Climate
Control

IMI TA

EMO TM II



Actuators

High performance thermoelectric actuator –
For modulating control

Breakthrough
engineering for
a better world

EMO TM II

Used in conjunction with small terminal valves e.g. TA-Modulator, TBV-CM and TA-Nano, the high performing EMO TM II actuator offers reliable modulating control and a high enclosure class. The position indicator is visible from all sides and allows easy maintenance procedures. The snap-on and First-open functions facilitate the installation and commissioning of the EMO TM II.



Key features

High adjusting force and high reliability
Tested in conjunction with all of IMI valves up to 150 000 cycles.

Automatic adaptation to actual valve stroke
For optimum control characteristics.

High enclosure class IP54
For secure operations at any installation positions.

Position indicator visible from all sides
For straightforward maintenance.

Low power consumption
For reduced energy consumption and easy power supply dimensioning.

M30x1.5 snap-on ring
Facilitating installation of actuator on valve thread.

Technical description

Applications:
For modulating control

Supply voltage:
24 VAC ±20%
Frequency 50-60 Hz

Power consumption:
During operation ≤ 1 W (VA)
Starting current ≤ 320 mA during max. 2 min.

Input signal:
0-10 V

Operating cycle time:
~ 4 min when starting from cold.

Adjusting force:
100 N +-5%

Stroke:
5 mm
Valve position visible due to position indicator.

Temperature:
Max. ambient temperature: 60°C
Min. ambient temperature: 0°C
Max. medium temperature: 100°C
Storage temperature: -25°C to +60°C

Ingress protection:
IP54 at any position.

Protection class:
III, EN 60730

Certification:
CE, EN 60730-2-14

Cable:
Cable length: 1 m, 2 m, 5 m or 10 m.
Connection cable: 3 x 0,22 mm^2.
The cable is stripped 100 mm and each wire is stripped 8 mm.
Halogen free as option, fire class $B2_{ca}$ – s1a, d1, a1 according to EN 50575.

Connection to valve:
M30x1,5 plastic snap-on ring.

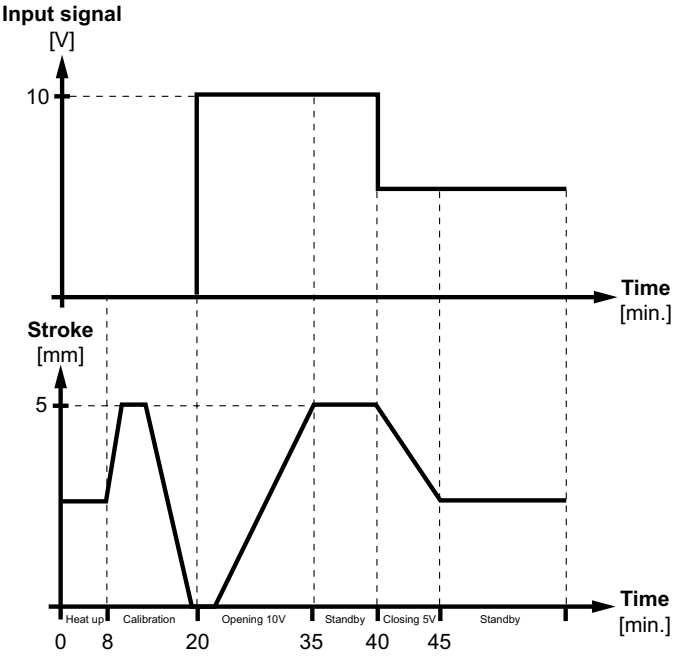
Body:
Shock-resistant Polyamide, white RAL 9016.

Function

First-Open function (NC model)
In delivery status, the First-Open function allows the NC actuator to keep the valve open without current. This simplifies actuator installation by removing the need to press it onto the valve stem. This enables heating operation during the construction phase even when the electric wiring of the room-by-room temperature control system is not yet complete. During subsequent commissioning, applying the operating voltage (> 6 min. at 24V) automatically unlocks the First-Open function and the actuator is fully functional.

Closed when currentless (NC model)
Initiating operating voltage heats up the expansion system of the actuator. After the time lag, a uniform opening process ensues. If the voltage is cutoff, the actuator closes via the cooling of the expansion system after the time lag.

Note:
When conducting a performance test, be sure to check the time response (time lag)!
Opening and closing times are dependent on the ambient temperature.

