – NPT threads

Suitable in building applications for heating and cooling systems. Available in dimensions up to DN 50, pressure class PN 16, with external thread connection and internal connection parts.

Key features

Microprocessor controlled

Multifunctional adjustable.

Extensive actuator programme

For different actuating thrust and actuating time – easily interchangeable.

Complete delivery

Delivery of valve, inclusive connection parts.



Technical description

Application:

Heating and cooling systems

Function:

CV216 RGA: 2-way control valve

CV316 RGA: 3-way mixing or reversing valve

Characteristics:

CV216 RGA: Equal percentage.

CV316 RGA: A–AB equal percentage.

B–AB linear.

Dimensions:

DN 15-50

Pressure class:

PN 16

Temperature:

Max. working temperature: 150°C
(The valves should be mounted in horizontal position at temperatures above 130°C)

Min. working temperature: 0°C

Suitable for water with antifreeze compounds down to -15°C.

(For lower and higher temperatures (up to 200°C) and working pressures PN 25-40 please contact IMI).

Leakage rate:

EN 1349, seat-leakage VI G 1 (tight sealing)

Max. lift of the control valve:

DN 15-20: 12 mm

DN 25-50: 14 mm

Rangeability:

DN 15: 50:1

DN 20-50: 100:1

Material:

Body: Bronze CC491K

Plug: Brass CW614N

Stem: CrMo-steel 1.4122

Stem sealing: EPDM O-ring

Marking:

TA, PN, DN and flow direction arrow.

(in case of CV316 RGA names of ports also - A, B, AB)

Connection:

Body with male thread according to ISO 228/1 including connection parts of malleable cast iron with female NPT union ends.

Actuator:

TA-MC55, TA-MC100, TA-MC161.

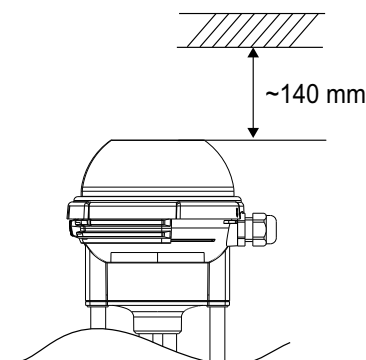
Valve variants and accessories

See sections “Accessories for actuators”, “Accessories for valves” and “Valve variants”.

Installation

Valve trim could be damaged by dirt in the pipe system.
Installation of strainers are recommended.

Note! The free space above the actuators is necessary for TA-MC55, TA-MC100 and TA-MC161.

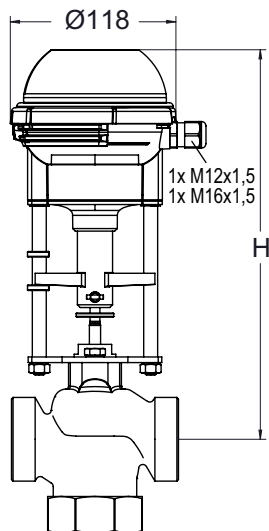


Technical data – Valve with actuator

DN			15		20	25	32	40	50
Kvs			4 2,5	1,6 1,25 0,63	6,3 5	10 8	16 12,5	25 20	40 31,5
Stroke		mm	12			14			
TA-MC55/24 TA-MC55/230 TA-MC55Y	Actuating time ¹⁾	s	105 60*			125 70*			
	Closing pressure	kPa	1500	1500	1250	750	450	250	150
TA-MC100/24 TA-MC100/230	Actuating time ¹⁾	s	145 105* 45 20			170 125* 55 30			
	Closing pressure	kPa	1600			1500	900	550	350
TA-MC161/24 TA-MC161/230	Actuating time ¹⁾	s	-				85 55*		
	Closing pressure	kPa	-				1500	950	600

1) Actuating time freely adjustable, presetting is marked with *

Actuator TA-MC55



TA-MC55/24, TA-MC55/230, TA-MC55/115, TA-MC55Y

DN	H	Kg
15	267	1,5
20	272	1,5
25 - 32	277	1,5
40 - 50	282	1,5

Technical description

		TA-MC55/24	TA-MC55/230	TA-MC55/115	TA-MC55Y
Actuating time ¹⁾	s/mm	9 · 5*			
Actuating thrust	kN	0,6			
Stroke	mm	max. 20			
Power supply	VAC	24 ±10%	230 +6% -10%	115 +6% -10%	24 ±10%
Power supply ²⁾	VDC	24 ±10%	-	-	24 ±10%
Frequency	Hz	50/60 ±5%			
Power consumption	VA	3,5	7	7	3,5
Input signal ³⁾		3-point			0(2)...10 VDC, 70 kΩ 0(4)...20 mA, 0,51 kΩ
Output signal ³⁾		0..10 VDC			min. 1200 Ω
Hysteresis	V	max. 8 mA			0,3

Ingress protection:

Automatic operation: IP 54
Manual operation: IP 30

Resolution:

Electric: 0,04 VDC
Mechanical: 0,06 mm

Electrical connection:

Actuator with screwed terminals.

