Stationary-type non-contact thermometer For installation in limited space

Measurement range -40 to 500°C (-40 to 932°F) 0 to 1000°C (32 to 1832°F) THERMO-HUNTER

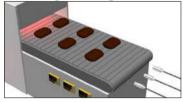
**CS** series

<-40 to 500°C (-40 to 932°F)> CS-30TAC/CS-40TAC

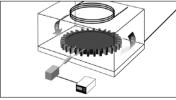




# Temperature control of iron plates in hamburger cooking machines



Temperature control during sprocket molding



CE



# Features

### World's smallest-class sensor head ideal for installation in limited space

The ultra-compact head measures only M12 ( $\emptyset$ 14)  $\times$  30 mm.

This allows the thermometer to be mounted to a wide variety of equipment in various manufacturing lines.

# Heat-resistant sensor head capable of handling up to 180°C (356°F)

The sensor head and cable are heat resistant to  $180^{\circ}C$  ( $356^{\circ}F$ ). This eliminates the need for water cooling even in high-temperature environments. (Low- and medium-temperature models are heat resistant to  $100^{\circ}C$  ( $212^{\circ}F$ ).)

# Industry's highest level of waterproof performance

In harsh manufacturing lines, water and dust can cause sensors to fail, so environmental resistance is a must. The CS series offers IP69K protection as stipulated by German standard DIN40050-9.



ENTER buttor

Selection

buttons

This allows for problem-free use even in high-pressure sterilization washing.

## Compact body offering both visibility and operability

Main display

Sub displa

300

250

120

The 7-segment, large digital display is incredibly easy to read. In addition, the large, easy-to-understand buttons make operation easier even when mounted to equipment.

# 2-point teaching function for simple temperature adjustment

The CS series is now equipped with a 2-point teaching function. Setting the upper and lower limits for a measurement target makes adjusting in order to display the desired value easy.

## Various measurement modes

#### **Bank function**

Settings can be saved independently for banks 1 through 4. Output scaling function The temperature range of the analog output (4 to 20 mA) can be set as desired

#### **Trigger function**

Output control can be set according to trigger (synchronization) input. [External trigger / Wave trigger / MAX, MIN, P-P, SAMPLE hold]

Energy amount

## Laser marker for easy alignment (optional)

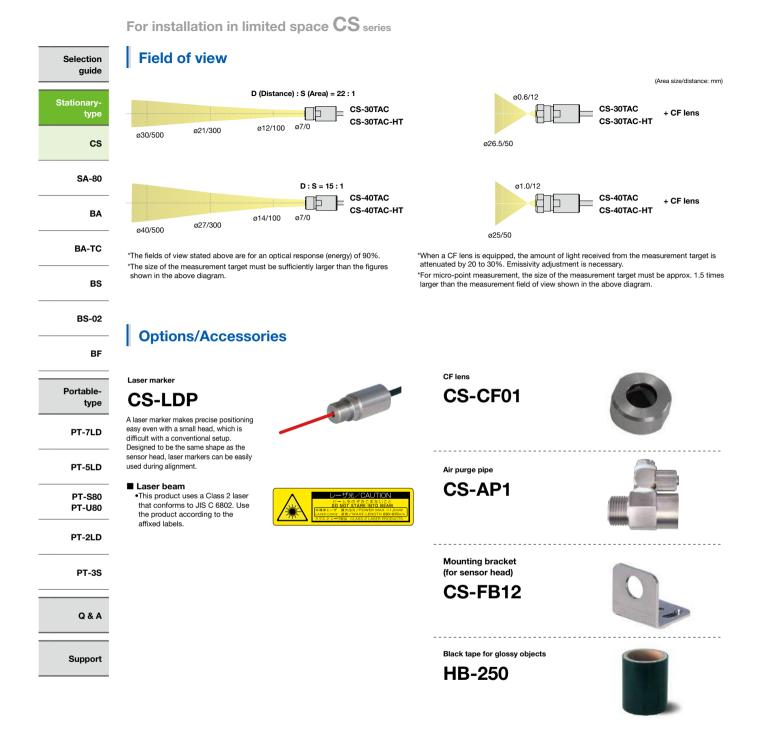
A laser marker makes precise positioning easy even with a small head, which is difficult with a conventional setup. Designed to be the same shape as the sensor head, laser markers can be easily used during alignment.



