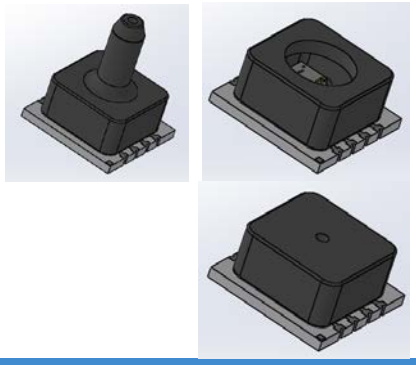
AV Sensors
AdVanced Sensor Design and Manufacture

CCT-4 SERIES



CCT-4 Series
Small size
mV Output, Uncompensated
Voltage Supply

DESCRIPTION

Advanced Sensors Ceramic Castellation Technology (CCT) 4 Series contains a piezo resistive sensor element that delivers a high level mV output in a low cost, small footprint, leadless castellation package This low profile sensor is available in narrow hole, single tube, and wide hole with gel to ensure isolation from the pressure media. The closed bridge sensor delivers a stable mV output in absolute and gauge pressures in both psi and inH20 ranges. The sensor high input impedance and wide supply voltage allow the sensor to be used in low power battery applications. The CCT-4 series small leadless package, many port configurations make it the best low cost sensor for OEM customers.

APPLICATIONS

- Pneumatic controls
- Automotive diagnostics
- Medical equipment/instrumentation
- Dental equipment
- Environmental controls
- Barometric pressure measurement
- Altimeters
- Pneumatic controls
- Battery powered equipment

FEATURES

- Small size
- inH20 or PSI Ranges
- Wide selection of ports
- Absolute or gage pressures
- High-impedance bridge
- Low power consumption

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Performance Characteristic (PSI Ranges)						
Supply Voltage		1.8V	3.0	12.0	V	
Bridge Resistance		3900		6100	Ω	
Zero Pressure Offset		-30	8	+30	mV	
Pressure Non Linearity		-0.1		+0.1	PSI	2
Hysteresis & Repeatability			0.05		%FSS	
Full Scale Span	FSS	See Table 1.				
Temperature Coefficient Resistance		2300	+2800	3100	ppm/°C	3
Temperature Coefficient Sensitivity		-2100	-1800	-1400	ppm/°C	3
Temperature Coefficient Offset			0.10		%FSS /°C	3
Temperature Hysteresis, Offset & Span		-0.20		+0.20	%FSS	3
Long Term Stability, Offset & Span			±0.4		%FSS	4
Weight				0.3	grams	
Operating Temperatures		-40 to 125			°C	

AV Sensors
AdVanced Sensor Design and Manufacture

CCT-4 SERIES

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Performance Characteristic (mBar Ranges)						
Supply Voltage		1.8V	3.0	9.0	V	
Bridge Resistance		3150		4350	Ω	
Zero Pressure Offset		-20	0	+5	mV/V	
Pressure Non Linearity		-0.75		+0.75	PSI	2
Hysteresis & Repeatability			0.05		%FSS	
Full Scale Span		See Table 1.				
Temperature Coefficient Resistance		2300	+2800	3100	ppm/°C	3
Temperature Coefficient Sensitivity		-2100	-1800	-1400	ppm/°C	3
Temperature Coefficient Offset			2		µV/V/°C	5
Operating Temperatures		-40 to 125			°C	

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Absolute Maximum Conditions						6
Supply Voltage				15	V	
Storage Temperature		-50		150	°C	
Overage Pressure						
Proof				5x	Range	
Burst				10x	Range	
Media Compatibility		CDA, Non Ionic, Non Corrosive Gases				
Wetted Materials		Ceramic, LCP, Epoxy, RTV, Silicon, Gold, Aluminum, Palladium Silver				
Media Compatibility		CDA, Non Ionic, Non Corrosive Gases				

SPECIFICATIONS	Range	Min	Typical	Max	Unit	Note
Full Scale Span (mbar Ranges)	20	18.0	33.0	50	mV	
	50	18.0	33.0	50	mV	
	100	18.0	33.0	50	mV	
	200	60.0	90.0	120	mV	
Full Scale Span (PSI Ranges)	5	30.0	36.0	42.0	mV	
	15	54.0	66.0	80.0	mV	
	30	57.0	69.0	80.0	mV	
	50	60.0	75.0	90.0	mV	
	100	75.0	96.0	108.0	mV	
	150	60.0	75.0	90.0	mV	
	300	50.0	60.0	75.0	mV	

Reference Conditions: Vsupply: 3.00Vdc, Ta=25°C.

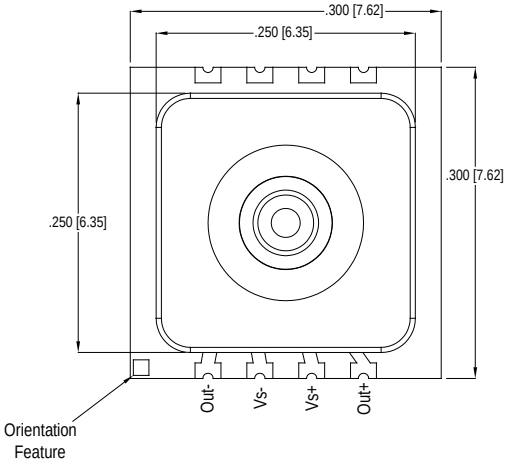
1. All specification at reference conditions unless otherwise noted. Output is ratio metric to supply voltage.
2. ½ Terminal Base Non Linearity (Measured at 0, 50% and 100% FS).
3. Deviation between 70°C and 0°C expressed as percentage of reading at 25°C.
4. Deviation after 1 year period measured at reference conditions.
5. Measured over the temperature range of 70°C and 0°C.
6. Exceeding Absolute Maximum Specification may damage the device. Extended exposure beyond the operating conditions may affect device reliability.

AV Sensors
AdVanced Sensor Design and Manufacture

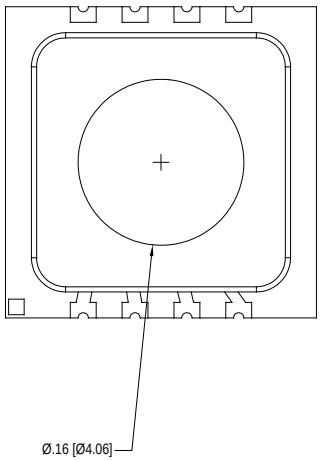
CCT-4 SERIES

MECHANICAL DIMENSIONS in [mm]

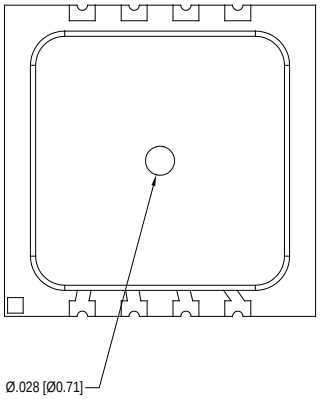
SINGLE TUBE

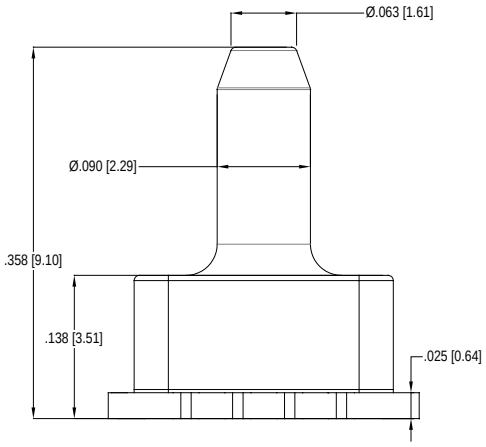


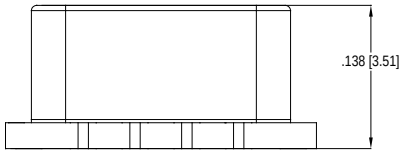
WIDE HOLE

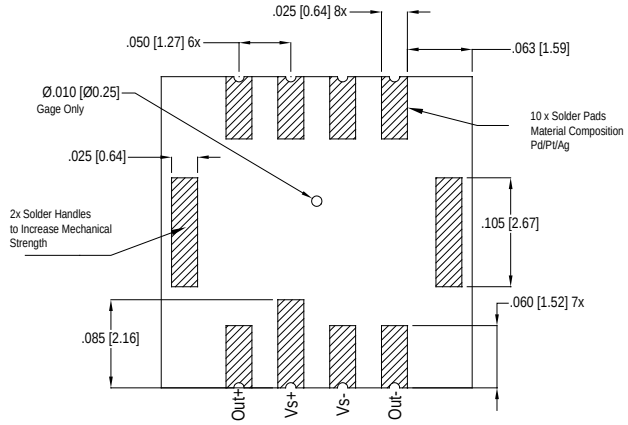


NARROW HOLE









PART NUMBERING FOR ORDERS

Series	Port Style	Pressure Range	Pressure Units	Pressure Type (Range Availability) [Package Availability]
CCT-4	NH=Narrow Hole ST=Single Tube WH=Wide Hole	005 015 030 050 100 150 300	P=PSI	A=Absolute (15,30,50,100,150,300) [NH,ST,WD] G=Gauge (All) [NH,ST,WD]
		20 50 100 200	W=inH20	G=Gauge (All) [NH,ST,WD]

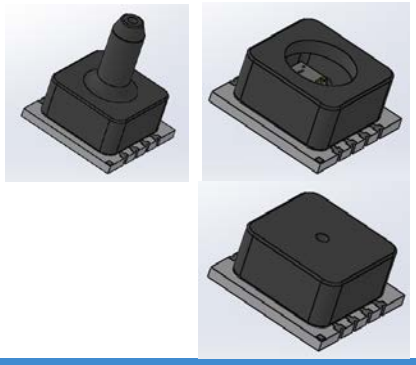
Part Number Example: CCT-4NH015PG 0-15 PSI Gage, Narrow Hole

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 buyer s 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.

AV Sensors
AdVanced Sensor Design and Manufacture

CCT-6 SERIES



CCT-6 Series
Small size
mV Output, Calibrated
Voltage Supply

DESCRIPTION

Advanced Sensors Ceramic Castellation Technology (CCT) 6 Series contains a piezo resistive sensor element and additional thick film resistors to delivers a calibrated high level mV output in a low cost, small footprint, leadless castellation package. The overall accuracy is improved by laser trimming each sensor to minimize zero and span errors at room temperature. This low profile sensor is available in narrow hole, single tube, and wide hole with gel to ensure isolation from the pressure media. The closed bridge sensor delivers a stable mV output in absolute and gauge pressures. The CCT 6 series small leadless package, many port configurations and improved accuracy make it the best low cost sensor for OEM customers.

APPLICATIONS

- Pneumatic controls
- Automotive diagnostics
- Medical equipment/instrumentation
- Dental equipment
- Environmental controls
- Barometric pressure measurement
- Altimeters
- Pneumatic controls
- Battery powered equipment

FEATURES

- Small size
- PSI Ranges
- Wide selection of ports
- Absolute or gage pressures
- High-impedance bridge
- Low power consumption

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Performance Characteristic (PSI Ranges)						
Supply Voltage		1.8V	5.0	12.0	V	
Bridge Resistance, Input		3900		25000	Ω	
Bridge Resistance, Output		3900		6100	Ω	
Zero Pressure Offset		-0.5	±0.1	+0.5	mV/V	
Pressure Non Linearity		-0.1		+0.1	PSI	2
Hysteresis & Repeatability			0.05		%FSS	
Full Scale Sensitivity			See Table			
Temperature Hysteresis, Offset & Span		-0.20		+0.20	%FSS	3
Long Term Stability, Offset & Span			±0.4		%FSS	4
Weight				0.3	grams	
Operating Temperatures			-40 to 125		°C	

AV Sensors
AdVanced Sensor Design and Manufacture

CCT-6 SERIES

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Absolute Maximum Conditions						5
Supply Voltage				15	V	
Storage Temperature		-50		150	°C	
Overage Pressure						
Proof				5x	Range	
Burst				10x	Range	
Media Compatibility		CDA, Non Ionic, Non Corrosive Gases				
Wetted Materials		Ceramic, LCP, Epoxy, RTV, Silicon, Gold, Aluminum, Palladium Silver				

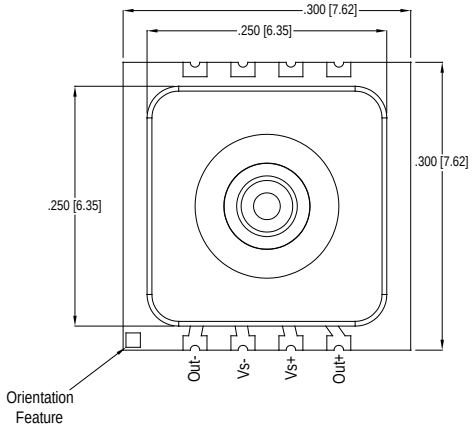
SPECIFICATIONS	Range	Min	Typical	Max	Unit	Note
Full Scale Span (PSI Ranges)	5	10.0	12.0	14.0	mV/V	
	15	18.0	15.0	25.0	mV/V	
	30	19.6	15.0	26.0	mV/V	
	50	21.0	15.0	30.0	mV/V	
	100	27.0	15.0	36.0	mV/V	
	150	21.0	15.0	30.0	mV/V	
	300	17.0	15.0	25.0	mV/V	

Reference Conditions: Vsupply: 5.00Vdc, Ta=25°C.

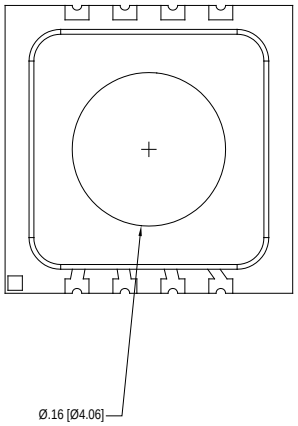
1. All specification at reference conditions unless otherwise noted. Output is ratio metric to supply voltage.
2. ½ Terminal Base Non Linearity (Measured at 0, 50% and 100% FS).
3. Deviation between 50°C and 0°C expressed as percentage of reading at 25°C.
4. Deviation after 1 year period measured at reference conditions.
5. Exceeding Absolute Maximum Specification may damage the device. Extended exposure beyond the operating conditions may affect device reliability.

MECHANICAL DIMENSIONS in [mm]

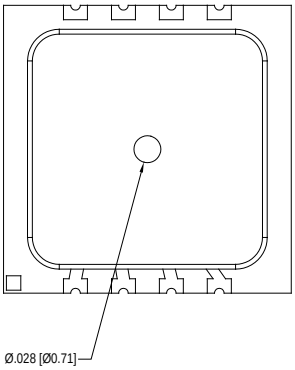
SINGLE TUBE

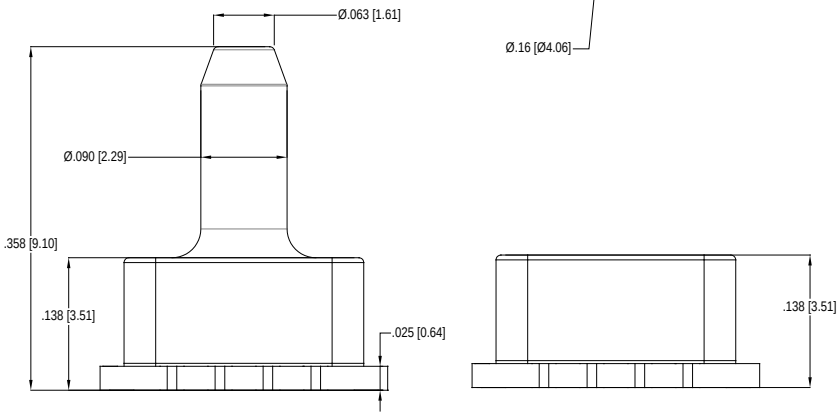


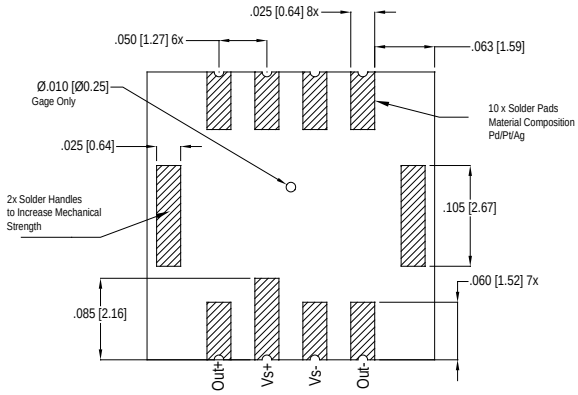
WIDE HOLE



NARROW HOLE







PART NUMBERING FOR ORDERS

Series	Port Style	Pressure range (psi)	Pressure Units	Pressure Type (Range Availability) [Package Availability]
CCT-6	NH=Narrow Hole ST=Single Tube WH=Wide Hole	005 015 030 050 100 150 300	P=PSI	A=Absolute (15,30,50,100,150,300) [NH,ST,WD] G=Gauge (All) [NH,ST,WD]

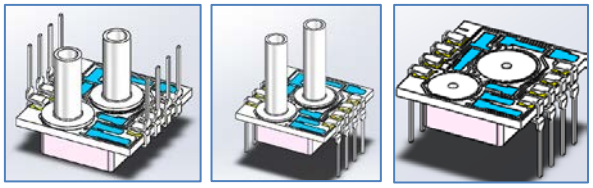
Part Number Example: CCT-6WH030PA 0-30 PSI Absolute, Wide Hole

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 buyer s 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.

AV Sensors
AdVanced Sensor Design and Manufacture

CHT-2 SERIES



CHT-2 Series
Dual In Line Package
mV Output, Temperature Compensated
Current Supply

DESCRIPTION

Advanced Sensor Ceramic Hybrid Technology (CHT) 2 Series is a temperature compensated, mV output, PCB mounted pressure sensor packaged in a rugged Dual In Line package. The Ceramic Hybrid Technology uses a silicon MEMS pressure sensor bound to a ceramic substrate containing thick film resistors that are uniquely laser trimmed for each sensor. Incorporating a flexible design, the CHT-2 Series is available with no, short or long tubes and can be mounted pin up or pins down to allow OEMs to optimize their board design. The CHT-2 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. The CHT-2 series superior die performance, coupled with rugged ceramic substrate ensures long term stability with superior temperature performance over wide operating range.

APPLICATIONS

- Pneumatic controls
- Automotive diagnostics
- Medical equipment/instrumentation
- Air Speed and Altitude
- Environmental controls
- Barometric pressure measurement
- Factory Automation
- Process Controls

FEATURES

- 1% Field Interchangeability
- Constant Voltage
- Wide selection of port
- Absolute, Differential or Gage pressures
- Temperature Compensated
- 0.1% Pressure Non Linearity

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Performance Characteristic						
Supply Voltage		0.5	1.5	2.0	mA	
Bridge Resistance, Input & Output		2500		6100	Ω	
Zero Pressure Offset		-2.0	±0.1	+2.0	mV	
Pressure Non Linearity		-0.1		+0.1	PSI	2
Hysteresis & Repeatability			0.05		%FSS	
Full Scale Span	FSS	75		150	mV	3
Temperature Hysteresis, Offset & Span		-0.20		+0.20	%FSS	4
Thermal Error of Span		-0.5		+0.5	%FSS	
Thermal Error of Offset		-0.5		+0.5	%FSS	
Response Time			100		µS	
Insulation Resistance		50			M Ω	
Long Term Stability, Offset & Span			±0.4		%FSS	5
Weight				0.3	grams	
Compensated Temperature		0 to 50			°C	
Operating Temperatures		-40 to 125			°C	

AV Sensors
AdVanced Sensor Design and Manufacture

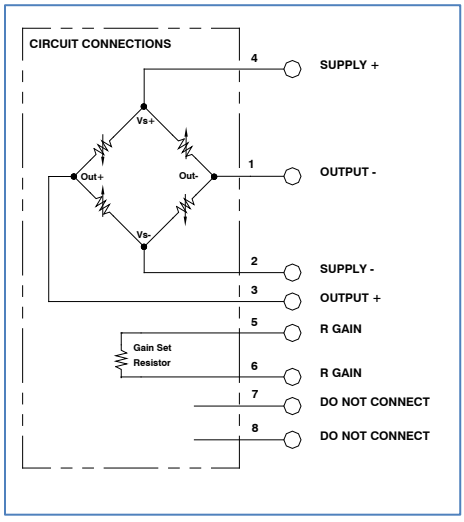
CHT-2 SERIES

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Absolute Maximum Conditions						6
Supply Voltage				3	mA	
Storage Temperature		-50		150	°C	
Overage Pressure						
Burst, Differential Pressure				3x	Range	
Burst , Gauge & Absolute Pressure				10x	Range	
Media Compatibility		CDA, Non Ionic, Non Corrosive Gases				
Wetted Materials		Ceramic, Epoxy, RTV, Silicon, Gold, Aluminum, Palladium Silver				

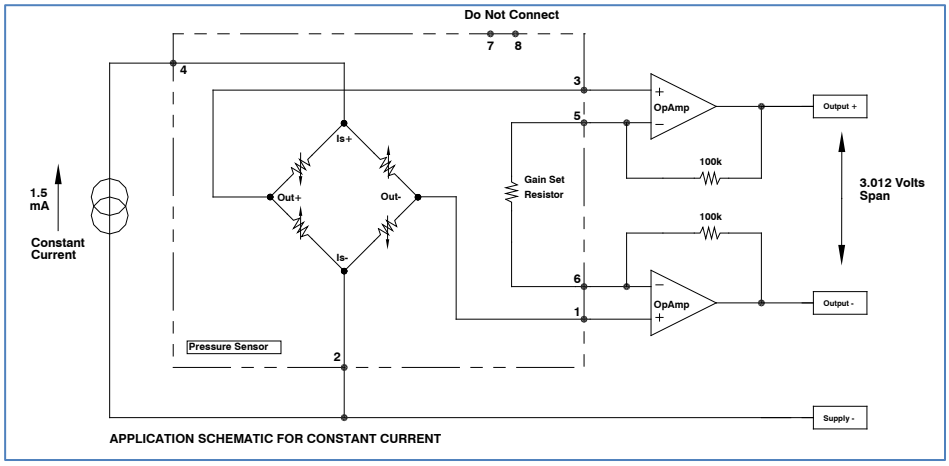
Reference Conditions: Vsupply: 1.500mA, Ta=25°C.

