

Climate  
Control

IMI TA

TA-MC100



## Actuators

High performance proportional actuator – 1000 N

# TA-MC100

High performance proportional actuators with automatic stroke adaptation which provide accurate modulating or 3-point control when used together with 2-way and 3-way control valves from IMI.

## Key features

### Easy commissioning

Automatic measurement and adaptation to the valve lift as well as load-dependent end position switch-off helps to reduce commissioning time and protect the valve and actuator from overloading.

### Easy troubleshooting

Protected hand drive for a safe manual operation enables easy troubleshooting.

### Ease of service

The actuator housing cover is easy to remove. Parameters can easily be changed on site.



## Technical description

### Functions:

Modulating or 3-point control.

### Supply voltage:

24 VAC/VDC\*  $\pm 10\%$   
230 VAC  $+6\%/-10\%$   
115 VAC  $+6\%/-10\%$   
Frequency 50-60 Hz  $\pm 5\%$   
\*) DC – Direct current flat voltage.

### Power consumption:

24 V: 6 VA  
230 V: 12 VA  
115 V: 12 VA

### Input signal:

0(2)-10 VDC,  $R_i \sim 77 \text{ k}\Omega$   
0(4)-20 mA,  $R_i \sim 510 \Omega$ .  
Signal direction and starting point adjustable by micro switches.  
3-point control.

### Output signal:

0-10 VDC, max. 8 mA, min. 1,2 k $\Omega$ .

### Hysteresis:

0,15 or 0,5 V

### Resolution:

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

### Control speed:

1.9, 4, 9, 12 s/mm

### Adjusting force:

1000 N

### Operation mode:

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

### End position switch-off:

Load-dependent

### Temperature:

Max. ambient temperature: 60°C  
Min. ambient temperature: 0°C

### Ingress protection:

IP54

### Protection class:

(according to EN 60730)  
24 V: III  
230 V: II  
115 V: II

### Stroke:

Max. 20 mm  
Automatic detection of the valve lift (stroke detection).

### Electrical connection:

Actuator with screwed terminals.

### Connection to valve:

Simple attachment to the valve by means of M8 screws.  
For some valve types an adapter may be needed. Information on adapters included in valve datasheets.

### Colour:

Black body and red cover.

### Marking:

IMI TA, Article No, product name and technical specification.

### Weight:

2,5 kg

### Actuator variants:

- Position switch unit <sup>1)</sup>:  
2 switches (WE1/WE2), potential free, infinitely adjustable.  
Rated load: 8 A / 250 VAC, 8 A / 30 VDC.  
Switching voltage: max. 400 VAC, max. 125 VDC
- Ingress protection: IP65
- Output signal <sup>1)</sup>: X=0(4)...20 mA
- Adapter with coupling for external product

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

For variants and accessories please contact IMI.

## Function

### Manual operation

Handwheel with automatic switch-off of the actuator.

### Position indication

Indicators on the mounting rig.

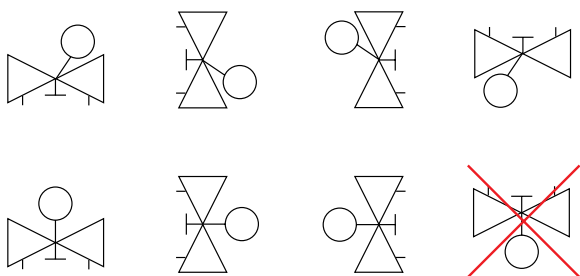
### Error detection

Automatic detection of broken control wire (for 2-10V / 4-20mA only).

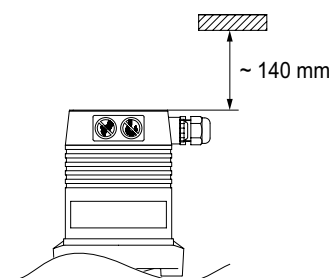
Automatic detection of blocked valve.

## Installation

**Note:** Read carefully the installation instruction of the actuator. Intended for indoor installation applications. For outdoor installation applications please contact IMI. In cooling systems, the pipe and valve must be insulated.



