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 instruments 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
- 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, Chemicals
- Pulp and paper : Wood chips, White liquid, Black liquid, Chemicals, Water treatment plant
- Semiconductor industry : Pure water, Ultra pure water, Chemicals, Water treatment



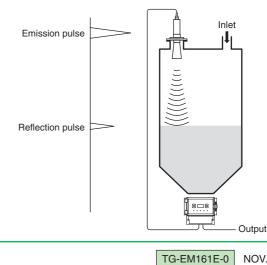
MEASURING PRINCIPLE

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.



TOKYO KEISO CO., LTD.

TG-EM161E-0 NOV. 2005 TG-EM161E-3 AUG. 2013K

SPCIFICATION

Object		Item	Description
		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							
C.		Analogue output	Maximum load	750Ω : UW5200, UWC520 (2 wire system)							
Common Electric Specification			Maximum load	270Ω : UW5100, UWC510 (AC/DC power supply)							
Sifice	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)							
.0		(Only AC/DC type)	Contact rating	SPDT Max. 0.5A, 240V AC							
lecti		Digital output	Specification /Protocol	RS485 MODOBUS / RTU Connection should be individual twisted pair							
Ē		Digital Output	Specification/Frotocol	(screened for longer distance)							
om	Accuracy	Under reference co	ndition	$\pm 0.25\%$ of Max. range for each sensor							
Loc	Power supply	AC/DC type		90 to 260V AC 50/60 Hz,12 to 30 V DC							
U		2 wire loop powered	d	12 to 30 V DC (Max. ripple 100mV)							
	Power	AC/DC type		Max. 10VA (AC)							
	consumption	2 wire loop powered	d	Max. 10W (DC)							

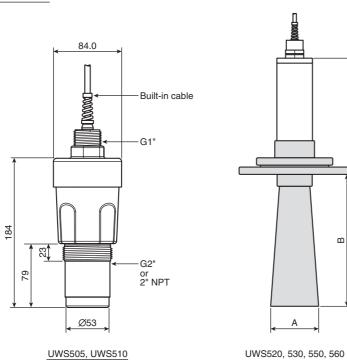
Object		Item	Description					
	Tomporatura	Remote sensor	-40 to 80°C					
SS	Temperature	Integral sensor/Remote converter	-40 to 80°C					
onmental/Process Specification	Pressure	Process pressure	ATM to 50kPa					
ation	Protection	Remote sensor/Integral sensor	IP67 (IEC60529)					
enta	class	Remote converter	IP65 (IEC60529)					
bec	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 (–20°C, +70°C)	Remote sensor : UWS505, 510, 520, 530, 550, 560 (Combination to UWC520)					

Ot	oject	Range Category	Short	Range	Middle	Range	Long	g Range	
		Туре	UW5□05	UW5□10	UW5□20	UW5□30	UW5□50	UW5□60	
		Measuring Range	5m (Liquid)	10m (liquid)	20m (liquid) 10m (solid)	30m (liquid) 20m (solid)	50m (liquid/solid)	60m (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° (Mith for	oolizer bern)		
	gral	(One side)	7.5° (Without	focalizer horn)			calizer horn)		
	Inte	Resolution	±1	mm			mm		
noi	Č	Material	Body : PBT * ² /ET Membrane (Gas-c ETFE		Body : PBT/PP *2 Flange, Focalizer Membrane (Gas-o PTFE	horn : PP	Body : PBT/PP * Flange, Focalize Membrane (Gas Polyolefine	r horn : PP	
icat		Manuation	4" flange (with foc	alizer horn) or	4" flange (with	10" flange (with fo	ocalizer horn)		
ecif		Mounting	2" screw without f	ocalizer horn *1	focalizer horn)				
r sp		Туре	UWS505	UWS510	UWS520	UWS530	UWS550	UWS560	
Sensor specification		Measuring Range	5m (Liquid)	10m (liquid)	20m (liquid) 10m (solid)	30m (liquid) 20m (solid)	50m (liquid/solid)	60m (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	
	sei	Beam Angle	4° (With focalizer horn)	6° (With focalizer horn)		6° (Mith for	calizer horn)		
	note	(One side)	7.5° (Without	focalizer horn)		6 (111110	calizer norm)		
	Rer	Resolution	±1	mm		±4	mm		
		Material	Body : PBT * ² /ET Membrane (Gas-o ETFE		Body : PBT/PP *2 Flange, Focalizer Membrane (Gas- PTFE	horn : PP	Body : PBT/PP * Flange, Focalize Membrane (Gas Polyolefine	r horn : PP	
		Manuatina	4" flange (with foc	alizer horn) or	4" flange (with	10" flonge (with f			
		Mounting	2" screw without f	ocalizer horn *1	10" flange (with focalizer horn)				

