

# Ultrasonic Level Transmitter DU-Series



## OPERATING PRINCIPLE

DU (Daehan Ultrasonic) sensor uses ultrasound to measure the level in non-contact way and convert the time taken by the ultrasound, to reach the target object and then to return to the sensor, into current signal which is used for indicating the level value, warning, and controlling. DU is durable and easy to install and its built-in temperature sensor enables more precise measurement.

## FEATURES

- Selectable modes of either “Air space” or “Liquid height”.
- Display panel allows user to easily check current level and control the setting. (Excluding 'DU-WB Series')
- Condensation prevention function in transducer.

It is a function that makes strong ultrasonic signal oscillate at regular intervals to prevent water droplets from forming on the outer surface of the transducer. Therefore, the Ultrasonic sensors can provide more stable measurement.

## SPECIFICATIONS

|                     |  |
|---------------------|--|
| Dead Band           | Range 1M model : 10cm<br>Range 5M model : 30cm<br>Range 10M model : 30cm<br>Range 12M model : 50cm |
| Accuracy            | Full scale $\pm 0.25\%$  |
| Resolution          | 1mm  |
| Beam Width          | 11°  |
| Operating Temp.     | -20°C~60°C   |
| Operating Pressure  | A.T.M (Option : Up to 2.5Kgf/cm <sup>2</sup> )   |
| Supply Voltage      | DC 24V   |
| Current Consumption | Max. 100mA (4-wire type)<br>Max. 22mA (2-wire type)  |
| Signal Output       | DC 4~20mA<br>(Some items support optional RS485 or Bluetooth)                                      |
| Cable Entry         | PF 1/2 Inch  |
| Material            | HEAD : PBT-FR-GF10<br>Transducer : PVDF<br>(Option) Flange : P.V.C or A.B.S                        |
| Enclosure Rating    | IP65 (Optional : IP68)   |

## 4 - wire type

- Cable entry size PF 1/2
- Dead band : 30cm
- 3 wire connection type (GND COMMON) Current (4 20mA) Output
- 4 wire connection type (RS-485) Output
- Selectable models of Air Space or Liquid height
- Condensation prevention function in transducer

### Ordering Variation

|          |  |
|----------|--|
| DU - 05  | Max. Range 5M / Mounting : Socket 1.5" |
| DU - 010 | Max. Range 10M / Mounting : Socket 2"  |

\* Dimension : 90 Page



Built in indicator



DU - 010

## 2 - wire type

- Cable entry size PF 1/2
- Dead band : 30cm
- 2 wire connection type with 4~20mA current loop
- Selectable models of Air Space or Liquid height
- Condensation prevention function in transducer

### Ordering Variation

|          |  |
|----------|--|
| DU - 50  | Max. Range 5M / Mounting : Socket 1.5" |
| DU - 100 | Max. Range 10M / Mounting : Socket 2"  |

\* Dimension : 90 Page



Built in indicator



DU - 50

## 2 - wire type for open channel

- Cable entry size PF 1/2
- Dead band : 10cm (DU-10-G) , 30cm (DU-50-G)
- 2 wire connection type with 4~20mA current loop
- Selectable models of Air Space or Liquid height
- Condensation prevention function in transducer
- For water
- Suitable for open channel environment with a flow

### Ordering Variation

|             |  |
|-------------|--|
| DU - 10 - G | Max. Range 1M / Mounting : Socket 1"   |
| DU - 50 - G | Max. Range 5M / Mounting : Socket 1.5" |

\* Dimension : 90 Page



Built in indicator



DU - 10 - G

## Explosion proof type

- Cable entry size PF 1/2
- Dead band : 30cm
- 2 wire connection type with 4~20mA current loop
- Selectable models of Air Space or Liquid height
- Ex dm IIB T6 (KCs standard)
- Enclosure (Head) Material : Aluminium

### Ordering Variation

DU - 100 - EX      Max. Range 10M / Mounting : Socket 2"

\* Dimension : 90 Page



Built in indicator

DU - 100 - EX

## Bluetooth type

- Enclosure Rating : IP68
- Cable Length : Std. 1M
- Dead band : 30cm
- Selectable models of Air Space or Liquid height
- Condensation prevention function in transducer
- Easy calibration & monitor via DHS RC App. with Bluetooth

### Ordering Variation

DU - 50 - WB      Max. Range 5M / Mounting : Socket 1.5"

DU - 100 - WB      Max. Range 10M / Mounting : Socket 2"

\* DHS RC detail : 86 Page

\* Dimension : 90 Page



Communication status L.E.D

DU - 50 - WB

## Custom Extension type

- Cable entry size PF 1/2"
- Base body : '4 - wire type' or '2 - wire type'
- Selectable models of Air Space or Liquid height
- Condensation prevention function in transducer
- Suitable for tanks with a long nozzle ('L' variation)
- Suitable when side mounting is required ('B' Variation)

### Ordering Variation

DU - XX - B      Side mount type

DU - XX - L      Extension type

\* Dimension : 90 Page



DU - 50 - B

DU - 010 - L

# Ultrasonic Level Transmitter DU-12-D

## OPERATING PRINCIPLE

DU-12-D is a set of a separate transducer part and a controller.

