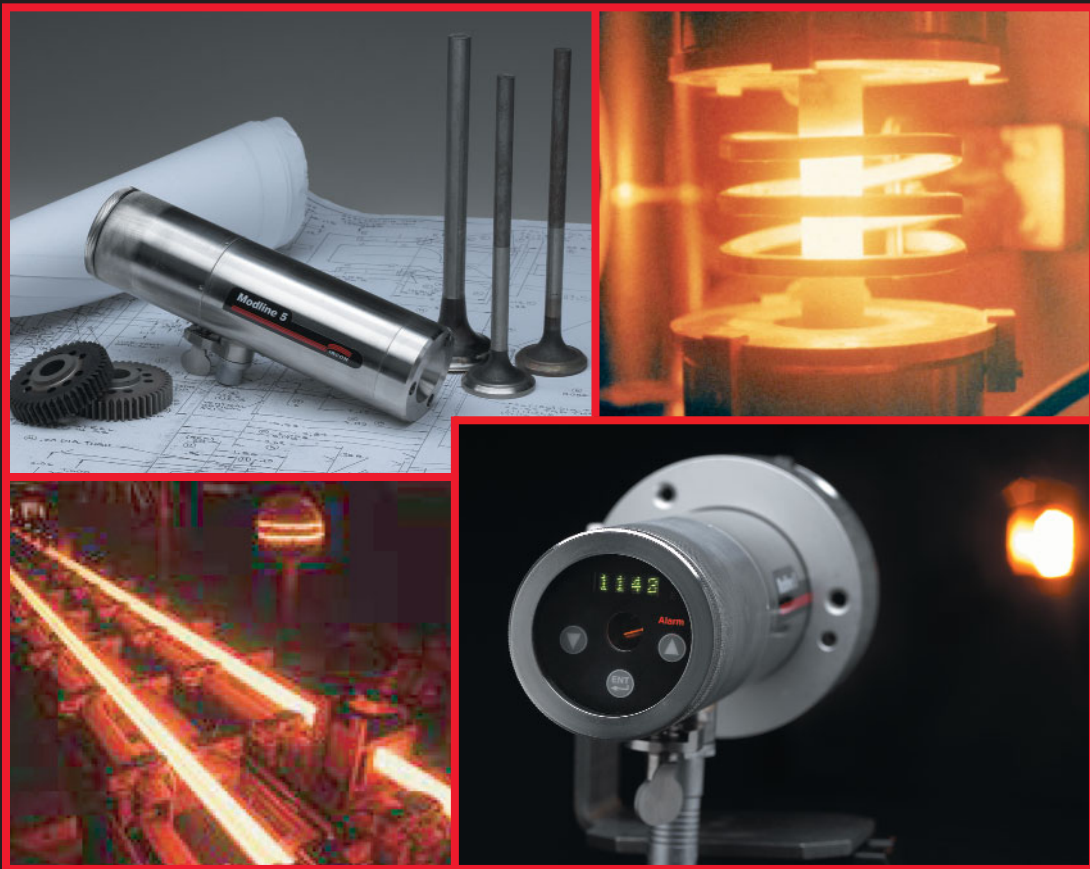


Modline[®] 5 Stand Alone Temperature Sensor



You can bet your process on it!

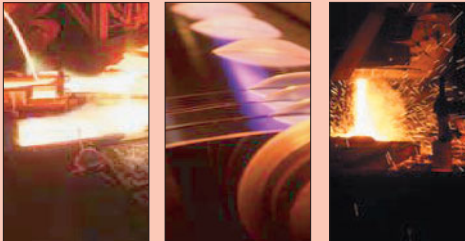


Modline 5 Infrared Thermometer - you can bet your process on it!

If reliable and accurate temperature measurement is imperative to your process, then you need an infrared thermometer you can trust.

Icon raises the bar one more time with a completely new and innovative infrared temperature sensor.

The durable industrial sensor design, industry-leading performance, and the only infrared thermometer with features such as rear focus optics and Total System Health Check makes the Modline 5 a must for your process temperature measurement needs.



- Single color and two-color (ratio) wavelength options for high temperature measurement.
- Rear focus capability allows for easy setup and focusing even with accessories in use.
- Wide temperature ranges and superior optical resolution
- Durable stainless steel NEMA 4 (IP65) rated housing
- Thru-the-lens sighting (visual or optional laser)
- Patented true dirty window detection option ensures accuracy in tough environments.
- Backlit rear panel display with tactile feedback keypad for easy instrument setup.
- Complete line of installation and mounting accessories to customize any application.

