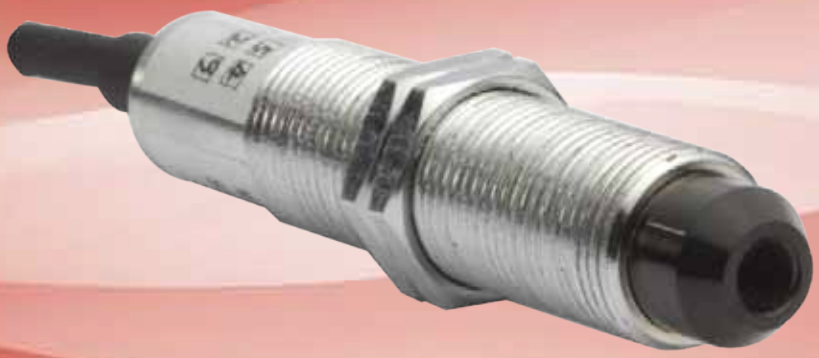
Infrared Thermometer

VTIR1816



İMAJ TEKNİK
ELEKTRİK ELEKTRONİK MALZEMELERİ SAN. VE TİC. LTD. ŞTİ.

辉格科技
Vigor Technology

VTIR1816 Infrared Thermometer

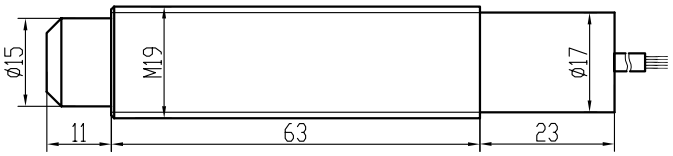
Features

- Advanced digital design & Optical structure
- Various analog & digital signal output
- Repeatability:±1℃
- Spectrum response: 8-14μm
- Accuracy: ±2℃ or 2%
- Resolution: 0.1℃
- Response time: ≤500ms
- Factory calibration with temperature compensation within full range
- Wide range of operation temperature
- Easy to install & maintain, low cost

Description

VTIR1816 thermometer is composed of metal housing, optical component and special integrated circuit, which can be used for non-contact temperature measurement in electric power, metallurgy, petrifaction and other industry. Also many accessories are available to select, such as control device (digital display), air purging device (dustproof), air or water cooling jacket, temperature data acquisition equipment, communication software and so on.

Dimensions (mm)



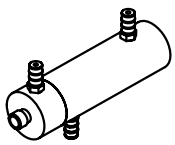
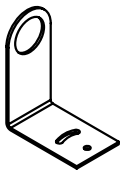
Wiring

Cable wire color	RS232 output	RS485 output	4~20mA output	Voltage output
Red	Power +	Power +	Power +	Power +
Black	Power -	Power -	Power -	Power -
Yellow	RS232-RXD	RS485-A	I_{out+}	V_{out+}
Green	RS232-TXD	RS485-B	I_{out-}	V_{out-}
Bare wire	Shield ground	Shield ground	Shield ground	Shield ground

Performances

Range	0~300°, 0~500°C, −20~300°C, 0~800°C
Resolution	0.1°C
Accuracy	±2°C or ±2%, which greater
Repeatability	±1.0°C
Spectrum response	8~14μm
Distance to Spot ratio(D:S)	3:1, 5:1, 8:1,10:1, 12:1
Operating temperature range	0~70°C
Storage temperature range	-20~85°C
Relative humidity	10~90%, no condensation
Response time	100~500ms, default 300ms
Emissivity	Default 0.95(Adjustable)
Spot diameter (Min.)	Φ6mm
Measuring distance (Min.)	10mm
Analog output	4~20mA, 0~5VDC, 10mV/℃
Digital output	RS485, RS232
Power supply	12VDC, 24VDC or 18~30VDC
Size	Φ19x97mm
Protection	IP65
Weight	200g

Options

Item	Photo	Function
18A-01	 Water cooling jacket with air purging device	Water Cooling Jacket When working temperature over 50℃ , cooling jacket ensure stable and high accurate output, and it can work under 150℃ .
18A-02		Air Purging Device When vapor or moisture around object covers lens, measuring result will be greatly influenced. An air purging equipment is available to blow away moisture within measuring area to guarantee accuracy.
18A-03	 L mounting bracket	Easy to install and adjust.