# For installation in limited space **CS** series

Measurement range     (Hit High-temperature model, 10 1007 C(24 to 1822*)); Heat-resistant (10 100 C(24 to 182*)); (Fype)     (Site 30 mm/S00 mm (Field of view)     (Site 30 mm/S00 mm (Field of view)     (Site 30 mm/S00 m	Туре кеу							
[Feld of view]     4/0: e40 mm/500 mm     SA-80       [Fype]     CS: Cylindrical sensor head and ampifier     SA-80       BA     BA     BA       Specifications     BA     BA       Model     Low-medium-temperature models (standard)     High-temperature models (heat-resistant head)     BA       Measurement range     -40 to 500°C (-40 to 92°F)     0 to 1000°C (32 to 1832°F)     BS       Pelod of view     630/500 mm (22:1)     040/500 mm (15:1)     030/500 mm (22:1)     040/500 mm (15:1)       Optics     Sensing element/ segentral response     Silicone lens     BF       Response time     100 mt/900% response     150 mt/900% response     BF       Response time     100 mt/900% response     150 mt/900% response     Pr-100       Response time     100 mt/900% response     150 mt/900% response     Pr-100       Model     0.10 nt 2     Pr-100     Pr-100       Display resolution     0.10 nt 2     Pr-100       Model     0.01 nt 2     Pr-100       Model     0.01 nt 2     Pr-100       Display resolution     0.15 nt 2     0.15 nt 2	HT: High-temperature model, 0 to 1000°C (32 to 1832°F);						Stationary- type	
Fight   BA     Model   Low-medium-temperature models (standard)   High-temperature models (heal-resistant head)   BS     Model   CS-307AC   CS-407AC   CS-307AC-HT   CS-407AC-HT   BS     Resourcement range   -01 to 500°C (-10 to 332°F)   0 to 1000°C (32 to 1382°F)   BS   BS     Field of view   s20/500 mm (22.1)   e40/500 mm (15.1)   e30/500 mm (22.1)   e40/500 mm (15.1)   BS-02     Sensing element/ spectral response   Themople/8 to 14 µm   BF   BF     Response times   150 ms/00% response   Do 200°C (32 to 382°F): ±2°C (3.6°F), 14% of reading   Portable:     Currery   -40 to 0°C (-40 to 32°F): ±3°C (5.4°F), 110 200°C (32.8 to 382°F); ±1% of reading   PT-100   PT-100     Prospective load   100 to 200°C (32°F): ±1°C (1.6°F), 201°C (33.8°F) pr more: ±0.6% of reading   PT-100     Prospective load   0.5°C (1.6°F), 0.100°C (32.8 to 32°F); ±1% of reading   PT-100     Prospective load   0.5°C (1.6°F), 0.100°C (32.8 to 32°F); ±1% of reading   PT-100     Prospective load   0.5°C (1.6°F), 100 20°C (32.8 to 32°F); ±1% of reading   PT-100     Prospective load   0.5°C (1.6°F), 100 20°C (32.8 to 32°F); ±1% of reading   PT-100     Prospective l								
Specifications   Ba-ro     Model   Low-medum-temperature models (standard)   High-temperature models (standard)   High-temperature models (standard)   BS     Model   CS-30TAC   CS-40TAC   CS-40TAC-HT   CS-40TAC-HT   BS     Measurement range   -40 to 500°C (-40 to 593°C f)   0 to 100°C (32 to 158°C f)   BS   BS-02     Optics   Solono m (2:1)   e40/500 mm (15:1)   e30/500 mm (2:1)   e40/500 mm (15:1)   BS-02     Sensing stemant/ spectral response   150 ms/00% response   150 ms/00% response   BF   BF     Response time   150 ms/00% response   0 to 200°C (32 to 393°C f): 22°C (36°F), 20 to 100°C (393 to 1393°C f): 22°C (36°F), 20 to 100°C (30°C f): 20 to 10°C (18°F)   PT-100     P1-5L0   Display resolution   0.5°C incements   PT-5L0     P1-5L0   To 10°C f): 10		[Type]						
Mode     Low-medium-temperature models (standard)     High-temperature models (heat-resistant head)     BA-TC       Mode     CS-30TAC     CS-40TAC     CS-30TAC-HT     CS-40TAC-HT     Standard     BS       Measurement range    40 to 500°C (-40 to 952°F)     0 to 1000°C (21 to 1832°F)     940/500 mm (2:1)     940/500 mm (2:1)     940/500 mm (2:1)     940/500 mm (15:1)     930/500 mm (2:1)     940/500 mm (15:1)     950/500 mm (2:1)     940/500 mm (15:1)     950/500 mm (2:1)     940/500 mm (15:1)     950/500 mm (2:1)     940/500 mm (2:1)     940/500 mm (15:1)     950/500 mm (2:1)     940/500 mm (2								
Model     CS-30TAC     CS-40TAC     CS-30TAC-HT     CS-40TAC-HT     BS       Measurement range    40 to 500°C (-40 to 932°F)     0 to 100°C (32 to 1832°F)     BS     BS       Field of view     630/500 mm (22:1)     640/500 mm (22:1)     640/500 mm (52:1)     640/500 mm (52:1)     BS     BS       Sensing element/ spectral response     150 ms/90% response     150 ms/90% response     BF       Response time     150 ms/90% response     150 ms/90% response     BF       Response time     150 ms/90% response     150 ms/90% response     BF       Response time     150 ms/90% response     150 ms/90% response     BF       Response time     150 ms/90% response     150 ms/90% response     BF       Response time     0.10 0.2°C (38.16 392°F): 13.0° (38.8 16 392°F)     0 to 20°C (28.0 16 38°F): 13.0°C (38.7 16 30°F)     Portable       Upbids     40 to 0°C (-40 to 32°F): 30°C (38.10 392°F): 13.0°C (38.8 16 392°F)     0 to 20°C (28.0 16 38°F): 13.0°C (38.10 138°F)     PT       Resolution     0.1 to 1.2     Dipta/secolution     0.1 to 1.2     PT     PT       Dipta/secolution     0.5°C increments     0.5°C increments <td< td=""><td>3</td><td>pecification</td><td>5</td><td></td><td></td><td></td><td>BA-TC</td></td<>	3	pecification	5				BA-TC	
