



Clean water

KL78 Level Transmitter

OUTLINE

This is a level sensor, in which a built-in ceramic capacitance sensor with aluminum dioxide applied to the pressure-receiving portion has been installed. Its output is 4 mA to 20 mA with an exclusive amplifier. Because of the throw-in type level transmitter, a liquid level can easily be measured by hanging it directly in the liquid. This level sensor can be used in combination with the GC93 receiver for liquid level measuring.

FEATURES

- Because of adopting a ceramic diaphragm, requiring no liquid charge, this level sensor is a highly reliable product, demonstrating high-pressure resistance and high corrosion resistance.
- Zero adjustment (zero resetting for the atmospheric pressure and zero suppression) can easily be implemented.
- This level sensor is small in size and rigid in construction.
- This level sensor is a product complying with protective properties against surging (1 kV), demonstrating superior protective characteristics against electrical noise and induction thunder from the exterior.

SPECIFICATION

Fluid:
Non-corrosive liquid

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

Cable mounting:
11 DIA. Bore cable
Please select from 5, 10, 15, 20 m.

Wetted parts material:

Case	316st.st.
Sensing part diaphragm	Alumina
Gasket	NBR (For FPM is fair)
Cable sheath	PVC (Chloroethylene)
Flange	316st.st.
Stand	316st.st.
Chain	304st.st.

Level range:
0 ~ 1 → 0 ~ 10m

Operating temperature:
-5 ~ 50°C (But should not be frozen)

Power source:
24V DC ±10%

Output:
4 ~ 20mA DC (2 wire system)

Load resistance:
500Ω or less

Transmission system:
2 wire system

Zero reset:
Short-circuit between minuses of power source and leased line.

Accuracy:
±1%F.S.

Temperature coefficient:
Zero ±0.05%F.S./°C
Span ±0.05%F.S./°C

Weight:
Body approx. 1kg (Cable approx. 140g/m)

Level range, Water level detection range, Zero adjustable range, Accuracy and allowance over load:

Level range	Water level detection range	Zero adjustable range*1	Accuracy (±1%F.S.)	Allowance over load
0 ~ 1m	0 ~ 2m	0 ~ 1m	±0.01m	5m (0.05MPa)
0 ~ 3m	0 ~ 5m	0 ~ 2m	±0.03m	15m (0.15MPa)
0 ~ 5m	0 ~ 8m	0 ~ 3m	±0.05m	25m (0.25MPa)
0 ~ 10m	0 ~ 15m	0 ~ 5m	±0.1m	50m (0.5MPa)

* 1 Zero adjustment is done by exclusive line.

DETECTION PRINCIPLE AND FASILITY

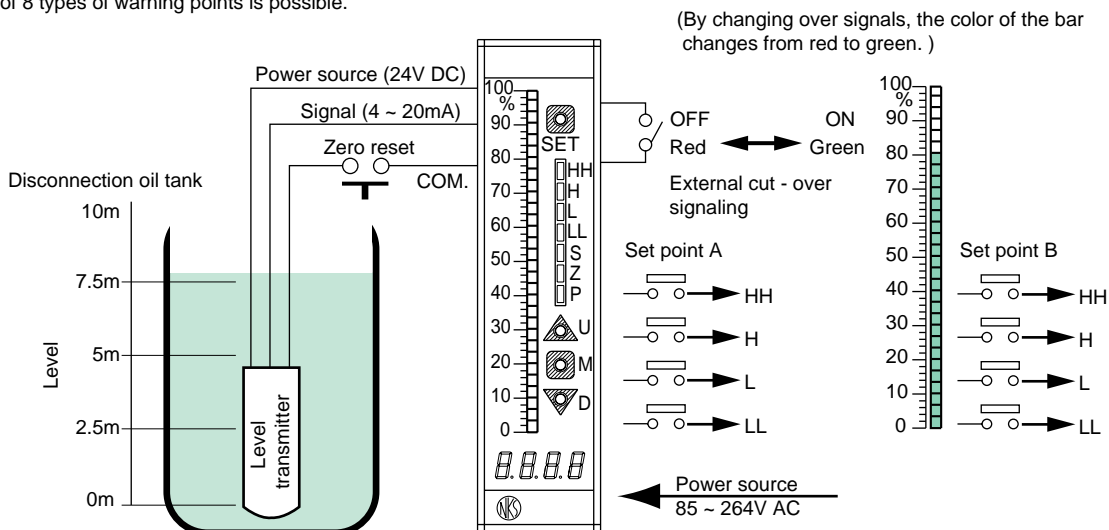
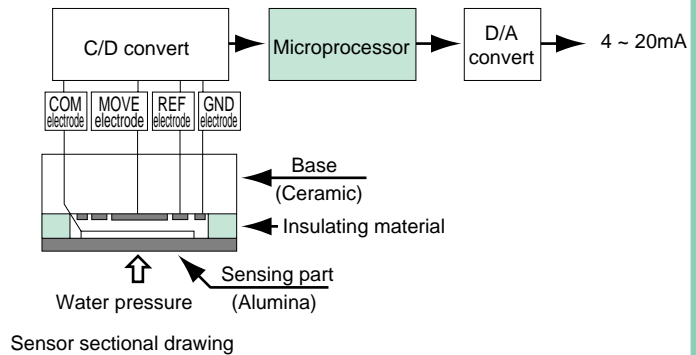
In combination with a digital bar graph meter relay (model: GC93) and in accordance with utilization purposes, this level sensor can widely be applied to watch and control at the job site.

