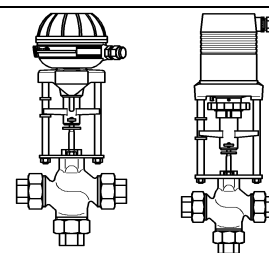


Control valves with electric actuators up to 150°C

PN 16 **2.2.1**

Screwed connection
PN 16
Bronze

with electric actuators
MC55/24 • MC55/230 • MC55Y
MC100/24 • MC100/230
MC161/24 • MC161/230



BR216RA

BR316RA

Features

- Suitable for the control of hot and chilled water (0...+150°C) in HVAC systems control of heating plants. Above 130°C valves should only be mounted in the horizontal position.
- With stem heater 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

Technical data valve

Series	BR216RA		BR316RA	
Form	Two-way		Three-way	
Diameter nominal	DN 15 + DN 20	DN 25 – DN 50	DN 15 + DN 20	DN 25 – DN 50
Pressure rating	PN 16		PN 16	
Characteristic	A→AB equal %		A→AB equal % B→AB linear	
Stroke mm	12	14	12	14
Rangeability	DN 15: 50:1 DN 20 – 50: 100:1		DN 15: 50:1 DN 20 – 50: 100:1	

Function: BR216RA as two-way valve
BR316RA as mixing or on-off valve

Connection type: Body with external thread acc. ISO 228/1 incl. connection parts of malleable cast iron with cylindrical internal thread acc. ISO 7/1, union nuts and gaskets

Leakage rate: EN 1349 – seat-leakage VI G 1 (tight sealing)

Body: Bronze CC491K
Plug: Brass CW614N
Stem: CrMo-steel 1.4122
Stem sealing: O-rings EPDM

Valve variant and accessories

- Internal thread connection parts of bronze
Union nut of malleable cast iron
- Plug made of CrNi-steel 1.4305
- With stem heater suitable for water with antifreeze compounds down to -15°C
24 VAC, 50/60 Hz
Power consumption: $P_{max.} \approx 400 \text{ VA}$
 $P_N \approx 45 \text{ VA}$
- Usable for media based on mineral oil basis (stem sealing made of FKM)
- Technical silicon free version

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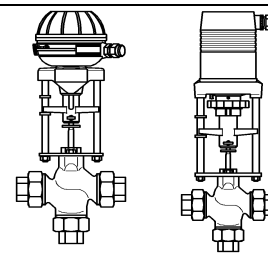
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Control valves with electric actuators up to 150°C

PN 16 **2.2.1**

Screwed connection
PN 16
Bronze

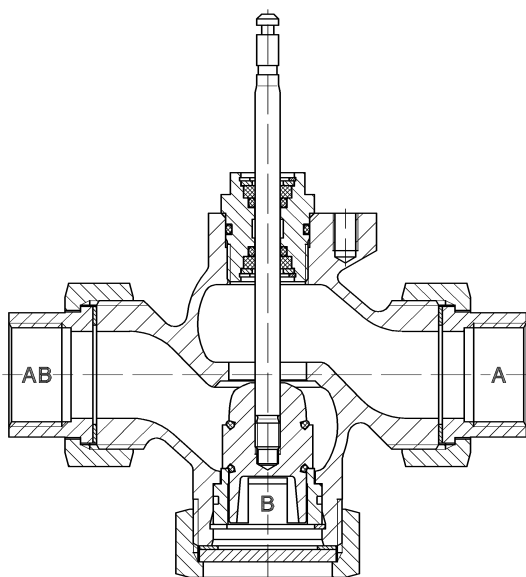
with electric actuators
MC55/24 • MC55/230 • MC55Y
MC100/24 • MC100/230
MC161/24 • MC161/230



