

# 18S

11/05

## Hazardous Area Temperature and Pressure Switches


4250 Series



### Typical Applications

- Provides snap switch action at set points on:
  - Engine coolant systems
  - Process control points
  - Alarm systems
  - Compressor coolant systems
  - Lubrication systems
  - Hazardous area applications

### Key benefits

- Flame proof protection - ATEX certified
-  II 2 G EEx d IIB T6
- Single or dual pressure
- Single or dual temperature
- Snap acting

# Operation

The 4250 series is designed for use wherever explosion proof switches are needed to sense pressure or temperature. Several types are available for sensing dual temperature levels, dual pressure levels or combined pressure and temperature. Pressure ranges from 0.3 - 17.2 bar (5-250 psi) and temperature ranges from 15° - 124°C (60° - 255°F) are covered.

Well established and long proven pressure and temperature sensing methods enable precise and reliable operation largely unaffected by changes in ambient conditions. These units are easy to install since multi-function and dual switching types share common housings.

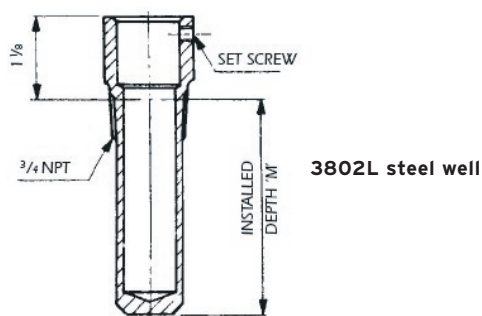
## Model types

Model type	Description
4251	Pressure and temperature switch combination with two snap switches, one for the pressure set point and the other for temperature set point.
4252	Pressure switch with one snap switch for one pressure set point.
4253	Temperature switch with one snap switch for one temperature set point.
4254	Temperature switch with two snap switches, each independently adjustable, providing two temperature set points, within the limits of the chosen temperature range.
4255	Pressure switch with two snap switches, each independently adjustable, providing two pressure set points within the limits of the chosen pressure range.

## Stainless steel well

Well part no.	Length mm	Code
3802L001	46.0	00
3802L003	65.0	01
3802L004	77.7	02
3802L005	90.4	03
3802L006	103.1	04
3802L007	115.8	05

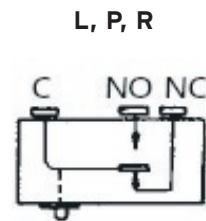
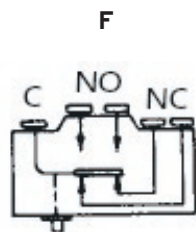
A stainless steel well may be ordered with the type 4251, 4253 and 4254 switches as an option. The model 3802L well is usable for 340 bar (5000 psi) service and has a non-threaded bore with set screws for quick installation or removal of the switch. Wells and valves ordered at the same time will be assembled by AMOT using 40081 silicon heat transfer compound in the well. This is necessary to reduce the temperature lag experienced by controls when fitted to immersion wells. Lag will vary according to the fluid and flow conditions. Model 2766L well is also available for 681 bar (10,000 psi) service. Contact AMOT for details.



# Specification

<b>Housing material:</b>	Cast aluminium	
<b>Diaphragm:</b>	Nitrile or Viton	
<b>Maximum pressure on diaphragm:</b>	24.1 Bar (350 psi)	
<b>Maximum pressure on temperature element:</b>	54.04 Bar (800 psi)	
<b>Maximum case temperature:</b>	40°C (T6)	55°C (T5 - to special order)
<b>Maximum net weight:</b>	2.1 kg (4.6 lbs)	
<b>Maximum shipping weight:</b>	2.4 kg (5.4 lbs)	
<b>EC type examination cert:</b>	Baseefa 03ATEX0633X	

## Snap-switch types, terminals and ratings



Voltage	AC		DC	
	Resistive	Inductive	Resistive	Inductive
15			15.0	10.0
30			5.0	5.0
50			1.25	1.25
75		15.0	0.25	0.30
125	15.0	15.0	0.75	0.05
250	15.0	5.0	0.50	0.03
380	15.0	4.0	0.25	
480	15.0			

