


**Technical description**
**Application:**

Heating and cooling waterborne system control

**Function:**

CV 216 RGA: Two-way control valve

CV 316 RGA: Three-way mixing or on-off valve

**Characteristics:**

CV 216 RGA: equal %

CV 316 RGA: A→AB, equal %

B→AB, linear

Stroke: 14 mm

Range ability:  $\geq 40:1$

Pressure class: PN 16

**Temperatures:**

Min. working temperature: 0 °C

Max. working temperature: 150 °C

Note: Suitable for the control of hot and chilled water (0 to +150°C) in HVAC systems control of heating plants. Above +130°C valves should be isolated or should only be mounted in the horizontal position so that the actuator is not directly above the valve body.

For lower and higher temperatures please contact IMI International.

**Materials:**

Body: Bronze CC491K

Plug: Brass CW614N

Stem: CrNi-steel 1.4571

Stem sealing: O-rings EPDM

**Marking:**

DN, PN, flow direction

(in case of CV 316 RGA names of ports also - A, B, AB)

**Connection type:**

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.

**Leakage rate:**

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

**Features:**

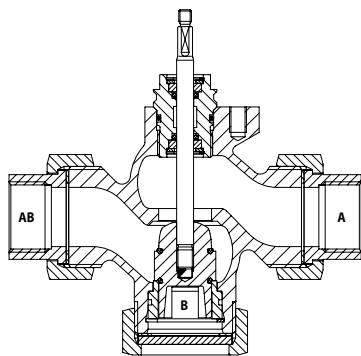
- Suitable for the control of hot and chilled water in HVAC systems control of heating plants.
- Suitable for water with antifreeze compounds down to -15 °C.
- Tight shut-off in the closed position
- Microprocessor controlled
- Automatic self-calibration on start-up

**Valve variants and accessories:**

- Internal thread connection parts of bronze
- Union nut of malleable cast iron
- Plug made of CrNi-steel 1.4305
- Suitable for water with antifreeze compounds down to -15°C  
24 VAC, 50/60 Hz or 24 VDC  
Power consumption: Pmax.  $\approx$  200 VA  
PN  $\approx$  45 VA
- Usable for media based on mineral oil basis (stem sealing made of FKM)
- Technical silicon free version

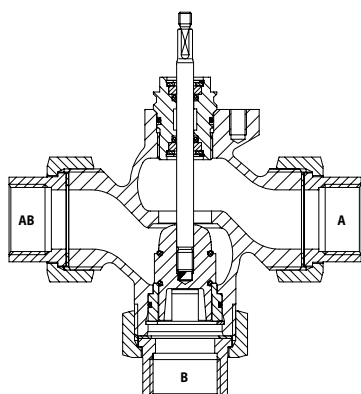
For variants and accessories please contact IMI International.

## CV 216 RGA



Order Code	DN	Kvs (m <sup>3</sup> /h)	Stroke (mm)
60-230-115	15	0,63	12
60-230-215	15	1,25	12
60-230-315	15	1,6	12
60-230-415	15	2,5	12
60-230-515	15	4	12
60-230-120	20	5	12
60-230-220	20	6,3	12
60-230-125	25	8	14
60-230-225	25	10	14
60-233-132	32	12,5	14
60-233-232	32	16	14
60-233-140	40	20	14
60-233-240	40	25	14
60-233-150	50	31,5	14
60-233-250	50	40	14

## CV 316 RGA



Order Code	DN	Kvs (m <sup>3</sup> /h)	Stroke (mm)
60-330-115	15	0,63	12
60-330-215	15	1,25	12
60-330-315	15	1,6	12
60-330-415	15	2,5	12
60-330-515	15	4	12
60-330-120	20	5	12
60-330-220	20	6,3	12
60-330-125	25	8	14
60-330-225	25	10	14
60-333-132	32	12,5	14
60-333-232	32	16	14
60-333-140	40	20	14
60-333-240	40	25	14
60-333-150	50	31,5	14
60-333-250	50	40	14

