

M1A Series MIST

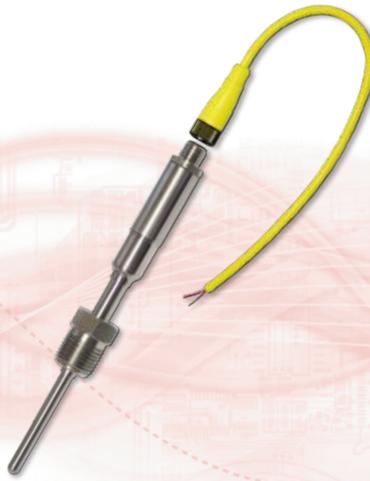
Microprocessor Integrated Sensor Transmitter

Manufacturer of Superior Quality Instrumentation

CSA/UL Approved Temperature Transducer With M12 Micro Connector



*Straight or Bent,
with or without Lag &
Optional Compression Fitting*



*Fixed Process Fitting
with Lag for Higher
Process Temperatures*



*Fixed Process Fitting
without Lag.
Compact design.*

USA Patent No.: 7,223,014
CAD Patent No.: 2,561,570

Applications and Uses:

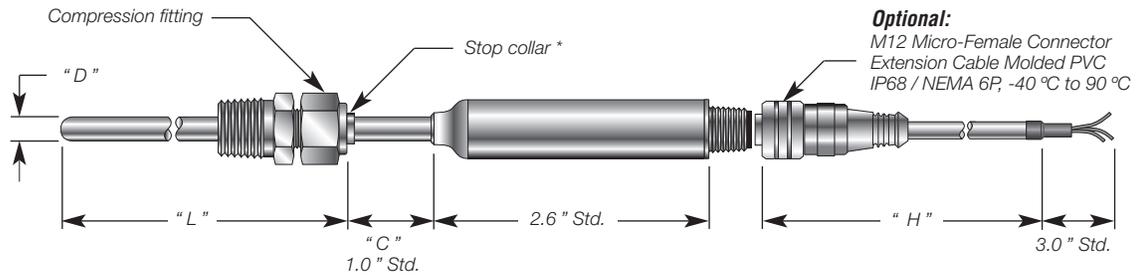
MIST M1A temperature sensor is a high accuracy programmable temperature transducer with available 4-20mA , 0-5VDC, 1-5 VDC or 0/10 VDC output proportional to temperature.

CSA c/us: CAN/CSA-C22.2 No. 61010-1:12/UL 61010-1 (3rd edition) for easy integration into systems and areas requiring approvals.

M1A sensors provide an M12 micro male connector for applications where quick connect and disconnect feature is required, reducing installation time and cost on initial installation and thereafter when sensors need to be serviced during validation or calibration.

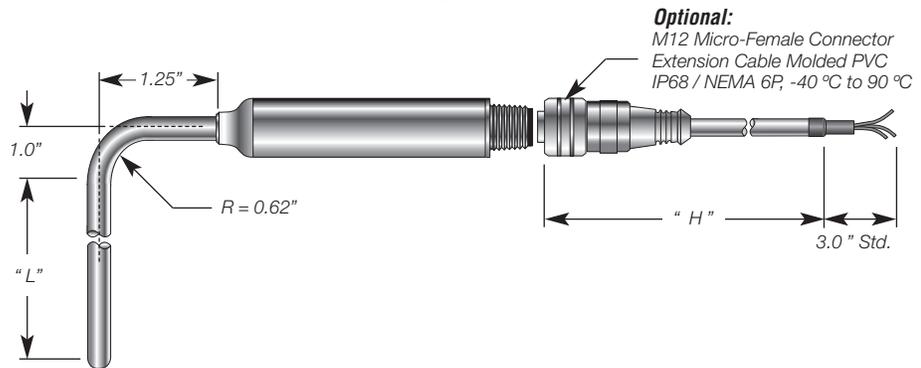
These devices are typically installed in laboratory test equipment, mobile equipment, hydraulic power units, generators and skids. Calibration certificates are available with tracability to national standards.

