

# 2-Way Temperature Sensing Valves

Models 2230 and 4430

## Overview

Model 2230/4430 is a normally-closed, 2-way valve which is opened by increasing temperature of engine cooling water, lubricating oil, high pressure gas or other fluids. The 2230/4430 can also be used to sensing high bearing or packing temperatures. Opening of the valve vents control pressure from an AMOT Mater Safety Control such as Model 2800 or 4261, and protects the engine, compressor, pump, gear case, and industrial machinery from over-temperature.

## Typical applications

- Lube oil
- Jacket water
- Discharge gases
- Bearings or packing

## Key features and benefits

- Compact, rugged design
- Factory set, field adjustable
- Compatible in hydraulic or gas systems
- Easy maintenance; few moving parts
- Compatible with complete AMOT shutdown systems
- No electricity required; failsafe
- No wires to break or corrode
- Viton seals standard
- Brass (2230) or stainless steel (4430) construction
- Temperature setting available from 30°C to 118°C (95°F to 245°F) standard or 129°C (265°F) high temperature
- Maximum pressure at the IN Port is 8.6 bar (125 psi)
- Maximum internal pressure on the temperature sensing element is 551 bar (800 psi)



Type 2230 Valve  
(Brass)

Type 4430 Valve  
(Stainless Steel)

# 2-Way Sensing Valves - Models 2230/4430

## Operation

Model 2230/4430 operation is simple and straight forward. As the temperature of the sensed fluid increases, wax enclosed in the valve's temperature sensing element expands against a push rod, which in turn unseats a valve allowing flow to travel from the valve's IN port and out the valve's OUT port. For visual indication that the temperature valve has tripped, use AMOT Model 4054 Trip Indicator.

Model 2230/4430 Temperature Valves are set at the factory, and the trip temperature is stamped on the valve body. The valve will start to bleed control pressure at 2°F to 4°F below its calibrated setting. Do not operate 2230/4430 beyond the valve's maximum continuous operating temperature. Both models are field service/adjustable. See 'Adjustment' on page 5.

## Specification

	<b>2230D</b>		<b>4430B</b>	
<b>Standard materials</b>				
Body & Nut	Brass		316 SS	
Seals	Viton		Viton	
Element	Brass		Brass	
Extensions	Brass		316 SS	
<b>Maximum pressure on temp. element</b>	55.1 bar	(800 psi)	55.1 bar	(800 psi)
<b>Maximum pressure at IN Port</b>	8.6 bar	(125 psi)	8.6 bar	(125 psi)
<b>Maximum net weight</b>	0.57 kg	(1 1/4 lbs)	0.57 kg	(1 1/4 lbs)
<b>Maximum net weight of well</b>	0.45 kg	(1 lb)	0.45 kg	(1 lb)

## Stainless Steel Wells

Two types of stainless steel well may be used with Model 4430 Temperature Valves. The 2766L well has a 1" NPT insertion connection, and a heavy wall thickness for pressures up to 10,000 psi. The 3802L well has a 3/4" NPT connection, a thinner wall and is good for 5,000 psi. Pressures are the maximum allowable.

To obtain working pressure, factors of safety should be applied as required by appropriate codes or regulations. In certain adverse conditions, a corrosion or erosion allowance should also be made.