## Actuators

Order Code	Type	Power supply	Actuating thrust (kN)	Input signal
61-055-001	MC55/24	24 VAC/DC	0.6	3-point
61-055-002	MC55/230	230 VAC	0.6	3-point
61-055-003	MC55Y	24 VAC/DC	0.6	0(2)-10 V; 4(0)-20 mA
61-100-001	MC100/24	24 VAC/DC	1.0	3-point; 0(2)-10 V; 4(0)-20 mA
61-100-002	MC100/230	230 VAC	1.0	3-point; 0(2)-10 V; 4(0)-20 mA
61-160-001	MC160/24	24 VAC/DC	1.6	3-point; 0(2)-10 V; 4(0)-20 mA
61-160-002	MC160/230	230 VAC	1.6	3-point; 0(2)-10 V; 4(0)-20 mA

## MC 55 - Actuator technical data

Type		MC 55/24	MC 55/230	MC 55Y
Actuating time <sup>1)</sup>	s/mm	9.5*	9.5*	9.5*
Actuating thrust	kN	0,6	0,6	0,6
Stroke	mm	max. 20	max. 20	max. 20
Power supply	VAC	24 ±10%	230 +6% -10%	24 ±10%
Power supply <sup>2)</sup>	VDC	24 ±10%	-	24 ±10%
Frequency	Hz	50/60 ±5%	50/60 ±5%	50/60 ±5%
Power consumption	VA	3	7	3
Input signal <sup>2)</sup>		3-point	3-point	0(2)...10 VDC 70 kOhm 0(4)...20 mA 0,51 kOhm
Output signal <sup>2)</sup>		0...10 VDC max. 8 mA min. 1200 Ohm	0...10 VDC max. 8 mA min. 1200 Ohm	0...10 VDC max. 8 mA min. 1200 Ohm
Hysteresis	V	0,3	0,3	0,3

**Enclosure protection:**  
Automatic operation: IP 54  
Manual operation: IP 30

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

**Mains connection:**  
24 VAC: 1,5 m flexible cable, 0,5 mm<sup>2</sup>, with wire end ferrule  
230 VAC: Actuator with terminal

**Ambient temperature:** 0 - 60 °C

**Weight:** 1,5 kg

**Operating mode:**  
S3-50% ED c/h 1200 EN 60034-1

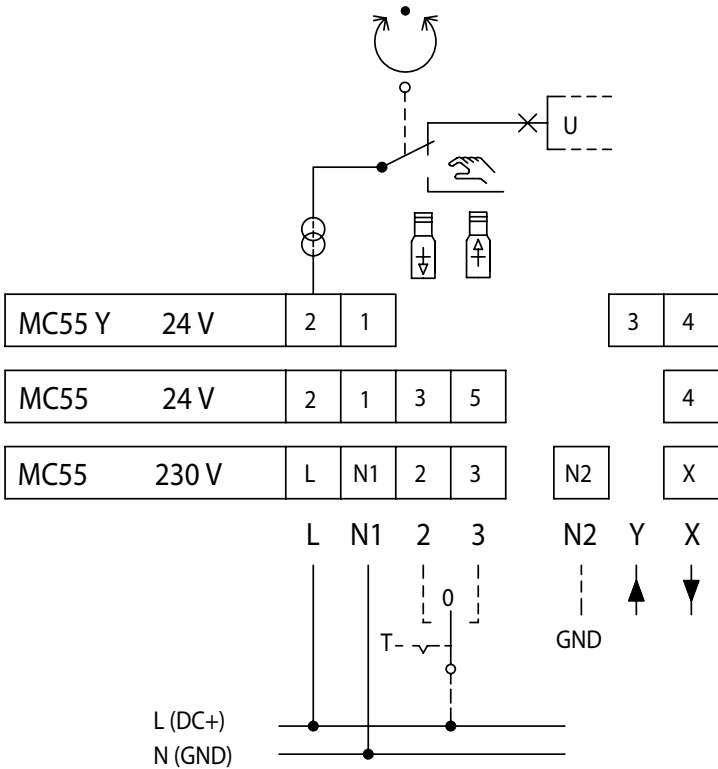
**End position switch-off:** Load-dependent