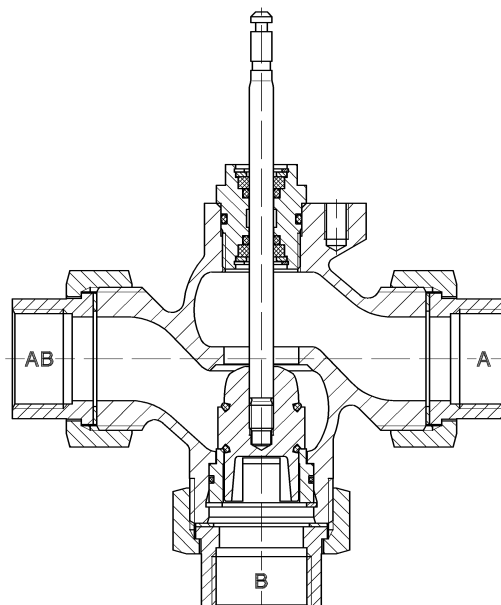
BR216RA

BR316RA

Drawing



BR216RA



BR316RA

Technical data actuator MC55

Type		MC55/24	MC55/230	MC55Y
Actuating time ¹⁾	s/mm	9 · 5*	9 · 5*	9 · 5*
Actuating thrust	kN	0.6	0.6	0.6
Stroke	mm	max. 14	max. 14	max. 14
Power supply	VAC	24 ±10%	230 +6% -10%	24 ±10%
Power supply ²⁾	VDC	24 ±10%		24 ±10%
Frequency	Hz	50/60 ±5%	50/60 ±5%	50/60 ±5%
Power consumption	VA	3.5	7	3.5
Input signal ³⁾		3-point	3-point	0(2)...10 VDC 77 kOhm 0(4)...20 mA 0.51 kOhm
Output signal ³⁾		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

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

²⁾ only rectified alternating voltage

³⁾ Invertible input and output signal

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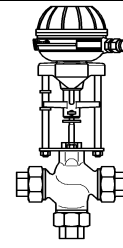
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Control valves with electric actuators up to 150°C

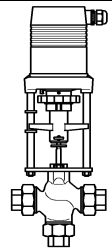
PN 16 **2.2.1**

Screwed connection
PN 16
Bronze

with electric actuators
MC55/24 • MC55/230 • MC55Y
MC100/24 • MC100/230
MC161/24 • MC161/230



BR216RA



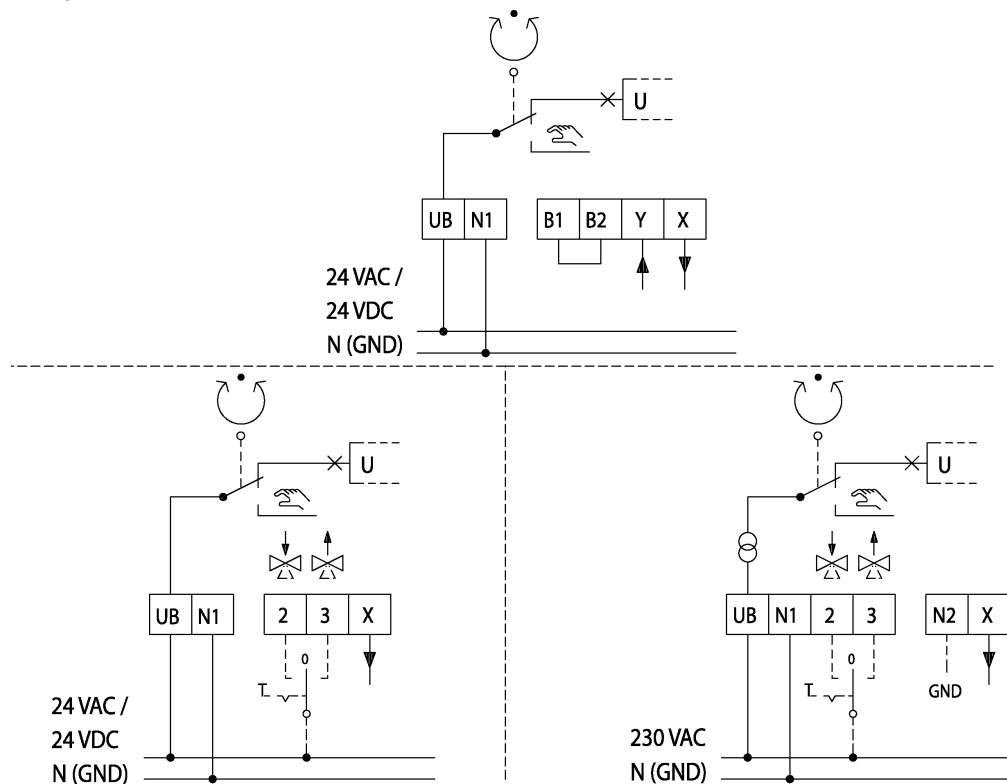
BR316RA

Enclosure protection:	IP 54 in automatic operation IP 30 in manual operation	
Resolution:	electric	0.04 VDC
	mechanical	0.06 mm
Mains connection:	Actuator with terminal	
Operating mode:	S3-50% ED c/h 1200	EN 60034-1
End position switch-off:	load-dependent	
Ambient temperature:	0...+60°C	
Weight:	1.5 kg	