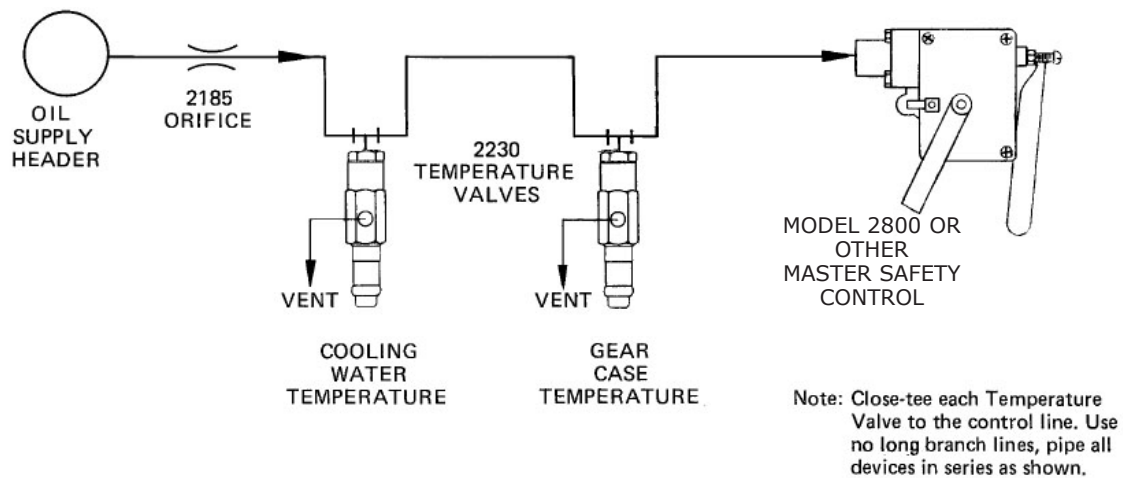
# 2-Way Sensing Valves - Models 2230/4430

## Installation

Before installing the Model 4430 it is advisable to run a 23"/32" dia. tap drill through the pipe fitting in which the unit will be placed. Some commercial fittings are not tapped deep enough and the threads may damage the valve's temperature element cup. Apply a quality thread sealant such as Loctite™ Pipe Sealant to pipe thread connections. Avoid introducing the sealant or other contaminants into the system.

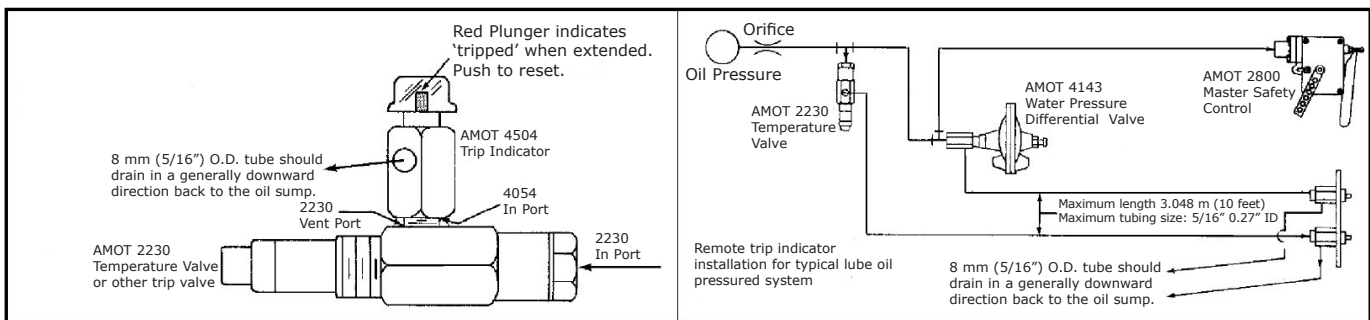
On a system using lubricating oil for control pressure, the vent port is connected to the engine oil sump. If natural gas is used, the vent port is connected to the system vent. No vent connection is required where air is the control medium, but the port should be protected from contamination by an AMOT 4125 vent closure or a tubing elbow turned downward.

### Typical Installation Diagram



## Optional Visual Trip Indicators

A typical installation for lube oil pressured system. It is also suitable for air or gas systems when not vented back to the oil sump.



# 2-Way Sensing Valves - Models 2230/4430

## How to order

Use the table below to select the unique specification of your 2230/4430 2-way sensing valve