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

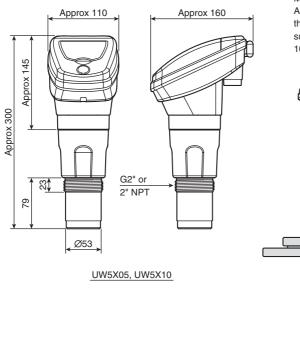
OUTLINE DRAWING

Remote Sensor



Sensor Type	Flange equivalent to JIS 10K or	ſ	Dimension	s
Sensor type	ANSI Class150	A	В	С
UWS505	100mm/4"	Ø98	265	410
UWS510	100mm/4"	Ø98	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

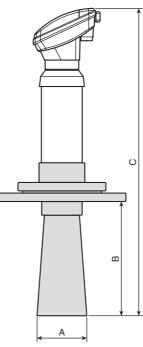
Integral sensor



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

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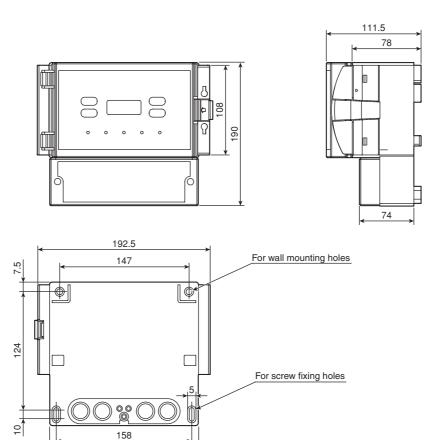
Sensor Type	Flange equivalent to JIS 10K or	C	Dimension	S
оеноог туре	ANSI Class 150	A	В	С
UW5X05	100mm/4"	Ø98	265	525
UW5X10	100mm/4"	Ø98	265	525
UW5X20	100mm/4"	Ø98	270	650
UW5X30	250mm/10"	Ø235	450	900
UW5X50	250mm/10"	Ø235	420	950
UW5X60	250mm/10"	Ø235	460	1270

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



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TERMINALS

Integral sensor, AC/DC supply (UW5100)

;	Sens	sor te	ərmiı	nals]					
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	\oslash	Ø	\oslash							
	5	z	\oplus	-	+	<u>s</u>	Test	-	+	
		AC-IN		4	-20m/	4		DC	-IN	

Integral sensor, 2 wire system (UW5200)

Sensor termina	ls
COMMS B R COMMS	
0 0 0	
4-20mA TEST	
$ \bigcirc \oslash \oslash $	
- +	

Remote converter, AC/DC supply (UWC510)

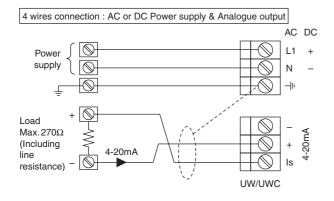
Co	onv	erte	r teri	mina	ls										
	RELAY1 RELAY2 RELAY3 RELAY4 RELAY5 X X X X X X Y X Y X Y Y														
	S	COM	S	COM	Q										
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	ANALOG TRANSDUCER COMMS DC-IN AC-IN														
	Ø	\oslash	\oslash	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	\oslash
•	s	+	-	RED	BLK	BLUE	WHIT	Test-in	-	۷	-	+	٢	z	5
	4	-20m/	۹.						CON	MMS	DC	-IN		AC	-IN

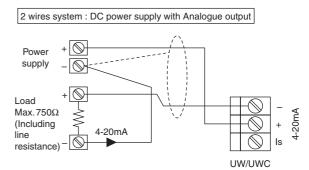
Remote converter, 2 wire system (UWC520)

