

# **KSL SERIES**

## **SOUNDING BOB TYPE LEVEL INDICATOR**

**Measuring Level Correctly & Reliably !!  
Ultimate Solution for Stock Management**



**The housing is so robust that the unit's durability under  
harsh conditions may be incomparable.  
It can be applied to every process !!**

# **KSL SERIES**

**SOUNDING BOB TYPE LEVEL INDICATOR**

Ultimate Solution for Stock Management Reliably Catching Level for Powder, Granules & Lumps

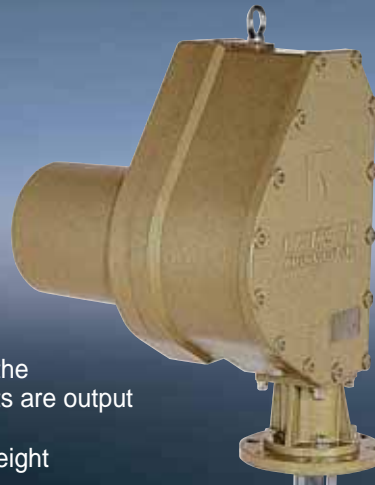
This is the general-purpose level meter having a good market share as a level meter for powder, granules and lumps stored in a tank, a silo or the like. It can be used for versatile purposes as a level meter for all sorts of powder, granules, and lumps.



**KSL-T8**  
CPU Built-in

## PRINCIPLE OF OPERATION

- 1 When a start signal is input, the motor starts up and then the metering tape comes out, followed by the weight descending.
- 2 The motor stops when the weight touches on the measuring substance, and level measurements are output
- 3 When the motor reversely rotates to get the weight back to the roll-up-complete position, it stops.
- 4 The unit stands by awaiting the next start signal



**KSL-GT**

Withstand-pressure  
Explosion-proof  
Exd BT4

Just push a measuring button on any tanks, and, with only this touch, you can select the tank to measure and start measuring !!