Actuator variant and accessories

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

Circuit diagram



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

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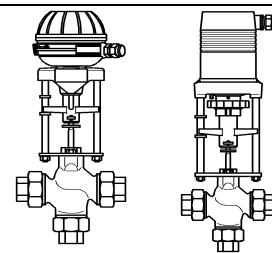


Control valves with electric actuators up to 150°C

PN 16 **2.2.1**

Screwed connection
PN 16
Bronze

with electric actuators
MC55/24 • MC55/230 • MC55Y
MC100/24 • MC100/230
MC161/24 • MC161/230



BR216RA

BR316RA

Technical data actuator MC100 / MC161

Type		MC100/24	MC100/230
Actuating time ¹⁾	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 ²⁾	VDC	24 ±10%	-
Frequency	Hz	50/60 ±5%	50/60 ±5%
Power consumption	VA	6	12
Input signal ³⁾		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 ³⁾		0...10 VDC max. 8 mA min. 1200 Ohm	0...10 VDC max. 8 mA min. 1200 Ohm
Hysteresis ⁴⁾	V	0.15 · 0.5	0.15 · 0.5

Type		MC161/24	MC161/230
Actuating time ¹⁾	s/mm	6 · 4*	6 · 4*
Actuating thrust	kN	1.6	1.6
Stroke	mm	max. 20	max. 20
Power supply	VAC	24 ±10%	230 +6% -10%
Power supply ²⁾	VDC	24 ±10%	-
Frequency	Hz	50/60 ±5%	50/60 ±5%
Power consumption	VA	6	12
Input signal ³⁾		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 ³⁾		0...10 VDC max. 8 mA min. 1200 Ohm	0...10 VDC max. 8 mA min. 1200 Ohm
Hysteresis ⁴⁾	V	0.05 · 0.15 · 0.3 · 0.5	0.05 · 0.15 · 0.3 · 0.5

Enclosure protection: IP 54

Resolution: MC electric 0.04 VDC
MC100 mechanical 0.095 mm
MC161 mechanical 0.05 mm

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

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

²⁾ only rectified alternating voltage

³⁾ Invertible input and output signal

⁴⁾ Freely adjustable

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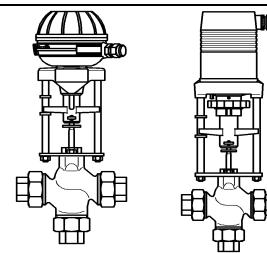
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Control valves with electric actuators up to 150°C

PN 16 **2.2.1**

Screwed connection
 PN 16
 Bronze

with electric actuators
 MC55/24 • MC55/230 • MC55Y
 MC100/24 • MC100/230
 MC161/24 • MC161/230



BR216RA

BR316RA

End position switch-off: load-dependent

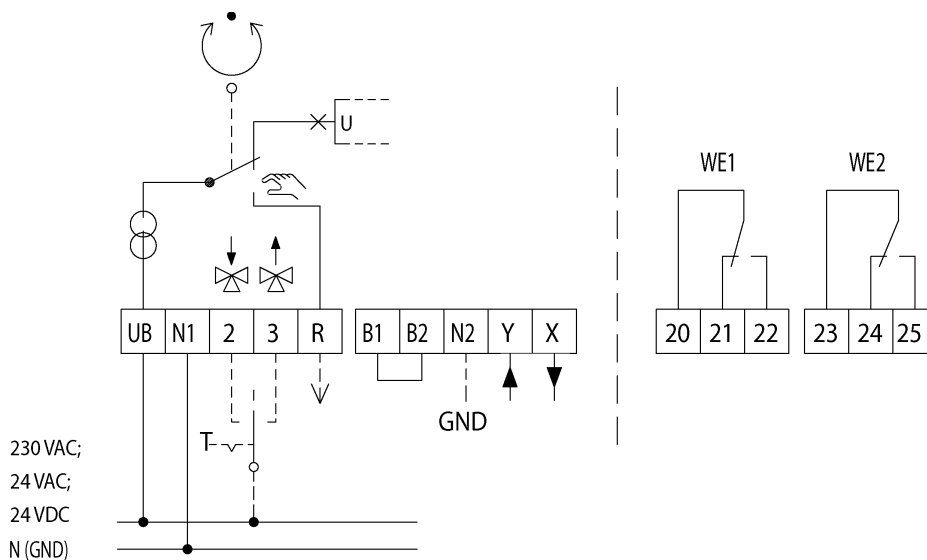
Ambient temperature: 0...+60°C

Weight: MC100 2.5 kg
 MC161 3.2 kg

Actuator variant and accessories

- Voltage: 115 VAC
- Position switch unit ¹⁾: 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
- Board for output signal X=0(4)...20 mA ¹⁾
- Adapter with coupling for external products