<Level sensor part>

- This level sensor senses by its diaphragm the variation of hydraulic pressure as a variation of capacitance.
- In the sense of preciseness, this level sensor's hysteresis is small, demonstrating excellent repeatability and, additionally, excellent temperature characteristics.
- Suppression can be implemented within the range of zero adjustment, if required, by a zero setting signal.
- The zero setting signals can easily be implemented by simply inputting it to the minus side of the power source.

<Receiver part (Digital bar graph water relay GC93) >

- Wiring can easily be implemented because the sensor power source (24V DC) is built - in.
- This level sensor can comply with various types of fields because its power source of main body is the free type power source of 85V to 264V.
- Respective levels can be observed at a single glance by 101 pcs. of bar LED.
- Four relay contactors are mounted, making it capable of high - precision level control.
- The four - digit LED display enables the precise reading of the actual level amount.
- Two patterns of setting values can be registered. By inputting changing over signals from the exterior, therefore, the setting of 8 types of warning points is possible.

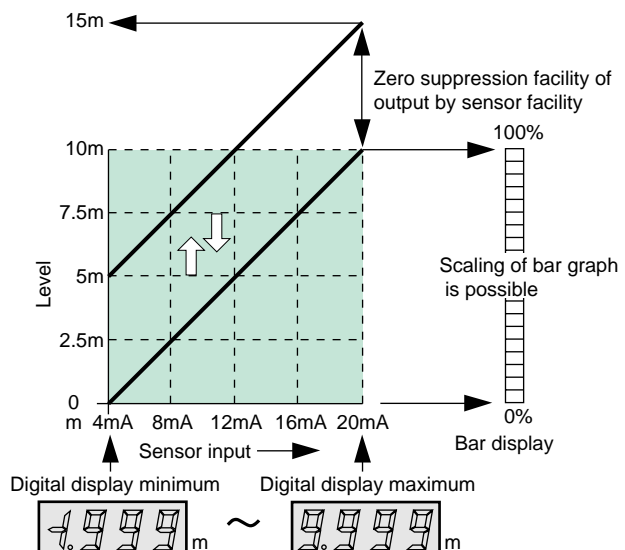


ZERO SUPPRESSION AND SCALING

- After setting the zero suppression of the level sensor, the rescaling of actual amount display and bar indication are possible at the receiver side. So, the easy change of the range and setting is possible.

