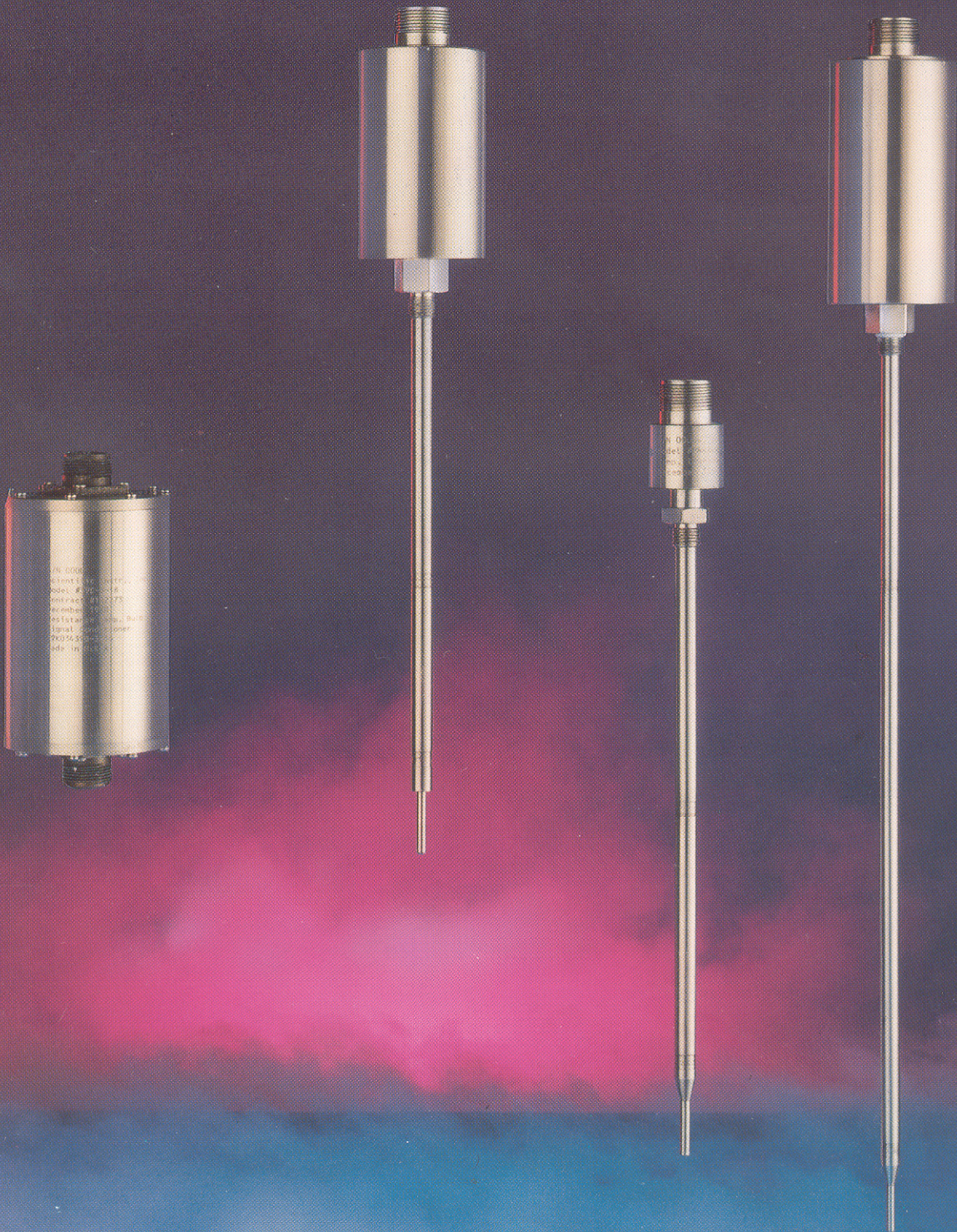




Aerospace Products

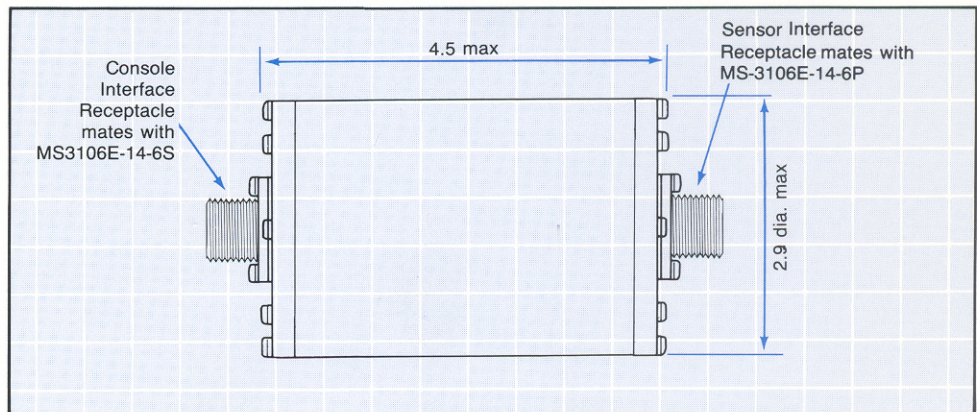


Scientific Instruments, Inc.



Series 39 Signal Conditioning Modules

The Series 39 Signal Conditioning Modules feature the latest in microprocessor technology. They offer ease of programming, rugged construction and linearized 0 - 5 volt outputs. The Series 39 Signal Conditioning Modules are designed to be used in conjunction with Series 44 Temperature Probes.



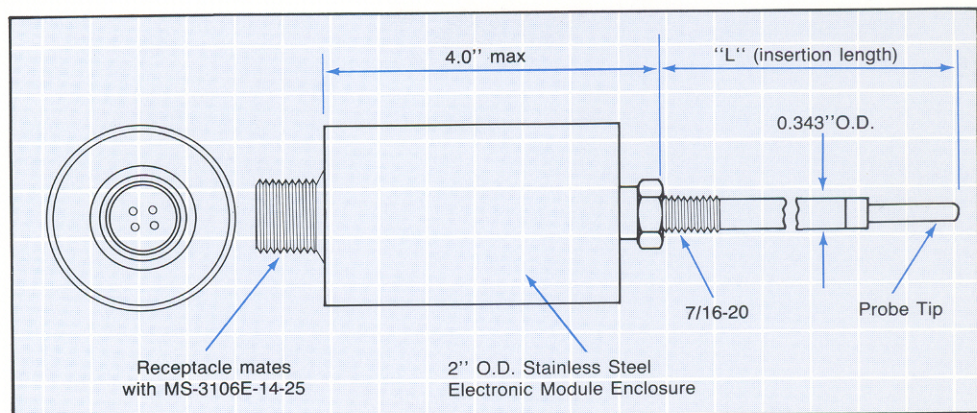
Specifications

Enclosure:	Stainless steel housing, gasket sealed for adverse environment.
Temperature Scaling:	Specific ranges -427°F to $+500^{\circ}\text{F}$.
Operating:	-25°C to $+80^{\circ}\text{C}$ (-13 to $+175^{\circ}\text{F}$).
Insulation Resistance:	Greater than 100 megohms at 50 VDC between all terminals in parallel and case.
Isolation Resistance:	Greater than 100 megohms at 50 VDC measured between input and output leads.

Signal Conditioner:	24 to 32 VDC reverse polarity protected. Unit protected up to ± 100 volts at 10 millisecond pulse.
Sensor:	1.0 ma DC, four leaded.
Output Voltage:	0.000 ± 0.025 to 5.000 ± 0.025 VDC.
Repeatability:	Less than ± 10 mv DC.
Stability:	Less than ± 25 mv DC.
Error Band:	Within ± 75 mv for all error sources.

Series 40 Liquid Level Probes

The Series 40 Liquid Level Probes are designed for use with liquid oxygen, liquid hydrogen, liquid nitrogen and hypergolics. These hermetically sealed stainless steel assemblies are designed to withstand severe environmental conditions and feature a response time from vapor to liquid of 0.25 seconds.



