



Model	ID
S33ACT4	.3539878

DESCRIPTION

The Stream33 Thermal Actuator 24 V is a thermoelectric actuator for opening and closing valves used in the fields of heating, ventilation and air conditioning engineering. The integrated micro-switch with floating contact allows direct operation of a pump or a fan control unit. The Stream33 Thermal Actuator 24 V with end switch is controlled by a corresponding room thermostat with two-point output or pulse-width modulation.

APPLICATION

- Two-point control systems in heating, air conditioning and ventilation systems
- Control of circuit distributors for individual room temperature control of concealed heating and cooling systems
- Control of radiators, convectors and similar units
- The integrated switch with floating contact allows direct or with a relay operation of a pump or fan control unit

SUBMITTAL SHEET

PROJECT INFORMATION

Job Name:

Location:

Engineer:

Contractor:

P.O. Number:

Representative:

FEATURES

- Integrated micro-switch with floating contact
- Compact size, small dimensions
- Protection against leaky valves
- All around function indicator
- Maintenance-free
- High functional safety and long expected service life
- Low power consumption
- 360° Installation position
- Snap-on installation
- Valve-adapter concept
- Adaptation check on valve
- 39-3/8" (1 m) cable included

GENERAL INFORMATION

Scope of Supply (standard)

- 1x Stream33 Thermal Actuator 24 V with end switch
- 1x cable 39-3/8" (1 m)
- 1x installation manual with ten languages

Type

A 4024: Version 24 V with 24 V end switch - normally closed

FUNCTIONS

In General

The actuator mechanism of the Stream33 Thermal Actuator uses a PTC resistor-heated elastic element and a compression spring. The wax element is heated by applying the operating voltage and moves the integrated ram. The force generated by the movement is transferred on the valve lifter and thus opens and closes the valve.

Standard Version

Normally Closed (valve closed)

Upon switching on the operating voltage, the valve is opened steadily from the position "closed" by the ram motion. The integrated micro-switch is closed after an actuator travel of 1/16" (2 mm). After the operating voltage is cut and after expiry of the hold time, the valve is closed evenly by the closing force of the compression spring. This allows using the micro-switch signal as a function corresponding to the opening of the valve. The closing force of the compression spring is matched to the closing force of commercially available valves and keeps the valve normally closed.

Valve-Adaptor-Concept

A valve-adaptor concept guarantees a perfect match of the actuator to almost any valve bottom or heating circuit distributor available on the market. Simply snap on the Stream33 Thermal Actuator to the pre-installed valve adapter.

Function Display

The function display of the Stream33 Thermal Actuator (all-round display) allows identifying the operating condition (valve open and closed and positions) at a glance.

TECHNICAL DATA

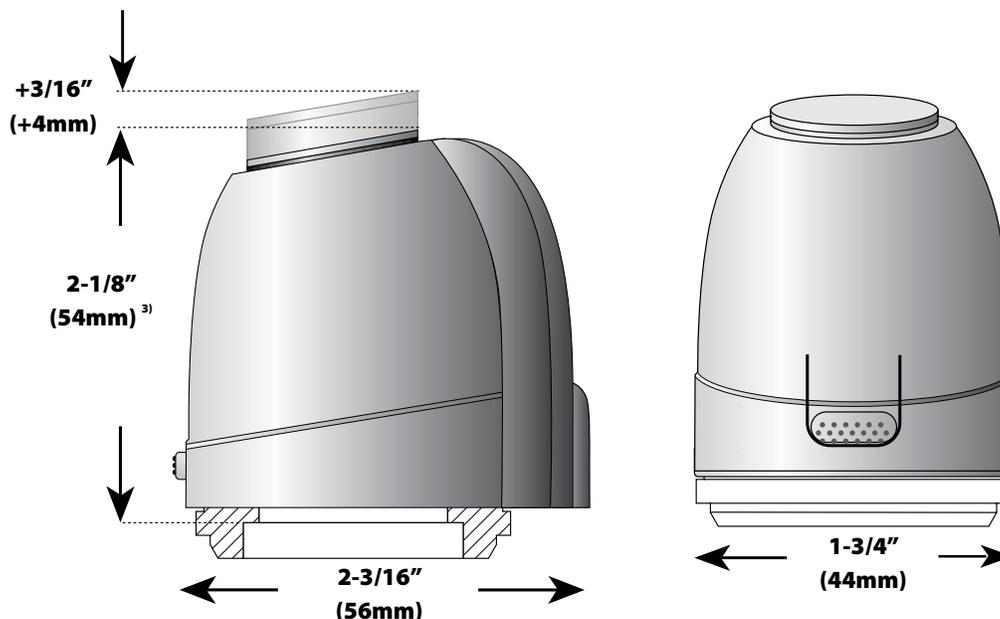
Type	A 4024
Version	Normally closed
Voltage	24 V AC/DC, +20%...-10%, 0-60 Hz
Max. inrush current	250 mA during 2 min. max.
Operating current	75 mA
Operating power	1.8 W
Closing and opening times	Approx. 3 min.
Actuator travel	3/16" (4 mm)
Actuating force	100 N ± 5%
Micro-Switch	24 V AC: 3 A ohm resistive load, 1 A inductive load
Switching point	Approx. 1/16" (2mm)
Fluid temperature	50 - 212° F (10 - 100° C ¹⁾)
Storage temperature	-13 to 140° F (-25 to 60° C)
Ambient temperature	32 to 140° F (0 to 60° C)
Degree	IP 54 ²⁾
CE conformity according to	EN 60730
Housing / housing color	Polyamide / grey
Weight	5-1/2 oz (155 g) with a 39-3/8" (1 m) connecting cable
Connecting cable / length	3/16" x 1/16" ²⁾ PVC, grey / 39-3/8" (4 x 0.75 mm ² PVC, grey / 1 m)

