TECHNICAL GUIDANCE

SOUNDMAX[®] UW5000 Series

Ultrasonic Levelmeter

GENERAL

UW-5000 Series is an ultrasonic non-contact level meter that can measure liquid, slurry and solid level continuously.

UW-5000 can be used for wide range of application and measuring span with variety of sensors.

The combination of the high efficiency sensors as well as state of the art signal treatment and evaluation based on years of experi ences ensures the measurement in a difficult condition, which used to be judged uncertain to measure by ultrasonic technology. UW-5000 offers either integral or remote sensors by application .

Simple push button commissioning, AC and/or DC power supply are available for both integral and remote type sensors. RS485 MODBUS output is standard even for 2 wire system instru-

ments that are suitable for remote commissioning and data acquisition by a PC with dedicated software.

UW-5000 series is an ultimate level meter for the most applications in any industry.

FEATURES

- Non contact, Continuous level measurement in use of acoustic wave
- $\hfill\square$ Suitable for liquids, slurries, powders, granulates and even rocks
- □ Selectable 2 wires loop power or AC/DC power supply type
- Integral and remote type are selectable by mounting and measurement conditions
- □ High efficiency, high power sensors realizes up to 60 m range
- Built-in temperature sensor as standard for sound velocity compensation
- Automatic controlled threshold, false echo mapping are the standard features
- Relays are integrated to AC/DC power type for pump control, overflow protection and elimination of empty pumping
- Outputs of level, distance, volume, difference of two sensors, average of measurement values

APPLICATION AREA

- Water/Waste water, Fluvial and Agricultural water : Open-channel, Under-drain, Water-intake screen control, Pump station, Dam, River water, Chemical additives
- Steel, Stone crushing, Mining, Cement : Crusher, Hopper, Conveyer junction, Stacker/Reclaimer, Storage silo, Water treatment plant
- Power station : Coal bunker, Coal silo, Bottom & Fly ash, Water-intake screen control, Water treatment plant
- Foods/Animal feeds : Flour, Wheat, Mice, Cereal, Grain, Morasses, Syrup, Additives, Water, Cacao, Paste, Butter, Edible oil, Margarine
- Chemica/Plastics :
- Pellets silo, Powder silo, ChemicalsPulp and paper :
- Wood chips, White liquid, Black liquid, Chemicals, Water treatment plant
- Semiconductor industry : Pure water, Ultra pure water, Chemicals, Water treatment

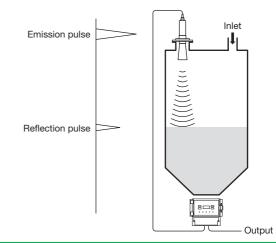


MEASURING PRINCIPLE

UW5000 emits high powered acoustic wave transmit pulse, which propagate through the air approx. 340 m/sec and reflected from the surface of the measured material.

The reflected signal is received by the same sensor. UW5000 measures the time interval from emission to receipt of the pulse and calculates distance from sensor to the surface by the sound velocity. The sound velocity is a function of the temperature so the built-in temperature sensor is used for the compensation of the sound velocity to distance.

The transmission of high powered acoustic wave ensures minimal losses through the environment where the sensor is mounted and therefore the return signal is much bigger than the conventional ultrasonic level meter. Thus the Signal to Noise ratio is fundamentally good. Moreover, newly developed software eliminates noisy signal and enhances the correct signal. The measured distance generates output in the form of 4 to 20mA DC. (directly in ullage or calculate level from zero point registered in UW5000.) UW5000 with the optional relay outputs contact signals at predetermined measuring level.



TG-EM161E-4 5th edition Sep 2017 K 1st edition Nov 2005

TOKYO KEISO CO., LTD.

SPCIFICATION

Object		Item	Description
Common		Purpose	Non contact continuous level measurement. Vessel top mounting
Common Specification	Measurement	Measuring object	Liquid, Slurries, Powders, Granulates, Rocks
		Measuring principle	Acoustic wave Pulse Echo

Object		Item		Description
			Output items	Level, Distance (Ullage), Volume, Average level, Difference level
		Analogue output	Output signal	4 to 20mA DC
- -		Analogue output	Maximum load	750Ω : UW5200, UWC520 (2 wire system)
ation				270Ω : UW5100, UWC510 (AC/DC power supply)
lifice	Output	Relay output	Numbers of relays	2 relays (Integral sensor type, AC/DC power supply)
bec		(Only AC/DC type)	Numbers of relays	5 relays (Remote converter type, AC/DC power supply)
Common Electric Specification			Contact rating	SPDT Max. 0.5A, 240V AC
ectr		Digital output	Specification /Protocol	RS485 MODOBUS / RTU Connection should be individual twisted pair
		Digital output		(screened for longer distance)
lo m	Accuracy	Under reference co	ndition	±0.25% of Max. range for each sensor
mo	Power supply	AC/DC type		90 to 260V AC 50/60 Hz,12 to 30 V DC
0		2 wire loop powere	d	12 to 30 V DC (Max. ripple 100mV)
	Power	AC/DC type		Max. 10VA (AC)
	consumption	2 wire loop powere	d	Max. 10W (DC)