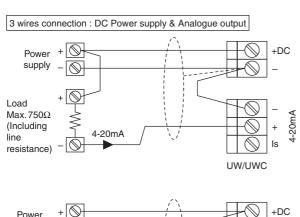
(Conv	verte	r ter	mina	ls		
			CON	MMS	_	_	
	TEST	Ē	A	ш	SHLD	SHLD	
	\oslash	\oslash	\oslash	Ø	Ø	\oslash	
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					4-20	DmA	

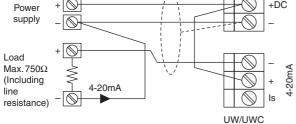
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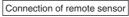
CONNECTION DIAGRAM

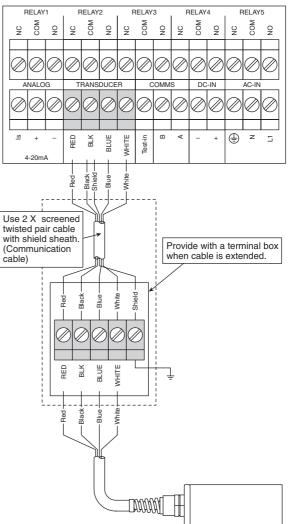












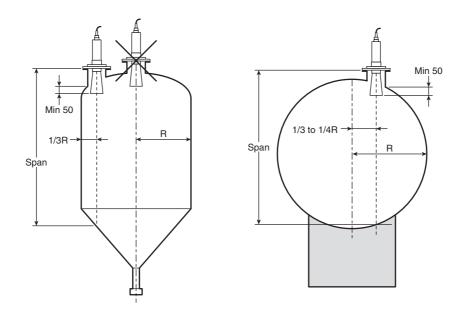
NOTICE OF USE

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.

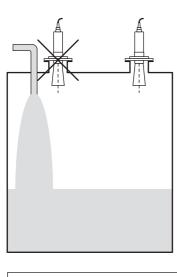
• In case of mounting to a horizontal cylindrical tank, mount the sensor offset 1/4 to 1/3 of radius from the center line.

Do not mount the sensor at the center of the vessel

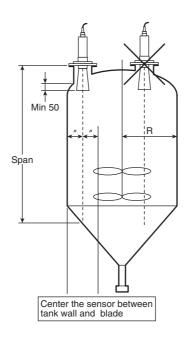


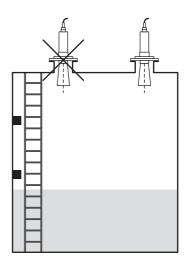
- ② Mounting location should be carefully selected where inlet material will not intrude into the sound robe. Also locate the sensor where no inner structure those reflects sound such as agitator blade, ladder or beam in the sound robe. In case of mounting to the tank with agitator, locate the mounting 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.





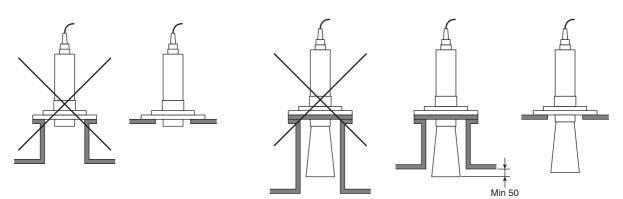
6

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.

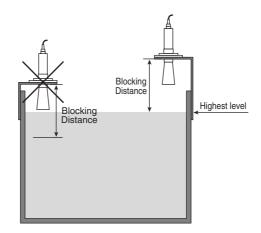


2 Blocking distance

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

① Fasten the sensor with your hands not using tool when screwing the sensor onto the nozzle. Excess force might damage the sensor.