1. All specification at reference conditions unless otherwise noted. Output is ratio metric to supply voltage.
2. ½ Terminal Base Non Linearity (Measured at 0, 50% and 100% FS).
3. Full Scale Span output with sensor only. Field Interchangeability of 1% is guaranteed with use of Application Note.
4. Deviation between 50°C and 0°C expressed as percentage of reading at 25°C.
5. Deviation after 1 year period measured at reference conditions.
6. Exceeding Absolute Maximum Specification may damage the device. Extended exposure beyond the operating conditions may affect device reliability.

EQUIVALENT CIRCUIT

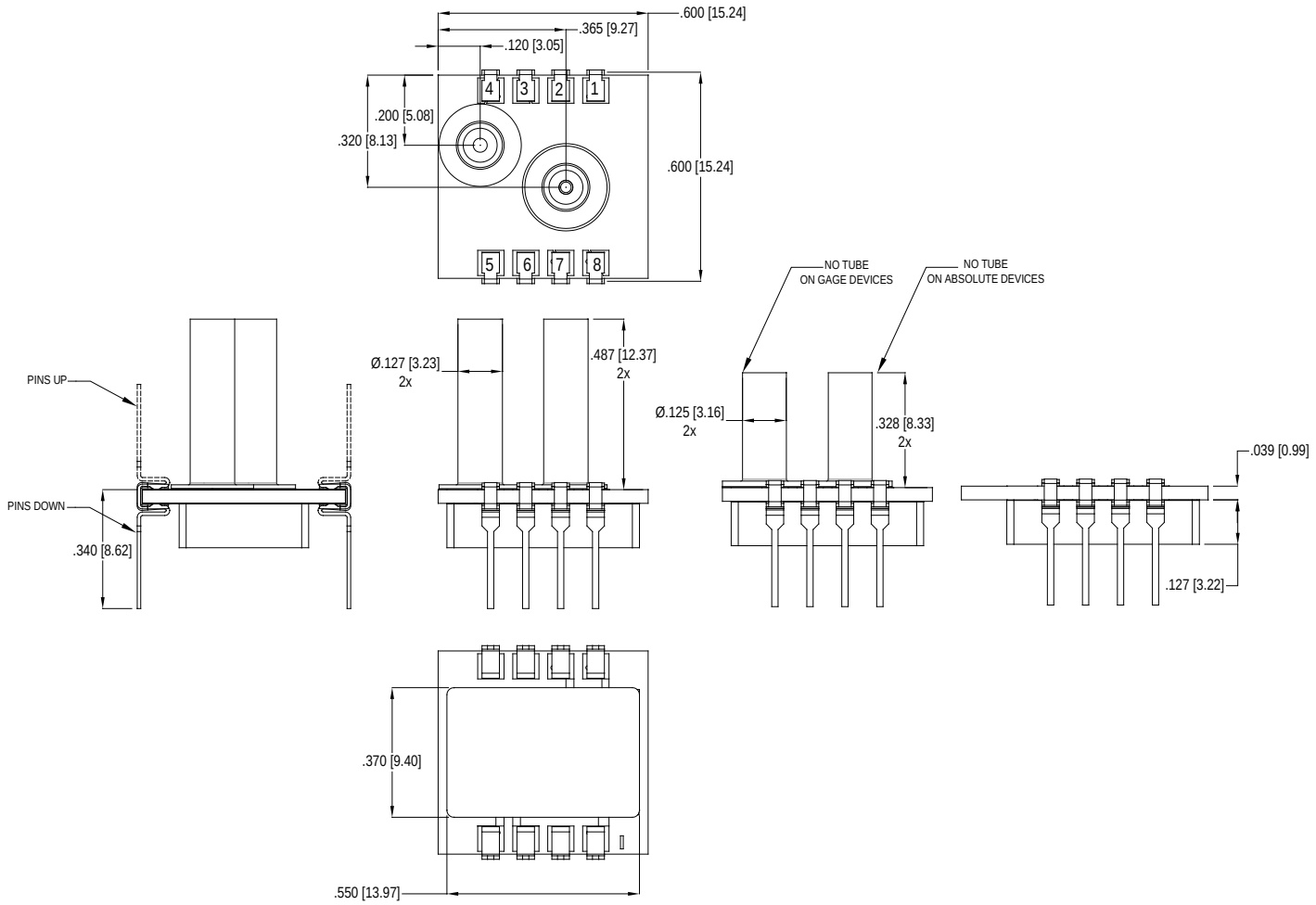


APPLICATION CIRCUIT



MECHANICAL DIMENSIONS in [mm]

LONG TUBE SHORT TUBE NO TUBE



PART NUMBERING FOR ORDERS

Series	Port Style	Pressure Range	Pressure Units	Pressure Type (Range Availability) [Package Availability]	Pin Orientation
CHT-2	NT=No Tube ST=Short Tube LT=Long Tube	001 002 005 015 030 050 100 150	P=PSI	A=Absolute (15,30,50,100,150) [NT,ST,LT] G=Gauge (All Ranges) [NT,ST,LT] D=Differential (All Ranges) [NT,ST,LT]	3= Down 1= Up

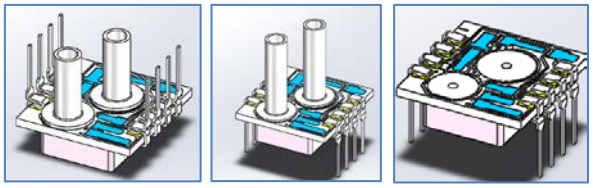
Part Number Example: HCT-2NT005PD3 0-5PSI Differential, No Tube, Pins Down, CHT-2 Product

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 buyer s 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.

AV Sensors
AdVanced Sensor Design and Manufacture

CHT-3 SERIES



CHT-3 Series
Dual In Line Package
mV Output, Temperature Compensated
Voltage Supply

DESCRIPTION

Advanced Sensor Ceramic Hybrid Technology (CHT) 3 Series is a temperature compensated, mV output, PCB mounted pressure sensor packaged in a rugged Dual In Line package. The Ceramic Hybrid Technology uses a silicon MEMS pressure sensor bound to a ceramic substrate containing thick film resistors that are uniquely laser trimmed for each sensor. Incorporating a flexible design, the CHT-3 Series is available with no, short or long tubes and can be mounted pins up or pins down to allow OEMs to optimize their board design. The CHT-2 series is powered using a constant voltage and when configured as in the Application Note, the integrated current set resistor will ensure sensor field interchangeability. The CHT-3 series superior die performance, coupled with rugged ceramic substrate ensures long term stability with superior temperature performance over a wide operating range.

APPLICATIONS

- Pneumatic controls
- Automotive diagnostics
- Medical equipment/instrumentation
- Air Speed and Altitude
- Environmental controls
- Barometric pressure measurement
- Factory Automation
- Process Controls

FEATURES

- 1% Field Interchangeability
- Constant Voltage
- Wide selection of port
- Absolute, Differential or Gage pressures
- Temperature Compensated
- 0.1% Pressure Non Linearity

SPECIFICATIONS

	Symbol	Min	Typical	Max	Unit	Note
Performance Characteristic						
Supply Voltage		0.5	1.5	2.0	mA	
Bridge Resistance, Input & Output		2500		6100	Ω	
Zero Pressure Offset		-2.0	±0.1	+2.0	mV	
Pressure Non Linearity		-0.1		+0.1	PSI	2
Hysteresis & Repeatability			0.05		%FSS	
Full Scale Span	FSS	75		150	mV	3
Temperature Hysteresis, Offset & Span		-0.20		+0.20	%FSS	4
Thermal Error of Span		-0.5		+0.5	%FSS	
Thermal Error of Offset		-0.5		+0.5	%FSS	
Response Time			100		µS	
Insulation Resistance		50			M Ω	
Long Term Stability, Offset & Span			±0.4		%FSS	5
Weight				0.3	grams	
Compensated Temperature		0 to 50			°C	
Operating Temperatures		-40 to 125			°C	

AV Sensors
AdVanced Sensor Design and Manufacture

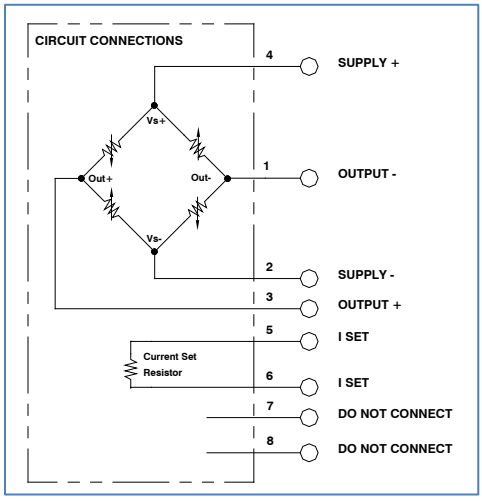
CHT-3 SERIES

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Absolute Maximum Conditions						6
Supply Voltage				3	mA	
Storage Temperature		-50		150	°C	
Overage Pressure						
Burst, Differential Pressure				3x	Range	
Burst , Gauge & Absolute Pressure				10x	Range	
Media Compatibility		CDA, Non Ionic, Non Corrosive Gases				
Wetted Materials		Ceramic, Epoxy, RTV, Silicon, Gold, Aluminum, Palladium Silver				

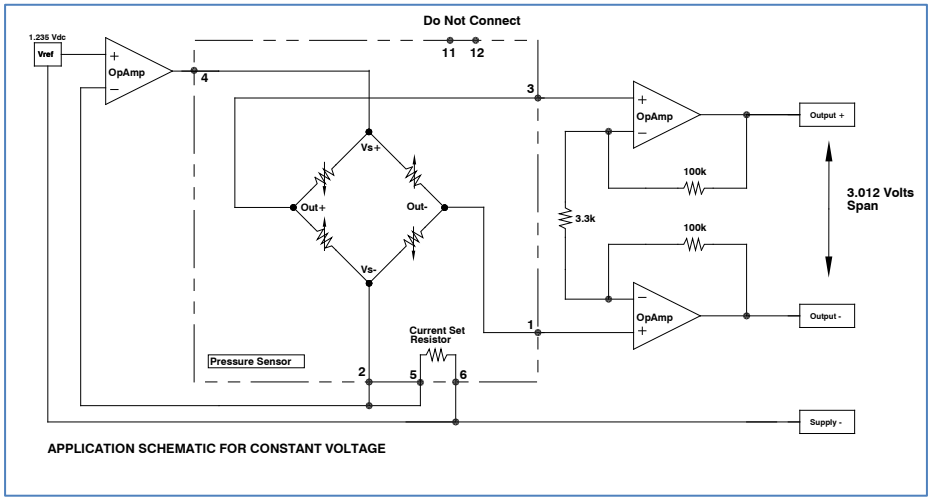
Reference Conditions: Vsupply: 1.500mA, Ta=25°C.

1. All specification at reference conditions unless otherwise noted. Output is ratio metric to supply voltage. The CHT -3 is identical to the CHT-2 except for the resistor value between pins 7 & 9.
2. ½ Terminal Base Non Linearity (Measured at 0, 50% and 100% FS).
3. Full Scale Span output with sensor only. Field Interchangeability of 1% is guaranteed with use of Application Note.
4. Deviation between 50°C and 0°C expressed as percentage of reading at 25°C.
5. Deviation after 1 year period measured at reference conditions.
6. Exceeding Absolute Maximum Specification may damage the device. Extended exposure beyond the operating conditions may affect device reliability.

EQUIVALENT CIRCUIT

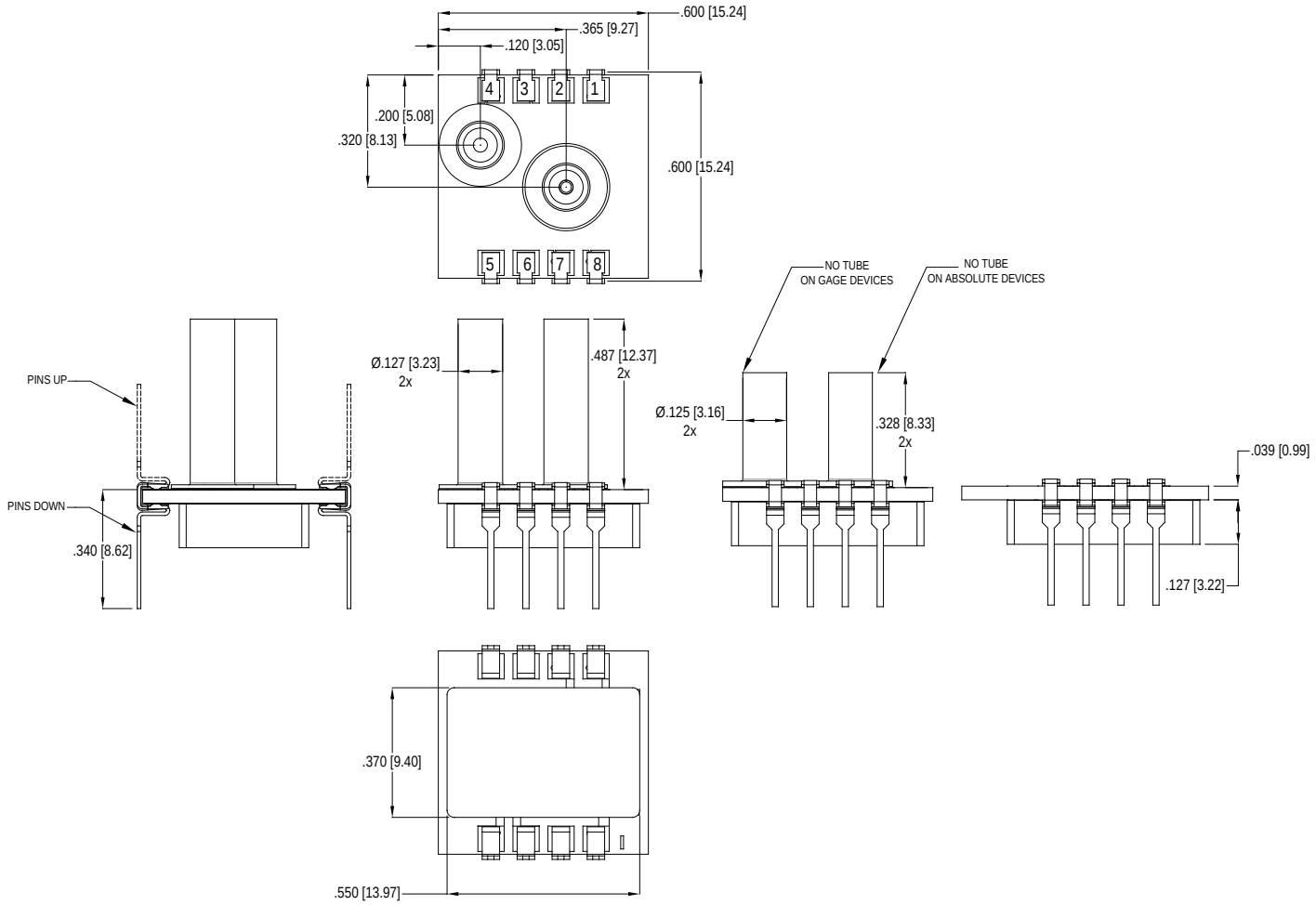


APPLICATION CIRCUIT



MECHANICAL DIMENSIONS in [mm]

LONG TUBE SHORT TUBE NO TUBE



PART NUMBERING FOR ORDERS

Series	Port Style	Pressure Range	Pressure Units	Pressure Type (Range Availability) [Package Availability]	Pin Orientation
CHT-3	NT=No Tube ST=Short Tube LT=Long Tube	002 005 015 030 050 100 150	P=PSI	A=Absolute (15,30,50,100,150) [NT,ST,LT] G=Gauge (All Ranges) [NT,ST,LT] D=Differential (All Ranges) [NT,ST,LT]	3= Down 1= Up

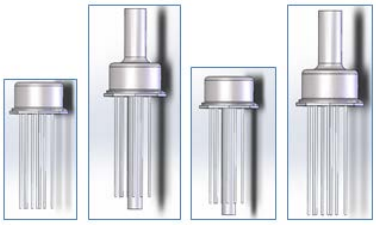
Part Number Example: CHT-3NT005PD3 0-5PSI Differential, No Tube, Pins Down, CHT-2 Product

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 buyer s 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.

AV Sensors
AdVanced Sensor Design and Manufacture

CTO-7 Series
Transistor Outline (TO-8)
mV Output, Temperature Compensated
Current Supply, Low Pressure



DESCRIPTION

Advanced Sensor Ceramic TO Technology (CTO) 7 Series is a temperature compensated, mV output, PCB mounted pressure sensor packaged in a rugged Transistor Outline 8 pin (TO-8) package. The CTO-7 Series uses a dual bossed *low pressure* silicon MEMS pressure sensor mounted to a TO header with a separately soldered ceramic substrate that is uniquely laser trimmed and matched to each sensor. Available in gage and differential pressures and four different package configurations allow OEMs to optimize their board design. The CTO-7 series is powered with constant current and when configured as in the Application Note, the integrated gain set resistor will ensure sensor field interchangeability. Altogether, the CTO-7 series superior die performance, coupled with rugged ceramic substrate ensures long term stability with superior temperature performance over a wide operating range.

APPLICATIONS

- Pneumatic controls
- Automotive diagnostics
- Medical equipment/instrumentation
- Dental equipment
- Environmental controls
- Barometric pressure measurement
- Altimeters
- Pneumatic controls

FEATURES

- 1% Field Interchangeability
- inH20 ranges
- Wide selection of ports
- Differential or Gage pressures
- Temperature Compensated
- Linear High Output

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Performance Characteristic (PSI Ranges)						
Supply Voltage		0.5	1.5	2.0	mA	
Bridge Resistance, Input & Output		2500		6100	Ω	
Zero Pressure Offset		-2.0	±0.1	+2.0	mV	
Pressure Non Linearity		-0.1		+0.1	PSI	2
Hysteresis & Repeatability			0.05		%FSS	
Full Scale Span	FSS	65		150	mV	3
Temperature Hysteresis, Offset & Span		-	±0.1	+	%FSS	4
Thermal Error of Span		-1.0		+1.0	%FSS	
Thermal Error of Offset		-1.0		+1.0	%FSS	
Response Time			100		µS	
Insulation Resistance		50			M Ω	
Long Term Stability, Offset & Span			±0.2		%FSS	5
Weight				3	grams	
Compensated Temperature		0 to 50			°C	
Operating Temperatures		-40 to 125			°C	

AV Sensors
AdVanced Sensor Design and Manufacture

CTO-7 SERIES

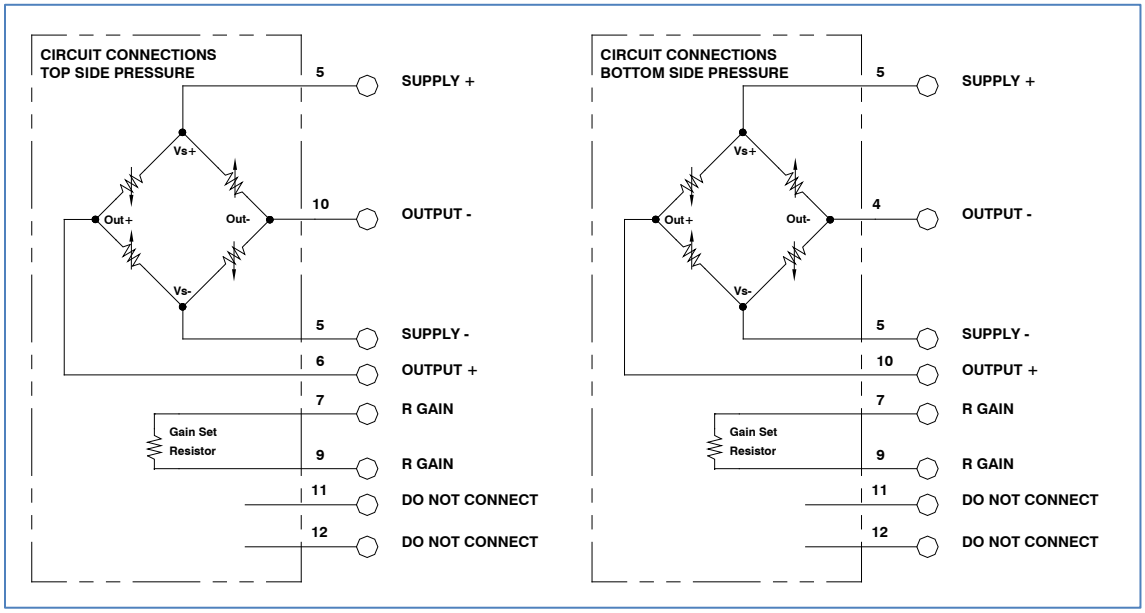
SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Performance Characteristic (inH20)						
Supply Voltage		0.5	1.5	2.0	mA	
Bridge Resistance, Input & Output		2500		6100	Ω	
Zero Pressure Offset		-4.0	±0.1	+4.0	mV	
Pressure Non Linearity		-0.1		+0.1	PSI	2
Hysteresis & Repeatability			0.05		%FSS	
Full Scale Span (20inH20)	FSS	45		70	mV	3
Full Scale Span (10inH20)	FSS	30		80	mV	3
Temperature Hysteresis, Offset & Span		-	±0.5	+	%FSS	4
Thermal Error of Span		-2.5		+2.4	%FSS	
Thermal Error of Offset		-2.5		+2.5	%FSS	
Response Time			100		µS	
Insulation Resistance		50			M Ω	
Long Term Stability, Offset & Span			±0.4		%FSS	5
Weight				3	grams	
Compensated Temperature		0 to 50			°C	
Operating Temperatures		-40 to 125			°C	