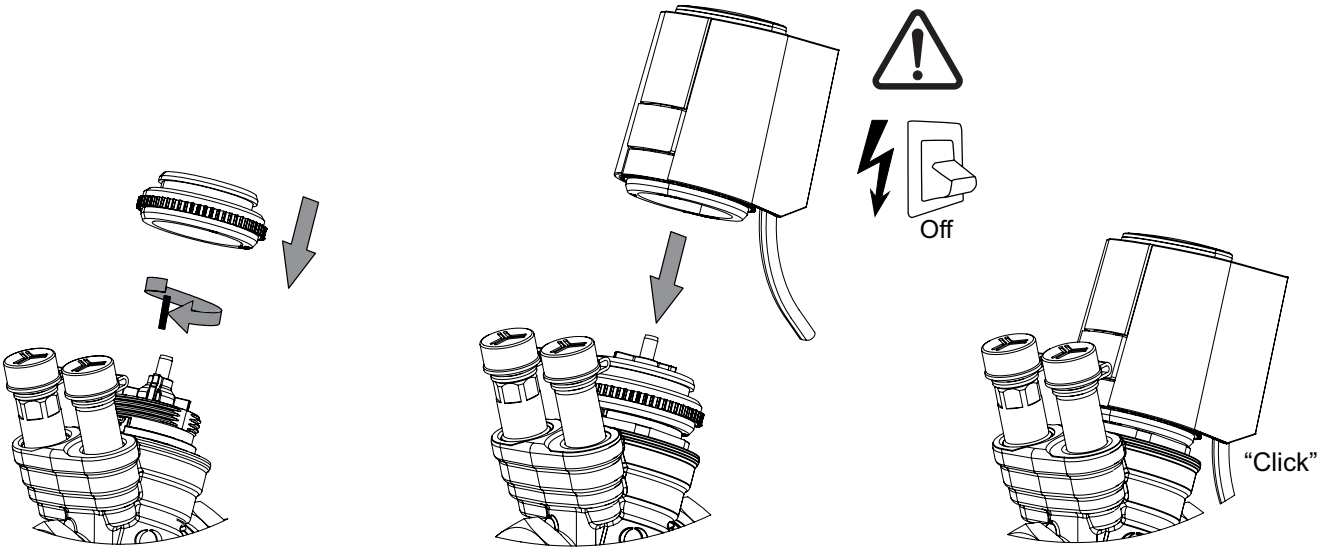


Working range

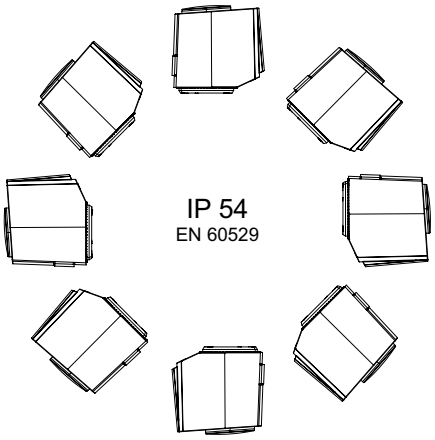
The actuator is designed to suit all IMI TA valves with M30x1,5 connection to actuator.
The actuator has a working range corresponding to X = 11,0 mm - 16,0 mm.



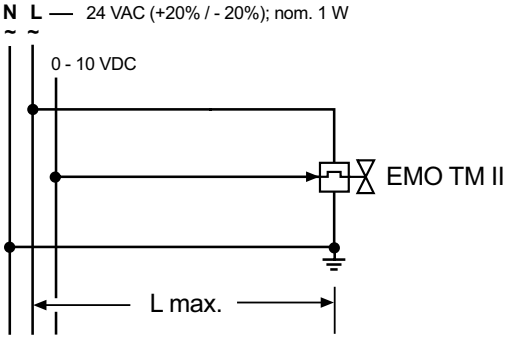
Installation



Enclosure class:



Connection diagram



(L max. see planning notes)

Planning notes

24 V transformer dimensioning
For operation with 24 V low voltage, a transformer is required which is in compliance with EN 60335 and possesses sufficient capacity.
For dimensioning transformer performance, the value for the starting phase needs to be taken into account. The same applies to the layout of switching contacts of room temperature controllers.
Minimum transformer power delivery results from:
the sum of the take-up of the 24 V EMO TM (in the starting phase) in addition to the sum of the take-up capacities of the room thermostat.

24 V protective low voltage
With the required protective low voltage (SELV based on DIN VDE 0100) a safety isolating transformer in compliance with EN 61558-2-16 must be used.

Length of cable
In order to maintain the declared opening times for the actuators, the voltage loss (depending on length of cable and cross section) in the operating phase on the supply lines to the actuators may not exceed 4%.

For general dimensioning with copper lines, use the following standard formula:

L max. = l / n

L max.: max. length of cable in [m] (see “Connection diagram”)
l: table value in [m]
n: number of actuators

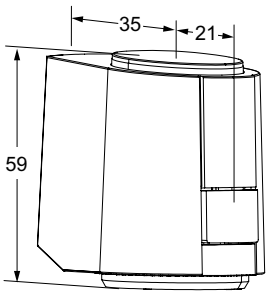
Line: Type/name	**Cross section: A** [mm^2]	**l 24 V** [m]
Standard DDC line	0,22	20
J-Y(ST)Y	0,8	45
NYM / NYIF	1,5	136

Calculation example
Goal:
max. length of cable L max.

Given:
Voltage U = 24 V
Conductor cross section A = 2 x 1.5 mm^2
Value in table l = 136 m
Number of actuators n = 4

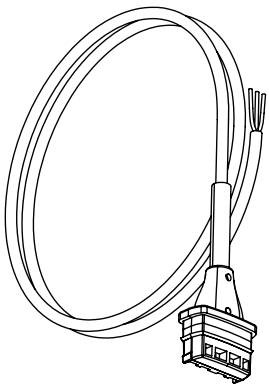
Solution:
l max. = l / n = 136 m / 4 = 34 m

Articles



EMO TM II – 24 VAC
Including snap-on ring.

		EAN	Article No
NC (normally closed)	1 m PVC cable included (unplugged)	5902276825248	322043-21111
NC (normally closed)	Without cable - ordered separately	5902276825255	322043-21100



Cables

Cable length [m]	EAN	Article No
PVC		
1	5902276825385	322042-13001
2	5902276825392	322042-13002
5	5902276825408	322042-13003
10	5902276825415	322042-13004
Halogen free		
1	5902276825422	322042-13011
2	5902276825439	322042-13012
5	5902276825446	322042-13013
10	5902276825453	322042-13014

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