

MIOF-87NCC Series

Media Isolated, Oil Filled,
High Pressures 1000, 3000 & 5000PSI
200 mV Output, Temperature
Compensated
Constant Current Supply with Gain Set

DESCRIPTION

Advanced Sensor MIOF-87NCC Series sensor is a media isolated pressure sensor designed for high pressures applications where media is compatible with stainless 316L. The sensor design utilizes silicon oil to transfer pressure from the 316L diaphragm to the sensing element. The series is powered using a constant current and when configured as in the Application Note, the integrated gain set resistor will ensure sensor field interchangeability to within 1%. The design's superior performance provides low thermal errors across a wide temperature range of -20 to 85°C. Available in sealed gage and absolute pressures to 5000 PSI with electrical terminations of solderable cable or cable with Molex termination.

APPLICATIONS

- Hydraulic Controls
- Robotics
- Oceanography
- Compressors
- Pressure Transmitters

FEATURES

- Field Interchangeability
- Process Fittings/Customer Weldable
- Pressures Ranges 1000, 3000 or 5000 PSI
- Absolute or Sealed Gage pressures
- Temperature Compensated
- Ribbon & Cable Electrical Connections

SPECIFICATION	Symbol	Min	Typical	Max	Unit	Note
Performance Characteristic						
Full Scale Span	FSS	75		210	mV	1
Zero Pressure Offset		-2.0	±0.1	+2.0	mV	2
Pressure Non-Linearity		-0.25		+0.25	%FSS	3
Pressure Hysteresis			±0.05		%FSS	
Repeatability			±0.02		%FSS	
Bridge Resistance, Input		2000		5000	Ω	
Bridge Resistance, Output		4000		25000	Ω	
Thermal Error of Span		-1.00		+1.00	%FSS	4
Thermal Error of Offset		-1.00		+1.00	%FSS	4
Temperature Hysteresis, Span		-0.25		+0.25	%FSS	4
Temperature Hysteresis, Offset		-0.25		+0.25	%FSS	4
Long Term Stability, Offset			±0.10		%FSS	
Long Term Stability, Span			±0.10		%FSS	
Supply Current		0.5	1.5	2.0	mA	5
Output Load Resistance		5			MΩ	6
Insulation Resistance (50Vdc)		50			MΩ	7
Compensated Temperature		-20 to 85			°C	6
Operating Temperatures		-40 to 125			°C	9

SPECIFICATIONS

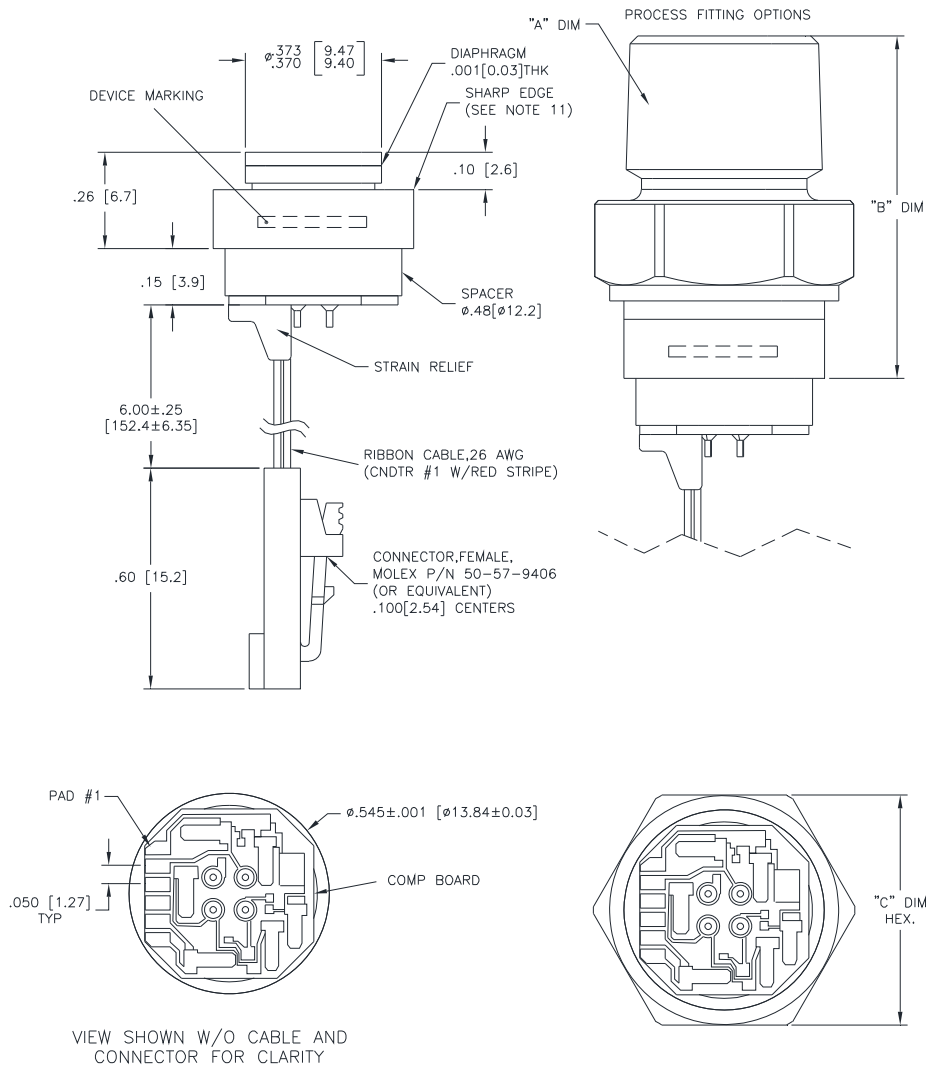
Symbol Min Typical Max Unit Note

Absolute Maximum Conditions						14
Supply Current				3	mA	
Storage Temperature		-50		125	°C	9
Overage Pressure				20000	PSI	8
Proof Pressure				15000	PSI	
Media Compatibility		Liquids & Gases Compatible with 316/316L Stainless Steel				
Wetted Materials		316L Stainless Steel				

Reference Conditions: Isupply: 1.500mA, Ta=25 °C.

