

Installation Guide

TS-35 230V Ascent Thermal Actuator 2-wire,
Normally Closed (NC) with Manually Open (MO) Clip



TS-35 230V Ascent Thermal Actuator



The TS-35 is a professional-grade 230V electrothermal actuator engineered for highly reliable multi-zone underfloor heating (UFH) and HVAC control. Designed for seamless integration into residential and commercial environments, it provides trade professionals with a robust solution for complex zonal heating.

The actuator features a unique manual 90-degree Manually Open (MO) clip that opens the actuator without electrical power, drastically reducing commissioning and system filling time.

Technical Specification

Product Model	TS-35 230V Ascent Thermal Actuator 2-wire, Normally Closed (NC) with Manually Open (MO) Clip
Product Code	TACT-0301
Actuator Type	Normally Closed (NC)
Operating Voltage	230V AC 50/60Hz
Power Consumption	2.5W
Start-up Current	Max 300mA
Drive / Closing Force	130N
Pin Travel / Stroke Range	Min 3.5mm Max 4mm
Connection Size	M30 x 1.5mm
Protection Grade	IP54
Cable Length	1000mm / 1m
Storage Temperature	-10°C to +50°C
Compliance	CE, RoHS, WEEE
Compliance Standards	EN 60730-1 and EN 60730-2-5:2015+A1:2019

Regulatory Compliance & Safety ⚠

Installation must be carried out by a qualified professional, adhering to UK wiring regulations (BS 7671).

BS 7671 Requirements: The electrical circuit must feature a means of isolation with a minimum 3mm contact separation on all poles.

RCD Protection: The circuit must be protected by a Residual Current Device (RCD) with a rated operating current not exceeding 30mA.

Building Regulations Part L: The TS-35 facilitates precise zonal control, supporting the conservation of fuel and power as mandated by Approved Document L.

Safety Warning: The internal spring rebound mechanism is highly forceful. Exercise extreme caution during handling to avoid pinching fingers.

Features

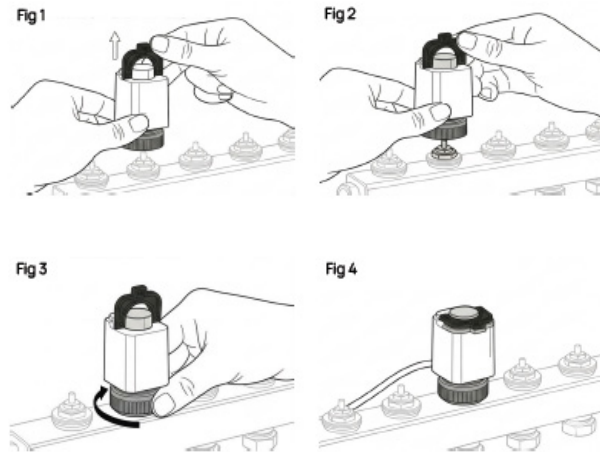
- **Manual Bypass Switch:** Features a unique 90-degree MO clip that allows for an "open status" without requiring electrical power. This significantly reduces time during system filling, commissioning and maintenance.
- **High Driving Force:** Provides a robust 130N closing force to ensure reliable valve operation.
- **Open Loop Status:** By locking the 90-degree manual clip in the "up" position, you can ensure specific zones (typically high-thermal-mass areas like a tiled hallway or tiled bathroom) remain open regardless of thermostat demand.
- **Smooth Operation:** Utilises a wax-filled capsule expansion principle for controlled opening and closing, which effectively prevents water hammer within the system.
- **Visual Status Indicator:** Includes a cylindrical indicator at the top of the housing; when this is fully raised, the actuator is in the open position.
- **Durable Construction:** Rated at IP54 for protection against dust and water splashes.
- **Versatile Compatibility:** Equipped with a standard M30 x 1.5mm connection size and with a pin travel range of 3.5mm to 4mm, ensuring compatibility with a wide range of professional manifolds.
- **Extended Protection:** Supported by a comprehensive five-year warranty from the date of installation.

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Installation Guidelines

Pre-Installation Checks

Valve Compatibility: Verify that the manifold or valve installation thread adheres strictly to the M30 x 1.5mm standard and the pin travel requirement is a minimum of 3.5mm and maximum of 4mm.



Step 1: Mounting the Actuator on the Manifold

1. Prepare the Actuator (Fig 1)

- Locate the MO clip at the top of the actuator.
- Lift the MO clip upwards as indicated by the vertical arrow. This reduces the internal tension of the mechanism to enable easy mounting.
- Failure to do this before mounting may prevent the collar from threading correctly onto the valve.