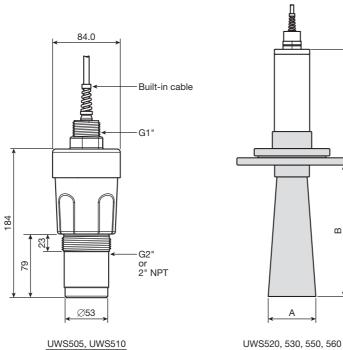
Object		Item	Description
	Temperature	Remote sensor	-40 to 80°C
S	Temperature	Integral sensor/Remote converter	-40 to 80°C
onmental /Process Specification	Pressure	Process pressure	ATM to 50kPa
atio	Protection	Remote sensor/Integral sensor	IP67 (IEC60529)
enta	class	Remote converter	IP65 (IEC60529)
bed	Cable Length	Built-in cable to remote sensor	6m (Standard), 15m, 30m, 50m (Option)
-	Cable Length	Remote sensor to remote converter	Max.500m (4 cores : 2X twisted pair individually/screed/communication)
Ë	Approval	IEC Ex	Integral sensor : UW5205, 5210,5220, 5230, 5250, 5260
	Approval	Ex ia IIA T4 (–20C, +70C)	Remote sensor : UWS505, 510, 520, 530, 550, 560 (Combination to UWC520)

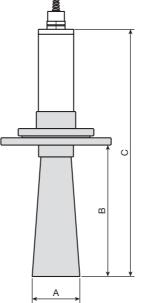
Obj	ect	Range Category	Short	Range	Middle	Range	Long	Range
		Туре	UW5□05	UW5□10	UW5□20	UW5□30	UW5□50	UW5□60
		Measuring	Ene (Liquid)	10mm (liquid)	20m (liquid)	30m (liquid)	50m	60m
		Range	5m (Liquid)	10m (liquid)	10m (solid)	20m (solid)	(liquid/solid)	(liquid/solid)
		Frequency	50kHz	30kHz	20kHz	15kHz	10kHz	5kHz
	(Integral sensor)	Blocking Distance (From transmitter side)	Min. 0.3m	Min. 0.4m	Min. 0.6m	Min. 0.8m	Min. 1.5m	Min. 2.0m
	ser	Beam Angle	4° (With focalizer horn)	6° (With focalizer horn)		6° (With for	calizer horn)	
	gral	(One side)	7.5° (Without	focalizer horn)		0 (With 100		
	Inte	Resolution	±11	mm		±41	mm	
u	Ú	Material	Body : PBT *2 /ET Membrane (Gas-c ETFE		Body : PBT/PP *2 Flange, Focalizer Membrane (Gas-c PTFE		Body : PBT/PP *2 Flange, Focalizer Membrane (Gas-o Polyolefine	horn : PP
Sensor specification		Mounting	4" flange (with foc	,	4" flange (with	10" flange (with fo	ocalizer horn)	
bec			2" screw without f		focalizer horn)		,	
or si		Туре	UWS505	UWS510	UWS520	UWS530	UWS550	UWS560
enso		Measuring Range	5m (Liquid)	10m (liquid)	20m (liquid)	30m (liquid)	50m	60m
Ś			50111		10m (solid)	20m (solid)	(liquid/solid)	(liquid/solid)
		Frequency	50kHz	30kHz	20kHz	15kHz	10kHz	5kHz
	(Remote sensor)	Blocking Distance (From transmitter side)	Min. 0.3m	Min. 0.4m	Min. 0.6m	Min. 0.8m	Min. 1.5m	Min. 2.0m
	ser	Beam Angle	4° (With focalizer horn)	6° (With focalizer horn)		6° (With for	calizer horn)	
	lote	(One side)	7.5° (Without	focalizer horn)		0 (With 100		
	Ren	Resolution	±11	mm		±41	mm	
	E)	Material	Body : PBT *2 /ET Membrane (Gas-c ETFE		Body : PBT/PP *2 Flange, Focalizer Membrane (Gas-c PTFE		Body : PBT/PP *2 Flange, Focalizer Membrane (Gas-o Polyolefine	horn : PP
		Mounting	4" flange (with foc 2" screw without f	,	4" flange (with focalizer horn)	10" flange (with fo	ocalizer horn)	

*1 4" flange mounting with focalizer horn is recommended.
*2 PBT (Polybutylene terephthalate), PP (Polypropylene)