**KSL-DS4**

**KSL-DS8**



**KSL-MT**  
CPU Built-in



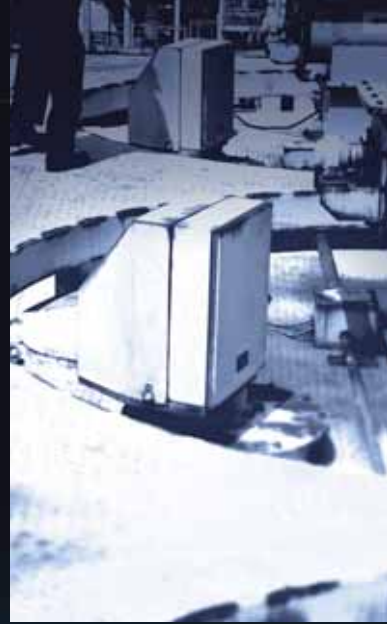
**KSL-W2B**  
Standard



**KSL-T2**  
Standard



**KSL-W3T**  
Standard



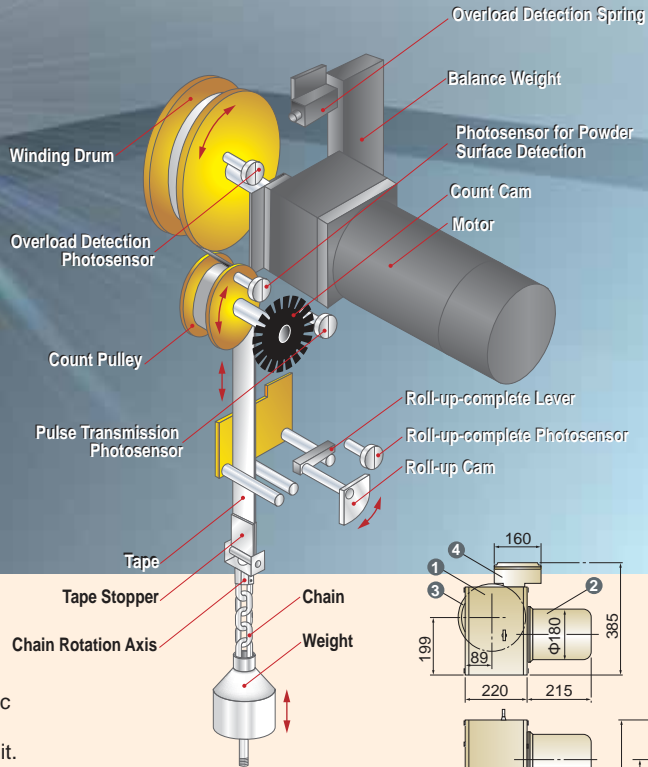
# Intelligent CPU Built-in Model

## KSL-T8

**CPU Built-in**

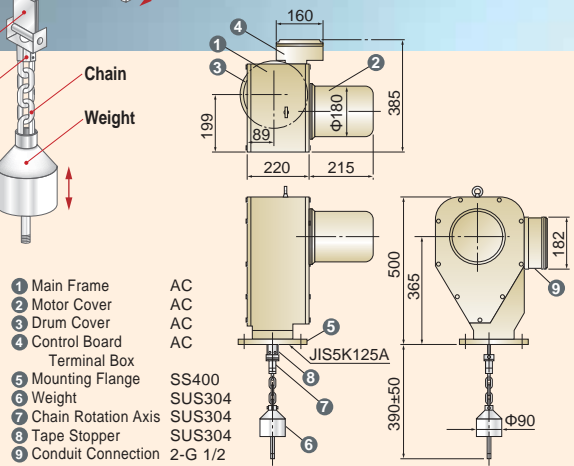
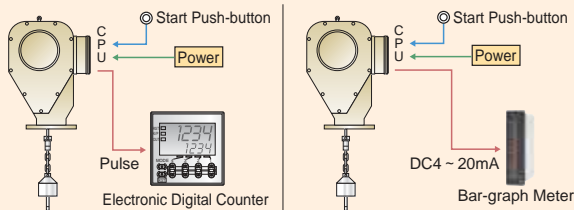
Ultimate Solution for Stock Management !!

CPU being built in a rugged body, the unit is weatherproof and can effectively operate under any circumstances including a pressured tank.



### Example of Equipment Configuration

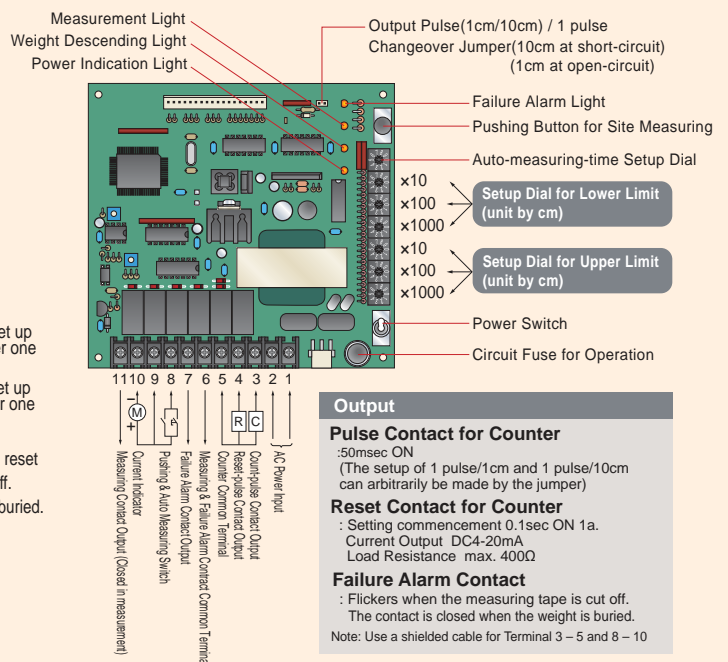
Transmitted pulses may be indicated directly on an Electromagnetic counter or on an electronic counter via Control Unit, or may be displayed as analog outputs via P/I Converter from Control Unit.