2. Align and Engage (Fig 2)

- Position the actuator directly above the chosen manifold valve port.
- Align the central internal pin of the actuator with the manifold valve spindle.
- Lower the unit onto the valve thread until the grey collar contacts the manifold.

3. Secure the Collar (Fig 3)

- Grip the grey M30 x 1.5mm threaded collar.
- Rotate the collar clockwise (hand-tight only) as shown by the directional arrow to secure the actuator body to the manifold rail.
- Ensure the actuator body remains upright and does not rotate with the collar.
- Over-tightening the grey collar with tools can crack the plastic housing or damage the manifold threads. Always tighten by hand.

4. Final Commissioning (Fig 4)

- **CAUTION:** The MO clip rebound is very strong, beware of pinching.
- Once the collar is secure, push the MO clip down into its final flat position. This will spring shut during the close process.
- This action releases the internal spring mechanism to engage with the manifold valve.
- Route the electrical cable neatly away from the manifold rail toward the wiring centre.

Step 2: Electrical Connections

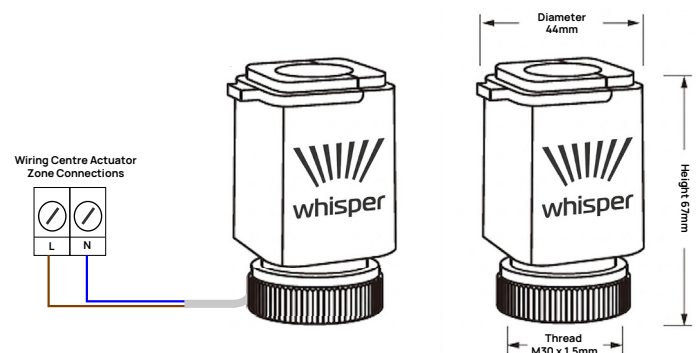
1. Electrical Connection / Heating Zone Accuracy

- **Isolate Power:** Ensure the mains power supply to the wiring centre is safely isolated before commencing any electrical work.
- **Identify Actuator Wiring:** The actuator is supplied with a two-core cable
 - Brown: Live (L)
 - Blue: Neutral (N)
- **Terminal Termination:** Connect the wires to the designated terminals for the specific zone within the wiring centre.
 - Connect the Brown (Live) wire to the switched live terminal for the corresponding zone.
 - Connect the Blue (Neutral) wire to the common neutral terminal.
- **Cable Management and Strain Relief:** Route the 1000mm cable neatly away from the manifold rail using designated cable entries. Ensure the cables are supported to prevent tension on the terminal connections, in accordance with BS 7671.
- **Zone Accuracy:** Double-check that the actuator is wired to the correct zone.

2. Functional Testing & Commissioning

- **Power Up:** Restore power to the wiring centre once all covers are securely replaced.
- **Thermostat Activation:** Turn on the room thermostat for the specific zone being tested.
- **Verification:** Confirm the actuator opens correctly. Note that thermal actuators typically take 3–5 minutes to react. Check the indicator window or pop-up pin to verify the valve has opened.
- **Sequential Check:** Test each zone one by one to ensure there is no “cross-talk” or incorrect wiring between rooms.
 - Failure Check: If a room remains cold while another overheats, the actuators have likely been cross-wired at the wiring centre.
- **Documentation:** Fully complete the commissioning sheets. You should record
 - The specific room/zone associated with each actuator.
 - The date of installation and commissioning.
 - The company name and contact.

Dimensions & Wiring



Wiring: Connect the pre-wired 1m cable to the designated zone outputs on the wiring centre.

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Compatibility

Electrical Compatibility

- **Optimised Control:** The TS-35 is fully compatible with the Whisper Controls 230V KF Range of wiring centres.
- **Universal Integration:** The actuator is also designed for seamless operation with standard 3rd-party 230V wiring centres, making it a versatile choice for retrofit or new-build projects.

Mechanical Compatibility

- **Standardised Fitment:** The actuator utilises a standard M30 x 1.5mm connection size, ensuring it is compatible with a wide range of professional manifolds commonly found in the UK market.
- **Stroke Requirements:** The device provides a minimum 3.5mm stroke, providing the necessary travel to engage with standard manifold valve spindles effectively.
- **Valve Engagement:** With a robust 130N driving and closing force, the TS-35 ensures reliable valve closure and precise flow control across various manifold brands.

