

# Danfoss AIT-U Actuator For Temperature Control Instructions



## Contents

### 1 Instructions

#### 1.1 Type AIT-U

##### 1.1.1 Actuator for temperature control AIT-U

##### 1.1.2 Safety Notes

##### 1.1.3 Definition of Application

##### 1.1.4 Mounting

##### 1.1.5 Permissible Installation Positions

##### 1.1.6 Installation

##### 1.1.7 Actuator AIT-U Mounting

##### 1.1.8 Temperature Sensor Installation

##### 1.1.9 Application examples

##### 1.1.10 Dimensions

##### 1.1.11 Filling the System, Pressure Test

##### 1.1.12 Temperature Setting

##### 1.1.13 Procedure

##### 1.1.14 Technical Data

##### 1.1.15 Help

### 2 Documents / Resources

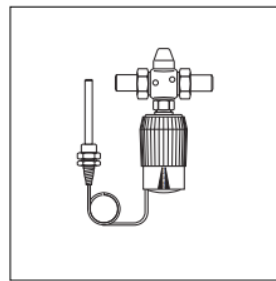
#### 2.1 References

### 3 Related Posts

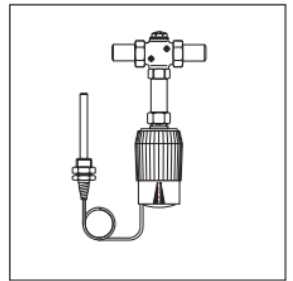
## Instructions

### Type AIT-U





AIT-U / VIG 2



AIT-U / VIS 2

## Actuator for temperature control AIT-U

[www.danfoss.com](http://www.danfoss.com)

7369189-0

VI.GB.A2.81

### Safety Notes

Prior to assembly and commissioning, these Assembly, Start-up, and Maintenance Instructions must be read carefully and observed.

Necessary assembly, start-up, and maintenance work must only be performed by qualified, trained, and authorized personnel.

Prior to assembly and maintenance work at the temperature sensor without immersion pocket or at the immersion pocket, the system must be depressurized, cooled down and emptied.

Please comply with the instructions of the system manufacturer or system operator.



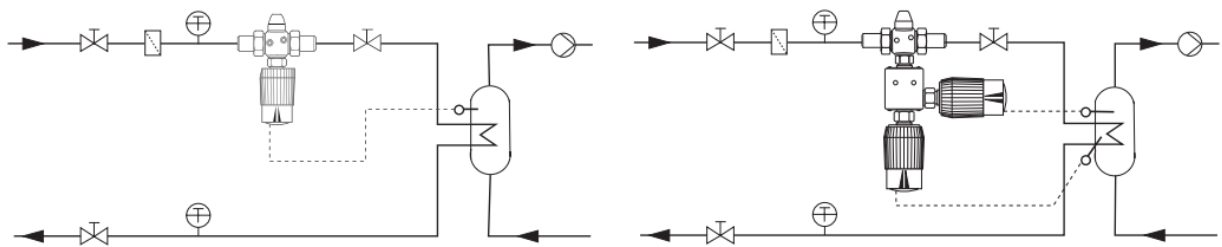
### Definition of Application

The actuator AIT-U is used for temperature control in combination with Danfoss valves and Danfoss controller combinations.

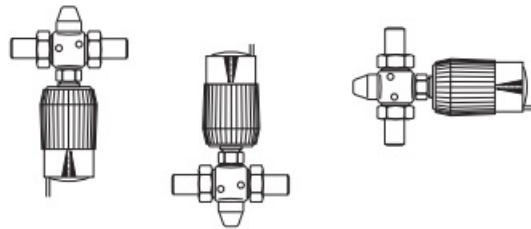
The controllers with the actuator AIT-U are type-tested acc. to DIN 3440 and comply with the safety requirements for temperature control and temperature limiting units in heat systems.