### Standard Specification

- Power Voltage : 100VAC or 200VAC, Single-phase 50/60Hz
- Consumption : Max. 150VA
- Allowable Temperature : ambient - 10°C ~ + 50°C (No freezing /condensation)  
Inside tank - 10°C ~ + 80°C (No freezing/ condensation)
- Measuring Span : Standard 20m (Max. 40m Option)
- Measuring Method : Pulse Counting
- Measuring Unit : 1 pulse/10cm, or 1 pulse/1cm
- Measuring Accuracy : ±10cm / ±1cm
- Motor : Single-phase, Reversible, Output 40W  
30 minutes rating, with brake
- Elevating Speed : 8.8m/min(50Hz), 11.0m/min(60Hz),
- Measure : SUS304, CSP tape W32 x Thick 0.3mm
- Cutoff Load : 9kN
- Output Signal : Current signal DC4 ~ 20mA (indicate remains).  
DC20 ~ 4mA(indicate vacated portion) — User can set up either one
- Pulse contact signal 1 pulse / 1cm — User can set up either one  
(No-volt signal) 1pulse / 10cm
- Built-in Timer : Measuring stand-by time can be adjusted via a set-up..
- Output Contact : Reset Contact / for Remote Indication Counter, ON at the time of reset  
Failure Alarm Contact/ Flickers when the measuring tape is cut off.  
The contact is closed when the weight is buried.
- Body material : Aluminum casting
- Mounting Method : JIS 5K 125A
- Protection Rank : IP67
- Weight : 45kg

### Circuit Board Layout / Interconnecting Diagram



The level indications are directed from the remote. That requires no site measurement, and you can expect much improvement in terms of the working and safety environment.

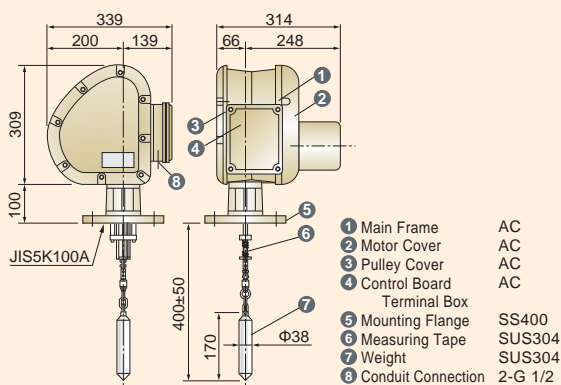


## KSL-MT

CPU Built-in

CPU Built-in Model of Compact Size

Suitable for level control of Hopper Bin or the like in smaller capacity



### Standard Specification

- Power Voltage : 100VAC or 200VAC, Single-phase 50/60Hz
- Consumption : Max. 90VA
- Allowable Temperature : -10°C ~ +50°C (No freezing / no condensation)
- Measuring Span : 0 ~ 20m
- Measuring Method : Pulse Counting
- Measuring Unit : 1 pulse/10cm or 1 pulse/1cm
- Measuring Accuracy : ±10cm / ±1cm
- Motor : Single-phase, Reversible, Output 25W  
30 minutes rating, with brake
- Elevating Speed : 7.2m/min (50Hz), 8.5m/min (60Hz),
- Measure : SUS304, CSP tape W10 x Thick 0.2mm
- Cutoff Load : 1kN
- Output Signal : Current signal DC4 ~ 20mA (indicate remains):
  - DC20 ~ 4mA (indicate vacated portion) — User can set up either one
  - Pulse contact signal 1 pulse / 1cm — User can set up either one
  - (No-volt signal) 1 pulse / 10cm — User can set up either one
- Built-in Timer : Measuring standby time can be adjusted by a set-up.
- Output Contact : Reset Contact / for Remote Indication Counter, ON at the time of reset
- Failure Alarm Contact/ Flickers when the measuring tape is cut off.
- The contact is closed when the weight is buried.
- Body material : Aluminum casting
- Mounting Method : JIS 5K 100A
- Protection Rank : IP67
- Weight : 20kg

