

STEK Fiber Optic Ratio Pyrometer



STEK FR Series is highly accurate two color pyrometer with fiber optics especially designed for rough industrial environment for temperature measurement of metals, ceramic or graphite. They are suitable for high temperature measurement ranging from 250°C to 3200°C.

STEK FR series pyrometers are suitable for industrial purpose due to following advantages:

- Optical Head and Fiber cable can withstand ambient temperature upto 250°C without cooling

- Measurement of temperature is not affected by emissivity of object.

- Measurement of object temperature is possible where dust, moisture & other contaminants are present in surrounding environment.

- The measuring object can be smaller than spot size.

- The pyrometer can be switched between 1-colour & 2-colour mode

The heat radiation, enter from optical head, to the lens system & travel through mono glass fiber with flexible stainless steel protection tube where it is transmitted along to the converted .The optical head contains only the lens system, the electronic are located in the converter box, so the measurement is possible in atmospheric condition upto 250°C.

Two color pyrometer involves measuring thermal radiance at two different wavelengths and inferring the temperature from the ratio of these spectral radiance. Radiance ratio thermometers can be significantly more accurate than single band thermometers in many applications

STEK Fiber Optic Pyrometer Applications

- Induction heating

- Annealing

- Welding

- Forging

- Sintering

- Melting

- Rolling mills

- Rotary kilns

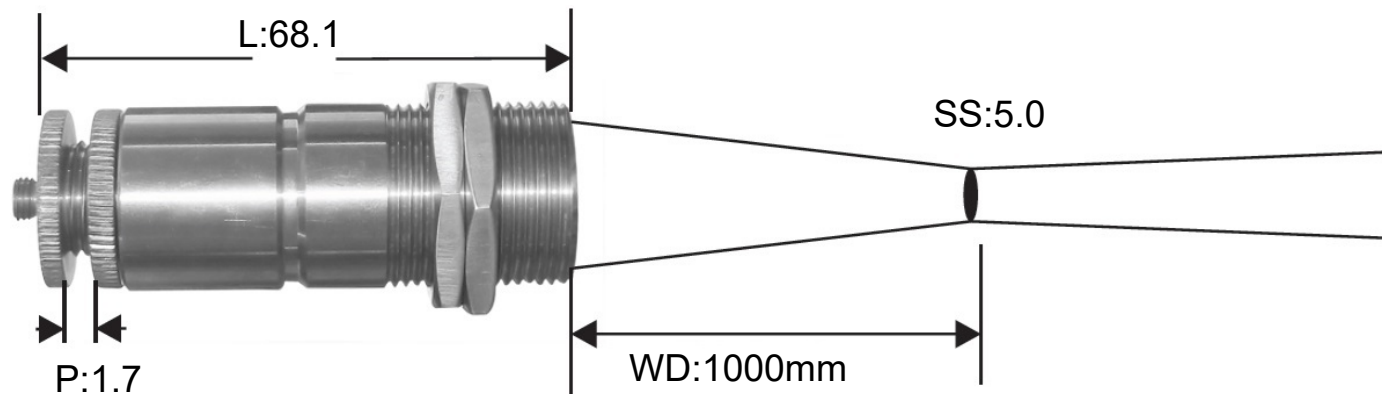


STEK Fiber Optic Ratio Pyrometer



Optics 100:1

STEK FR series Fiber Optic Pyrometer receives heat radiation from the measured object, which is converted to an electrical signal after passing through the lens. **Variable Focus** Head enables one to focus exactly on the spot Size (object) at variable distance there by increasing accuracy of measurement



