

with microcontroller
for two-way and three-way valves
BR216 • BR316
BR225 • BR325
BR240S • BR340S
BR240E • BR340E



MC253
MC403
MC503
MC1003
MC1503

Features

- Microprocessor controlled with automatic self-calibration on start up
- LED indication of actuator status
- Wear-free distance measuring system - no potentiometer
- Permanent storage of stroke in EPROM memory, values can not be lost
- Wire break recognition in 2...10 VDC and 4...20 mA operation
- Bonnet detachable in four positions, 90° locking, no screws required
- Safety position for switching a binary signal (frost safety)
- Integrated, self-controlling heater
- Pull-out manual adjustment with message signal
- Fault recognition in continuous operation (in case of blockage by foreign bodies)
- Input and output signal independently reversible
- Input signal freely adjustable: 3-point or modulating
- Hysteresis freely adjustable
- Shockproof at 230 VAC, no protective conductor (PE) necessary

Technical data

Type		MC253/24	MC253/230
Actuating time ¹⁾	s/mm	5 · 2.5*	5 · 2.5*
Actuating thrust	kN	2.5	2.5
Stroke	mm	max. 60	max. 60
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	max. 18	max. 25
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

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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Type		MC403/24	MC403/230
Actuating time ¹⁾	s/mm	0.6 · 0.4*	0.6 · 0.4*
Actuating thrust	kN	4.0	4.0
Stroke	mm	max. 60	max. 60
Power supply	VAC	24 ±10%	230 +6% -10%
Frequency	Hz	50/60 ±5%	50/60 ±5%
Power consumption	VA	max. 50	max. 63
Input signal ³⁾		3-Punkt 0(2)...10 VDC 77 kOhm 0(4)...20 mA 0.51 kOhm	3-Punkt 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

Type		MC503/24	MC503/230
Actuating time ¹⁾	s/mm	5 · 2.5*	5 · 2.*
Actuating thrust	kN	5.0	5.0
Stroke	mm	max. 60	max. 60
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	max. 18	max. 25
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

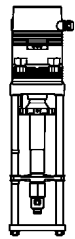
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²⁾ only rectified alternating voltage

³⁾ Invertible input and output signal

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Type		MC1003/24	MC1503/24	MC1003/230	MC1503/230
Actuating time ¹⁾	s/mm	1	2	1	2
Actuating thrust	kN	10	15	10	15
Stroke	mm	max. 80		max. 80	
Power supply	VAC	24 ±10%		230 +6% -10%	
Frequency	Hz	50/60 ±5%		50/60 ±5%	
Power consumption	VA	max. 50		max. 63	
Input signal ²⁾		3-point 0(2)...10 VDC 0(4)...20 mA	77 kOhm 0.51 kOhm	3-point 0(2)...10 VDC 0(4)...20 mA	77 kOhm 0.51 kOhm
Output signal ²⁾		0...10 VDC max. 8 mA min. 1200 Ohm		0...10 VDC max. 8 mA min. 1200 Ohm	
Hysteresis ³⁾	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
MC253 / MC503 mechanical 0.04 mm
MC403 mechanical 0.12 mm
MC1003 / MC1503 mechanical 0.05 mm

Operating mode: MC253 / MC503 S3-50% ED c/h 1200 EN 60034-1
MC403 / MC1003 / MC1503 S3-30% ED c/h 1200 EN 60034-1

End position switch-off: load-dependent

Ambient temperature: MC253 / MC503 / MC403 / MC503 / MC1003 -10...+60°C
MC1503 -10...+50°C

Weight: MC253/24 and MC503/24 7.4 kg
MC253/230 and MC503/230 8.6 kg
MC403 9.5 kg
MC1003 / MC1503 11.5 kg

Actuator variant and accessories

- Voltage: 115 VAC
- Position switch unit: 2 switches (WE1/WE2), potential free, infinitely adjustable
Rated load: 8 A / 250 VAC or 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
- Adapter with coupling for external products

