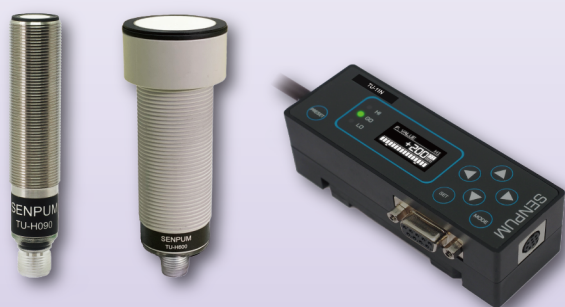


Digital Display High-Precision Ultrasonic Sensor TU-H Series



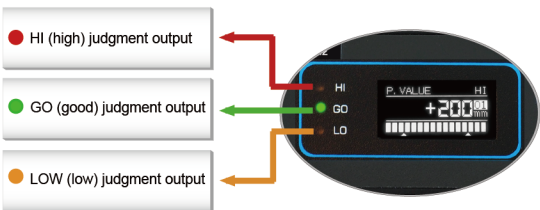
Digital display controller, output accurate data immediately after power on

OLED high-definition digital display, output accurate data immediately after power on.



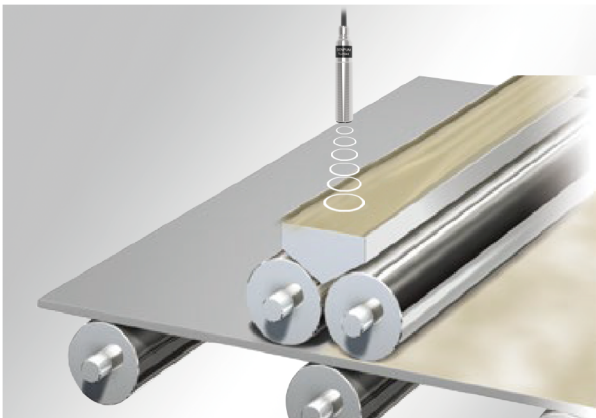
HI/GO/LOW three switching control outputs

Directly connect with PC/PLC, position data can be seen at a glance.



Suitable for detecting liquid level, material level, distance, etc.

Detect the adhesive liquid on the coating machine.



EtherCAT

RS-232C / RS-485

PROFINET

Ask SENPUM

+86-755-83330055

Fast Delivery Standard Models



Most products are in stock. Upon receiving your order, we will arrange prompt shipment to minimize your downtime-related costs and losses.



WeChat



WhatsApp

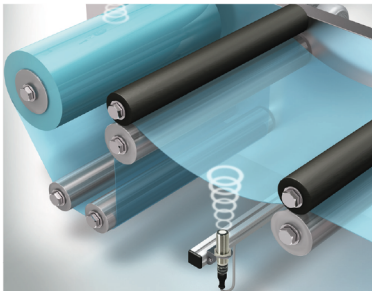


LINE

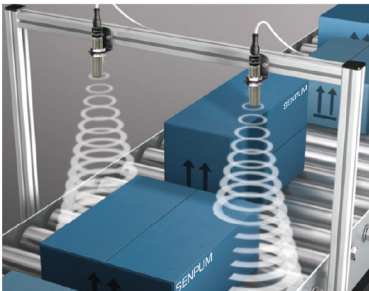
More Features

- Maximum resolution ± 1 mm.
- Maximum detection distance up to 6 m.
- Maximum accuracy up to $\pm 1\%$ of full scale.
- M18/M3 mounting thread.
- Maximum repeatability up to $\pm 0.5\%$ of full scale.
- Digital output RS-232 signal for direct connection to PC/PLC.