**Actuator variants:**

- Voltage: 115 VAC
- Adapter with coupling for external products

**Notices**  
1) Actuating time freely adjustable, presetting is marked with \*  
2) Invertible input and output signal

## Circuit diagram MC 55



## MC 100 - Actuator technical data

Type		MC 100/24	MC 100/230
Actuating time <sup>1)</sup>	s/mm	12 . 9* . 4 . 1,9	12 . 9* . 4 . 1,9
Actuating thrust	kN	1,0	1,0
Stroke	mm	max. 20	max. 20
Power supply	VAC	24 ±10%	230 +6% -10%
Power supply <sup>2)</sup>	VDC	24 ±10%	-
Frequency	Hz	50/60 ±5%	50/60 ±5%
Power consumption	VA	6	12
Input signal <sup>3)</sup>		3-point 0(2)...10 VDC 77 kOhm 0(4)...20 mA 0,51 kOhm	3-point 0(2)...10 VDC 77 kOhm 0(4)...20 mA 0,51 kOhm
Output signal <sup>3)</sup>		0...10 VDC max. 8 mA min. 1200 Ohm	0...10 VDC max. 8 mA min. 1200 Ohm
Hysteresis <sup>4)</sup>	V	0,15 . 0,5	0,15 . 0,5

Enclosure protection: IP 54

### Resolution:

Electric: 0,04 VDC

Mechanical: 0,06 mm

Ambient temperature: 0 - 60 °C

Weight: 2,5 kg

### Operating mode:

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

End position switch-off: Load-dependent

### Actuator variants and accessories:

- 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
- Distance pillars, traverse and all screws located on exterior made of stainless steel
- Adapter with coupling for external products

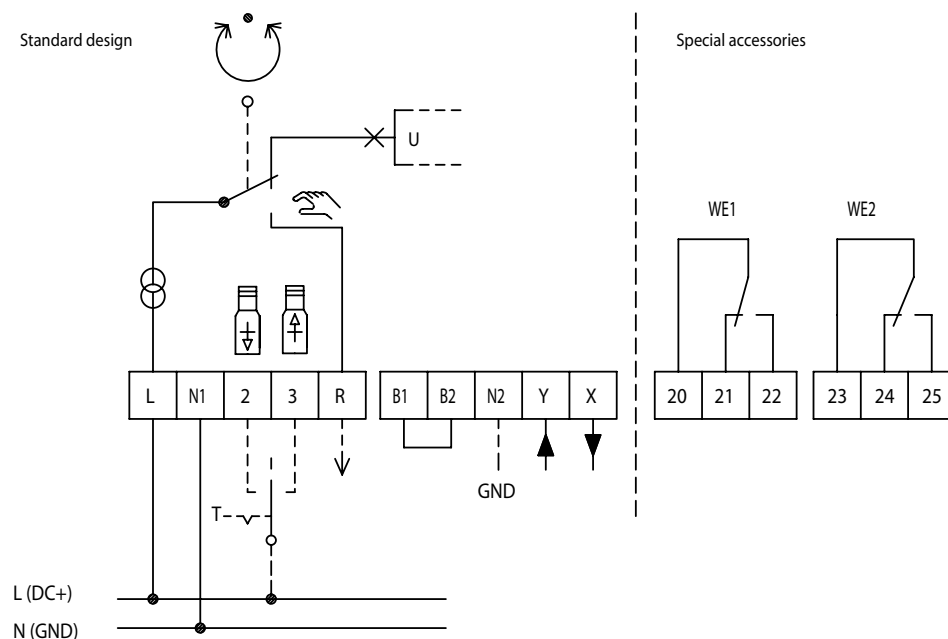
For variants and accessories please contact IMI International.