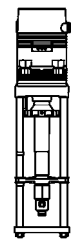
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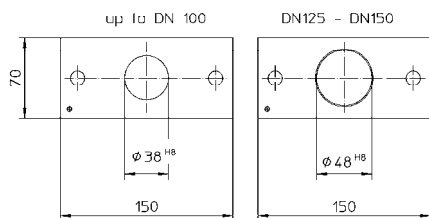
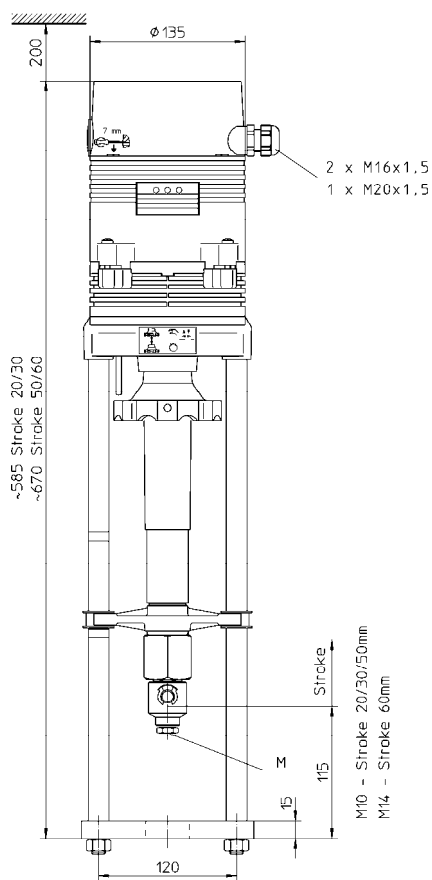
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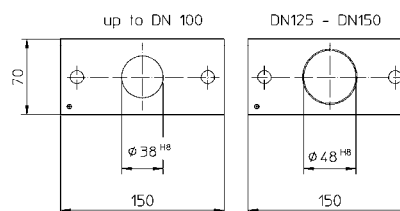
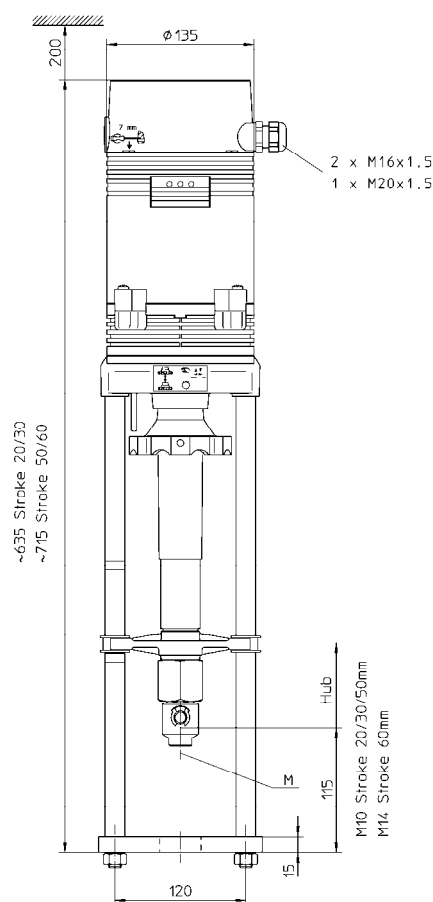