WD: Working Distance

L : Optical Head Length

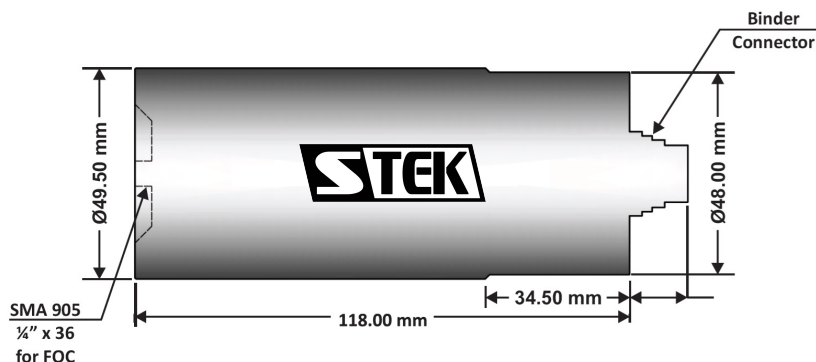
P : Optical Pullout Length

SS : Spot Size of which Temperature Measured

Pull Out (P) = 1.7mm
Optical Head Length (L) = 68.1mm

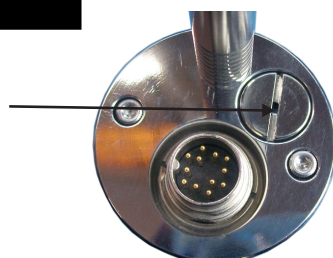
Variable Optics		Optical Head - V (variable)									
Working Distance (mm)		0	250	300	400	600	800	1000	1500	2000	2500
Optical Head Length L (mm)		66.4	78.9	75.75	72.8	70.1	68.8	68.1	67.15	66.7	66.4
Optical Pullout P(mm)		0	12.5	9.35	6.4	3.7	2.4	1.7	0.75	0.3	0
Spot Size(mm) RAYFR1	600 - 1800°C	13-16.5	2.5	3	4	6	8	10	15	20	25
	1000 - 3200°C	13.5-17	1.3	1.5	2	3	4	5	7.5	10	13
		13.5-17	1.3	1.5	2	3	4	5	7.5	10	13

Variable Optics Head Dimensions :



PCConnectivity :

Unscrew to access USB Port



USB Port & LED



Specifications:

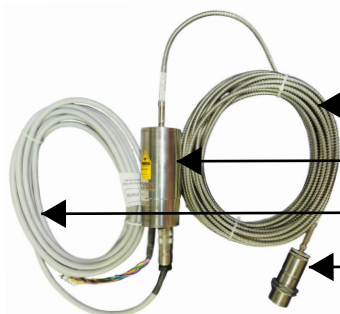
Model	STEK FR Series
Measured Temperatures Range (Analog sub-range adjustable)	Model: ST-FR-1A-VF: 400°C - 1200°C, Model: ST-FR-1B-VF: 600°C - 1800°C, Model: ST-FR-1C-VF: 1000 °C - 3200 °C
Emissivity Range Emissivity Slope	0.1.....1.0 adjustable 0.75.....1.25 slope adjustable
Spectral Range, μm	0.7.....1.15 μm
Photodetector Type	Si/Si
Response Time	20msec. Adjustable upto 10S
Accuracy	+/-0.5% of the measured value + 1°C
Repeatability	0.1 % of reading in °C +1°C
Analog Output	4.....20mA or 0 - 20mA or 0 - 10 V User Selectable
Digital Output	Bluetooth, RS-232 / RS-485(Isolated) (User Selectable)
Power	24 V DC
Operating temperature range at fiber	Max.250°C at fiber optics cable, 0....70°C at pyrometer end
Fiber Optic	Standard with no Suffix:2.5 meter Suffix CB5: 5 Meter, CB10: 10 meter, CB15: 15 meter
Sighting	Laser pilot light
Isolation	Power supply and digital output and analog output are galvanically isolated against each other
Operating humidity	Unlimited
Electronic Housing	Stainless steel, IP65 Ø49.5mm; L=118mm;/0.6kg
Adjustable Parameters via software or GPCM Controller	Emissivity, Emissivity slope, Analog output, Response time, Peak picker, Average, Temperature sub range, Switches between two color & single color

Fiber Optics Cable:

The radiation, from object coming through optical head, is transported by the lens into the mono fiber cable with flexible stainless steel protection where it is transmitted to the converter. It can withstand ambient temperature upto 250°C without cooling because there is no electronic part.



Standard Scope Of Supply:



Fiber Cable, Length as per selection

Electronic Box

12 core signal cable

Variable Focus Optical Head

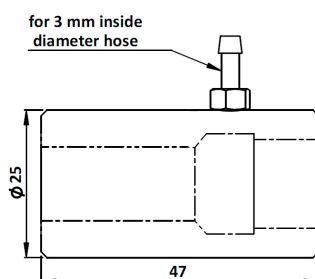
Optional Accessories:



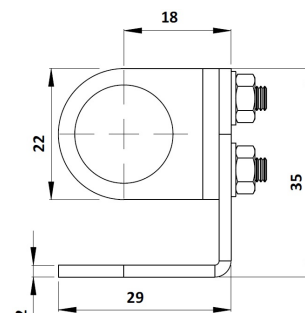
Model: STFRQW
Quartz Protection Window



Model: STFRAP
Air Purge jacket



Model: STFRAB
Adjustable Mounting Bracket



Model: GPCM

Digital Input from STEK Pyrometer gives Immediate Response
Programmable Analog retransmission of 4-20mA
Two Independent Alarm Outputs with Hi and LO alarm configurable
and alarm deactivation possible
PEAK/AVERAGE Hold ,
EMISSIONITY / E-SLOPE Setting
CALIBRATION Offset possible
Program Lock function
Universal supply voltage (90 to 270 VAC)