Temperature range in °C	Temperature differential in °C		
	Type R, F	Type P	Type L
15.6 - 35.0	1.62 +/- 1	1 +/- .5	2.16 +/- 1
35.5 - 54.4	2.16 +/- 1	1.62 +/- .5	2.70 +/- 1
55.0 - 71.1	2.90 +/- 1	2.16 +/- .5	3.24 +/- 1
71.6 - 82.2	2.70 +/- 1	2.16 +/- .5	3.24 +/- 1
82.7 - 98.9	2.70 +/- 1	2.16 +/- .5	3.24 +/- 1
101.7 - 107.2	2.16 +/- 1	1.62 +/- .5	2.78 +/- .5
107.7 - 118.3	2.70 +/- 1		3.24 +/- .5

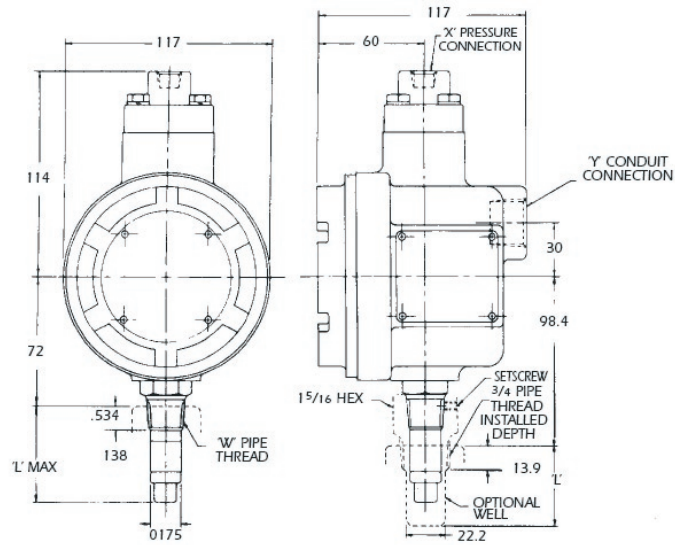
Temperature ranges shown indicate settings on rising temperature. For falling temperatures subtract the particular switch differential from the given range. Temperature differentials are generally greater at the low end of a range.

Pressure range falling pressure in PSI	Pressure differential in PSI		
	Type R, F	Type P	Type L
5 - 25	4 +/- 2	1.5 +/- 1	6 +/- 2
15 - 75	9 +/- 3	4 +/- 2	12 +/- 3
45 - 125	13 +/- 4	7 +/- 3	16 +/- 4

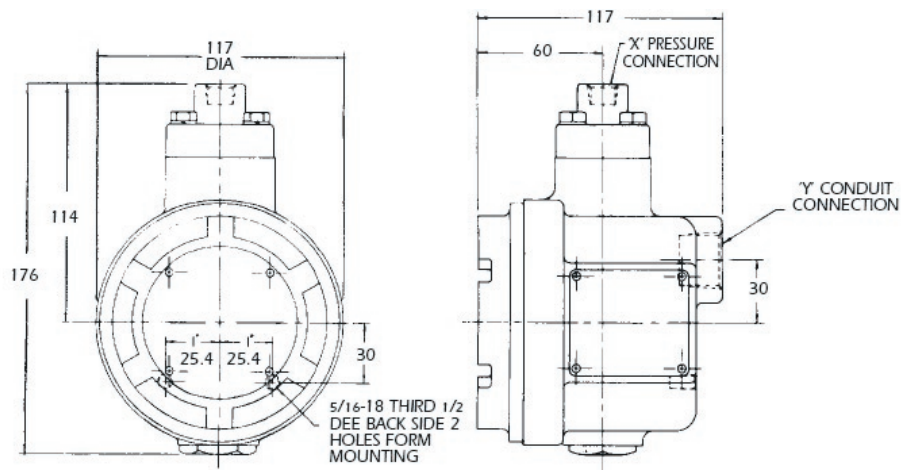
Pressure ranges shown indicate switch settings on falling pressure. For rising pressure, add the particular switch differential to the falling range limits shown.