OUTLINE DRAWING

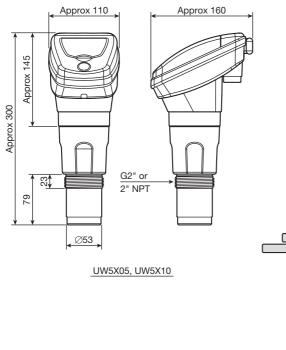
Remote Sensor



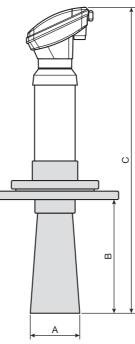


Sensor Type	Flange equivalent to	C	Dimension	s
Sensor type	JIS 10K or ANSI Class150	A	В	С
UWS505	100mm/4"	Ø 98	265	410
UWS510	100mm/4"	Ø 98	265	485
UWS520	100mm/4"	Ø98	270	537
UWS530	250mm/10"	Ø235	450	795
UWS550	250mm/10"	Ø235	420	845
UWS560	250mm/10"	Ø235	460	1170

Integral sensor



Cable entries M16:3 pieces A cable gland is attached as the standard accessory suitable cable diameter 5 to 10mm.



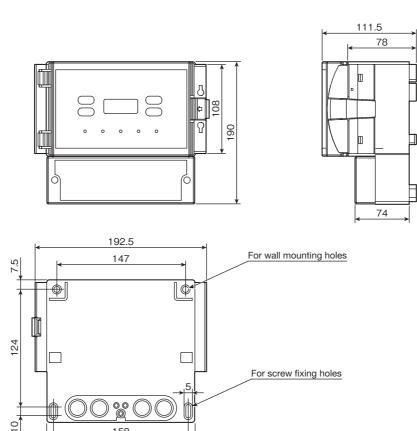
Sensor Type	Flange equivalent to JIS 10K or	C	Dimension	S
Sensor type	ANSI Class 150	А	В	С
UW5X05	100mm/4"	Ø98	265	525
UW5X10	100mm/4"	Ø98	265	525
UW5X20	100mm/4"	Ø98	270	650
UW5X30	250mm/10"	Ø235	450	900
UW5X50	250mm/10"	Ø235	420	950
UW5X60	250mm/10"	Ø235	460	1270

UW5X20, 5X30, 5X50, 5X60

SOUNDMAX® Ultrasonic Levelmeter UW 5000 Series

Remote Converter

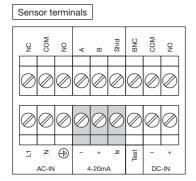
Cable entries (at the bottom of housing) 1×16 mm 4×20 mm



158 182.5

TERMINALS

Integral sensor, AC/DC supply (UW5100)

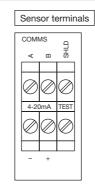


Remote converter, AC/DC supply (UWC510)

Converter terminals

Г	F	RELAY	1	F	RELAY	2	F	RELAY	3	F	RELAY	4	F	RELAY	5
	S	COM	NO	NC	COM	N	NC	COM	NO	NC	COM	NO	S	COM	N
			Ø		Ø						<u> </u>				
			Ø G	Ш Т	RANS		R		Ю	∕⊘ s	DC	-IN	Ø	AC-IN	Ø
	\oslash	\oslash	\oslash	\oslash	Ø	Ø	Ø	Ø	\oslash	Ø	\oslash	\oslash	Ø	Ø	\oslash
	<u>s</u>	+	-	RED	BLK	BLUE	WHIT	Test-in	8	A	-	+	Ð	z	5
L	4	-20m/	۹.						CON	IMS	DC	-IN		AC	-IN

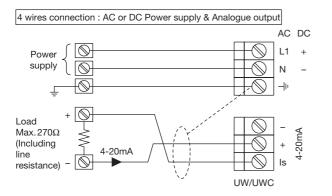
Integral sensor, 2 wire system (UW5200)



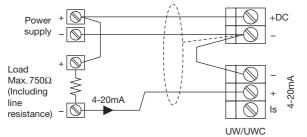
Remote converter, 2 wire system (UWC520)

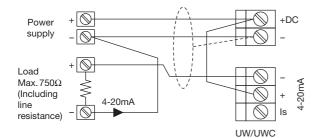
(Con	/erte	r ter	mina	ıls	
			CON	MMS	0	0
	TEST	Ē	A	ш	SHLD	SHLD
	\oslash	\oslash	\oslash	\oslash	\oslash	\oslash
	Т	RANS	DUCE	R	DC	-IN
	\oslash	\oslash	\oslash	\oslash	\oslash	\oslash
	RED	BLK	BLUE	WHIT	-	+
					4-20	DmA

CONNECTION DIAGRAM

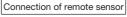


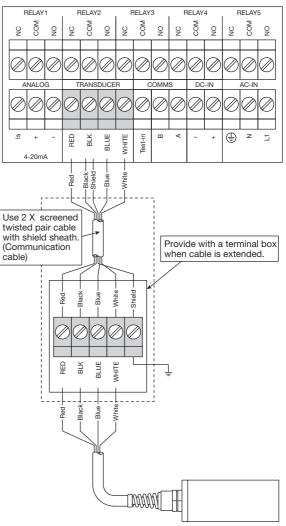
3 wires connection : DC Power supply & Analogue output





2 wires system : DC power supply with Analogue output Power + supply - Load Max.750Ω (Including line resistance) - UW/UWC





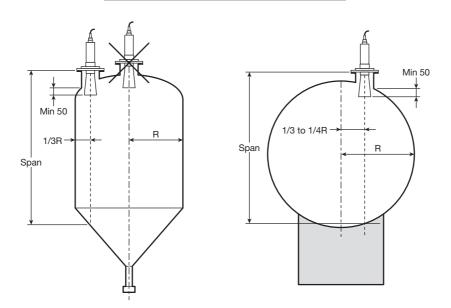
NOTICE OF USE

Mounting location

① Mount the sensor around 1/3 of the vessel radius from the vessel wall. Do not mount the sensor at the center of the vessel.