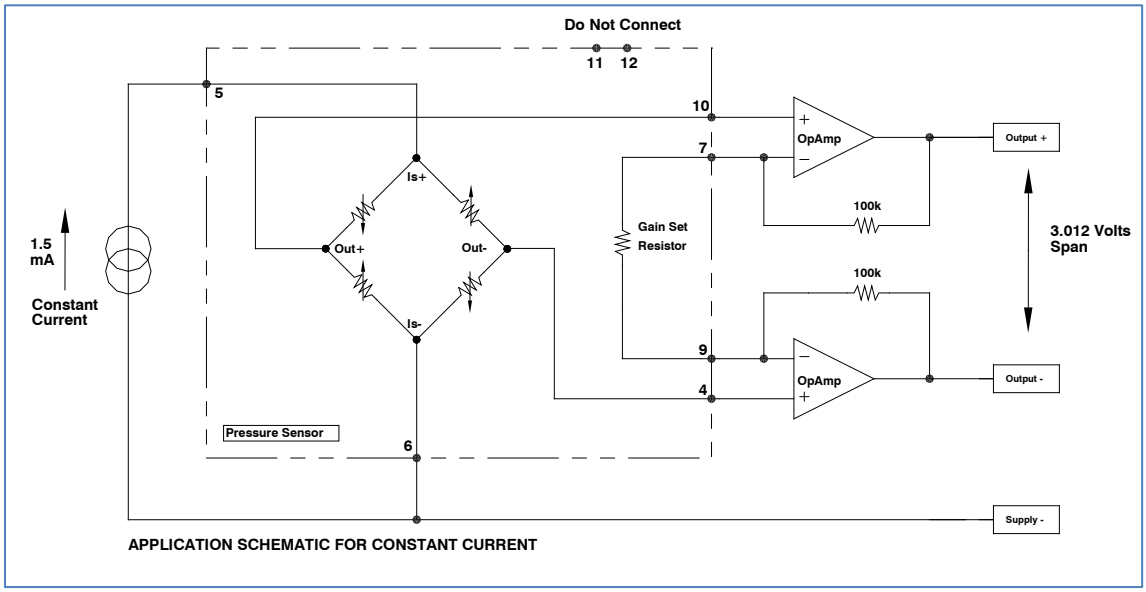
SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Absolute Maximum Conditions						5
Supply Voltage				3	mA	
Storage Temperature		-50		150	°C	
Overage Pressure						
Burst, Differential & Gage, Top Side				10x	Range	
Burst, Differential & Gage, Back Side				5x	Range	
Media Compatibility		CDA, Non Ionic, Non Corrosive Gases				
Wetted Materials		Top Port: RTV, Silicon, Glass, Nickel, Gold Bottom Port: RTV, Silicon, Glass, Gold				

Reference Conditions: Vsupply: 1.500mA, Ta=25°C. Pressure applied to top side of pressure port.

1. All specification at reference conditions unless otherwise noted. Output is ratio metric to supply voltage.
2. ½ Terminal Base Non Linearity (Measured at 0, 50% and 100% FS) measured from front side.
3. Full Scale Span output with sensor only. Field Interchangeability of 1% is guaranteed with use of Application Note.
4. Deviation between 50°C and 0°C expressed as percentage of reading at 25°C.
5. Deviation after 1 year period measured at reference conditions.
6. Exceeding Absolute Maximum Specification may damage the device. Extended exposure beyond the operating conditions may affect device reliability.

EQUIVALENT CIRCUIT APPLICATION CIRCUIT

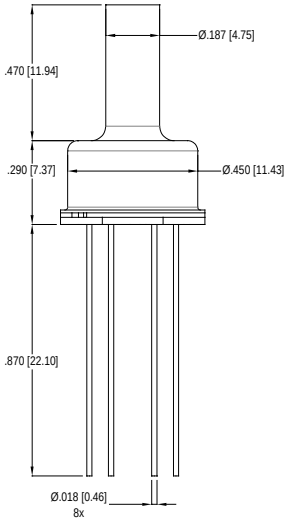




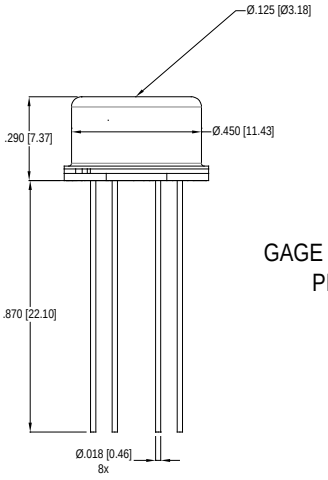
APPLICATION SCHEMATIC FOR CONSTANT CURRENT

MECHANICAL DIMENSIONS in [mm]

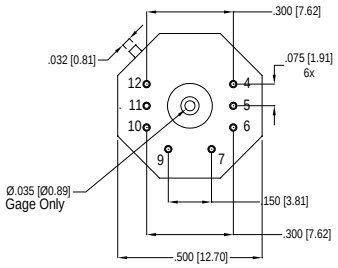
SINGLE TUBE



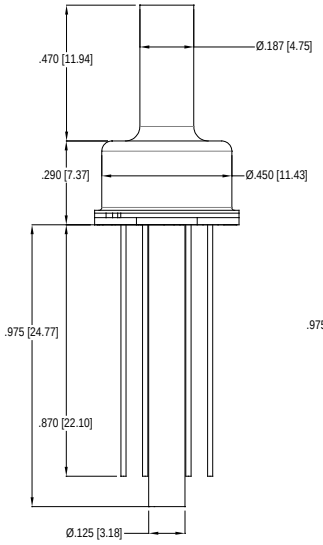
CAN



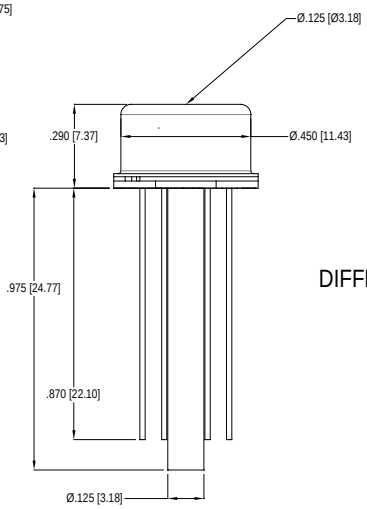
GAGE AND ABSOLUTE PRESSURES



DUAL TUBE



CAN & TUBE



DIFFERENTIAL AND GAGE (BACKSIDE) PRESSURES

PART NUMBERING FOR ORDERS

Series	Port Style	Pressure Range	Pressure Units	Pressure Type (Range Availability) [Package Availability]	-Options
CTO-7	ST=Single Tube CN=Can DT=Dual Tube CT-Can & Tube	001	P=PSI	G=Gauge (All Ranges) [ST, CN, DT, CT] D=Differential (All Ranges) [DT, CT]	-GC = Gel Coat
		010 020	H=inH20		

Part Number Example: CTO-7CT001PD-GC **0-1PSI Differential Can & Tube Port, Gel Coat**

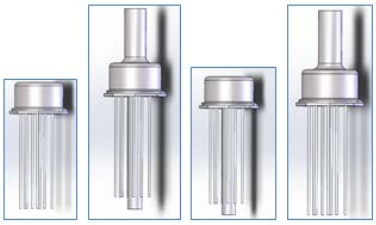
WARRANTY

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 buyer s 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.

AV Sensors
AdVanced Sensor Design and Manufacture

CTO-8 SERIES

CTO-8 Series
Transistor Outline (TO-8)
mV Output, Temperature Compensated
Current Supply, PSI Ranges



DESCRIPTION

Advanced Sensor Ceramic TO Technology (CTO) 8 Series is a temperature compensated, mV output, PCB mounted pressure sensor packaged in a rugged Transistor Outline 8 pin (TO-8) package. The CTO-8 Series uses a silicon MEMS pressure sensor mounted to a TO header with a separately soldered ceramic substrate that is uniquely laser trimmed and matched to each sensor. Available in gage, absolute and differential pressures and four different package configurations allow OEMs to optimize their board design. The CTO-8 series is powered with constant current and when configured as in the Application Note, the integrated gain set resistor will ensure sensor field interchangeability. Altogether, the CTO-8 series superior die performance, coupled with rugged ceramic substrate ensures long term stability with superior temperature performance over a wide operating range.

APPLICATIONS

- Pneumatic controls
- Automotive diagnostics
- Medical equipment/instrumentation
- Dental equipment
- Environmental controls
- Barometric pressure measurement
- Altimeters
- Pneumatic controls

FEATURES

- 1% Field Interchangeability
- Constant Current
- Wide selection of port
- Absolute, Differential or Gage pressures
- Temperature Compensated
- 0.1% Pressure Non Linearity

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Performance Characteristic						
Supply Voltage		0.5	1.5	2.0	mA	
Bridge Resistance, Input & Output		2500		6100	Ω	
Zero Pressure Offset		-2.0	±0.1	+2.0	mV	
Pressure Non Linearity		-0.1		+0.1	PSI	2
Hysteresis & Repeatability			0.05		%FSS	
Full Scale Span	FSS	75		150	mV	3
Temperature Hysteresis, Offset & Span		-0.20		+0.20	%FSS	4
Thermal Error of Span		-0.5		+0.5	%FSS	
Thermal Error of Offset		-0.5		+0.5	%FSS	
Response Time			100		µS	
Insulation Resistance		50			M Ω	
Long Term Stability, Offset & Span			±0.2		%FSS	5
Weight				0.3	grams	
Compensated Temperature		0 to 50			°C	
Operating Temperatures		-40 to 125			°C	

AV Sensors
AdVanced Sensor Design and Manufacture

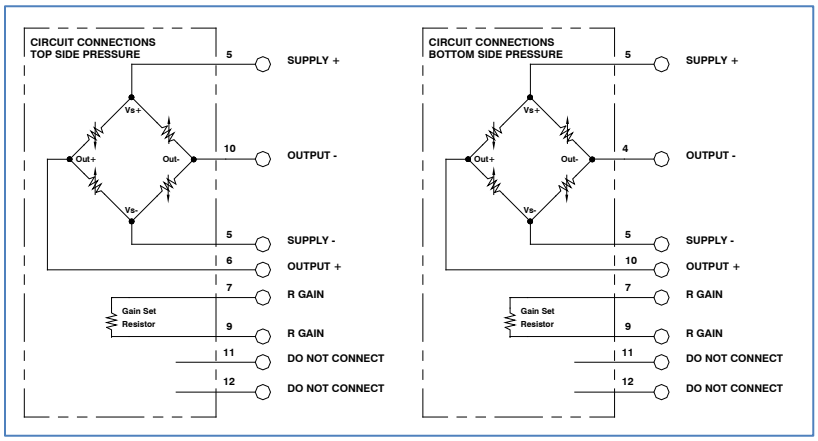
CTO-8 SERIES

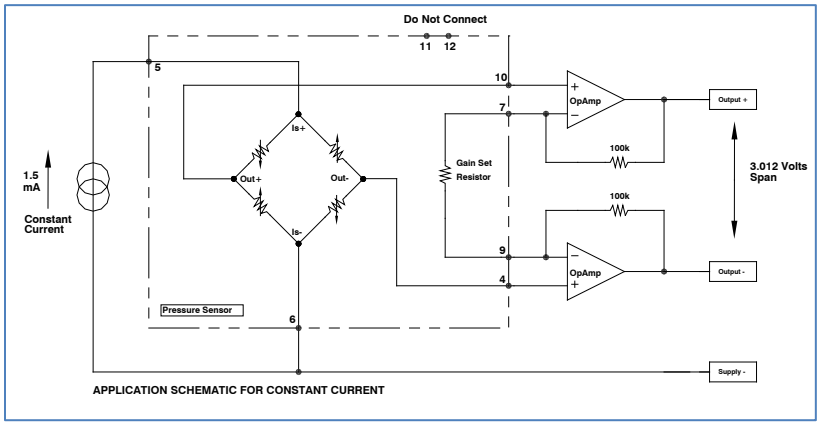
SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Absolute Maximum Conditions						5
Supply Voltage				3	mA	
Storage Temperature		-50		150	°C	
Overage Pressure						
Burst, Differential Pressure				3x	Range	
Burst , Gauge & Absolute Pressure				10x	Range	
Media Compatibility		CDA, Non Ionic, Non Corrosive Gases				
Wetted Materials		Top Port: RTV, Silicon, Glass, Nickel, Gold Bottom Port: RTV, Silicon, Glass, Gold				

Reference Conditions: Vsupply: 1.500mA, Ta=25°C. Pressure applied to top side of pressure port.

1. All specification at reference conditions unless otherwise noted. Output is ratio metric to supply voltage.
2. ½ Terminal Base Non Linearity (Measured at 0, 50% and 100% FS) measured from front side. .
3. Full Scale Span output with sensor only. Field Interchangeability of 1% is guaranteed with use of Application Note.
4. Deviation between 50°C and 0°C expressed as percentage of reading at 25°C.
5. Deviation after 1 year period measured at reference conditions.
6. Exceeding Absolute Maximum Specification may damage the device. Extended exposure beyond the operating conditions may affect device reliability.

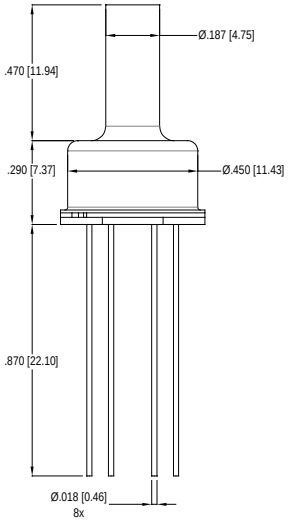
EQUIVALENT CIRCUIT APPLICATION CIRCUIT



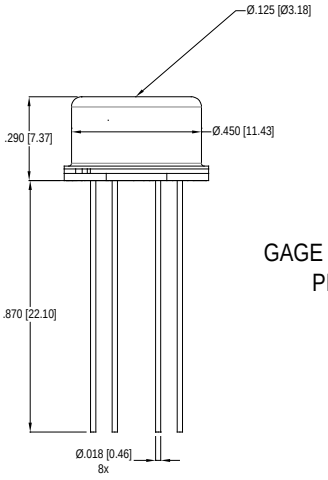


MECHANICAL DIMENSIONS in [mm]

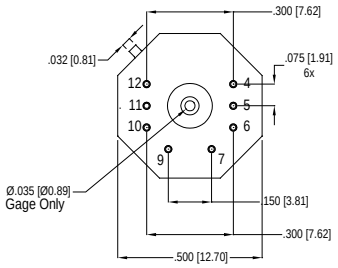
SINGLE TUBE



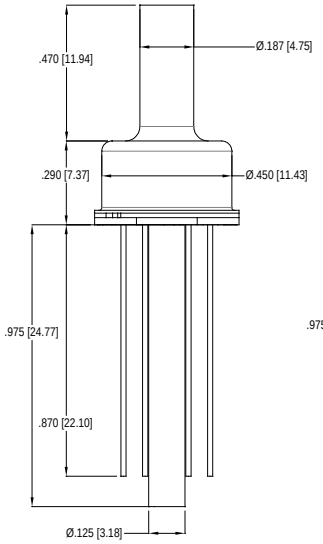
CAN



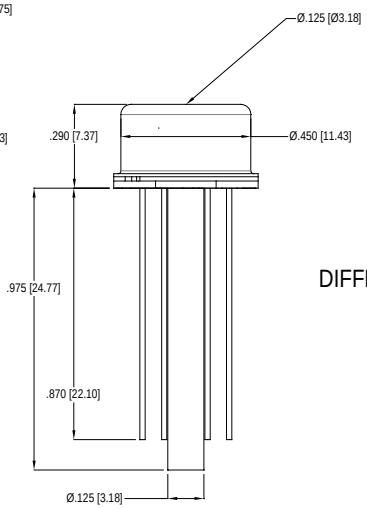
GAGE AND ABSOLUTE PRESSURES



DUAL TUBE



CAN & TUBE



DIFFERENTIAL AND GAGE (BACKSIDE) PRESSURES

AV Sensors
AdVanced Sensor Design and Manufacture

CTO-8 SERIES

PART NUMBERING FOR ORDERS

Series	Port Style	Pressure Range	Pressure Units	Pressure Type (Range Availability) [Package Availability]	-Options
CTO-8	ST=Single Tube CN=Can DT=Dual Tube CT-Can & Tube	002 005 015 030 050 100 150	P=PSI	A=Absolute (15,30,50,100,150) [ST,CN] G=Gauge (All Ranges) [ST, CN, DT, CT] D=Differential (2,5,15) [DT, CT]	-GC = Gel Coat

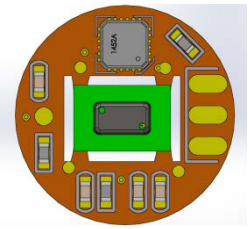
Part Number Example: CTO-8CT002PD 0-2PSI Differential Can & Tube Port, No Gel Coat

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 buyer s 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.

AV Sensors
AdVanced Sensor Design and Manufacture

FRT-1 SERIES



FRT-1 Series
FR4 Disc
High Level Analog, Fully Compensated
High Accuracy, OEM Assembly

DESCRIPTION

Advanced Sensors Fiberglass Reinforced Technology (FRT) 1 Series incorporates a rugged silicon MEMS pressure sensor that is designed to measure barometric pressures within a small FR4 footprint. The sensor outputs a proportional voltage from 0.5 to 4.5Vddc within barometric pressure of 800 to 1100mBar. The sensor incorporates an application specific integrated circuit (ASIC) with a full analog path that ensures a wide dynamic output can be monitored at 15kHz in high speed train applications. The sensor is highly accurate with total errors less than 0.20% TEB over a wide temperature range. The sensor is ideal for many barometric applications where high accuracy and full bandwidth are needed .

APPLICATIONS

- High Speed Trains
- High Accuracy Weather Station
- OEM Custom Product

FEATURES

- 0.5 to 4.5Vdc Output
- Wide Temperature Range
- Highly Accurate, 0.20% TEB
- Absolute Pressures
- ±16Vdc Voltage Protection
- Small FR4 Footprint

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Performance Specifications						
Supply Voltage		4.5	5.0	5.5	Vdc	1
Supply Current			3.2		mA	
Input Pressure Range		800		1100	mBar A	
Output Voltage at 800mBar			0.5		Vdc	
Output Voltage at 1100mBar			4.5		Vdc	
Accuracy, Total Error Band		-0.20	0.12	0.20	%FSS	2
Compensated Temperature Range		-20		50	°C	
Operating Temperatures		-40 to 100			°C	

AV Sensors
AdVanced Sensor Design and Manufacture

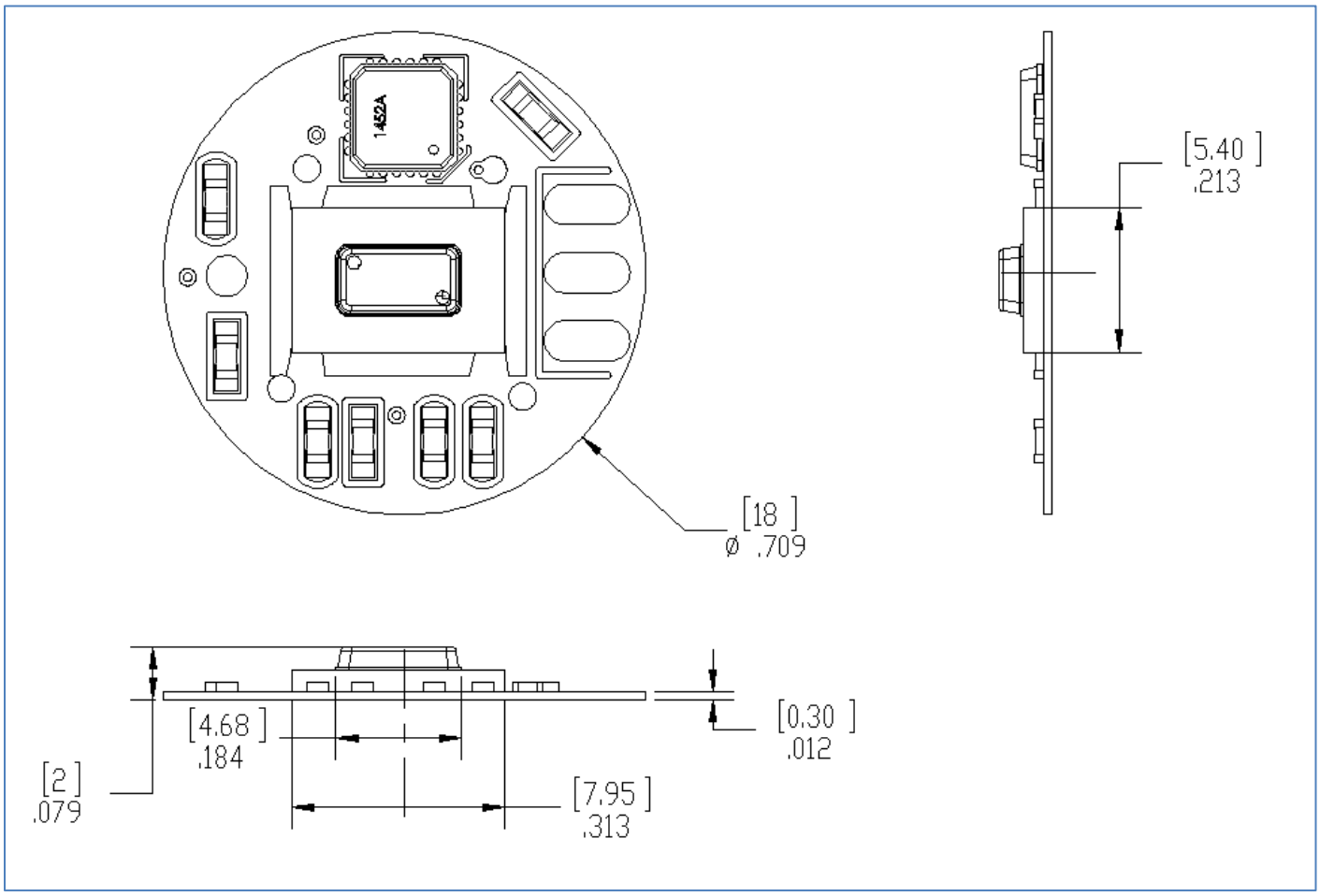
FRT-1 SERIES

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Absolute Maximum Conditions						
Supply Voltage				6	V	
Storage Temperature		-40		125	°C	
Media Compatibility		CDA, Non Ionic, Non Corrosive Gases				

Reference Conditions: Vsupply: 5.00Vdc, Ta=25°C. .