### Note!



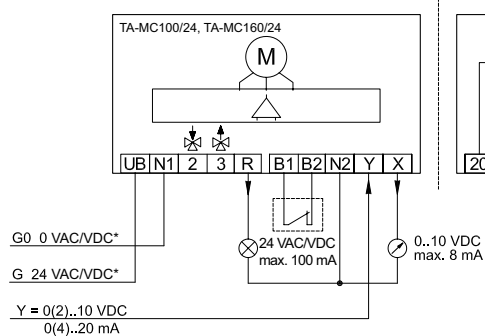
## Connection diagram

### 24 VAC/VDC\*

#### Modulating

0(2)-10V, 0(4)-20 mA

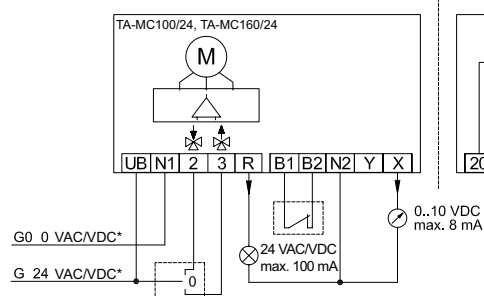
Standard design



Special accessories

#### 3-point

Standard design



Special accessories

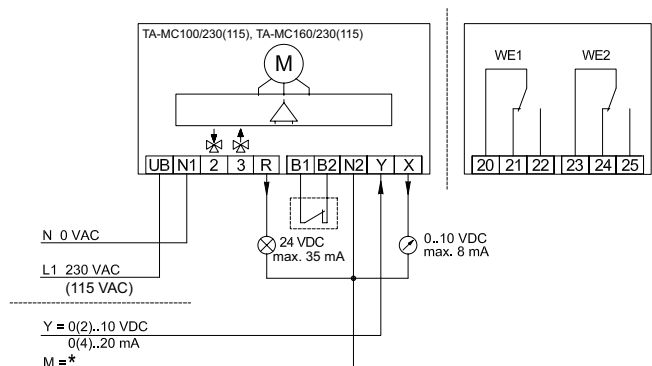
\*) DC – Direct current flat voltage.

## 230 VAC

### Modulating

0(2)-10V, 0(4)-20 mA

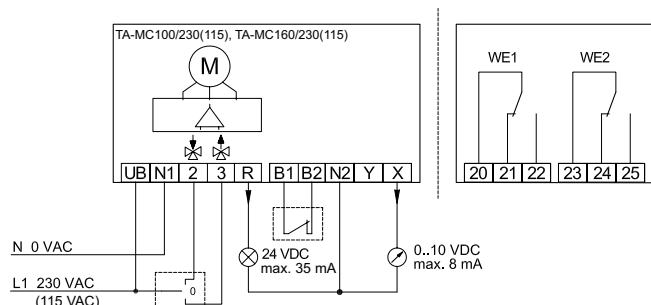
Standard design



\*) M = ground

### 3-point

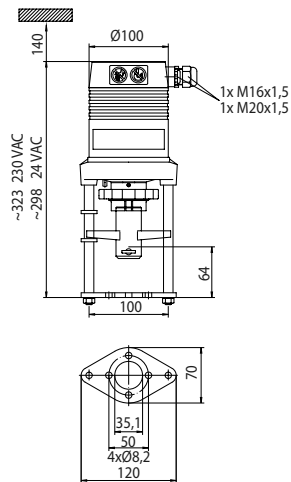
Standard design



Terminal	Description
UB, N1	Supply voltage
2	Control signal for extending the actuator spindle
3	Control signal for retracting the actuator spindle
R	Response signal during "manual" mode depending on the supply voltage: supply 24VAC: R = 24VAC max. 100mA supply 24VDC: R = 24VDC max. 100mA supply 230/115VAC: R = 24VDC max. 35mA
B1, B2	Connection of a potential free contact (e.g. for frost protection) - bridged if not used
Y	Input signal continuous mode
X	Output signal continuous mode
N2	Zero potential of signals X, Y and R - When the zero potentials of signals X, Y and R are identical to the zero potential of the supply voltage it is possible to bridge terminals N1 and N2. - If you run the actuator in continuous mode at 230 V (115 V) you will have to connect N2. - If you run the actuator in three-point mode at 230 V (115 V) you will have to connect N2 if you wish to use X or R at the same time.
WE1, WE2	Position switch units - see "Actuator variants"
20, 21, 22	Terminals of switching unit PS1
23, 24, 25	Terminals of switching unit PS2

For 24V/230V/115V 3-point control, the actuation direction can be changed by changing the supply lines of terminals 2 and 3 on the actuator.

## Articles



### TA-MC100

Supply voltage	Input signal	EAN	Article No
24 VAC	0(2)-10 VDC, 0(4)-20 mA, 3-point	3831112511675	61 100-001
24 VDC*	0(2)-10 VDC, 0(4)-20 mA, 3-point	5902276804427	61 100-003
230 VAC	0(2)-10 VDC, 0(4)-20 mA, 3-point	3831112500235	61 100-002
115 VAC	0(2)-10 VDC, 0(4)-20 mA, 3-point	5902276894350	61 100-302

\*) DC – Direct current flat voltage.

For some valve types an adapter may be needed. Information about adapters are included in the valve datasheets.

**For IP65 version:** Add "IP" after the Article No., example 61 100-001IP

## Accessories

### General actuator accessories

		EAN	Article No
<b>ACA 71</b>	Position Switch Unit (2 switches)	5902276894169	67 071-100
<b>ACA 76</b>	Output signal: 0(4)-20mA	5902276894183	67 076-100

**Note:** Position switch unit and output signal 0(4)-20 mA not in combination.

### Stem heaters

TA-MC55, TA-MC55Y, TA-MC100, TA-MC160

Type	Supply voltage	EAN	Article No
<b>ACV 13</b>	24 VAC	3831112512108	68 013-015



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