

GENERAL

ATS is an averaging temperature sensor installed from the top of liquid bulk storage tank towards the bottom vertically. **ATS** consists of multiple numbers of temperature detectors having same resistance characteristics located in fixed intervals along sensor probe. Connected to the TOKYO KEISO's digital tank data transmitters, the **ATS** temperature sensors determine the average temperature of the submerged temperature elements and indicates individual temperature including temperature profile and gas phase temperature.

STANDARD SPECIFICATION

Element standard	: Pt (JIS C1604-1997) On request : JPt, Cu
Element class	:
Standard	: Class B (ATS-□□□□-□B-□□□□□)
Fine	: Class A (ATS-□□□□-□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 Class 150, JPI Class 150 or others
Enclosure	: Flameproof construction Exd II B T4 (TIIS) Exd II B T6 (LCIE) Exd II B T4 (KOSHA) Intrinsic safety Ex ia II B T4 (Corresponding to the combination with RTG 3900 only) Element number: 6 elements (Max.)
Cable entry	: G3/4 or others (with adapters)
Cable termination	: M3.5 screw terminal
Painting color	: Terminal box: Silver (Standard) Stainless steel part: Not painted

	Material class 1 ATS-□□□□1	Material class 2 ATS-□□□□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

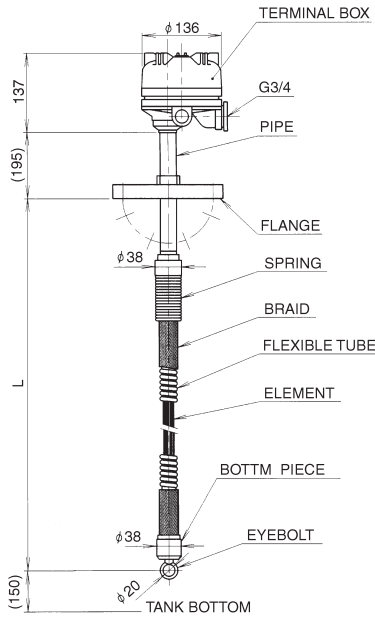


MODEL CODE

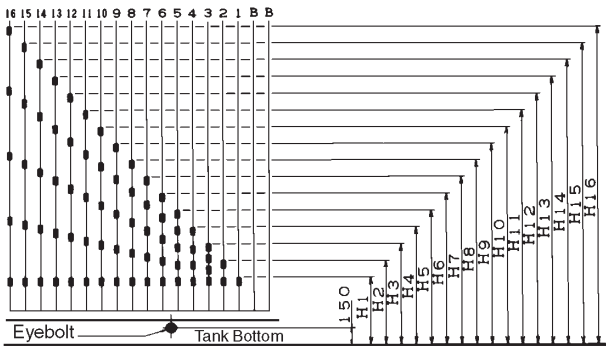
Model code		Description
ATS-	1 2 3 9	
Element interval	1 2 3 9	1m 2m 3m Special
No. of elements	1 2 9	*01*(1 element) to *16*(16 elements)
Material class	1 2 9	Material class 1 Material class 2 Special *1
Enclosure	W	Water tight
	E1	Flameproof construction (TIIS)
	E2	Flameproof construction (LCIE)
	E3	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 Class 150
	3	JPI Class 150 *2
	9	Others *3
Flameproof cable gland	0	Not provided *4
	1	Provided
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 ATS-1□□□	2m Interval ATS-2□□□	3m Interval ATS-3□□□
H1	450	450	450
H2	1500	2500	3500
H3	2500	4500	6500
H4	3500	6500	9500
H5	4500	8500	12500
H6	5500	10500	15500
H7	6500	12500	18500
H8	7500	14500	21500
H9	8500	16500	24500
H10	9500	18500	27500
H11	10500	20500	—
H12	11500	22500	—
H13	12500	24500	—
H14	13500	26500	—
H15	14500	28500	—
H16	15500	—	—

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 ATS-1□□□	2m Interval ATS-2□□□	3m Interval ATS-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	—	—

Note : Consult TOKYO KEISO if gas phase temperature measurement is required.

ASSOCIATED TRANSMITTERS AND RECEIVERS

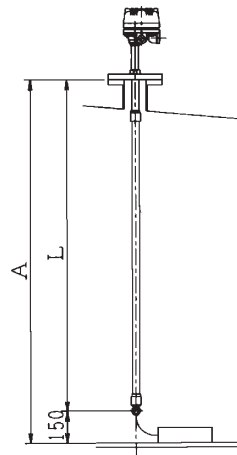
ATS Averaging temperature sensors are connectable to the following TOKYO KEISO's instruments for further transmission and indication.

- (1) FW-9000, FW-9000N, FW9000NN super intelligent tank gauge.
- (2) DM4N-2, -3 Intelligent tank data transmitter.
- (3) RTG3900 Microwave level meters.

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.

TOKYO KEISO CO., LTD.

Head Office : Shiba Toho Building, 1-7-24 Shibakoen, Minato-ku, Tokyo 105-8558
 Tel : +81-3-3431-1625 (KEY) ; Fax : +81-3-3433-4922
 e-mail : overseas.sales@tokyokeiso.co.jp ; URL : http://www.tokyokeiso.co.jp