

# **Water meter·Hot water meter**

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# **Heat meter (32/40/50)**

WATER METER · HOT WATER METER · HEAT METER



**DONGHO**  **COSMO**

# Water meter(Remote)



# Hot water meter(Remote)



# Heat meter(Remote)



# Specification

Scale		32mm	40mm	50mm
Length(mm)		230	245	305
Screw nominal		PF 1 1/2"	PF 2	Ø70
Type		Tangential impeller type		
Structure		Multi-jet dry		
P max		below 1MPa(10bar)		
Installation		Horizontality (H)		
Telecommunication connect		White(+), Black(-)		
Output signal	Water meter	10L/Pulse(Contactless signal)		
	Hot water meter	10L/Pulse(Contactless signal)		
Scale Min.		0.1		
Scale Max(m <sup>3</sup> )		99999		
Temperature	Water meter	0°C ~ 30°C		
	Hot water meter	30°C ~ 90°C		
	Heat meter	0°C ~ 90°C		

## Flow rate by standard

### Water meter

Standard(mm)		32mm	40mm	50mm
Q1	±5%	0.063 m <sup>3</sup> /h	0.1 m <sup>3</sup> /h	0.16 m <sup>3</sup> /h
Q2	±2%	0.252 m <sup>3</sup> /h	0.4 m <sup>3</sup> /h	0.64 m <sup>3</sup> /h
Q3		6.3 m <sup>3</sup> /h	0.10 m <sup>3</sup> /h	16 m <sup>3</sup> /h
Optimal range		7.875 m <sup>3</sup> /h	12.5 m <sup>3</sup> /h	20 m <sup>3</sup> /h

### Hot water meter

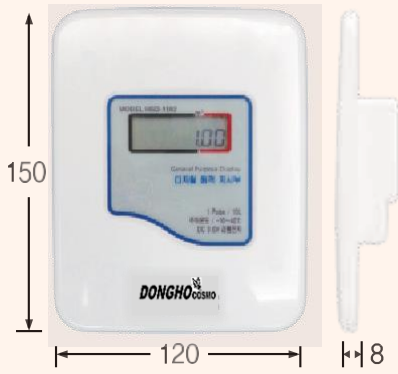
Standard(mm)		32mm	40mm	50mm
Q <sub>min</sub>	±5%	0.075 m <sup>3</sup> /h	0.2 m <sup>3</sup> /h	0.3 m <sup>3</sup> /h
Q <sub>t</sub>	±3%	0.4 m <sup>3</sup> /h	1 m <sup>3</sup> /h	2 m <sup>3</sup> /h
Q <sub>n</sub>		3 m <sup>3</sup> /h	8 m <sup>3</sup> /h	12 m <sup>3</sup> /h
Q <sub>max</sub>		6 m <sup>3</sup> /h	16 m <sup>3</sup> /h	24 m <sup>3</sup> /h

### Heat Meter

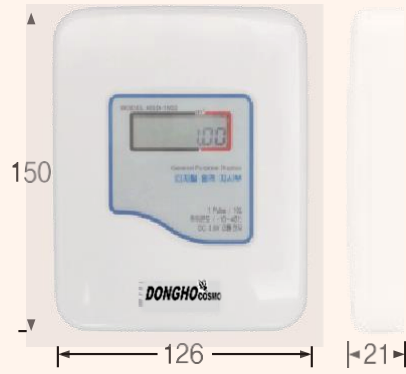
Standard(mm)		32mm	40mm	50mm
Q <sub>i</sub>		0.12 m <sup>3</sup> /h	0.28 m <sup>3</sup> /h	0.32 m <sup>3</sup> /h
Q <sub>p</sub>		3.0 m <sup>3</sup> /h	7 m <sup>3</sup> /h	8 m <sup>3</sup> /h
Q <sub>s</sub>		6.0 m <sup>3</sup> /h	14 m <sup>3</sup> /h	16 m <sup>3</sup> /h

## Display part

### Embedded type



### Non-embedded type



### How to read indicator



= 12345.67

Power resource	DC 3.6V
Temperature	-20°C~50°C
Input signal	Reed switch(Nonpolar)
	Static Relay(Nonpolar)
Display Unit	99999.99
Box	102 x 102 x 54

