

Water in Oil Probe and Monitor Model 4200 / Model 420



The Model 4200 capacitance probes provide a direct analogue current output of percent emulsified water in the process system.

The measuring system consists of a probe and sensor assembly, and, as an option, a monitor or net oil computer.

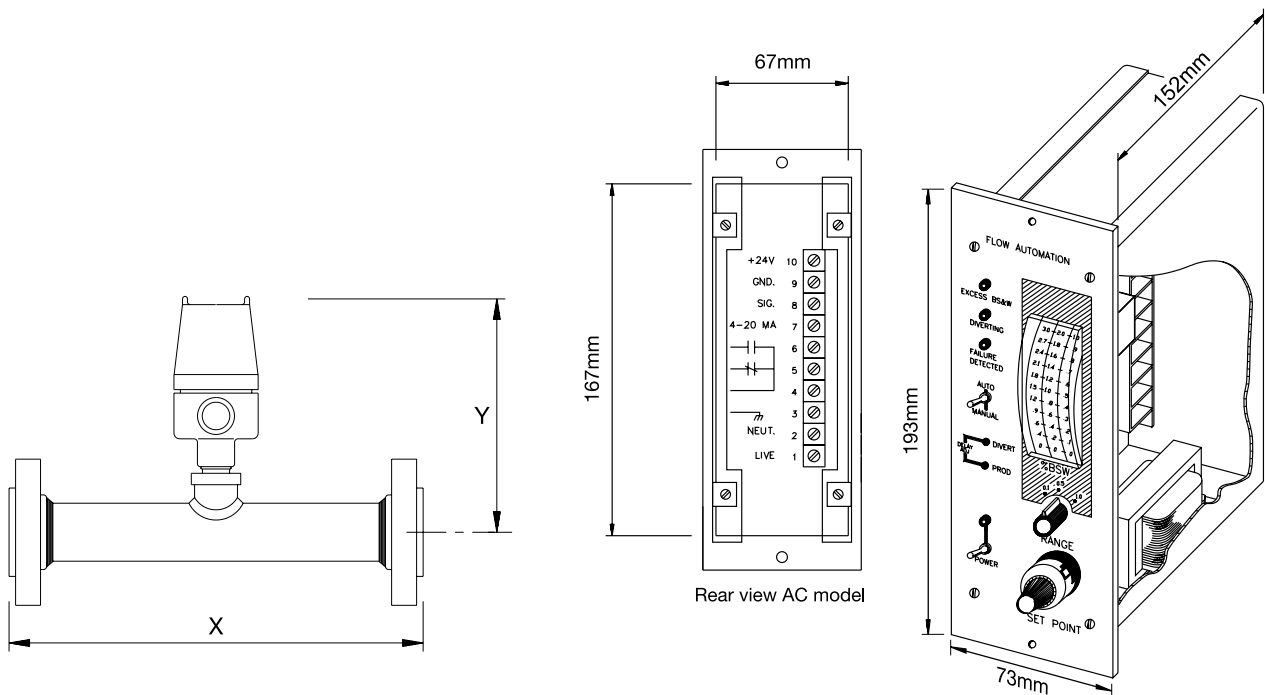
Features

- ③ 316 stainless or carbon steel construction
- ③ can be mounted directly in line or in a bypass
- ③ oven-cured Phenolic coating on internal diameter to reduce wax build-up
- ③ high and low range capability
- ③ high temperature option available

Applications

fuel oil systems • process systems
• tanker loading docks • storage facilities

Dimensional drawing



Detailed specification and ordering information: see overleaf

Specification

Probe:

Accuracy / linearity: $\pm 1\%$ of full scale

Repeatability: $\pm 0.25\%$ of full scale

Process temperature: -20 to +65°C standard
-20 to +190°C optional

Maximum pressure: to Class 600 flange rating

Materials of construction: Carbon steel or 316 stainless steel

Probe finish: Oven-cured Phenolic on all wetted surfaces, epoxy on external surfaces

General:

Hazardous area certification: NEMA 7X, Class 1, Div 1, Group D

Installation: Vertical, flow up

Sensor card:

Accuracy: Better than 1% of full scale

Repeatability: 0.25% of full scale

Resolution: $\pm 0.5\%$ of full scale

Working temperature: 0 to 75°C (see Ordering Information for low range/high range)

Humidity: to 95% non-condensing

Outputs: 4-20mA into 320 Ohms load maximum

Electrical:

