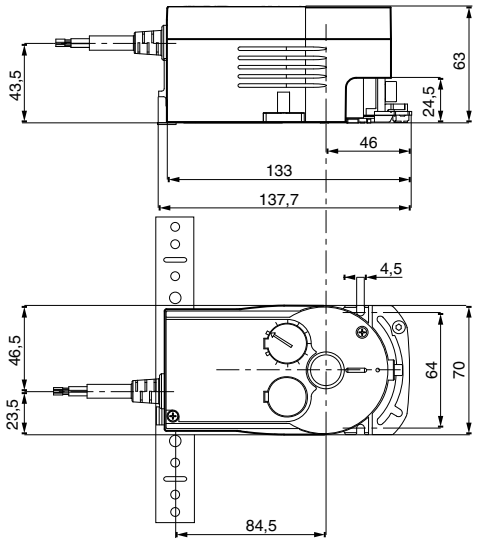
HERZ Damper actuator with/without SUT

Datasheet **7712** 25, 27, Issue 0620

Dimensions in mm





Models

1 **7712** 25 Damper actuator
Torque 10 Nm, Supply voltage AC 230 V, Control: 2-/3-point
for HERZ 3 way valve 1 2137 XX

1 **7712** 27 Damper actuator with SUT
Torque 10 Nm, Supply voltage AC/DC 24 V, Control: 2-/3-point, constant
for HERZ 3 way valve 1 2137 XX

Features

- For controllers with switching (2- and 3-point) or continuous output (0…10 V, 1 **7712** 27 only)
- Self-centring spindle adapter
- Gear unit can be disengaged to position the damper and for manual adjustment
- Stepping motor with electronic activation and cut-out
- Maintenance-free
- Intelligent adaptation of angle of rotation, incl. feedback adjustment (1 **7712** 27 only)
- Suitable for all fitting positions

Technical data

General	
Construction	
Weight	0,7 kg
Housing	Lower section black, upper section red
Housing material	Fire-retardant plastic
Power cable	1,2 m, 3×0,75 mm² (1 **7712** 25) 1,2 m, 5×0,5 mm²(1 **7712** 27)

Parameters	
Angle of rotation	95°
Admissible damper shaft	Ø 8...16 mm, □ 6,5...12,5 mm
Adm.. damper shaft (hardness)	Max. 300 HV
Operating noise	< 30 dB (A)
Response time	200 ms

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Ambient conditions	
Adm. ambient temperature	–20...65 °C
Adm. ambient humidity	5…85 % rF no condensation
Control	2-/3-point
Supply voltage	AC 230 V

Type of protection	IP 54 according to EN 60529
Protection class 230 V	II according to IEC 60730

CE conformity according to	EMC-Richtlinie 2004/108/EG EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4 Directive 2006/95/EG EN 1050 Low-voltage directive EN 60730-1, EN 60730-2-14
Over-voltage category	III,
Degree of contamination	II

1) Operating time approx. 80% up to 65 °C, 100% up to 55 °C

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Power supply	
Supply voltage 24 V~	±20%, 51...60 Hz
Supply voltage 24 V=	±20%

Postioner	
Control signal y	0...10 V, Ri > 100 kΩ
Positional feedback	0...10 V, load > 10 kΩ
Starting point U0	0 V or 10 V
Control span ΔU	10 V
Switching range Xsh	200 mV

Ambient conditions	
Adm. Ambient temperature	–20...55 °C
Adm. ambient humidity	< 95% rF no condensation

Type of protection	IP54 according to EN 60529
Protection class	III according to IEC 60730
CE conformity according to	EMV-directive 2004/108/EU EN 61000-6-1, EN 61000-6-3 EN 61000-6-4 Directive 2006/95/EG Machine directive (EN 1050)

Description of operation

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When voltage is applied to the cable, the control unit to be activated is moved to any desired position.

Direction of rotation for 3-point control (viewing the spindle adaptor from the actuator):

- The spindle adaptor turns in the clockwise direction, with the voltage on the brown cable.
- The spindle adaptor turns in the anti-clockwise direction, with the voltage on the black cable.