C5-30TAC     C5-30TAC     C5-30TAC     C5-30TAC-HT     C5-30TAC-HT <thc< th=""><th colspan="2" rowspan="2">Model</th><th colspan="4">Low-medium-temperature models (standard) High-temperature models (heat-resistant head)</th><th></th></thc<>	Model		Low-medium-temperature models (standard) High-temperature models (heat-resistant head)					
Field of view   s30/500 mm (22:1)   e40/500 mm (15:1)   s30/500 mm (22:1)   e40/500 mm (15:1)   s30/500 mm (15:1)   s30/50 mm			CS-30TAC	CS-40TAC	CS-30TAC-HT	CS-40TAC-HT	BS	
Optics   Silicone lens   Determine     Sensing element/ spectral response   150 ms/90% response   BF     Response time   150 ms/90% response   150 ms/90% response     Accuracy   -40 to 0°C (40 to 32°F): 3°C (6.4°F), 1to 200°C (38.8 to 392°F): 2°C (3.8°F), 201 to 1000°C (39.8 to 132°F): 410° to 1000°C (39.3 to 132°F): 410° to 100°C (39.3 to 100°C (39.3 to 132°F): 410° to 100°C (39.3 to 100°C (39.3 to 132°F): 410° to 100°C (39.3 to 100	Measurement range		–40 to 500°C	(-40 to 932°F)	0 to 1000°C	(32 to 1832°F)		
Sensing element/ spectral response     Thermopile/8 to 14 µm     BF       Response time     150 ms/90% response     150 ms/90% response     Portable 120 ms/90% response       Accuracy     -40 to 0°C (-40 to 32°F) ±3°°C (5.4°F), 11 to 20°C (33.8 to 1382°F): 1% of reading ±2°C (3.6°F), 201 to 1000°C (393.8 to 1382°F): 201 to 1000°C (393.8 to 1382°F): 1% of reading     Portable 120 to 1000°C (393.8 to 1382°F): 1% of reading     Portable type       Repeatability     Up to 200°C (322°F): ±1.0°C (1.8°F), 201°C (39.8°F) or more: ±0.5% of reading     PT-7LD       Display resolution     1°C increments     PT-7LD       Moretable     0.1 to 1.2     PT-7LD       Notput     4 to 20 mA     PT-7LD       Accuracy     ±0.5% or ±1.0°C (1.8°F)     PT-5LD       Notput     0.5% increments     PT-5LD       Moretable load     2650 Ω     PT-2LD       Impedance     47 Ω     PT-2LD       Control output     Photo MOS FET × 2 (transfer contact × 2)     PT-3S       Control output     Photo MOS FET × 2 (transfer contact × 2)     PT-3S       Control output     Teaching function: 2 points, Response time selection (DELAY function: 1 (0.15 sec.) to 200 (approx. 10 sec.), Output seling function     PT-3S       Ga & A	Field of view		ø30/500 mm (22:1)	ø40/500 mm (15:1)	ø30/500 mm (22:1)	ø40/500 mm (15:1)	BS-02	
spectral response     Intermoprie/or to 14 μm     BF       Response time     150 ms/90% response     150 ms/90% response     Protable- 201 to 00°C (32 to 362°F): ±2°C (3.6°F), ±2°C (3.6°F), 201 to 1000°C (393.8 to 1832°F): ±2°C (3.6°F), 201 to 1000°C (393.8 to 1832°F): ±1% of reading     Portable- 201 to 1000°C (393.8 to 1832°F): ±1% of reading       Repeatability     Up to 200°C (392°F): ±1.0°C (1.8°F), 201°C (393.8°F) or more: ±0.5% of reading     Pr-7LD       Displar     Control     1°C increments     Pr-7LD       Resolution     0.5°C increments     Pr-5LD       Accuracy     ±0.5% or ±1.0°C (1.8°F)     Pr-5LD       Valuate time     10 ms     Pr-2LD       Independence     10 ms     Pr-2LD       Ortrol output     Photo MOS FET × 2 (Transfer contact × 2)     Pr-2LD       Control output     Photo MOS FET × 2 (Transfer contact × 2)     Pr-3S       Control output     Photo MOS FET × 2 (Transfer contact × 2)     Pr-3S       Dipal output     Teaching function: 2 points, Response time selection (DELAY) function: 1 (0.15 sec.) to 200 (approx. 10 sec.), Output scaling function     Pr-3S       Repere of protection     Sensor head: 1P69K, Amplifer: 1P40     Q&A       Ogene of protection     Sensor head: 10 to 100°C (32 to 122°F), A	Optics		Silicone lens					
