

Climate  
Control

IMI TA

# TA-MC253 SE



## Actuators

High performance proportional actuator with fail-safe function – 561 lbf (2500 N)

# TA-MC253 SE

High performance proportional actuators with fail-safe extending and automatic stroke adaptation which provide accurate modulating or 3-point control when used together with combined control and balancing valves – both with or without integrated  $\Delta p$  controller – as well as 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 which helps to reduce commissioning time and protect the valve and actuator from overloading.

### Easy troubleshooting

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

### Ease of service

The actuator housing cover is easy to remove (without screws). Parameters can be easily changed on site.



## Technical description

### Functions:

Modulating or 3-point control.

### Fail-safe function:

Actuator's stem extended on power failure.

### Supply voltage:

24 VAC  $\pm 10\%$   
115 VAC  $+6\%/-10\%$   
Frequency 50-60 Hz  $\pm 5\%$

### Power consumption:

24 V: 50 VA  
115 V: 80 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:

0,05 V / 0,15 V / 0,3 V / 0,5 V

### Resolution:

Electric: 0,04 VDC  
Mechanical: 0,002 in (0.04 mm)

### Control speed:

88.9 s/in

### Fail-safe speed:

2.54 s/in

### Adjusting force:

562 lbf

### Operation mode:

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

### End position switch-off:

Load-dependent

### Temperature:

Max. ambient temperature: 140°F  
Min. ambient temperature: 32°F

### Ingress protection:

IP54

### Protection class:

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

### Stroke:

Max. 1.58 in  
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.

### Color:

Black body and red cover.

### Marking:

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

### Weight:

27.6 lb

### Actuator variants:

- Position switch unit:  
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: X=0(4)...20 mA
- Adapter with coupling for external product

For variants and accessories please contact your local sales office.

## Function

### Manual override

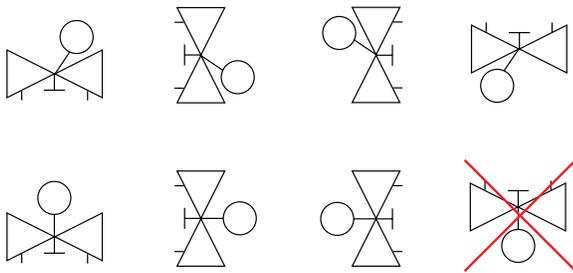
Handwheel with automatic switch off of the actuator (only possible if actuator is not closed by the safety spring!).

### Calibration/self-stroking

Initialized by pressing the INIT button.

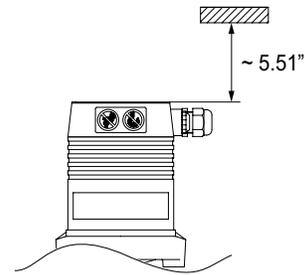
## Installation

**Note:** Carefully read 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!

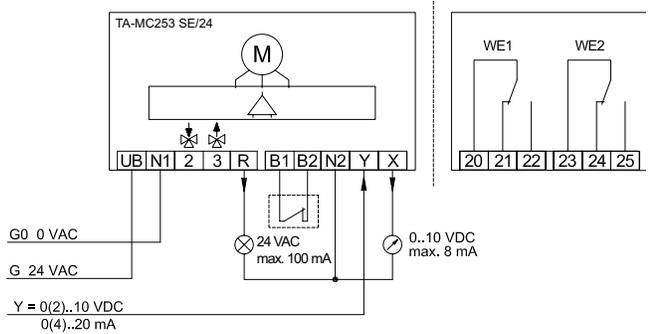
Space above actuator >5.5 in.



## Connection diagram

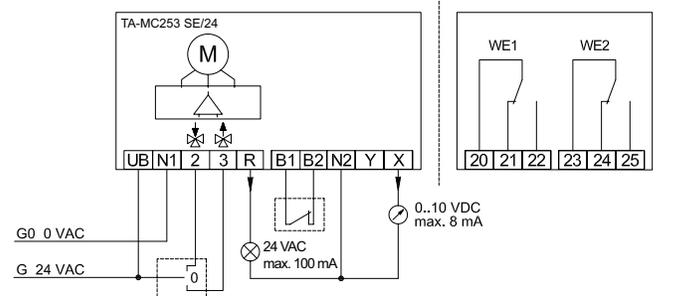
### 24 VAC

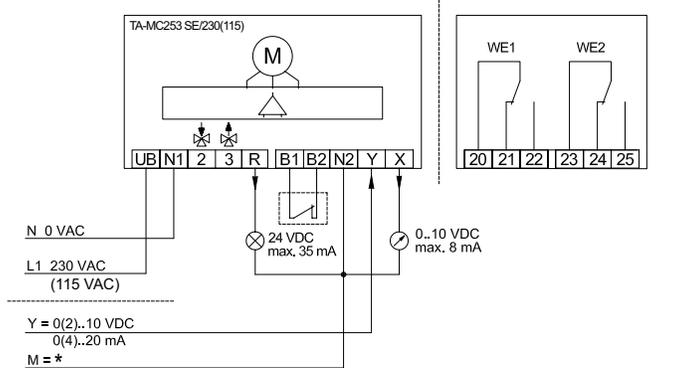
**Modulating** 0(2)-10V, 0(4)-20 mA  
Standard design



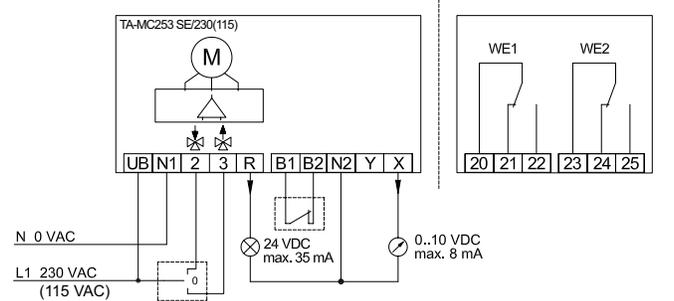
### 3-point

Standard design



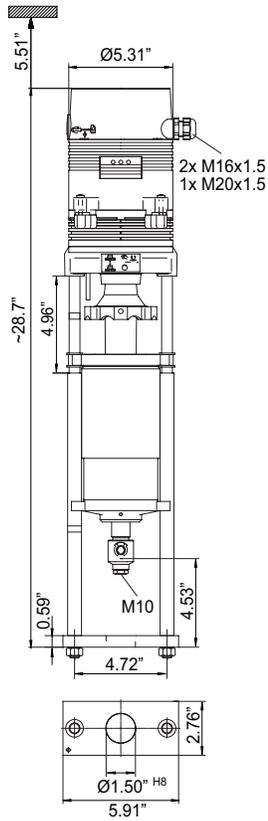
**115 VAC**
**Modulating 0(2)-10V, 0(4)-20 mA**  
 Standard design


\*) M = ground

**3-point**  
 Standard design


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

## Articles



### TA-MC253 SE

Actuator's stem extended on power failure.

Supply voltage	Input signal	Article No
24 VAC	0(2)-10 VDC, 0(4)-20 mA, 3-point	61 253-101
115 VAC	0(2)-10 VDC, 0(4)-20 mA, 3-point	61 253-402

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 61 253-101IP

## Accessories

### General actuator accessories

		Article No
<b>ACA 71</b>	Position Switch Unit (2 switches)	67 071-250
<b>ACA 76</b>	Output signal: 0(4)-20mA	67 076-250







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