Applications



Transparent tape roll diameter measurement and presence detection



Detection of different heights of objects on the conveyor belt



Detection of foodstuffs on the conveyor belt

Product List

Sensor Head

Appearance	Detection distance	Model
	50–400 mm	TU-H040
	100–900 mm	TU-H090
	150–1600 mm	TU-H160
	200–2200 mm	TU-H220
	350–3500 mm	TU-H350
	350–6000 mm	TU-H600

Controller

Controller types	Model	
	NPN	PNP
Main module	TU-11N	TU-11P
Expansion module	TU-12N	TU-12P

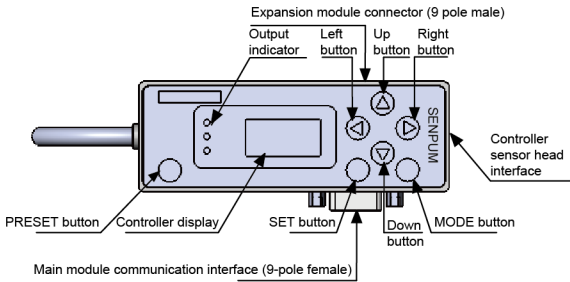
Cable (connecting cable between sensor head and controller)

Type	Applicable sensor head	Model
Cable	TU-H040 TU-H090	OW-TU20001 ⁽¹⁾
	TU-H160 TU-H220	
Cable	TU-H350 TU-H600	OW-TU20002 ⁽¹⁾

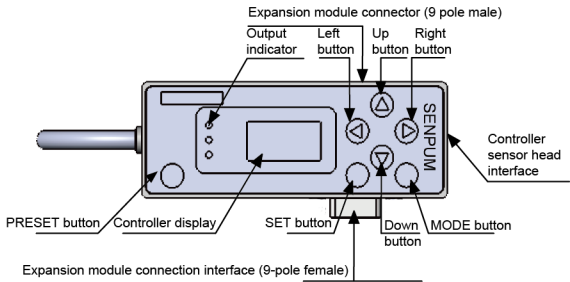
(1) The standard cable length is 2 m, if need other cable length can be customized.

Controller Panel Description

TU-11N / TU-11P



TU-12N / TU-12P



- Fiber Optic Sensors
- Photoelectric Sensors
- Color Sensors
- Laser Sensors
- Proximity Sensors
- Precision Contact Sensors
- Area Sensors/ Safety Light Curtains
- Laser Scanners
- Digital Contact Sensors
- Laser Displacement Sensors
- Laser Micrometers
- Confocal Displacement Sensors
- Barcode Readers
- AI Vision Sensors
- RFID
- Infrared Temperature Sensors
- Pressure Sensors
- Flow Sensors
- Magnetic Sensors
- Ultrasonic Sensors
- Magnetic Scales
- Static Eliminators



TU-N
TU-H

Ultrasonic Sensors

Fiber Optic Sensors

Photoelectric Sensors

Color Sensors

Laser Sensors

Proximity Sensors

Precision Contact Sensors

Area Sensors/
Safety Light Curtains

Laser Scanners

Digital Contact Sensors

Laser Displacemen
Sensors

Laser Micrometers

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Sensors

Pressure Sensors

Flow Sensors

Magnetic Sensors

Ultrasonic Sensors

Magnetic Scales

Static Eliminators

TU-H

Digital Display High-Precision Ultrasonic Sensor

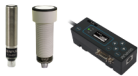
Specifications						
Type	Diffuse reflective					
Main unit model	TU-H040	TU-H090	TU-H160	TU-H220	TU-H350	TU-H600
Maximum sensing distance	400 mm ⁽¹⁾	900 mm ⁽²⁾	1600 mm ⁽²⁾	2200 mm ⁽²⁾	3500 mm	6000 mm ⁽²⁾
Minimum sensing distance	50 mm	100 mm	150 mm	200 mm	350 mm	350 mm
Sensing range	50–400 mm	100–900 mm	150–1600 mm	200–2200 mm	350–3500 mm	350–6000 mm
Beam angle	10°±2°		15°±2°	14°±2°	±7°	±9°
Switching frequency (switching output)	10 Hz	4 Hz	3 Hz	2 Hz	1 Hz	
Response time (switching output)	500 ms				250 ms	500 ms
Hysteresis	1%					
Repeatability	0.5%				1%	0.5%
Resolution	±1 mm	±2 mm	±3 mm		±4 mm	±6 mm
Linearity error	1%					
Operating temperature range	-20 to +70 °C					
Temperature compensation	Available					
Thermal drift	±2%					
Ripple coefficient	5%					
Operating voltage	12 to 24 VDC					
Leakage current	10 µA @ 30 VDC					
Output voltage drop	2.2 V max. (I = 100 mA)					
No-load current	≤ 50 mA					
Output current (switching output)	100 mA (3)					
Minimum load resistance (analog voltage output)	3 k Ω					
Adjustable switching point	Teach-In button					
Start-up delay	≤300 ms					
Indicator	Green: reflective; Yellow: output					
Circuit protection	Short-circuit protection (automatic reset), inductive protection, reverse voltage protection					
Electromagnetic compatibility/EMC	Conforms to the requirements of the EMC directive, in accordance with EN60947-5-2 specifications					
Protection class	IP67 (EN 60529) (4)					
Connection cable	OW-TU20001 ⁽³⁾				OW-TU20002 ⁽³⁾	
Housing material	Stainless steel 316L					PBT
Vibrating head material	Glass epoxy resin					
Torsional torque	Plastic housing: 1 N·m / Metal housing: 50 N·m					
Storage temperature	-35 to +70 °C (no freezing)					
Weight	100 g					70 g

