

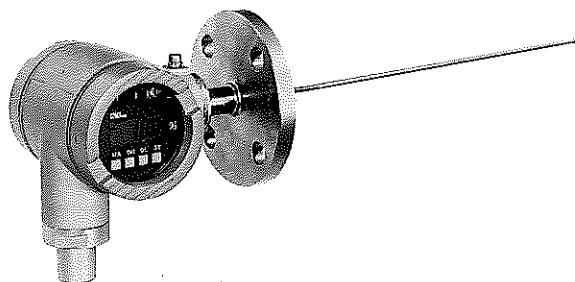
OPTICAL PLATINUM RESISTANCE BULB TEMPERATURE TRANSMITTER

The Optical Temperature Transmitter model FUL is a platinum resistance bulb temperature transmitter used for measuring temperatures of various kinds of fluids.

The electronics unit is provided with a micro-processor for digital processing of signals to realize high accuracy and intelligent measurements.

The adoption of fiber optic cable for the signal transmission line configures an optical field instrumentation system with an optical star coupler and a master station.

The transmitter is ϕ 6mm optical fiber cable connection type.



SPECIFICATIONS

Functional specifications

Fluids measured: Liquid, gas or steam

Measuring range:

Type	Measuring range [°C]	Span [°C]	Limits of measuring range [°C]	
			Lower limit	Upper limit
FUL2	-50 to 210	50 to 210	-50	210
FUL3	0 to 500	200 to 500	0	500

Operating pressure:

Flange type...Less than nominal pressure of flange

Thread type...Less than 3.9MPa (40 kgf/cm²)

Output:

Linear output (optical digital output) or 2-point, 3 segmented lines linear compensated output at maximum span

Power source: Built-in lithium battery (life; About 2 years)

Setting:

Item	Remote setting	Direct setting
Setting item	1. Measuring range 2. Damping constant(*1) 3. Transmitter memory read/write	1. Measuring range 2. Damping constant(*1)
Setting equipment	HHC (*2) or MS (*2)	Indicating unit (option)

Notes: (*1) Adjustable range of damping constant; 0.2 to 51.2 sec

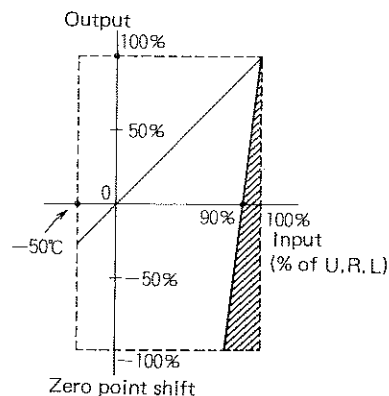
(*2) HHC: Hand held communicator (Model FXL)

MS: Master station (Model PMH)

(See "System block diagram")

Zero elevation and suppression:

From -50°C to +90% of the upper range limit



Self-diagnosis: Displayed on indicating unit (option) or HHC and transmitted to master station

Diagnosis items	HHC, MS	Indicating unit
Measuring range abnormal	○	○
Detecting unit failure	○	○
Battery voltage low	○	○
Battery voltage	○	-
Amplifier ambient temperature	○	-

Explosion-proof: Intrinsic safety

(safety barriers are not needed. Under application)

Approval authority	Standard	Classification
RIIS (Japan)	JIS	i3nG5
FM (USA)	NEC, ANSI	Class I Div. 1 Group A, B, C, D Class II Div. 1 Group E, G Class III
BASEEFA (UK)	CENELEC	EEx ibIIC T4

Ambient temperature:

-30 to +60°C

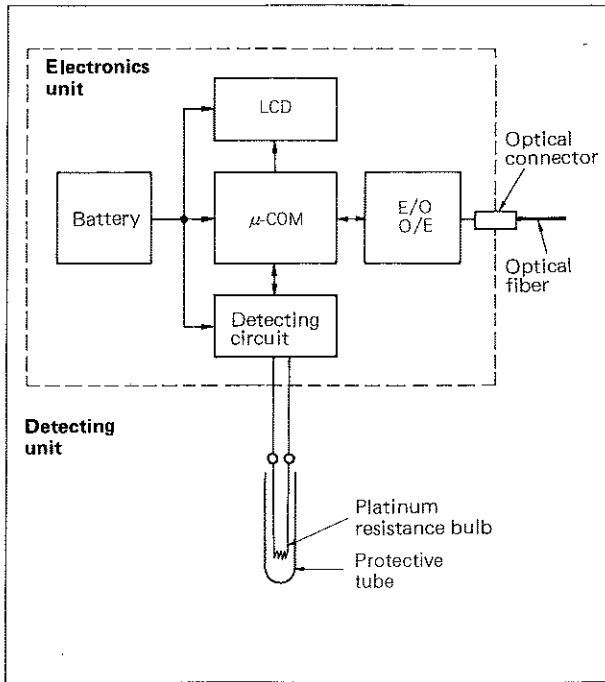
Storage temperature:

-30 to +70°C

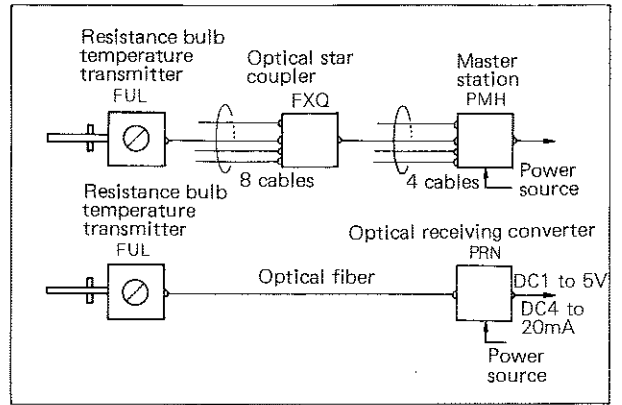
Ambient humidity:

0 to 95% RH

OPERATING PRINCIPLE DIAGRAM

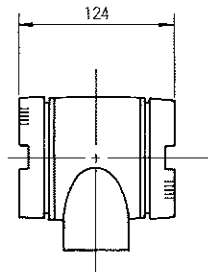


SYSTEM BLOCK DIAGRAM

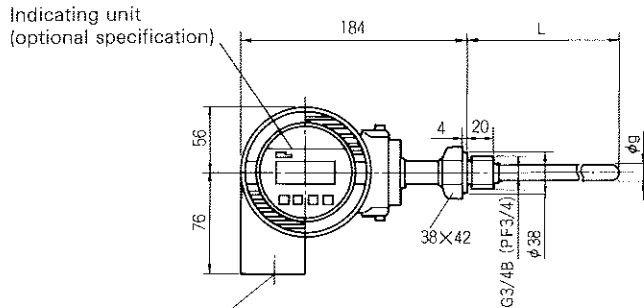


OUTLINE DIAGRAM (Unit:mm)

- Thread type

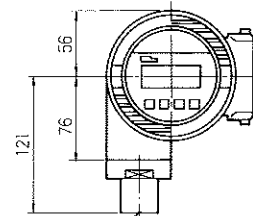


5th digit of code symbols	φ gmm
A	12
B	4.8 (sheath type)

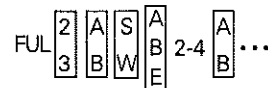


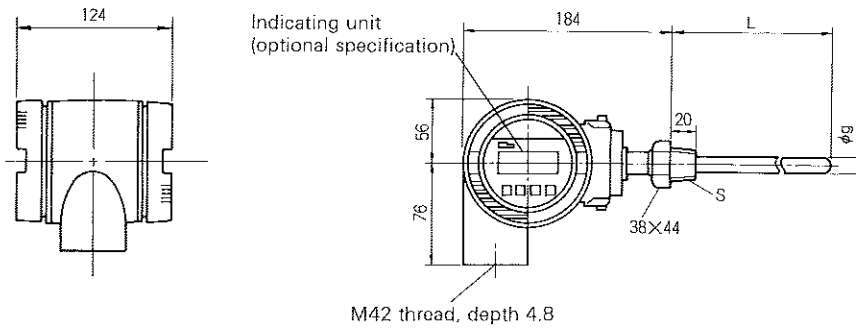
M42 thread, depth 4.8

With optical cable protective adapter



Adapter 1/2-14NPT (option)

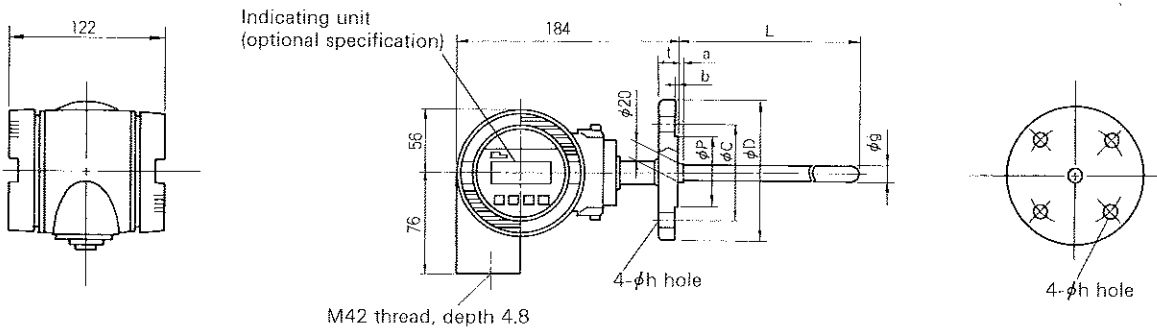




9th digit of code symbol	S
5	R3/4 (PT3/4)
6	3/4 - 14NPT

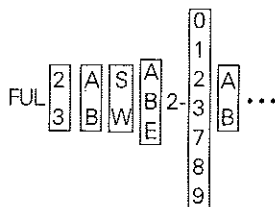


• flange type



Flange	φD	φC	φP	t	a	b	φh
JIS - 10K - 25ARF	125	90	70	14	3	1	19
JIS - 20K - 25ARF	125	90	70	16	3	1	19
JIS - 30K - 25ARF	130	95	70	20	3	1	19
JIS - 63K - 25ARF	140	100	70	27	3	1	23
ANSI 150LB, 1 inch	108	79.4	50.8	14.5	3	1.6	18
ANSI 300LB, 1 inch	124	88.9	50.8	17.5	3	1.6	20
ANSI 600LB, 1 inch	124	88.9	50.8	17.5	3	1.6	20

5th digit of code symbol	φ gmm
A	12
B	4.8 (sheath type)



RELATED DEVICES

- Master station (Data sheet No. EDS11-86, EDS11-121)
- Optical receiving converter (Data sheet No. EDS9-43)
- Optical star coupler (Data sheet No. EDS8-48)
- HHC (Data sheet No. EDS8-44)
- Connector assembling tool
- Optical connector
- Cable

ORDERING INFORMATION

1. Measured item or application
2. Name of product
3. Type of product
4. Measuring range
5. Material of measuring unit
6. Special specifications
7. Other

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