Rugged Withstand-pressure Explosion-proof  
For Explosive Environment

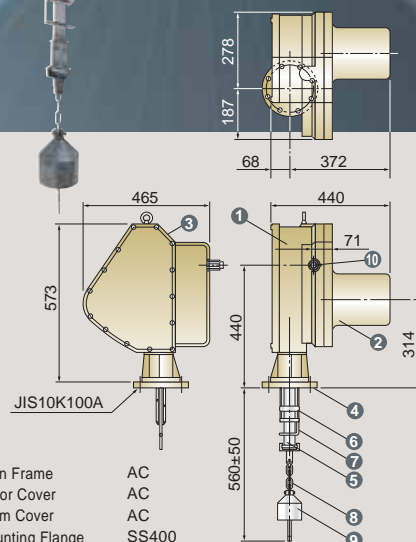
## KSL-GT

Withstand-pressure  
Explosion-proof  
Exd BT4



It can reliably operate regardless of particulates, temperature changes, and electric fluctuation of measuring substances.

It can measure explosive substances as well as effectively function in the explosive gas environments such as chemical/medical factories, power station or the like.



### Standard Specification

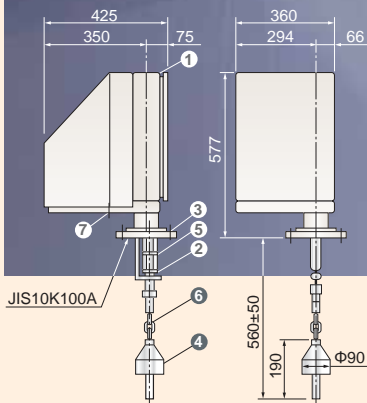
- Power Voltage : 100VAC or 200VAC, Single-phase 50/60Hz
- Consumption : 150VA
- Allowable Temperature : ambient -10°C ~ +40°C (No freezing / condensation)  
inside tank -10°C ~ +40°C (No freezing / condensation)
- Measuring Span : 0 ~ 20m (Max. 30m Option)
- Measuring Method : Pulse Counting
- Measuring Unit : 1 pulse/10cm
- Measuring Accuracy : ±10cm
- Motor : Single-phase Output 40W, Class E Insulating  
33% ED twice/hour (condenser 15 $\mu$ F)  
Single-phase 200VAC 40W Class E Insulating  
33% ED twice/hour (condenser 3.5 $\mu$ F)
- Elevating Speed : 8.8m/min(50Hz), 11.0m/min(60Hz),
- Measure : SUS304 - CSP tape W32 x Thick 0.3mm
- Cutoff Load : 9kN
- Body material : Aluminum casting
- Mounting Method : JIS 10K 100A
- Protection Rank : Indoor (Provide with raintight cover for outdoor use)
- Weight : 75kg

# KSL-T2

**Standard**

This is the general-purpose level meter having a good market share as a level meter for powder & granules.

Stainless tape being adopted as a metering device, it can be used for versatile purposes as a level meter for all sorts of powder & granules.



- 1 Main Frame SPCC
- 2 Measuring Tape 304SS
- 3 Mounting Flange SS400
- 4 Weight 304SS
- 5 Cleaner Polyacetal
- 6 Chain 304SS
- 7 Conduit Connection  $\Phi 27$

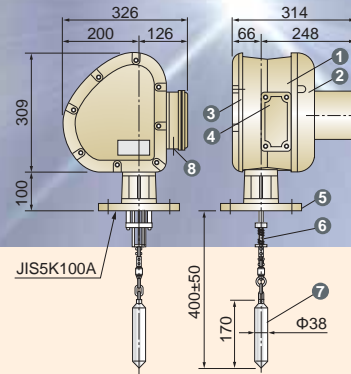
# VERSATILE MODEL HAVING CUSTOMERS' CONFIDENCE AND A GOOD MARKET SHARE

A Model of Medium size, suitable for Pressured Tank, Silo or the like.