1. All specification at reference conditions unless otherwise noted. Output is ratio metric to supply voltage.
2. Total errors over the Input Pressure Range and within the Compensated Temperature Range. Errors include calibration errors, hysteresis, pressure nonlinearity and temperature errors with the compensated temperature range.

MECHANICAL DIMENSIONS in [mm]



PART NUMBERING FOR ORDERS

Series	Port Style	Pressure Range	Options
FRT-1	CR= Circular FR4 Disc	00= 800-1100 01= 600-1100 02= 800-1300 04= 600-1300	-C4 = 4M Cable

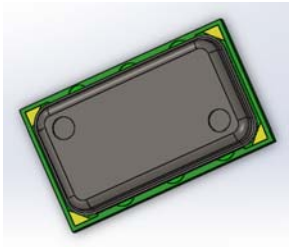
Part Number Example: RFT-1CR01 **600-1100 mBar, Circular FR4 Disc, no cable**

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 buyer s 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.

AV Sensors
AdVanced Sensor Design and Manufacture

MCT-1D SERIES



MCT-1D Series
QFN Package
Advanced 16bit Digital Altimeter
Digital Pressure & Temperature

DESCRIPTION

Advanced Sensors Multi Chip Technology (MCT) 1D Series incorporates the latest mixed signal ASIC (Application Specific Integrated Circuit) with a bonded silicon gage to provide a leading edge *altimeter* for the consumer industry. The MCT 1D Series provides a 16bit digital pressure and 14bit temperature output offered in SPI and I^2C protocols. The advanced design requires *no* external calculation since a fully integrated 18bit digital signal processor (DSP) performs an error correction algorithm. The ASIC's next generation low power stage can reduce sleep state currents to 50nA making it the ideal choice for OEM designing low power battery applications.

APPLICATIONS

- Mobile Altimetry
- High Accuracy Weather Station
- Sport Devices

FEATURES

- Internal Error Correction
- Low Power Sleep Stage
- Highly Accuracy
- Digital Pressure and Temperature
- Low Supply Voltage
- Small QFN 5x3 Footprint

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Performance Specifications						
Supply Voltage		1.8V	3.	3.6	V	
Operating Pressure Range	Pmin, Pmax	300			1100	
Current Consumption				2	mA	
Pressure Resolution				16	bits	
Temperature Resolution				14	bits	
Output at Pmin			6553		cts	
Output at Pmax			58982		cts	
Relative Pressure Accuracy		-0.5		0.5	mbar	2
Absolute Pressure Accuracy		-1.5		1.5	mbar	3
Temperature Accuracy			2.5		°C	4
3sigma Noise			.06		mBar	
Conversion Time			200		mS	5
Power to 1st Command				1	mS	6
Power to 1st Measurement				2.5	mS	7
Sleep to Wake State				0.5	mS	8
Sleep to Active Measurement				2	mS	9
Weight				3		
Compensated Temperature		20 to 50			°C	
Operating Temperature		-40 to 110			°C	

AV Sensors
AdVanced Sensor Design and Manufacture

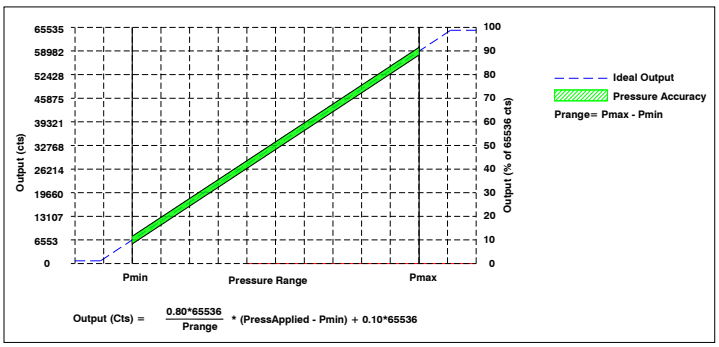
MCT-1D SERIES

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Absolute Maximum Conditions						
Supply Voltage		-0.4		3.65	V	
Storage Temperature		-50		125	°C	
ESD Immunity				4kV		MIL 883, Method 3015

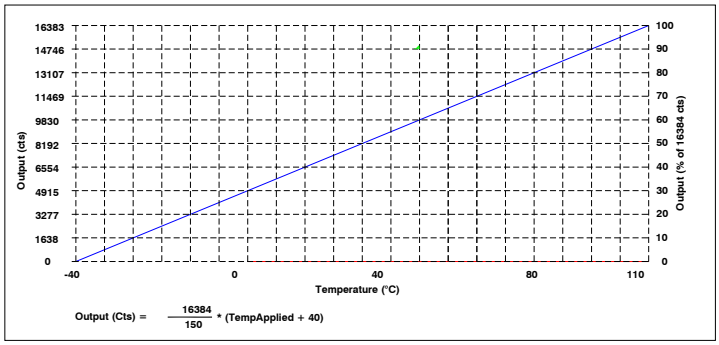
Reference Conditions: Vsupply: 3.00Vdc, Ta=25°C. .

1. All specification at reference conditions unless otherwise noted. .
2. From 700 to 1100mBar after Autozero at reference conditions.
3. Over operating pressure and temperature compensation range.
4. Over compensated temperature range.
5. The time from Power On to first command.
6. The time from Power On to first measurement.
7. The wake time from Sleep
8. The time from Sleep to first measurement.
8. Exceeding Absolute Maximum Specification may damage the device. Extended exposure beyond the operating conditions may affect device reliability

PRESSURE AND TEMPERATURE TRANSFER FUNCTIONS

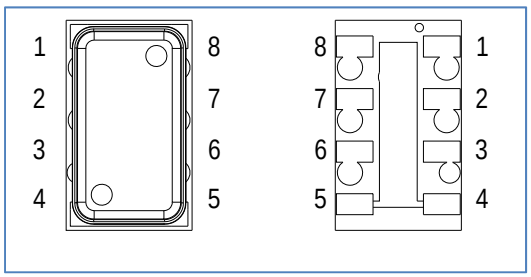


Pressure Transfer Function



Temperature Transfer Function

ELECTRICAL CONNECTIONS

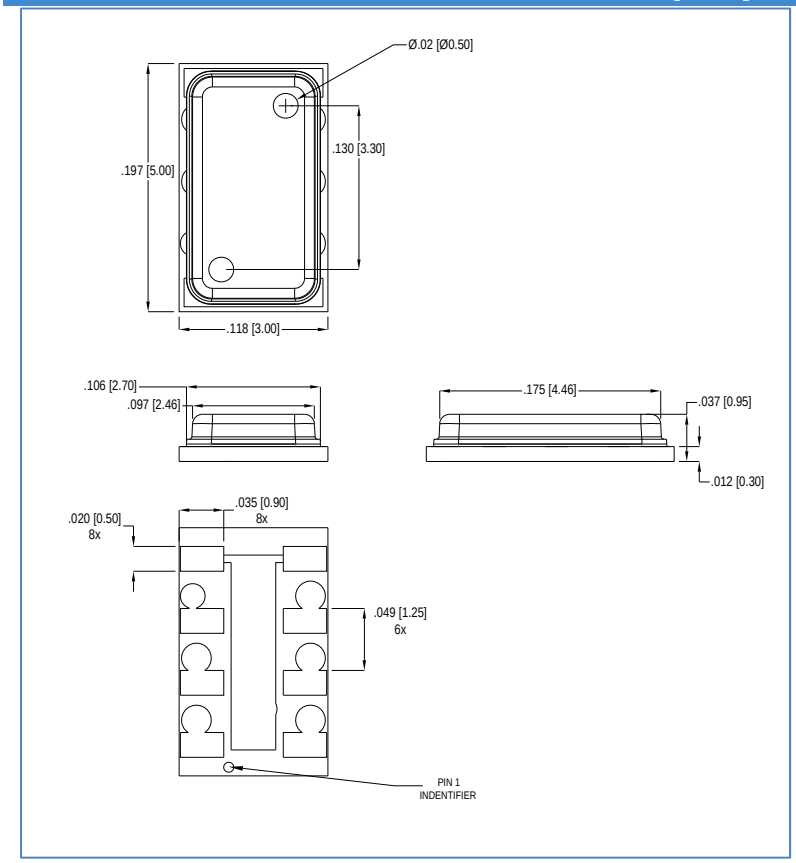


Pin	Function
1	Vdd
2	No Connection
3	Gnd
4	No Connection
5	No Connection
6	INT/SS
7	SDA/MISO
8	SCLK

AV Sensors
AdVanced Sensor Design and Manufacture

MCT-1D SERIES

MECHANICAL DIMENSIONS in [mm]



PART NUMBERING FOR ORDERS

Series	Port Style	Pressure Range	Digital Protocol, Address
MCT-1D	ML= Metal Lid	00= 300-1100	I1=I2C, 0x28H I2=I2C, 0x36H I3=I2C, 0x46H S1=SPI

Part Number Example: MCT-1D ML00I1 **300-1100 mBar, Metal Lid, I2C Protocol, 0x28H Address**

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 buyer s 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.

AV Sensors
AdVanced Sensor Design and Manufacture

MCT-2A SERIES

The MCT-2A Series
ASIC Compensated
Wide Temperature Range
Multiple Industry Applications

DESCRIPTION

Advanced Sensors Multi Chip Technology (MCT) 2A Series incorporates the latest mixed signal ASIC (Application Specific Integrated Circuit) with a *low pressure* bossed silicon MEMS sensor to provide a high level, temperature compensated transducer. Two electrical outputs ranges with bidirectional or unidirectional pressure types and 3/16in barb ports make it the ideal choice for HVAC or Air Flow measurement applications. The package offers snap tabs for attachment to PCB assemblies and can be easily soldered with only 3 electrical contacts.

APPLICATIONS

- Blocked Filter Detection
- Cabinet Pressure
- Isolation Rooms Control
- Fan Pressure
- Glove Box Pressure

FEATURES

- 1/8in ID Tubing
- ASIC Temperature Compensated
- Two Output Voltage Ranges
- 1% Accuracy
- Minimal Position Stability
- Simple Attachment to PCB

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Performance Specifications						
Supply Voltage	V_{supply}	2.7	3.30	5.5	V	
Current Consumption				3	mA	
Output DAC Resolution				12	bits	
Output Type 1						
Output at Pmin			10%		V_{supply}	
Output at Pmax			90%		V_{supply}	
Output Type 2						
Output at Pmin			5%		V_{supply}	
Output at Pmax			95%		V_{supply}	
Pressure Accuracy		-0.50		0.50	%FSS	2
Total Error Band	TEB	-1.0		1.0	%FSS	3
Long Term Stability			±0.4		%cts	
Conversion Time			1.0		mS	4
Power On to Valid Data				<10	mS	5
Weight				12	grams	
Compensated Temperature		10 to 60			°C	

AV Sensors
AdVanced Sensor Design and Manufacture

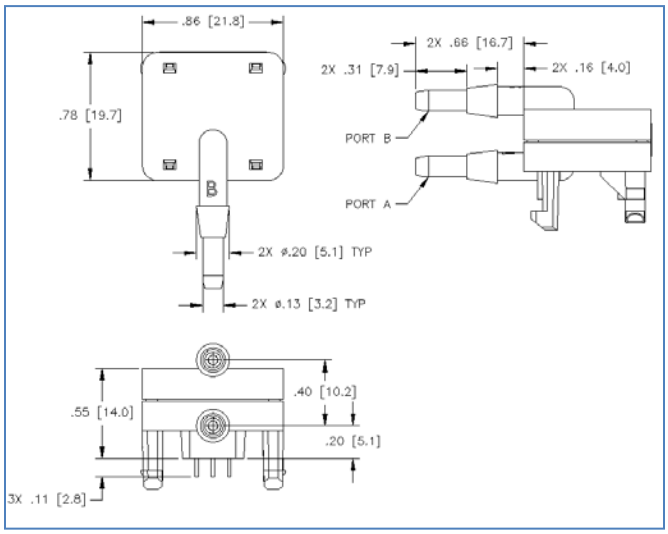
MCT-2A SERIES

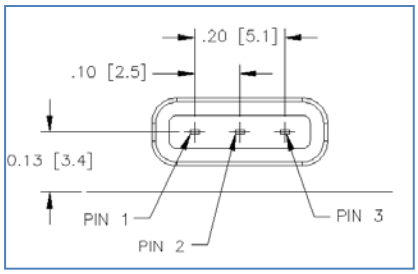
SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Absolute Maximum Conditions						
Supply Voltage				6.5	V	
Storage Temperature		-20		105	°C	
Overage Pressure						
<=10inH20		5			PSI	
> 10inH20 < 1 psi		7			PSI	
>=1 psi		10			PSI	
Common Mode Pressure				10	PSI	
Media Compatibility		CDA, Non Ionic, Non Corrosive Gases				

Reference Conditions: Vsupply: 3.30Vdc, Ta=25°C. Port A=Positive Pressure.

1. All specification at reference conditions unless otherwise noted. Output is ratio metric to supply voltage.
2. Maximum deviation from a Best Fit Straight Line through Pmin and Pmax measured at 25°C. Errors included Pressure Non Linearity, Pressure Hysteresis and Repeatability.
3. Maximum deviation from the Ideal Transfer Function expressed as a percentage of the %FSS over the compensated temperature range. Includes calibration errors (Offset & Span), temperature errors (Offset & Span), pressure non-linearity, pressure and thermal hysteresis. V_{supply}
4. The time for the output DAC to be updated with new data.
5. The time for the output DAC to have valid data after a power on reset.

MECHANICAL DIMENSIONS in [mm]





Series	Pressure range (psi)	Pressure Units	Pressure Type (Range Availability)	Calibrated Voltage	Output Type
MCT-2A	002 005 010 015 030	W=inH20	U= Unidirectional (005,010,015,030) B=Bidirectional (All Ranges)	3=3.3Vdc 5=5.0Vdc	1=10-90%Vdd 2=5-95%Vdd
	001	P=PSI	U= Unidirectional (All Ranges) B=Bidirectional (All Ranges)		
	004 010 020 050 100	M=mBar	U= Unidirectional (010,015,030) B=Bidirectional (All Ranges)		

Part Number Example: MCT-2A-005WD31, ±5inH20, Bidirectional, 0.30 to 3.00Vdc Output,

WARRANTY

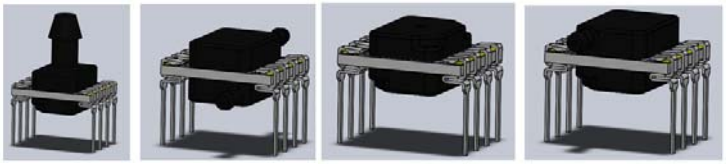
Pressure sensors have a limited one-year warranty to the original purchaser. AVSensors will repair or replace, at its option, without charge those items it finds defective. This is the buyer s sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability 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.

AV Sensors
AdVanced Sensor Design and Manufacture

MCT-4A SERIES

The MCT-4A Series
Dual & Single In Line Package (SIL & DIL)
High Level Analog Output
3.3 & 5.0 Vdc Supply Voltages



DESCRIPTION

Advanced Sensors Multi Chip Technology (MCT) 4A Series incorporates the latest mixed signal ASIC (Application Specific Integrated Circuit) with a bonded silicon gage to provide a high level analog output for medical, life science and pneumatic control industries. The designs superior performance provides 1% Total Error across a wide temperature range of -10 to 85°C. The ASIC's advanced design allows for the sensor output to be limited for safety critical operations with internal error checking of the sensor's input and output lines. With all the advanced features, the MCT-4A series is the ideal choice for OEM customers.

APPLICATIONS

- Pneumatic controls
- Automotive diagnostics
- Medical equipment/instrumentation
- Air Speed and Altitude
- Environmental controls
- Barometric pressure measurement
- Factory Automation
- Process Controls

FEATURES

- Ratiometric, Analog Voltage Output
- Low Power Option
- 3.3 & 5.0Vdc Supply Voltages
- Low Overall Errors, 1%TEB
- Many Port Configurations
- Custom Outputs and Ranges Available

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Performance Specifications						
Supply Voltage		2.7V	3.3	5.50	V	
Current Consumption				3	mA	
Pressure Accuracy		-0.25		0.25	mA	2
Total Error Band	TEB	-1.0		1.0	%FSS	3
Output DAC Resolution				12	bits	
Output (Type 1) at Pmin			10		%Vdd	
Output (Type 1) at Pmax			90		%Vdd	
Output (Type 2) at Pmin			5		%Vdd	
Output (Type 2) at Pmax			95		%Vdd	
Conversion Time			1.0		mS	4
Power On to Valid Data				<10	mS	5
Weight				3	grams	
Compensated Temperature		-10 to 85			°C	6
Operating Temperature		-40 to 125			°C	6

AV Sensors
AdVanced Sensor Design and Manufacture

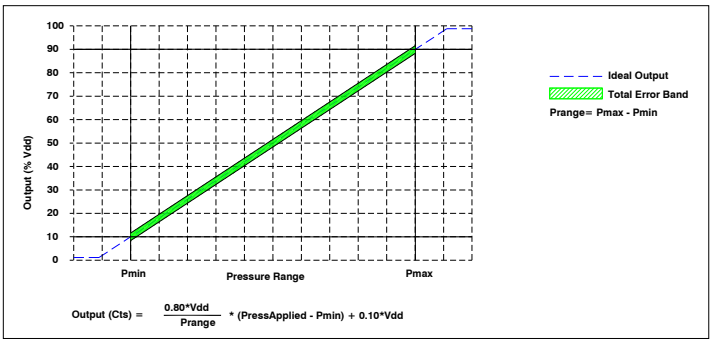
MCT-4A SERIES

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Absolute Maximum Conditions						10
Supply Voltage		-5.0		6	V	
Storage Temperature		-50		150	°C	
Package Integrity, Common Mode				300	psi	7
Proof Pressure				3x		8
Burst Pressure				5x		9
Media Compatibility		CDA, Non Ionic, Non Corrosive Gases				
Wetted Materials		Ceramic, RTV, Epoxy, Silicon, Gold, Aluminum, LCP				

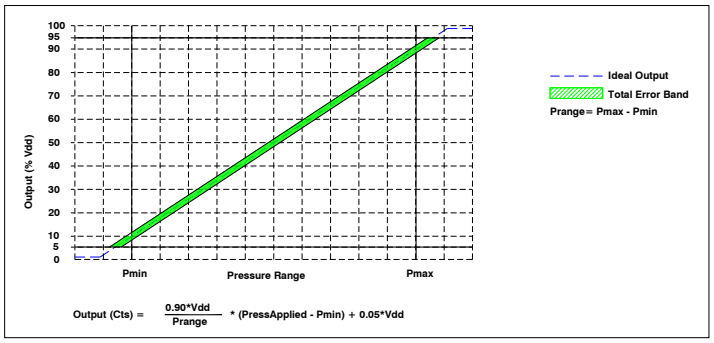
Reference Conditions: Vsupply: 3.30Vdc or 5.00, Ta=25°C, Positive Pressure Port A

1. All specification at reference conditions unless otherwise noted.
2. Maximum deviation from a Best Fit Straight Line through Pmin and Pmax measured at 25°C. Errors included Pressure Non Linearity, Pressure Hysteresis and Repeatability.
3. Maximum deviation from the Ideal Transfer Function expressed as a percentage of the %FSS over the compensated temperature range. Includes calibration errors (Offset & Span), temperature errors (Offset & Span), pressure non-linearity, pressure and thermal hysteresis. TEB Errors for mBar Ranges below
4. The time for the output DAC to be updated with new data.
5. The time for the output DAC to have valid data after a power on reset.
6. Compensated and operating temperature for mBar ranges are 0°C to 60°C and -20°C – to 105°C, respectively.
7. Maximum pressure the sensor package can withstand without rupture.
8. Maximum pressure without degrading sensor's performance specifications.
9. Maximum pressure the silicon diaphragm can withstand without rupture.
10. Exceeding Absolute Maximum Specification may damage the device. Extended exposure beyond the operating conditions may affect device reliability.