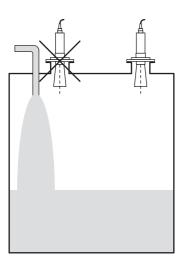
• In case of mounting to a horizontal cylindrical tank, mount the sensor offset 1/4 to 1/3 of radius from the center line.

Do not mount the sensor at the center of the vessel

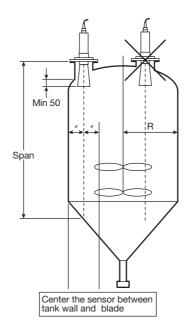


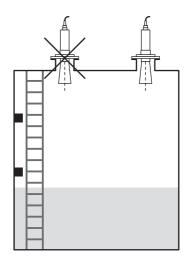
- ② Mounting location should be carefully selected where inlet material will not intrude into the sound robe. Also locate the sensor where no inner structure those reflects sound such as agitator blade, ladder or beam in the sound robe. In case of mounting to the tank with agitator, locate the mounting position in the center between tank wall and tip of the agitator blade.
- When the vessel wall is straight and smooth, it is able to mount the sensor close to the vessel wall where sound robe touching to the vessel wall.
- If the welding bead is rough and juts out, avoid the mounting position where the welding bead is in the sound robe or make the welding bead flat and smooth.
- Do not install the sensor at the center of the vessel. Do not install the sensor in the area where inflow of liquids and powders is within the sound robe.

Do not mount close to any obstacle that reflects sound.



Do not install level meter in the place where vibration is fierce. Install a shade in the place where direct sunlight hits.



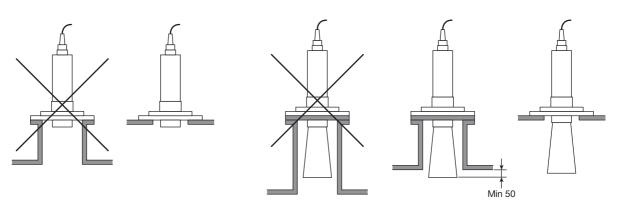


Mounting of the sensor

1) Nozzle length

Mount the sensors for both integral and remote sensor types using flange or screw. The mounting nozzle on the vessel shall have the length so that the sensor (vibrating membrane) or lower end of focalizer horn protrudes at least 50mm into the inside vessel.

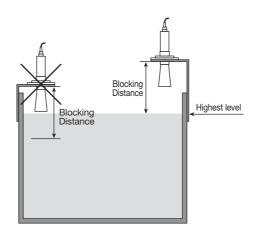
Mount the sensor that the end of the sensor or focalizer horn juts to the vessel minimum 50 mm.



② Blocking distance

UW5000 sensors has its own blocking distance, where sensor is not able to measure the level. Blocking distance means the one from the transmitter side of a sensor. Be sure that the highest measured level is below the blocking distance.

Consider the blocking distance for the Installation of the sensor. Highest level should be below the blocking distance.



(3) Mount the sensor

Vertically for liquid measurement.

In case of solid measurement, it might be effective for receiving reflection signal by inclining the sensor to the solid surface if the resting angle is steep and steady.

④ Focalizer horn

Use of focalizer horn is recommended for narrowing sound robe and effective signal detection. Especially it is recommended when using middle and long range sensor. The focalizer horn shall be used so that lower end of focalizer horn comes out of mounting nozzle. Without the focalizer horn, the blocking distance may be larger.

Mounting of the remote converter

For the mounting of the remote converter, select the location where temperature is within the temperature range and avoid vibration, electrical noise and dust as much as possible. Remote converter can be mounted on the wall or stanchion pipe (pipe adapter is required).

Cautions on the sensor handling

Fasten the sensor with your hands not using tool when screwing the sensor onto the nozzle. Excess force might damage the sensor.
 Do not drop sensor on the floor or do not apply any mechanical shock.