Power supply: 19-28Vdc at 60mA

Cable requirement: 3 conductor shielded 18-22 AWG

Monitor:

General:

Hazardous area certification: NEMA 7X Class 1, Div 1, Group D

Outputs: 4-20mA retransmission non-isolated
Power to sensor

Electrical:

Power supply: 24Vdc, 115 or 240Vac 50/60Hz

Physical Dimensions - Probe

Probe size		4200 series - low range		4200 series - high range	
		X end to end	Y centre line to top of conduit	X end to end	Y centre line to top of conduit
mm	inches	mm	mm	mm	mm
50	2	432	250	432	250
76	3	812	260	432	266
102	4	812	275	432	275
152	6	812	300	432	300
203	8	812	325	432	325
254	10	812	353	Consult factory	

* Note: Dimension Y is given for -20 to +65°C version (0 to 150°F). For -20 to +190°C version (0 to 380°F) version, add 198mm (7.75")

Ordering Information

Model code format					
4200	Water in Oil Capacitance Probe				
Range					
LR	Low range				
HR	High range (0 - 100% only)				
L2	Liquid (clean liquid applications only)				
Temperature range					
LT	-20 to +65°C (0 to 150°F)				
HT	-20 to +190°C (0 to 380°F)				
Body material					
1	316 stainless steel (NACE certified)				
2	Carbon steel (NACE certified)				
Internal diameter	ID (inch)	low range, face to face		high range, face to face	
		mm	inch	mm	inch
1	2	432	17	432	17
2	3	812	32	432	17
3	4	812	32	432	17
4	6	812	32	432	17
5	8	812	32 (dual stem)	432	17
6	10	812	32 (dual stem)	N/A	N/A
Process connection					
1	ANSI Class 150 raised face, A105 carbon steel				
2	ANSI Class 300 raised face, A105 carbon steel				
3	ANSI Class 600 raised face, A105 carbon steel				
4	ANSI Class 900 raised face, A105 carbon steel				
5	ANSI Class 150 RTJ, A105 carbon steel				
6	ANSI Class 300 RTJ, A105 carbon steel				
7	ANSI Class 600 RTJ, A105 carbon steel				
8	ANSI Class 900 RTJ, A105 carbon steel				
Certification					
S	Non hazardous/safe area operation				
7	Explosion proof to NEMA 7X Class 1, Div 1, Group D				
Sensor card options	Monitor selection		Range		
011	0 - 1% range, 0 - 3mA output		420-2		L
020	0 - 100% range, 4 - 20mA output		420-2		H
021	0 - 3% range, 0 - 3mA output		420-3		L
031	0 - 10% range, 0 - 3mA output		420-2		L
051	0 - 25% range, 4 - 20mA output		420-3		L
061	0 - 10% range, 4 - 20mA output		420-3		L
071	0 - 3% range, 4 - 20mA output		420-3		L
081	0 - 1% range, 4 - 20mA output		420-3		L

Example: 4200-LR-LT-1-2-2-S-031

Thermo water in oil capacitance probe, low range, temperature range -20°C to +65°C (0 to 150°F), 316 stainless steel body, ID 3inch, ANSI 300lb RF flanges, safe area operation, 0-10% output range, with 0-3mA output

Ordering Information

Model code format	
420	Water in Oil Capacitance Monitor
Type	
2	Standard
3	Fail safe
Power input options	
1	24Vdc, +/- 15%
2	115Vac, 50/60Hz, +/- 15%
3	230Vac, 50/60Hz, +/- 15%
Indicator type	
01	0 - 1% range, multi-scale indicator
02	0 - 3% range, multi-scale indicator
03	0 - 10% range, multi-scale indicator
04	0 - 25% range, multi-scale indicator
05	0 - 100% range, multi-scale indicator
Enclosure options	
01	NEMA 1, panel mount
22	NEMA 7X explosion proof. Class 1, Div 1, Group D
33	NEMA 12, pole mount
43	NEMA 4X, weather proof, fibreglass

Example: 420-2-2-02-01

Thermo's water in oil capacitance monitor, standard version, 115Vac power source, 0-3% indicator, panel mounted.

King's Worthy
Winchester
SO23 7QA, United Kingdom
Tel: +44 (0) 1962 625000
Fax: +44 (0) 1962 885530



9303 W. Sam Houston Parkway South
Houston
Texas
77099 - 5298 USA
Tel: +1 (713) 272 0404
Fax: +1 (713) 272 2273