

# CV216/316 RGA



## Standard control valves

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

# CV216/316 RGA

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 Hydronic Engineering).

### 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 external thread according to ISO 228/1 including connection parts of malleable cast iron with cylindrical internal thread according to ISO 7/1, union nuts and gaskets.

### Actuator:

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

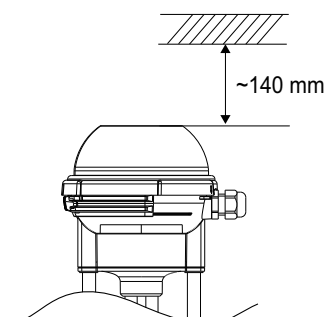
## Valve variants and accessories

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.

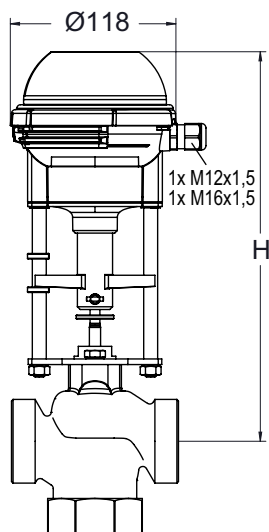


## Technical data – Valve with actuator

DN			15		20	25	32	40	50
Kvs			4	1,6	6,3	10	16	25	40
			2,5	1,25 0,63	5	8	12,5	20	31,5
Stroke		mm	12			14			
TA-MC55/24 TA-MC55/230 TA-MC55Y	Actuating time <sup>1)</sup>	s	105 60*			125 70*			
	Closing pressure	kPa	1500	1500	1250	750	450	250	150
TA-MC100/24 TA-MC100/230	Actuating time <sup>1)</sup>	s	145 105* 45 20			170 125* 55 30			
			Closing pressure	kPa	1600	1600	1600	1500	900
	TA-MC161/24 TA-MC161/230	Actuating time <sup>1)</sup>	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-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-MC55Y
Actuating time <sup>1)</sup>	s/mm	9 · 5*		
Actuating thrust	kN	0,6		
Stroke	mm	max. 14		
Power supply	VAC	24 ±10%	230 +6% -10%	24 ±10%
Power supply	VDC	24 ±10%	-	24 ±10%
Frequency	Hz	50/60 ±5%		
Power consumption	VA	3,5	7	3,5
Input signal <sup>3)</sup>		3-point	3-point	0(2)...10 VDC, 70 kΩ 0(4)...20 mA, 0,51 kΩ
Output signal <sup>3)</sup>		0..10 VDC		
		max. 8 mA		min. 1200 Ω
Hysteresis	V	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

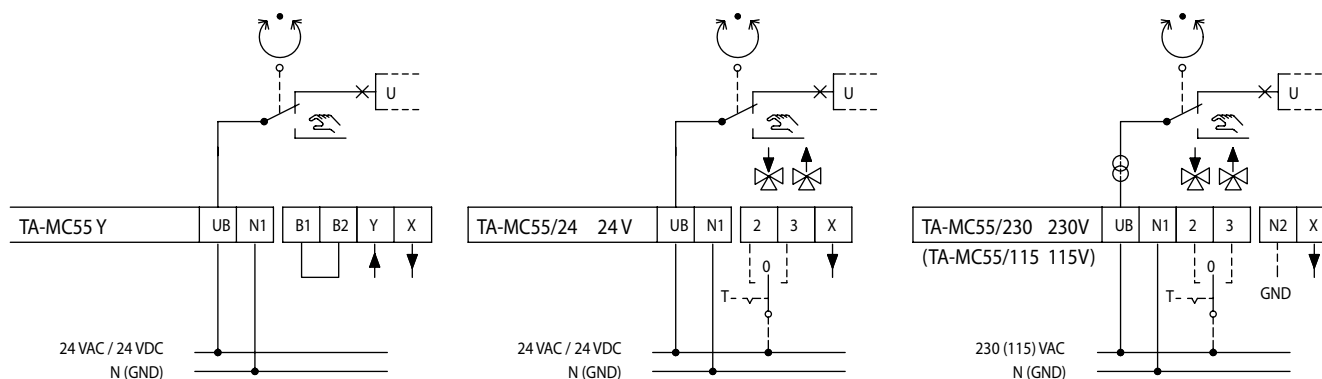
### Actuator variants:

Voltage: 115 VAC

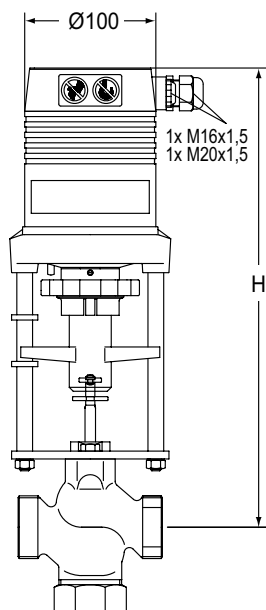
For variants and accessories please contact IMI Hydronic Engineering.

- 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

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

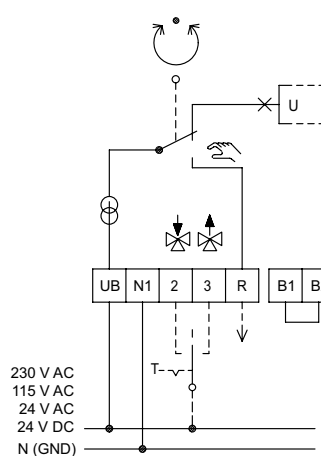
For variants and accessories please contact IMI Hydronic Engineering.

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

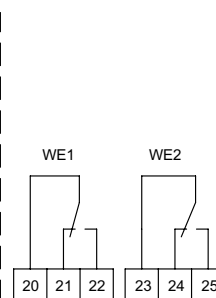
### Wiring diagram:

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

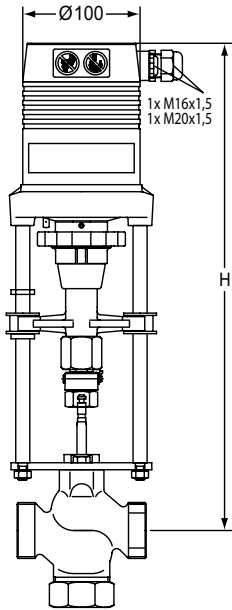
### Standard design



### Special accessories



## Actuator TA-MC161



### TA-MC161/24, TA-MC161/230

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

### Technical description

		TA-MC161/24	TA-MC161/230
Actuating time <sup>1)</sup>	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%
Power supply <sup>2)</sup>	VDC	24 ±10%	-
Frequency	Hz	50/60 ±5%	
Power consumption	VA	6	12
Input signal <sup>3)</sup>		3-point	
		0(2)...10 VDC, 77 kΩ	0(4)... 20 mA, 0,51 kΩ
Output signal <sup>3)</sup>		0...10 VDC	
		max. 8 mA	min. 1200 Ω
Hysteresis <sup>4)</sup>	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 <sup>5)</sup>:  
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 <sup>5)</sup>: X=0(4)...20 mA

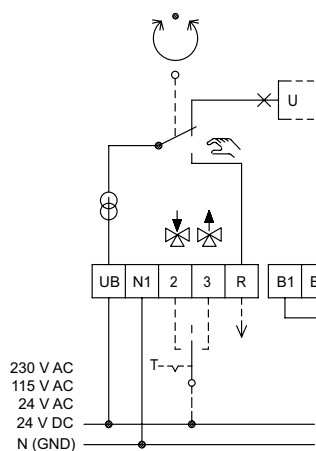
For variants and accessories please contact IMI Hydronic Engineering.

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

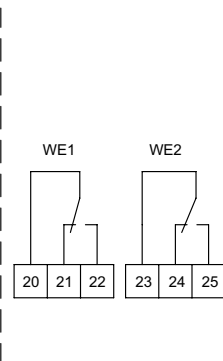
### Wiring diagram:

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

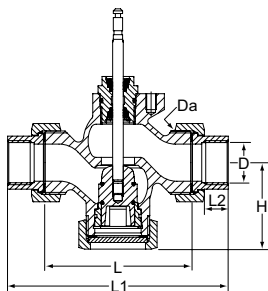
### Standard design



### Special accessories



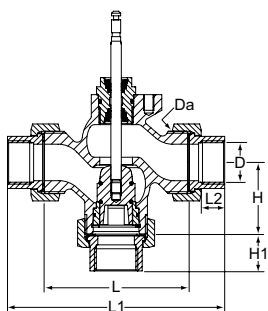
## CV216 RGA (2-way)