Rugged, Small, and Easy to Install

Built to withstand the harshest environments, the sensor is housed in a stainless steel NEMA 4 (IP65) housing. With the high temperature cables, totally sealed electrical connectors, and visible or laser focus from the rear of the unit, the Modline 5 is really a snap to install.

Outstanding Performance

Designed to handle wider temperature ranges with superior optical resolution characteristics that exceed industry performance specifications, the Modline 5 is the industry standard for high performance stand alone infrared thermometers.

Lower your Installed Cost

The Modline 5 provides an affordable solution for noncontact temperature measurement. A wide range of optional accessories lets you custom-tailor your sensor for a specific application or retrofit it in pre-existing sensor installations.

Multiple Interface Options

Full access to all sensor settings can be achieved from the backlit rear panel. This panel displays the indicated temperature, system alarm status, as well as all sensor parameters. You can also use the Digital Panel Meter (DPM) accessory to set-up and monitor settings. This customized accessory displays temperature output from the sensor and provides optional alarm relays. Finally, if your process control takes place from a PLC, it can communicate directly with single or multiple sensors using the RS-485 output.

Total System Health Check Capability

Tough applications require smart sensors. The Modline 5 provides Total System Health Check to verify that the sensor is within factory specifications. Automatically check the detector, electronics, and even the window of the sensor. With the Modline 5, the sensor is no longer in question when evaluating your process.

Modline 5

... the most advanced infrared thermometer on the market

Advanced Features

Intelligent Design

The Modline 5 design makes installation easy. The instrument can be focused by turning the rear portion of the sensor housing. This design, combined with thru-the-lens sighting, allows the Modline 5 to be focused on a target in any application with any accessory installed! No longer do you need to pre-focus an instrument prior to mounting it within a water jacket or an air purge assembly.

The Modline 5 can be focused and locked in place with any of its accessories installed. Beyond simple focusing, the Modline 5 high resolution optics provide superior spot sizes so that distant targets still have a very small focal area. Finally, optional mounting flanges let the Modline 5 be retrofit in place of older Ircon sensors and even competitive units. With features like these, the Modline 5 makes sense in any installation - old or new.

Total System Health Check

The Total System Health Check refers to the Modline 5's own proprietary self-diagnostics system. When the Total System Health Check is activated, the internal electronics of the Modline 5 are verified against the instrument specifications. If there are any issues with the sensor electronics, the user can be notified via an alarm or by visual indication when the check is completed.

The Total System Health Check can be initiated from the rear panel keypad, the Digital Panel Meter display, or any remote device using RS-485 to communicate with the Modline 5.

It can also be programmed to occur at regular intervals. Combine the optional Dirty Window Detector (DWD) with the Total System Health Check to provide complete confidence that your temperature measurement is accurate. The Total System Health Check is a great tool for critical processes, start-up trouble-shooting and instrument maintenance programs.

The Match Function

If you already know your existing process temperature (or verify it with a secondary temperature instrument), the Match Function allows you to set the initial process temperature while simultaneously adjusting the emissivity or E-slope.

Standard features like these make the Modline 5 the most user-friendly infrared thermometer on the market.

Modview Configuration Software

The Modview Configuration software provides a PC based interface to all sensor settings. It can be used as a setup tool for multiple sensors in your plant and is provided with every sensor.

Advanced Options

Dirty Window Detection

The Modline 5 infrared thermometer offers an option called the Dirty Window Detector (DWD). The DWD can detect if a build-up on the window is present and provide an alarm output to notify you of the condition. All infrared sensors, whether single wavelength or ratio, will experience some loss of measurement accuracy when the window becomes obscured.

With industrial installations the most common culprits of this include:

- Dust and dirt
- Condensation or other liquid build-up on the window
- Scratches on the window surface
- Contaminants in the plant air (air purge applications)

The traditional solution is to offer an air purge which blows compressed air away from the window of the sensor to protect it. While this solution works well, there are cases where it is not always practical. If no plant air exists or the air is often contaminated or unreliable, then the DWD becomes a very valuable option. Even in relatively clean applications where fluctuations in signal accuracy can have an extreme effect on the process, the DWD provides added insurance that the temperature measurement is maintaining accuracy. Ircon combines the DWD with our unique air purge design to provide multiple levels of insurance that the temperature measurement is accurate.



