

Model KH13 Pressure Transmitter



OUTLINE

This is a simple construction pressure transmitter equipped with an evaporative-condensing-type semiconductor strain gauge at the pressure sensing portion. A stainless steel case has been applied to this small, compact and excellent-in-cost-performance pressure transmitter, being appropriate for hydraulic devices using oil or water. This pressure transmitter demonstrates high reliability even under serious utilization conditions.

FEATURE

- Because of equipping an evaporative-condensing-type semiconductor strain gauge, this pressure transmitter demonstrates excellent durability and stability.
- No moving parts exist. This pressure transmitter demonstrates excellent vibration resistance and impact resistance.
- Because of rigid construction where a metallic diaphragm is welded to the case, this pressure transmitter is appropriate for hydraulic machines using oil and water, construction machines and vehicles.
- This pressure transmitter is small and light.
- This pressure transmitter is of volume sales type.

KH13-A33 (Mass production type)
-B33 (Mass production type)

Superior to vibration and shock, and is available for wide operating temperature range.

Accuracy: $\pm 3.0\%$ F.S. (Synthesis accuracy)

KH13-633 KH13-833
-733 -933

Connection is richness and accuracy output adopts to object / condition, and a selection is possible.

Accuracy: $\pm 0.5\%$ F.S. or $\pm 1.0\%$ F.S.

COMMON SPECIFICATION

Fluid:

Gas or Liquid

Operating condition:

Under the normal condition, where there is no inflammable gas or liquid which cause the ignition or explosion.

Wetted parts material:

Diaphragm 630st.st. (17-4PH st.st.)

Joint 304st.st.

Throttle S35C (KH13-B33 only)

Pressure range:

0 ~ 1h0 ~ 50MPa (0 ~ 10h0 ~ 500kgf/cm²)

Max. allowable pressure:

200% of rated pressure (150% for range 35, 50MPa)

Case material:

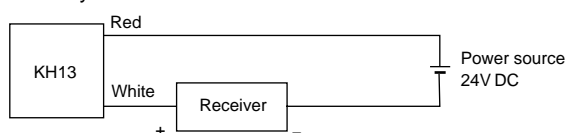
304st.st.

Weight:

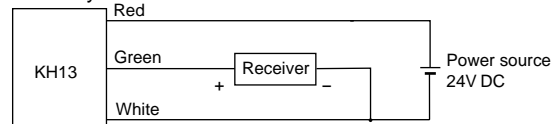
Approx. 100 g

WIRING

2 wire system



3 wire system



SPECIFICATION 1

Mass production type:

Type No.	Connection	Pressure range MPa (kgf/cm ²)	Temperature compensation	Operating temperature	Storage temperature	Vibration proof	Shock resistance	Construction
KH13-A74	R1/4	0 ~ 1 (0 ~ 10) ~ 2 (~ 20) ~ 3.5 (~ 35) ~ 5 (~ 50) ~ 10 (~ 100) ~ 20 (~ 200) ~ 35 (~ 350)	-10 ~ 70°C	-20 ~ 80°C	-30 ~ 90°C	6.8m/s ² (33.3Hz)	294m/s ² (11ms or less)	IP54
KH13-B74	R1/4	0 ~ 5 (0 ~ 50) ~ 10 (~ 100) ~ 20 (~ 200)	-20 ~ 110°C	-30 ~ 120°C	-40 ~ 125°C	147m/s ² (10 ~ 200Hz)	490m/s ² (20ms or less)	IP65
KH13-BC4	G3/8B	~ 35 (~ 350) ~ 50 (~ 500)						

Synthesis accuracy:

- ±3.0%F.S. (Synthesis accuracy in temperature compensation limit)
- * It contains linearity, hysteresis, repeatability, temperature coefficient (temperature compensation limit) and line voltage variation error

Power source:

10 ~ 30V DC (Standard 24V DC), 5V DC(KH13-B □□ only)

Output:

1 ~ 5V DC, 0.5 ~ 4.5V DC(KH13-B □□ only)

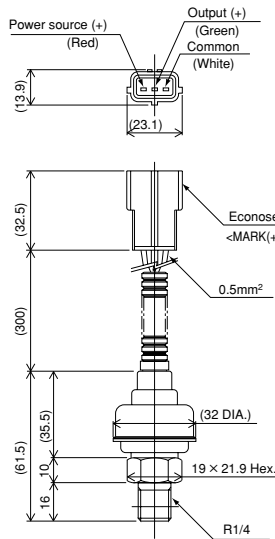
Load resistance:

10kΩ min.