Direction of rotation for 2-point control (viewing the spindle adaptor from the actuator):

There is always voltage on the black cable.

- The spindle adaptor turns in the clockwise direction, with the voltage on the brown cable.
- The spindle adaptor turns in the anti-clockwise direction, with no voltage on the brown cable.

In the end positions (limit stop in air damper or maximum angle of rotation reached), or in the case of an overload, the magnetic coupling is activated. The positioning signal is switched off by the electronic cut-out after 3 minutes. The effective end position results from the limit stop of the damper or the angle-of-rotation limit, or by reaching the maximum angle of rotation of 95°. The manual adjustment is performed by releasing the gear unit using the adjuster beside the connection cable and simultaneously adjusting the spindle adaptor. With 3-point control, the direction of rotation is changed by swapping the connections.

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Depending on the type of connection (see connection diagram), the actuator can be used as a continuous 0...10 V, 2-point (OPEN/CLOSE) or 3-point actuator (OPEN/STOP/CLOSE) with an intermediate position. The running time of the actuator can be set with switches S1 and S2 according to requirements.

The manual adjustment is performed by releasing the gear unit using the adjuster beside the connection cable and simultaneously adjusting the spindle adaptor.

Additional technical data

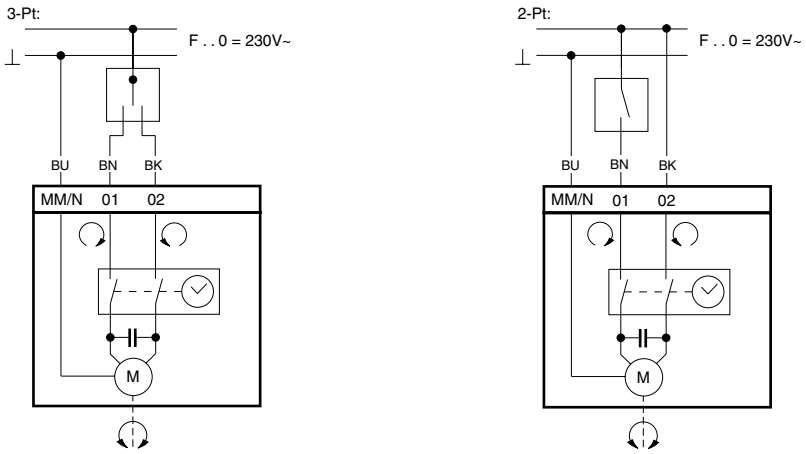
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The upper section of the housing with the cover and indicator knob contains the synchronous motor with capacitor. The lower section of the housing contains the maintenance-free gear unit and the gear-release knob. To reverse the direction of rotation for 3-point control, the brown and black cables must be swapped. The actuators are protected against incorrect connection.

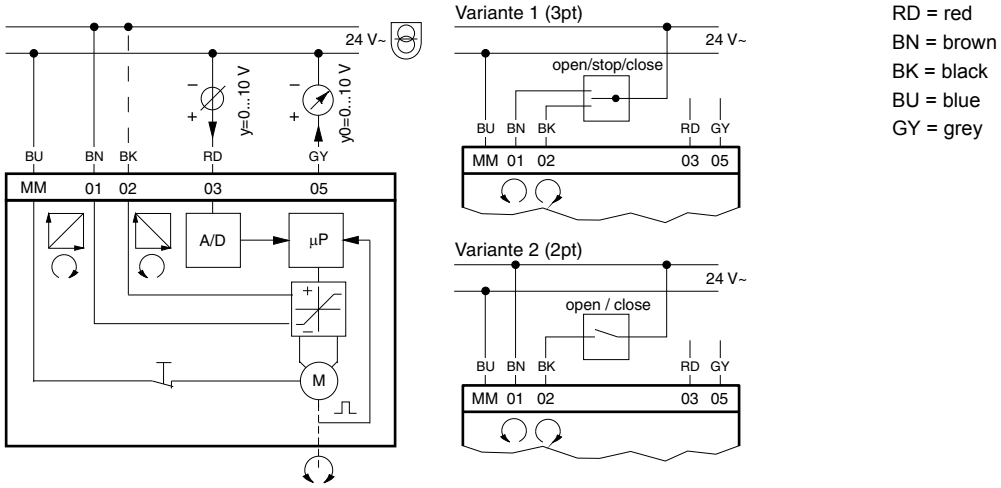
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The upper section of the housing with the cover, indicator knob and cover knob contains the stepping motor and the SUT electronics. The lower section of the housing contains the maintenance-free gear unit, the gear-release lever and the spindle adaptor.

