

ATM

Averaging Temperature Sensor

GENERAL

ATM is an average temperature sensor which is installed from tank top. **ATM** consists of plural temperature elements which have different length with fixed interval. In one element, several Pt sensors are distributed in equal interval and these Pt sensors totally form Pt 100 ohm. Thus, one element detects vertical average temperature.

ATM is connected to Tokyokeiso's Intelligent type servo operated tank gauges or digital tank data transmitters by which the longest temperature element below the liquid surface is selected.

STANDARD SPECIFICATION

Element standard	: Pt (JIS C1604-1997)
	On request : JPt, Cu
Element class	:
Standard	; Class B (ATM-□□□□-□B-□□□□□)
Fine	; Class A (ATM-□□□□-□A-□□□□□)
Rating current	: 2mA
Measuring range	: 0 to 100°C
No. of elements	: Max. 16
Measuring length	: Max.30000mm
Element interval	: Standard sensor intervals : 1m, 2m, 3m Consult TOKYO KEISO for other intervals including uneven distribution.
Operating pressure	: Atmospheric pressure
Connection	: Flange
Flange size	: 40mm, 50mm, 80mm, 100mm or others
Rating	: JIS10k RF, ANSI#150, JPI#150 or others
Enclosure	: Flameproof construction Exd II B T4 (TIIS) Exd II B T6 (LCIE) Exd II B T4 (KOSHA)
Cable entry	: G3/4 or others (with adapters)
Cable termination	: M3.5 screw terminal
Material	:

	Material class 1 ATM-□□□□1	Material class 2 ATM-□□□□2
Flex. tube	SUS316L	SUS316L
Flange	SUS304	SUS316
Terminal box	ADC12	
Anchor weight	SUS304	SUS316

Mass :

Measuring length (m)	7	10	15	20	25	30
Mass (kg)	12	14	18	22	26	30

Finish : Terminal box ; Silver as standard color
Stainless steel part ; No paint



MODEL CODE

Model code		Description	
ATM-	1 2 3 9	-	
Element interval	1 2 3 9		1m 2m 3m Special
No. of elements			"01"(1 element) to "16"(16 elements)
Material class	1 2 9		Material class 1 Material class 2 Special *1
Enclosure		W	Water tight
		E1	Flameproof construction (TIIS)
		E2	Flameproof construction (LCIE)
		E3	Flameproof construction (KOSHA)
Standard element		J	JPt (JIS)
		P	Pt (JIS)
Element class		A	Class A (Fine)
		B	Class B (Standard)
Process flange size		1	40mm (1 1/2")
		2	50m (2")
		3	80m (3")
		4	100m (4")
		9	Others
Process flange rating		1	JIS10k RF
		2	ANSI#150
		3	JPI#150
		9	Others *2
Flameproof cable gland		0	Not provided *3
		1	Provided *4
Anchor weight		0	Not provided
		1	Provided

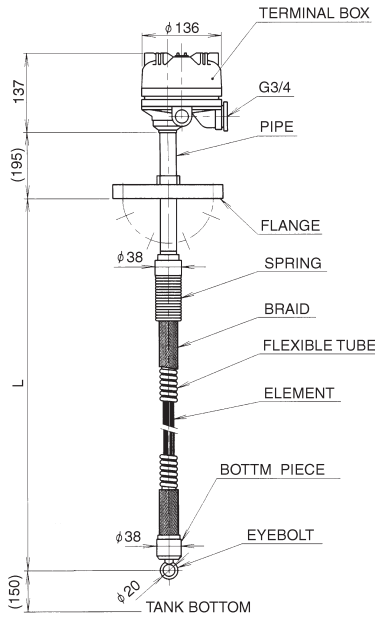
*1: Consult TOKYO KEISO for other kinds of materials.

*2: with adapters

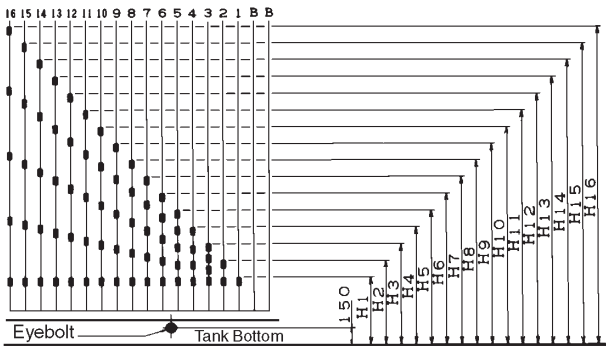
*3: It is required to use specific Flameproof cable gland.

*4: Specify cable Outside diameter.

DIMENSION



ELEMENT ARRANGEMENT



(mm)	1m Interval ATM-1□□□	2m Interval ATM-2□□□	3m Interval ATM-3□□□
H1	450	450	450
H2	1000	2000	3000
H3	2000	4000	6000
H4	3000	6000	9000
H5	4000	8000	12000
H6	5000	10000	15000
H7	6000	12000	18000
H8	7000	14000	21000
H9	8000	16000	24000
H10	9000	18000	27000
H11	10000	20000	—
H12	11000	22000	—
H13	12000	24000	—
H14	13000	26000	—
H15	14000	28000	—
H16	15000	—	—

NUMBER OF ELEMENTS

Number of elements are determined from the maximum liquid level and element intervals as shown in the following table.

No. of element	Max. Liquid level		
	1m Interval ATM-1□□□	2m Interval ATM-2□□□	3m Interval ATM-3□□□
1	0 to 1999	0 to 2999	0 to 3999
2	2000 to 2999	3000 to 4999	4000 to 6999
3	3000 to 3999	5000 to 6999	7000 to 9999
4	4000 to 4999	7000 to 8999	10000 to 12999
5	5000 to 5999	9000 to 10999	13000 to 15999
6	6000 to 6999	11000 to 12999	16000 to 18999
7	7000 to 7999	13000 to 14999	19000 to 21999
8	8000 to 8999	15000 to 16999	22000 to 24999
9	9000 to 9999	17000 to 18999	25000 to 27999
10	10000 to 10999	19000 to 20999	28000 to 30999
11	11000 to 11999	21000 to 22999	—
12	12000 to 12999	23000 to 24999	—
13	13000 to 13999	25000 to 26999	—
14	14000 to 14999	27000 to 28999	—
15	15000 to 15999	29000 to 30999	—
16	16000 to 16999	—	—

ASSOCIATED TRANSMITTERS AND RECEIVERS

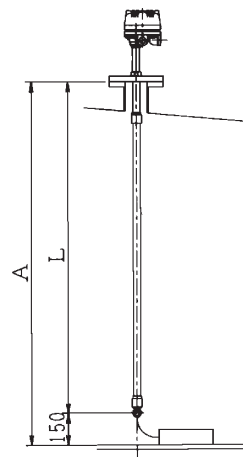
ATM Averaging temperature sensors are connectable to the following TOKYO KEISO's instruments for further transmission and indication.

- (1) FW-9000, FW-9000N, FW9000NN super intelligent tank gauge.
- (2) DM4N Intelligent tank data transmitter.

ORDERING INFORMATION

Please specify the following for order / inquiry :

- 1) Model code
- 2) Total length from tank nozzle to tank bottom. (A or L length in sketch)
- 3) External diameter of connection cable if the cable glands are required to supply by TOKYO KEISO.
- 4) Other special requirements, if any.



* Specification is subject to change without notice.

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