SOUNDMAX Specification Code

Integral 2 wire loop powered Type

Short range for Liquids Standard sensor material for wetted part (Vibrating part Case, Membrane : ETFE)

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Specification Code		S			_	-	6		\rightarrow	_		(-	-						-			\rightarrow				Integral 2 wire sensor for short range	Std
Range/	UW5205			5			6)				-						-			$ \rightarrow$				Max. 5m Liquids 50kHz	0
Frequency	UW5210	S	В	3	0	Т	6)	<			-						-							Max. 10m Liquids 30kHz	0
									0																			Flange mounting (Refer Flanges Code below)	0
Mounting									В																			Thread mounting G2 male thread	
								Т	N	2	0																	Thread mounting 2"NPT male thread	
Fixed code)	(Always X	
Certificate														0							\square							None (Not Ex proof)	0
Certificate												7	A (0							\square							IEC Ex	
																0			1		\square							None (without flange)	
Type of flange	е															А					\square							ANSI Class 150 equivalent diameter and bolt holes	
																J			1		\square							JIS 10 K equivalent diameter and bolt holes	0
Flange size																	0	0			\square							None (without flange)	
Flange size																	0	4			\square							100mm/4"	0
Flange positio	20																		0		\square							None (without flange)	
Flange positio	JII																		В		\square							Bottom of sensor	0
Flange mater	ial																			0	\square							None (without flange)	
Flange mater	Idi																			4	\square							Polypropylene	0
Focaliser hor																						0	0	0	0			Without horn	
Focaliser non	n																					0	4	2	В			With horn (only with flange)	0
Llawa mastavia																										0		Without horn	
Horn materia	I																								Ī	4		Polypropylene	0
																											blank	Without special requirements	0
Special requi	rements																									İ	17	With special requirements Please describe after /Z	
																											/Z	(Please use /Z in case use of focaliser horn)	

Middle range for Liquids & Solids Standard sensor material (Vibrating part Case : Polypropylene/Membrane : PTFE)

Specification Code	UW52	S	В			Т	4	Х	0	Х	0	Х			-		Τ		A	4	-			Τ		4		Integral 2 wire sensor for middle range	Std
Range/	UW5220	S	В	2	0	Т	4	Х	0	Х	0	Х			-		0	4	A	4	-	0	4	10	0	4		Max. 20m Liquids/10m Solids 20kHz	0
Frequency	UW5230	S	В	1	5	Т	4	Х	0	Х	0	Х			1-		1	0	Α	4	-	1	0) 1	5	4		Max. 30m Liquids/20m Solids 15kHz	0
Mounting								Х	0	Х	0						Τ		Τ		Γ		Τ		Γ			Flange mounting (Refer Flanges Code below)	0
Fixed code												Х																Always X	
Certificate													X	0 0)								Τ					None (Not Ex proof)	0
Certificate													A	0 0)													IEC Ex	
Type of flange	2															A							Τ					ANSI Class 150 equivalent diameter and bolt holes	
Type of hange	5															J												JIS 10 K equivalent diameter and bolt holes	0
Flange size																	0	4					Τ					100mm/4" for UW5220	0
i lange size																	1	0										250mm/10" for UW5230	0
Flange position	on																		A						Γ			Sensor end	0
Flange mater	ial																			4	Γ		Т		Γ			Polypropylene	0
Focaliser hor	n																					0	4	10	0			For UW5220	0
I OCAIISEI HOI																						1	0) 1	5			For UW5230	0
Horn materia																										4		Polypropylene	0
Special requi	romonte																										blank	Without special requirements	0
Special requi	lements																										/Z	With special requirements Please describe after /Z	

Long range for Liquids & Solids Standard sensor material (Vibrating part Case : Polypropylene/Membrane : Polyplefine)

Specification Code	UW52	S	В			S	4	Х	0	X	0	Х		Γ		-		1	0	A	4	-					4		Integral 2 wire sensor for long range	Std
Range/	UW5250	S	В	1	0	S	4	X	0	X	0	Х				-		1	0	A	4	-	1	0	1	0	4		Max. 50m Liquids/Solids, 10kHz	0
Frequency	UW5260	S	В	0	5	S	4	Х	0	X	0	Х				-		1	0	A	4	-	1	0	0	5	4		Max. 60m Liquids/Solids, 5kHz	
Mounting			-					X	0	X	0																		Flange mounting (Refer Flanges Code below)	0
Fixed code												Х																	Always X	
Certificate													Х	0	0					Τ									None (Not Ex proof)	0
Certificate													А	0	0														IEC Ex	
Type of flange																	А			Τ									ANSI Class 150 equivalent diameter and bolt holes	
Type of hange	7																J												JIS 10 K equivalent diameter and bolt holes	0
Flange size																		1	0	Τ									250mm/10" for UW5250/UW5260	0
Flange positio	on																	•		A									Sensor end	0
Flange materi	al																				4								Polypropylene	0
Focaliser hor	`																						1	0	1	0			For UW5250	0
T UCAIISEI TIOTI	1																						1	0	0	5			For UW5260	
Horn material																											4		Polypropylene	0
Special requir	romonte																											blank	Without special requirements	0
Special lequil	CITICITIS																										- 1	/Z	With special requirements Please describe after /Z	

Integral model AC/DC powered Type with 2 relays output

Short range for Liquids Standard sensor material for wetted part (Vibrating part Case, Membrane : ETFE)

