

**Climate
Control**

IMI Heimeier

EMOtec II



Actuators

Thermal actuator for heating, ventilation, and air conditioning systems

EMOTec II

Used in conjunction with floor heating manifolds e.g. Dynacon Eclipse, the high performing EMOTec II actuator offers reliable on/off 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 EMOTec II.



Key features

High adjusting force and high reliability

Tested in conjunction with all of IMI valves up to 150 000 cycles.

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.

Compact sizes especially suited to manifold cabinets

Technical description

Applications:

Designed for ON/OFF or PWM control.

Supply voltage:

24 VAC/VDC +20% / -10%
230 VAC ±10%
Frequency 50-60 Hz

Power consumption:

24 V:
During operation ≤ 1 W (VA)
Starting current ≤ 200 mA
230 V:
During operation ≤ 1 W (VA)
Starting current ≤ 275 mA

Operating cycle time:

~ 4 min when starting from cold.

Adjusting force:

100 N +10%

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.
Connection cable: 2 x 0,75 mm².
The cable is stripped 100 mm and each wire is stripped 8 mm.

Connection to valve:

M30x1.5 plastic snap-on ring.

Body:

Shock-resistant Polyamide,
white RAL 9003.

Function

First-Open function (NC model)

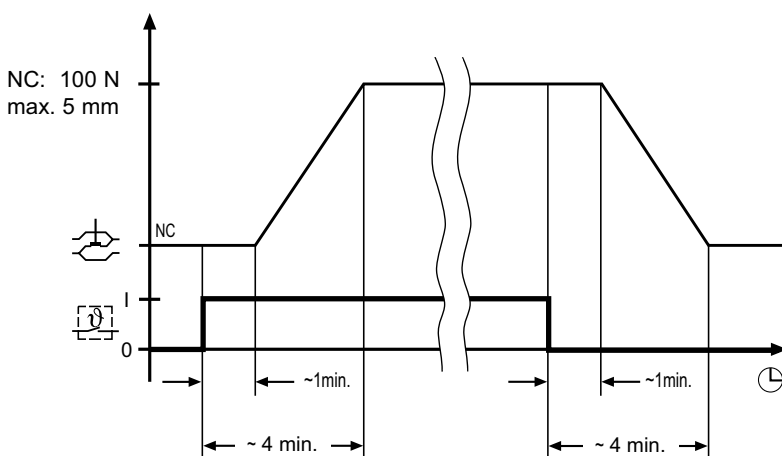
In delivery status, the First-Open function allows the NC actuator to keep the valve open without current. This simplifies actuator installation by removing the need to press it onto the valve stem. This enables heating operation during the construction phase even when the electric wiring of the room-by-room temperature control system is not yet complete. During subsequent commissioning, applying the operating voltage (> 6 min. at 230/120 V and > 9 min. at 24/12 V) 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.

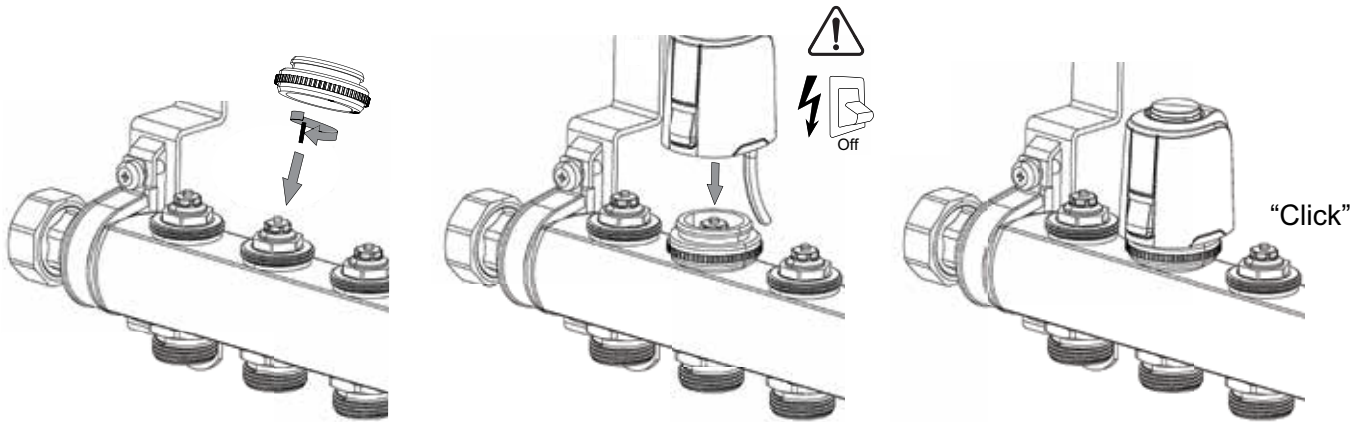


Working range

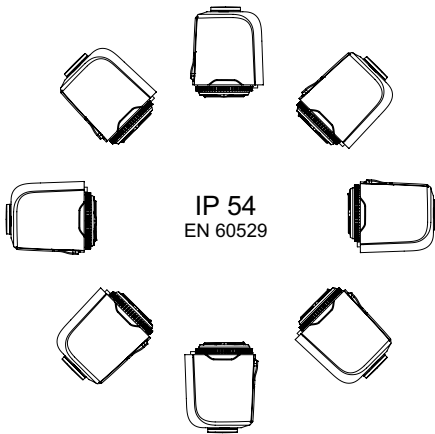
The actuator is designed to suit all IMI Heimeier valves with M30x1.5 connection to actuator.
The actuator has a working range corresponding to X = 11,0 mm - 16,0 mm.