<b>Example</b>	2230D	1	2	0	E	N	210F	***	<b>Code Description</b>							
<b>Basic Model</b>	2230D								Basic Model - Brass							
	4430B								Basic Model - Stainless Steel							
<b>Finish and Thread</b>		1							<b>Finish and Thread</b>							
			2						Standard, NPT							
				3					Standard, BSP (TR)							
					4				Plated NPT							
									Plated BSP (TR)							
<b>Seal Material</b>			2						<b>Seal Material</b>							
									<b>Temperature Element Extension</b>							
									<b>Installed Depth of Wells</b>							
									Installed Depth "L"		3/4" 3802L Well "M"		1" 2766L Well "N"			
									inch	mm	inch	mm	inch	mm		
<b>Temperature Element Extension/ Installed Depth of Wells</b>		0			(no extension)				1 3/8	34.9	-	-	1	25.4		
		1							2 3/16	55.6	1 11/16	42.9	2	50.8		
		2							2 1/2	63.5	1 15/16	49.2	2 1/4	57.2		
		3							3	73.2	2 7/16	61.9	2 3/4	69.9		
		4							3 1/2	88.9	2 15/16	74.6	3 1/4	82.6		
		5							4	101.6	3 7/16	87.3	3 3/4	95.3		
		6							4 1/2	114.3	3 15/16	100	4 1/4	107.6		
		7							5	127	4 7/16	112.7	4 3/4	120.7		
<b>Temperature Range</b>									<b>Temperature Range</b>							
									Temperature Range without a well (add 10°F if in a well)			Max. Continuous Allowable Temp.				
									°F		°C		°F		°C	
						A	K		65 - 95		18 - 35		120		49	
						B	M		96 - 130		36 - 54		155		68	
						C	N		131 - 160		55 - 71		185		85	
						D	P		161 - 180		72 - 82		215		102	
						E	R		181 - 210		83 - 99		230		110	
					F	S		215 - 225		102 - 107		245		118		
					G	T		226 - 245		108 - 118		255		124		
					H	W		265		129		275		135		
<b>Thermal Well Code</b>									<b>Thermal Well Code</b>							
							N		Not Fitted							
							V		Calibrated in a well (well not fitted)							
							1		3/4" NPT							
						2		1" NPT								
<b>Temperature Setting</b>									<b>Temperature Setting</b>							
							210F		In °F or °C							
<b>Special Requirements (made to order)</b>									<b>Special Requirements</b>							
							***		Customer Special Code							

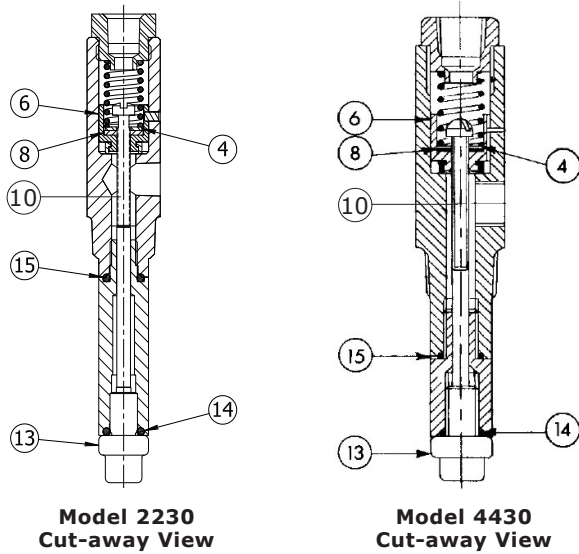
# 2-Way Sensing Valves - Models 2230/4430

## Adjustment

Refer to cut-away view below. To adjust the temperature setting of the 2230/4430, place a screwdriver through the IN port and in the slot of Adjusting Screw (Item 10). To RAISE the temperature setting turn the screw

counterclockwise, to LOWER the setting turn the screw clockwise. One turn equals about 10°F. When changing the tripping temperature be sure that the valve is not adjusted beyond the range limit.