Ambient temperature:

0 - +60°C

Operation mode:

S3 - 50% ED c/h 1200, EN 60034-1

End position switch-off:

Load-dependent

Actuator variants:

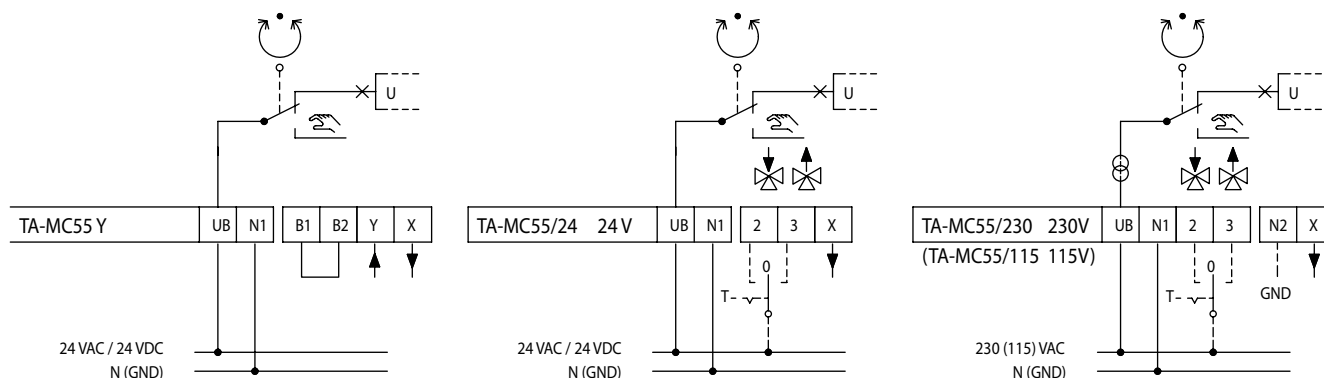
- Voltage: 115 VAC

For variants and accessories please contact IMI.

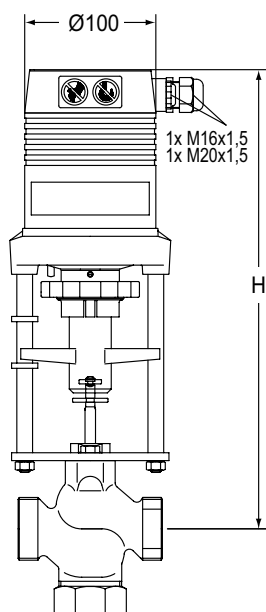
1) Actuating time freely adjustable, presetting is marked with *

3) Invertible input and output signal

Wiring diagram:



Actuator TA-MC100



TA-MC100/24, TA-MC100/230, TA-MC100/115

DN	24 V H	230 V/115 V H	Kg
15	343	368	2,5
20	348	373	2,5
25 - 32	353	378	2,5
40 - 50	358	383	2,5

Technical description

		TA-MC100/24	TA-MC100/230	TA-MC100/115
Actuating time ¹⁾	s/mm	12 · 9* · 4 · 1,9		
Actuating thrust	kN	1,0		
Stroke	mm	max. 20		
Power supply	VAC	24 ±10%	230 +6% -10%	115 +6% -10%
Power supply	VDC	24 ±10%	-	-
Frequency	Hz	50/60 ±5%		
Power consumption	VA	6	12	12
Input signal ³⁾		3-point		
		0(2)...10 VDC, 77 kΩ	0(4)... 20 mA, 0,51 kΩ	
Output signal ³⁾		0...10 VDC		
		max. 8 mA	min. 1200 Ω	
Hysteresis ⁴⁾	V	0.15 · 0.5		

Ingress protection:
IP54

Resolution:
Electric: 0,04 VDC
Mechanical: 0,095 mm

Ambient temperature:
0 - +60°C

Operation mode:
S3 - 50% ED c/h 1200, EN 60034-1

End position switch-off:
Load-dependent

Actuator variants:

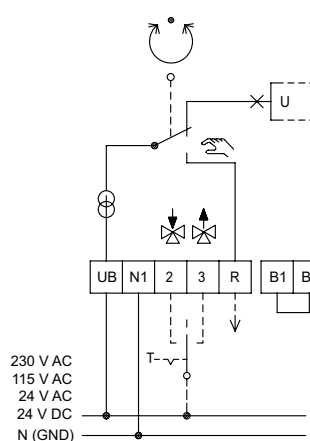
- Voltage: 115 VAC
- Position switch unit ⁵⁾:
2 switches (WE1/WE2), potential free, infinitely adjustable.
Rated load: 8 A / 250 VAC, 8 A / 30 VDC.
Turn-on voltage: max. 400 VAC, max. 125 VDC
- Enclosure protection: IP 65
- Output signal ⁵⁾: X=0(4)...20 mA

For variants and accessories please contact IMI.

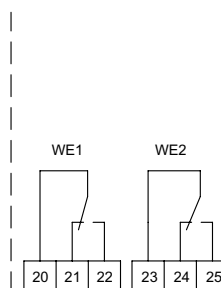
- 1) Actuating time freely adjustable, presetting is marked with *
- 3) Invertible input and output signal
- 4) Freely adjustable
- 5) Position switch unit and output signal 0(4)...20 mA not in combination

Wiring diagram:
B1/B2 Connection of a binary signal (e.g. frost safety)

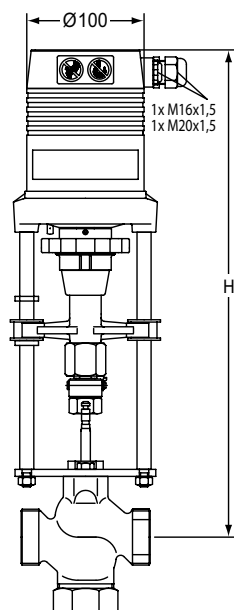
Standard design



Special accessories



Actuator TA-MC161



TA-MC161/24, TA-MC161/230, TA-MC161/115

DN	24 V H	230 V/115 V H	Kg
32	431	456	3,2
40 - 50	436	461	3,2

Technical description

		TA-MC161/24	TA-MC161/230	TA-MC161/115
Actuating time ¹⁾	s/mm	6 · 4*		
Actuating thrust	kN	1,6 (VAC) / 1,1 (VDC)		
Stroke	mm	max. 20		
Power supply	VAC	24 ±10%	230 +6% -10%	115 +6% -10%
Power supply ²⁾	VDC	24 ±10%	-	-
Frequency	Hz	50/60 ±5%		
Power consumption	VA	6	12	12
Input signal ³⁾		3-point		
		0(2)...10 VDC, 77 kΩ	0(4)... 20 mA, 0,51 kΩ	
Output signal ³⁾		0...10 VDC		
		max. 8 mA	min. 1200 Ω	
Hysteresis ⁴⁾	V	0,05 · 0,15 · 0,3 · 0,5		

Ingress protection:
IP54

Resolution:
Electric: 0,04 VDC
Mechanical: 0,05 mm

Ambient temperature:
0 - +60°C

Operation mode:
S3 - 50% ED c/h 1200, EN 60034-1

End position switch-off:
Load-dependent

Actuator variants:

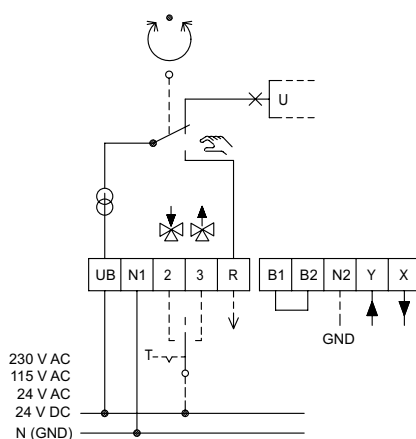
- Voltage: 115 VAC
- Position switch unit ⁵⁾:
2 switches (WE1/WE2), potential free, infinitely adjustable.
Rated load: 8 A / 250 VAC, 8 A / 30 VDC.
Turn-on voltage: max. 400 VAC, max. 125 VDC
- Enclosure protection: IP 65
- Output signal ⁵⁾: X=0(4)...20 mA

For variants and accessories please contact IMI.

