

Digital Display

Infrared Temperature Sensor

TS-Z Series



High-definition digital tube display

Allows for a more intuitive view of the display.



Supports various communication networks

It can connect to various communication device modules and enables reading and writing parameters via the network.



EtherCAT[®] RS-232C / RS-485

EtherNet/IP[™] Ethernet (TCP/IP)



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.



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* For more product features, please contact a SENPUM sales engineer.

Product List

Main unit

Measuring temperature	Celsius (°C)	0 to 500 °C	100 to 600 °C	300 to 1300 °C	600 to 1600 °C
	Fahrenheit (°F)	32 to 932 °F	212 to 1112 °F	572 to 2372 °F	1112 to 2912 °F
Operating wavelength		8 to 14 μm	2.3 μm	1.6 μm	1 μm
Model	With SF focusing lens	TS-Z500	TS-Z600S	TS-Z1300S	TS-Z1600S
	With CF2 focusing lens	-	TS-Z600S-CF2	TS-Z1300S-CF2	TS-Z1600S-CF2
Appearance					

Controller

Appearance	Type	Output method	Model
 Main module	DIN rail mounting	NPN / PNP	TS-1000
 Expansion module			TS-1050

Network Communication Unit

Appearance	Network	Model
	EtherCAT	OW-EC2A
	PROFINET	OW-PN2
	Ethernet (TCP/IP)	OW-EN2
	EtherNet/IP™	OW-EP2
	RS-232C / RS-485	OW-RS1A

Bracket (sold separately)

Appearance	Type	Model
	M16 bracket	OW-TSZ001
	M22 bracket	OW-TSZ002
	Adjustable bracket	OW-TSZ003

Infrared Temperature Sensors

TS-D	
TS-P	
TS-H	
TS-Z	
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	



TS-Z

Digital Display Infrared Temperature Sensor

Specifications

Sensor Head

Type		Standard type	Ultra type		
Model	With SF focusing lens	TS-Z500	TS-Z600S	TS-Z1300S	TS-Z1600S
	With CF2 focusing lens	-	TS-Z600S-CF2	TS-Z1300S-CF2	TS-Z1600S-CF2
Measuring temperature	Celsius (°C)	0 to 500 °C	100 to 600 °C	300 to 1300 °C	600 to 1600 °C
	Fahrenheit (°F)	32 to 932 °F	212 to 1112 °F	572 to 2372 °F	1112 to 2912 °F
Operating wavelength		8 to 14 μm	2.3 μm	1.6 μm	1 μm
Optical resolution (90% energy)		15:1	60:1	150:1	
Temperature resolution		0.1 °C			
Emissivity		0.100 to 1.000			
Mounting thread		M16 × 1	M22 × 1.5		
Accuracy		±1% or ±1.5 °C	± (0.5% of reading + 2 °C)		
Repeatability		±0.5% or ±1 °C	± (0.3% of reading + 1 °C)		
Maximum current consumption		50 mA	100 mA		
Maximum load		500 Ω			
Protection class		IP65 (NEMA-4)			
Operating temperature		0 to +70 °C (no freezing)			
Relative humidity		10 to 95% RH (no condensation)			
Cable temperature		-20 to +80 °C (no freezing)			
Response time (95% energy)		150 ms	5 ms		
Material		Stainless steel			
Cable		2 m, 5 m, 10 m optional			
Weight		Approx. 150 g	Approx. 280 g		

