

# MI-SQ 5

The compact, highly exact, completely digital infrared sensor

Digital two color infrared non-contact pyrometer for temperature measurement between 1112°F and 5432°F

- highest accuracy
- wide ranges
- laser targeting or through lens sighting
- analog and digital output
- built-in maximum value storage
- bus control of all parameters
- also 1-channel temperature display



## Typical applications:

- |   |   |   |
|---|---|---|
| <ul style="list-style-type: none"><li>• welding</li><li>• annealing</li><li>• casting</li><li>• induction heating</li></ul> | <ul style="list-style-type: none"><li>• pouring stream measurement</li><li>• rotary kilns</li><li>• sintering</li></ul> | <ul style="list-style-type: none"><li>• soldering</li><li>• melting</li><li>• forging</li><li>• rolling</li></ul> |
|---|---|---|

## Technical Data MI-SQ 5:

Spectral ranges:	channel 1 0.70...1.15 $\mu\text{m}$ ; channel 2 0.97...1.15 $\mu\text{m}$
Accuracy:	< 2732°F $\pm$ 0.5% of the measured value in °F $\pm$ 3.6°F > 2732°F $\pm$ 1.0% of the measured value in °F
Max load:	$\leq$ 3 VA (inclusive active laser-targeting)
Resolution:	<1 K
Temperature dependence:	$\pm$ 0.25 K per K deviation of ambient temperature
Repeatability:	0.2 % of the measured value in °F $\pm$ 3.6°F
Response time:	< 10 ms, adjustable up to 10 s
Switch off limit:	adjustable via interface: 2% ... 50%
Parameters:	<i>adjustable on the sensor's rear side:</i> emissivity slope, emissivity, response time, laser-targeting, 4...20 mA or 0...20 mA analog output, on-/offline <i>via interface adjustable and readable:</i> two- or one-color temperature signal, emissivity slope, emissivity, parametrizing the analog output, temperature subrange, maximum value storage, clear time and external clear of the maximum value storage, address, baud rate, switch off limit <i>only readable:</i> measured value, internal temperature of the unit
Power supply:	24 VDC $\pm$ 25%, stabilised, ripple < 50 mV
Interface:	RS 232 or RS 485 addressable, half duplex, baud rate up to 38.4 kBd
Sighting system:	laser targeting light (standard) or through lens sighting
Maximum value storage:	single or dual storage, clear modes: time, external clear contact, via interface or automatic "hot object mode"
Emissivity slope:	( $\epsilon_1/ \epsilon_2$ ): 0.800 ... 1.250
Safety class:	I after VDE 0411
Enclosure rating:	IP 65 (according to DIN 40050)
Storage temperature:	-4...158°F
Operating temperature:	32...158°F at housing
Isolation:	power supply and digital and analog output galvanically isolated
CE-Sign:	according to EU directives about electromagnetic immunity
Weight:	19.4 oz

## Basic measuring ranges and Ref.No: Ref.No for the unit with RS 232 inclusive laser targeting

		Ref.No.:			Ref.No.:
MB 14	1112 ... 2552°F	<b>5 853 100</b>	MB 18	1292 ... 3272°F	<b>5 853 200</b>
MB 25	1472 ... 4532°F	<b>5 853 300</b>	MB 30	1832 ... 5432°F	<b>5 853 400</b>

## Options:

RS 485 instead of RS 232: **+ 010**  
through lens sighting instead laser targeting light **+ 020**

add option number to the unit's ref. no., e.g.

MI-SQ 5, MB 18 with RS 232 and laser targeting light: 5 853 200  
MI-SQ 5, MB 18 with RS 485 (+ 010) and through-lens-sighting (+ 020): 5 853 230

## Optics:

Spot diameter M [mm] at the measuring distance a for 90% of the radiation.

Measuring range	MB 14: 1112 ... 2552°F	MB 18: 1292 ... 3272°F	MB 25: 1472 ... 4532°F	MB 30: 1832 ... 5432°F
Aperture D [in]	0.315	0.315	0.315	0.197
M. distance a				
9.8 in	0.236	0.118	0.059	0.059
11.8 in	0.315	0.157	0.079	0.079
19.7 in	0.433	0.217	0.110	0.110
31.5 in	0.630	0.315	0.157	0.157
51.2 in	1.024	0.512	0.256	0.256
78.7 in	1.575	0.787	0.394	0.394

The spot diameter between the above mentioned distances can easily be calculated by interpolation.

## Scope of delivery:

Sensor;

Infrarwin PC-Software

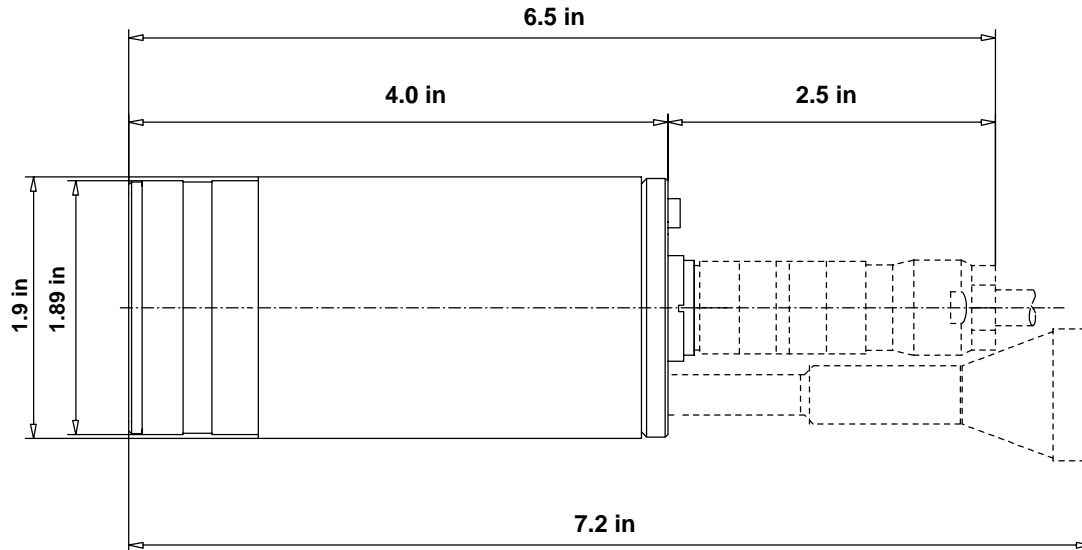
The connecting cable is not included with the sensor and has to be ordered separately.

## Details of order:

To process your order quickly, please give us the following data:

- Measurement range or ref. no.
- Requested measurement distance (e.g. "measurement distance 9.8 in")
- Connection cable (3 820 330)

## Dimensions:



## Accessories:

3 820 330	Connection cable 16 ft
3 852 140	Power supply NG 0 in a standard carrier rail housing
3 834 210	Adjustable mounting support
5 890 640	LED-display MI-DA 4000-N
5 890 650	LED-display MI-DA 4000 with 2 limit switches
3 890 660	IP 65-front cover for MI-DA 4000-N, MI-DA 4000
3 835 160	Air purge unit
3 837 080	Cooling jacket for ambient temperature up to 338 °F
3 835 080	Mounting angle for cooling jacket 3 837 080
3 835 070	Mounting flange for cooling jacket 3 837 080
3 835 100	Coupling flange for cooling jacket 3 837 080
3 835 090	Mounting sleeve for cooling jacket 3 837 080
3 846 100	Installation tube
3 846 120	Flange tube

Please see also separate drawing 3 837 031 for mechanical accessories.

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Specifications are subject to change without notice.