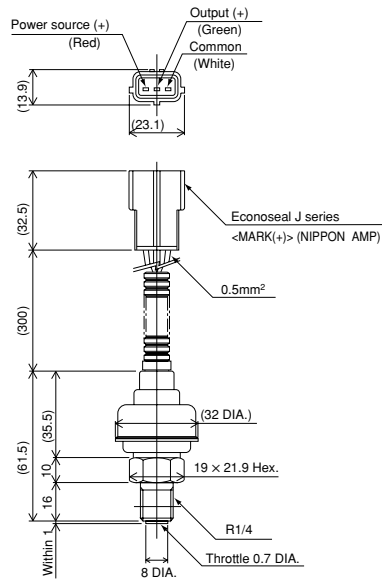
Transmission system:

3 wire system

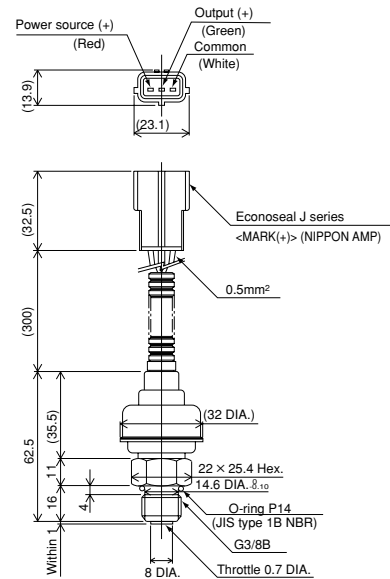
DIMENSIONS1



KH13-A74



KH13-B74



KH13-BC4

SPECIFICATION 2

Type No.	Connection	Pressure range MPa(kgf/cm ²)	Accuracy	Temperature compensation	Operating temperature	Storage temperature
KH13-6 □ 4	G3/8B R1/4	0 ~ 1 (0 ~ 10) ~ 2 (~ 20)	±1.0%F.S.	-20 ~ 70°C	-20 ~ 70°C	-30 ~ 80°C
KH13-7 □ 4	R3/8 M18 × 1.5	0 ~ 3.5 (0 ~ 35) ~ 5 (~ 50)	±0.5%F.S. or ±1.0%F.S.			
KH13-8 □ 4	G3/8A R1/8	~ 10 (~ 100) ~ 20 (~ 200)				
KH13-9 □ 4	1/8NPT 1/4NPT	~ 35 (~ 350) ~ 50 (~ 500)				

Accuracy:

±0.5%F.S. or ±1.0%F.S.
(Depend on range)

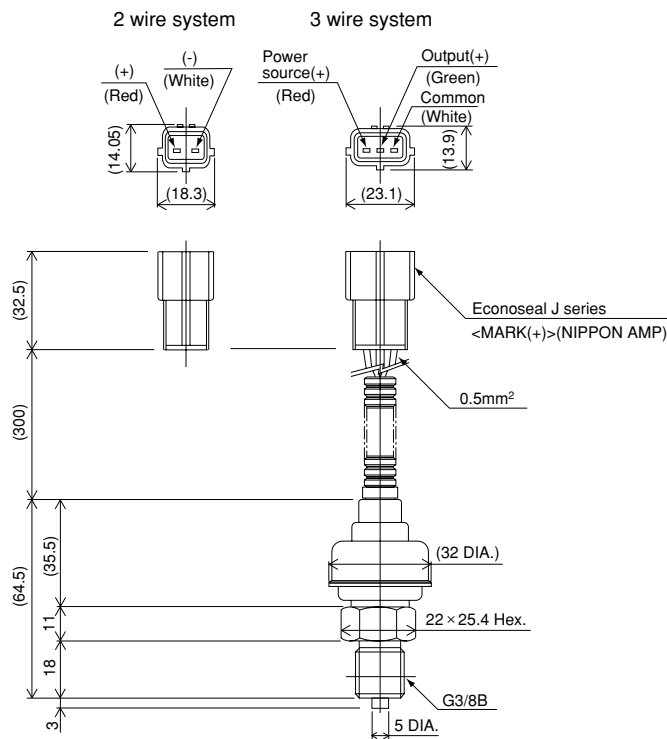
Temperature coefficient:

Zero } ±0.05%F.S./°C (In case of accuracy ± 0.5 % F.S.)
Span } ±0.1%F.S./°C (In case of accuracy ± 1.0 % F.S.)