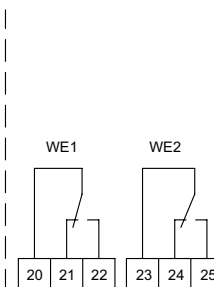
- 1) Actuating time freely adjustable, presetting is marked with *
- 2) Direct-current rectified alternating voltage
- 3) Invertible input and output signal
- 4) Freely adjustable
- 5) Position switch unit and output signal 0(4)...20 mA not in combination

Wiring diagram:
B1/B2 Connection of a binary signal (e.g. frost safety)

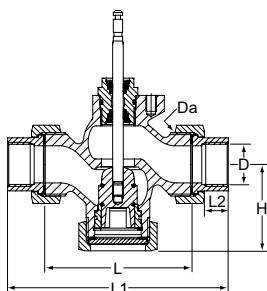
Standard design



Special accessories



CV216 RGA (2-way)

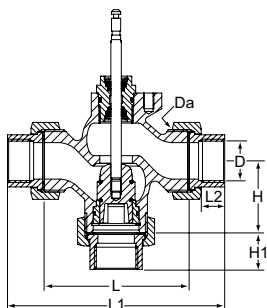


Female NPT threads

Body male thread (Da) according to ISO 228/1.

DN	Size	D	Da	L	L1	L2	H	Kvs	Kg	EAN	Article No
15	1/2"	1/2 NPT	G1	62	114	13	48	0,63	0,9	5902276886539	60 237-115
15	1/2"	1/2 NPT	G1	62	114	13	48	1,25	0,9	5902276886591	60 237-215
15	1/2"	1/2 NPT	G1	62	114	13	48	1,6	0,9	5902276886652	60 237-315
15	1/2"	1/2 NPT	G1	62	114	13	48	2,5	0,9	5902276886669	60 237-415
15	1/2"	1/2 NPT	G1	62	114	13	48	4	0,9	5902276886676	60 237-515
20	3/4"	3/4 NPT	G1 1/4	75	127	15	53	5	1,4	5902276886546	60 237-120
20	3/4"	3/4 NPT	G1 1/4	75	127	15	53	6,3	1,4	5902276886607	60 237-220
25	1"	1 NPT	G1 1/2	80	138	17	57	8	1,7	5902276886553	60 237-125
25	1"	1 NPT	G1 1/2	80	138	17	57	10	1,7	5902276886614	60 237-225
32	1 1/4"	1 1/4 NPT	G2	120	184	19	68	12,5	3,4	5902276886560	60 237-132
32	1 1/4"	1 1/4 NPT	G2	120	184	19	68	16	3,4	5902276886621	60 237-232
40	1 1/2"	1 1/2 NPT	G2 1/4	130	198	19	73	20	4,0	5902276886577	60 237-140
40	1 1/2"	1 1/2 NPT	G2 1/4	130	198	19	73	25	4,0	5902276886638	60 237-240
50	2"	2 NPT	G2 3/4	150	222	24	78	31,5	5,7	5902276886584	60 237-150
50	2"	2 NPT	G2 3/4	150	222	24	78	40	5,7	5902276886645	60 237-250

CV316 RGA (3-way)



Female NPT threads

Body male thread (Da) according to ISO 228/1.

DN	Size	D	Da	L	L1	L2	H	H1	Kvs	Kg	EAN	Article No
15	1/2"	1/2 NPT	G1	62	114	13	40	66	0,63	0,9	5902276891014	60 337-115
15	1/2"	1/2 NPT	G1	62	114	13	40	66	1,25	0,9	5902276891076	60 337-215
15	1/2"	1/2 NPT	G1	62	114	13	40	66	1,6	0,9	5902276891137	60 337-315
15	1/2"	1/2 NPT	G1	62	114	13	40	66	2,5	0,9	5902276891144	60 337-415
15	1/2"	1/2 NPT	G1	62	114	13	40	66	4	0,9	5902276891151	60 337-515
20	3/4"	3/4 NPT	G1 1/4	75	127	15	41	67	5	1,4	5902276891021	60 337-120
20	3/4"	3/4 NPT	G1 1/4	75	127	15	41	67	6,3	1,4	5902276891083	60 337-220
25	1"	1 NPT	G1 1/2	80	138	17	45	74	8	1,7	5902276891038	60 337-125
25	1"	1 NPT	G1 1/2	80	138	17	45	74	10	1,7	5902276891090	60 337-225
32	1 1/4"	1 1/4 NPT	G2	120	184	19	55	89	12,5	3,4	5902276891045	60 337-132
32	1 1/4"	1 1/4 NPT	G2	120	184	19	55	89	16	3,4	5902276891106	60 337-232
40	1 1/2"	1 1/2 NPT	G2 1/4	130	198	19	60	94	20	4,0	5902276891052	60 337-140
40	1 1/2"	1 1/2 NPT	G2 1/4	130	198	19	60	94	25	4,0	5902276891113	60 337-240
50	2"	2 NPT	G2 3/4	150	222	24	65	101	31,5	5,7	5902276891069	60 337-150