Housed in aluminum casting, it is so occlusive that it may be dustproof, pressure-proof and weatherproof.

# KSL-W3T

**Standard**



- 1 Main Frame AC
- 2 Motor Cover AC
- 3 Pulley Cover AC
- 4 Terminal Box AC
- 5 Mounting Flange SS400
- 6 Measuring Tape 304SS
- 7 Weight 304SS
- 8 Conduit Connection G 3/4

## Standard Specification

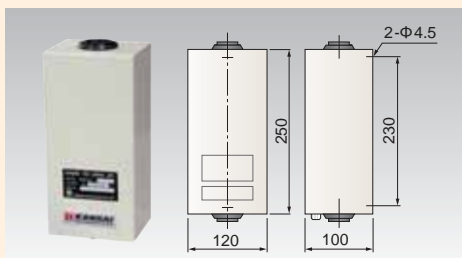
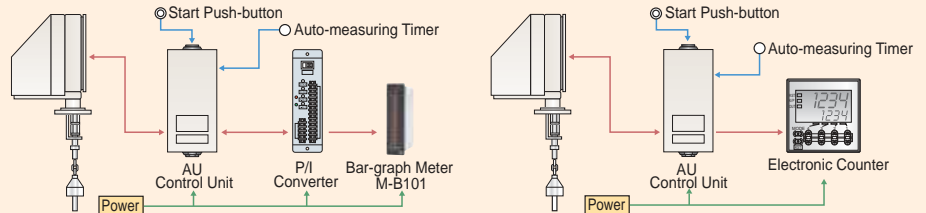
Power Voltage : 100VAC or 200VAC 50/60Hz  
 Consumption : 150VA  
 Allowable Temperature : ambient -10°C to +50°C (No freezing / condensation)  
 inside tank -10°C to +80°C (No freezing / condensation)  
 Measuring Span : 0 - 20m (Max. 40m Option)  
 Measuring Method : Pulse Counting  
 Measuring Unit : 1 pulse/10cm  
 Measuring Accuracy :  $\pm 10$ cm  
 Motor : Single-phase, Reversible, Output 40W  
 30 minutes rating, with brake  
 Elevating Speed : 9.3m/min (50Hz), 11.0m/min (60Hz),  
 Measure : Tape / 304SS W32 x Thick 0.3mm  
 Cutoff Load : 9kN  
 Body material : SPCC  
 Mounting Method : JIS 10K 100A  
 Protection Rank : IP33 or equivalent  
 Weight : 53kg

## Standard Specification

Power Voltage : 100VAC or 200VAC 50/60Hz  
 Consumption : 90VA  
 Allowable Temperature : ambient -10°C to +50°C (No freezing / condensation)  
 inside tank -10°C to +80°C (No freezing / condensation)  
 Measuring Span : 0 - 20m  
 Measuring Method : Pulse Counting  
 Measuring Unit : 1 pulse/10cm  
 Measuring Accuracy :  $\pm 10$ cm  
 Motor : Single-phase, Reversible, Output 25W  
 30 minutes rating, with brake  
 Elevating Speed : 7.2m/min (50Hz), 8.5m/min (60Hz),  
 Measure : 304SS - CSP tape W10 x Thick 0.2mm  
 Cutoff Load : 1kN  
 Body material : Aluminum Casting  
 Mounting Method : JIS 5K 100A  
 Protection Rank : IP67

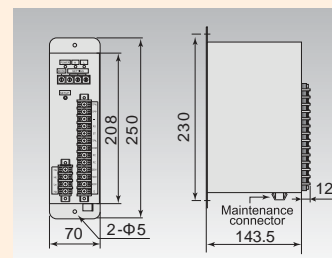
### Example of Equipment Configuration

Transmitted pulses may be indicated directly on an electromagnetic counter or on an electronic counter via Control Unit, or may be displayed as analog outputs via P/I Converter from Control Unit.



