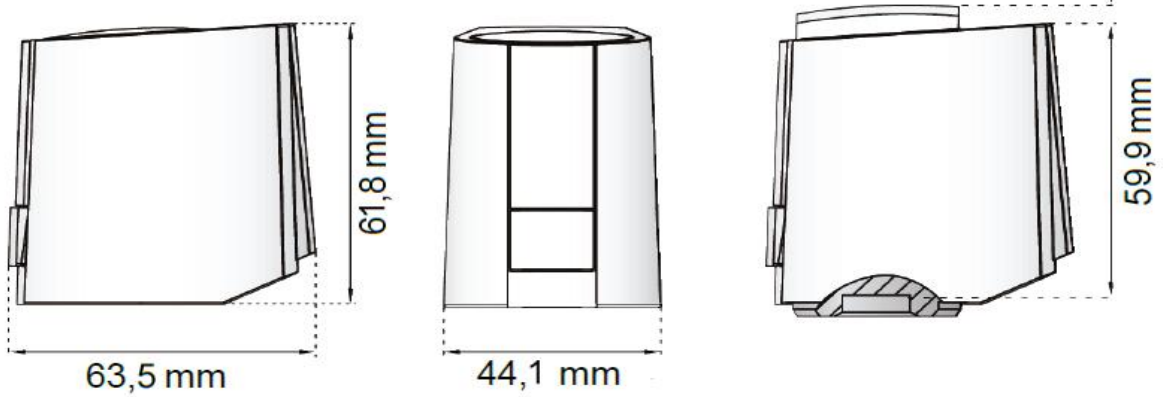
HERZ Actuator 7990

Data sheet for 7990 Issue 0916



Dimensions **Installation height**

1 **7990** 31 **HERZ Actuator modulating 0..10 V, M28 x 1.5, 24 V, 50 Hz**
normally closed, closing force 100 N, operating voltage 24 V ~,
threaded connection M28 x 1.5, blue adapter
1 **7708** 85 is included, max. stroke 5 mm

1 **7990** 32 **HERZ Actuator modulating 0..10 V, M28 x 1.5, 24 V, 50 Hz**
normally closed, closing force 125 N, operating voltage 24 V ~,
threaded connection M28 x 1.5, blue adapter
1 **7708** 85 is included, with valve path recognition, max. stroke 6,5 mm

Application 1 **7990** 31, 1 **7990** 32

The HERZ-Actuator proportional 5/6,5 mm is a thermoelectric actuator for the control of heating and cooling systems in direct proportion to the applied control voltage. The control of the actuators is performed by a 0-10 V DC signal via a central DDC system or by a room thermostat. Principal area of application is the building management system range.
Furthermore, the variant 1 7990 32 with valve path recognition automatically register the valve path for an optimum use of the active control voltage range. This guarantees an even more precise control of all valves.

Operation

The actuating drive is switched on via an electrical contact, e.g. from a room thermostat, and starts opening or closing the thermostatic valve. The actuating movement is accomplished by an electrically-heated expansion element. When the heating current is switched off, the valve closes or opens respectively. The HERZ actuating drive is maintenance-free and offers silent operation.

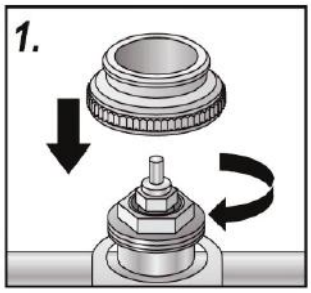
Emergency function

With factory setting “normally closed” the valve can be opened by removing the drive in case of a power failure.

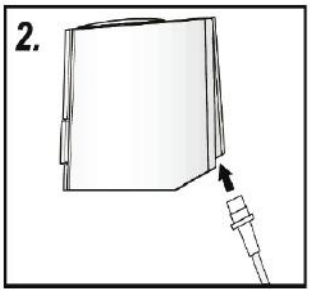
Installation 1 **7990** 31, 1 **7990** 32

The valve adapter assortment guarantees a perfect match of the actuator to almost all valve bottoms and heating circuit distributors available on the market. The HERZ Actuator Proportional is simply plugged on to the valve adapter previously installed manually.