## Service Parts

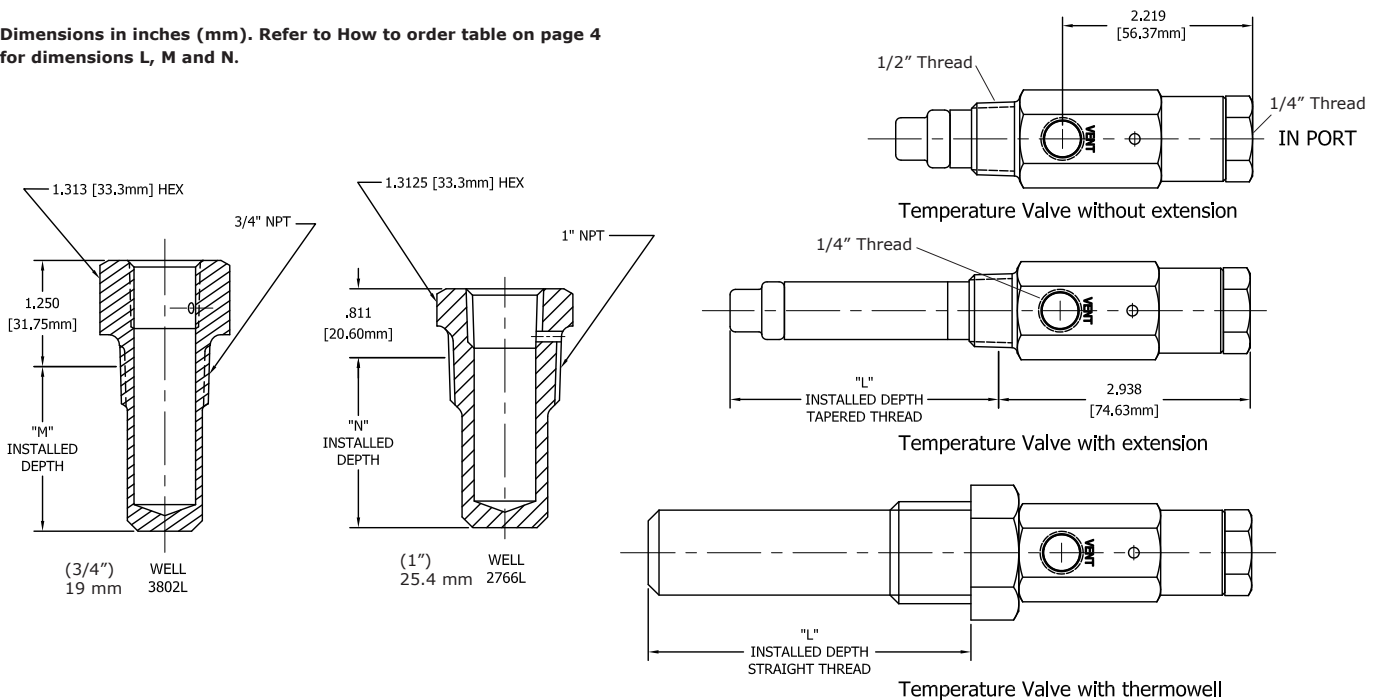


Refer to cut-away view to the left.

Ref no.:	Qty	Description	Part no. for standard finish
4	1	Washer	141
6	1	Valve Seat Assembly - Viton	2924X001
8	1	Valve Stem Seal - Viton	3555L001
13	1	Temp. Element	
		Standard	1981X
		Plated	1981P
14	1	O Ring - Viton	348L001
15	1	O Ring - For use on extensions only	348L001

## Dimensions

Dimensions in inches (mm). Refer to How to order table on page 4 for dimensions L, M and N.



## Americas

---

AMOT USA  
8824 Fallbrook Dr  
Houston  
TX 77064  
USA

Tel: +1 (281) 940 1800  
Fax +1 (713) 559 9419  
Email sales@amotusa.com

## Asia and Australasia

---

AMOT Shanghai  
Rm 4102 - 4104 United Plaza  
1468 Nanjing Road West  
Shanghai 200040  
China

Tel +86 (0) 21 6279 7700  
Fax +86 (0) 21 5237 8560  
Email shanghai@amot.com

AMOT Singapore  
10 Eunos Road 8 #12-06  
Singapore Post Centre  
Singapore 408600

Tel +65 6408 6265  
Fax +65 6293 3307  
Email singapore@amot.com

## Europe and Africa

---

AMOT  
Western Way  
Bury St Edmunds  
Suffolk, IP33 3SZ  
England

Tel +44 (0) 1284 762222  
Fax +44 (0) 1284 760256  
Email info@amot.com

AMOT Controls GmbH  
Rondenbarg 25  
22525 Hamburg  
Germany

Tel +49 (0) 40 8537 1298  
Fax +49 (0) 40 8537 1331  
Email germany@amot.com

AMOT Russia  
#34 Shabolovka Street  
Building 2  
Moscow 115419  
Russia

Tel: +7 495 617 12 93  
Fax: +7 495 913 97 65