- Initial value of flow unit and indication unit can be integrated
- Save and restore final data when battery on / off

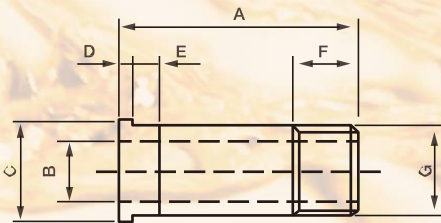
## Union pipe / nut



### Length of union-pipe

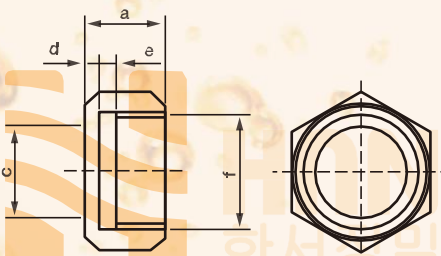
32mm	67
40mm	75
50mm	80

### Scale of pipe



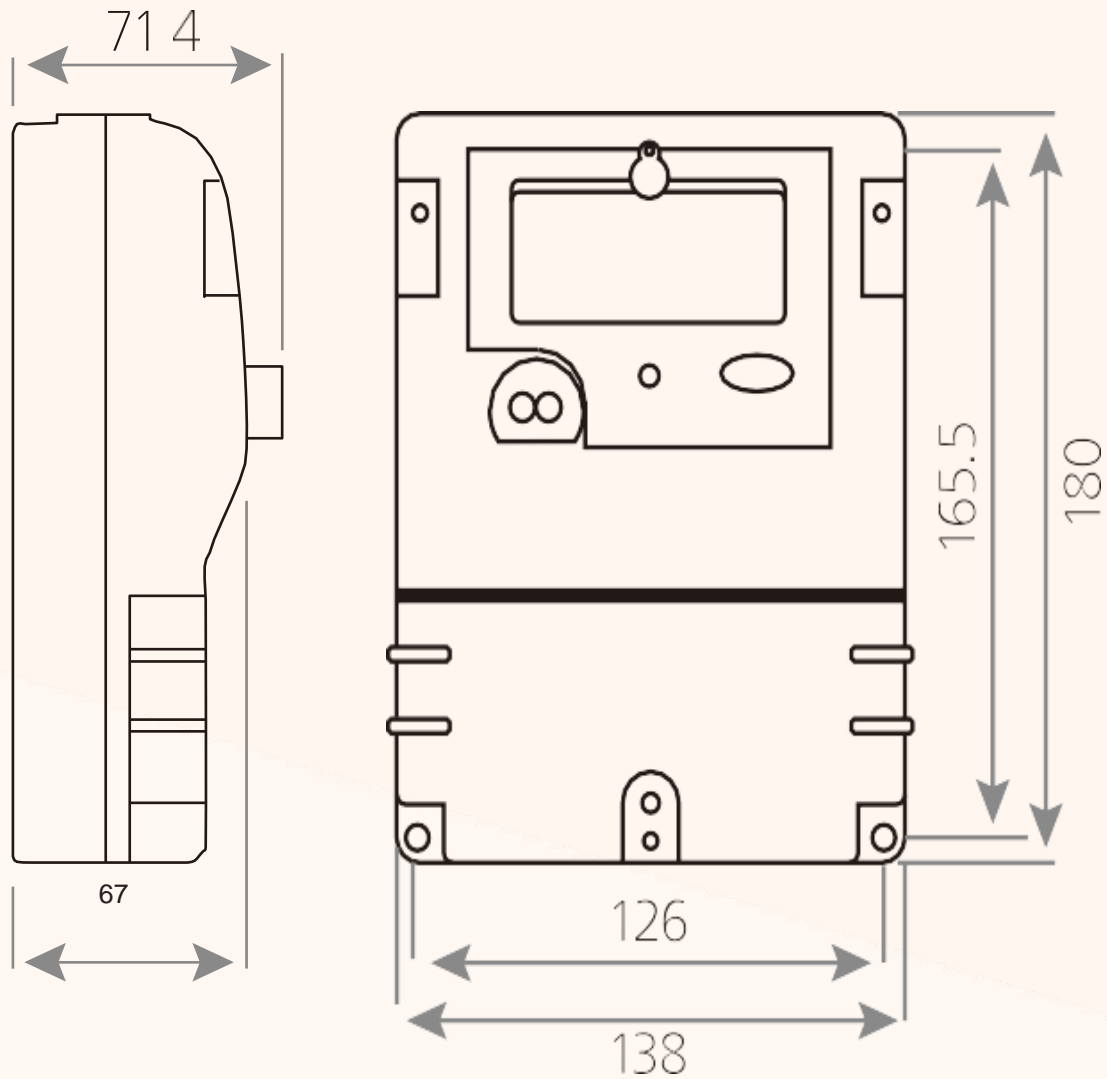
mm	a	b	c	d	e	f	g	"
32	67	32	44.2	5	4	23	42	11
40	75	40	56	5	-	30	47.8	11
50	80	50	67	6	-	40	59.6	11