Accuracy   -40 to 0°C (-40 to 32°F): ±3°C (5.4°F), 1 to 200°C (33.8 to 392°F); ±2°C (3.6°F), 201 to 1000°C (393.8 to 1832°F): ±1% of reading   0 to 200°C (32 to 392°F): ±1% of reading   Portable- type     Repeatability   Up to 200°C (392°F): ±1.0°C (1.8°F), 201°C (393.8 to 1832°F): ±1% of reading   0.1 to 1.2   PT-7LD     Display resolution   1°C increments   PT-7LD   PT-7LD     Mesolution   0.5°C increments   PT-5LD     Voltput   4 to 20 mA   PT-5LD     Accuracy   ±0.5% or ±10°C (1.8°F)   PT-5LD     Voltput   0.1 to 1.2   PT-5LD     Moreable load   250 Ω   PT-5LD     Moreable load   250 Ω   PT-2LD     Control output   Photo MOS FET × 2 (Transfer contact × 2)   PT-2LD     Capacitive load   300 mA/30 VDC or less   PT-3S     Interface   Digital output   PT-3S     Functions   Teaching function: 2 points, Response time selection (DELAY) function: 10.15 sec.) to 200 (approx. 10 sec.), Output scialing function: 2 points, Response time selection (DELAY) function   Q & A     Supply voltage   12 to 24 VDC ±10%   Q & A     Capacitive load   10 to 55 H2; amplitude 1.5 mm; 2 hours in each of the X, Y, and Z directions   Supply voltage	-		Thermopile/8 to 14 μm				BF	
Accuracy   ±2°C (3.6°F), 201 to 1000°C (393.8 to 1832°F): ±1% of reading   201 to 1000°C (393.8 to 1832°F): ±1% of reading   PT-7LD     Repeatability   Up to 200°C (392°F): ±1.0°C (1.8°F), 201°C (393.8 °F) or more: ±0.5% of reading   PT-7LD     Display resolution   1°C increments   PT-7LD     Output   4 to 20 mA   PT-7SLD     Negative   ±0.5% or ±1.0°C (1.8°F)   PT-7LD     Update time   10 ms   PT-7LD     Negative   ±0.5% or ±1.0°C (1.8°F)   PT-7LD     Update time   10 ms   PT-7LD     Negative   250 Ω   PT-880     Morable load   250 Ω   PT-2LD     Truedom   00 mA/30 VDC or less   PT-2LD     PT-3LD   Teaching function: 2 points, Response time selection (DELAY) function: 1 (0.15 sec.) to 200 (approx. 10 sec.), Output scaling function:   PT-3S     Repeative load   Sensor head: IP69K, Amplifier: IP40   Q & A     Supply voitation   12 to 24 VDC ±10%   Sensor head: 0 to 180°C (32 to 356°F), Amplifier: 20 to 65°C (32 to 149°F)   Support     Ambient temperature   Sensor head: M12 (014) × 34 mm, Amplifier: 35 × 52 × 38.5 mm   Support     Sensor head: M12 (014) × 34 mm, Amplifier: 55 × 52 × 38.5 mm   Sensor head: SUS, Amplifier	Response time		150 ms/90% response 150 ms/90% response					
Enissivity adjustment   0.1 to 1.2   PT-7LD     Display resolution   1°C increments   PT-7LD     Display resolution   0.5°C increments   PT-5LD     Resolution   0.5°C increments   PT-5LD     Accuracy   ±0.5% or ±1.0°C (1.8°F)   PT     Update time   10 ms   PT-5LD     Allowable load   250 Ω   PT-880     Impedance   47 Ω   PT-2LD     Control output   Photo MOS FET × 2 (Transfer contact × 2)   PT-2LD     Capacitive load   300 mA/30 VDC or less   PT-2LD     Interface   Digital output   PT-3S     Functions   Teaching function: 2 points, Response time selection (DELAY) function: 1 (0.15 sec.) to 200 (approx. 10 sec.), OLitput scaling function   PT-3S     External input   Bank function: 2 points, Response time selection (DELAY) function: 1 (0.15 sec.) to 200 (approx. 10 sec.), OLitput scaling function   Q & A     Degree of protection   Sensor head: IP69K, Amplifier: IP40   Support     Vibration resistance   10 to 55 Hz; amplitude 1.5 mm; 2 hours in each of the X, Y, and Z directions   Support     Ambient temperature   Sensor head: 0 to 100°C (32 to 12*F), Amplifier: 0 to 65°C (32 to 149*F)   Amplifier: 0 to 65°C (32 to 149*F) <	Accuracy							
Display resolution   1°C increments     Output   4 to 20 mA     Resolution   0.5°C increments     Accuracy   ±0.5% or ±1.0°C (1.8°F)     Update time   10 ms     Allowable load   250 Ω     Impedance   47 Ω     Control output   Photo MOS FET × 2 (franker contact × 2)     Capacitive load   300 mA/30 VDC or less     Interface   Digital output     Percetions   Teaching function: 2 points, Response time selection (DELAY) function: 1 (0.15 sec.) to 200 (approx. 10 sec.), Output scaling function   PT-3S     Degree of protection   Sensor head: IP69K, Amplifier: IP40   Support     Vibration resistance   10 to 55 Hz; amplitude 1.5 mm; 2 hours in each of the X, Y, and Z directions   Support     Ambient temperature   Sensor head: 0 to 100°C (32 to 21°F), Amplifier: 10 to 65°C (32 to 14°F)   Sensor head: 0 to 180°C (32 to 356°F), Amplifier: 0 to 65°C (32 to 14°F)   Support     Storage temperature   0 to 70°C (32 to 158°F)   Sensor head: 0 to 180°C (32 to 14°F)   Sensor head: N12 (e14) × 34 mm, Amplifier: 35 × 52 × 38.5 mm     Weight   Sensor head: Approx. 100 g (including 3 m cable), Amplifier: Approx. 200 g (including 2 m cable)   Mediendim-temperature models /	Repeatability		Up to 200°C (392°F): ±1.0°C (1.8°F), 201°C (393.8°F) or more: ±0.5% of reading					