### Control Unit (KSLAU)

Supply Voltage : 100 / 110AC, 200 / 220V  
 50/60Hz as specified (same voltage as detector)  
 Output Contact Capacity : Rated load 250VAC 5A 30VDC 5A (resistance load)  
 Minimum Applicable Resistance Load 5VDC 10mA  
 Allowable Ambient Temperature : 0°C to +50°C  
 Color : Munsell 5Y 7/1  
 Housing Material : Steel Plate  
 Weight : 1.7kg



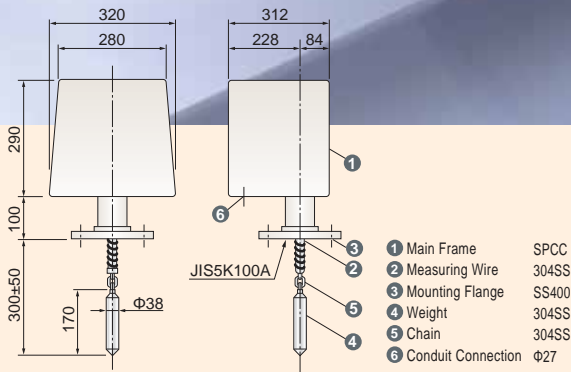


Compact model used for a hopper bin in smaller capacity.

This is a convenient type to be used for a less capacious storage tank which is placed in light-industry processing facilities including flour, feeding stuff, plastic and so on.

## KSL-W2B

Standard



### Standard Specification

- Power Voltage : 100VAC or 200VAC 50/60Hz
- Consumption : 70VA
- Allowable Temperature : ambient -10°C to +50°C (No freezing / condensation)  
inside tank -10°C to +80°C (No freezing / condensation)
- Measuring Span : 0 – 20m
- Measuring Method : Pulse Counting
- Measuring Unit : 1 pulse/10cm
- Measuring Accuracy : ±10cm
- Motor : Single-phase, Reversible, Output 15W  
30 minutes rating, with brake
- Elevating Speed : 7.0m/min (50Hz), 8.6m/min (60Hz),
- Measure : 304SS Wire Φ1.5mm 7 x 19 Z-Stranding
- Cutoff Load : 1.7kN
- Body material : SPCC
- Mounting Method : JIS 5K 100A
- Protection Rank : IP33 or equivalent
- Weight : 20kg

### Installed Equipment

#### ● P/I Converter (PSC-222)

- Supply Voltage : 100/200VAC ±10% 50/60Hz
- Consumption : 4VA
- Level Output : 4 – 20mADC Allowable load resistance 1kΩ
- Output Contact Capacity : Rated load 250VAC 3A 30VDC 3A (Resistance load)  
\*Contact output of Upper/Lower limit Minimum Applicable Load 1VDC 10mA
- Allowable Ambient Temperature : 0°C to +50°C
- Painted Color : Munsell N7
- Housing Material : Steel Plate
- Setting Range : 0-99.9m

## Microprocessor-Control CONTROLLER

- Selecting a Tank with One-touch Operation
- Discretionary Detection by Application
- Intelligent Diagnosis, Equipped with Memory Function

### System Outline

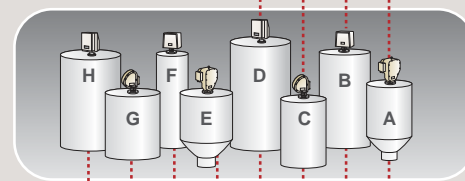
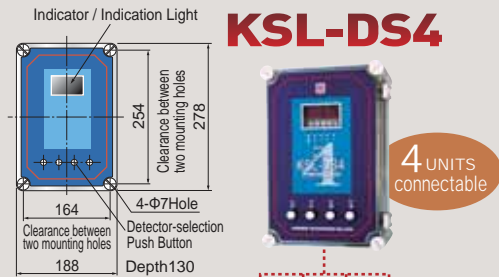
The descent distance of measuring tape/wire may be converted to the stock volume in a tank.