### Scale of nut



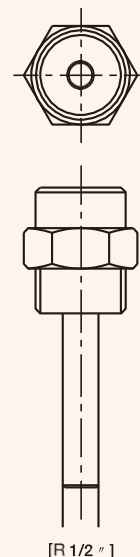
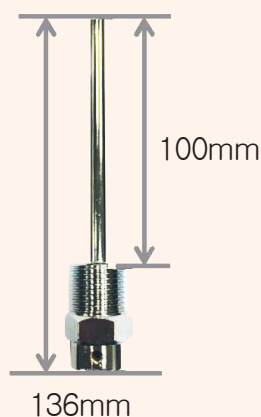
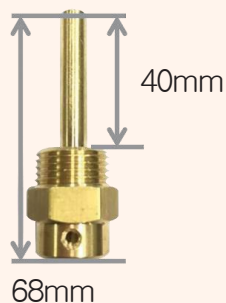
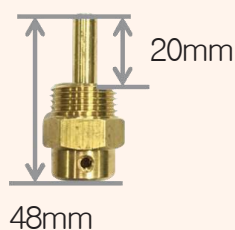
mm	a	b	c	d	e	f	"
32	22	53.5	42	5	3	46	11
40	28	68	48	5	5	59.6	11
50	40	80	61	8	6	70	11

## Specification of operation part in heat meter



Division	Specification
Minimum temperature difference	3K
Maximum temperature difference	50K
Calorie display unit	9999.999Mwh
Communication output	100kw/1pulse (Option: DC-PLC)
Power supply	DC3.6V(Lithium Battery)
Length of sensor cable	8m

## Temperature sensor pocket



A platinum resistor is used for the sensing part to measure the supply and return temperatures

## Calorimeter tolerance

Error range of flow part	Flux (m <sup>3</sup> /h)	MAX Range	Error range of calculation part	Temp. differ range ( $\Delta T$ )	MAX Range	Remarks	
	$q_p$ (Max.Flow)	$\pm 3.0\%$		$\Delta\theta_{\min} \leq \Delta\theta \leq 1.2\Delta\theta_{\min}$	$\approx 5.0\%$		$\Delta\theta_{\min} = 3K$ $\Delta\theta_{\max} = 50K$
	$0.1q_p$	$\pm 3.5\%$		$10K \leq \Delta\theta \leq 20K$	$\pm 2.2\%$		
$q_i$ (Min.Flow)	$\pm 4.3\%$	$\Delta\theta_{\max} - 5K \leq \Delta\theta \leq \Delta\theta_{\max}$	$\pm 1.2\%$				

## Points to note when installing water and hot water meters

Space for repair and maintenance

Avoid direct sunlight, high humidity, high vibration, dusty places.

Install attachment first before installing meter

It is necessary to install an intuitive tube more than 5 times of the meter diameter on the inlet side of the meter and more than 3 times of the meter diameter on the outlet side.

Valve and pressure reducer are located behind the meter.