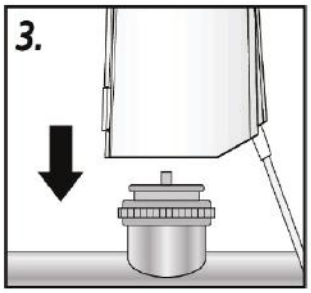
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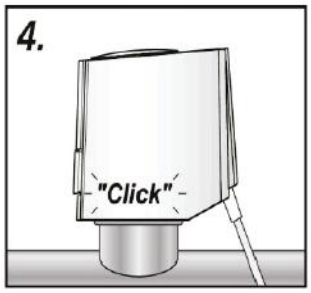
Screw the adapter manually onto the valve.



Connect the line to the actuator.



Position the HERZ Actuator manually in vertical position to the valve adapter.



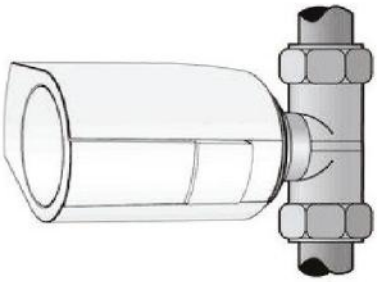
Latch the HERZ Actuator to the valve adapter by manually applied vertical pressure; this can be done noiselessly and without any problems.

Installation position

The HERZ-Actuator must be installed preferably in vertical or horizontal installation position. For “upside down” installation special circumstances (e. g. drain water) can reduce the lifetime of the actuator.



Vertical



Horizontal



Upside down

Technical data 1 **7990** 31, 1 **7990** 32

Voltage	24 V AC, -20 %... +20 %
Control voltage range	0 V… 10 V DC
Max. inrush current	< 300 mA for max. 2 Min.
Operating power	1. W[1)] (1 **7990** 31) / 1.2 W[1)] (1 **7990** 32)
Resistance of control voltage input	100 kΩ
Stroke	5 mm (1 **7990** 31) / 6.5 mm (1 **7990** 32)
Actuating force	100 N ±5% (1 7990 31) / 125 N ±5% (1 7990 32)
Fluid temperature	0 to +100°C 2)
Storage temperature	-25°C to +65°C
Ambient temperature	0 to +60°C
Degree / class of protection	IP 54[3)] / III
CE conformity	according to EN 60730
Casing material / colour	Polyamid / white
Connection line / colour	3 x 0.22 mm² PVC / white

1) measured with precision reference instrument LMG95 - 2) in dependence of the adapter even higher - 3) in all installation positions

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Room thermostat

Standard room thermostats equipped with a thermal feedback loop can be used for piloting the HERZ actuating drive. If required, several drives can be connected in parallel taking the maximum admissible electrical load of the switch contact into account.

Design and planning notes

When selecting the switch contacts and mains fuses, the inrush current of the heating element must be taken into account. The voltage loss in the electric lines must not exceed 10 %, ensuring that the indicated runtime is guaranteed.

Max. cable length for an actuating drive with given cable cross-sections (information with voltage drop approx. 5 %; at 230 V voltage drop is 10 V, at 24 V voltage drop is 1 V).

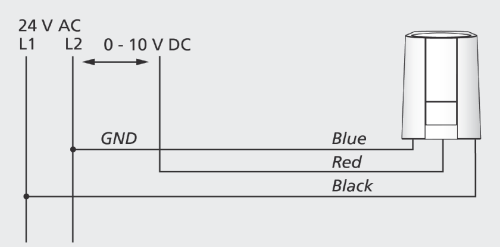
When using several actuating drives, the indicated cable length must be divided by the number of actuating drives connected.

Cable cross-section (mm2)	230 V, max. length (m)	24 V, max. length (m)
2 x 0.75	1500	168
2 x 1.0	2000	224
2 x 1.5	3000	340
2 x 2.5	5000	560

Resistance values

Please refer to the HERZ standard diagrams contained in the relevant standard sheets with regard to resistance values when operating HERZ valves with HERZ actuating drives. The curves "Valve fully open" or "max." apply.

Electric connections 1 **7990** 31, 1 **7990** 32



Calculation of maximum cable length (copper cable) for 24 V rated voltage
L = C x A / n
L Cable length in m; K Constant (269 m/mm²); A Conductor cross section in mm²; n Number of Alpha-Actuators

We recommend the following cables for installing a 24 V system:
Telephone line J-Y(ST)Y 0.8 mm2
Light plastic-sheathed cable: NYM 1.5 mm²
Flat webbed building wire: NYIF 1.5 mm²

Transformer: A safety isolating transformer according to EN 61558-2-6 must always be used. Transformer dimensioning results from the making capacity of the HERZ-Actuators.
Rule-of-thumb formula: Ptransformer = 7.2 W x n
n = Number of OEM Actuators

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