Output   4 to 20 mA     Resolution   0.5°C increments     Accuracy   ±0.5% or ±1.0°C (1.8°F)     Update time   10 ms     Allowable load   250 Ω     Impedance   47 Ω     Control output   Photo MOS FET × 2 (Transfer contact × 2)     Capacitive load   300 mA/30 VDC or less     Interface   Digital output     Functions   Teaching function: 2 points, Response time selection (DELAY) function: 1 (0.15 sec.) to 200 (approx. 10 sec.), Output scaling function.     Degree of protection   Sensor head: 10 to 55 Hz; amplitude 1.5 mm; 2 hours in each of the X, Y, and Z directions     Supply voltage   12 to 24 VDC ±10%     Current consumption   120 mA (at max. load) / 80 mA (in Eco mode)     Ambient humidity   35 to 85% RH (no condensation)     Storage temperature   0 to 70°C (32 to 158°F). Amplifier: 0 to 65°C (32 to 149°F)     Mmbient humidity   Sensor head: M12 (e14) × 34 mm, Amplifier: 35 × 52 × 38.5 mm     Weight   Sensor head: M12 (e14) × 34 mm, Amplifier: 35 × 52 × 38.5 mm     Weight   Sensor head: Approx. 100 g (including 3 m cable), Amplifier: Approx. 200 g (including 2 m cable)     Material   Sensor head: SUS, Amplifier: ABS, Sensor cable: PVC (low-medium-temperature models) /	Emissivity adjustment		0.1 to 1.2				PT-7LD	
Resolution   0.5°C increments   PT-5LD     Accuracy   ±0.5% or ±1.0°C (1.8°F)   PT-580     Update time   10 ms   PT-580     Allowable load   250 Ω   PT-1080     Impedance   47 Ω   PT-2LD     Control output   Photo MOS FET × 2 (Transfer contact × 2)   PT-2LD     Capacitive load   300 mA/30 VDC or less   PT-3S     Interface   Digital output   PT-3S     Functions   Teaching function: 2 points, Response time selection (DELAY) function: 1 (0.15 sec.) to 200 (approx. 10 sec.), Output scaling function   Q & A     Degree of protection   Sensor head: IP69K, Amplifier: IP40   Sensor head: 0 to 100°C (32 to 212°F), Amplifier: IP40     Ambient temperature   Sensor head: 0 to 100°C (32 to 212°F), Amplifier: 0 to 65°C (32 to 149°F)   Sensor head: 0 to 100°C (32 to 212°F), Amplifier: 0 to 65°C (32 to 149°F)     Ambient temperature   Sensor head: 0 to 100°C (32 to 212°F), Amplifier: 0 to 65°C (32 to 149°F)   Sensor head: 0 to 100°C (32 to 212°F), Amplifier: 0 to 55°C (32 to 149°F)     Ambient temperature   Sensor head: 10 to 70°C (32 to 158°F)   Amplifier: 0 to 55°C (32 to 149°F)     Motion temperature   Sensor head: M12 (014) x34 mm, Amplifier: 35 x 52 x 38.5 mm   Weight     Sensor head: M12 (014) x34 mm, Amplifier: Approx. 2	Display resolution		1°C increments					
Resolution   0.5°C increments     Accuracy   ±0.5% or ±1.0°C (1.8°F)     Update time   10 ms     Allowable load   250 Ω     Impedance   47 Ω     Control output   Photo MOS FET × 2 (Transfer contact × 2)     Capacitive load   300 mA/30 VDC or less     Interface   Digital output     Functions   Teaching function: 2 points, Response time selection (DELAY) function: 1 (0.15 sec.) to 200 (approx. 10 sec.), Output scaling function     External input   Bank function: 4 banks, Synchronous input trigger function, External trigger function, Wave trigger function     Degree of protection   Sensor head: IP69K, Amplifier: IP40     Vibration resistance   10 to 55 Hz; amplitude 1.5 mm; 2 hours in each of the X, Y, and Z directions     Supply voltage   12 to 24 VDC ± 10%     Current consumption   120 mA (at max. load) / 80 mA (in Eco mode)     Ambient temperature   Sensor head: 0 to 100°C (32 to 212°F), Amplifier: 0 to 65°C (32 to 149°F)   Sensor head: 0 to 150°C (32 to 149°F)     Marbiert temperature   Sensor head: 102 or 10% C (20 to 158°F)   Dimensions     Sensor head: 0 to 100°C (32 to 212°F), Amplifier: 35 x 52 x 38.5 mm   Sensor head: M12 (014) x 34 mm, Amplifier: 35 x 52 x 38.5 mm     Weight   Sensor head: M12 (014) x 34 mm, Amplifie		Output	4 to 20 mA				PT-5LD	
Boy or PT-USO   PT-USO   PT-USO   PT-USO     Allowable load   250 Ω   PT-USO   PT-USO     Impedance   47 Ω   PT-USO   PT-USO     Control output   Photo MOS FET × 2 (Transfer contact × 2)   PT-USO   PT-USO     Capacitive load   300 mA/30 VDC or less   PT-SS   PT-3S     Interface   Digital output   PT-3S   PT-3S     Functions   Teaching function: 2 points, Response time selection (DELAY) function: 1 (0.15 sec.) to 200 (approx. 10 sec.), Output scaling function   Q & A     Degree of protection   Sensor head: IP69K, Amplifier: IP40   Q & A     Vibration resistance   10 to 55 Hz; amplitude 1.5 mm; 2 hours in each of the X, Y, and Z directions   Support     Current consumption   120 mA (at max. load) / 80 mA (in Eco mode)   Support     Ambient temperature   Sensor head: 0 to 100°C (32 to 212°F), Amplifier: 0 to 65°C (32 to 149°F)   Sensor head: 0 to 70°C (32 to 158°F).     Dimensions   Sensor head: (of to 70°C (32 to 158°F)   Sensor head: 0 to 70°C (32 to 158°F).     Dimensions   Sensor head: Approx. 100 g (including 3 m cable), Amplifier: 35 x 52 x 38.5 mm     Weight   Sensor head: SUS, Amplifier: ABS, Sensor cable: PVC (low-medium-temperature models) /	t bri	Resolution	0.5°C increments					