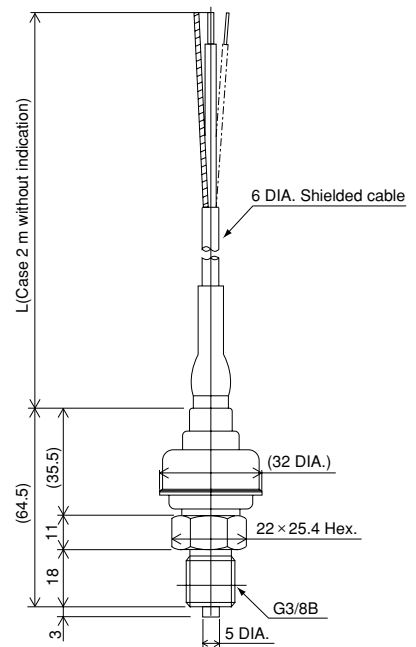
Power source	Output	Load resistance	Transmission system
24V DC±10%	4 ~ 20mA DC	500Ω max.	2 wire system
15V DC±10%		100Ω max.	
24V DC±10% 12V DC±10% 15V DC±10%	1 ~ 5V DC 0 ~ 5V DC	10kΩ min.	3 wire system

DIMENSIONS 2

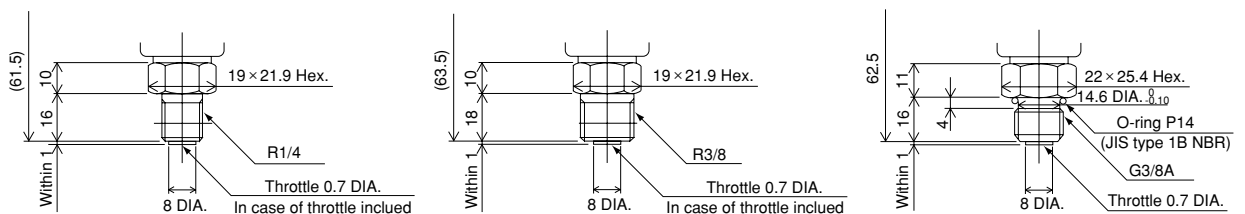
Electric wire type



Shielded cable type



Other connection



Type No. constitution 1

Please specify Type No.,each specification and range, when ordering.

Note: For this Model,there is no applicable item for the figures X,but please specify X when ordering.

Mass production type

		Throttle
A	Electric wire + EJ II (IP54 only)	Nil
B	Electric wire + EJ II (IP65 only)	S53C

1 Type

Pressure transmitter
K H 1 3 — (1) — (2) — (3) — (4) — (5) — (6) — (7) — (8) — (9) — (10) — (11) — (12) — (13) — (14) — (15)

Type No.

Selection spec.

8 Throttle

0	Nil
F	S35C

Additional spec. (Option)

2 Connection

7	R1/4
C	G3/8 O-ring (It can produce only 1 form B selection)

3 Wetted parts material

4	Diaphragm: 630st.st. (17-4PH st.st.) Joint: 304st.st.
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4 Pressure range (MPa)
(When ordering,please specify pressure range & unit.)

1	0 ~ 1, 2, 3.5 (It can produce only 1 form A selection)
2	0 ~ 5, 10
3	0 ~ 20, 35
4	0 ~ 50

5 Accuracy

A	±3.0%F.S. (Synthesis accuracy)
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6 Power source

D	5V DC (It can produce only 7 output 0.5-4.5 V DC output by 1 form B selection)
M	10 ~ 30V DC (Standard 24V DC)

7 Output

8	1 ~ 5V DC
Y	0.5 ~ 4.5V DC (It can produce only 1 form B selection)

9 Electric wire

1	Electric wire (With 0.3 m as standard) Latex wire EF0.5mm ² 2.2 DIA. Standard color:: Red/Green/White
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10 Cable terminal

0	Standard
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11 Condenser

	Built-in condenser	Through capacitor
0	With (standard)	With (standard)

12 Treatment

0	Nil
1	Use no oil
2	Use no water
3	Use no oil & water

15 Document

0	Nil
1	Please specify your requirement Drawing one sheet,Instruction manual, Inspection procedure,Mill sheet, Test report

Type No. constitution 2

Please specify Type No., each specification and range, when ordering.

Note: For this Model, there is no applicable item for the figures X, but please specify X when ordering.

		Power source
6	Electric wire + EJ II	24V DC±10%
7	Electric wire + other indication connector *	12V DC±10%
8	Shielded cable	15V DC±10%
9	Shielded cable + other indication connector *	15V DC±10%

		Power source
1	24V DC±10%	
6	12V DC±10% For 4 ~ 20mA is not available	
A	15V DC±10% 4 ~ 20mA is applicable for load resistance less than 100Ω	

* If only electric wire is required, please select above 7 and designate 7 or 8 in 10 electric wire terminal.