The Dirty Window Detector (patent number 5812270) option has a small "bill" that hides a mirror used by the detector on the front of the sensor

Advanced Features and Options

Advanced Options (continued)

Laser Sighting

With the laser-sighting option, the Modline 5 can be focused by viewing a circular laser image instead of looking directly through the lens of the instrument. Laser sighting is useful on dark targets with little contrast. It is also a helpful tool to verify the spot size of the area where temperature will be measured. The back panel of the Modline 5, the Digital Panel Meter or any RS-485 device can all be used to trigger the laser sighting. If the sensor is mounted in a difficult-to-reach location, the laser sighting option can be energized remotely through the Digital Panel Meter. Modline 5 units that are ordered with the Laser sighting option do not have the thru-the-lens rear sighting window. Laser sighting option is a Class II laser product.

Programming Options

Modline 5 offers many programming options - the sensor rear panel keypad and display; the digital panel meter accessory, and the remote communication accessibility.

Rear Panel Keypad and Display

The back panel of the Modline 5 consists of the programming keypad, alphanumeric display and backlit text prompts for setup, temperature, and alarms. All setup parameters can be controlled through the keypad and the bright 4-digit alphanumeric display provides menu prompts; temperature display in C or F; and alarm prompts if critical conditions exist.

Programming Options (continued)

Digital Panel Meter Display (DPM)

The Ircon Digital Panel Meter Display is more than a temperature display - it's a complete configuration tool for the Modline 5. All menu parameters can be reached from the DPM using RS-485 serial communication. The menu is pre-loaded at the factory so the DPM is ready to communicate with the sensor after wiring. The DPM makes it simple for applications that require temperature indication or sensors that are mounted in hard-to-reach applications.

An optional relay board can be ordered to provide four user configurable controls for temperature alarms. The DPM is powered separately from the Modline 5 and requires 85 to 250 VAC 50/60 Hz power.

Remote Communication

Modline 5 accepts both analog and discrete inputs through the Power Supply/Signal Interface (POI) box. Use a remote analog signal to change emissivity or e-slope. A switching input allows you to operate either the peak picker or track & hold functions. Ircon's remote communication configuration can be used with a PLC, DCS, or other control systems that use RS-485 communication.



Brite LED Display shows temperature, menu prompts, and alarm codes.

Backlit text prompts let you know if you are in setup or alarm mode.

SENSOR REAR PANEL

Tactile buttons allows for easy setup of all menu parameters

DIGITAL PANEL METER DISPLAY (DPM)

REMOTE COMMUNICATION CONTROL SYSTEM

Sensor Characteristics

Sensor Specifications

	52 Series	5G Series	5R Series (Ratio)
Performance			
Spectral Region	0.85 - 1.1µm	1.6 µm	0.75 - 1.05µm; 1.0 - 1.1µm (ratio mode) 1.0 - 1.1µm (single color mode)
Accuracy @ 25°C	0.3% of reading, plus 1°C	0.3% of reading, plus 1°C	0.5% of reading, plus 2°C
Response Time, adjustable to 60 sec.	6.6ms	6.6ms	10ms
Emissivity	0.100-1.000	0.100 -1.000 *	0.100 -1.000 (single color mode)
* Note: Emissivity span is limited to 0.3 -1.0 for the first 55°C (100°F) for all temperature ranges			
E-slope range	----	----	0.800 - 1.200 (ratio mode)
Repeatability	@ 25°C 0.1% of full scale, plus 1 digit (all models)		
Signal Processing	Peak Picker and Track & Hold (all models)		
Sighting	Visual or Laser (user-selectable thru-the-lens sighting)		

Inputs/Outputs

Analog Output	0-20ma, 4-20ma with 600 ohm Max. load
Analog Input	4 - 20mA
Relay Output	System Alarm (24 VAC/DC @1 amp resistive)
Digital Input/Output	RS-485 (user selectable, 57.6K max)
Power Requirements	24 VDC +/- 5%, 8 Watts Max.

Operating Ambient Temperature

Without Cooling	0 to 55°C	32 to 130°F
With Air Cooling	0 to 105°C	32 to 220°F
With Water Cooling	0 to 200°C	32 to 400°F
Storage Temperature	-20 to 70°C	-4 to 160°F
Cable Temperature	200°C (max)	392°F (max)

Physical Environmental

Environmental Rating	NEMA 4 (IP65)
Weight	1.4 kg (3.1 lbs)
Humidity	10 to 90% non-condensing
Shock	IEC 68-2-27
Vibration	IEC 68-2-6

Product Compliance

The Modline 5 and POI box meet the following standards:

- EN 61010-1:2001, Safety Requirements
- EN 55011:1998, Amendment A1:1999 Emissions for Industrial Equipment
- EN 61326-1:1997 Immunity Test Requirements in Industrial Locations
- UL 61010B-1, 2003, General Requirements
- CSA C22.2 No. 1010.1, 1997, General Requirements

Note: Specifications subject to change without notice.