### Notices

- 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

## Circuit diagram MC 100

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



## MC 160 - Actuator technical data

Type		MC 160/24	MC 160/230
Actuating time <sup>1)</sup>	s/mm	6 . 4*	6 . 4*
Actuating thrust	kN	1,6	1,6
Stroke	mm	max. 30	max. 30
Power supply	VAC	24 ±10%	230 +6% -10%
Power supply <sup>2)</sup>	VDC	24 ±10%	-
Frequency	Hz	50/60 ±5%	50/60 ±5%
Power consumption	VA	6	12
Input signal <sup>3)</sup>		3-point 0(2)...10 VDC 77 kOhm 0(4)...20 mA 0,51 kOhm	3-point 0(2)...10 VDC 77 kOhm 0(4)...20 mA 0,51 kOhm
Output signal <sup>3)</sup>		0...10 VDC max. 8 mA min. 1200 Ohm	0...10 VDC max. 8 mA min. 1200 Ohm
Hysteresis <sup>4)</sup>	V	0,05 . 0,15 . 0,3 . 0,5	0,05 . 0,15 . 0,3 . 0,5

**Enclosure protection: IP 54**

**Resolution:**

Electric: 0,04 VDC

Mechanical: 0,06 mm

**Ambient temperature: 0 - 60 °C**

**Weight: 3,2 kg**

**Operating mode:**

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

End position switch-off: Load-dependent

**Notices**

- 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

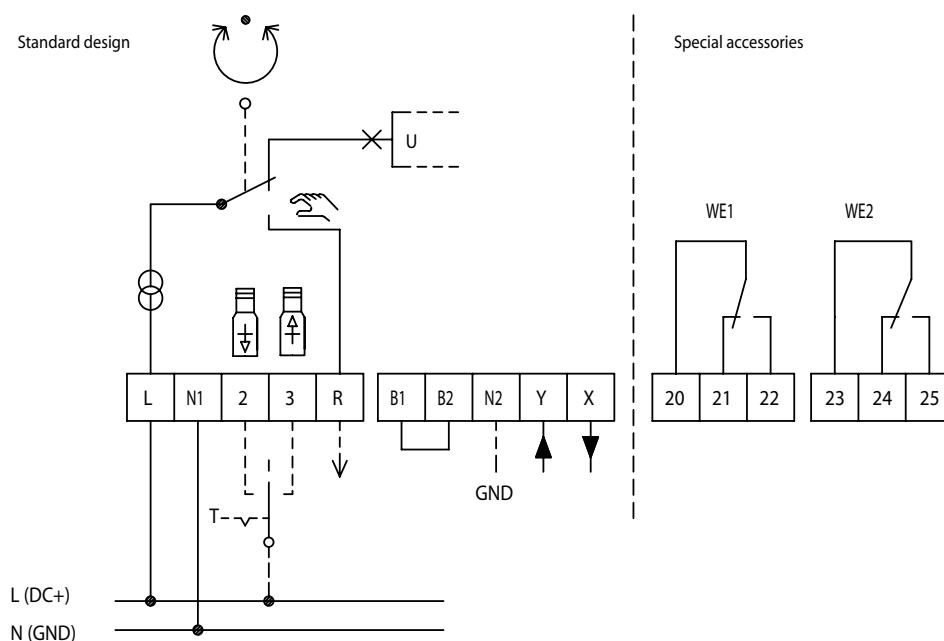
**Actuator variants and accessories:**

- 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
- Distance pillars, traverse and all screws located on exterior made of stainless steel
- Adapter with coupling for external products

For variants and accessories please contact IMI International.

## Circuit diagram MC 160

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



## Technical data valve with actuator

DN			15		20	25	32	40	50	
Kvs-value		m <sup>3</sup> /h	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				
MC55/24 MC55/230 MC55Y	Actuating time <sup>1)</sup>	s	125 70*							
	Closing pressure	kPa	1500	1500	1250	750	450	250	150	
MC100/24 MC100/230	Actuating time <sup>1)</sup>	s	170 125* 55 30							
	Closing pressure	kPa	1600	1600	1600	1500	900	550	350	
MC160/24 MC160/230	Actuating time <sup>1)</sup>	s					95 55*			
	Closing pressure	kPa					1500	950	600	