Connection diagram 1 7712 25



Connection diagram 1 7712 27



RD = red
BN = brown
BK = black
BU = blue
GY = grey

Connection as 2-point control unit

This OPEN/CLOSE activation can be performed via 2 cables. The actuator is connected to the voltage via the blue and brown cables. The damper actuator is moved to the end position by connecting the voltage to the black cable (clockwise direction to 100% angle of rotation). After the voltage is switched off, the actuator moves to the opposite end position. The unused red and grey wires must not be connected or come into contact with other cables. We recommend that you insulate these.

Connection as 3-point control unit

When voltage is applied to the cable (brown or black), the damper actuator can be moved to any desired position. Direction of rotation (viewing the spindle adaptor from the actuator):

- The spindle adaptor turns in the clockwise direction, with the voltage on the black cable.
- The spindle adaptor turns in the anti-clockwise direction, with voltage on the brown cable.

In the end positions (limit stop of damper, limit stop due to angle-of-rotation limit, max. angle of rotation of 95° reached) or in the case of an overload, the electronic motor cut-off is activated (no limit switches). Direction of rotation changed by transposing the connections.

The unused red and grey wires must not be connected or come into contact with other cables. We recommend that you insulate these.

Connection for control voltage 0...10 V

The built-in positioner controls the actuator depending on controller's output signal y.

Direction of rotation (viewing the spindle adaptor from the actuator):

Direction of operation 1 (mains power supply on brown cable):

When the positioning signal is increasing, the spindle adaptor turns in the clockwise direction

Direction of operation 2 (mains power supply on black cable):

When the positioning signal is increasing, the spindle adaptor turns in the anti-clockwise direction The starting point and the control span are fixed. Depending on the direction of operation, only the brown cable or the black cable may be connected. The other cable must be insulated.

When the voltage is connected, the stepping motor moves to the two end stops one after the other, and determines its effective angle of rotation. Thanks to the electronics, no steps can be lost, and the actuator does not require periodic re-adjustment. In the case of a power failure longer than at least 5 min, or directly after manual adjustment, the actuator automatically readjusts itself. When the angle of rotation is changed, the manual adjuster must be used to trigger a new adjustment so that the actuator, the control voltage 0...10 V and the feedback signal adjust to the new angle of rotation. Switch S3 can be used to switch off the automatic initialisation. The positioning motor now works in the manual or controlled initialisation mode and must be manually moved to the end stops by the controller output signal, or it is automatically moved to the end stops by the control behaviour in the control loop. If it detects a new limit stop, this is saved and the feedback signal is adjusted accordingly. Then the current position is calculated and output. When control signal 0…10 V is interrupted and direction of operation 1 is connected, the damper is closed completely (0% position).

Coding switch 1 7712 27

1 **7712** 27	S1	S2	S3
120s	OFF	ON	-
120s	ON	ON	-
60s	ON	OFF	-
60s	OFF	OFF	-
Initialisation on	-	-	ON
Initialisation off	-	-	OFF
Factory setting position	ON	ON	ON

Engineering and fitting notes

The concept of the synchronous motor enables the electric parallel operation of multiple damper actuators. The actuator can be installed in any position (including a hanging position). It is plugged directly onto the damper spindle and clipped to the anti-torsion device. The self-centring spindle adapter protects the damper spindle. The damper actuator can be detached from the damper spindle very easily without removing the anti-torsion device.

The angle of rotation can be limited to between 0° and 90° and continuously adjusted between 5° and 80°. The limit is fixed using a set screw directly on the actuator and the limit stop on the self-centring spindle adapter. The spindle adapter is suitable for Ø 8...16 mm and □ 6.5...12.7 mm damper spindles.