Actuators

Type	Power supply	Actuating thrust [kN]	Input signal	EAN	Article No
TA-MC55/24	24 VAC	0,6	3-point	3831112527812	61 055-001
TA-MC55/24	24 VDC *	0,6	3-point	5902276804403	61 055-402
TA-MC55/230	230 VAC	0,6	3-point	3831112506503	61 055-002
TA-MC55/115	115 VAC	0,6	3-point	5902276894329	61 055-302
TA-MC55Y	24 VAC	0,6	0(2)-10 V, 4(0)-20 mA	3831112506510	61 055-003
TA-MC55Y	24 VDC *	0,6	0(2)-10 V, 4(0)-20 mA	5902276898686	61 055-004
TA-MC100/24	24 VAC	1,0	3-point, 0(2)-10 V, 4(0)-20 mA	3831112511675	61 100-001
TA-MC100/24	24 VDC *	1,0	3-point, 0(2)-10 V, 4(0)-20 mA	5902276804427	61 100-003
TA-MC100/230	230 VAC	1,0	3-point, 0(2)-10 V, 4(0)-20 mA	3831112500235	61 100-002
TA-MC100/115	115 VAC	1,0	3-point, 0(2)-10 V, 4(0)-20 mA	5902276894350	61 100-302
TA-MC161/24	24 VAC	1,6	3-point, 0(2)-10 V, 4(0)-20 mA	5902276894367	61 161-001
TA-MC161/230	230 VAC	1,6	3-point, 0(2)-10 V, 4(0)-20 mA	5902276894374	61 161-002
TA-MC161/115	115 VAC	1,6	3-point, 0(2)-10 V, 4(0)-20 mA		61 161-302

*) DC – Direct current flat voltage.

Accessories for actuators

ACA71, ACA72, ACA76

NOTE!

- ACA72 must be ordered together with the actuator.
- TA-MC100, TA-MC161: Position switch unit (ACA71) and output signal 0(4)...20 mA (ACA76) not in combination.

Type	For actuator	EAN	Article No
ACA71 Position switch (2 switches)	TA-MC100, TA-MC161	5902276811166	67 071-100XA
ACA72 IP65	TA-MC100, TA-MC161	5902276818325	67 072-100XA
ACA76 Output signal 0(4)-20 mA	TA-MC100, TA-MC161	5902276811173	67 076-100XA

For actuator accessories, please add "SO" (special order) after the article number of the actuator, and include the article number for the type of accessory.

Accessories for actuators not suitable for TA-MC55.

Example: 61 100-001SO + 67 071-100XA

Accessories for valves

Stem heater

Stem heater for water-glycol mixtures.

Min. temperature: -15°C

Power supply: 24 VAC $\pm 10\%$, 50/60 Hz $\pm 5\%$.

Power consumption: Pmax ~400 VA, PN ~45 VA

For DN	EAN	Article No
15-50	3831112512108	68 013-015

Valve variants

For valve variant, please add "SO" after the article number of the valve, and include the article number of the variant.

Example: 60 230-115SO + 68 012-015XV

ACV12 Plug made from CrNi-steel 1.4305

NOTE! Must be ordered together with the valve.

For DN	Article No
15	68 012-015XV
20	68 012-020XV
25	68 012-025XV
32	68 012-032XV
40	68 012-040XV
50	68 012-050XV

ACV15 O-rings made of FKM

NOTE! Must be ordered together with the valve.

For DN	Article No
15	68 015-015XV
20	68 015-020XV
25	68 015-025XV
32	68 015-032XV
40	68 015-040XV
50	68 015-050XV

ACV16 Technical silicon free version, max. 150°C

NOTE! Must be ordered together with the valve.

For DN	Article No
15	68 016-015XV
20	68 016-020XV
25	68 016-025XV
32	68 016-032XV
40	68 016-040XV
50	68 016-050XV



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