Ordering

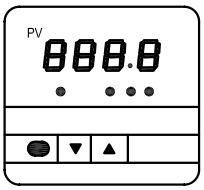
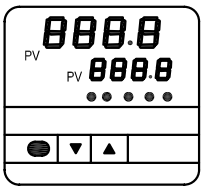
VTIR1816- | **D:S** | **Range**(℃) | **Output** | / | **Cable type** | **Cable length** | **Power supply**

D:S	Range(℃)	Output	Cable type	Cable length	Power supply
1=3:1 2=5:1 3=8:1 4=10:1 5=12:1	1= 0~300 2=-20~300 3= 0~500 6= 0~800	3=RS485 4=RS232 5=4~20mA 6=0~5VDC 7=10mV/°C	1=Non-shielded 2=Shielded 3=Pyrotenax （up to 250℃）	1=1.0m (Standard) … n= n.0m	7=12VDC 8=24VDC 9=18~30VDC

For example: VTIR 1816-113/229

Means: The VTIR1816 with parameter D:S is 3:1, range 0~300℃ , RS485 output, 18~30VDC power supply, 2 meters shielded cable.

Appendix 1: Display Instrument

Item	Photo	Function
D101	 Single channel display instrument	Single channel , LED display, without alarm, with 24VDC power supply to thermometer
D102		Single channel , LED display, with alarm, with 24VDC power supply to thermometer
D103		Single channel , LED display, with PID control & alarm, with 24VDC power supply to thermometer
D104		Single channel, LED display, with RS485 output , without alarm, with 24VDC power supply to thermometer
D105	 Double channel display instrument	Double channel, LED display, without alarm, with 24VDC power supply to thermometer
D106		Double channel, LED display, with alarm with 24VDC power supply to thermometer
D107		Double channel, LED display, with PID control &alarm, with 24VDC power supply to thermometer
D108		Double channel, LED display, with RS485, without alarm, with 24VDC power supply to thermometer

Appendix 2: Emissivity Table

Typical emissivity values for metals

Material		Emissivity
Aluminum	Unoxidized	0.02-0.10
	Oxidized	0.20-0.40
Alloy A3003	Oxidized	0.30
	Roughened	0.10-0.30
Brass	Burnished	0.30
	Oxidized	0.50
Haynes	Alloy	0.30-0.80
Inconel	Oxidized	0.70-0.95
	Sandblasted	0.30-0.60
Iron	Oxidized	0.50-0.90
	Un oxidized	0.05-0.20
	Rusted	0.50-0.70
Iron, cast	Oxidized	0.60-0.95
	Un oxidized	0.20
Iron, Wrought	Dull	0.90
Lead	Rough	0.40
Molybdenum	Oxidized	0.20-0.60
Nickel	Oxidized	0.20-0.50
	Electrolytic	0.05-0.15
Platinum	Black	0.90
Steel	Cold-rolled	0.70-0.90
	Ground sheet	0.40-0.60
	Polished sheet	0.10
	Oxidized	0.70-0.90
	Stainless	0.10-0.80
Titanium	Oxidized	0.50-0.60

Typical emissivity values for non-metals

Material		Emissivity
Asbestos		0.95
Asphalt		0.95
Basalt		0.7
Carbon	Un oxidized	0.80-0.90
	Graphite	0.70-0.80
	Carborundum	0.90
	Geramic	0.95
	Clay	0.95
	Concrete	0.95
	Cloth	0.95
	Class-plate	0.85
	Gravel	0.95
	Gypsum	0.80-0.95
	Ice	0.98
	Limestone	0.98
	Paint(non-al.)	0.90-0.95
	Paper(any color)	0.95
	Plastic	0.95
	Rubber	0.95
	Sand	0.90
	Snow	0.90
	Soil	0.90-0.98
	Water	0.93
	Wood, natural	0.90-0.95