User Guide

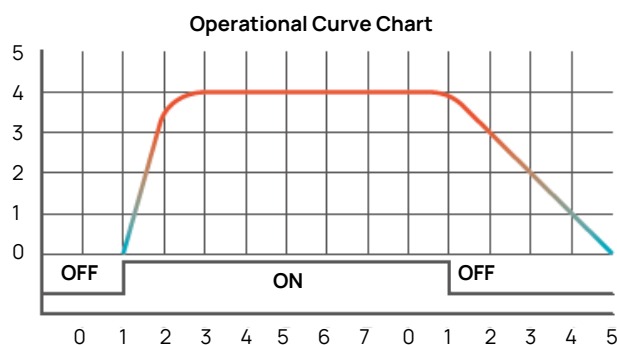
1. Actuator Mechanics

The TS-35 utilises a wax-filled capsule expansion principle. It does not operate instantaneously like a solenoid; it provides smooth, controlled opening and closing to prevent water hammer.

Visually, when the cylindrical indicator is flat or only slightly raised from the top surface of the actuator, the actuator is in a closed/off position. When the button is clearly protruding up from the actuator housing, the actuator is in an open/on position.

2. Operation Curve

When an "ON" signal (230V) is received from the thermostat/wiring centre, the internal wax element begins to heat.



It requires around 3 minutes for the element to expand fully and achieve the minimum 3.5mm stroke required to open the valve completely.

When power is removed ("OFF"), the 130N spring force returns the valve to its normally closed (NC) position as the wax cools.

3. Commissioning / Manual Override

During initial system filling, flushing, or maintenance, electrical power is often unavailable. Use the 90-degree MO clip to mechanically lock the valve in the open position. Ensure this is toggled back to automatic mode prior to normal system operation.

Frequently Asked Questions (Homeowner Guide)

Why is the cylindrical button / indicator on top of my actuator raised?

The protruding cylindrical button is a visual status indicator. When the button is raised, the actuator is in the "open" or "on" position, allowing water to flow through that manifold circuit. When the button is flat or only slightly raised, the actuator is "closed" or "off".

My thermostat is on, but the actuator hasn't moved yet. Is it broken?

Not necessarily. The TS-35 uses a wax-filled capsule that expands gradually to provide smooth, controlled opening and prevent water hammer. It typically requires 3–5 minutes after receiving a signal from the thermostat to reach its full 4mm stroke.

What is the black clip at the top of the unit for?

This is a "manually open" (MO) bypass switch. It allows the valve to be locked in an open position mechanically without needing electrical power. This is primarily used by engineers for system filling, flushing, or maintenance. Ensure this is pushed down into the flat position for normal automatic operation.

My living room is cold, but the kitchen is too hot. What should I do?

This often indicates that actuators have been "cross-wired" to the incorrect zones in the wiring centre. Do not attempt to open the wiring centre yourself. This is a high-voltage environment (230V). You must contact a qualified electrician to rectify the wiring mapping.

Can I leave the actuator in the manually open position permanently?

While the manually open position is useful for system filling or creating bypass loops for heat pumps and boilers, it must be used with extreme caution. Unless a system has been specifically designed for an open loop (underfloor heating loop, radiator or towel rail), you should always close the clip back to the horizontal position for normal operation.

CAUTION: Risk of Damage to Floor Finishes

Do not leave actuators in the "manually open" position if the underfloor heating zone contains delicate floor finishes (such as engineered wood, Karndean, or certain laminates).

When the manual clip is engaged, the actuator is mechanically locked open. This means the room thermostat and floor sensor cannot shut off the heat to that zone. If the water temperature exceeds the floor manufacturer's limits, it may cause permanent warping, cracking, or adhesive failure.

Warranty

Five-Year Warranty: The TS-35 is supported by a 5-year warranty from the date of installation, backed by a proven manufacturing defect indemnity policy with a limit of £5,000,000 per incident.

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Product Support: 01993 640073

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Download a digital version of this manual or to find out more about our range of controls:

www.whispercontrols.com



Activate Your Warranty

To validate the 5-Year Warranty on your Whisper Controls product, you must register your installation within 7 days of fitting.

The warranty is offered subject to the following key conditions:

Installation: Must be carried out by a UK qualified professional with relevant electrical competence and conform to BS 7671: 18th Edition IET Wiring Regulations.

Building Regulations: Installation must comply with Part P of the Building Regulations in England and Wales.

Indemnity: The warranty includes compensation for proven manufacturing defects up to a £5,000,000 limit of indemnity per incident.

For full terms and conditions, please visit our website.

www.whispercontrols.com