Short range	· ·		ota	nua		_	113		na		_	_	_	_	.00	<u> </u>	_	(• •		aun	'y	μαι		143	ω,	wern		
Specification Code	UW5100	S			Т	6	$ \top$	T)	κŢ	X	0 0) -		0				-	Τ	Τ					Integral AC/DC supply sensor for short range	Std
Range/	UW5105	S	5	5 0	Т	6)	K []	X	0 0) -		0				-							Max. 5m Liquids, 50kHz	0
Frequency	UW5110	S	3	3 0	Т	6)	()	X	0 0) -		0				-				Τ	Τ		Max. 10m Liquids 30kHz	0
			В																								24V DC	
Power supply	/	Ì	U																								90 to 260V AC 50/60Hz	0
							Х	0	X	0																	Flange mounting (Refer Flanges Code below)	0
Mounting							Т	в	2	0																	Thread mounting G2 male thread	
							Т	N	2	0																	Thread mounting 2"NPT male thread	
Fixed code)	(Always X	
Certificate												X	0 0)													None (Not Ex proof)	0
															0												None	
Type of flange	е														Α												ANSI Class 150 equivalent diameter and bolt holes	
															J												JIS 10 K equivalent diameter and bolt holes	0
																0	0										None (without flange)	
Flange size																0	4										100mm /4"	0
																		0									None (without flange)	
Flange positi	on																	В									Bottom of sensor	0
-																			0								None (without flange)	
Flange mater	ial																		4								Polypropylene	0
																						0	0 0				Without horn	
Focaliser hor	n																			Ī	0	4	2 E	3	Τ		With horn (only with flange)	0
																								C)		Without horn	
Horn materia	I																							4	1		Polypropylene	0
																										blank	Without special requirements	0
Special requi	rements																									/Z	With special requirements Please describe after /Z	
																										12	(Please use /Z in case use of focaliser horn)	

Middle range for Liquids & Solids Standard sensor material (Vibrating part Case : Polypropylene/Membrane : PTFE)

	-															· · ·			.9				-					
Specification Code	UW5100	S										X						A	4	-				4			Integral AC/DC supply sensor for middle range	Std
Range/	UW5120	S	4	2 0) T	- 4	X	0	Х	0	Х	X	0 0) -		0	4	A	4	-	0	4 C	0	4			Max. 20m Liquids/10m Solids 20kHz	0
Frequency	UW5130	S	•	1 5	5 T	- 4	X	0	Х	0	Х	X	0 0) -		1	0	A	4	-	1	0 1	5	4			Max. 30m Liquids/20m Solids 15kHz	0
Power supply	,		В																								24V DC	
	/		U																				Т	Т			90 to 260V AC 50/60Hz	0
Mounting							Х	0	Х	0																	Flange mounting (Refer Flanges Code below)	0
Fixed code											Х												Τ	Τ			Always X	
Certificate												X	0 0)				Т						Т			None (Not Ex proof)	0
Type of flange	0														Α					Τ				Τ			ANSI Class 150 equivalent diameter and bolt holes	
Type of hange	5														J			Т						Т			JIS 10 K equivalent diameter and bolt holes	0
Flange size																0	4			Τ			Τ	Т			100mm/4" for UW5120	0
i lalige size																1	0	Т						Т			250mm/10" for UW5130	0
Flange position	on																	A									Sensor end	0
Flange mater	ial																		4				Т	Т			Polypropylene	0
Focaliser hor	n																				0	4 C	0				For UW5120	0
Focaliser non	11																			Γ	1	0 1	5				For UW5130	0
Horn materia	I																							4			Polypropylene	0
Special requi	romonte																								bla	ank	Without special requirements	0
Special lequi	i ci i ci i ci i ci																								/	Z	With special requirements Please describe after /Z	

Long range for Liquids & Solids Standard sensor material (Vibrating part Case : Polypropylene/Membrane : Polyplefine)

																			5 1									
Specification Code	UW51	S			Т	4	Х	0	Х	0	Х			-		1	0	Α	4	-					4		Integral AC/DC supply sensor for long range	Std
Range/	UW5150	S	•	1 0) T	· 4	Х	0	Х	0	Х			-		1	0	Α	4	-	1	0	1	0	4		Max. 50m Liquids/Solids 10kHz	0
Frequency	UW5160	S	() 5	5 T	4	X	0	X	0	Х			-		1	0	Α	4	-	1	0	0	5	4		Max. 60m Liquids/Solids 5kHz	
Devuer eventu			В																								24V DC	
Power supply			U																								90 to 260V AC 50/60Hz	0
Mounting							Х	0	Х	0																	Flange mounting (Refer Flanges Code below)	0
Fixed code											Х																Always X	
Certificate												Х	0 0)													None (Not Ex proof)	0
Type of flange															A												ANSI Class 150 equivalent diameter and bolt holes	
Type of fiange	;														J												JIS 10 K equivalent diameter and bolt holes	0
Flange size																1	0										250mm/10" for UW5150/UW5160	0
Flange positio	on																	Α									Sensor end	0
Flange materi	al																		4								Polypropylene	0
Focaliser horr																					1	0	1	0			For UW5150	0
FOCALISEI HOH	1																				1	0	0	5			For UW5160	
Horn material																									4		Polypropylene	0
Special requir	omonto																									blank	Without special requirements	0
Special requir	ements																								Ī	/Z	With special requirements Please describe after /Z	