The detector detects in a mechanical manner.

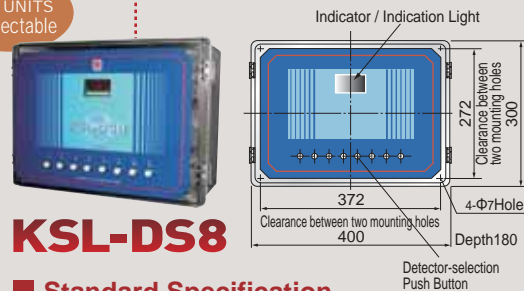
The measuring findings can be shown by height(m), %, ton & m3. You can select an indication of either Remains or Vacated Portion.

### Applicable Models

KSL-T8(AUType), KSL-T2, KSL-W3T, KSL-W2B



8 UNITS connectable

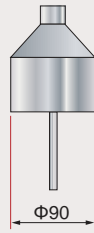


### Standard Specification

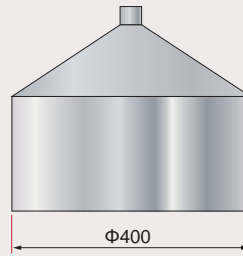
- Housing Type : Indoor Wall-mounted Type DS4  
W188 x H278 x D130mm  
DS8 W400 x H300 x D180mm
- Allowable Temperature : 0 to +50°C
- Power : 100VAC or 200VAC ±10% 50/60Hz
- Configured Detector : Select from KSL-W2B, W3T, T2, T8 (AU model) and so on.
- Number of Connected Detectors : DS4 / 4 units, DS8 / 8 units
- Cable Type : Regular Control Cable (No extension limit)
- Number of Cable Cores : W2B : 6 cores  
W3T, T2, T8 (AU model) : 7 cores
- Measuring Range : 0 – 20m (T2, T8 (AU model) Option Max.40m)  
\*Varied by a selected detector
- Indicator : 7-segment LED (W8 x H14.2mm)
- Level Indication : Height (m), Specific Volume Bulk (%), Conversion (m<sup>3</sup>, ton) – No unit indicated
- Indication Format : Set up to indicate either vacated portion or remains.
- Indicated Conversion Values : Discretionary (in the range of 0 to 999)
- Memory Function : EEPROM, Set Values or Values formerly measured
- Diagnostic Function : Burial Alarm, Measure Cut-off Alarm depend on Selected Detector
- External Output : Not available

KSL-T8  
KSL-GT  
KSL-T2  
Various Types  
of Weight

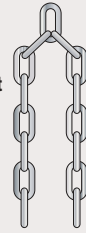
Standard Weight  
SUS304



Opened/Float-type  
Weight  
SUS304  
(Low Specific Gravity)

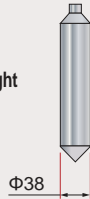


Chain-type Weight  
SS400 or  
SUS304  
(for lumps)

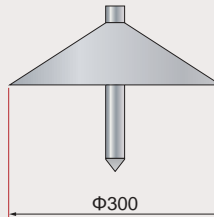


KSL-MT  
KSL-W2B  
KSL-W3T  
Various Types  
of Weight

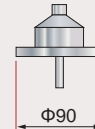
Standard Weight  
SUS304



Umbrella-type Weight  
SUS304  
(Low Specific Gravity)

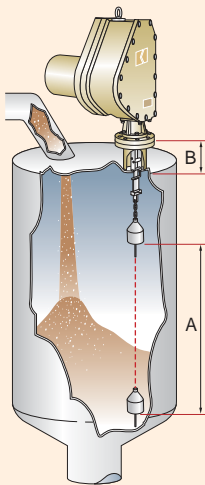


Disc-shaped Weight  
SUS304  
(Low Specific Gravity)



Please advise the following information for your inquiries and ordering.