Internal threads according to ISO 7

DN	D	Da	L	L1	L2	H	Kvs	Kg	EAN	Article No
15	Rp1/2	G1	62	114	13	48	0,63	0,9	5902276885846	60 230-115
15	Rp1/2	G1	62	114	13	48	1,25	0,9	5902276885877	60 230-215
15	Rp1/2	G1	62	114	13	48	1,6	0,9	5902276885907	60 230-315
15	Rp1/2	G1	62	114	13	48	2,5	0,9	5902276885914	60 230-415
15	Rp1/2	G1	62	114	13	48	4	0,9	5902276885921	60 230-515
20	Rp3/4	G1 1/4	75	127	15	53	5	1,4	5902276885853	60 230-120
20	Rp3/4	G1 1/4	75	127	15	53	6,3	1,4	5902276885884	60 230-220
25	Rp1	G1 1/2	80	138	17	57	8	1,7	5902276885860	60 230-125
25	Rp1	G1 1/2	80	138	17	57	10	1,7	5902276885891	60 230-225
32	Rp1 1/4	G2	120	184	19	68	12,5	3,4	5902276885945	60 233-132
32	Rp1 1/4	G2	120	184	19	68	16	3,4	5902276885983	60 233-232
40	Rp1 1/2	G2 1/4	130	198	19	73	20	4,0	5902276885952	60 233-140
40	Rp1 1/2	G2 1/4	130	198	19	73	25	4,0	5902276885990	60 233-240
50	Rp2	G2 3/4	150	222	24	78	31,5	5,7	5902276885969	60 233-150
50	Rp2	G2 3/4	150	222	24	78	40	5,7	5902276886003	60 233-250

## CV316 RGA (3-way)



Internal threads according to ISO 7

DN	D	Da	L	L1	L2	H	H1	Kvs	Kg	EAN	Article No
15	Rp1/2	G1	62	114	13	40	66	0,63	0,9	5902276890178	60 330-115
15	Rp1/2	G1	62	114	13	40	66	1,25	0,9	5902276890185	60 330-215
15	Rp1/2	G1	62	114	13	40	66	1,6	0,9	5902276889554	60 330-315
15	Rp1/2	G1	62	114	13	40	66	2,5	0,9	5902276889561	60 330-415
15	Rp1/2	G1	62	114	13	40	66	4	0,9	5902276890192	60 330-515
20	Rp3/4	G1 1/4	75	127	15	41	67	5	1,4	5902276889523	60 330-120
20	Rp3/4	G1 1/4	75	127	15	41	67	6,3	1,4	5902276888212	60 330-220
25	Rp1	G1 1/2	80	138	17	45	74	8	1,7	5902276889530	60 330-125
25	Rp1	G1 1/2	80	138	17	45	74	10	1,7	5902276889547	60 330-225
32	Rp1 1/4	G2	120	184	19	55	89	12,5	3,4	5902276888229	60 333-132
32	Rp1 1/4	G2	120	184	19	55	89	16	3,4	5902276889592	60 333-232
40	Rp1 1/2	G2 1/4	130	198	19	60	94	20	4,0	5902276889578	60 333-140
40	Rp1 1/2	G2 1/4	130	198	19	60	94	25	4,0	5902276889608	60 333-240
50	Rp2	G2 3/4	150	222	24	65	101	31,5	5,7	5902276889585	60 333-150
50	Rp2	G2 3/4	150	222	24	65	101	40	5,7	5902276884047	60 333-250

## 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-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-MC161/24	24 VDC *	1,1	3-point, 0(2)-10 V, 4(0)-20 mA	5902276804458	61 161-402
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
<b>ACA71</b> Position switch (2 switches)	TA-MC100, TA-MC161	5902276811166	67 071-100XA
<b>ACA72</b> IP65	TA-MC100, TA-MC161	5902276818325	67 072-100XA
<b>ACA76</b> 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:** 61 100-001**SO** + 67 071-100XA



## Accessories for valves

### Stem heater

Stem heater for water-glycol mixtures.

Min. temperature: -15°C

Power supply: 24 VAC ±10%, 50/60 Hz ±5%.

Power consumption: P<sub>max</sub> ~400 VA, P<sub>N</sub> ~45 VA

	For DN	EAN	Article No
<b>ACV13</b> Stem heater	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:** 60 215-115SO + 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