Specifications

Enclosure:	All wetted areas 316ss. Housing hermetically sealed 300 series ss.										
Media Connection:	MS-33656-E4 boss seal capable of withstanding 2000 PSI media pressure.										
Temperature Range:	<table border="1"> <thead> <tr> <th>Media</th><th>Temperature</th></tr> </thead> <tbody> <tr> <td>(oxygen)</td><td>-183.0°C (-297.3°F)*</td></tr> <tr> <td>(hydrogen)</td><td>-252.9°C (-423.2°F)*</td></tr> <tr> <td>(nitrogen)</td><td>-195.8°C (-320.3°F)*</td></tr> <tr> <td>(hypergolic)</td><td>$+20^{\circ}\text{C}$ to $+68^{\circ}\text{F} \pm 5^{\circ}\text{C}$ (9°F)</td></tr> </tbody> </table> <p>* Boiling point at 1 atmosphere</p>	Media	Temperature	(oxygen)	-183.0°C (-297.3°F)*	(hydrogen)	-252.9°C (-423.2°F)*	(nitrogen)	-195.8°C (-320.3°F)*	(hypergolic)	$+20^{\circ}\text{C}$ to $+68^{\circ}\text{F} \pm 5^{\circ}\text{C}$ (9°F)
Media	Temperature										
(oxygen)	-183.0°C (-297.3°F)*										
(hydrogen)	-252.9°C (-423.2°F)*										
(nitrogen)	-195.8°C (-320.3°F)*										
(hypergolic)	$+20^{\circ}\text{C}$ to $+68^{\circ}\text{F} \pm 5^{\circ}\text{C}$ (9°F)										
Electronic Housing:	-20°C to $+80^{\circ}\text{C}$ (-13 to $+175^{\circ}\text{F}$).										
Isolation Resistance:	Greater than 100 megohms at 50 VDC between all terminals in parallel and case.										

Excitation:	24 to 32 VDC reverse polarity protected. Unit protected up to ± 100 volts at 10 millisecond pulse.						
Output:	<table border="1"> <thead> <tr> <th>Media State</th><th>Output State</th></tr> </thead> <tbody> <tr> <td>gaseous</td><td>Logic 0</td></tr> <tr> <td>liquid</td><td>Logic 1</td></tr> </tbody> </table>	Media State	Output State	gaseous	Logic 0	liquid	Logic 1
Media State	Output State						
gaseous	Logic 0						
liquid	Logic 1						