2 Do not drop sensor on the floor or do not apply any mechanical shock.

7

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	UW52					Т	6				Х				-						-							Integral 2 wire sensor for short range	Std
Range/	UW5205	S	В	5	0	Т	6				Х				-						-							Max. 5m Liquids 50kHz	0
Frequency	UW5210	S	В	3	0	Т	6				Х				-						-	Т						Max. 10m Liquids 30kHz	0
							1	Х	0)	(()																	Flange mounting (Refer Flanges Code below)	0
Mounting							Ē	Τ	B 2	2 ()																	Thread mounting G2 male thread	
							Г	ΤI	N 2	2 ()																	Thread mounting 2"NPT male thread	
Fixed code											Х																	Always X	
Certificate												X	0	0								Т						None (Not Ex proof)	0
Certificate												A	0	0														IEC Ex	
																0						Т						None (without flange)	
Type of flange	e															A												ANSI Class 150 equivalent diameter and bolt holes	
																J												JIS 10 K equivalent diameter and bolt holes	0
																	0	0				Т						None (without flange)	
Flange size																- [0	4										100mm/4"	0
Elenge pesiti																			0									None (without flange)	
Flange position	JN																	Ī	В									Bottom of sensor	0
	2-1																			0								None (without flange)	
Flange mater	lai																		- [4								Polypropylene	0
Focaliser hor																							0 0					Without horn	
Focaliser non	n																				Γ	0	4 2	2 E	3			With horn (only with flange)	0
Llara mataria	1																								0			Without horn	
Horn materia	I																								4			Polypropylene	0
																											blank	Without special requirements	0
Special requi	rements																										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	٦	Г 4	Х	0	X	0	Х			Т	-	Т	Т		A i	4	-	Т			ŀ	4		Integral 2 wire sensor for middle range	Std
Range/	UW5220	S	В	2 (ר (Г 4	Х	0	X	0	Х				-		0	4	A i	4	-	0	4) (D .	4		Max. 20m Liquids/10m Solids 20kHz	0
Frequency	UW5230	S	В	1 5	5 7	Г 4	Х	0	X	0	Х				-		1	0	A I	4	-	1	0	1 {	5	4		Max. 30m Liquids/20m Solids 15kHz	0
Mounting							Х	0	X	0																		Flange mounting (Refer Flanges Code below)	0
Fixed code											Х																	Always X	
Certificate												Х	0	0														None (Not Ex proof)	0
Certificate												А	0	0														IEC Ex	
Type of flange															/	٩												ANSI Class 150 equivalent diameter and bolt holes	
Type of hange																J												JIS 10 K equivalent diameter and bolt holes	0
Flange size																	0	4										100mm/4" for UW5220	0
T lange size																	1	0										250mm/10" for UW5230	0
Flange position	on																		A									Sensor end	0
Flange mater	ial																			4								Polypropylene	0
Focaliser hor	•																					0	4	0 0	0			For UW5220	0
Focaliser non	1																				Γ	1	0	1 {	5			For UW5230	0
Horn materia																										4		Polypropylene	0
Special requir	romonto																										blank	Without special requirements	0
Special require	ements																										/Z	With special requirements Please describe after /Z	