(1)Metal target plate 100 x 100 mm (2)Metal target plate 200 x 200 mm (3)Standard cable length is 2 m, other cable lengths can be customized.

Specifications			
Model	NPN	TU-11N	TU-12N
	PNP	TU-11P	TU-12P
Main module/Expansion module	Main module		Expansion module
Mounting method	DIN rail mounting		
Type	Amplifier module		
Power consumption	At 12 V: max. 1440 mW (120 mA); At 24 V: max. 1680 mW (70 mA)		
Measurement value display	OLED		
Display range	-9999 to 9999		
Display resolution	1 mm/2 mm/3 mm/4 mm/6 mm		
Sampling rate	30 mA max. 1,000 times/sec		
Control input	No voltage input		
Control output	HI/GO/LOW NPN/PNP open collector; 100 mA 30 V max; Residual voltage 1 V max; N.O./N.C. switchable		
Response time	1 ms		
Communication method	RS-232 (can convert to RS-485 or USB output)		None ^{*1}
Main function	Current measured value display, original value display, upper limit/lower limit threshold manual setting, tolerance manual setting, upper limit/lower limit threshold automatic teach-in, tolerance automatic teach-in, display inversion, measurement plus or minus direction, preset value, peak hold, valley hold, peak-to-peak hold, initialization, key lock.		
Calculation function	Maximum value, Minimum value, Peak-to-peak value, Average value, Reference deviation, Distortion value, Thickness, Warpage		None ^{*2}
Indicator	Output indicators: HIGH (red), GO (green), LOW (orange)		
Rated supply voltage	12 to 24 VDC, Ripple (P-P) 10% or less		
Ambient temperature	-10 to +55 °C (no freezing)		
Relative humidity	35 to 85% RH (no condensation)		
Vibration resistance	10 to 55 Hz, Double amplitude 1.5 mm, 2 hours in each of the X, Y, and Z directions		
Connection method	Cable lead type (standard cable length 2 m)		
Material	Main unit housing: Alloy aluminum; Membrane button switch: PET plastic; Cable: PVC		

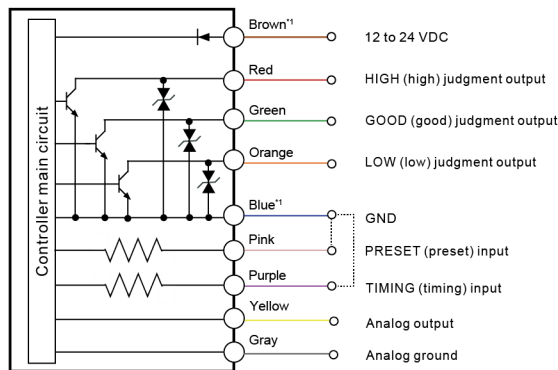
^{*1} When the expansion module is used in cascade with the main module, it has communication function.

^{*2} When the expansion module is used in cascade with the main module, the main module can read the values of multiple expansion modules for calculation, and directly output the maximum value, minimum value, peak-to-peak value, average value, reference deviation, distortion value, thickness and warpage.