1. For amplified output circuits, 3.012V ±1% interchangeability with gain set resistor. See application schematic.
2. Measured at vacuum for absolute (A), ambient for gage (G).
3. Best fit straight line.
4. Over the compensated temperature range with respect to 25°C.
5. Guarantees output/input ratiometricity.
6. Load resistance to reduce measurement errors due to output loading.
7. Between case and sensing element.
8. The maximum pressure that can be applied to a transducer without rupture of either the sensing element or transducer.
9. Maximum temperature range for product with standard cable and connector is -20°C to +105°C.
10. Standard gage units are not recommended for vacuum applications. For vacuum applications below 1/2 atmosphere, consult factory.
11. Device Marking: Each part shall be identified with Model Number, Pressure Range, Type, Lot Number, Serial Number and Date Code.
12. Shipping/Packaging requirements: The stainless steel diaphragm is protected by a plastic CAP. Each unit will be packaged individually in a plastic vial with anti-static foam.
13. Direct mechanical Contact with diaphragm is prohibited. Diaphragm surface must remain free of defects (scratches, punctures, dents, fingerprints, etc) for device to operate properly. Caution is advised when handling parts with exposed diaphragms. Use protective cap whenever devices are not in use
14. Exceeding Absolute Maximum Specification may damage the device. Extended exposure beyond the operating conditions may affect device reliability.

MECHANICAL DIMENSIONS in [mm]



CNDTR	FUNCTION
1	+OUT
2	-EX
3	+EX
4	-OUT
5	GAIN
6	

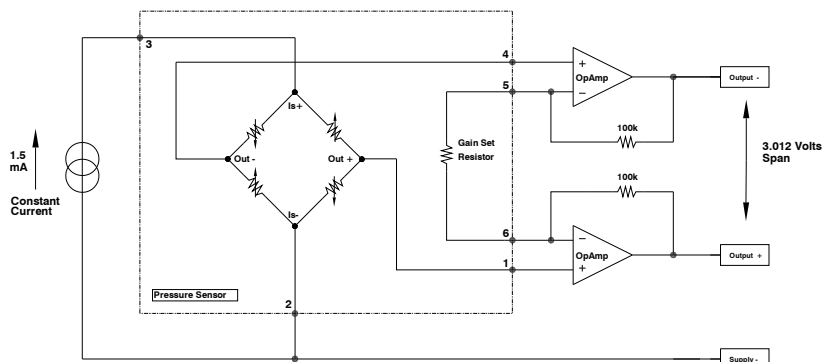
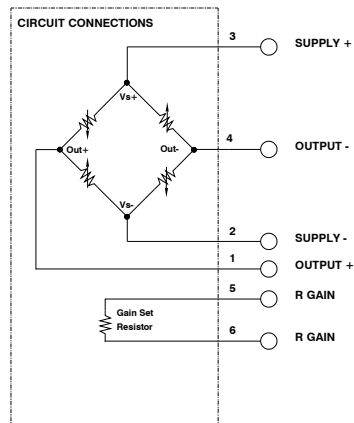
*CNDTR #1 W/RED STRIPE

FITTING DIMENSIONS			
FITTING TYPE	"A" DIM	"B" DIM	"C" DIM
1	1/4-18 NPT	1.16[29.5]	7/8[22.2]
2	1/8-27 NPT	1.15[29.0]	7/8[22.2]
3	7/16-20 UNF	1.00[25.4]	7/8[22.2]
4	1/4-18 NPT	.93[23.6]	5/8[15.9]
5	1/4-19 BSP	.98[24.9]	3/4[19.0]
8	1/8-27 NPT	.80[20.3]	5/8[15.9]
9	1/4-19 BSP	1.12[28.4]	7/8[22.2]
NOTE: FTG TYPE "4" ASSEMBLY SHOWN ALL DIMS FOR REFERENCE			

EQUIVALENT CIRCUIT

APPLICATION CIRCUIT

APPLICATION SCHEMATIC FOR MIOF-154N SERIES



PART NUMBERING FOR ORDERS

Series	Port Style	Pressure Range	Pressure Units	Pressure Type (Range Availability) [Package Availability]	Connection
MIOF-87N CC	P0= No Fitting/Weldable P1=1/4-18 NPT P2=1/8-27 NPT P3=7/6-20 UNF P4=1/4-18 NPT P5=1/4-19 BSP P8=1/8-27 NPT P9=1/4-19 BSP	1000 3000 5000	P=PSI	A=Absolute [ALL] G=Sealed Gauge [ALL]	P= Solder Pads R= Ribbon Cable C= Cable with Connector

Part Number Example: MIOF-87N CC P0 1000PG C

MIOF-87NCC Series, No Fitting/Weldable, 100PSI Sealed Gage Cable Termination with Connector

WARRANTY

Pressure sensors have a limited one-year warranty to the original purchaser. AVSensors will repair or replace, at its option, without charge those items it finds defective. This is the buyers sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall AVSensors be liable for consequential, special, or indirect damages. This warranty does not apply to units that have been modified, misused, neglected or installed where the application exceeds published ratings. Specifications may change without notice. The information supplied is believed to be accurate and reliable as of this printing, however, we assume no responsibility for its use.