Circuit diagram



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

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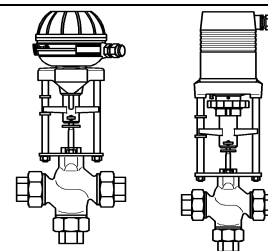
¹⁾ Position switch unit and output signal 0(4)...20 mA not in combination

Control valves with electric actuators up to 150°C

PN 16 **2.2.1**

Screwed connection
PN 16
Bronze

with electric actuators
MC55/24 • MC55/230 • MC55Y
MC100/24 • MC100/230
MC161/24 • MC161/230



BR216RA

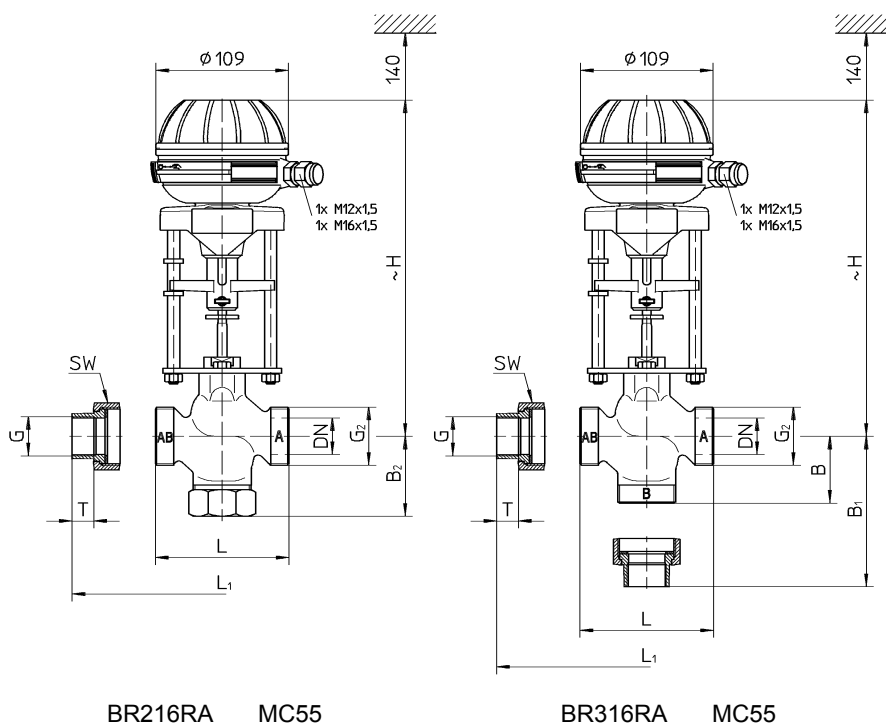
BR316RA

Technical data valve with actuator

DN		15		20	25	32	40	50	
kvs-value	m³/h	4	1.6	6.3	10	16	25	40	
		2.5	1.25	5	8	12.5	20	31.5	
Stroke	mm	12			14				
MC55/24 MC55/230 MC55Y	Actuating time ¹⁾	105			125				
		60*			70*				
	Closing pressure	kPa	1500	1500	1250	750	450	250	150
MC100/24 MC100/230	Actuating time ¹⁾	145			170				
		105*			125*				
		45			55				
		20			30				
	Closing pressure	kPa	1600	1600	1600	1500	900	550	350
MC161/24 MC161/230	Actuating time ¹⁾						95		
							55*		
	Closing pressure	kPa				1500	950	600	

100 kPa = 1 bar = 10 mWS

Drawing



BR216RA MC55

BR316RA MC55

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

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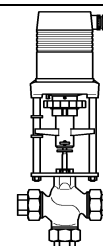
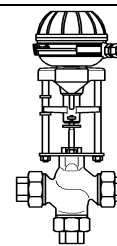
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Control valves with electric actuators up to 150°C