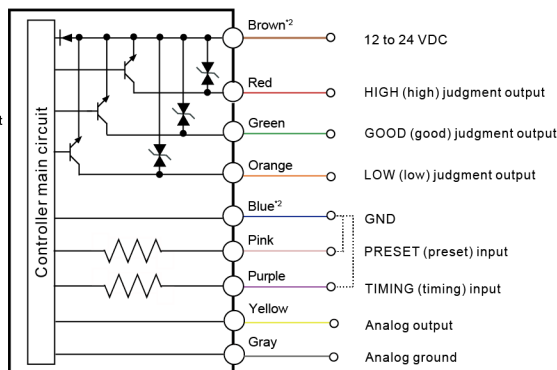
I/O Circuit Diagrams

TU-11N / TU-12N



*1 Brown and blue lines are used only for the main module TU-11N, not for the expansion module TU-12N.

TU-11P / TU-12P

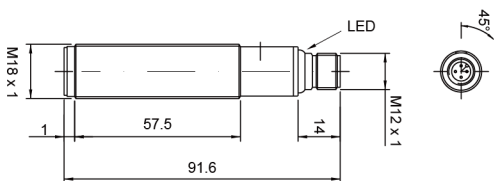


*2 Brown and blue lines are used only for the main module TU-11P, not for the expansion module TU-12P.

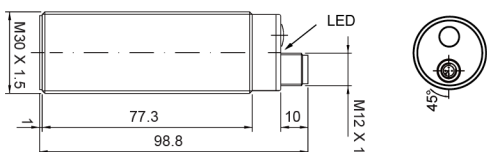
Dimensions

TU-H040 / TU-H090 / TU-H160 / TU-H220

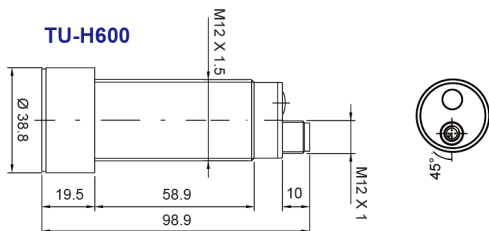
Unit: mm



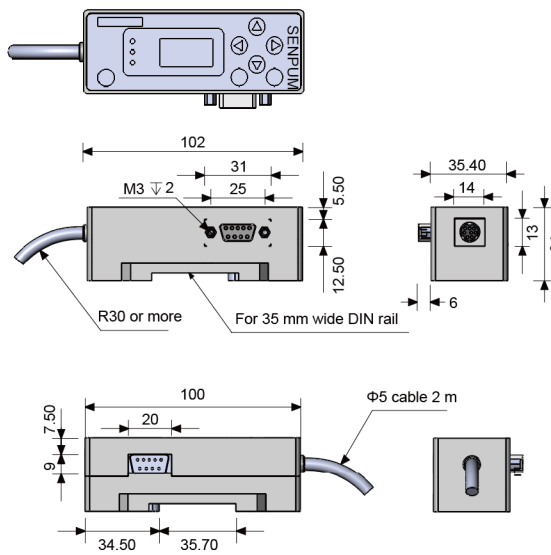
TU-H350



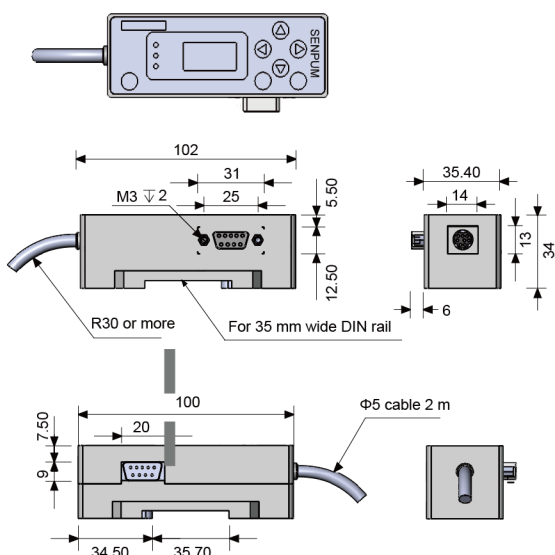
TU-H600



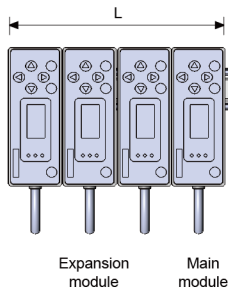
TU-11N / TU-11P



TU-12N / TU-12P



When connecting multiple units together



Number of devices	L
1	35.4
2	70.8
3	106.2
4	141.6
5	177.0
6	212.4
7	247.8
8	283.2

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