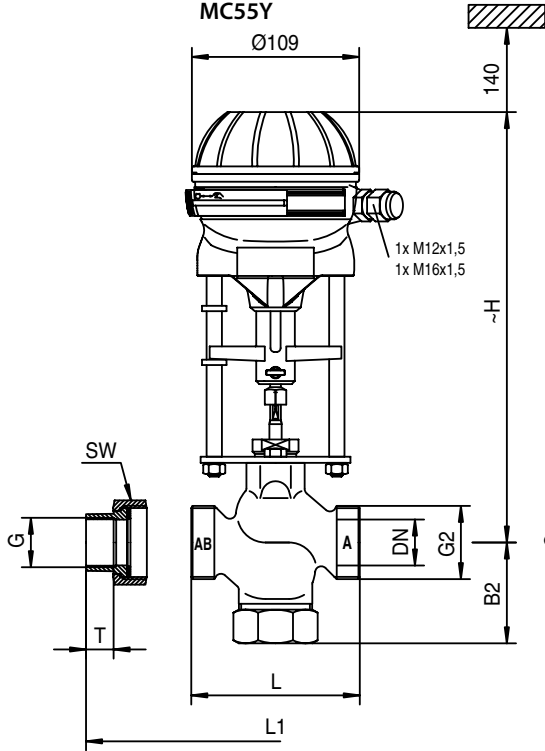
1) Actuating time freely adjustable, presetting is marked with \*

100 kPa = 1 bar = 10 mWS

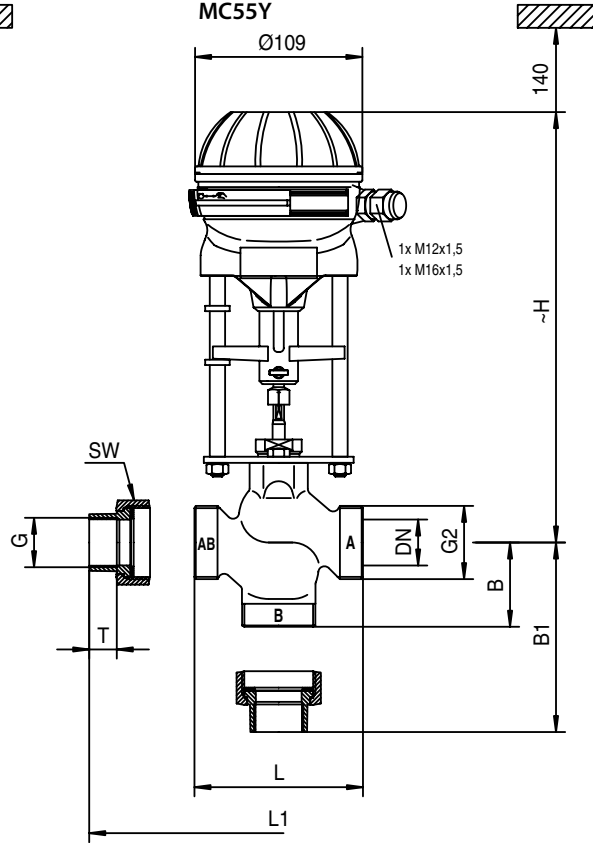
## Installation instruction

Valve trim could be damaged by dirt in the pipe system. herefore we recommend the installation of strainers.

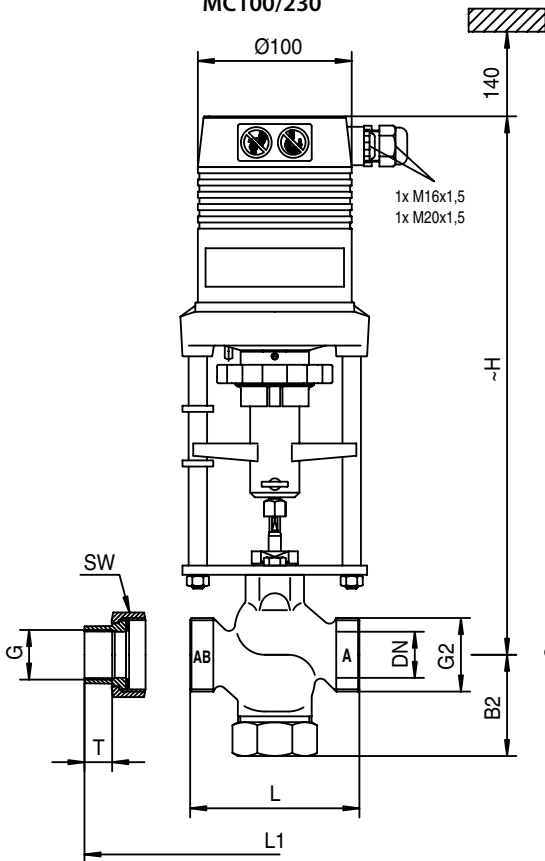
**CV 216 RGA**  
 MC55/24  
 MC55/230  
 MC55Y