Remote Converter

2	wire	loop	powered
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Specification Code UWC520 S B X X C					Remote converter 2 wire loop powered	Std
Output X					420mA DC	0
Fixed code X 0					Always X0	
Certificate	Х	0	0		None (Not Ex proof)	0
Certificate	А	0	0		IEC Ex (EEx i)	
Special requirements				blank	Without special requirements	0
Special requirements				/Z	With special requirements Please describe after /Z	

AC/DC powered Converter with 5 relays output

no/bo powered o	0110	CIL				0 1	ciu.	yU	output		
Specification Code UWC51) S	;	X	X	0	Х	0	0		AC/DC powered Remote converter	Std
Power supply		В								24V DC	
		U								90 to 260V AC 50/60Hz	0
Output			X							420mA DC	0
Fixed code				X	0					Always X0	
Certificate						Х	0	0		None (Not Ex proof)	0
Special requirements									blank	Without special requirements	0
								[/Z	With special requirements Please describe after /Z	

Remote Sensor

Short range for Liquids Standard sensor material for wetted part (Vibrating part Case, Membrane : ETFE)

Specification Code L	JWS500			ΤE	3					Т	С	0	0	-						-	Т					Remote sensor for short range	Std
Range/ L	JWS505	5	0	TE	3					Τ	С	0	0	-						-						Max. 5m Liquids 50kHz	0
Frequency L	JWS510	3	0	ΤG	5						С	0	0	-						-						Max. 10m Liquids 30kHz	0
Temperature ra	nge			Т																						Standard (-40 to +80°C)	0
	-				Х	0	Х	0																		Flange mounting (Refer Flanges Code below)	0
Mounting					Т	В	2	0																		Thread mounting G2 male thread	
					Т	Ν	2	0		Τ										T	T					Thread mounting 2"NPT male thread	
Certificate								2	X (0 0																None (Not Ex proof)	0
Certificate										0 0											┓					IEC Ex	
Fixed code											С	0	0							Т						Always C00	
															0											None (without flange)	
Type of flange															А					Τ	T					ANSI Class 150 equivalent diameter and bolt holes	
															J					Т	Τ					JIS 10 K equivalent diameter and bolt holes	0
Flange size																0	0									None (without flange)	
Fialige Size																0	4			Т	T					100mm/4"	0
Flange position																		0			Τ					None (without flange)	
Flange position	I																[В			Т					Bottom of sensor	0
Flange material																			0							None (without flange)	
Flange material	1																	ſ	4		Т					Polypropylene	0
Focaliser horn																						0 0				Without horn	
I Ocalisei Horri																				(0	4 2	В			With horn (only with flange)	0
Horn material																								0		Without horn	
nommateria																								4		Polypropylene	0
																									blank	Without special requirements	0
Special require	ments																								/Z	With special requirements Please describe after /Z	
																									/ _	(Please use /Z in case use of focaliser horn)	

Middle range for Liquids & Solids Standard sensor material (Vibrating part Case : Polypropylene/Membrane : PTFE)

Specification Code	UWS5			Т	4	X	0	X	(0				С	0	0	-				A		-							Remote sensor for middle range	Std
Range/	UWS520	2	0	Т	4	X	0	X	(0				С	0	0	-				A		- 1	0	4 () (5			Max. 20m Liquids/10m Solids 20kHz	0
Frequency	UWS530	1	5	Т	4	X	0	X	(0				С	0	0	-				A	1	-	1	0 -	1 5	5			Max. 30m Liquids/20m Solids 15kHz	0
Temperature	range			Т			Τ	Τ					Γ		Γ					Τ		Τ			Τ		Τ		Standard (-40 to +80°C)	0
Mounting						X	0	X	(0		Τ		Γ		Γ					Т		Т			Τ				Flange mounting (Refer Flanges Code below)	0
Certificate										X	0	0	Γ							Τ					Τ		Τ		None (Not Ex proof)	0
Certificate										A	0	0	Γ		Γ					Т		Т			Τ				IEC Ex	
Fixed code													С	0	0		Γ			Т		Т			Т	Т			Always C00	
Type of flange	0																A			Τ		Τ							ANSI Class 150 equivalent diameter and bolt holes	
Type of hange	6																J			Т		Т			Т	Т			JIS 10 K equivalent diameter and bolt holes	0
Flange size																		0	4	Τ		Τ			Τ	Τ	Τ		100mm/4" for UWS520	0
i lange size																		1	0	Т		Т			Т	Т			250mm/10" for UWS530	0
Flange positio	on																			A		Τ			Τ		Τ		Sensor end	0
Flange materi	ial																			ŀ	4								Polypropylene	0
Focaliser hor	n																						0	4 () (Τ		For UWS520	0
Focaliser non	11																					Γ	1	0 -	1 5	5	Τ		For UWS530	0
Horn material																										4	1		Polypropylene	0
Special requir	romonte																											blank	Without special requirements	0
Special requi	ICHICIIIS																										Γ	/Z	With special requirements Please describe after /Z	