### Mounting

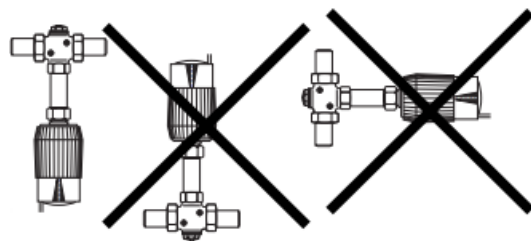
Application system examples



## Permissible Installation Positions



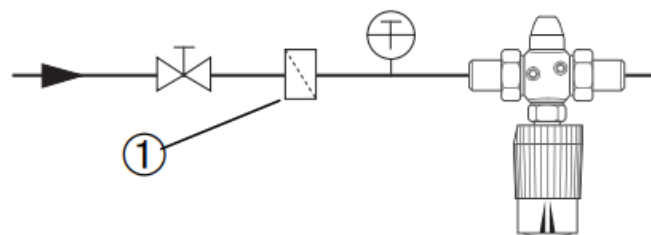
AIT-U / VIG 2



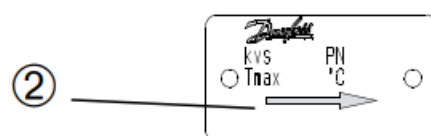
AIT-U / VIS 2

## Installation

1. Install strainer (1) before controller.

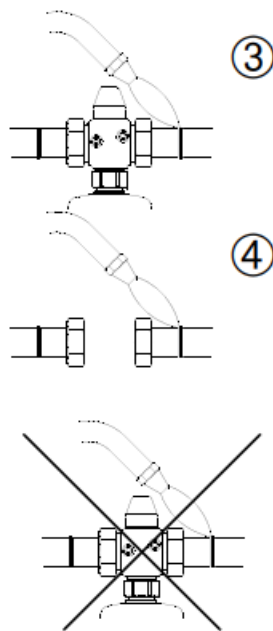


2. Observe flow direction (2) on rating plate or valve.



Design with welded end

- (3) pin only
- (4) weld



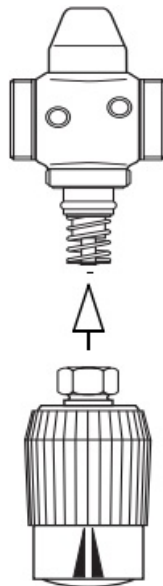
3. Rinse system.

#### **Actuator AIT-U Mounting**

Before mounting the actuator, carry out the filling of the system and pressure tests, see page 9

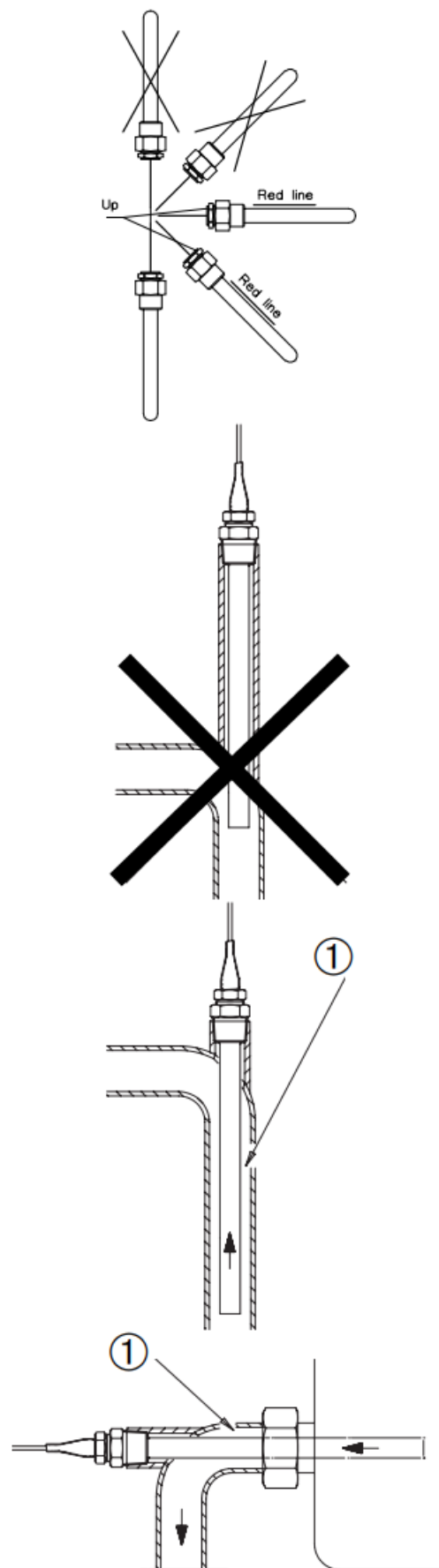
Place actuator AIT-U at the valve or combination pipe and tighten union nut with wrench SW36.