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

Specification Code	UW52🗆	S	В			S 4	X	0	X	0	Х			-		1	0	А	4	-					4		Integral 2 wire sensor for long range	Std
Range/	UW5250	S	В	1 () (S 4	X	0	X	0	Х			-		1	0	А	4	-	1	0	1	0	4		Max. 50m Liquids/Solids, 10kHz	0
Frequency	UW5260	S	В	0 5	5 \$	S 4	X	0	X	0	Х			-		1	0	А	4	-	1	0	0	5	4		Max. 60m Liquids/Solids, 5kHz	
Mounting							Х	0	X	0																	Flange mounting (Refer Flanges Code below)	0
Fixed code											Х																Always X	
Certificate												Х	0 0)													None (Not Ex proof)	0
Certificate												А	0 0)													IEC Ex	
Type of flange															А												ANSI Class 150 equivalent diameter and bolt holes	
Type of hange	3														J												JIS 10 K equivalent diameter and bolt holes	0
Flange size																1	0										250mm/10" for UW5250/UW5260	0
Flange position	on																	А									Sensor end	0
Flange mater	ial																		4								Polypropylene	0
Focaliser hor	~																				1	0	1	0			For UW5250	0
Focaliser nor	n																				1	0	0	5			For UW5260	
Horn materia																									4		Polypropylene	0
Crossial requi	ro monto																									blank	Without special requirements	0
Special requi	rements																									/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	e ioi Liqui	ius .	Siai	iua	ľu	30	1150		au		ווג	UI.	we		u l	Jai	. ()		au	ing	l ha	an	Ja	э с,	Mentic	nane. L n L/	
Specification Code	UW5100	S			Т	6				Х	X	0	0	-		0				-						Integral AC/DC supply sensor for short range	Std
Range/	UW5105	S	5	0	Т	6			Т	Х	X	0	0	-		0				-	Т					Max. 5m Liquids, 50kHz	0
Frequency	UW5110	S	3	0	Т	6			Τ	Х	X	0	0	-		0			1	-						Max. 10m Liquids 30kHz	0
Device a view h			В																							24V DC	
Power supply		ſ	U						T																	90 to 260V AC 50/60Hz	0
							Χ (ΣХ	(0										T							Flange mounting (Refer Flanges Code below)	0
Mounting						Ī	ΤE	3 2	2 0																	Thread mounting G2 male thread	
-						Ī	1 T	V 2	2 0										T							Thread mounting 2"NPT male thread	
Fixed code										Х																Always X	
Certificate											X	0	0													None (Not Ex proof)	0
															0				T							None	
Type of flange	е														А											ANSI Class 150 equivalent diameter and bolt holes	
															J											JIS 10 K equivalent diameter and bolt holes	0
																0	0		T							None (without flange)	
Flange size																0	4									100mm /4"	0
																		0								None (without flange)	
Flange position	on																	В								Bottom of sensor	0
	2-1																	1	0							None (without flange)	
Flange mater	iai																	-	4							Polypropylene	0
E K k	-																			(0 0	0 (0			Without horn	
Focaliser hori	n																			() 4	1 2	В			With horn (only with flange)	0
l la ma na atanial																								0		Without horn	
Horn materia	I																							4		Polypropylene	0
																									blank	Without special requirements	0
Special requir	rements																								/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)

	<u> </u>		_	_	_		_	-	_	_		_	-	-	_	-	÷	_	_	-	1	-	-	_	-	_	710 11		
Specification Code	UW5100	S				_			0							-			A	_						4		Integral AC/DC supply sensor for middle range	Std
Range/	UW5120	S		2 0	0.	Т	4	Х	0	Х	0	Х	Х	0	0	-		0 4	1 A	4	-	0	4	0	0	4		Max. 20m Liquids/10m Solids 20kHz	0
Frequency	UW5130	S		1 5	5	Т	4	Х	0	Х	0	Х	Х	0	0	-		1 () A	4	-	1	0) 1	5	4		Max. 30m Liquids/20m Solids 15kHz	0
Deuter europhy			В																									24V DC	
Power supply		ſ	U																	Ι								90 to 260V AC 50/60Hz	0
Mounting								Х	0	Х	0																	Flange mounting (Refer Flanges Code below)	0
Fixed code												Х								Τ						Γ		Always X	
Certificate													Х	0	0													None (Not Ex proof)	0
Tune of floorer																1	A			Τ								ANSI Class 150 equivalent diameter and bolt holes	
Type of flange	•															- [J											JIS 10 K equivalent diameter and bolt holes	0
																		0 4	1									100mm/4" for UW5120	0
Flange size																		1 ()	Τ								250mm/10" for UW5130	0
Flange positio	on																		Α									Sensor end	0
Flange mater	ial																			4	Ļ							Polypropylene	0
E K	-																					0	4	10	0	Γ		For UW5120	0
Focaliser hor	n																					1	0) 1	5			For UW5130	0
Horn material																										4		Polypropylene	0
0																										•	blank	Without special requirements	0
Special requir	rements																										/Z	With special requirements Please describe after /Z	