Modline 5 sensor with Digital Panel Meter (DPM) accessory

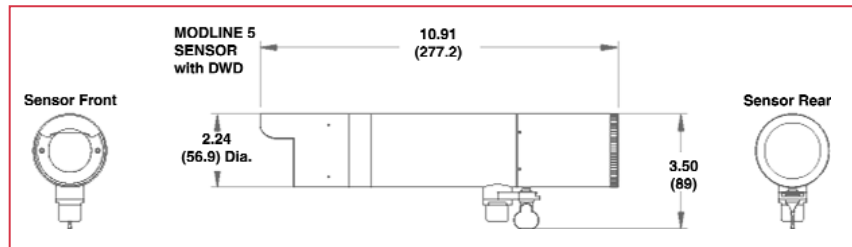
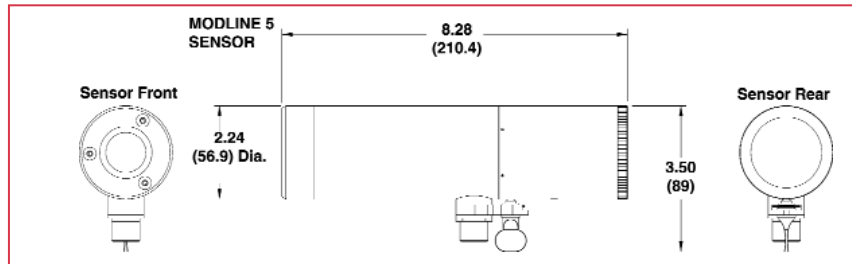


Modline 5 Power Supply/Signal Interface (POI) accessory box

Sensor Selection

Choosing the right instrument

When selecting a Modline 5 for your application, the two most important considerations are temperature range and wavelength. See temperature ranges below for each series of the Modline 5 family of instruments. The applications listed should serve as a basic guide for selecting the proper sensor wavelength. Beyond temperature range and wavelength, understanding the application is also important in selecting the proper optional equipment and accessories. For example, if the sensor will be operating in a high ambient temperature environment, the Water Jacket (WJA) accessory should be considered. If the instrument will be mounted in an area that is hard to access, accessories such as the Digital Panel Meter (DPM) and the Laser Sighting option can be important.



Note: Cable length, Laser option, Dirty Window Detector (DWD), and Lens selection must be specified at time of order.

SELECTION GUIDE

TEMPERATURE SERIES

Series / Model	Temperature Range °C and °F	Wavelength	Optical Resolution *	Applications
Series 52				
52-1410	500 to 1400°C	932 to 2552°F	0.85 - 1.1 μm	High Temperature Metals, forging, annealing, hardening, foundries, incandescent processes
52-2020	600 to 2000°C	1112 to 3632°F	D/200	
52-3024	750 to 3000°C	1382 to 5432°F	D/240	
Series 5G				
5G-1007	250 to 1000°C	482 to 1832°F	1.6 μm	Medium Temperature Metal applications for ferrous and non-ferrous metals
5G-1415	300 to 1400°C	572 to 2552°F	D/150	
5G-2024	350 to 2000°C	662 to 3632°F	D/240	
Series 5R				
5R-1410	600 to 1400°C	1112 to 2552°F	Ratio (2 wavelengths)	Difficult High Temperatures Molten metals, small wires, small rods, vacuum furnaces and kilns
5R-1810	700 to 1800°C	1292 to 3272°F	0.75 - 1.05 μm	
5R-3015	1000 to 3000°C	1832 to 5432°F	and 1.0 - 1.1 μm	

SENSOR LENS SELECTION (Must be specified at time of order)

Series	Lens Selection	Focusing Range
52, 5G	2A	330 mm (13") to infinity
52, 5G	2B	152 to 305 mm (6 to 12")
52, 5G	2C	57 to 70 mm (2.25 to 2.75")
5R	RA	330 mm to infinity (13" to infinity)
5R	RB	178 to 355 mm (7 to 14")
5R	RC	57 to 70 mm (2.25 to 2.75")

* Formula (for optical resolution): $d = \frac{D}{F}$

d = Spot size at Target Distance

D = Working Distance

F = Optical Resolution Factor

ADDITIONAL OPTIONS (Must be specified at time of order)

Option Designation	Description
LASER	Laser Sighting - thru-the-lens laser sighting provided when this option is specified.
DWD	Dirty Window Detector - provides monitoring and alarm capability for contaminated option
Sensor Cable	Cable (assembled with connector) length up to 350 feet or 107 meters (<i>maximum</i>)

Note: Specifications subject to change without notice

Modline 5 Accessories

Sensor Accessories and their Applications

MOUNTING, COOLING AND AIR PURGE ACCESSORIES

APA Air Purge accessory

Ironcon's specially designed air purge is used to help keep the Modline 5 optics clean. This unit mounts to the front of the Modline 5 and requires the universal adapter (UAA) or water jacket (WJA) accessory to keep it in place.

