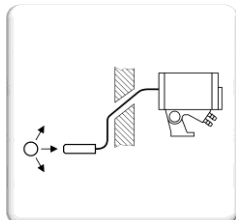


**Stato-Sonde**

**Z56**



**High sensitivity: 300 °C**

**High temperature optic**

**Metallic sheath to protect the fiber**

**Different fiber lengths / optics**



## Presentation and operating principle

The **Stato-Sonde Z56** is a Hot Metal Detector for material at temperatures over 300 °C (580 °F)<; Thanks to its optical fiber, it is able to detect products even in areas with high ambient temperature or in difficult areas due to physical obstructions, limited space, steam etc... Its rugged design enables the Stato-Sonde Z56 to withstand the very severe environmental conditions of the steel industry or rolling mills or continuous casting machine. The infrared radiation emitted by the hot product is collected by the optic, transmitted through the optical fiber and send to the photosensitive element. The signal is processed by the electronic circuit which outputs the detection signal.

## Features

The Stato-Sonde Z56 is composed of three major elements:

- **Sensor head**
  - 3 different detection angles: **4°** or **12°** or **Spot** 10 mm at 0.5 m (very small precise detection point).
  - standard optic type **N** or optic with water cooling type **C** or optic with water cooling and air purging and additional hood/glass type **CA**.
  - an **external diaphragm** is available for applications with very hot product and background
- **Optical fiber:**
  - Fiber optic bundle with flexible stainless-steel protection, length from 2 to 25 m
  - Available with additional protective sheath. Air can be supplied at the electronic unit. The air flow through the sheath and optics keeps the optical fiber and lens assembly at lower temperature.
- **Electronic Unit**
  - Sensitivity adjustment potentiometer
  - Multicolour LED indicator: Product Presence, low detection margin, alarm
  - **Test function**

## Specifications of Optic

Optic	Z56-...-.../.../S•	Z56-...-.../.../4•	Z56-...-.../.../12•
Detection field			
Operating temperature	-20 °C to 250 °C (0 °F to 480 °F) up to 400 °C (752 °F) with fiber with metallic sheath type G, air purging 40 l/min at 1 bar up to 500 °C (930 °F) with water-cooling, water at about 25 °C (77 °F), 1-2 bar and 1-2 l/min		
Air purging with G fiber	About 40 l/min @ 1 bar (1,5scfm @ 14 psi), instrument air (clean, dry, no oil) or nitrogen		
Air purging with F fiber	About 10 l/min @ 0.1 bar (0,3scfm @ 2psi), instrument air (clean, dry, no oil) or nitrogen		

Detection temperature (1) °C [°F]	% (2)	Fiber Length (Z56-...-.../.../...)						
		2 m	3 m	5 m	9 m	12 m	15 m	25 m
4 and 12° without diaphragm	100%	300 [580]	310 [590]	320 [610]	340 [640]	350 [660]	360 [680]	370 [700]
	20%	360 [680]	370 [690]	380 [720]	400 [760]	420 [780]	430 [810]	440 [830]
	5%	420 [790]	430 [810]	440 [830]	470 [880]	490 [910]	500 [940]	520 [970]
Spot	100%	430 [800]	440 [820]	450 [850]	480 [900]	500 [930]	510 [950]	530 [990]
	20%	520 [960]	530 [980]	550 [1010]	580 [1080]	600 [1110]	620 [1150]	640 [1190]
	5%	610 [1120]	620 [1150]	640 [1190]	680 [1260]	710 [1310]	730 [1350]	760 [1400]

(1): at sensitivity max 7 and product emissivity > 0.9

(2): percentage of field of view filled by hot product

For applications with very hot product and background, a diaphragm is provided and can be inserted in front of the optic to reduce the sensitivity by about 100°C.

Fiber	Z56-...-.../.../F••	Z56-...-.../.../G••
Type	Fiber alone	Fiber + stainless steel sheath protection–Air conduit
Diameter	10 mm	22 mm
Length	2, 3, 5, 9, 12, 15, 25 m	

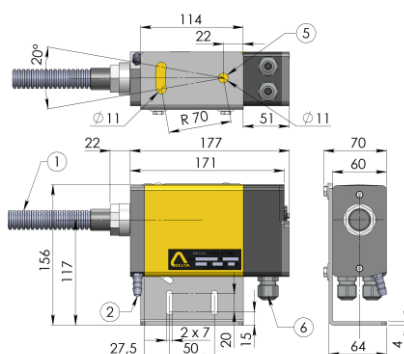


### Specifications of Electronic Unit

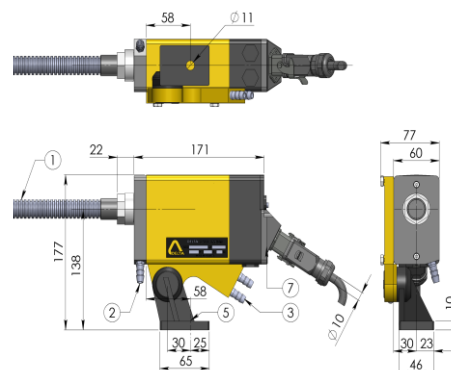
Outputs / Models	Z56-...-SP/.../... Static output	Z56-...-SR/.../... Static Relay output	Z56-...-R/.../... Relay output
Electrical characteristics	2 complementary push-pull outputs, 0/24 VDC short circuit protection, Low impedance: 50 mA max.	2 Optocoupled complementary Solid State Relay: Impedance 50Ω, switching capacity +/- 350 V peak +/- 100 mA peak	Single pole changeover Switching capacity : 230 V a.c. – 2.5 A a.c.
Response time	0.2 ms		Make time : 8 ms Break time : 4 ms
Test input	0/24 V		
LED1	Off: no detection    Green: detection    Orange: detection with low margin		
LED2	Off: no power    Blue: power on    Red: alarm		
Operating voltage / Power consumption	VAC: 115 V (-15%) to 230 V (+10%)- 50 / 60 Hz / 5 VA VDC: 10-30 VDC / 3 W		
Connection	Z56-•B: terminal block – 2 x PG9 Z56-•C: connector fitted with silicone cable, 2 m (other length 3, 5, 8m) with protective steel braid		
Protecting rating	IP66 (cast aluminium case)		
Operating temperature	-10 to 70°C (14 to 160°F); up to 120°C (250°F) with water-cooling (Z56-J-.../.../...) (industrial quality water at about 25°C (77°F), 1-2 bar and 1-2 l/min)		
Weight	From 4.5 kg (Z56-LB/2F/•N) to 6 kg (Z56-JC/2G/•CA) – add 0.5 kg/m for F fiber and 1 kg/m for G Fiber		