Specification Code	UW5100	S			Т	4	ιX	0	X	0	Х			-		1	0	А	4	-				4		Integral AC/DC supply sensor for long range	Std
Range/	UW5150	S		1 () T	14	ιX	0	X	0	Х			-		1	0	А	4	- '	1 (0 1	0	4		Max. 50m Liquids/Solids 10kHz	0
Frequency	UW5160	S		0 5	5 T	14	X	0	X	0	Х			-		1	0	А	4	- '	1 (0 0	5	4		Max. 60m Liquids/Solids 5kHz	
Dever events			В																	Т	Τ					24V DC	
Power supply			U																		Т					90 to 260V AC 50/60Hz	0
Mounting							X	0	Х	0										Т	T					Flange mounting (Refer Flanges Code below)	0
Fixed code											Х										Т					Always X	
Certificate												X	0 0													None (Not Ex proof)	0
Type of flange	•														А											ANSI Class 150 equivalent diameter and bolt holes	
Type of hange	9														J						Τ					JIS 10 K equivalent diameter and bolt holes	0
Flange size																1	0				T					250mm/10" for UW5150/UW5160	0
Flange position	on																	А			Т					Sensor end	0
Flange mater	ial																		4		Т					Polypropylene	0
Focaliser hor	2																				1 (0 1	0			For UW5150	0
Focaliser nor	n																			-	1 (0 0	5			For UW5160	
Horn materia	I																							4		Polypropylene	0
Crossial requi	romonto																								blank	Without special requirements	0
Special requi	rements																								/Z	With special requirements Please describe after /Z	

Remote Converter

2 v	vire	loop	powered	
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Specification Code UWC520 S B X X 0		Remote converter 2 wire loop powered	Std
Output X		420mA DC	0
Fixed code X 0		Always X0	
Certificate X 0	0	None (Not Ex proof)	0
A 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

· · ·	_	_	_	_	_	_	_	÷	· ·		
Specification Code UWC510	D	S	2	XХ	0	X	0	0		AC/DC powered Remote converter	Std
Deuter europhy		1	В							24V DC	
Power supply			U							90 to 260V AC 50/60Hz	0
Output			2	X						420mA DC	0
Fixed code				X	(0					Always X0	
Certificate						X	0	0		None (Not Ex proof)	0
Special requirements									blank	Without special requirements	0
Special requirements									/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	UWS5	Γ		Т	6		Τ	Т	Т	Τ		С	0	0	-			Ĩ		-	Ť	Ť		1	1		Remote sensor for short range	Std
Range/	UWS505	5	0	Т	6							С	0	0	-					-							Max. 5m Liquids 50kHz	0
Frequency	UWS510	3	0	Т	6							С	0	0	-					-		T					Max. 10m Liquids 30kHz	0
Temperature	range			Т																	Т	Τ					Standard (-40 to +80°C)	0
					>	< 0		(0																			Flange mounting (Refer Flanges Code below)	0
Mounting					1	ГЕ	3 2	2 0														Т					Thread mounting G2 male thread	
					٦	ΓΝ	1 2	2 0																			Thread mounting 2"NPT male thread	
Certificate									X	0	0																None (Not Ex proof)	0
Certificate									A	0	0											Τ					IEC Ex	
Fixed code												С	0	0							Τ	Τ					Always C00	
																0											None (without flange)	
Type of flange	e															А						Τ					ANSI Class 150 equivalent diameter and bolt holes	
																J											JIS 10 K equivalent diameter and bolt holes	0
Flange size																	0										None (without flange)	
T lange size																	0	4									100mm/4"	0
Flange positio	20																		0								None (without flange)	
Flarige positio	JII																		В								Bottom of sensor	0
Flange mater	iol																		(C							None (without flange)	
Flange mater	iai																		4	4							Polypropylene	0
Focaliser hor	n																						0 0				Without horn	
I Ucaliser Hul																					C	2	4 2	В			With horn (only with flange)	0
Horn materia	1																								0		Without horn	
Horri materia	1																								4		Polypropylene	0
																										blank	Without special requirements	0
Special requi	rements																									/Z	With special requirements Please describe after /Z	
																										/2	(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	Х	(0)))	(()			(0	0 0) -				А		-							Remote sensor for middle range	Std
Range/	UWS520	2	0	Т	4	Х	(0)))	(()		Т	(C	0 0) -		Τ		А		-	0	4	0	0			Max. 20m Liquids/10m Solids 20kHz	0
Frequency	UWS530	1	5	Т	4	Х	(0)))	< ()		Τ	(C	0 0) -				А		-	1	0	1	5			Max. 30m Liquids/20m Solids 15kHz	0
Temperature	range			Т																									Standard (-40 to +80°C)	0
Mounting						Х	(0)))	< ()		Τ						Τ											Flange mounting (Refer Flanges Code below)	0
Cartificate										>	(()																None (Not Ex proof)	0
Certificate										A	1) ()																IEC Ex	
Fixed code												Τ	(C	0 0)		Τ											Always C00	
Tune of floorer																	A												ANSI Class 150 equivalent diameter and bolt holes	
Type of flange	2																J												JIS 10 K equivalent diameter and bolt holes	0
Flange size																		0	4										100mm/4" for UWS520	0
Flange size																		1	0										250mm/10" for UWS530	0
Flange positio	on																			А									Sensor end	0
Flange mater	ial																				4								Polypropylene	0
Focaliser horr	•																						0	4	0	0			For UWS520	0
Focaliser non	1																						1	0	1	5			For UWS530	0
Horn material																											4		Polypropylene	0
Special requir	romonto																											blank	Without special requirements	0
Special requir	ements																										- [/Z	With special requirements Please describe after /Z	