BMA Base Mount Adapter

This trunion-style mounting bracket is used in conjunction with heavier accessories such as the water jacket (WJA).

ESA Extension Sleeve Adapter

This is a special accessory that must be purchased with the Dirty Window Detector (DWD) option. The ESA serves as a spacer when using accessories with DWD-equipped Modline 5 sensors.

MFL Mounting Flange, Large

This large mounting flange has a bolt circle pattern that matches many of Ironcon's other infrared thermometer products. The large mounting flange (MFL) can be mated to the sensor by bolting it to the universal adapter assembly (UAA), air purge (APA), or water jacket (WJA) accessory.

MFS Mounting Flange, Small

A smaller version of the large mounting flange is designed with a bolt pattern to match many infrared thermometers on the market. Like the large mounting flange (MFL), the small flange (MFS) can be mated to the sensor by bolting it to the air purge (APA) accessory.

RAM Right Angle Mount

The right angle mount (RAM) is a smaller, more convenient way to mount the Modline 5. The universal adapter (UAA) accessory is required to attach the sensor to the RAM.

UAA Universal Adapter accessory

The universal adapter accessory is a circular ring that clamps around the Modline 5. It also can be used to mount the Modline 5 to the right angle (RAM) bracket, tripod, or any customer-supplied device using 1/4-20 UNC threaded mounting hardware.

WJA Water Jacket accessory

The water jacket accessory (WJA) protects the Modline 5 from extreme ambient temperatures by using water (200°C max) or air (105°C max) as a heat transfer agent. The base mounting adapter (BMA) can be used for trunion mounting of the WJA or, if flange mounting is preferred, the large mounting flange (MFL) or small mounting flange (MFS) can be used in conjunction with the WJA and other accessories.

Base Mount



Sensor with universal adapter (UAA).



Sensor with universal adapter (UAA), air purge (APA), and right angle mount (RAM).



Sensor with air purge (APA), water jacket (WJA), and base mounting adapter (BMA).

Flange Mount



Sensor & water jacket (WJA), air purge (APA), and small mounting flange (MFS).



Sensor with universal adapter (UAA), air purge (APA), & small mounting flange (MFS).



Sensor with air purge (APA), mounting flange (MFS), and extension sleeve (ESA).

SIGNAL INTERFACE ACCESSORIES

DPM Digital Panel Meter

The digital panel meter (DPM) displays temperature and alarm signals from the Modline 5. It's RS-485 communication protocol allows for complete setup directly from the DPM. The digital panel meter requires 85 to 250 VAC 50/60 Hz power. An optional relay board can also be provided with the DPM so that users can set up temperature alarms.

POI Power Supply/Signal Interface Box

The NEMA 4 junction box serves several functions. It provides 24V power and a terminal strip for easy wiring of the signal cable from the Modline 5. Use of POI box assures compliance with EMI regulations. The power supply/signal interface (POI) box requires 100 to 240VAC 50/60 Hz power.

TSP Terminal Strip Plate

The plate-mounted terminal strip allows for easy wiring of the Modline 5 sensor cable in a user-supplied enclosure. If the POI is not used, the TSP ensures proper operation when operated with other power supplies. It can also be combined with the switching power supply described below.

551632 Switching Power Supply

The encapsulated switching power supply is a chassis-mount for users that intend to use their own enclosure. It supplies 24 VDC/635mA power to the sensor. Input for the switching power supply is 100 to 240 VAC 50/60 Hz.

Modline 5 Infrared Thermometer - you can bet your process on it!

SERVICES:

Ircon offer many services to complement our products. Consult Ircon factory for more information.

On-Site Service

Start up assistance, operator training, and field calibration services available.

Extended Warranty

Extended warranty coverage of up to three years can be purchased for your Modline 5.

Factory Service

Firmware and hardware upgrades, NIST traceable calibration and complete repair services are available through Ircon offices worldwide.

Users Group

Join the Modline 5 user's group for the latest information on updates to Ircon instruments, tips and other resources for Ircon customers.

GLOBAL REACH: Our headquarters are based in Niles, Illinois USA; our European office is located in The Netherlands, and our sales channel offices are located worldwide. Visit our website at www.ircon.com or email us at info@ircon.com.

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