The transducer measures the level using ultrasonic waves, and the controller outputs the screen and relay contact signals so that the user can easily read the level values measured by the transducer which is likely to be installed at a remote location.

DU-12-D supports both analog 4~20mA current and digital RS485 signal outputs. The sensing part (Transducer) is of IP68 waterproof / dustproof grade and is durable. And its built-in temperature sensor enables more precise measurement.

## FEATURES

- Current (4- 20mA) Output
- Digital communication (RS-485) output
- Relay contact 4ea output
- Selectable feed / drain operation
- High/low alarm function
- LED level indication dial
- Graphic LCD display
- Selectable mode of either Air Space or Liquid height

## SPECIFICATIONS

|                       |  |
|-----------------------|--|
| Supply Voltage        | AC 220V  |
| Current Consumption   | Max. 100mA   |
| Operating Temperature | -20℃ ~ 60℃   |
| Max. Pressure         | A.T.M<br>(Option : 1Kgf/cm <sup>2</sup> more)  |
| Beam Width            | 11°  |
| Dead Band             | 500mm  |
| Range                 | 50cm ~ 12M   |
| Temp. Comp.           | Automatic in Full scale  |
| Accuracy              | Full scale ±0.25%  |
| Resolution            | 1mm  |
| Enclosure Rating      | IP68 (Transducer)  |
| Signal Output         | Current 4~20mA<br>RS-485<br>Relay Contact - 4 pcs  |
| Cable Extension       | Up to 1.1 KM<br>(from transducer to controller)  |
| Mounting              | Socket 25A (Transducer)  |
| Controller Material   | A.B.S  |
| Transducer Material   | Socket : P.O.M<br>Flange : P.V.C (Optional)<br>Cable gland : A.B.S<br>Transducer : P.V.D.F (Kynar 720) |

\* Dimension : 91 Page



# PRODUCT IMAGE

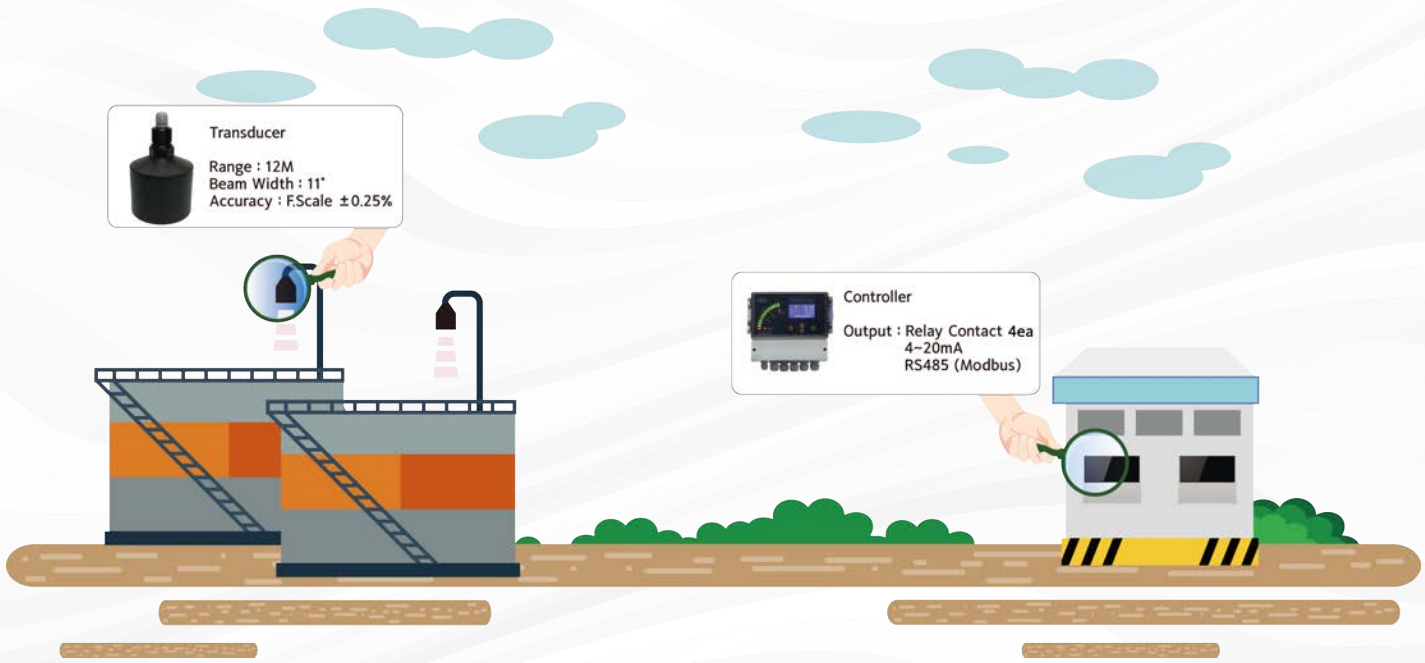


**Transducer**  
Model : DUS-12



**Controller**  
Model : DUC-200

# RELATED IMAGES & INSTALLATION



**Transducer**  
Range : 12M  
Beam Width : 11"  
Accuracy : FScale  $\pm 0.25\%$

**Controller**  
Output : Relay Contact 4ea  
4-20mA  
RS485 (Modbus)

**Cable extension : Up to 1,100M**