Model: M1A1, Straight with Optional Compression Fitting

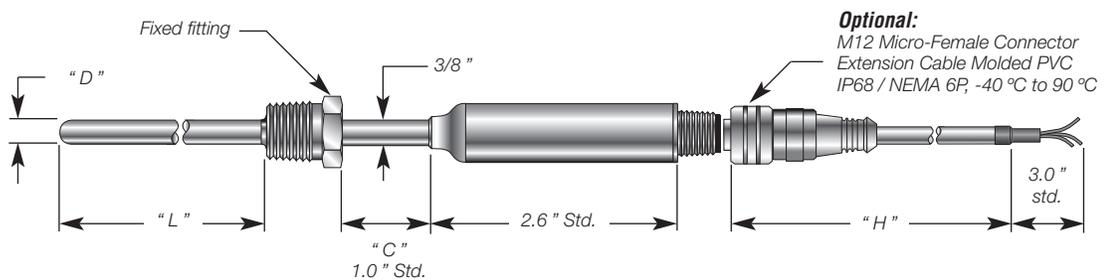


* No stop collar option, "C" = N00
Stop collar recommended for temperature above 100 °C

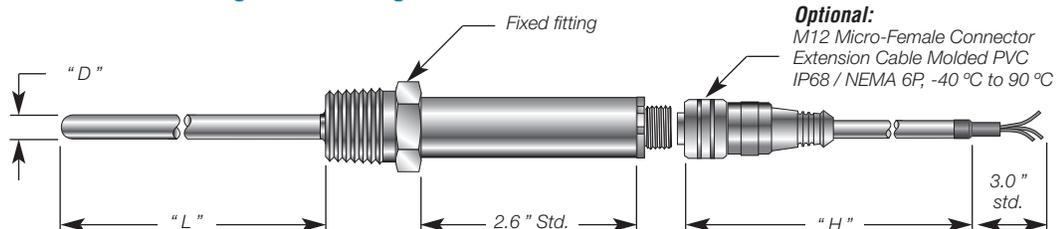
Model: M1A2, Bent 90 Deg. with Optional Compression Fitting



Model: M1A3, Fixed Process Fitting with Lag



Model: M1A4, Fixed Process Fitting without Lag



M1A Series MIST

Temperature Transducer
M12 Micro Connector

CSA/UL APPROVED



Custom Builder

MODEL 1 2 3 4 5 6 7 8 9 10 11 12 13

M1A_ - [] - [] - [] - [] - [] - N_ - 0 - [] - [] - [] - 0 - [] - []

Model CODE	Description
M1A1	Straight with optional compression fitting
M1A2	Bent 90° with optional compression fitting
M1A3	Fixed process fitting with lag
M1A4	Fixed process fitting without lag

BOX1 CODE	Calibrated Temperature Range
05	0 °C to 50 °C (32 / 122 °F)
10	0 °C to 100 °C (32 / 212 °F)
15	0 °C to 150 °C (32 / 302 °F)
20	0 °C to 200 °C (32 / 392 °F)
55	-50 °C to 50 °C (-58 / 122 °F)
51	-50 °C to 150 °C (-58 / 302 °F)
52	-50 °C to 200 °C (-58 / 392 °F)
L*	-50 °C to 200 °C (-58 / 392 °F)
H*	-200 °C to 600 °C (*328/1112 °F)

* Codes **L** & **H** are not factory programmed. Requires customer calibration using the **MIST PKIT**.

Notes:

- MIST Temperature Sensors™ are factory calibrated at on point to an accuracy of ± 0.12 °@0°C or better. See MIST Specs
- For non-standard temperature ranges indicate desired value in °C or °F in Box1 or see website www.intempco.com.
- Order **MIST PKIT** for customer customization.

BOX2 CODE	Output
LP	4-20 mA 2 wire loop-powered, upscale burnout (std.)
LD	4-20 mA 2 wire loop-powered, downscale burnout
VA	0-5 VDC Source, 3-wire
VB	1-5 VDC Source, 3-wire
VD	0-10 VDC Source, 3-wire

Other outputs available. Consult Factory

BOX3 CODE	Probe Diameter " D "
B	1/8"
C	3/16"
D	1/4"
F	3/8"
H	1/2"
60	6 mm
80	8 mm

Other diameters available. Consult Factory

BOX4 CODE	Probe Material
S	Stainless steel 316/316L

Other material available. Consult Factory

BOX5 CODE	Probe Length " L "
---	In 0.1 " increments Ex.: 065 = 6.5 " long , 120 = 12 " long