Model: JD09

Large 4 inch Jumbo Display

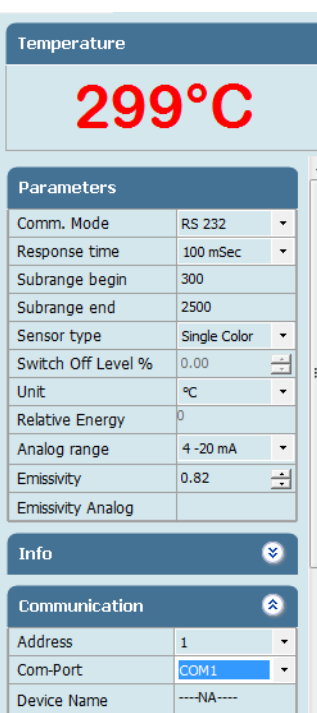
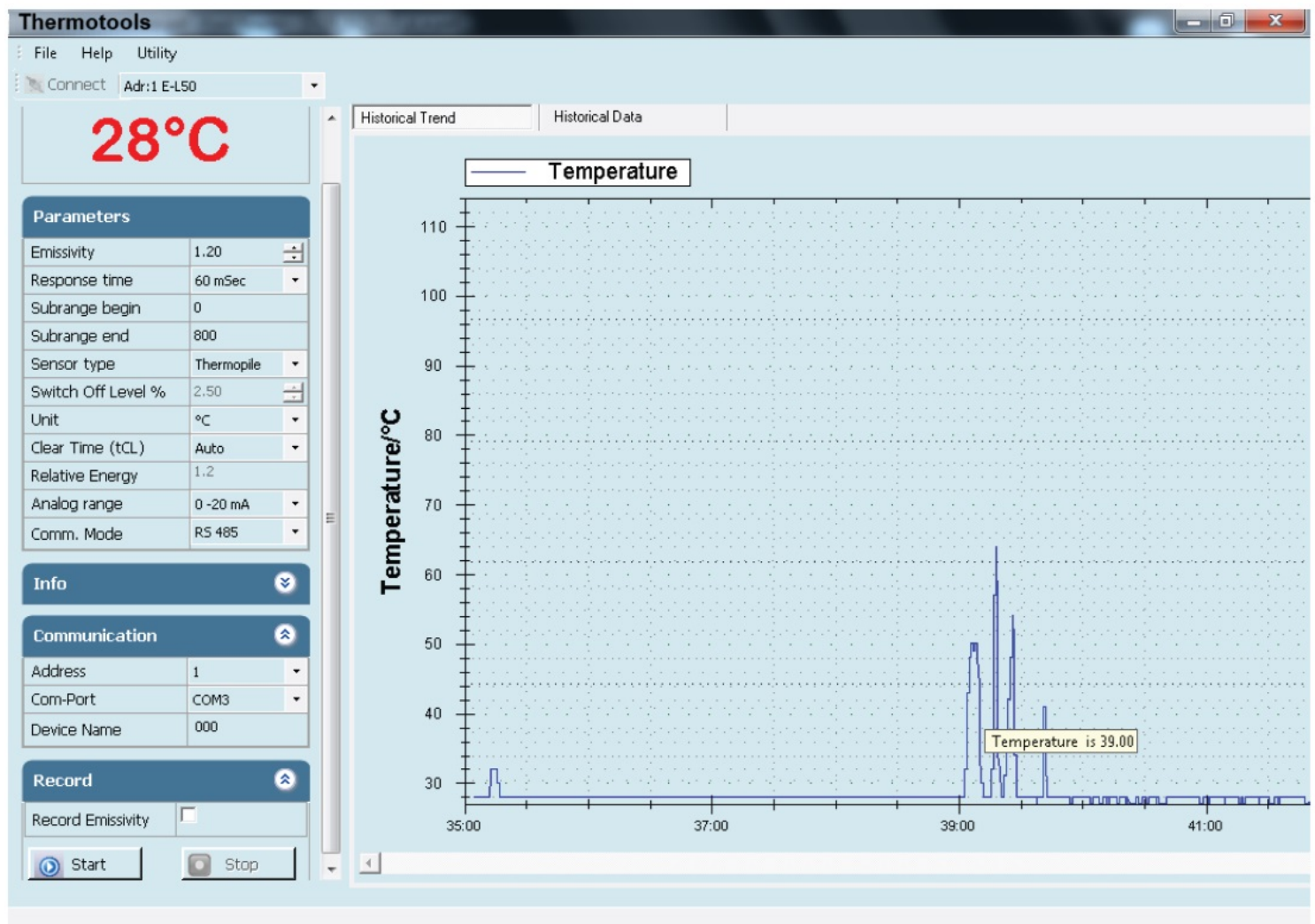


Model: STFRJB

IP65 Junction Box



The STEK software "Thermotools" offers digital PC interface RS-232 RS-485. Using this software we can set all the parameters like response time, analog scale, emissivity, clear time, communication mode. This software provide all necessary information about pyrometer

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