

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.

#### Control speed:

3,5 s/mm

#### Electrical connection:

Actuator with screwed terminals.

#### Fail-safe function:

Actuator's stem extended on power failure.

#### Fail-safe speed:

0,1 s/mm

#### 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.

#### Supply voltage:

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

#### Adjusting force:

2500 N

#### Colour:

Black body and red cover.

#### Power consumption:

24 V: 50 VA  
230 V: 80 VA  
115 V: 80 VA

#### End position switch-off:

Load-dependent

#### Marking:

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

#### 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.

#### Operation mode:

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

#### Weight:

12,5 kg

#### Output signal:

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

#### Ingress protection:

IP54

#### Protection class:

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

#### Hysteresis:

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

#### Stroke:

Max. 40 mm  
Automatic detection of the valve lift (stroke detection).

#### Resolution:

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

#### 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

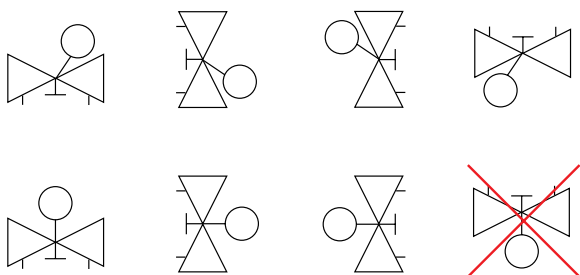
Handwheel with automatic switch off of the actuator (only possible if actuator is not closed by the safety spring!).

### Calibration/self-stroking

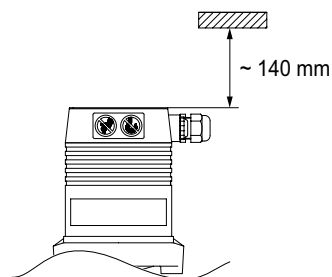
Initialized by pressing the INIT button.

## 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!



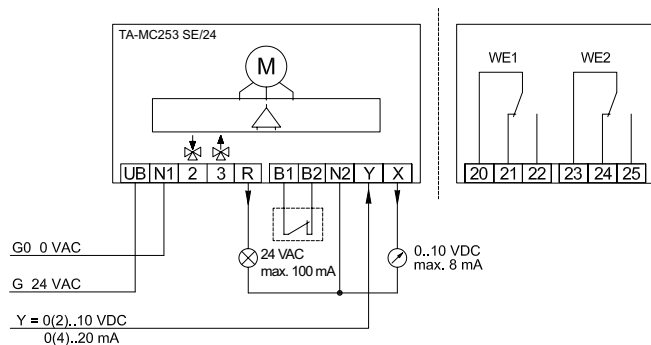
## Connection diagram

### 24 VAC

#### Modulating

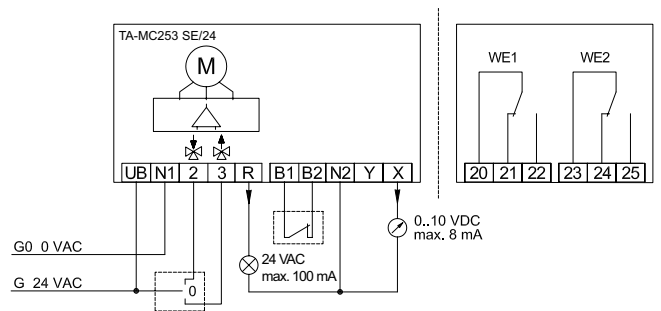
0(2)-10V, 0(4)-20 mA

Standard design



### 3-point

Standard design



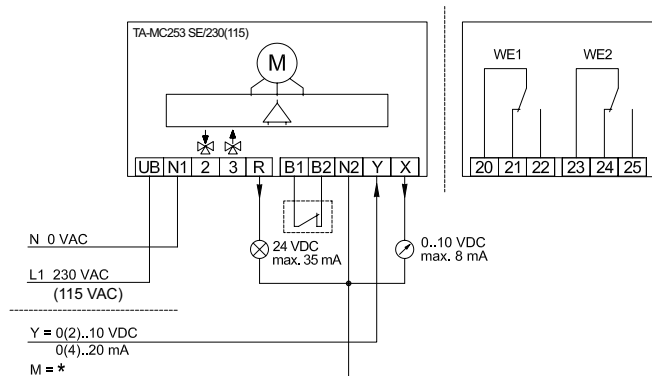
Special accessories

## 230 VAC

### Modulating

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

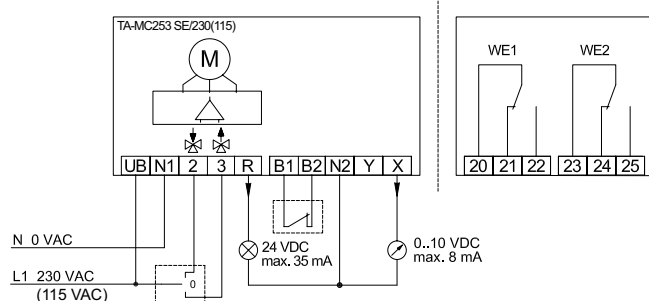
Standard design



\*) M = ground

### 3-point

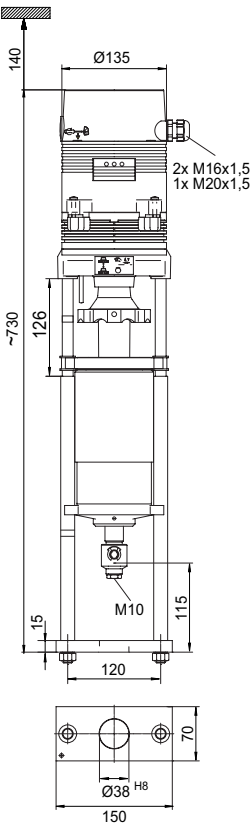
Standard design



Special accessories

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 24 VAC: R = 24 VAC max. 100 mA supply 230/115 VAC: R = 24 VDC max. 35 mA
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/and 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

## 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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