PN 16 **2.2.1**

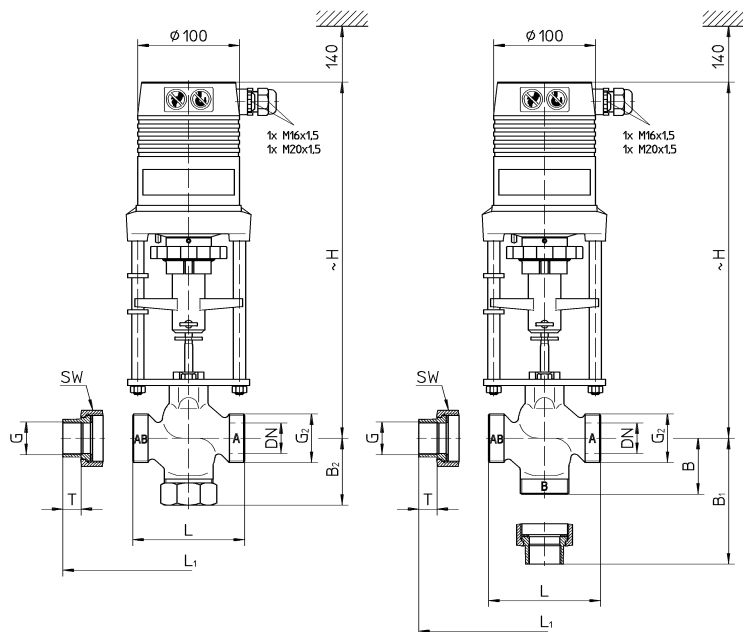
Screwed connection
PN 16
Bronze

with electric actuators
MC55/24 • MC55/230 • MC55Y
MC100/24 • MC100/230
MC161/24 • MC161/230



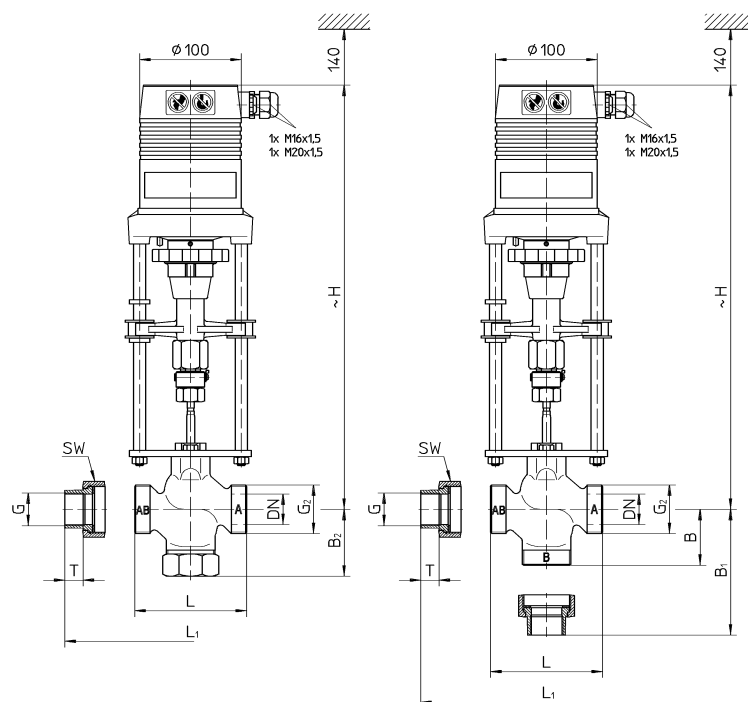
BR216RA

BR316RA



BR216RA MC100

BR316RA MC100



BR216RA MC161

BR316RA MC161

Installation instruction:

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

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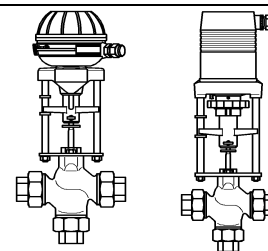
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Control valves with electric actuators up to 150°C

PN 16 **2.2.1**

Screwed connection
PN 16
Bronze

with electric actuators
MC55/24 • MC55/230 • MC55Y
MC100/24 • MC100/230
MC161/24 • MC161/230



BR216RA

BR316RA

Dimension

DN		15	20	25	32	40	50	
G		Rp ½	Rp ¾	Rp 1	Rp 1 ¼	Rp 1 ½	Rp 2	
L	mm	62	75	80	120	130	150	
L ₁	mm	114	127	138	184	198	222	
B	mm	40	41	45	55	60	65	
B ₁	mm	66	67	74	89	94	101	
B ₂	mm	48	53	57	68	73	78	
G ₂		G 1 A	G 1 ¼ A	G 1 ½ A	G 2 A	G 2 ¼ A	G 2 ¾ A	
SW	mm	37	48	53	68	73	88	
T	mm	13	15	17	19	19	24	
H	MC55	24 VAC/230 VAC	mm	265	268	271	280	283
	MC100	24 VAC	mm	338	341	344	353	358
		230 VAC	mm	363	366	369	378	383
	MC161	24 VAC	mm				420	423
230 VAC		mm				445	448	
m	MC55		kg	2.4	2.9	3.2	4.9	5.5
	MC100		kg	3.4	3.9	4.2	5.9	6.5
	MC161		kg				6.6	7.2