

# ZF 210C Fixed Infrared Sensors Operating Instructions

Small and robust infrared temperature sensor

- ☆ 2-wire installation
- ☆ Linear current output
- ☆ Easy installation and connection

## Specifications :

Spectral range : 8 ~14  $\mu\text{m}$   
 Distance:Spot Size = 12 : 1 (measuring distance / spot size)  
 Output Temperature range: 0°C ~400°C(0.04mA/°C)/ 32°F~752°F(0.022mA/°F)  
 Analog output: 4~20mA ; linear to temperature  
 Loop impedance: Max. 700 Ohms@24VDC; Min. 100 Ohms recommended  
 Max. 150 Ohms@12VDC; Min. 100 Ohms recommended  
 Emissivity: Fixed at 0.95  
 Response time: 300 ms  
 Accuracy: 2.0% of temperature reading or 2.0°C/3.6 °F, whichever is greater  
 Repeatability: 1% of measured value or 1°C/ 1.8°F , whichever is greater  
 Warm up time: 10 minutes  
 Connection cable: 1 m length, PVC  
 Power supply: Isolated Power 12VDC~24VDC@20 mA, Ripple< 2.5%  
 Ambient temperature: 0°C ~ 70°C /32°F ~158°F  
 Storage temperature:- 30°C ~ 85°C/-22°F ~185°F  
 Housing: Stainless Steel Tube  
 Mounting Nut : M22  
 Dimensions/ Weight: L= 91 mm x  $\Phi$ =22 mm / 158 g  
 Enclosure rating: IP65 (according DIN 40 050)  
 Vibration: IEC68-2-27 (MIL STD 810D), any axis, 11 to 200 Hz, 3G  
 Shock: IEC68-2-27 (MIL STD 810D), any axis, 11 ms, 50G

## Current Loop Output & Target Temperature:

The following table shows the relationship for the Current Loop Output with the Target Temperature. The different Current Loop Output is corresponding to the relevant target temperature.

Table 1: Current Loop Output & Target Temperature

Code	Current Loop Output [mA]	Target Temp [°C /°F]
1	4.00	0.0°C/ 32°F
2	8.00	100°C/ 212°F
3	12.00	200°C/ 392°F
4	16.00	300°C/ 572°F
5	20.00	400°C/ 752°F

## Installation Instruction:

The installation process contains two parts:

1. Bracket installation
2. Sensor parts assembly

### Step 1: Fixed Mounting Bracket

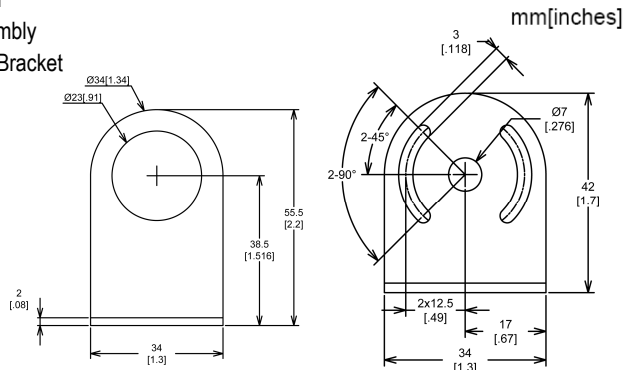


Figure 1: The Fixed Mounting Bracket  
 Step 2: Adjustable Mounting Bracket

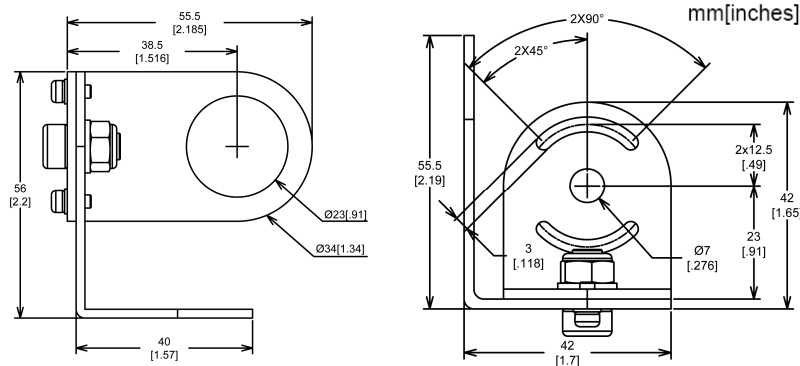


Figure 2: The Adjustable Mounting Bracket  
 Step 3: The sensor parts assembly

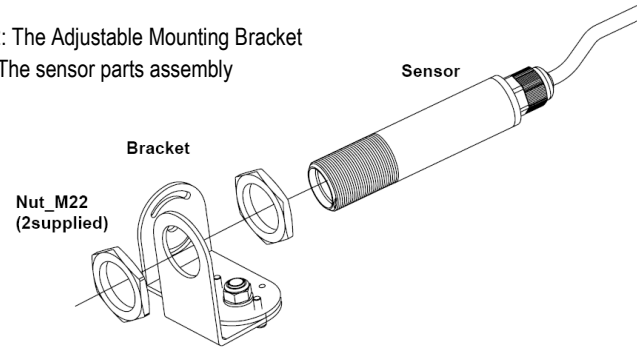


Figure 3: The Sensor Parts Assembly

### Step 4: Accessories Installation

The working environment is with dust, smoke will dirty up the optical lens, and will influence the temperature readings, In order to keep the surface of the optical lens clean, the option accessory of air purge collar is recommend, see fig 4 (Air Purge accessories and option), Please refer to the following pictures:

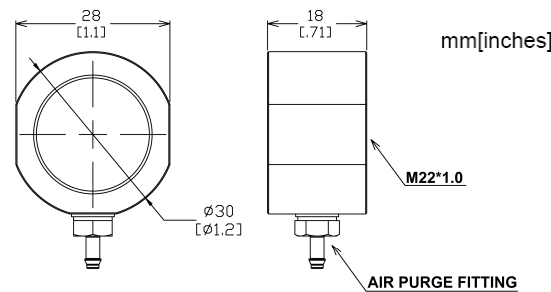


Figure 4: Air Purge accessories and option

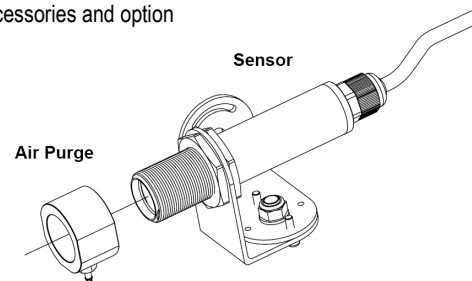


Figure 5: Air Purge Assembly

## FOV & Dimension & Power Inlet instruction:

### ● FOV (Field Of View)

This diagram shows the measurement range of the sensor. The Distance: Spot Size is 12:1. The Spot Size should not be larger than the target if you wish to measure the temperature. You can choose the any target based on your optional under this principle.

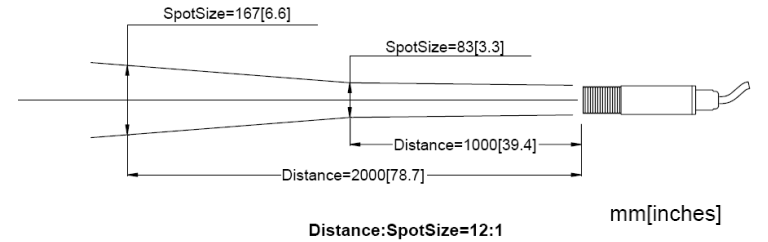


Figure 6: The FOV indication

### ● Dimension

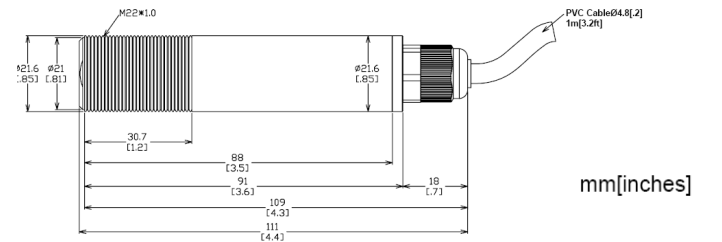


Figure 7: The Detailed Dimension

### ● Wire connection

The following diagram and table show the proper wiring connections. Each wire is numbered with the number and the relative color. Please follow the function guide when you connect the wire.

**Warning: Please pay the special attention to the wire connection for the Green (V+) and Brown (V-). Please take care that Shield Line can not be linked with any Power line (Green (V+), Brown (V-)), and the shield wire is connecting to earth grounded at one point. The false wire connection will directly lead to the irreparable damage to the Fixed Infrared Sensors.**

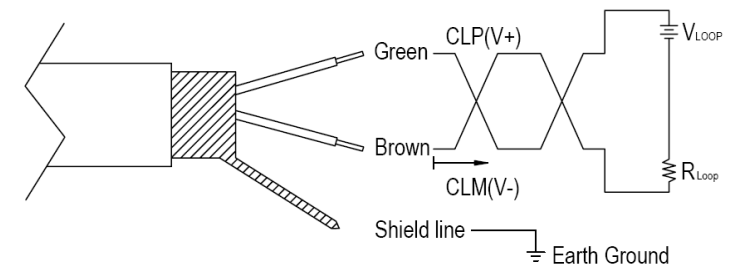


Figure 8: Wiring Configuration

Table 2: Wire Color & Connection Indication

Wire No	Wire Color	Label	Function
1	Green	CLP	Current Loop plus(V+)
2	Brown	CLM	Current Loop minus(V-)
3	Bare	-	Shield Ground

(Specifications are subject to change without notice.)