0 module time   10 ms   PT-U80     Allowable load   250 Ω     Impedance   47 Ω     Control output   Photo MOS FET × 2 (Transfer contact × 2)     Control output   Photo MOS FET × 2 (Transfer contact × 2)     Control output   PT-38     Interface   Digital output     Functions   Teaching function: 2 points, Response time selection (DELAY) function: 1 (0.15 sec.) to 200 (approx. 10 sec.), Output scaling function     External input   Bank function: 4 banks, Synchronous input trigger function, External trigger function, Wave trigger function     Degree of protection   Sensor head: IP69K, Amplifier: IP40     Vibration resistance   10 to 55 Hz; amplitude 1.5 mm; 2 hours in each of the X, Y, and Z directions     Supply voltage   12 to 24 VDC ± 10%     Current consumption   120 mA (at max. load) / 80 mA (in Eco mode)     Ambient temperature   Sensor head: 0 to 100°C (32 to 212°F), Amplifier: 0 to 65°C (32 to 149°F)     Storage temperature   0 to 70°C (32 to 158°F)     Dimensions   Sensor head: M12 (at 14) × 34 mm, Amplifier: 35 × 52 × 38.5 mm     Weight   Sensor head: SUS, Amplifier: ABS, Sensor cable: PVC (low-medium-temperature models) /	0	Accuracy	±0.5% or ±1.0°C (1.8°F)				PT-S80	
Impedance     47 Ω     PT-2LD       Control output     Photo MOS FET × 2 (Transfer contact × 2)     PT-38       Capacitive load     300 mA/30 VDC or less     PT-33       Interface     Digital output     PT-35       Functions     Teaching function: 2 points, Response time selection (DELAY) function: 1 (0.15 sec.) to 200 (approx. 10 sec.), Output scaling function     PT-38       External input     Bank function: 4 banks, Synchronous input trigger function, External trigger function, Wave trigger function     Q & A       Degree of protection     Sensor head: IP69K, Amplifier: IP40     Sensor head: 10 to 55 Hz; amplitude 1.5 mm; 2 hours in each of the X, Y, and Z directions     Supply voltage       Current consumption     12 to 24 VDC ±10%     Sensor head: 0 to 100°C (32 to 212°F), Amplifier: 0 to 65°C (32 to 149°F)     Sensor head: 0 to 100°C (32 to 212°F), Amplifier: 0 to 65°C (32 to 149°F)     Amplifier: 0 to 65°C (32 to 149°F)       Ambient temperature     Sensor head: 0 to 100°C (32 to 212°F), Amplifier: 0 to 65°C (32 to 149°F)     Sensor head: 0 to 70°C (32 to 158°F)       Dimensions     Sensor head: M12 (ø14) × 34 mm, Amplifier: 35 × 52 × 38.5 mm     Sensor head: Approx. 100 g (including 3 m cable), Amplifier: Approx. 200 g (including 2 m cable)       Weight     Sensor head: SUS, Amplifier: ABS, Sensor cable: PVC (low-medium-temperature models) /	alog	Update time	10 ms					
Control output   Photo MOS FET × 2 (Transfer contact × 2)     Capacitive load   300 mA/30 VDC or less     Interface   Digital output     Functions   Teaching function: 2 points, Response time selection (DELAY) function: 1 (0.15 sec.) to 200 (approx. 10 sec.), Output scaling function   PT-3S     External input   Bank function: 4 banks, Synchronous input trigger function, External trigger function, Wave trigger function   Q & A     Degree of protection   Sensor head: IP69K, Amplifier: IP40   Q & A     Vibration resistance   10 to 55 Hz; amplitude 1.5 mm; 2 hours in each of the X, Y, and Z directions   Support     Support   20 to 25 VDC ±10%   Sensor head: 0 to 100°C (32 to 212°F), Ambient temperature   Sensor head: 0 to 100°C (32 to 212°F), Ambient tumidity   Sensor head: 0 to 100°C (32 to 149°F)   Sensor head: 0 to 180°C (32 to 149°F)     Storage temperature   0 to 70°C (32 to 149°F)   Amplifier: 0 to 65°C (32 to 149°F)   Sensor head: M12 (ø14) × 34 mm, Amplifier: 35 × 52 × 38.5 mm     Weight   Sensor head: Approx. 100 g (including 3 m cable), Amplifier: Approx. 200 g (including 2 m cable)   Material	Å Å	Allowable load	250 Ω					
Capacitive load   300 mA/30 VDC or less   PT-3S     Interface   Digital output     Functions   Teaching function: 2 points, Response time selection (DELAY) function: 1 (0.15 sec.) to 200 (approx. 10 sec.), Output scaling function   PT-3S     External input   Bank function: 4 banks, Synchronous input trigger function, External trigger function, Wave trigger function   Q & A     Degree of protection   Sensor head: IP69K, Amplifier: IP40   Q & A     Vibration resistance   10 to 55 Hz; amplitude 1.5 mm; 2 hours in each of the X, Y, and Z directions   Supply voltage     Current consumption   120 mA (at max. load) / 80 mA (in Eco mode)   Support     Ambient temperature   Sensor head: 0 to 100°C (32 to 212°F), Ambient numidity   Sensor head: 0 to 100°C (32 to 121°F), Amplifier: 0 to 65°C (32 to 149°F)   Sensor head: 0 to 180°C (32 to 149°F)     Storage temperature   0 to 70°C (32 to 158°F)   Dimensions   Sensor head: M12 (ø14) × 34 mm, Amplifier: 35 × 52 × 38.5 mm     Weight   Sensor head: M12 (ø14) × 34 mm, Amplifier: Approx. 200 g (including 2 m cable)   Material		Impedance	47 Ω				PT-2LD	