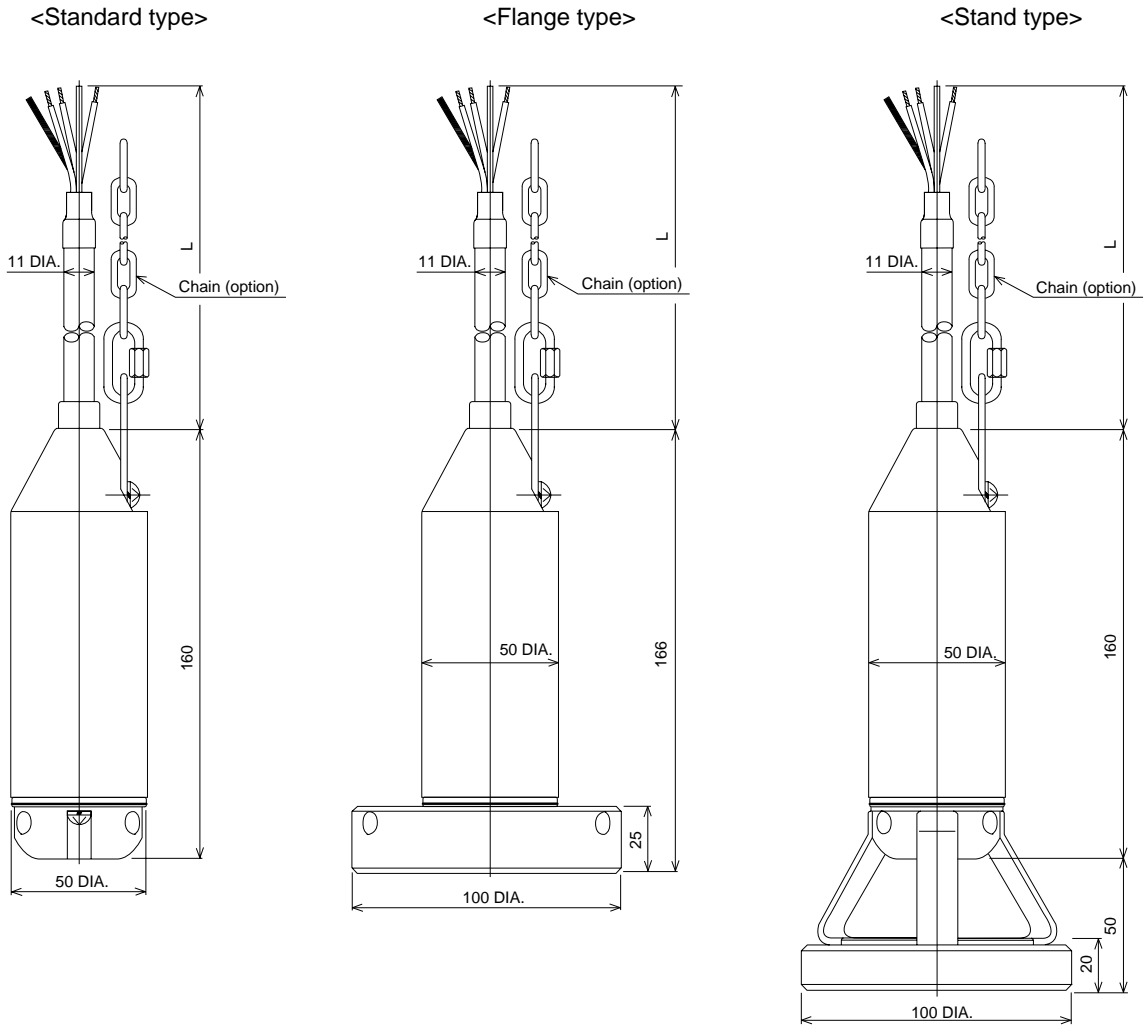
<Set - up function>

- * Migration of zero by sensor (in adjustable range)
- * True amount display by scaling of 4 digit LED
- * Digit setting of a graph decimal point
- * Scaling of bar diagrammatic chart display



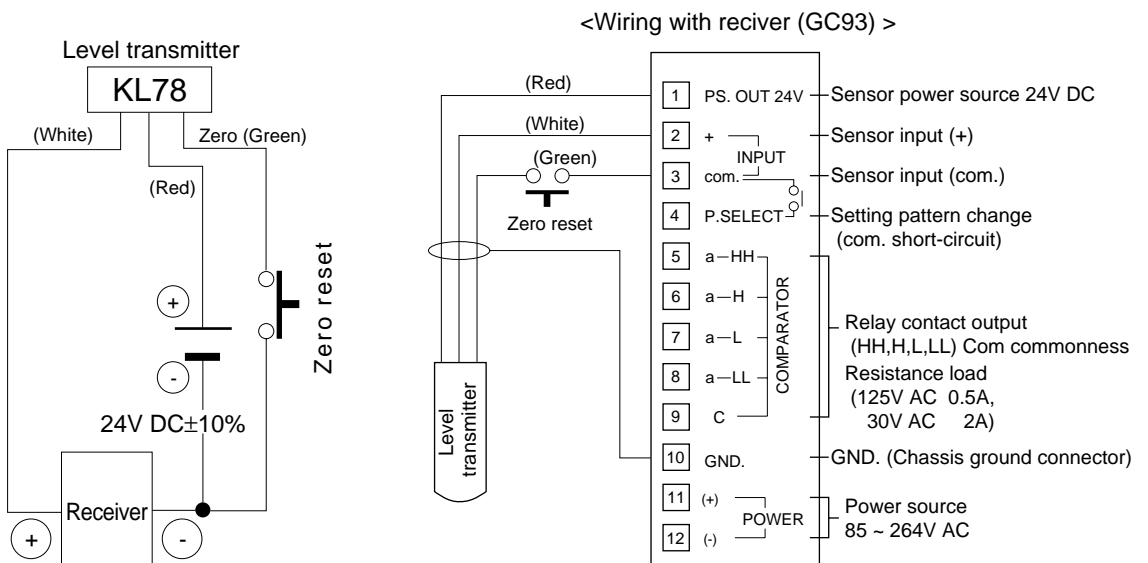
Please refer to the detailed catalogue for GC93.