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

																												1.2		
Specification Code	UWS5				4	Х	0	Х	0		Т	Т	С	; 0	0	-		1	0	А		-			Т				Remote sensor for long range	Std
Range/	UWS550	1	0		4	Х	0	Х	0				С	; 0	0	-		1	0	А		-							Max. 50m Liquids/Solids 10kHz	0
Frequency	UWS560	0	5		4	Х	0	Х	0				С	; 0	0	-		1	0	Α		-							Max. 60m Liquids/Solids 5kHz	
Temperature	range			S								Τ			Τ			Γ											Standard (-40 to +80°C)	0
Mounting						Х	0	Х	0			Τ			Т														Flange mounting (Refer Flanges Code below)	0
Cartificata										X	0	0																	None (Not Ex proof)	0
Certificate										A	0	0			Τ			Γ							Т				IEC Ex	
Fixed code													С	; 0	0				1										Always C00	
Tune of flores																	А												ANSI Class 150 equivalent diameter and bolt holes	
Type of flange	9																J	Γ											JIS 10 K equivalent diameter and bolt holes	0
Flange size																		1	0										250mm/10" for UWS560/UWS560	
Flange positio	on																			Α									Sensor end	0
Flange mater	ial																				4								Polypropylene	0
Esselia en la em	_																						1	0	1	0			For UWS550	0
Focaliser hori	n																						1	0	0	5			For UWS560	
Horn material	I																										4		Polypropylene	0
Crossial requir	romonto																											blank	Without special requirements	0
Special require	rements																										Ī	/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 	Pressure in the :	Operation ()°C, Design ()°C
[Symbol : DS]	vessel	
	 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	1900.	\Box Pressurized () bar,
Spec code : SB50T6TB20XX00-00000-00000		\Box Open pit \Box Close pit
	Shape :	□ Cylindrical □ Horizontal □ Silo
Example) Integral sensor flange connection		□ Other ()
Model : UW5250	Roof type :	□ Flat □ Conical □ Dome
Spec code : SB10S4X0X0XX00-J10A4-10104		\Box Other ()
	Vessel height :	() m
Example) Remot converter	Diameter or width :	() m
Model : UWC520	Obstructions :	· · · ·
Spec code : SBXX0X00	Agitator :	□ No □ Yes : Type ()
	Others :	□ Level switch □ Reinforce or Stay
Example) Remote sensor flange connection		□ Ladder □ Temperature sensor or well
Model : UWS530		□ Other ()
Spec code : 15T4X0X0X00C00-J10A4-10154	Vessel material :	□ Metal () Non metal (
	Coated :	🗆 Yes 🗆 No
2. Option (If required)		
Please state in Symbol		

3. Special request (If required) Please state special requests clearly. Consult TokyoKeiso or representative before ordering.

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 □ None □ Medium □ Strong • Stickiness : • Crystalline : □ None □ Medium □ Strong • Waving : □ None □ Medium □ Heavy • Foam : □ None □ Medium □ High and dense

Mounting nozzle

- Height () mm, Diameter () mm
-) mm • Distance from the vessel wall (
- Horizontal distance from the obstruction () mm
- Horizontal distance from the inlet () mm

* Specification is subject to change without notice.

TOKYO KEISO CO., LTD. | | 7

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