1. Name of Measuring Substance [ \_\_\_\_\_ ]
  2. Specific Gravity of the Substance [ \_\_\_\_\_ ]
  3. Granularity of the Substance [ \_\_\_\_\_ ]
  4. Granularity of the Substance [ \_\_\_\_\_ ]
  5. Temperature in a Tank [ \_\_\_\_\_ ] °C
  6. Pressure in a Tank [ \_\_\_\_\_ ] Pa
  7. Ambient Temperature [ \_\_\_\_\_ ] °C
  8. Power Voltage [ \_\_\_\_\_ ]
- 
- A. Measuring Range [ \_\_\_\_\_ ]
  - B. Nozzle Height [ \_\_\_\_\_ ]



Installed Equipment

### ● Meter Relay LV1000-AI-A2



Power supply: AC85 to 264V (50/60Hz)  
DC12 to 24V ±10%  
Power consumption: Max 22VA (Option 10W)  
Sensor supply voltage: DC24V (150mA)  
Analog Current Output: DC4 to 20mA  
(Resistance load Max.500Ω)  
Analog Current Input: DC4 to 20mA  
(Input resistance 250Ω)  
Contact capacity: AC250V 0.3A  
(Resistance load)  
DC30V 2A  
(Resistance load) Max 60w  
Linearization function: 20 points  
Alarm contact output: 2c

### ● Electronic Digital Counter (H7CX-A114)



Size : DIN48 x 48mm  
Power Voltage : 100 – 240VAC  
50/60Hz (common)  
Consumption : about 9.2VA  
Display : 7 segment, Negative  
Transmissive LCD in 4 digit)  
Input : Contact / Open the contact or  
short circuit.  
Features : Select either addition or subtraction.  
A counter that can operate the control  
output when a set number is counted

## Line of business

- Rotary Paddle Type Level Switch
- Vibration Type Level Switch
- Swing Type Level Switch
- Acoustic Level Switch
- Capacitance Type Level Switch
- Capacitive Proximity Sensor
- Capacitance Type Level Indicator
- Diaphragm Type Level Switch
- Tilt Switch
- Leak Type Level Switch
- Microwave Switch
- Sounding Bob Type Level Indicator
- Flow Switch
- Conductance Type Level Switch
- Float Switch
- Float Type Level Indicator
- Ultrasonic Type Level Indicator
- Equipments For Conveyor Lines
- Dust Monitor System
- Zirconia Oxygen Analyzer
- Laser Type Level Indicator
- RADAR Type Level Indicator
- On-line Sensors for Accurate  
Liquid Analysis
- Ultrasonic Flow meter

All-round Manufacturer of Level Controllers for Powder, Granules and Liquid

**KANSAI Automation Co., Ltd.**

Headquarters :  
2-14, Togano-cho, Kita-ku, Osaka 530-0056, Japan  
TEL. 81-6-6312-2071 FAX. 81-6-6314-0848  
e-mail: info@kansai-automation.co.jp

<http://www.kansai-automation.co.jp>

Tokyo Branch : 1-29-6, Hamamatsu-cho, Minato-ku, Tokyo 105-0013, Japan  
TEL. 81-3-5777-6931 FAX. 81-3-5777-6933

Nagoya Office : 3-31-27, Uchiyama, Chigusa-ku, Nagoya 464-0075, Japan  
TEL. 81-52-741-2432 FAX. 81-52-741-1588

Kyushu Office : 1-2-39, Asano, Kokura Kita-ku, Kitakyushu 802-0001, Japan  
TEL. 81-93-511-4741 FAX. 81-93-511-4580



\*Please be sure to read USER'S GUIDE, Installation & Operation  
Instructions before using the instrument.

\*The specifications herein may be subject to change without advance notice.

Agent