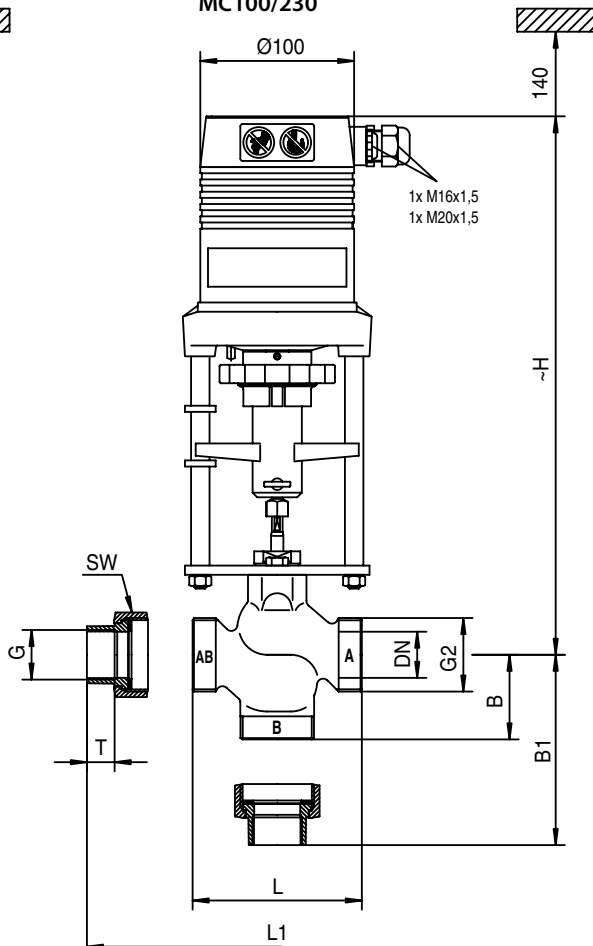
**CV 316 RGA**  
 MC55/24  
 MC55/230  
 MC55Y