BOX6 CODE	Extension Cold Leg Length " C "
N00	No Stop Collar
**N_ _	In 0.1 " increments Ex.: N65 = 6.5 " long

**Note: Option available for M1A1 and M1A3 only

BOX7 CODE	-
0	Fixed code

BOX8 CODE	Fitting Type
N	None
B	1/8 " NPT (max. probe .188 " dia.)
D	1/4 " NPT (max. probe .312 " dia.)
F	3/8 " NPT (max. probe .375 " dia.)
H	1/2 " NPT
L	3/4 " NPT
P	1 " NPT

Note: Fitting material is stainless steel SS316

BOX9 CODE	Connector Type
MC	M12 Micro-Male Connector

BOX10 CODE	Extension Cable Length " H "
N	None
A2	Straight, 2 meters
A5	Straight, 5 meters
B2	Right angle, 2 meters
B5	Right angle, 5 meters

BOX11 CODE	-
0	Fixed code

BOX12 CODE	Options
N	None
C1	Calibration certificate, NIST tracable, 1 point, 0°C (32°F)
C2	Calibration certificate, NIST tracable, 2 points: 0.0°C (32°F) & 100°C (212.0°F)
C3	Calibration certificate, NIST tracable, specify 3-points.

BOX13 CODE	Approvals
A	CSA c/us: CAN/CSA-C22.2 No. 610101-1:12/ UL 61010-1 (3rd edition)

Technical Specifications : 2-wire and 3-wire voltage outputs

Approvals, Electrical Specifications and Mechanical Properties

Approvals: CSA c/us: CAN/CSA-C22.2 No. 61010-1 :12 / UL 61010-1 (3rd edition)

Electrical Specifications

Sensing Element :	RTD, Type Pt100 DIN/EN 60751 Class A
Sensor Current :	< 0.25 mA
Sensor Temperature Ranges :	See Box1 code for standard ranges. Field re-scalable between or -50 °C to 200 °C or -200 °C to 600 °C depending on model selected.
Outputs :	4-20 mA loop powered, 2-wire, linear to temperature 0-5 VDC, 1-5 VDC, 0-10 VDC all 3-wire, linear to temperature
Minimum Input Impedance :	1000 Ohm (of measuring device, for voltage output)
Power Supply :	9-30 VDC, polarity protected (4-20 mA output) 12-30 VDC, polarity protected (Voltage output)
Supply Effect :	0.001%/V
Maximum Loop Resistance :	[(Vsupply – 7 V) /20mA] ohms (for 4-20mA output only)
Maximum Current Draw :	10 mA (Voltage output only)
Accuracy :	± (.25 °C + 0.40% of span) with one-point calibration ¹ . ± (.10 °C + 0.10% of calibrated span) with two-point calibration ² .
Sensor Open Circuit :	Upscale 24 mA or Downscale 2.5 mA (for 4-20 mA output only)
Warm-up :	30 seconds
RFI Effect :	1% or less typical
Isolation :	500 VDC , sensor housing to all output Pins
Temp. Effects :	± 0.001% of Span / °C deviation from 25 °C
Long Term Drift :	≤ 0.1% FS / Year

Mechanical Properties

Ambient Temp. Range :	- 40 °C to 80 °C (-40 °F to 176 °F)
Storage Temp. Range :	- 50 °C to 85 °C (-58 °F to 185 °F)
Ambient Pressure:	Vacuum to 600 kPa
Ambient Humidity:	0-100%
Probe Max. Pressure :	500 PSI (3.45 MPa), applies to probe portion only.
Housing Material :	Stainless steel 316/316L standard.
Probe Material :	Stainless steel 316/316L standard.
Cable Material :	PVC, 22 AWG, Euro DC color code. IP68 rated
Cable Length :	2 meters or 5 meters
Environmental Protection :	Type 4X , IP66/IP67. Potted electronics.
Electrical Connection :	M12 micro male

1. Max. error on complete span. Error at calibration point ≤ 0.1% of Span.

2. Max. error on complete calibrated span. Error at calibration points ≤ 0.1% of Span.

- Information furnished by Intempco is believed to be accurate and reliable. However, no responsibility is assumed by Intempco for its use
- Specifications subject to change without notice.