1) in dependence of the adapter even higher

2) in all installation positions

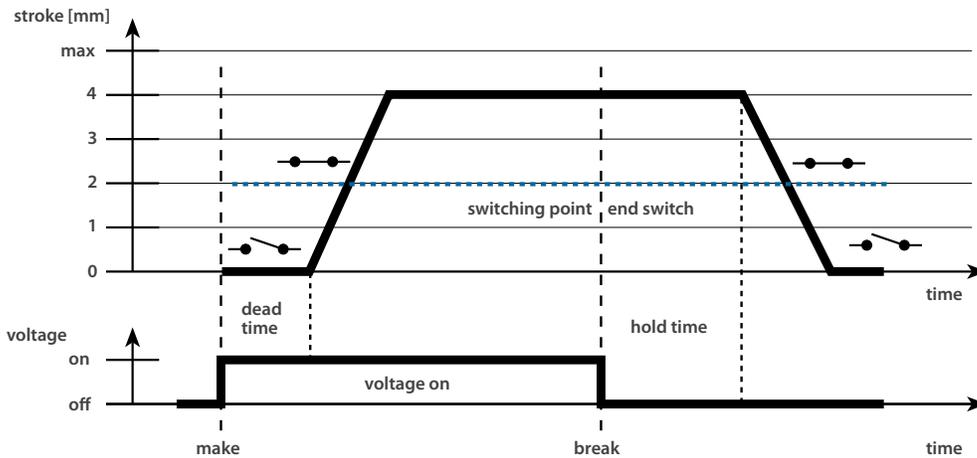
3) referring to standard valves

ACTUATOR WITH VALVE ADAPTER



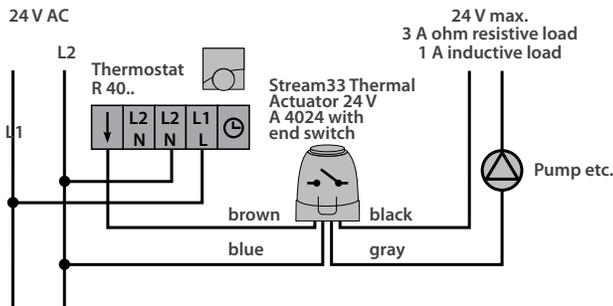
CHARACTERISTIC CURVES

Normally Closed (NC)



PLANNING AND INSTALLATION NOTES

Connections Overview



Calculation of maximum cable length (copper cable) for 24 V rated voltage

$$L = K \times A / n$$

A - Conductor cross-section in mm²

n - Number of actuators

K - Constant (269 m/mm²)

L - Cable length in m

We recommend the following cables for installing a 24 V system:

Bell wire: Y(R) 0,6 mm²

Light plastic-sheathed cable: NYM 1,5mm²

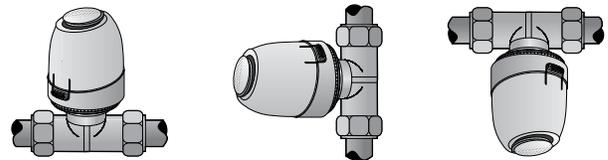
Flat webbed building wire: NYIF 1,5mm²

Transformer:

A safety isolating transformer according to EN 60335 must always be used. Transformer dimensioning results from the making capacity of the Stream33 Thermal Actuators.

Rule of thumb formula: $P_{\text{transformer}} = 6 W \times n$
n = number of Stream33 Thermal Actuators

Recommended Installation Positions



Preferred installation positions of the Stream33 Thermal Actuator are vertical and horizontal. An upside down position may reduce product life through special circumstance (e.g. contaminated water).

Valve Adaptation