PRESSURE TRANSFER FUNCTIONS



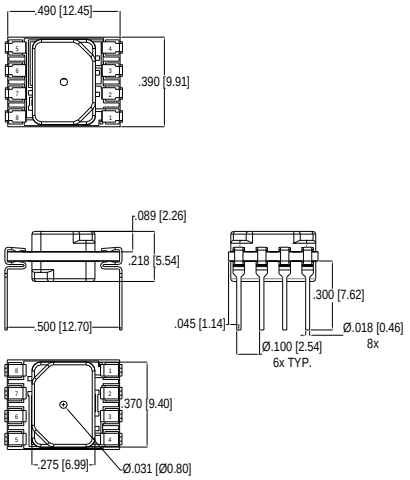
Type 1, 10-90%, Pressure Transfer Function



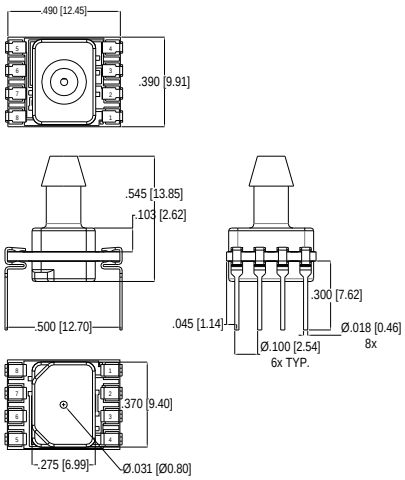
Type 2, 5-95%, Pressure Transfer Function

MECHANICAL DIMENSIONS in [mm]

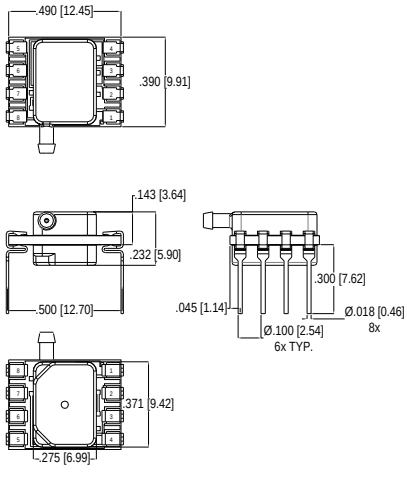
DUAL IN LINE, THRU HOLE



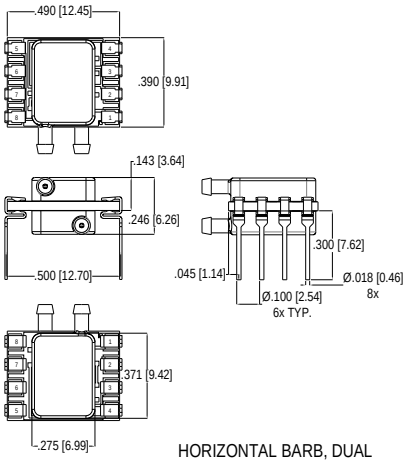
VERTICAL HOLE, DUAL



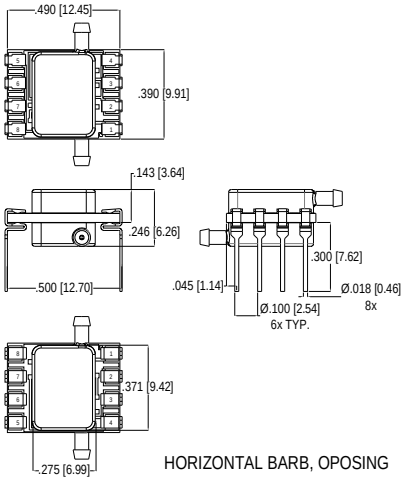
VERTICAL BARB, TOP



HORIZONTAL BARB, TOP



HORIZONTAL BARB, DUAL

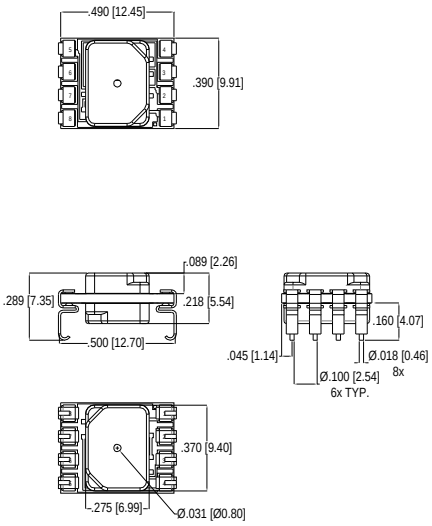


HORIZONTAL BARB, OPOSING

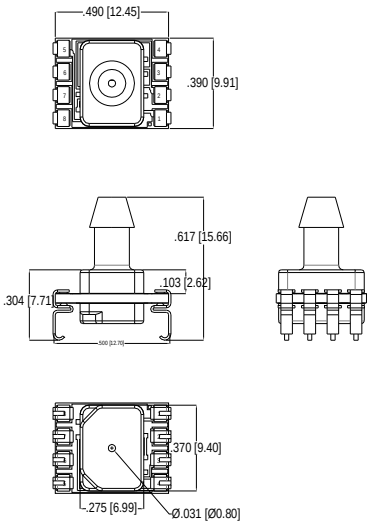
AV Sensors
AdVanced Sensor Design and Manufacture

MCT-4A SERIES

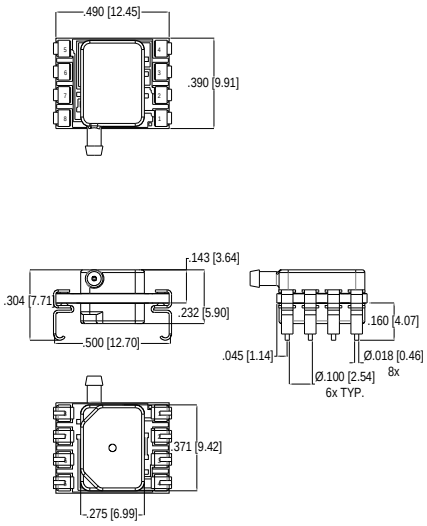
DUAL IN LINE, J LEAD SMT



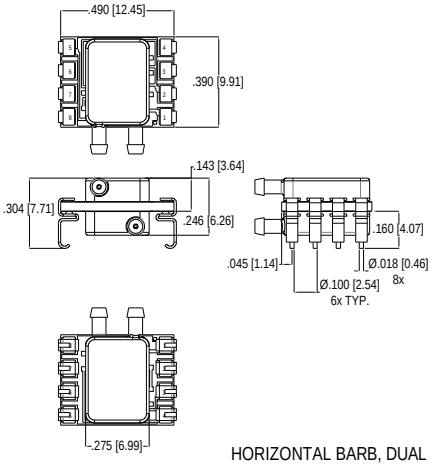
VERTICAL HOLE, DUAL



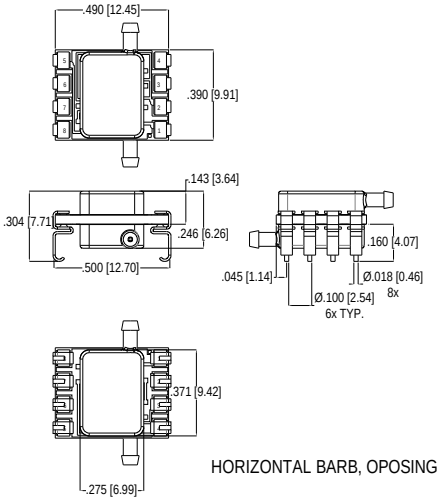
VERTICAL BARB, TOP



HORIZONTAL BARB, TOP



HORIZONTAL BARB, DUAL



HORIZONTAL BARB, OPOSING

PART NUMBERING FOR ORDERS

Series	Port Type	Package	Pressure Range	Pressure Units	Pressure Type (Range Availability) [Package Availability]	Calibrated Voltage	Output Type
MCT-4A	VHD=Vertical Hole, Dual HBD=Horizontal Barb, Dual VBT=Vertical Barb, Top HBO=Horizontal Barb, Opposing HBT=Horizontal Barb, Top	J= J lead SMT T= DIL Thru Hole S=SIL	005 010 020 050 100 200	M=mBar	G= Gage (All Ranges) [All Port Types] A=Absolute (All Ranges) [All Port Types] B=Bidirectional (All Ranges) [All Port Types]	3=3.3Vdc 5-5.0Vdc	Type1= 10 -90% of Supply Voltage Type2= 5 -95% of Supply Voltage
			001 002 005 015 030 050 100 150	P=PSI			
			001 002 003 006	B=Bar			

Part Number Example: MCT-4A VBTJ005PG51 **Vertical Barbed Top Port, J Leaded SMT Package, 0 to +5 PSI Range, 5.0Vdc Supply, Pmin=0 PSIG, Pmax=+ 5 PSIG**

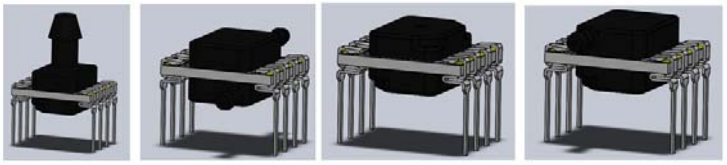
WARRANTY

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 buyer s 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.

AV Sensors
AdVanced Sensor Design and Manufacture

MCT-4D SERIES

The MCT-4D Series
Dual & Single In Line Package (SIL & DIL)
Digital Temperature & Pressure Outputs
I^2C & SPI Protocols



DESCRIPTION

Advanced Sensors Multi Chip Technology (MCT) 4D Series incorporates the latest mixed signal ASIC (Application Specific Integrated Circuit) with a bonded silicon gage to provide a leading *Digital Output* design for medical, life science and pneumatic control industries.. The MCT 4D Series provides a 14bit digital pressure and 11 bit digital temperature output in SPI and I^2C protocols. The designs superior performance provides 1% Total Error across a wide temperature range of -10 to 85°C while the ASIC's advanced design sets safety critical operations at the forefront with internal error checking of the sensor's input and output lines. Given these features and an available lower power option; the MCT-4D series is the ideal choice for OEM customers.

APPLICATIONS

- Pneumatic controls
- Automotive diagnostics
- Medical equipment/instrumentation
- Air Speed and Altitude
- Environmental controls
- Barometric pressure measurement
- Factory Automation
- Process Controls

FEATURES

- Digital Temperature & Pressure Output
- Low Power Option
- 3.3 & 5.0Vdc Supply Voltages
- Low Overall Errors, 1%TEB
- I2C & SPI Outputs
- Custom Outputs and Ranges Available

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Performance Specifications						
Supply Voltage		2.7V	3.3	5.50	V	
Current Consumption				3	mA	
Standby Current			0.5		µA	-L Option
Pressure Resolution				14	bits	
Temperature Resolution				11	bits	
Output (Type 1) at Pmin			1638		cts	
Output (Type 1) at Pmax			14746		cts	
Output (Type 2) at Pmin			819		cts	
Output (Type 2) at Pmax			15564		cts	
Pressure Accuracy		-0.25		0.25	mA	2
Total Error Band	TEB	-1.0		1.0	%FSS	3
Temperature Accuracy			1.5		°C	
Long Term Stability			±0.4		%FSS	
Conversion Time			1.0		mS	4
Power On to Valid Data				<10	mS	5
Weight				3	grams	
Compensated Temperature		-10 to 85			°C	6
Operating Temperature		-40 to 125			°C	6

AV Sensors
AdVanced Sensor Design and Manufacture

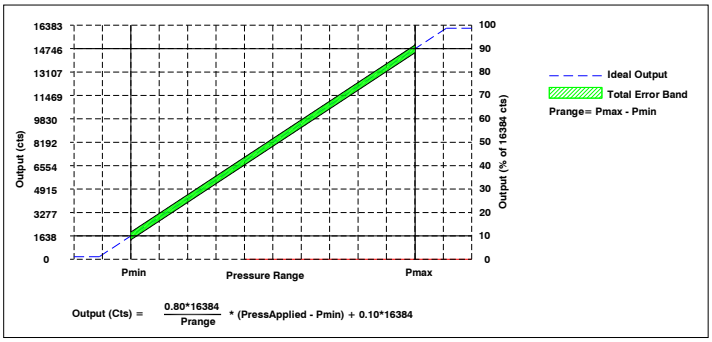
MCT-4D SERIES

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Absolute Maximum Conditions						10
Supply Voltage		-5.0		6	V	
Storage Temperature		-50		150	°C	
Package Integrity, Common Mode				300	psi	7
Proof Pressure				3x		8
Burst Pressure				5x		9
Media Compatibility		CDA, Non Ionic, Non Corrosive Gases				
Wetted Materials		Ceramic, RTV, Epoxy, Silicon, Gold, Aluminum, LCP				

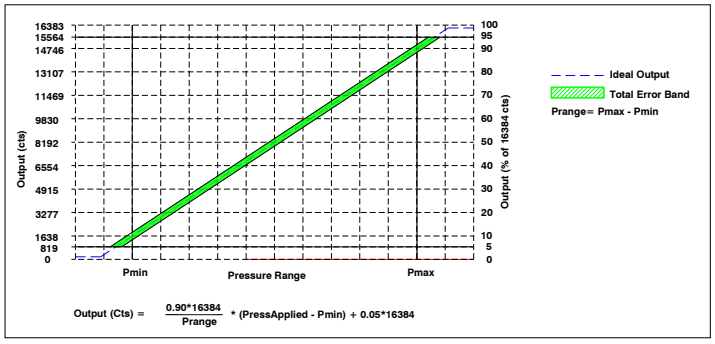
Reference Conditions: Vsupply: 3.30Vdc or 5.00, Ta=25°C, Positive Pressure Port A

1. All specification at reference conditions unless otherwise noted.
2. Maximum deviation from a Best Fit Straight Line through Pmin and Pmax measured at 25°C. Errors included Pressure Non Linearity, Pressure Hysteresis and Repeatability.
3. Maximum deviation from the Ideal Transfer Function expressed as a percentage of the %FSS over the compensated temperature range. Includes calibration errors (Offset & Span), temperature errors (Offset & Span), pressure non-linearity, pressure and thermal hysteresis. TEB Errors for mBar Ranges below
4. The time for the output DAC to be updated with new data.
5. The time for the output DAC to have valid data after a power on reset.
6. Compensated and operating temperature for mBar ranges are 0°C to 60°C and -20°C – to 105°C, respectively.
7. Maximum pressure the sensor package can withstand without rupture.
8. Maximum pressure without degrading sensor's performance specifications.
9. Maximum pressure the silicon diaphragm can withstand without rupture.
10. Exceeding Absolute Maximum Specification may damage the device. Extended exposure beyond the operating conditions may affect device reliability.

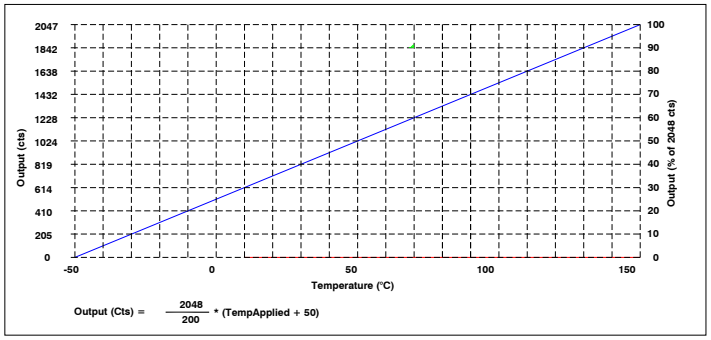
PRESSURE AND TEMPERATURE TRANSFER FUNCTIONS



Type 1, 10-90%, Pressure Transfer Function



Type 2, 5-95%, Pressure Transfer Function



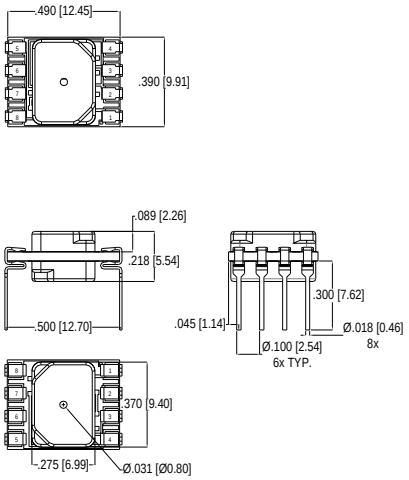
Temperature Transfer Function

AV Sensors
AdVanced Sensor Design and Manufacture

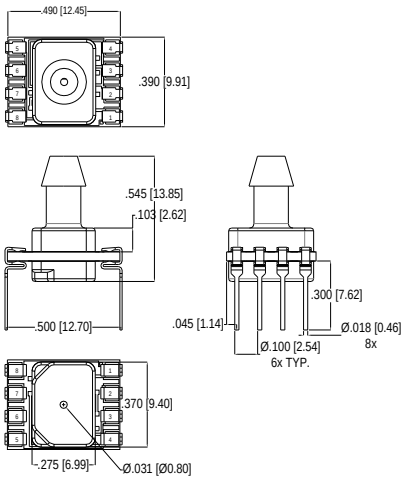
MCT-4D SERIES

MECHANICAL DIMENSIONS in [mm]

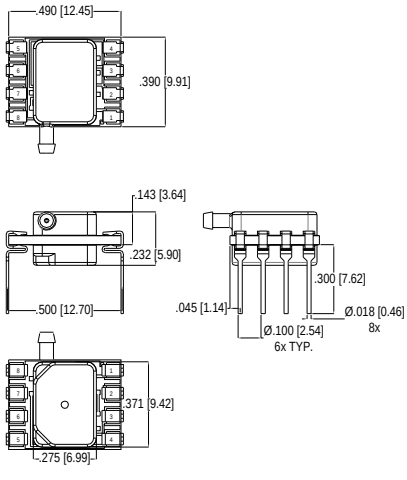
DUAL IN LINE, THRU HOLE



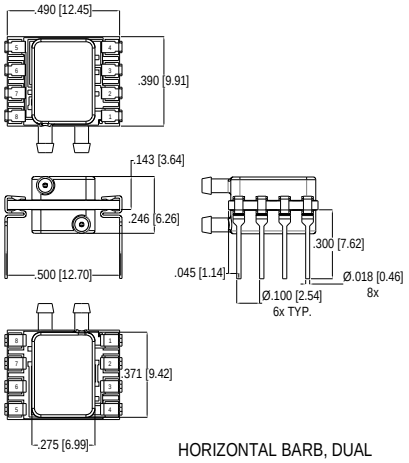
VERTICAL HOLE, DUAL



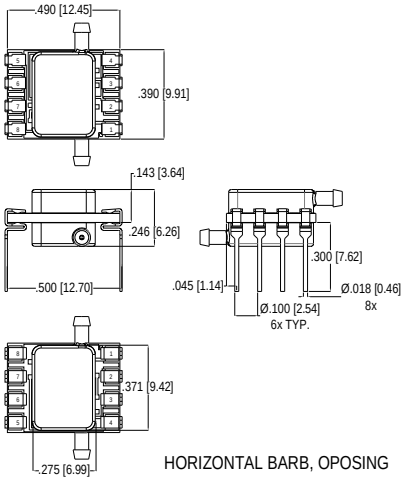
VERTICAL BARB, TOP



HORIZONTAL BARB, TOP



HORIZONTAL BARB, DUAL

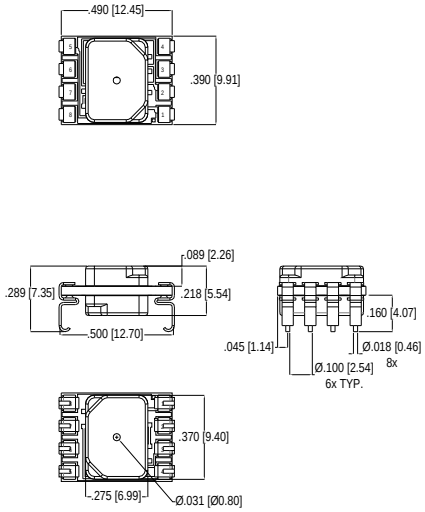


HORIZONTAL BARB, OPOSING

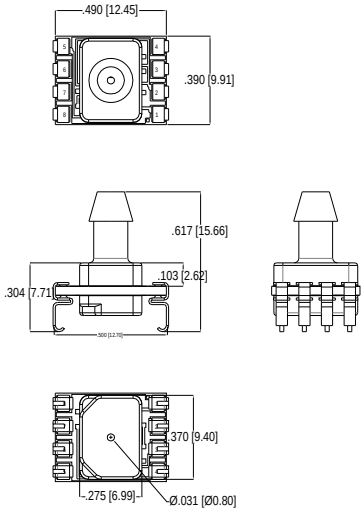
AV Sensors
AdVanced Sensor Design and Manufacture

MCT-4D SERIES

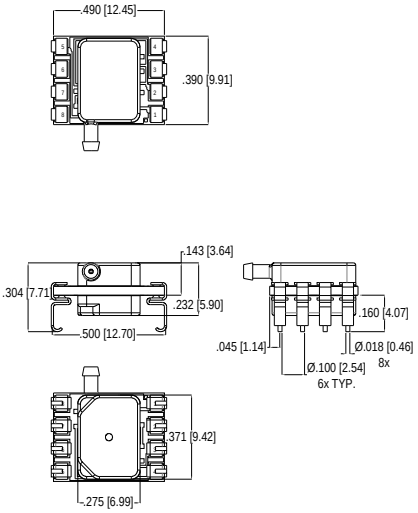
DUAL IN LINE, J LEAD SMT



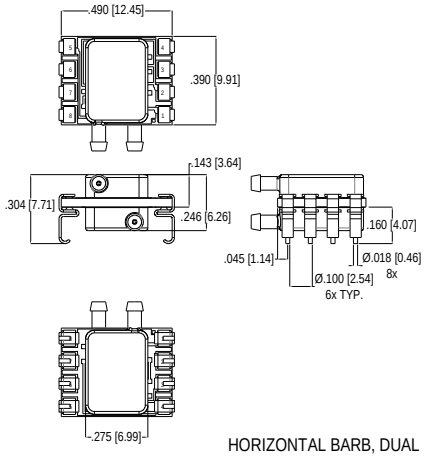
VERTICAL HOLE, DUAL



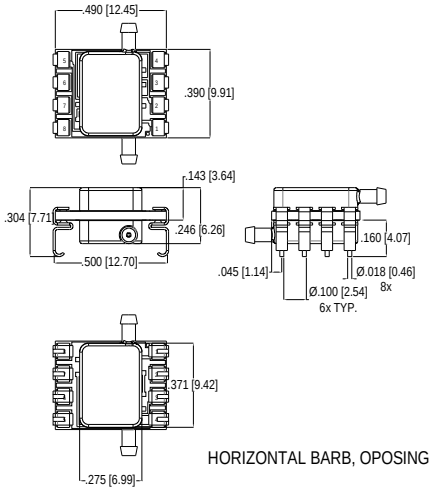
VERTICAL BARB, TOP



HORIZONTAL BARB, TOP



HORIZONTAL BARB, DUAL



HORIZONTAL BARB, OPOSING

AV Sensors
AdVanced Sensor Design and Manufacture

MCT-4D SERIES

PART NUMBERING FOR ORDERS

Series	Port Type	Package Style	Pressure Range	Pressure Units	Pressure Type (Range Availability) [Package Availability]	Calibrated Voltage	Output Type	Digital Protocol	Options
MCT-4D	VHD=Vertical Hole, Dual HBD=Horizontal Barb, Dual VBT=Vertical Barb, Top HBO=Horizontal Barb, Opposing HBT=Horizontal Barb, Top	J= J lead SMT T= DIL Thru Hole S=SIL	005 010 020 050 100 200	M=mBar	G= Gage (All Ranges) [All Port Types] A=Absolute (All Ranges) [All Port Types] B=Bidirectional (All Ranges) [All Port Types]	3=3.3Vdc 5-5.0Vdc	Type1= 10 -90% of Supply Voltage Type2= 5 -95% of Supply Voltage	I1=I2C, 0x28H I2=I2C, 0x38H I3=I2C, 0x48H [All Packages] S1=SPI [All Packages]	-L Low Power
			001 002 005 015 030 050 100 150	P=PSI					
			001 002 003 006	B=Bar					

Part Number Example: MCT-4D VBTJ005PB31S1 **Vertical Barbed Top Port, J Leaded SMT Package, -5 to +5 PSI Range, 3.3Vdc Supply, SPI Protocol, Pmin=-5, Pmax=+ 5 PSI**

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 buyer s 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.