Torque 35 Nm

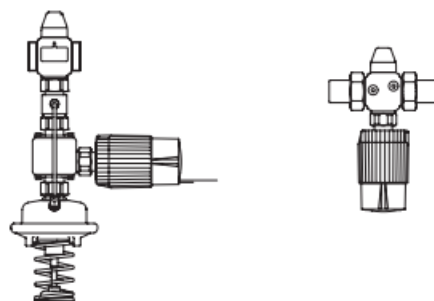


#### **Temperature Sensor Installation**

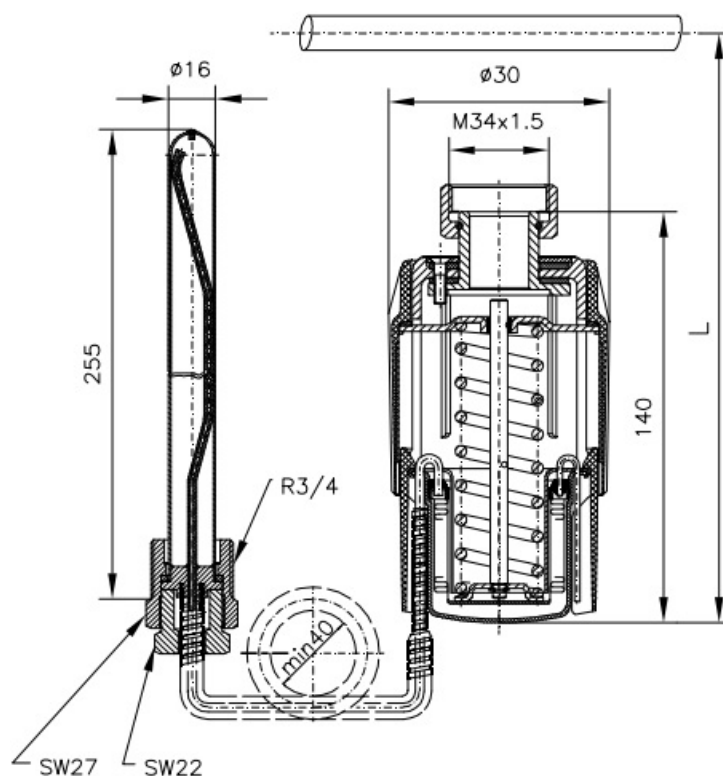
- The temperature sensor must be installed as shown on the picture.
- The capillary tube may not be twisted or buckled. The minimum bending radius is 50 mm.
- The place of installation must be chosen in such a way that the temperature of the medium is directly taken without any delay. Avoid overheating of temperature sensor
- The temperature sensor must be immersed into the medium in its full length.



Application examples



## Dimensions



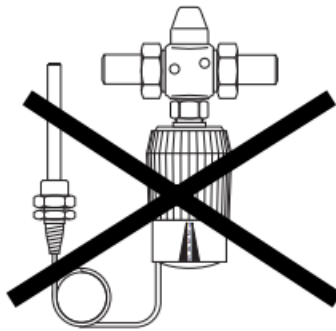
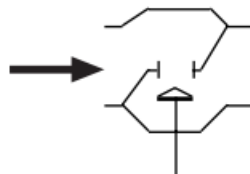
Valve		L by DN					
Type	Connection	15	20	25	32	40	50
VIG 2	Flange	174	180	180	210	214	214
VIG 2	Thread	174	180	180	–	–	–
VIS 2	Thread	247	247	247	–	–	–

## Filling the System, Pressure Test

### Valves VIG 2, VIS 2

Without actuator the valve is opened, therefore carry out filling the system and pressure tests **only without mounted actuator**.





### Temperature Setting

The setpoint range is marked on the scale carrier.