1 Type

Pressure transmitter

K H 1 3 — 1 — 2 — 3 — **4** — 4 — 5 — 6 — 7 — 8 — 9 — 10 — 11 — 12 — 13 — 14 — 15

Type No.

2 Connection

		Throttle
0	G3/8A O-ring 1=12	○
3	G3/8B	—
7	R1/4	○
8	R3/8	○
A	M18 O-ring	—
C	G3/8A O-ring 1=16	○
E	R1/8	—
F	R1/4	—
G	R3/8	—
J	1/8NPT	—
K	1/4NPT	○

If other connection or throttle is required, please contact us.

3 Wetted parts material

4	Diaphragm: 630st.st. (17-4PH st.st.) Joint: 304st.st.
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4 Pressure range (MPa)
(When ordering, please specify pressure range & unit.)

1	0 ~ 1, 2, 3.5
2	0 ~ 5, 10
3	0 ~ 20, 35
4	0 ~ 50

5 Accuracy

4	±0.5%F.S. 3.5MPa or over
6	±1.0%F.S.

7 Output

1	4 ~ 20mA DC (2 wire system)
6	0 ~ 5V DC (3 wire system) ±0.5% F.S. is implementation impossibility
8	1 ~ 5V DC (3 wire system)

8 Throttle

0	Nil
F	S35C
G	SUSXM7 *

* SUS forged part, water hammer countermeasures business

9 Electric wire In case of electric wire type (with 0.3m as standard)

1	Latex wire EF0.5mm ² 2.2 DIA Standard color: Red/Green/White
2	AEX0.5mm ² 2.0 ~ 2.2 DIA Standard color: Red/White/Black

It can respond to 0.2m-0.5m, and give order by 0.1m unit.

9 Cable In case of cable type (with 2m as standard)

0	Shielded cable Standard Cable color: Black 6 DIA Core line AWG22 1.56 DIA Standard color: Red/Green/White
1	Shielded cable Special Standard color: Black 6 DIA Core line AWG22 1.56 DIA Standard color: Red/White/Black

It can respond to 0.5m-5m, and give order by 0.5m unit.

6 Power source

1	24V DC±10%
6	12V DC±10% For 4 ~ 20mA is not available
A	15V DC±10% 4 ~ 20mA is applicable for load resistance less than 100Ω

12 Treatment

0	Nil
1	Use no oil
2	Use no water
3	Use no oil & water

15 Document

0	Nil
1	Please specify your requirement Drawing one sheet, Instruction manual, Inspection procedure, Mill sheet, Test report

11 Condenser

	Built-in condenser	Through capacitor
0	Include (standard)	Include (standard)
1	With	Nil
2	Nil	With
3	Nil	Nil

Because it is different by installation environment, please contact us.

When selected 6 or 8 in 1 type

10 Cable terminal

0	Standard
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When selected 7 in 1 type

10 Electric wire terminal

Terminal treatment	Manufacturer name	Type
K	Connector Tajimi	R04-J6F
L	Connector Tajimi	R04-P6M
M	Connector Nanaboshi	NJW-205-PM6
N	Connector Omron	XS2B-D421
P	Connector Molex	5196-04 (Non-Drip-proof)
Q	Connector Molex	5195-03 (Non-Drip-proof)
R	Connector Molex	5557-04R (Non-Drip-proof)
S	Connector J.S.T.	VHR-3N (Non-Drip-proof)
1	Solderless contact J.S.T.	V0.5-3
2	Solderless contact J.S.T.	V0.5-4

When selected 9 in 1 type

10 Cable terminal

Terminal treatment	Manufacturer name	Type
A	Connector AMP (Standard)	Econoseal J series MARK II-174354-2 2pin
B	Connector AMP (Standard)	Econoseal J series MARK II-174359-2 3pin
C	Connector Yazaki	7222 · 6234-40 3pin
D	Connector Mitsubishi	Z03M-GY 3pin
1	Solderless contact J.S.T.	V0.5-3
2	Solderless contact J.S.T.	V0.5-4
3	Solderless contact J.S.T.	V1.25-3
4	Solderless contact J.S.T.	V1.25-4

In case of electric wire only

10 Electric wire terminal

7	It shows it	With call gate tube
8	It shows it	With call gate tube

* Should be 7 in 1 type