AV Sensors
AdVanced Sensor Design and Manufacture

MCT-5A SERIES

The MCT-5A Series Transmitter& Transducer for Industrial Low Pressure

4-20mA, Regulated, Ratiometric Outputs

DESCRIPTION

Advanced Sensors Multi Chip Technology (MCT) 5A Series incorporates the latest mixed signal ASIC (Application Specific Integrated Circuit) with a bonded silicon gage to provide the standard for Industrial Transducers & Transmitters. The MCT 5A Series offers current, regulated and ratiometric outputs types along with a wide range of process fittings. The rugged design is compatible with a wide range of harsh media including refrigerants, compressed air, and hydraulic fluids. The designs superior performance provides 1% Total Error across a wide temperature range of -20 to 85°C and overall error of less than 2.5% over -40 to 125C. The flexible design incorporates many connector types making it the ideal choice for OEM customers.

APPLICATIONS

- Hydraulic and Pneumatic
- Rooftop Chillers
- Pumps and Compressors
- Refrigeration Systems
- Energy and Water Management

FEATURES

- Flexible Electrical Outputs
- ASIC Compensation
- Wide Temperature Range
- Hash Media Compatible
- High Accuracy
- Low Overall Errors, 1%TEB
- All Welded Design
- Custom Outputs and Ranges Available

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Performance Specifications						
Pressure Accuracy		-0.25		0.25	mA	2
Total Error Band	TEB	-1.0		1.0	%FSS	3
Long Term Stability			±0.4		%FSS	
Output DAC				12	bits	
Conversion Time			1.0		mS	4
Power On to Valid Data				<10	mS	5
Life		1kk			cycles	
Weight				120	grams	
Compensated Temperature		-20 to 85			°C	6
Operating Temperature		-40 to 125			°C	

AV Sensors
AdVanced Sensor Design and Manufacture

MCT-5A SERIES

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Absolute Maximum Conditions						
Supply Voltage		-16		35	V	
Storage Temperature		-50		150	°C	
Burst Pressure				3x	Range	
Insulation Resistance		10			MΩ	500Vdc
Wetted Materials		316L, Epoxy, Silicon				

Reference Conditions: Vsupply: Table Below, Ta=25°C.

1. All specification at reference conditions unless otherwise noted.
2. Maximum deviation from a Best Fit Straight Line through Pmin and Pmax measured at 25°C. Errors included Pressure Non Linearity, Pressure Hysteresis and Repeatability.
3. Maximum deviation from the Ideal Transfer Function expressed as a percentage of the %FSS over the compensated temperature range. Includes calibration errors (Offset & Span), temperature errors (Offset & Span), pressure non-linearity, pressure and thermal hysteresis.
4. The time for the output DAC to be updated with new data.
5. The time for the output DAC to have valid data after a power on reset.
6. Exceeding Absolute Maximum Specification may damage the device. Extended exposure beyond the operating conditions may affect device reliability.

	Current	Regulated				Ratiometric			
Electrical Output Type	4-20mA	0-5V	1-5V	1-6V	0-10V	.50-4.5 V 10-90% Vdd	.25-4.75V 5-95% Vdd	.30-3.00V 10-90% Vdd	.15-3.175V 5-95% Vdd
Supply Voltage (Vsupply)	24	15	15	15	15	5.0	5.0	3.3	3.3
Operating Voltage	10-28	10-28	10-28	10-28	15-30	2.7-5.5	2.7-5.5	2.7-5.5	2.7-5.5
Current Consumption	--	<10	<10	<10	<10	<5	<5	<5	mA
Span (FSS)	16.0	5.0	4.0	11.0	9.0	4.0	4.50	2.70	2.97
Output Load	-	5k	5k	5k	5k	5k	5k	5k	5k
Reverse/ Overvoltage Protection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

MECHANICAL DIMENSIONS in [mm]

M12x1
IEC 61076-2-101, Binder 09 0439 387 04
Protection Class (IEC 60529): IP67

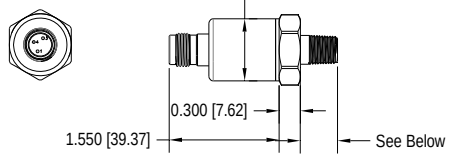
Mating M12x1 Connector
4 Position Femal,e Type D

Voltage
Regulated, Ratiometric

Pin 1: Supply +
Pin 4: Output+
Pin 3: Common

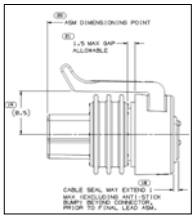
4-20mA
Transmitter

Pin 1: Supply+
Pin 4: Not Connected
Pin 3: Supply-



PACKARD CONNECTOR
Type A
Protection Class (IEC 60529): IP66

Mating Packard Connector
Housing Part Number: 12078090
Socket Part Number: 12103881

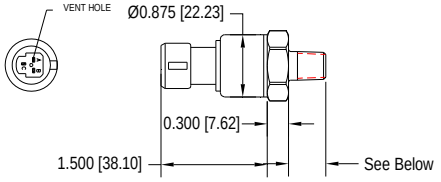


Voltage
Regulated, Ratiometric

Pin A: Supply +
Pin B: Common
Pin C: Output +

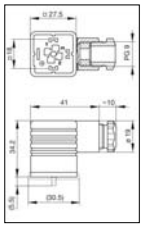
4-20mA
Transmitter

Pin A: Supply-
Pin B: Supply+
Pin C: Not Connected



HIRSCHMANN CONNECTOR
DIN 43650 FORM A, Part Number 933 376-100
Protection Class (IEC 60529): IP65

Mating Hirschmann Connector
Part Number: 931 969-100
Gasket (NBR) Part Number: 730 801-002
Knurled Screw Part Number: 732 574-001

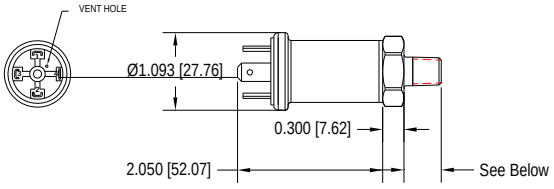


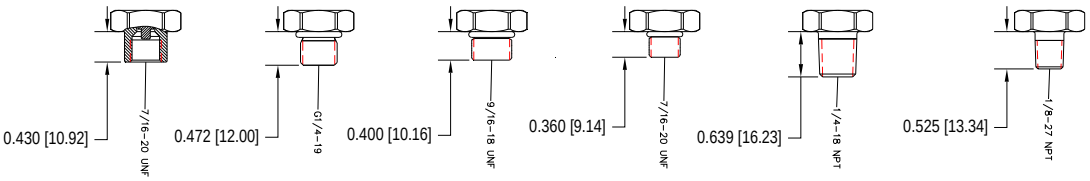
Voltage
Regulated, Ratiometric

Pin 1: Supply+
Pin 2: Common
Pin 3: Output+
Pin 4: Case

4-20mA
Transmitter

Pin 1: +Supply
Pin 2: -Supply
Pin 3: Not Connected
Pin 4: Case





7/16-20 UNF SAE J1926-3 Female
Seal: Conical
Mating Standard: SAE J514
Installation: 18 N m [12.3 ft lb]

G1/4-19 ISO 1179-3
Seal: O-Ring
Mating Standard: ISO 1179-1
Installation: 50 N m [38.9 ft lb]

9/16-18 UNF SAE J1926-3
Seal: O-Ring
Mating Standard: SAE J1926-1
Installation: 30 N m [22.1 ft lb]

7/16-20 UNF SAE J1926-3
Seal: O-Ring
Mating Standard: SAE J1926-1
Installation: 18 N m [12.3 ft lb]

1/4 -18 NPT ANSI B1.20.1
Seal: Pipe Threads
Mating Standard: ANSI B1.20.1
Installation: 2-3 Turns Past Finger Tight

1/8-27 NPT ANSI B1.20.1
Seal: Pipe Threads
Mating Standard: ANSI B1.20.1
Installation: 2-3 Turns Past Finger Tight

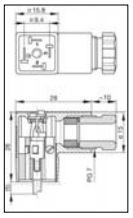
HIRSCHMANN CONNECTOR

DIN 43650 FORM C, Part Number 933 114-100

Protection Class (IEC 60529): IP65

Mating Hirschmann Connector

Part Number: 933 024-100
Gasket (NBR) Part Number: Supplied

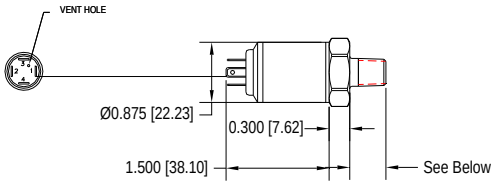


Voltage
Regulated, Ratiometric

Pin 1: Supply+
Pin 2: Common
Pin 3: Output+
Pin 4: Case

4-20mA
Transmitter

Pin 1: +Supply
Pin 2: -Supply
Pin 3: Not Connected
Pin 4: Case



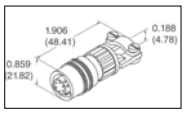
BENDIX CONNECTOR

MIL-C-26482, Part Number PT02A-10

Protection Class (IEC 60529): IP65

Mating Bendix Connector

Part Number: PT06A-10-6S



Voltage
Regulated, Ratiometric

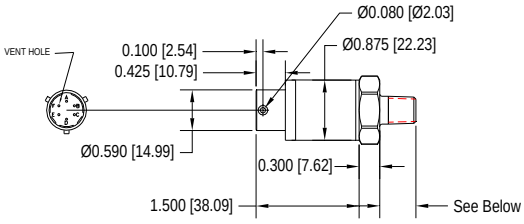
Pin A: Supply+
Pin B: Output+
Pin C: Common
Pin D: Common
Pin E: Not Connected
Pin F: Vent

Digital
I2C / SPI

Pin A: Supply+
Pin B: SDA/MISO
Pin C: Supply-
Pin D: SCK/SCLK
Pin E: SSI/INT
Pin F: Vent

4-20mA
Transmitter

Pin A, B: Supply+
Pin C, D: Supply-
Pin E: Not Connected
Pin F: Vent



FLYING LEADS

300 V Overall Foil Shield
Multiconductor, PVC, PVC

Protection Class (IEC 60529): IP65

Voltage
Regulated, Ratiometric

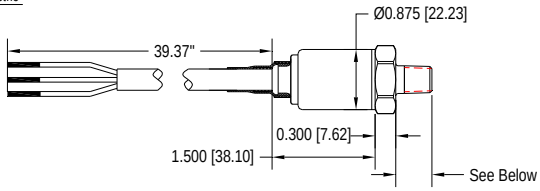
RED: Supply+
GRN: Output+
WHT: No Connection
BLK: Common

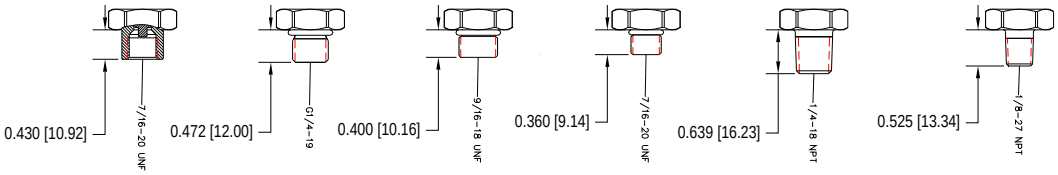
Digital
I2C / SPI

RED: Supply+
WHITE: SDA/MISO
BLACK: Supply-
BLUE: SCK/SCLK
GREEN: SS/INT

4-20mA
Transmitter

RED: Supply+
BLK: Supply-





7/16-20 UNF SAE J1926-3 Female

Seal: Conmical
Mating Standard: SAE J514
Installation: 18 N m [12.3 ft lb]

G1/4-19 ISO 1179-3

Seal: O-Ring
Mating Standard: ISO 1179-1
Installation: 50 N m [38.9 ft lb]

9/16-18 UNF SAE J1926-3

Seal: O-Ring
Mating Standard: SAE J1926-1
Installation: 30 N m [22.1 ft lb]

7/16-20 UNF SAE J1926-3

Seal: O-Ring
Mating Standard: SAE J1926-1
Installation: 18 N m [12.3 ft lb]

1/4 -18 NPT ANSI B1.20.1

Seal: Pipe Threads
Mating Standard: ANSI B1.20.1
Installation: 2-3 Turns Past Finger Tight

1/8-27 NPT ANSI B1.20.1

Seal: Pipe Threads
Mating Standard: ANSI B1.20.1
Installation: 2-3 Turns Past Finger Tight

AV Sensors
AdVanced Sensor Design and Manufacture

MCT-5A SERIES

PART NUMBERING FOR ORDERS

Series	Port Type	Pressure range (psi)	Pressure Units	Pressure Type (Range Availability) [Package Availability]	Output Type	Electrical Connection	Options
MCT-5A	N1 = 1/8 -27 NPT N2 = 1/4-18NPT S1 = 7/16-20UNF S2 = 9/16-18UNF G1 = G1/8 F1 =Female, 7/16-20UNF	0050 0100 0150 0300 0500	P=PSI	G= Gage (All Ranges) [All Port Types] A=Absolute (All Ranges) [All Port Types]	1=0-5 Vdc 2=1-5 Vdc 3=1-6 Vdc 4=1-10 Vdc 5=4-20 mA 6=10-90%, 3.3 Vdc 7= 5-95%, 3.3 Vdc 8=10-90%, 5.0 Vdc 9= 5-95%, 5.0 Vdc	M1=Micro M12 P2=Packard, Power B HA=Hirschmann Form A HC=Hirschmann Form C B1=Bendix F1=Flying leads, 1 Meter Fx=Flying leads, x=#of Meter	-L Low Power Option -CL Output Clipping,
		05.0 10.0 16.0 25.0 40.0	B=Bar				
		0.50 1.00 1.60 2.50 4.00	M=mPa				

Part Number Example: MCT-5A N150.0BG4F10 **1/8NPT, 0-50Bar , Gage, 1-10Vdc,10M Flying Leads Pmin=0, Pmax=50Bar**

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 buyer s 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.

AV Sensors
AdVanced Sensor Design and Manufacture

MCT-5D SERIES

The MCT-5D Series Digital Transducer for Industrial Low Pressure I²C & SPI Protocols

DESCRIPTION

Advanced Sensors Multi Chip Technology (MCT) 5D Series incorporates the latest mixed signal ASIC (Application Specific Integrated Circuit) with a bonded silicon gage to provide a leading *Digital Output* design for Industrial Transducers. The MCT 5D Series provides a 14bit digital pressure and 11 bit digital temperature output offered in SPI and I²C protocols. The rugged design is compatible with a wide range of harsh media including refrigerants, compressed air, and hydraulic fluids. The designs superior performance provides 1% Total Error across a wide temperature range of -20 to 85°C and overall error of less than 2.5% over -40 to 125C. The flexible design incorporates many process fitting and connector types making it the ideal choice for OEM customers.

APPLICATIONS

- Hydraulic and Pneumatic
- HVAC
- Pumps and Compressors
- Refrigeration Systems
- Energy and Water Management

FEATURES

- Digital Temperature & Pressure Output
- ASIC Compensation
- Wide Temperature Range
- Hash Media Compatible
- High Accuracy
- Low Overall Errors, 1%TEB
- All Welded Design
- Custom Outputs and Ranges Available

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Performance Specifications						
Supply Voltage		2.7V	3.3	5.50	V	
Current Consumption				3	mA	
Pressure Resolution				14	bits	
Temperature Resolution				11	bits	
Output at Pmin			1638		cts	
Output at Pmax			14746		cts	
Span	FSS		13107		cts	
Pressure Accuracy		-0.25		0.25	mA	2
Total Error Band	TEB	-1.0		1.0	%FSS	3
Temperature Accuracy			2.5		°C	
Long Term Stability			±0.4		%FSS	
Conversion Time			1.0		mS	4
Power On to Valid Data				<10	mS	5
Life		1kk			cycles	
Weight				120	grams	
Compensated Temperature		-20 to 85			°C	
Operating Temperature		-40 to 125			°C	

AV Sensors
AdVanced Sensor Design and Manufacture

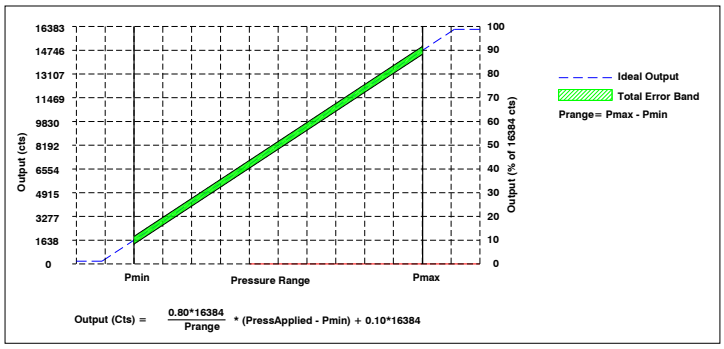
MCT-5D SERIES

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Absolute Maximum Conditions						6
Supply Voltage		-16		16	V	
Storage Temperature		-50		150	°C	
Burst Pressure				3x	Range	
Insulation Resistance		10			MΩ	500Vdc
Wetted Materials		316L, Epoxy, Silicon				

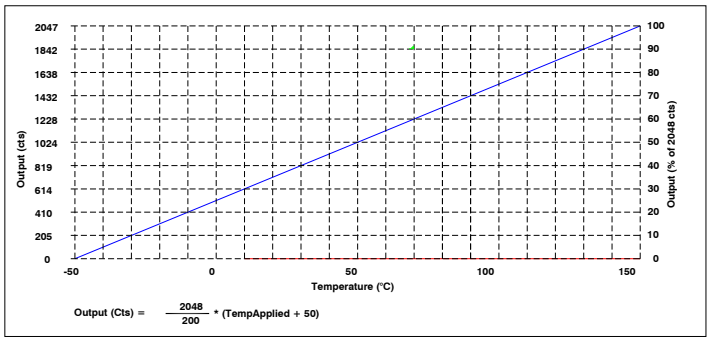
Reference Conditions: Vsupply: 3.30Vdc or 5.00, Ta=25°C.

1. All specification at reference conditions unless otherwise noted. Output is ratio metric to supply voltage.
2. Maximum deviation from a Best Fit Straight Line through Pmin and Pmax measured at 25°C. Errors included Pressure Non Linearity, Pressure Hysteresis and Repeatability.
3. Maximum deviation from the Ideal Transfer Function expressed as a percentage of the %FSS over the compensated temperature range. Includes calibration errors (Offset & Span), temperature errors (Offset & Span), pressure non-linearity, pressure and thermal hysteresis.
4. The time for the output DAC to be updated with new data.
5. The time for the output DAC to have valid data after a power on reset.
6. Exceeding Absolute Maximum Specification may damage the device. Extended exposure beyond the operating conditions may affect device reliability.