### Pre-conditions

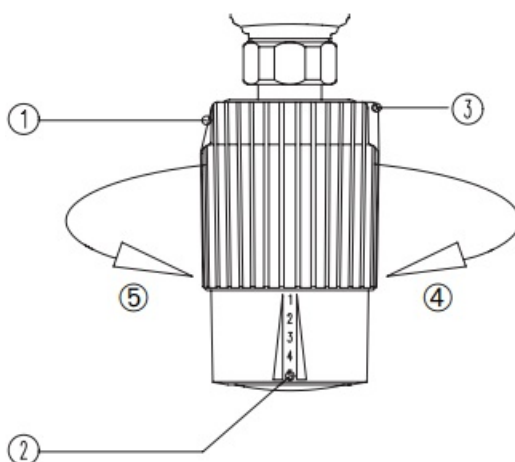
- The system must be open and the flow of the medium guaranteed.



	AIT-U			
	10-45	35-70	60-100	85-125
Min	10	35	60	85
1	14	38	64	91
2	23	49	78	103
3	32	58	87	113
4	39	65	95	122
5	46	71	102	129
Max	48	73	129	131

## Procedure

- Adjust to the desired setpoint by turning the setpoint adjuster (1).  
Turning to the left increases the setpoint (4).  
Turning to the right reduces the setpoint (5).  
The position of the setpoint adjuster on a scale value (2) means:  
1 lowest setpoint  
5 maximum setpoint
- Observe temperature indicator.
- Wait for about 3 to 5 Min. until the temperature indicator shows the final value.
- If the device is used as a temperature monitor, the setpoint adjuster (1) must be secured by a sealing wire (3).



## Technical Data

### Thermostat AIT-U

Setpoint range Xs	°C	10 – 45, 35 – 70, 60 – 100, 85 – 125
Time constant T <sup>1)</sup>		max. 30
Transmission coefficient Ks	mm/°C	0.7
Max. perm. temperature at sensor	°K	50°K above adjusted setpoint
Perm ambient temperature at actuator and sensor	°C	-10 – 70
Nominal pressure on temperature sensor	PN	25
Connection pipe length	m	4
Temperature sensor material		Copper / Brass
Setpoint adjuster material		Polyamide glass fiber reinforced
Scale material		Polyamide
Mass	ca. kg	0,9

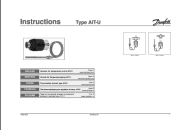
1) acc. to DIN 3440

## Help





Fault	Possible cause	Remedy
Temperature too high	Valve does not close: valve seat, plug or trim is dirty or damaged	<ol style="list-style-type: none"> <li>1. Dismount actuator AIT-U</li> <li>2. Unscrew trim</li> <li>3. Clean seat and plug</li> <li>4. Replace trim or valve if damaged</li> </ol>
	Actuator, temperature sensor or connection stem does not extend	<ol style="list-style-type: none"> <li>1. Loosen union nut SW36 and remove actuator AIT-U</li> <li>2. Unscrew temperature sensor</li> <li>3. Replace actuator AIT-U sensor</li> </ol>
Temperature too low	Valve does not open: trim dirty or damaged	<ol style="list-style-type: none"> <li>1. Dismount actuator AIT-U</li> <li>2. Unscrew trim</li> <li>3. Clean seat and plug</li> <li>4. Replace trim or valve if damaged</li> </ol>

## Documents / Resources

	<a href="#">Danfoss AIT-U Actuator For Temperature Control</a> [pdf] Instructions AQ00008644660001-010201, 7369189-0, VI.GB.A2.81, AIT-U Actuator For Temperature Control, AIT-U, Actuator For Temperature Control, For Temperature Control, Temperature Control
---	---

## References

-  [Danfoss France - économie d'énergie et solutions innovantes | Danfoss](#)
-  [Engineering Tomorrow | Danfoss](#)
- [User Manual](#)

[Manuals+](#), [Privacy Policy](#)

This website is an independent publication and is neither affiliated with nor endorsed by any of the trademark owners. The "Bluetooth®" word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. The "Wi-Fi®" word mark and logos are registered trademarks owned by the Wi-Fi Alliance. Any use of these marks on this website does not imply any affiliation with or endorsement.