### Dimensions

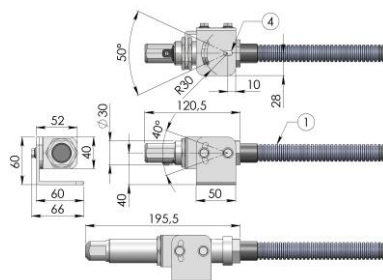
Z56 - LB - •



Z56 - JC - •

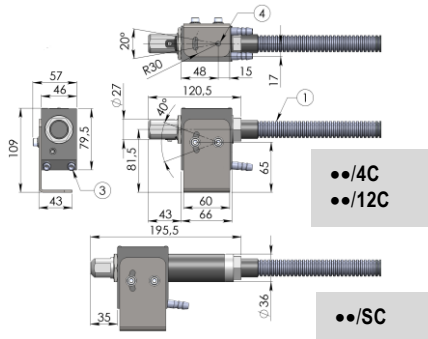


Z56 - ...-.../.../•N

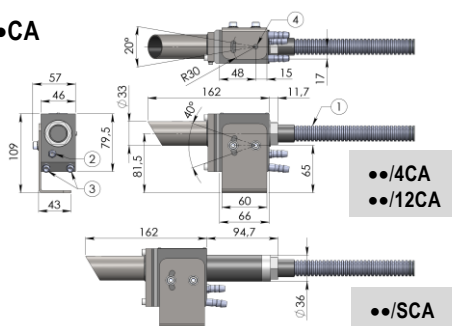


- ① Minimum radius of optical fiber :
  - for Z56-...-.../•F/• : 80 mm
  - for Z56-...-.../•G/• : 180 mm
- ② Air Supply Ø 10
- ③ Water Supplies Ø 10
- ④ Mounting with 2 screws M6
- ⑤ Mounting with screw M10
- ⑥ PG9 cable glands (2), for cable with diameter 7 – 10,5 mm
- ⑦ Connector clearance 120 mm

Z56 - ...-.../.../•C



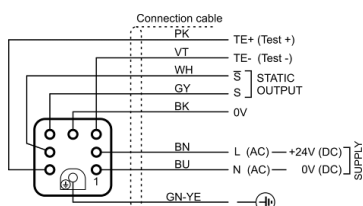
Z56 - ...-.../.../•CA



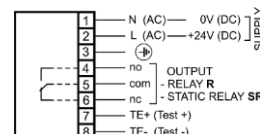
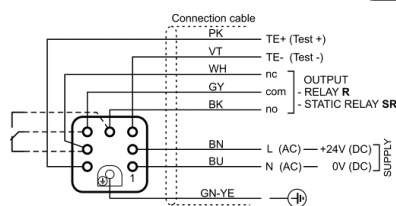
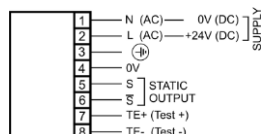


## Connection

Z56-C



Z56-B



## Reference for order

Stato-Sonde Z56 - . . . . / . . . . . L = . .

Mounting	Connection	Output	Fiber Length	Fiber protection	Detection angle	Optic	Power input	Cable length
<b>L</b>  Bracket	<b>B</b>  Terminal Block	<b>SP</b>  Static	<b>2</b> 2 m <b>3</b> 3 m <b>5</b> 5 m <b>9</b> 9 m <b>12</b> 12 m <b>15</b> 15 m <b>25</b> 25 m	<b>F</b> Fiber alone 	<b>S</b> Spot <b>4</b> 4° <b>12</b> 12°	<b>N</b> Standard 	<b>115-230 VAC</b>  <b>24 VDC</b>	<b>2</b> 2 m <b>3</b> 3 m <b>5</b> 5 m <b>8</b> 8 m
		<b>SR</b>  Static Relay				<b>C</b> Water cooling 		
<b>J</b>  Mounting stand & cooling jacket	<b>C</b>  Connector with 2m cable	<b>R</b>  Relay		<b>G</b> Fiber with stainless steel sheath protection and air conduit 		<b>CA</b> Water cooling + air + hood/glass 		
Electronic Unit			Fiber		Optic			

**Example:** Z56-JC-SR/5G/4CA 115-230V L=2: Z56 with mounting stand and cooling jacket, connector with 2m cable, Static Relay output, optical fiber length 5 m protected in metallic sheath, optic 4° in water cooling unit with air and additional hood/glass, power supply 115-230 VAC.

## Accessories

- Battery powered radiant Bar **BR4000**
- Stainless-steel Heat Shield, for **Z56-J-..** models; Ref: 7093146



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