PRESSURE AND TEMPERATURE TRANSFER FUNCTIONS



Pressure Transfer Function, TEB Error



Temperature Transfer Function

MECHANICAL DIMENSIONS in [mm]

M12x1
IEC 61076-2-101, Binder 09 0439 387 04
Protection Class (IEC 60529): IP67

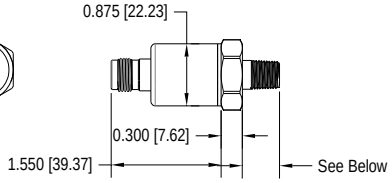
Mating M12x1 Connector
4 Position Femal,e Type D

Voltage
Regulated, Ratiometric

Pin 1: Supply +
Pin 4: Output+
Pin 3: Common

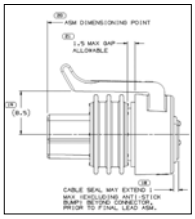
4-20mA
Transmitter

Pin 1: Supply+
Pin 4: Not Connected
Pin 3: Supply-



PACKARD CONNECTOR
Type A
Protection Class (IEC 60529): IP66

Mating Packard Connector
Housing Part Number: 12078090
Socket Part Number: 12103881

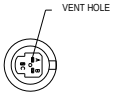


Voltage
Regulated, Ratiometric

Pin A: Supply +
Pin B: Common
Pin C: Output +

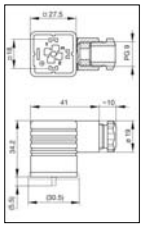
4-20mA
Transmitter

Pin A: Supply-
Pin B: Supply+
Pin C: Not Connected



HIRSCHMANN CONNECTOR
DIN 43650 FORM A, Part Number 933 376-100
Protection Class (IEC 60529): IP65

Mating Hirschmann Connector
Part Number: 931 969-100
Gasket (NBR) Part Number: 730 801-002
Knurled Screw Part Number: 732 574-001

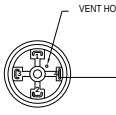


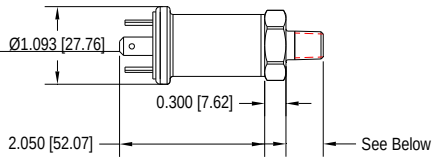
Voltage
Regulated, Ratiometric

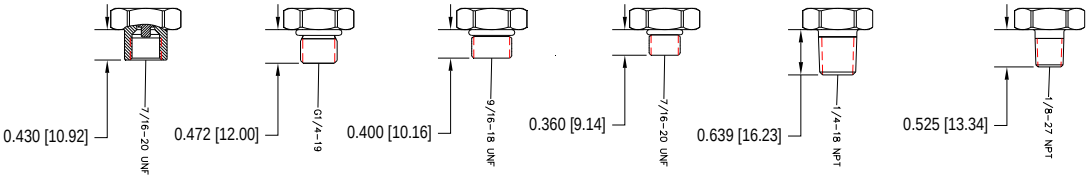
Pin 1: Supply+
Pin 2: Common
Pin 3: Output+
Pin 4: Case

4-20mA
Transmitter

Pin 1: +Supply
Pin 2: -Supply
Pin 3: Not Connected
Pin 4: Case







7/16-20 UNF SAE J1926-3 Female
Seal: Conical
Mating Standard: SAE J514
Installation: 18 N m [12.3 ft lb]

G1/4-19 ISO 1179-3
Seal: O-Ring
Mating Standard: ISO 1179-1
Installation: 50 N m [38.9 ft lb]

9/16-18 UNF SAE J1926-3
Seal: O-Ring
Mating Standard: SAE J1926-1
Installation: 30 N m [22.1 ft lb]

7/16-20 UNF SAE J1926-3
Seal: O-Ring
Mating Standard: SAE J1926-1
Installation: 18 N m [12.3 ft lb]

1/4 -18 NPT ANSI B1.20.1
Seal: Pipe Threads
Mating Standard: ANSI B1.20.1
Installation: 2-3 Turns Past Finger Tight

1/8-27 NPT ANSI B1.20.1
Seal: Pipe Threads
Mating Standard: ANSI B1.20.1
Installation: 2-3 Turns Past Finger Tight

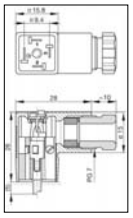
HIRSCHMANN CONNECTOR

DIN 43650 FORM C, Part Number 933 114-100

Protection Class (IEC 60529): IP65

Mating Hirschmann Connector

Part Number: 933 024-100
Gasket (NBR) Part Number: Supplied

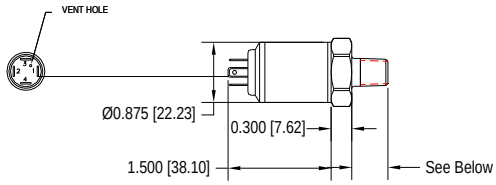


Voltage
Regulated, Ratiometric

Pin 1: Supply+
Pin 2: Common
Pin 3: Output+
Pin 4: Case

4-20mA
Transmitter

Pin 1: +Supply
Pin 2: -Supply
Pin 3: Not Connected
Pin 4: Case



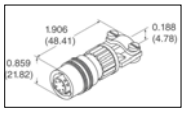
BENDIX CONNECTOR

MIL-C-26482, Part Number PT02A-10

Protection Class (IEC 60529): IP65

Mating Bendix Connector

Part Number: PT06A-10-6S



Voltage
Regulated, Ratiometric

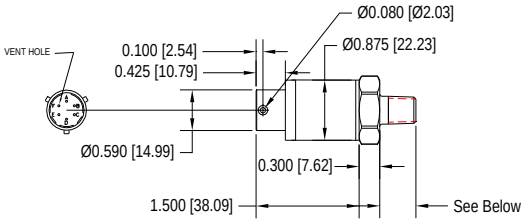
Pin A: Supply+
Pin B: Output+
Pin C: Common
Pin D: Common
Pin E: Not Connected
Pin F: Vent

Digital
I2C / SPI

Pin A: Supply+
Pin B: SDA/MISO
Pin C: Supply-
Pin D: SCK/SCLK
Pin E: SS/INT
Pin F: Vent

4-20mA
Transmitter

Pin A, B: Supply+
Pin C, D: Supply-
Pin E: Not Connected
Pin F: Vent



FLYING LEADS

300 V Overall Foil Shield
Multiconductor, PVC, PVC

Protection Class (IEC 60529): IP65

Voltage
Regulated, Ratiometric

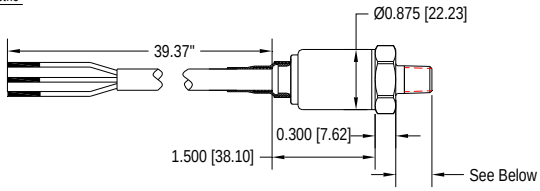
RED: Supply+
GRN: Output+
WHT: No Connection
BLK: Common

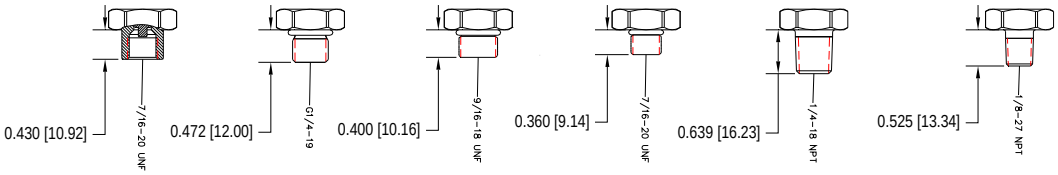
Digital
I2C / SPI

RED: Supply+
WHITE: SDA/MISO
BLACK: Supply-
BLUE: SCK/SCLK
GREEN: SS/INT

4-20mA
Transmitter

RED: Supply+
BLK: Supply-





7/16-20 UNF SAE J1926-3 Female

Seal: Conmical
Mating Standard: SAE J514
Installation: 18 N m [12.3 ft lb]

G1/4-19 ISO 1179-3

Seal: O-Ring
Mating Standard: ISO 1179-1
Installation: 50 N m [38.9 ft lb]

9/16-18 UNF SAE J1926-3

Seal: O-Ring
Mating Standard: SAE J1926-1
Installation: 30 N m [22.1 ft lb]

7/16-20 UNF SAE J1926-3

Seal: O-Ring
Mating Standard: SAE J1926-1
Installation: 18 N m [12.3 ft lb]

1/4 -18 NPT ANSI B1.20.1

Seal: Pipe Threads
Mating Standard: ANSI B1.20.1
Installation: 2-3 Turns Past Finger Tight

1/8-27 NPT ANSI B1.20.1

Seal: Pipe Threads
Mating Standard: ANSI B1.20.1
Installation: 2-3 Turns Past Finger Tight

AV Sensors
AdVanced Sensor Design and Manufacture

MCT-5D SERIES

PART NUMBERING FOR ORDERS

Series	Port Type	Pressure range (psi)	Pressure Units	Pressure Type (Range Availability) [Package Availability]	Calibrated Voltage	Digital Protocol	Electrical Connection
MCT-5D	N1 = 1/8 -27 NPT N2 = 1/4-18NPT S1 = 7/16-20UNF S2 = 9/16-18UNF G1 = G1/8 F1 =Female, 7/16-20UNF	0050 0100 0150 0300 0500	P=PSI	G= Gage (All Ranges) [All Port Types] A=Absolute (All Ranges) [All Port Types]	3=3.3Vdc 5-5.0Vdc	I1=I2C, 0x28H I2=I2C, 0x38H I3=I2C, 0x48H S1=SPI Protocol	M1=Micro M12 P2=Packard, Power B HA=Hirschmann Form A HC=Hirschmann Form C B1=Bendix F1=Flying leads, 1 Meter Fx=Flying leads, x=#of Meter
		05.0 10.0 16.0 25.0 40.0	B=Bar				
		0.50 1.00 1.60 2.50 4.00	M=mPa				

Part Number Example: MCT-5D N116.0BG3IP1 **1/8NPT, 0-16Bar , Gage, 3.3Vdc, I2c Protocol, Packard Connector, Pmin=0, Pmax=16Bar**

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 buyer s 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.

AV Sensors
AdVanced Sensor Design and Manufacture

GBMCT-6A SERIES

The GBMCT-6A Series Transmitter& Transducer for Industrial High Pressure

4-20mA, Regulated, Ratiometric Outputs

DESCRIPTION

Advanced Sensors Glass Bonded Multi Chip Technology (GBMCT) 6A Series incorporates the latest mixed signal ASIC (Application Specific Integrated Circuit) with a *glass bonded* silicon gage to provide the standard for Industrial Transducers & Transmitters. The GBMCT 6A Series offers current, regulated and ratiometric outputs types along with a wide range of process fittings. The rugged design is compatible with a wide range of harsh media including refrigerants, compressed air, and hydraulic fluids. The designs superior performance provides 1% Total Error across a wide temperature range of -20 to 85°C and overall error of less than 2.5% over -40 to 125C. The flexible design incorporates many connector types making it the ideal choice for OEM customers.

APPLICATIONS

- Hydraulic and Pneumatic
- Rooftop Chillers
- Pumps and Compressors
- Refrigeration Systems
- Energy and Water Management

FEATURES

- Glass Bonded Silicon Gage
- High Pressure upto 10Kpsi
- Flexible Electrical Outputs
- ASIC Compensation
- Wide Temperature Range
- 17-4 Process Ports
- High Accuracy
- Low Overall Errors, 1%TEB
- All Welded Design
- Custom Outputs and Ranges Available

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Performance Specifications						
Pressure Accuracy		-0.25		0.25	mA	2
Total Error Band	TEB	-1.0		1.0	%FSS	3
Long Term Stability			±0.4		%FSS	
Output DAC				12	bits	
Conversion Time			1.0		mS	4
Power On to Valid Data				<10	mS	5
Life		1kk			cycles	
Weight				120	grams	
Compensated Temperature		-20 to 85			°C	6
Operating Temperature		-40 to 125			°C	

AV Sensors
AdVanced Sensor Design and Manufacture

GBMCT-6A SERIES

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Absolute Maximum Conditions						
Supply Voltage		-16		35	V	
Storage Temperature		-50		150	°C	
Burst Pressure				3x	Range	
Insulation Resistance		10			MΩ	500Vdc
Wetted Materials		316L, Epoxy, Silicon				

Reference Conditions: Vsupply: Table Below, Ta=25°C.

1. All specification at reference conditions unless otherwise noted.
2. Maximum deviation from a Best Fit Straight Line through Pmin and Pmax measured at 25°C. Errors included Pressure Non Linearity, Pressure Hysteresis and Repeatability.
3. Maximum deviation from the Ideal Transfer Function expressed as a percentage of the %FSS over the compensated temperature range. Includes calibration errors (Offset & Span), temperature errors (Offset & Span), pressure non-linearity, pressure and thermal hysteresis.
4. The time for the output DAC to be updated with new data.
5. The time for the output DAC to have valid data after a power on reset.
6. Exceeding Absolute Maximum Specification may damage the device. Extended exposure beyond the operating conditions may affect device reliability.

	Current	Regulated				Ratiometric			
Electrical Output Type	4-20mA	0-5V	1-5V	1-6V	0-10V	.50-4.5 V 10-90% Vdd	.25-4.75V 5-95% Vdd	.30-3.00V 10-90% Vdd	.15-3.175V 5-95% Vdd
Supply Voltage (Vsupply)	24	15	15	15	15	5.0	5.0	3.3	3.3
Operating Voltage	10-28	10-28	10-28	10-28	15-30	2.7-5.5	2.7-5.5	2.7-5.5	2.7-5.5
Current Consumption	--	<10	<10	<10	<10	<5	<5	<5	mA
Span (FSS)	16.0	5.0	4.0	11.0	9.0	4.0	4.50	2.70	2.97
Output Load	-	5k	5k	5k	5k	5k	5k	5k	5k
Reverse/ Overvoltage Protection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

AV Sensors
AdVanced Sensor Design and Manufacture

GBMCT-6A SERIES

MECHANICAL DIMENSIONS in [mm]

M12x1
IEC 61076-2-101, Binder 09 0439 387 04
Protection Class (IEC 60529): IP67

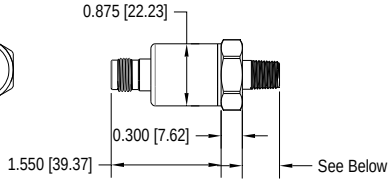
Mating M12x1 Connector
4 Position Femal,e Type D

Voltage
Regulated, Ratiometric

Pin 1: Supply +
Pin 4: Output+
Pin 3: Common

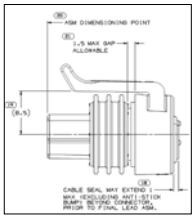
4-20mA
Transmitter

Pin 1: Supply+
Pin 4: Not Connected
Pin 3: Supply-



PACKARD CONNECTOR
Type A
Protection Class (IEC 60529): IP66

Mating Packard Connector
Housing Part Number: 12078090
Socket Part Number: 12103881

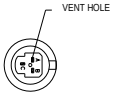


Voltage
Regulated, Ratiometric

Pin A: Supply +
Pin B: Common
Pin C: Output +

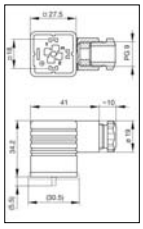
4-20mA
Transmitter

Pin A: Supply-
Pin B: Supply+
Pin C: Not Connected



HIRSCHMANN CONNECTOR
DIN 43650 FORM A, Part Number 933 376-100
Protection Class (IEC 60529): IP65

Mating Hirschmann Connector
Part Number: 931 969-100
Gasket (NBR) Part Number: 730 801-002
Knurled Screw Part Number: 732 574-001

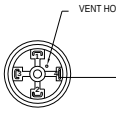


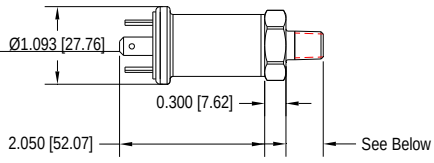
Voltage
Regulated, Ratiometric

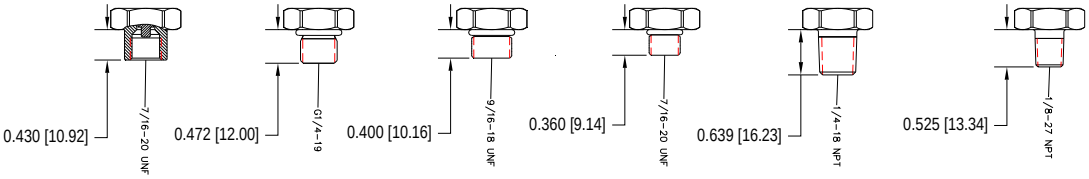
Pin 1: Supply+
Pin 2: Common
Pin 3: Output+
Pin 4: Case

4-20mA
Transmitter

Pin 1: +Supply
Pin 2: -Supply
Pin 3: Not Connected
Pin 4: Case







7/16-20 UNF SAE J1926-3 Female
Seal: Conical
Mating Standard: SAE J514
Installation: 18 N m [12.3 ft lb]

G1/4-19 ISO 1179-3
Seal: O-Ring
Mating Standard: ISO 1179-1
Installation: 50 N m [38.9 ft lb]

9/16-18 UNF SAE J1926-3
Seal: O-Ring
Mating Standard: SAE J1926-1
Installation: 30 N m [22.1 ft lb]

7/16-20 UNF SAE J1926-3
Seal: O-Ring
Mating Standard: SAE J1926-1
Installation: 18 N m [12.3 ft lb]

1/4 -18 NPT ANSI B1.20.1
Seal: Pipe Threads
Mating Standard: ANSI B1.20.1
Installation: 2-3 Turns Past Finger Tight

1/8-27 NPT ANSI B1.20.1
Seal: Pipe Threads
Mating Standard: ANSI B1.20.1
Installation: 2-3 Turns Past Finger Tight

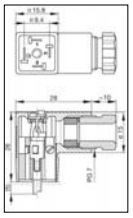
HIRSCHMANN CONNECTOR

DIN 43650 FORM C, Part Number 933 114-100

Protection Class (IEC 60529): IP65

Mating Hirschmann Connector

Part Number: 933 024-100
Gasket (NBR) Part Number: Supplied

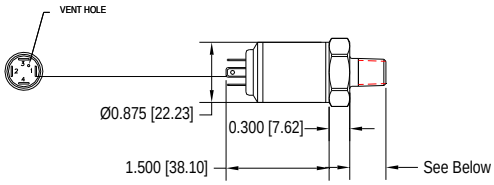


Voltage
Regulated, Ratiometric

Pin 1: Supply+
Pin 2: Common
Pin 3: Output+
Pin 4: Case

4-20mA
Transmitter

Pin 1: +Supply
Pin 2: -Supply
Pin 3: Not Connected
Pin 4: Case



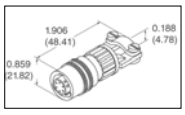
BENDIX CONNECTOR

MIL-C-26482, Part Number PT02A-10

Protection Class (IEC 60529): IP65

Mating Bendix Connector

Part Number: PT06A-10-6S



Voltage
Regulated, Ratiometric

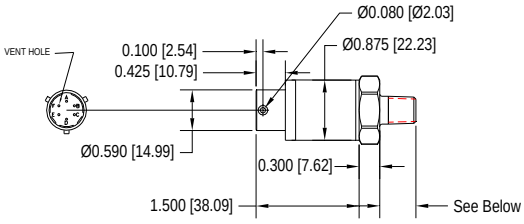
Pin A: Supply+
Pin B: Output+
Pin C: Common
Pin D: Common
Pin E: Not Connected
Pin F: Vent

Digital
I2C / SPI

Pin A: Supply+
Pin B: SDA/MISO
Pin C: Supply-
Pin D: SCK/SCLK
Pin E: SS/INT
Pin F: Vent

4-20mA
Transmitter

Pin A, B: Supply+
Pin C, D: Supply-
Pin E: Not Connected
Pin F: Vent



FLYING LEADS

300 V Overall Foil Shield
Multiconductor, PVC, PVC

Protection Class (IEC 60529): IP65

Voltage
Regulated, Ratiometric

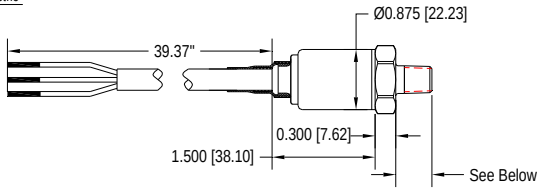
RED: Supply+
GRN: Output+
WHT: No Connection
BLK: Common

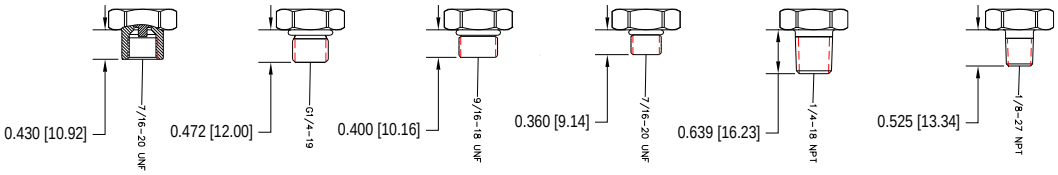
Digital
I2C / SPI

RED: Supply+
WHITE: SDA/MISO
BLACK: Supply-
BLUE: SCK/SCLK
GREEN: SS/INT

4-20mA
Transmitter

RED: Supply+
BLK: Supply-





7/16-20 UNF SAE J1926-3 Female

Seal: Conmical
Mating Standard: SAE J514
Installation: 18 N m [12.3 ft lb]

G1/4-19 ISO 1179-3

Seal: O-Ring
Mating Standard: ISO 1179-1
Installation: 50 N m [38.9 ft lb]

9/16-18 UNF SAE J1926-3

Seal: O-Ring
Mating Standard: SAE J1926-1
Installation: 30 N m [22.1 ft lb]

7/16-20 UNF SAE J1926-3

Seal: O-Ring
Mating Standard: SAE J1926-1
Installation: 18 N m [12.3 ft lb]

1/4 -18 NPT ANSI B1.20.1

Seal: Pipe Threads
Mating Standard: ANSI B1.20.1
Installation: 2-3 Turns Past Finger Tight

1/8-27 NPT ANSI B1.20.1

Seal: Pipe Threads
Mating Standard: ANSI B1.20.1
Installation: 2-3 Turns Past Finger Tight

AV Sensors
AdVanced Sensor Design and Manufacture

GBMCT-6A SERIES

PART NUMBERING FOR ORDERS

Series	Port Type	Pressure range (psi)	Pressure Units	Pressure Type (Range Availability) [Package Availability]	Output Type	Electrical Connection	Options
GBMCT-6A	N1 = 1/8 -27 NPT N2 = 1/4-18NPT S1 = 7/16-20UNF S2 = 9/16-18UNF G1 = G1/8 F1 =Female, 7/16-20UNF	0300 0500 1000 1500 2500 5000 7500 10k0	P=PSI	G= Gage (All Ranges) [All Port Types] A=Absolute (All Ranges) [All Port Types]	1=0-5 Vdc 2=1-5 Vdc 3=1-6 Vdc 4=1-10 Vdc 5=4-20 mA 6=10-90%, 3.3 Vdc 7= 5-95%, 3.3 Vdc 8=10-90%, 5.0 Vdc 9= 5-95%, 5.0 Vdc	M1=Micro M12 P2=Packard, Power B HA=Hirschmann Form A HC=Hirschmann Form C B1=Bendix F1=Flying leads, 1 Meter Fx=Flying leads, x=#of Meter	-L Low Power Option -CL Output Clipping,
		20.0 35.0 50.0 0100 0250 0350 0500	B=Bar				
		2.50 5.00 7.00 10.0 15.0 20.0 30.0 50.0	M=mPa				

Part Number Example: GBMCT-6A N116.0BG4F10 **1/8NPT, 0-16Bar , Gage, 1-10Vdc,10M Flying Leads Pmin=0, Pmax=16Bar**

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 buyer s 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.