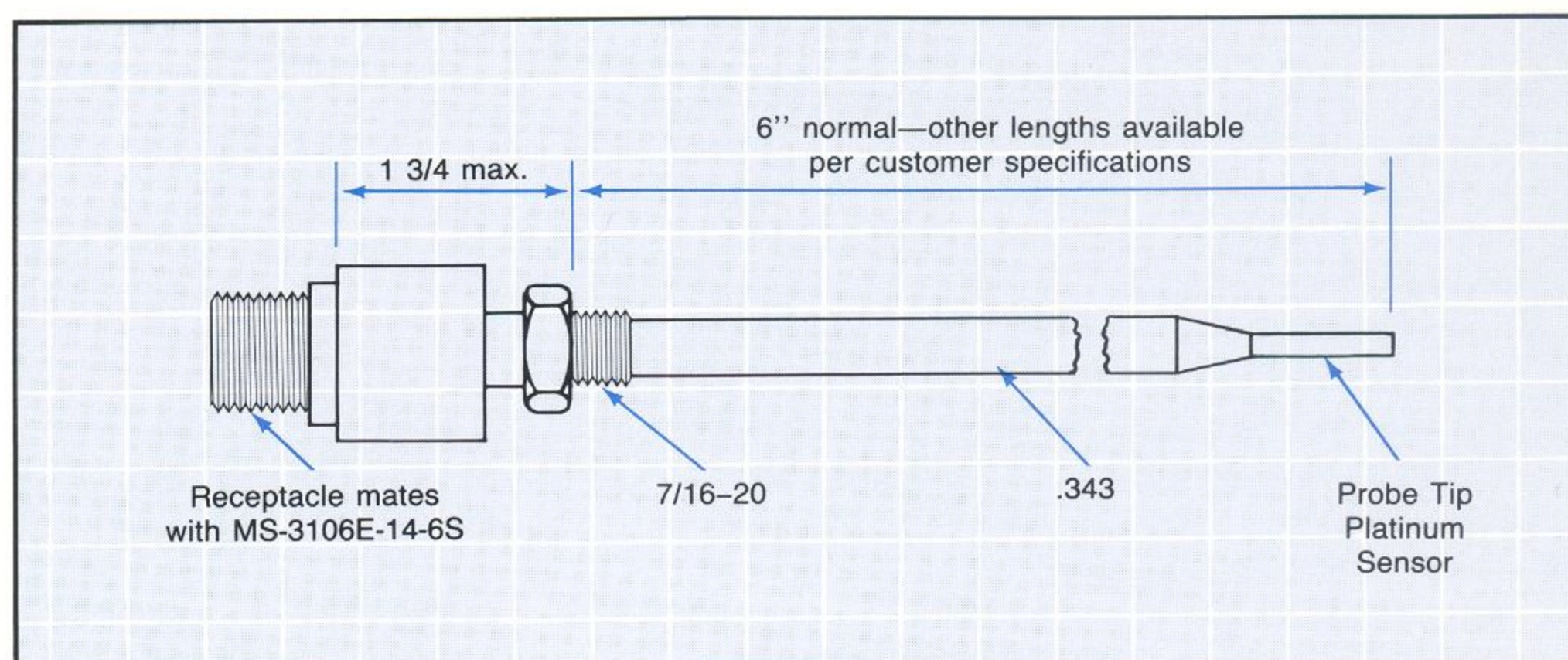
Note:

- Logic 0 is a nominal 0.0 VDC, (open circuit voltage $+3.0$, -0.0 VDC.)
- Logic 1 is a nominal 28.0 VDC (supply voltage $+0.0$, -3.0 , -0.0 VDC.)
- Voltage measurements referenced to external power return.

Repeatability:	Within $\pm 0.10\%$ F.S.O.
Response Time:	Less than 0.25 seconds for vapor to liquid.

Series 44 Temperature Probes

The Series 44 Series Temperature Probes are constructed of stainless steel and are hermetically sealed units thus allowing for installation into hazardous environments. These temperature probes are available with customer specified insertion lengths of 2" to 30".