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Drawing

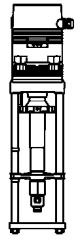


MC253 and MC503

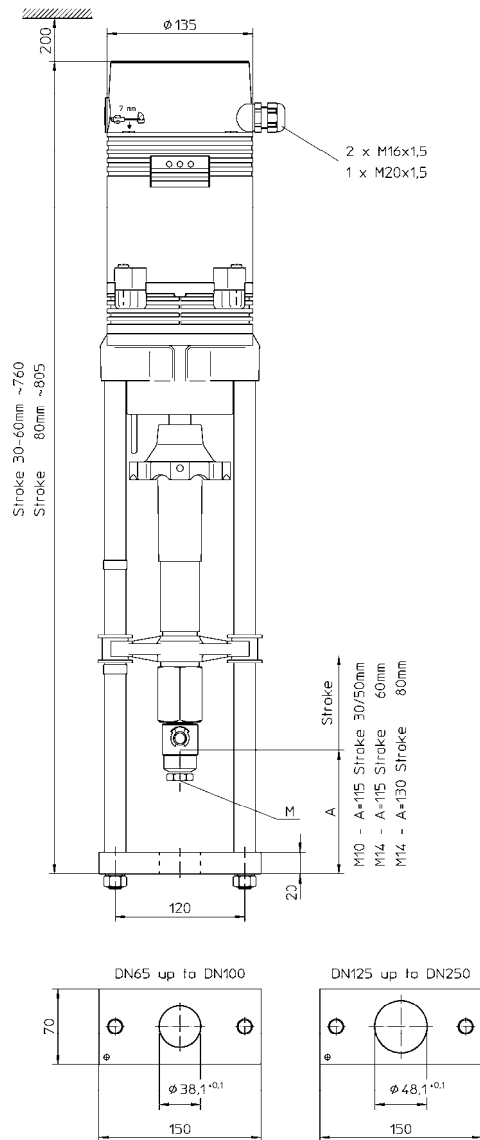


MC403

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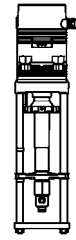


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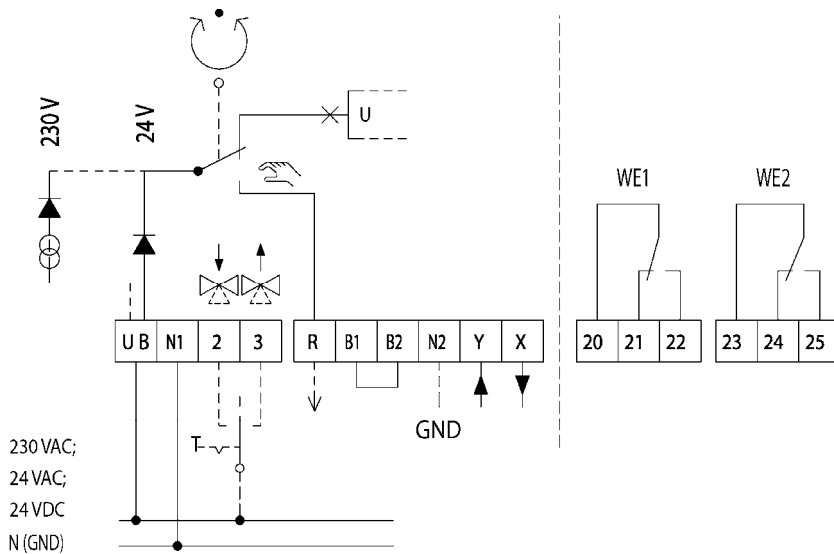
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Circuit diagram



R Feedback signal in „Manual“ mode of operation
R=24 VAC max.100 mA for actuators in 24 VAC design
R=24 VDC max.100 mA for actuators in 24 VDC design
R=24 VDC max. 100 mA for actuators in 230 VAC design

N2 Zero potential of the „X“, „Y“ and „R“ signals.

If the actuators in 230 VAC design are to be triggered on the „continuous“ mode of operation, i.e. by analogue signal „Y“, the connection of N2 (zero potential of the controller) is absolutely necessary. For actuators in 230 VAC design the connection N2 in the „3-position“ mode of operation is only necessary if „X“ and/or „R“ are to be use by the actuator. If the zero potentials of the signals X, Y and R are identical with the zero potential of the supply voltage, a bridge can be laid between N1 and N2 in order to save an additional lead to N2.

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