

Climate  
Control

IMI TA

# TA-MC253 SE



## Actuators

High performance proportional actuator with  
fail-safe function – 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 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.

### Fail-safe function:

Actuator's stem extended on power failure.

### Supply voltage:

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

### Power consumption:

24 V: 50 VA  
 230 V: 80 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: 0,04 mm

### Control speed:

3,5 s/mm

### Fail-safe speed:

0,1 s/mm

### Adjusting force:

2500 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. 40 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:

12,5 kg

### 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 IMI.

## Function

### Manual override

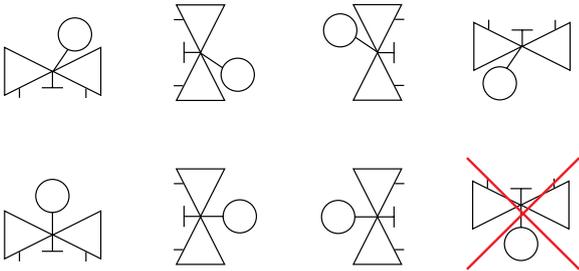
Handwheel with automatic switch off of the actuator (only possible if actuator is not closed by the safety spring!).

### Calibration/self-stroking

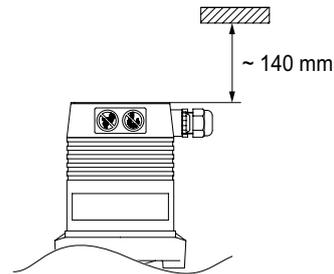
Initialized by pressing the INIT button.

## Installation

**Note:** 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!



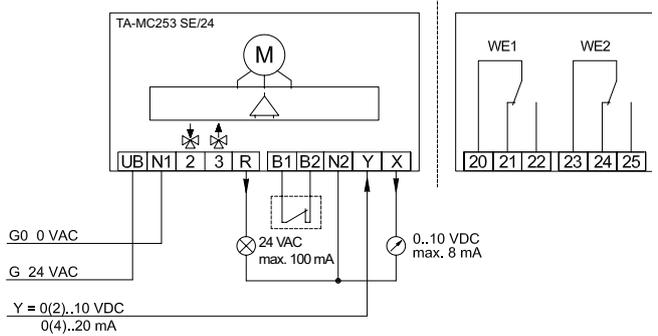
## Connection diagram

### 24 VAC

#### Modulating

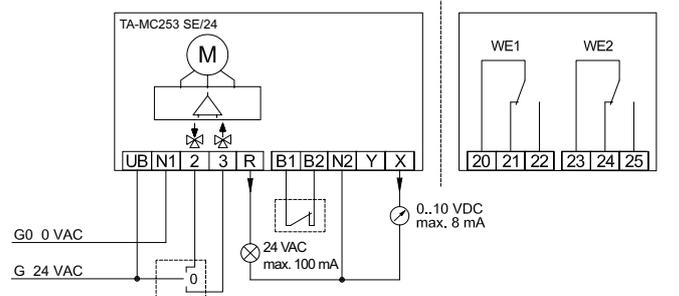
0(2)-10V, 0(4)-20 mA

Standard design



### 3-point

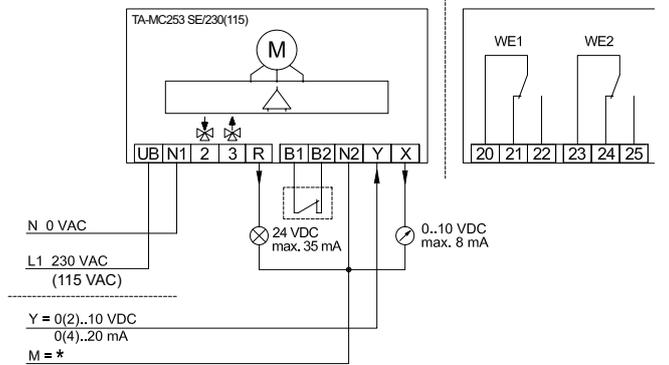
Standard design



**230 VAC**
**Modulating**

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

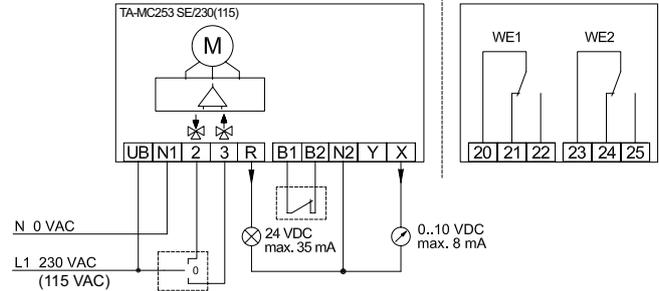
Standard design



Special accessories

**3-point**

Standard design

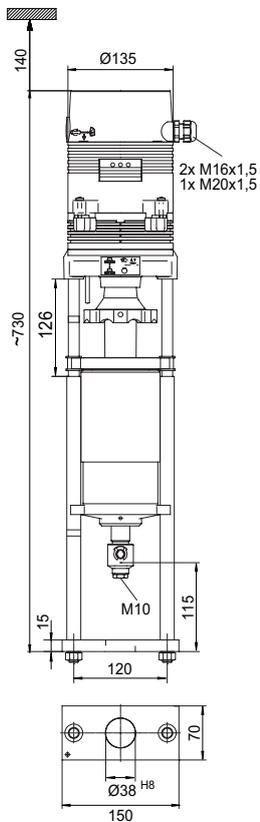


Special accessories

\*) M = ground

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 depending on the supply voltage: supply 24 VAC: R = 24 VAC max. 100 mA supply 230/115 VAC: R = 24 VDC max. 35 mA
<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 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/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	EAN	Article No
24 VAC	0(2)-10 VDC, 0(4)-20 mA, 3-point		61 253-101
230 VAC	0(2)-10 VDC, 0(4)-20 mA, 3-point		61 253-102
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

	EAN	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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