Interface     Digital output     PT-3S       Functions     Teaching function: 2 points, Response time selection (DELAY) function: 1 (0.15 sec.) to 200 (approx. 10 sec.), Output scaling function     Q & A       Degree of protection     Bank function: 4 banks, Synchronous input trigger function, External trigger function, Wave trigger function     Q & A       Vibration resistance     10 to 55 Hz; amplitude 1.5 mm; 2 hours in each of the X, Y, and Z directions     Supply voltage       Current consumption     12 to 24 VDC ±10%     Supply rol (at max. load) / 80 mA (in Eco mode)     Support       Ambient temperature     Sensor head: 0 to 100°C (32 to 212°F), Amplifier: 0 to 65°C (32 to 149°F)     Sensor head: 0 to 180°C (32 to 356°F), Amplifier: 0 to 65°C (32 to 149°F)     Sensor head: 0 to 180°C (32 to 149°F)       Storage temperature     0 to 70°C (32 to 158°F)     Dimensions     Sensor head: M12 (o14) × 34 mm, Amplifier: 35 × 52 × 38.5 mm       Weight     Sensor head: Approx. 100 g (including 3 m cable), Amplifier: Approx. 200 g (including 2 m cable)     Sensor head: SUS, Amplifier: ABS, Sensor cable: PVC (low-medium-temperature models) /	Control output							
Interface     Digital output       Functions     Teaching function: 2 points, Response time selection (DELAY) function: 1 (0.15 sec.) to 200 (approx. 10 sec.), Output scaling function     Q & A       External input     Bank function: 4 banks, Synchronous input trigger function, External trigger function, Wave trigger function     Q & A       Degree of protection     Sensor head: IP69K, Amplifier: IP40     Supply voltage     Supply voltage     Supply voltage     Supply voltage     Supply voltage     Sensor head: 0 to 100°C (32 to 212°F), Ambient temperature     Sensor head: 0 to 100°C (32 to 212°F), Ambient temperature     Sensor head: 0 to 100°C (32 to 212°F), Ambient temperature     Sensor head: 0 to 100°C (32 to 212°F), Ambient temperature     Sensor head: 0 to 100°C (32 to 149°F)     Sensor head: 0 to 70°C (32 to 149°F)       Storage temperature     Sensor head: M12 (ø14) × 34 mm, Amplifier: 35 × 52 × 38.5 mm     Sensor head: M12 (ø14) × 34 mm, Amplifier: Approx. 200 g (including 2 m cable)       Weight     Sensor head: SUS, Amplifier: ABS, Sensor cable: PVC (low-medium-temperature models) /	Capacitive load						PT-35	
Functions   Output scaling function   Output scaling function   Output scaling function     External input   Bank function: 4 banks, Synchronous input trigger function, External trigger function, Wave trigger function   Q & A     Degree of protection   Sensor head: IP69K, Amplifier: IP40   Sensor head: IP69K, Amplifier: IP40   Supply voltage   Sensor head: 10 to 55 Hz; amplitude 1.5 mm; 2 hours in each of the X, Y, and Z directions   Supply voltage   Supply voltage   Supply voltage   Supply voltage   Sensor head: 0 to 100°C (32 to 212°F), Amplifier: 0 to 65°C (32 to 150°C), Amplifier: 0 to 65°C (32 to 149°F)   Sensor head: 0 to 100°C (32 to 212°F), Amplifier: 0 to 65°C (32 to 149°F)   Sensor head: 0 to 100°C (32 to 149°F)   Sensor head: 0 to 165°C (32 to 149°F)   Sensor head: 0 to 165°C (32 to 149°F)     Ambient humidity   Sensor head: M12 (014) × 34 mm, Amplifier: 35 × 52 × 38.5 mm   Sensor head: Approx. 100 g (including 3 m cable), Amplifier: Approx. 200 g (including 2 m cable)     Weight   Sensor head: SUS, Amplifier: ABS, Sensor cable: PVC (low-medium-temperature models) /	Interface						11-00	
Degree of protection     Sensor head: IP69K, Amplifier: IP40       Vibration resistance     10 to 55 Hz; amplitude 1.5 mm; 2 hours in each of the X, Y, and Z directions       Supply voltage     12 to 24 VDC ±10%       Current consumption     120 mA (at max. load) / 80 mA (in Eco mode)       Ambient temperature     Sensor head: 0 to 100°C (32 to 212°F), Amplifier: 0 to 65°C (32 to 149°F)     Sensor head: 0 to 180°C (32 to 356°F), Amplifier: 0 to 65°C (32 to 149°F)       Storage temperature     0 to 70°C (32 to 158°F)     Dimensions       Sensor head: M12 (o14) × 34 mm, Amplifier: 35 × 52 × 38.5 mm       Weight     Sensor head: M12 (o14) × 34 mm, Amplifier: Approx. 200 g (including 2 m cable)			Output scaling function				0 * 4	