*Note: Emissivity = 1.000 at 23 °C ± 5 °C

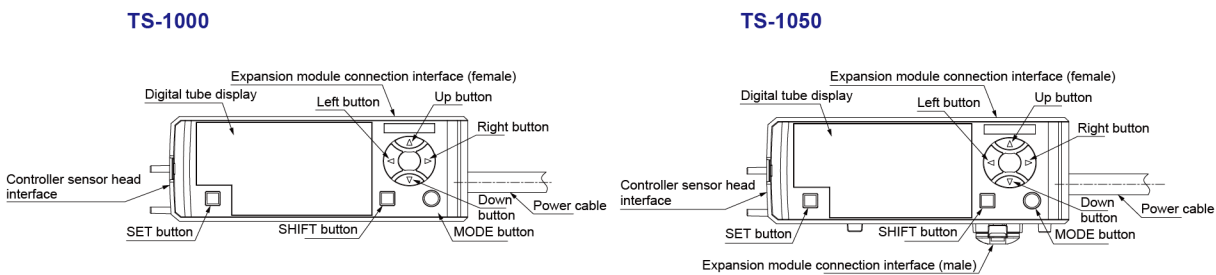
Controller

Model	NPN/PNP	TS-1000	TS-1050
Main module/Expansion module		Main module	Expansion module
Mounting type		DIN rail mounting	
Number of modules that can be added		Up to 7 expansion modules can be added to 1 main module	
Power voltage		15 to 30 VDC, Class 2, including ripple (P-P) 10%	
Display range		0 to 1600.0	
Display resolution		0.1 °C	
Current consumption		Less than 18 mA at 30 V (without load) Less than 22 mA at 24 V (without load)	
Response time		hsp (0.02 s), 0.04 s, 0.10 s, 0.20 s, 0.50 s, 1.00 s, 5.00 s	
Control input	Timer input	Input time: min. 2 ms	
	Preset input	Input time: min. 20 ms	
	Reset input		
	Channel input		
Control output (OUT1, OUT2, OUT3)	NPN output	NPN open collector 30 V max. 50 mA, residual voltage: 1 V max.	
	PNP output	PNP open collector 30 V max. 50 mA, residual voltage: 1.5 V max.	
Analog output	Voltage output	±5 V, 1 to 5 V, 0 to 5 V, output impedance 100 Ω	None
	Current output	4 to 20 mA, max. load resistance 350 Ω	
	Response time	Specific response time + 1 ms	
Ambient resistance	Ambient temperature	-10 to +50 °C (no freezing)	
	Ambient 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	
Material		Housing/Front panel: Polycarbonate, Keys: Polyacetal, Cable: PVC	
Weight		Approx. 145 g	

*1 When connecting to the expansion unit:
- Power voltage: 20 to 30 VDC
- Control output current: 20 mA max.

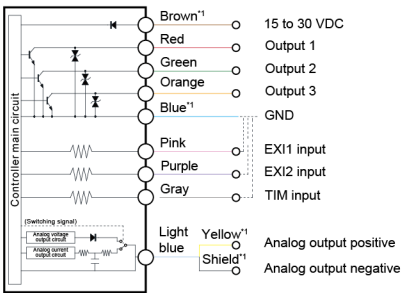


Control Panel Description

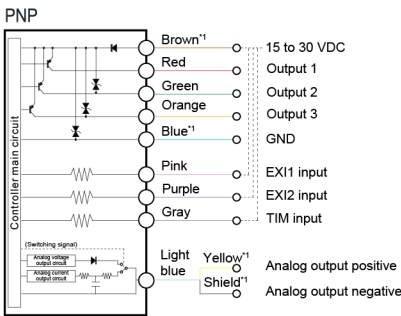


I/O Circuit Diagrams

Controller
TS-1000/TS-1050
NPN



^{*1} Main unit only.



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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
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AI Vision Sensors