# Dimensions

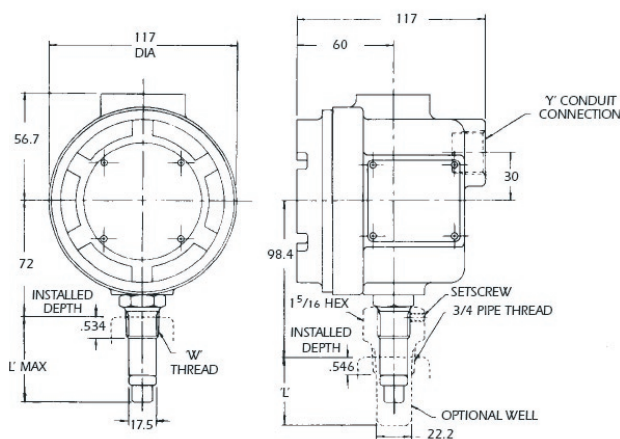
## Pressure/temperature model 4251



## Pressure model 4252, 4255



## Temperature model 4253, 4254



all dimensions in mm

Connections for all models		
'W' pipe thread	'X' pressure connection	'Y' conduit connection
1/2 NPT	1/4 NPT	3/4 NPT
1/2 BSP taper	1/4 BSP PL	M20 x 2.5
DIN 2999 R1/2 (1/2 BSP taper)	DIN 2999 R1/4 (1/4 BSP PL)	DIN 40 430 PG 13.5
DIN 2999 R1/2 (1/2 BSP taper)	DIN 2999 R1/4 (1/4 BSP PL)	DIN 40 430 PG 16

# Specification check list

Use the tables below to select the unique specification of your 4250 temperature and pressure switch.

Please select one characteristic from each section. Each characteristic is associated with a code that you will need to state when ordering.

Basic model	Code	✓
Pressure/temperature (pressure ranges 1 - 3 only)	4251M	
Single pressure	4252M	
Single temperature	4253M	
Dual temperature	4254M	
Dual pressure	4255M	

Pressure range	Code	✓
5-25 PSI (0.34 - 1.72 Bar)	1	
15-75 PSI (1.03 - 5.17 Bar)	2	
45 - 125 PSI (3.10 - 8.62 Bar)	3	
80 - 250 PSI (5.52 - 17.24 Bar)	4	
Non-pressure version	0	

Seal material	Code	✓
Buna-nitrile	1	
Viton	2	

Microswitch type	Code	✓
Temperatures 1 - 6	F	
Temperatures 1 - 6	L	
As R, Temperatures 1 - 7	P	
(Standard) Temperatures 1 - 6 only	R	

Temperature range without well		Temperature range with well		Code	✓
°C	°F	°C	°F		
15-35	60-95	21-40	70-105	1	
35-54	96-130	41-60	106-140	2	
55-71	131-160	60-76	141-170	3	
71-82	161-180	77-88	171-190	4	
83-99	181-210	88-104	191-220	5	
101-107	215-225	107-113	225-235	6	
108-118	226-245	113-124	236-255	7	
Non-temperature version				0	

Thread	Finish	Code	✓
NPT	Standard finish	A	
NPT	Gulfproof finish	B	
BSP	Standard finish	C	
BSP	Gulfproof finish	D	

Note: BSP gives parallel thread on pressure bonnet, taper thread on temperature extension.

Conduit thread	Code	✓
NPT	A	
M20	B	
PG 13.5	C	
PG 16	D	

Temperature element extension Installed depth		Code	✓
mm	inches		
55.56	2 <sup>3</sup> / <sub>16</sub>	00	
77.78	3 <sup>1</sup> / <sub>16</sub>	01	
84.14	3 <sup>5</sup> / <sub>16</sub>	02	
96.84	3 <sup>13</sup> / <sub>16</sub>	03	
109.54	4 <sup>5</sup> / <sub>16</sub>	04	
122.24	4 <sup>13</sup> / <sub>16</sub>	05	
134.94	5 <sup>5</sup> / <sub>16</sub>	06	
147.64	5 <sup>13</sup> / <sub>16</sub>	07	
239.70	9 <sup>7</sup> / <sub>16</sub>	08	
Non-temperature version		99	

Calibration	Code	✓
Unit to be calibrated for use with a thermowell	V	
Pressure version or not thermowell calibrated	N	

Special requirements	Code	✓
Standard	AA	
Please contact AMOT for any special requirements.		

Once you have made your selection, or if you need advice, please call us on:

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