Installation



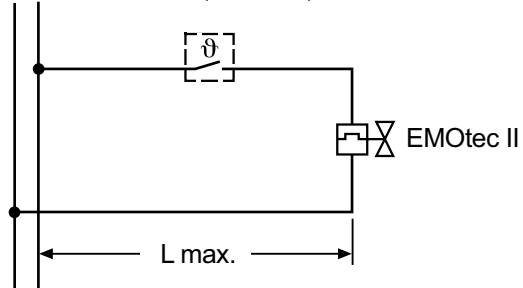
Enclosure class:



Connection diagram

N L — 230 VAC (+10%/- 10%); nom. 1 W

~ ~ — 24 VAC/VDC (+20%/- 10%); nom. 1 W



(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 power, 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 EMOTec II (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:

$$L \text{ max.} = I / n$$

L max.: max. length of cable in [m] (see "Connection diagram")

I: table value in [m]

n: number of actuators

Line: Type/name	Cross section: A [mm ²]	I 24 V [m]
NYM	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 mm²

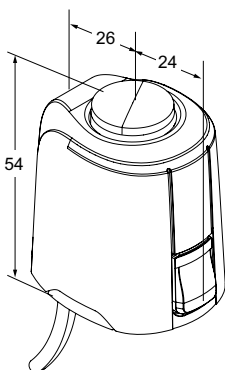
Value in table I = 136 m

Number of actuators n = 4

Solution:

$$I \text{ max.} = I / n = 136 \text{ m} / 4 = 34 \text{ m}$$

Articles

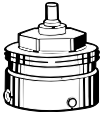


EMOTec II

Including snap-on ring. Normally closed. With pre-mounted cable. Cable length 1 m.

Supply voltage	EAN	Article No
24 VAC/VDC	5902276825286	342030-11111
230 VAC	5902276825293	342030-12111

Accessories



Connecting to other brands

Adapter for mounting the EMOTec II on valve bodies of other manufacturers.
Threads M30x1.5 factory standard.

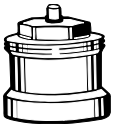
Manufacturer	EAN	Article No
Danfoss RA (Ø≈20 mm)	4024052297016	9702-24.700
Danfoss RAV (Ø≈34 mm)	4024052300112	9800-24.700
Danfoss RAVL (Ø≈26 mm)	4024052295913	9700-24.700
Vaillant (Ø≈30 mm)	4024052296019	9700-27.700
IMI TA (M28x1,5)	4024052336418	9701-28.700
Herz (M28x1,5)	4024052296316	9700-30.700
Markaryd (M28x1,5)	4024052296514	9700-41.700
Comap (M28x1,5)	4024052296712	9700-55.700
Oventrop (M30x1,0)	4024052428519	9700-10.700
Giacomini (Ø≈22,6 mm)	4024052429714	9700-33.700
Ista (M32x1,0)	4024052511419	9700-36.700
Uponor (Velta)	4024052448111	9700-34.700
- Euro-/compact distributor or return valve 17		
Uponor (Velta)	4024052510917	9701-34.700
- Provario distributor		



Connecting to radiators with integrated valves

Adapter for mounting the EMOTec II with M30x1.5 connection on thermostatic insert for **Series 2** or **Series 3** clamping joint.
M30x1.5 threading, factory standard.

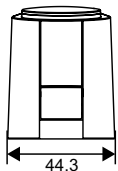
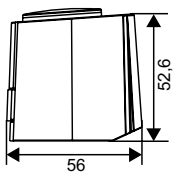
Model	EAN	Article No
Series 2	4024052297214	9703-24.700
Series 3	4024052313518	9704-24.700



Spindle extension

for thermostatic valve bodies and radiators with integrated valves with M30x1.5 connection.

L	EAN	Article No
Plastic, black		
15	4024052553310	2001-15.700
30	4024052165018	2002-30.700



Thermal actuator with auxiliary switch

Max. switching current auxiliary switch:
Type 230 V: 5 (1) A; Type 24 V: 3 (1) A.
Stroke: 4 mm.

Connection to valve: IMI Heimeier
M30x1.5, with enclosed adapter.

Adjusting force: 100 N.

Cable length: 1 m fixed.

Connection cable: 4 x 0,75 mm²

Type	EAN	Article No
230 V		
Currentless closed (NC)	4024052977819	4968-03.000
24 V		
Currentless closed (NC)	4024052977918	4988-03.000