DIMENSIONS



Please refer to catalogue No.B10-03 about dimensions and panel cut dimension of GC93.

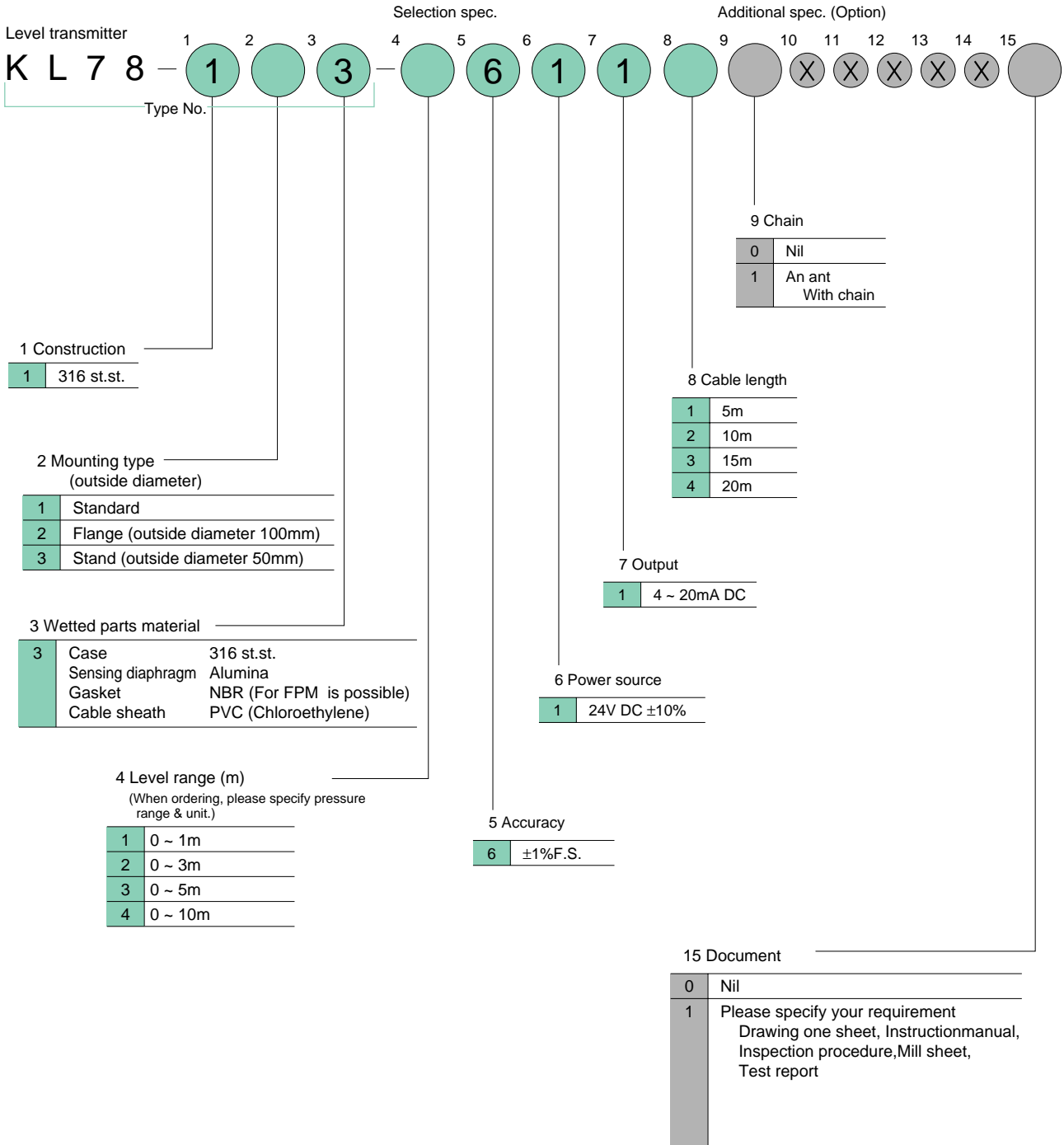
WIRING



Type No. constitution

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.



The contents in the catalogue are subject to change without notice.

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