AV Sensors
AdVanced Sensor Design and Manufacture

GBMCT-6D SERIES

The GBMCT-6D Series Digital Transducer for Industrial High Pressure, I^2C & SPI Protocols

DESCRIPTION

Advanced Sensors Glass Bond Multi Chip Technology (GBMCT) 6D Series incorporates the latest mixed signal ASIC (Application Specific Integrated Circuit) with a *glass bonded* silicon gage to provide a leading *Digital Output* design for Industrial Transducers. The GBMCT 6D Series provides a 14bit digital pressure and 11 bit digital temperature output offered in SPI and I^2C protocols. The rugged design is compatible with a wide range of harsh media including refrigerants, compressed air, and hydraulic fluids. The designs superior performance provides 1% Total Error across a wide temperature range of -20 to 85°C and overall error of less than 2.5% over -40 to 125C. The flexible design incorporates many process fitting and connector types making it the ideal choice for OEM customers.

APPLICATIONS

- Hydraulic and Pneumatic
- HVAC
- Pumps and Compressors
- Refrigeration Systems
- Energy and Water Management

FEATURES

- Digital Temperature & Pressure Output
- ASIC Compensation
- Wide Temperature Range
- Hash Media Compatible
- High Accuracy
- Low Overall Errors, 1%TEB
- All Welded Design
- Custom Outputs and Ranges Available

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Performance Specifications						
Supply Voltage		2.7V	3.3	5.50	V	
Current Consumption				3	mA	
Pressure Resolution				14	bits	
Temperature Resolution				11	bits	
Output at Pmin			1638		cts	
Output at Pmax			14746		cts	
Span	FSS		13107		cts	
Pressure Accuracy		-0.25		0.25	mA	2
Total Error Band	TEB	-1.0		1.0	%FSS	3
Temperature Accuracy			2.5		°C	
Long Term Stability			±0.4		%FSS	
Conversion Time			1.0		mS	4
Power On to Valid Data				<10	mS	5
Life		1kk			cycles	
Weight				120	grams	
Compensated Temperature		-20 to 85			°C	
Operating Temperature		-40 to 125			°C	

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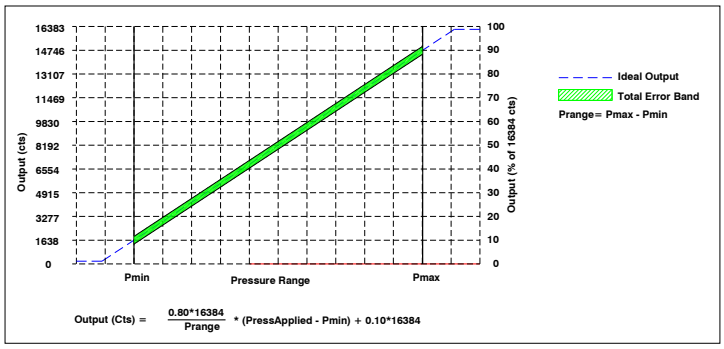
SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Absolute Maximum Conditions						6
Supply Voltage		-16		16	V	
Storage Temperature		-50		150	°C	
Burst Pressure				3x	Range	
Insulation Resistance		10			MΩ	500Vdc
Wetted Materials		316L, Epoxy, Silicon				

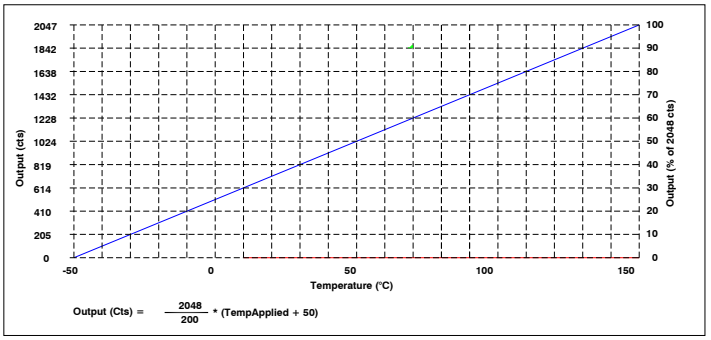
Reference Conditions: Vsupply: 3.30Vdc or 5.00, Ta=25°C.

1. All specification at reference conditions unless otherwise noted. Output is ratio metric to supply voltage.
2. Maximum deviation from a Best Fit Straight Line through Pmin and Pmax measured at 25°C. Errors included Pressure Non Linearity, Pressure Hysteresis and Repeatability.
3. Maximum deviation from the Ideal Transfer Function expressed as a percentage of the %FSS over the compensated temperature range. Includes calibration errors (Offset & Span), temperature errors (Offset & Span), pressure non-linearity, pressure and thermal hysteresis.
4. The time for the output DAC to be updated with new data.
5. The time for the output DAC to have valid data after a power on reset.
6. Exceeding Absolute Maximum Specification may damage the device. Extended exposure beyond the operating conditions may affect device reliability.

PRESSURE AND TEMPERATURE TRANSFER FUNCTIONS



Pressure Transfer Function, TEB Error



Temperature Transfer Function

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MECHANICAL DIMENSIONS in [mm]

M12x1
IEC 61076-2-101, Binder 09 0439 387 04
Protection Class (IEC 60529): IP67

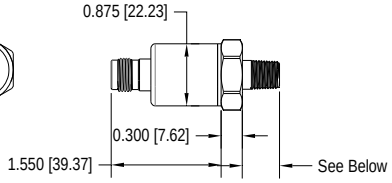
Mating M12x1 Connector
4 Position Femal,e Type D

Voltage
Regulated, Ratiometric

Pin 1: Supply +
Pin 4: Output+
Pin 3: Common

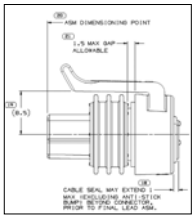
4-20mA
Transmitter

Pin 1: Supply+
Pin 4: Not Connected
Pin 3: Supply-



PACKARD CONNECTOR
Type A
Protection Class (IEC 60529): IP66

Mating Packard Connector
Housing Part Number: 12078090
Socket Part Number: 12103881

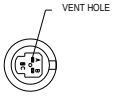


Voltage
Regulated, Ratiometric

Pin A: Supply +
Pin B: Common
Pin C: Output +

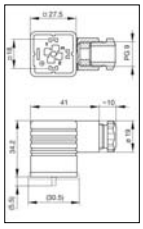
4-20mA
Transmitter

Pin A: Supply-
Pin B: Supply+
Pin C: Not Connected



HIRSCHMANN CONNECTOR
DIN 43650 FORM A, Part Number 933 376-100
Protection Class (IEC 60529): IP65

Mating Hirschmann Connector
Part Number: 931 969-100
Gasket (NBR) Part Number: 730 801-002
Knurled Screw Part Number: 732 574-001

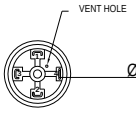


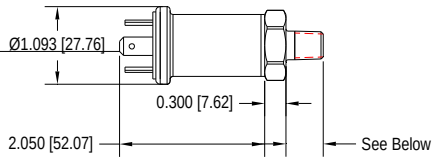
Voltage
Regulated, Ratiometric

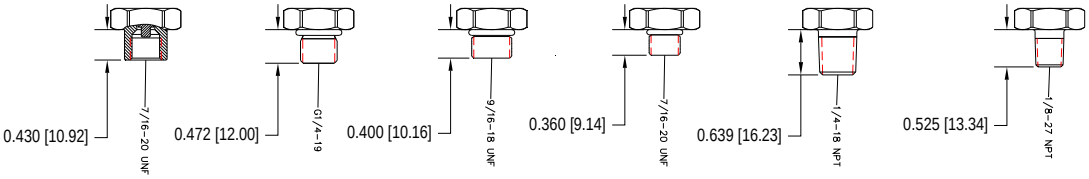
Pin 1: Supply+
Pin 2: Common
Pin 3: Output+
Pin 4: Case

4-20mA
Transmitter

Pin 1: +Supply
Pin 2: -Supply
Pin 3: Not Connected
Pin 4: Case







7/16-20 UNF SAE J1926-3 Female
Seal: Conical
Mating Standard: SAE J514
Installation: 18 N m [12.3 ft lb]

G1/4-19 ISO 1179-3
Seal: O-Ring
Mating Standard: ISO 1179-1
Installation: 50 N m [38.9 ft lb]

9/16-18 UNF SAE J1926-3
Seal: O-Ring
Mating Standard: SAE J1926-1
Installation: 30 N m [22.1 ft lb]

7/16-20 UNF SAE J1926-3
Seal: O-Ring
Mating Standard: SAE J1926-1
Installation: 18 N m [12.3 ft lb]

1/4 -18 NPT ANSI B1.20.1
Seal: Pipe Threads
Mating Standard: ANSI B1.20.1
Installation: 2-3 Turns Past Finger Tight

1/8-27 NPT ANSI B1.20.1
Seal: Pipe Threads
Mating Standard: ANSI B1.20.1
Installation: 2-3 Turns Past Finger Tight

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GBMCT-6D SERIES

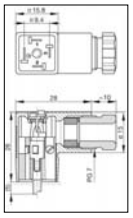
HIRSCHMANN CONNECTOR

DIN 43650 FORM C, Part Number 933 114-100

Protection Class (IEC 60529): IP65

Mating Hirschmann Connector

Part Number: 933 024-100
Gasket (NBR) Part Number: Supplied

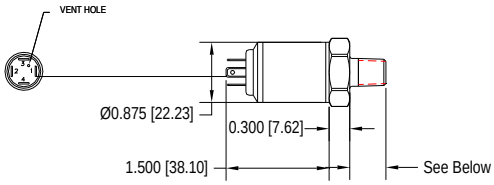


Voltage
Regulated, Ratiometric

Pin 1: Supply+
Pin 2: Common
Pin 3: Output+
Pin 4: Case

4-20mA
Transmitter

Pin 1: +Supply
Pin 2: -Supply
Pin 3: Not Connected
Pin 4: Case



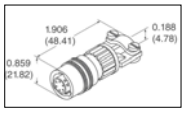
BENDIX CONNECTOR

MIL-C-26482, Part Number PT02A-10

Protection Class (IEC 60529): IP65

Mating Bendix Connector

Part Number: PT06A-10-6S



Voltage
Regulated, Ratiometric

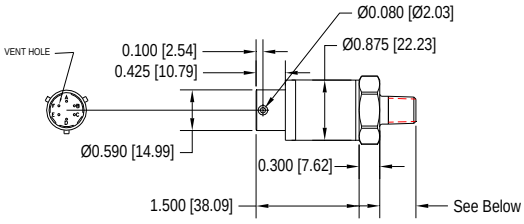
Pin A: Supply+
Pin B: Output+
Pin C: Common
Pin D: Common
Pin E: Not Connected
Pin F: Vent

Digital
I2C / SPI

Pin A: Supply+
Pin B: SDA/MISO
Pin C: Supply-
Pin D: SCK/SCLK
Pin E: SSI/INT
Pin F: Vent

4-20mA
Transmitter

Pin A, B: Supply+
Pin C, D: Supply-
Pin E: Not Connected
Pin F: Vent



FLYING LEADS

300 V Overall Foil Shield
Multiconductor, PVC, PVC

Protection Class (IEC 60529): IP65

Voltage
Regulated, Ratiometric

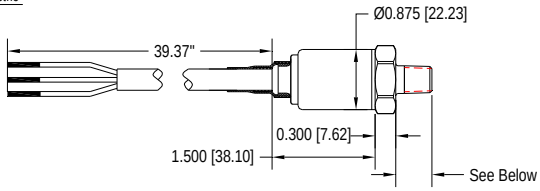
RED: Supply+
GRN: Output+
WHT: No Connection
BLK: Common

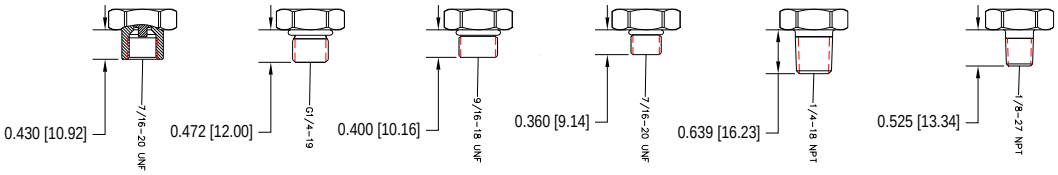
Digital
I2C / SPI

RED: Supply+
WHITE: SDA/MISO
BLACK: Supply-
BLUE: SCK/SCLK
GREEN: SS/INT

4-20mA
Transmitter

RED: Supply+
BLK: Supply-





7/16-20 UNF SAE J1926-3 Female

Seal: Conmical
Mating Standard: SAE J514
Installation: 18 N m [12.3 ft lb]

G1/4-19 ISO 1179-3

Seal: O-Ring
Mating Standard: ISO 1179-1
Installation: 50 N m [38.9 ft lb]

9/16-18 UNF SAE J1926-3

Seal: O-Ring
Mating Standard: SAE J1926-1
Installation: 30 N m [22.1 ft lb]

7/16-20 UNF SAE J1926-3

Seal: O-Ring
Mating Standard: SAE J1926-1
Installation: 18 N m [12.3 ft lb]

1/4 -18 NPT ANSI B1.20.1

Seal: Pipe Threads
Mating Standard: ANSI B1.20.1
Installation: 2-3 Turns Past Finger Tight

1/8-27 NPT ANSI B1.20.1

Seal: Pipe Threads
Mating Standard: ANSI B1.20.1
Installation: 2-3 Turns Past Finger Tight

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GBMCT-6D SERIES

PART NUMBERING FOR ORDERS

Series	Port Type	Pressure range (psi)	Pressure Units	Pressure Type (Range Availability) [Package Availability]	Calibrated Voltage	Digital Protocol	Electrical Connection
GBMCT-6D	N1 = 1/8 -27 NPT N2 = 1/4-18NPT S1 = 7/16-20UNF S2 = 9/16-18UNF G1 = G1/8 F1 =Female, 7/16-20UNF	0300 0500 1000 1500 2500 5000 7500 10k0	P=PSI	G= Gage (All Ranges) [All Port Types] A=Absolute (All Ranges) [All Port Types]	3=3.3Vdc 5-5.0Vdc	I= I2C Protocol S=SPI Protocol	M1=Micro M12 P2=Packard, Power B HA=Hirschmann Form A HC=Hirschmann Form C B1=Bendix F1=Flying leads, 1 Meter Fx=Flying leads, x=#of Meter
		20.0 35.0 50.0 0100 0250 0350 0500	B=Bar				
		2.50 5.00 7.00 10.0 15.0 20.0 30.0 50.0	M=mPa				

Part Number Example: GBMCT-6D N150.0BG3IP1 **1/8NPT, 0-50Bar , Gage, 3.3Vdc, I2c Protocol, Packard Connector, Pmin=0, Pmax=50Bar**

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 buyer s 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.

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DPG-2 SERIES

The DPG-2 Series
Digital Pressure Gage
Economical, 2.7in LCD Display
Multiple Industry Applications

DESCRIPTION

Advanced Sensors DPG-2 Series industrial Digital Pressure Gauge is the ideal selection for use with corrosive and demanding industrial pressure sensing applications. Made of one piece 17-4PH construction (no weld, no oil fill) this gauge can deliver 1.0% accuracy over vacuum and gauge applications. The 4 digit, large 2.7 inch display allows for the easy visibility from across the room or inside gas cabinets. Equipped with a backlight, the gauge can be read in low ambient light conditions. The DPG-2 series comes with basic embedded functions including auto Tare as well as auto power off function to conserve battery power. The IDPG 250 is available in many process fittings and pressure upto 5,000 psi gauge.

APPLICATIONS

- Hydraulic and Pneumatic
- HVAC
- Pumps and Compressors
- Refrigeration Systems
- Energy and Water Management

FEATURES

- Four digit 2.7inch LCD display
- Gauge and Compound Ranges
- Large Variety of Process Ports
- Fast update rate of 3Hz
- Protective Boot
- 5 Segment Battery Life Indicator
- One Piece No Weld Construction
- Auto Tare, Auto Power Off
- Standard Backlight Indicator
- Psi, KPa, Bar, Kgf/cm2 Pressure Units
- Power On, Range Descriptor
- Standard AAA Batteries (2x)

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Performance Specifications						
Accuracy		-1.0	±0.5	+1.0	%FS	
Operating Temperature		-10		40	◦C	
Thermal Errors			±0.04		%FS/◦F	
Long Term Stability		-0.20		+0.20	%FS/Year	
Resolution & Range		See Table				
Battery Life			300		Hrs	

AV Sensors
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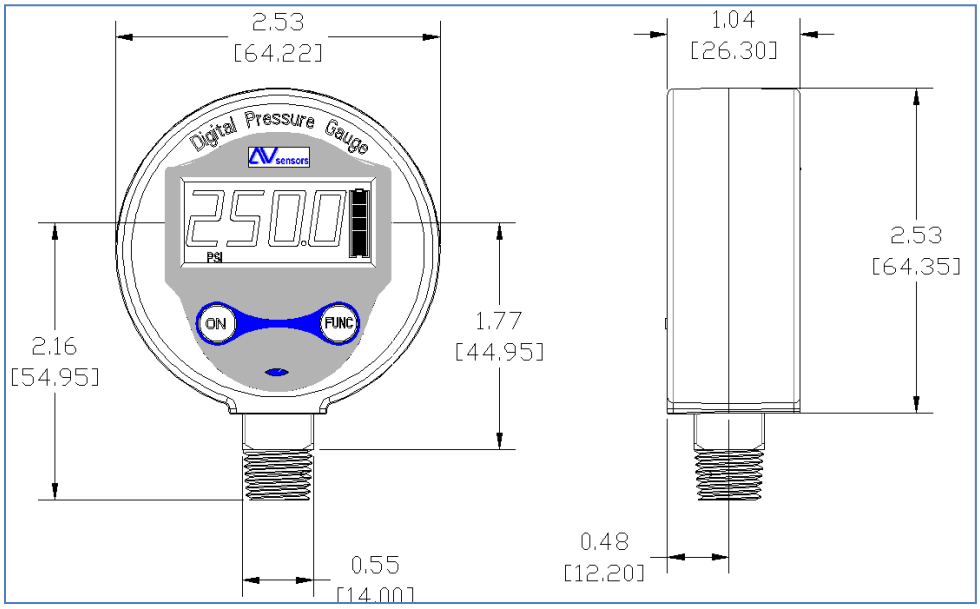
DPG-2 SERIES

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Absolute Maximum Conditions						
Pressure Cycles				>10 Million	Cycles	
Storage Temperature		-20		70	◦C	
Proof Pressure				2X	Range	
Burst Pressure				5X	Range	
Weight				250	Grams	
Media Compatibility (Wetted Materials) Applications		Material Compatible with 17-4PH Corrosive Gases and Liquids				

Sensor Range (Psi)	**Measurement Range (Units) Steps Resolution (Units)**							
Units	**Psi**		**Kpa**		**Bar**		**Kgf/cm2**	
	Min	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**
250	3.0 - 0.3	253.0	20 - 5	1745	0.20 - 0.05	17.45	0.20 - 0.05	17.80
500	5.0 - 0.5	505.0	35 - 5	3480	0.35 - 0.05	34.80	0.35 - 0.05	35.80
1000	10 - 1.0	1010	70 - 10	6965	0.70 - 1.0	69.65	0.70 - 1.0	71.00
2500	30 - 30	2530	-		2.0 - 0.5	175.0	2.0 - 0.05	178.3
5000	50 - 5	5050	-		3.5 - 0.5	34.80	0.35 - 0.5	35.50

MECHANICAL DIMENSIONS in [mm]



Shown without Protective Boo

AV Sensors
AdVanced Sensor Design and Manufacture

DPG-2 SERIES

PART NUMBERING FOR ORDERS

Series	Process Connection	Pressure Range (psi)	Pressure Type	Options
DPG-2	M04 - (1 / 4 NPT Male)	0250 0500 1000 2500 5000	G=Gauge C = Compound	

Part Number Example: DPG-2M040250C Compound Range (-14-7 to 250G) with 1 / 4 NPT Process Fitting

WARRANTY

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