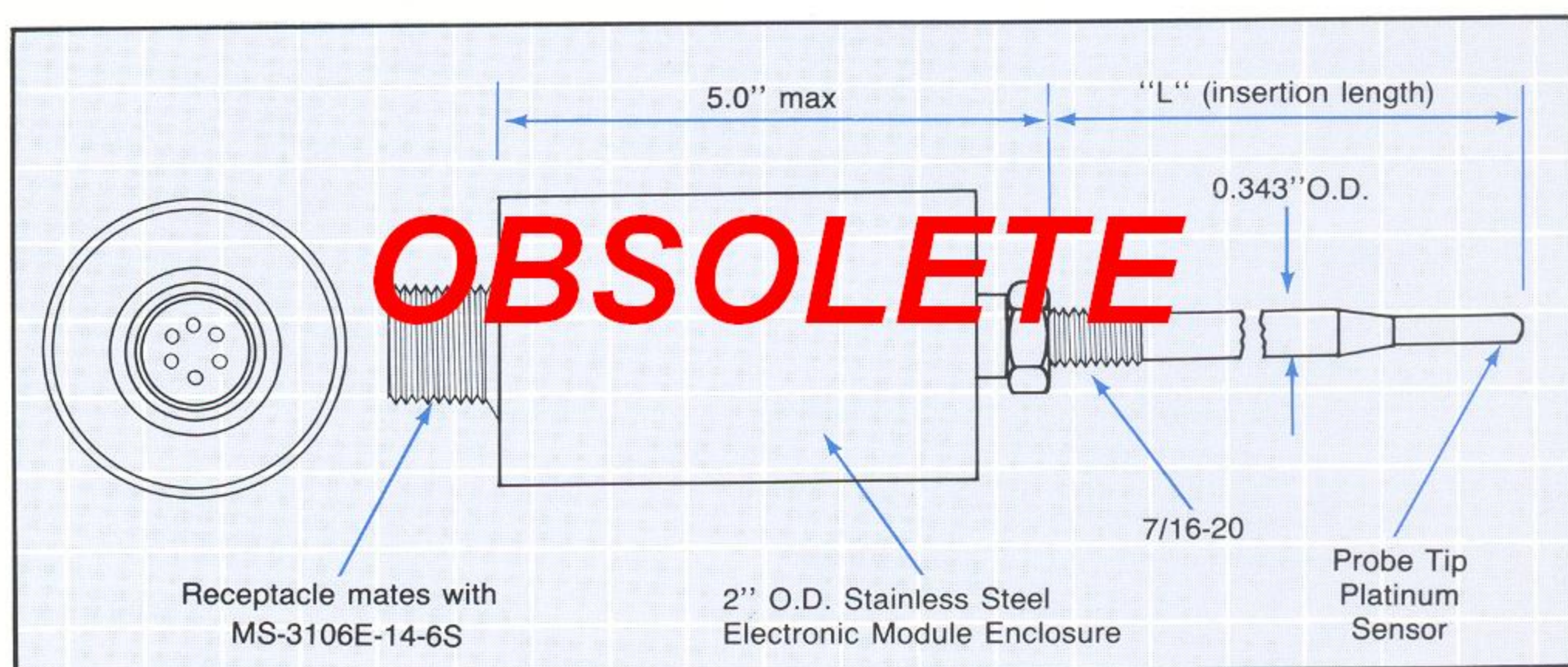


Specifications

Enclosure:	All wetted areas 316ss. Housing hermetically sealed 300 series ss.	Excitation:	1.0 ma DC, four leaded.
Insertion Length:	2" to 30" customer specified.	Ice Point Resistance:	44B 200 \pm 1.0 ohms 44C 1380 \pm 3.5 ohms
Media Connection:	MS-33656-E4 Boss seal capable of withstanding 2000 PSI media pressure.	Sensor Coefficient:	.003895 $\Omega/\Omega/^{\circ}\text{C}$ determined from calibration data taken at 0 $^{\circ}\text{C}$ and 100 $^{\circ}\text{C}$.
Temperature Range:	Series 44B -40 $^{\circ}\text{F}$ to +554 $^{\circ}\text{F}$ Series 44C -436 $^{\circ}\text{F}$ to +257 $^{\circ}\text{F}$		
Insulation Resistance:	Greater than 100 megohms at 50 VDC between all terminals in parallel and case.		

Series 49 Temperature Probes

Each Series 49 Temperature Probe is comprised of a calibrated platinum resistance thermometer matched to a self-contained electronic package which provides accurate sensor excitation and a linearized 0-5 volt output.



Specifications

Enclosure:	All wetted areas 316ss. Housing hermetically sealed 300 series ss.	Isolation Resistance:	Greater than 100 megohms at 50 VDC measured between input and output leads.
Media Connection:	MS-33656-E4 boss seal cable of withstanding 2000 PSI media pressure.	Excitation:	24 to 32 VDC reverse polarity protected. Unit protected up to \pm 100 volts at 10 millisecond pulse.
Insertion Length:	2" to 30" customer specified.	Output Voltage:	0.000 \pm 0.050 to 5.00 \pm 0.050 VDC.
Temperature Range:		Repeatability:	Less than \pm 25 mv DC.
Probe Tube/Sensor:	-427 $^{\circ}\text{F}$ to +500 $^{\circ}\text{F}$ customer specified.	Stability:	Less than \pm 25 mv DC.
Electronic Housing:	-25 $^{\circ}\text{C}$ to +80 $^{\circ}\text{C}$ (-13 to +175 $^{\circ}\text{F}$)	Error Band:	Within \pm 75 mv for all error sources.
Insulation Resistance:	Greater than 100 megohms at 50 VDC between all terminals in parallel and case.		