Vibration resistance   10 to 55 Hz; amplitude 1.5 mm; 2 hours in each of the X, Y, and Z directions     Supply voltage   12 to 24 VDC ±10%     Current consumption   120 mA (at max. load) / 80 mA (in Eco mode)     Ambient temperature   Sensor head: 0 to 100°C (32 to 212°F), Amplifier: 0 to 65°C (32 to 149°F)   Sensor head: 0 to 180°C (32 to 356°F), Amplifier: 0 to 65°C (32 to 149°F)     Ambient humidity   35 to 85% RH (no condensation)     Storage temperature   0 to 70°C (32 to 158°F)     Dimensions   Sensor head: M12 (ø14) × 34 mm, Amplifier: 35 × 52 × 38.5 mm     Weight   Sensor head: SUS, Amplifier: ABS, Sensor cable: PVC (low-medium-temperature models) /	· ·						Q&A	
Supply voltage     12 to 24 VDC ±10%     Support       Current consumption     120 mA (at max. load) / 80 mA (in Eco mode)     Sensor head: 0 to 100°C (32 to 212°F), Ambient temperature     Sensor head: 0 to 100°C (32 to 212°F), Amplifier: 0 to 65°C (32 to 149°F)     Sensor head: 0 to 180°C (32 to 356°F), Amplifier: 0 to 65°C (32 to 149°F)     Sensor head: 0 to 65°C (32 to 149°F)       Storage temperature     0 to 70°C (32 to 158°F)     Dimensions     Sensor head: M12 (ø14) × 34 mm, Amplifier: 35 × 52 × 38.5 mm       Weight     Sensor head: Approx. 100 g (including 3 m cable), Amplifier: Approx. 200 g (including 2 m cable)     Sensor head: SUS, Amplifier: ABS, Sensor cable: PVC (low-medium-temperature models) /	• •							
Current consumption   120 mA (at max. load) / 80 mA (in Eco mode)     Ambient temperature   Sensor head: 0 to 100°C (32 to 212°F), Amplifier: 0 to 65°C (32 to 149°F)   Sensor head: 0 to 180°C (32 to 356°F), Amplifier: 0 to 65°C (32 to 149°F)     Ambient humidity   35 to 85% RH (no condensation)     Storage temperature   0 to 70°C (32 to 158°F)     Dimensions   Sensor head: M12 (ø14) × 34 mm, Amplifier: 35 × 52 × 38.5 mm     Weight   Sensor head: Approx. 100 g (including 3 m cable), Amplifier: Approx. 200 g (including 2 m cable)     Material   Sensor head: SUS, Amplifier: ABS, Sensor cable: PVC (low-medium-temperature models) /							Support	
Ambient temperature   Sensor head: 0 to 100°C (32 to 212°F), Amplifier: 0 to 65°C (32 to 149°F)   Sensor head: 0 to 180°C (32 to 356°F), Amplifier: 0 to 65°C (32 to 149°F)     Ambient humidity   35 to 85% RH (no condensation)     Storage temperature   0 to 70°C (32 to 158°F)     Dimensions   Sensor head: M12 (o14) × 34 mm, Amplifier: 35 × 52 × 38.5 mm     Weight   Sensor head: Approx. 100 g (including 3 m cable), Amplifier: Approx. 200 g (including 2 m cable)     Material   Sensor head: SUS, Amplifier: ABS, Sensor cable: PVC (low-medium-temperature models) /							oupport	
Ambient humidity   35 to 85% RH (no condensation)     Storage temperature   0 to 70°C (32 to 158°F)     Dimensions   Sensor head: M12 (ø14) × 34 mm, Amplifier: 35 × 52 × 38.5 mm     Weight   Sensor head: Approx. 100 g (including 3 m cable), Amplifier: Approx. 200 g (including 2 m cable)     Material   Sensor head: SUS, Amplifier: ABS, Sensor cable: PVC (low-medium-temperature models) /				Sensor head: 0 to 100°C (32 to 212°F),		Sensor head: 0 to 180°C (32 to 356°F),		
Storage temperature     0 to 70°C (32 to 158°F)       Dimensions     Sensor head: M12 (ø14) × 34 mm, Amplifier: 35 × 52 × 38.5 mm       Weight     Sensor head: Approx. 100 g (including 3 m cable), Amplifier: Approx. 200 g (including 2 m cable)       Material     Sensor head: SUS, Amplifier: ABS, Sensor cable: PVC (low-medium-temperature models) /	Ambient humidity		35 to 85% RH (no condensation)					
Dimensions     Sensor head: M12 (ø14) × 34 mm, Amplifier: 35 × 52 × 38.5 mm       Weight     Sensor head: Approx. 100 g (including 3 m cable), Amplifier: Approx. 200 g (including 2 m cable)       Material     Sensor head: SUS, Amplifier: ABS, Sensor cable: PVC (low-medium-temperature models) /								
Weight     Sensor head: Approx. 100 g (including 3 m cable), Amplifier: Approx. 200 g (including 2 m cable)       Material     Sensor head: SUS, Amplifier: ABS, Sensor cable: PVC (low-medium-temperature models) /	•							
Material Sensor head: SUS, Amplifier: ABS, Sensor cable: PVC (low-medium-temperature models) /								
Silicone rubber (high-temperature models)	Material							

\*Note that specifications are subject to change without prior notice for product improvement purposes.



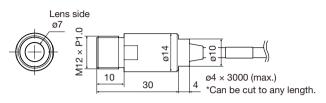
For installation in limited space CS series

# Dimensions

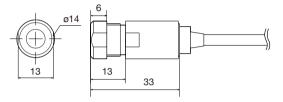
#### Sensor head

• Amplifier

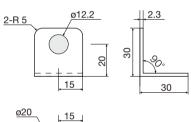
38.5

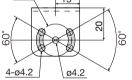


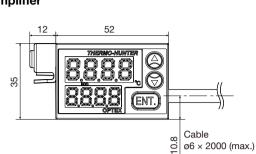
With CF lens



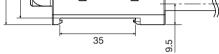
#### • Mounting bracket CS-FB12







36.5





Selection guide

cs

SA-80

BA

BA-TC

BS

BS-02

BF

(Unit: mm)

Support