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Pressure Sensors

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Magnetic Sensors

Ultrasonic Sensors

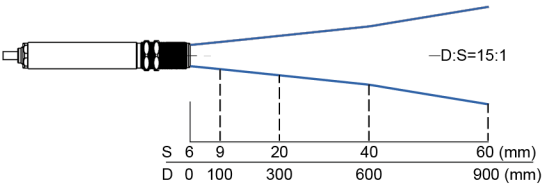
Magnetic Scales

Static Eliminators

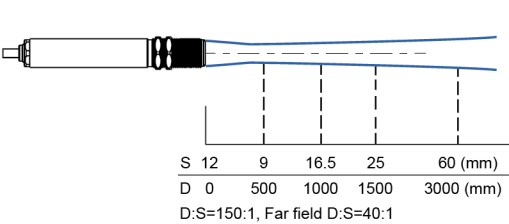


Measuring Area Description

TS-Z500

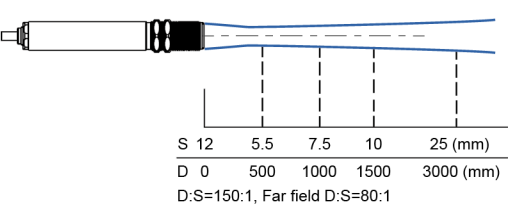


TS-Z600S

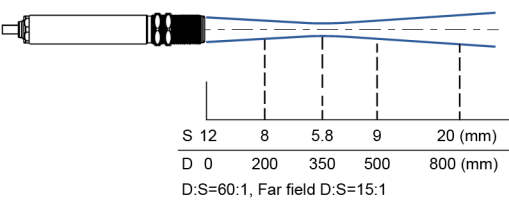


TS-Z1300S

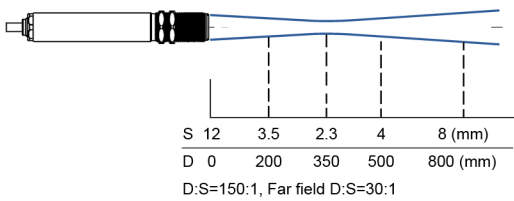
TS-Z1600S



TS-Z600S-CF2



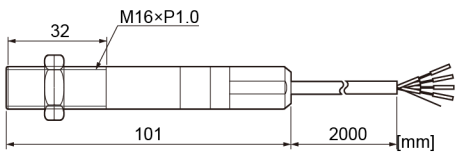
TS-Z1300S-CF2 TS-Z1600S-CF2



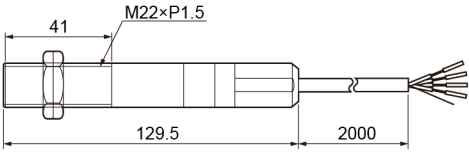
Dimensions

Unit: mm

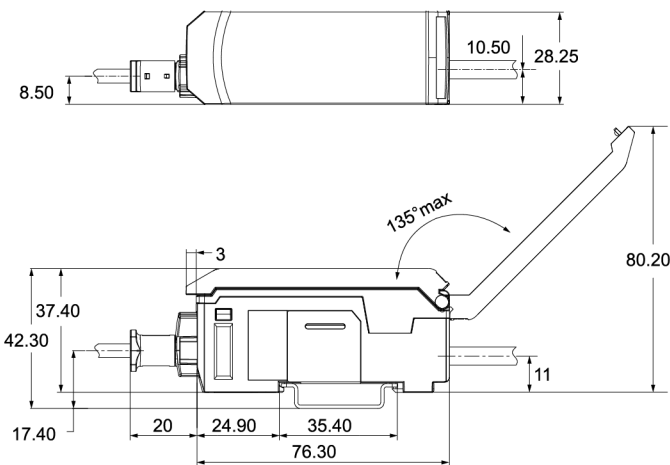
Sensor Head
TS-Z500*



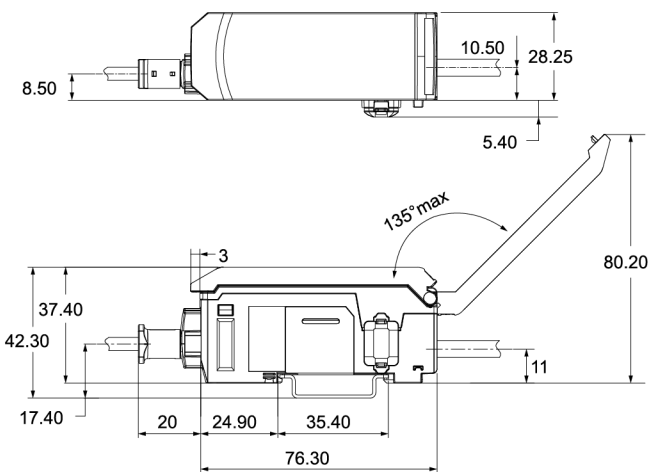
TS-Z600* / TS-Z1300* / TS-Z1600*



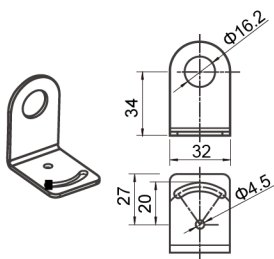
Controller
TS-1000



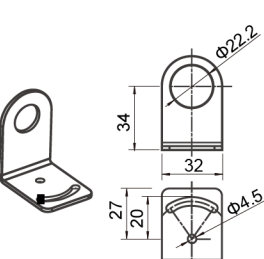
TS-1050



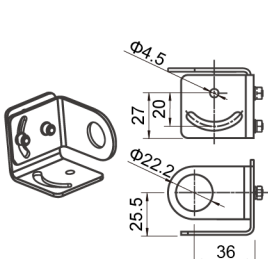
OW-TSZ001



OW-TSZ002



OW-TSZ003



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