**CV 216 RGA**  
 MC100/24  
 MC100/230

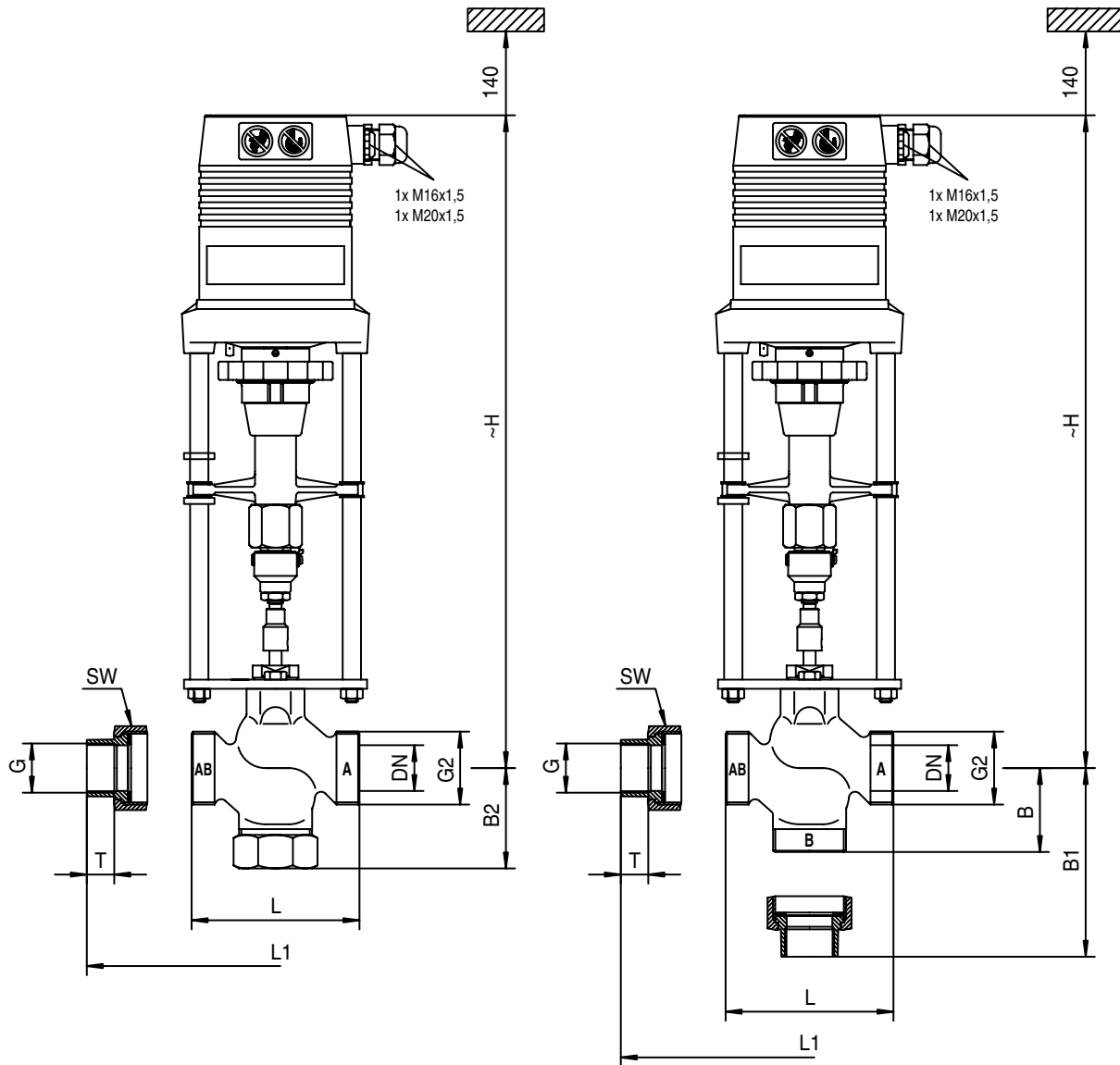


**CV 316 RGA**  
 MC100/24  
 MC100/230



**CV 216 RGA**  
MC160/24  
MC160/230

**CV316 RGA**  
MC160/24  
MC160/230



**Dimensions**

DN			15	20	25	32	40	50	
G			Rp ½	Rp ¾	Rp 1	Rp 1¼	Rp 1½	Rp 2	
L		mm	62	75	80	120	130	150	
L1		mm	114	127	138	184	198	222	
B		mm	40	41	45	55	60	65	
B1		mm	66	67	74	89	94	101	
B2		mm	48	53	57	68	73	78	
G2			G 1 A	G 1¼ A	G 1½ A	G 2 A	G 2¼ A	G 2¾ A	
SW		mm	37	48	53	67	74	90	
T		mm	13	15	17	19	19	24	
H	MC55	24 VAC/230 VAC	mm	265	268	271	277	282	282
	MC100	24 VAC	mm	338	341	344	353	358	358
		230 VAC	mm	363	366	369	378	383	383
	MC160	24 VAC	mm				431	436	436
230 VAC		mm				456	461	461	
	MC55		kg	2,4	2,9	3,2	4,9	5,5	7,1
	MC100		kg	3,4	3,9	4,2	5,9	6,5	8,1
	MC160		kg				6,6	7,2	8,8