Long range for Liquide & Solide	Standard sensor material Mibrating par	art Case : Polypropylene/Membrane : Polyolefine)	
Long range for Liquius & Solius	Standard Sensor material (vibrating pa	art Case . I olypropylene/ Membrane . I olypropylenie/	
Specification Code LINACE		Bomoto sonsor for long range	

Specification Code	UWS5			4		< ())	X ()			C	0	0	-		1	0	A		-							Remote sensor for long range	Std
Range/	UWS550	1	0	4)	K ())	X ()			С	0	0	-		1	0	A		-					Τ		Max. 50m Liquids/Solids 10kHz	0
Frequency	UWS560	0	5	4)	K ())	X ()	Т		С	0	0	-		1	0	A		-					Т		Max. 60m Liquids/Solids 5kHz	
Temperature	range		5	3	Τ			Τ				Γ														Τ		Standard (-40 to +80°C)	0
Mounting						K ())	X ()	Т																Т		Flange mounting (Refer Flanges Code below)	0
Certificate									X	0	0															T		None (Not Ex proof)	0
Certificate									A	0	0															Т		IEC Ex	
Fixed code												С	0	0												Т		Always C00	
Type of flange	2															А										Τ		ANSI Class 150 equivalent diameter and bolt holes	
Type of hange	5														Γ	J										Т		JIS 10 K equivalent diameter and bolt holes	0
Flange size																	1	0								Τ		250mm/10" for UWS560/UWS560	
Flange position	on																		A							Т		Sensor end	0
Flange mater	ial																			4						Τ		Polypropylene	0
Focaliser hor	n																					1	0 -	1 C		Т		For UWS550	0
FOCAIISEI HOI	11																				Γ	1	0 0) 5	5	Τ		For UWS560	
Horn materia																									4	1		Polypropylene	0
Special requi	romonte																										blank	Without special requirements	0
Special requi	iements																									Γ	/Z	With special requirements Please describe after /Z	

STANDARD ACCESSORIES	Process condition	
Parameter sheet : 1	• Power supply :	() V AC, () V DC
Instruction Manual : 1	Environment :	□ Outdoor use □ Indoor use
	• Temperature in :	Operation ()°C, Design ()°C
OPTION	the vessel	
 Parameters setting and data sheet as per customer's request [Symbol : DS] 	 Pressure in the : vessel 	Operation ()°C, Design ()°C
	 Ambient temperature 	
ORDERING INSTRUCTIONS	Explosion proof :	Required Intrinsically safe version Not required
Specify the following when ordering :		
1. Model and specification code	Vessel	
Example) Integral sensor thread connection	• Type :	Closed (atmospheric pressure)
Model : UW5205	e type.	\Box Pressurized () bar,
Spec code : SB50T6TB20XX00-00000-00000		□ Open pit □ Close pit
Example) Integral sensor flange connection Model : UW5250	• Shape :	□ Cylindrical □ Horizontal □ Silo □ Other ()
Spec code : SB10S4X0X0XX00-J10A4-10104	Roof type :	□ Flat □ Conical □ Dome □ Other ()
Example) Remot converter	Vessel height :	() m
Model : UWC520	Diameter or width :	() m
Spec code : SBXX0X00	Obstructions :	
	Agitator :	\Box No \Box Yes : Type ()
Example) Remote sensor flange connection	Others :	□ Level switch □ Reinforce or Stay
Model : UWS530		□ Ladder □ Temperature sensor or well
Spec code : 15T4X0X0X00C00-J10A4-10154		□ Other ()
	• Vessel material :	□ Metal () Non metal (
2. Option (If required)	Coated :	□ Yes □ No
Please state in Symbol		
	Mounting nozzle	
3. Special request (If required)	 Height () mm, Di 	iameter () mm
Please state special requests clearly.	 Distance from the vertex 	()
Consult TokyoKeiso or representative before ordering.	 Horizontal distance fi 	

ORDERING INFORMATION

Measuring condition

Measuring range :	The distance from the mounting nozzle to
	the minimum level : () m
	The distance from the mounting nozzle to
	the maximum level : () m

Product

Name: ()
Material: Liquid Slurry Powder Pellet
Corrosiveness: None Medium Strong
Stickiness: None Medium Strong
Crystalline: None Medium Strong
Waving: None Medium Heavy
Foam: None Medium High and dense

• Horizontal distance from the inlet () mm

* Specification is subject to change without notice.

TIF TOKYO KEISO CO., LTD.

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