Do not allow foreign matter to enter during installation and install horizontally according to the direction of the arrow

It is necessary to insulate it from freezing and breakage in winter.

Do not undermine sealed jade which has been tested by accredited institutions..

Remote controlling part should be installed in a place where meter reading is easy

# Points to note when installing calorie meters

Avoid locations where water or moisture may be generated.

Install the accessories before installing the calorimeter

It is necessary to install an intuitive tube more than 5 times on the inlet side of the meter and more than 3 times on the outlet side.

Prepare a temporary PIPE that has the same length and length as the calorimeter and let it flow instead of the flow volume

Clean the filter before installing the calorimeter.

When installing the indicator, use the standard box

When installing the warming part, check it on the supply side and the water return side and insert it completely into the seal pocket to seal it.

Make sure that there is no misconnection when connecting the communication line of the operation part

# Precautions when handling integrated calorie meter

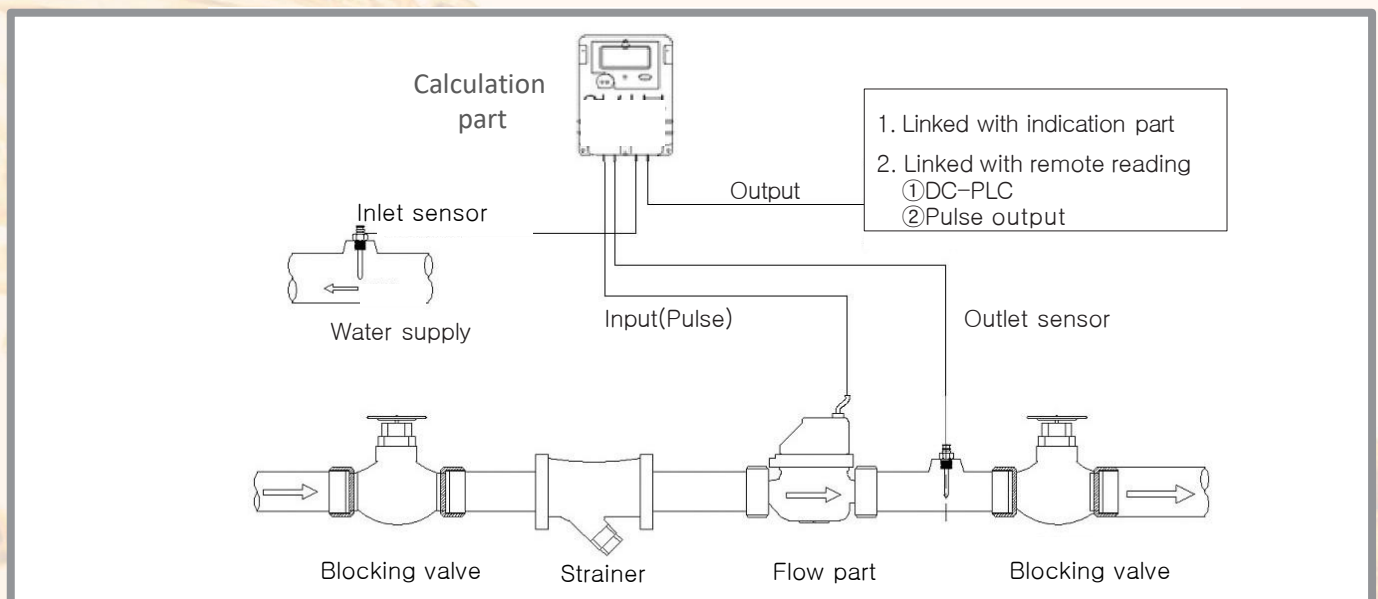
Because the calorimeter is a precision electronic instrument, do not subject the product to severe vibration or external shock

When transporting, please be sure to carry it in BOX packing condition

Do not carry the meter with grabbing cable

For smooth operation of the calorimeter, check the water quality of the heating water and clean the filter before every yearly heating

Please exchange the heating water on a regular basis for the protection of the heating pipe and for the heating to be done smoothly.



※ 32mm-1 Sensor pocket, / 40,50mm-1 Sensor pocket