

## 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 design's 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 125°C. 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
<b>Performance Specifications</b>						
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	

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
<b>Absolute Maximum Conditions</b>						
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			
<b>Electrical Output Type</b>	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

CONSTRUCTION	Material
<b>Wetted</b>	
Port	17-4 PH Stainless Steel
<b>External</b>	
MEMS Sense Element	Silicon Gage
Sensor Die Bond	Fused Glass Bond
Housing Tube	303 Stainless Steel
Connector	PBT Glass Filled
Cable Jacket	TPE

### MECHANICAL DIMENSIONS in [mm]

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

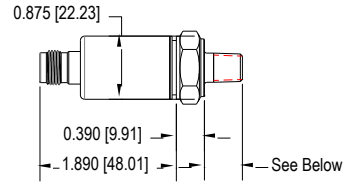
Mating M12x1 Connector  
4 Position Female Type D

Voltage  
Regulated, Ratiometric

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

4-20mA  
Transmitter

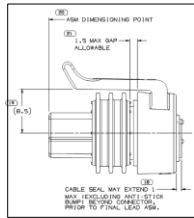
Pin 1: Supply+  
Pin 4: Not Connected  
Pin 3: Supply-



#### PACKARD CONNECTOR Type A

Protection Class (IEC 60529): IP66

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

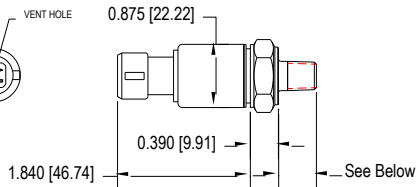


Voltage  
Regulated, Ratiometric

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

4-20mA  
Transmitter

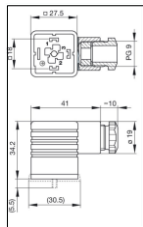
Pin A: Supply+  
Pin B: Supply+  
Pin C: Not Connected



#### 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

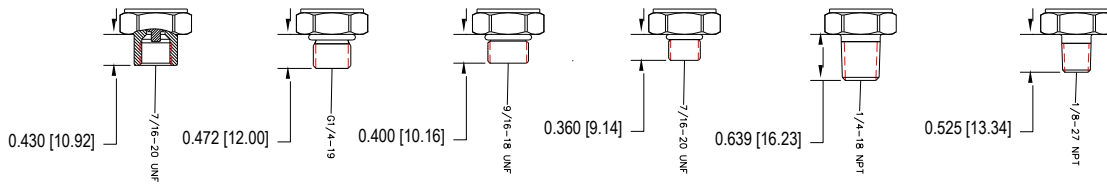
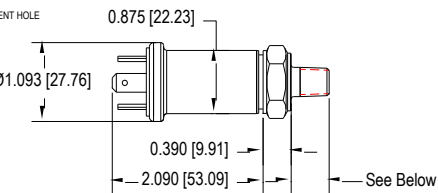
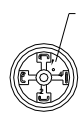


Voltage  
Regulated, Ratiometric

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

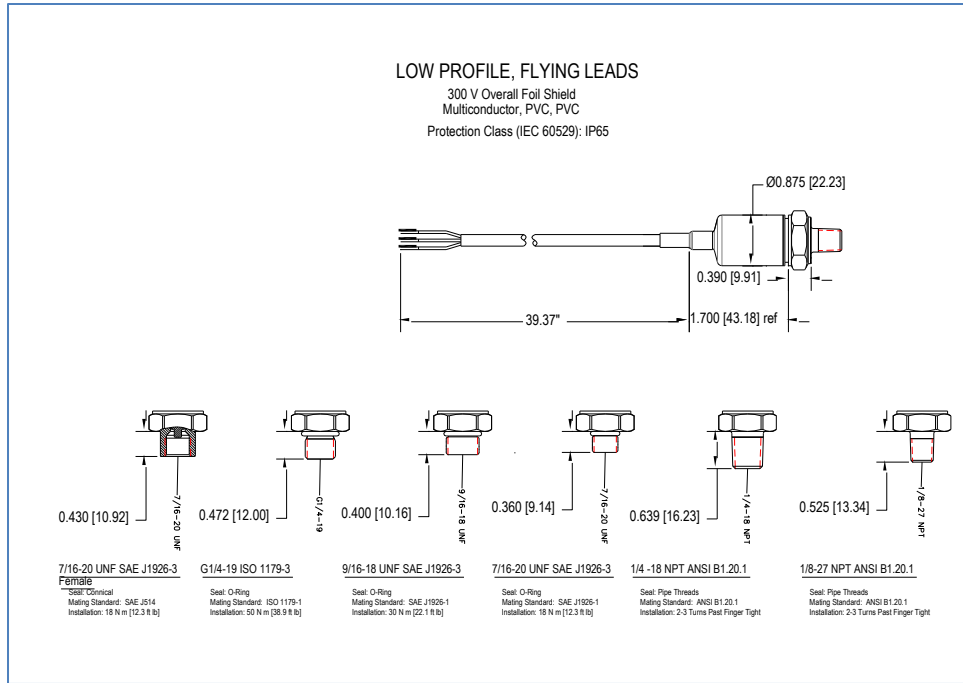
4-20mA  
Transmitter

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



Thread	Dimension [mm]	Seal	Mating Standard	Installation
7/16-20 UNF SAE J1926-3 Female	0.430 [10.92]	O-Ring	SAE J514	18 N m [12.3 ft lb]
G1/4-19 ISO 1179-3	0.472 [12.00]	O-Ring	ISO 1179-1	50 N m [38.9 ft lb]
9/16-18 UNF SAE J1926-3	0.400 [10.16]	O-Ring	SAE J1926-1	30 N m [22.1 ft lb]
7/16-20 UNF SAE J1926-3	0.360 [9.14]	O-Ring	SAE J1926-1	18 N m [12.3 ft lb]
1/4 -18 NPT ANSI B1.20.1	0.639 [16.23]	Pipe Threads	ANSI B1.20.1	2-3 Turns Past Finger Tight
1/8-27 NPT ANSI B1.20.1	0.525 [13.34]	Pipe Threads	ANSI B1.20.1	2-3 Turns Past Finger Tight





### Options

-ZSP Zero & Span Potentiometer

- R5= Span Adjustment
- R4= Zero Adjustment
- R6= Factory (Do Not Adjust)



-MHC Mating Hirschman Connector

Product is shipped with  
GDM 3009 Mating  
Connector



**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	0300	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  Fx LP=Flying leads, Low Profile x=#of Meter	-L Low Power Option  -CL Output Clipping,  -ZSP Zero & Span Potentiometer (4-20mA only)  -MHC Mating Hirschman Connector
		1500					
		2500					
	S1 = 7/16- 20UNF S2 = 9/16- 18UNF	5000	B=Bar				
		7500					
		10k0					
	G1 = G1/8  F1 =Female, 7/16-20UNF	20.0	M=mPa				
		35.0					
		50.0					
		0100					
		0250					
		0350					
		0500					

**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.