



MANY DATA ACQUISITION SYSTEMS ARE EQUIPPED FOR COMPLETING QUARTER-ARM AND HALF-BRIDGE STRAIN GAGE CIRCUITS USING INTERNAL RESISTORS. HOWEVER, WHEN LONG LEAD WIRES ARE REQUIRED BETWEEN THE DATA ACQUISITION SYSTEM AND THE STRAIN GAGE INSTALLATION SITE, THE WIRE IMPEDANCE WILL INFLUENCE THE BRIDGE CIRCUIT AND THE NOISE SENSITIVITY WILL INCREASE. THESE EFFECT ON THE MILLIVOLT-LEVEL OUTPUT SIGNALS FROM THE STRAIN GAGE CAN BE SIGNIFICANT. THEREFORE, IT IS OFTEN ADVANTAGEOUS TO COMPLETE THE BRIDGE CIRCUIT VERY NEAR THE GAGE LOCATION. THIS APPROACH PROVIDES A SYMMETRICAL AND BALANCED LEAD WIRE SYSTEM THAT REDUCES LEAD WIRE EFFECTS AND IMPROVES THE NOISE SENSITIVITY IN MOST ENVIRONMENTS.

WE HAVE DESIGNED OUR COMPLETION MODULES TO ALLOW FOR SIMPLE INPUT CONNECTION OF YOUR FOIL STRAIN GAGES WITH CUSTOM LENGTH, INTEGRATED INSTRUMENTATION CABLE OUTPUT. AVAILABLE IN BOTH 120Ω AND 350Ω CONFIGURATIONS AS WELL AS STANDARD OUTPUT AND 100 TIMES AMPLIFIED OUTPUT, THESE RUGGED RE-USABLE COMPLETION MODULES SIGNIFICANTLY REDUCES FIELD INSTALLATION TIME AND PROVIDE AN IMPROVED SIGNAL TO NOISE RATIO.

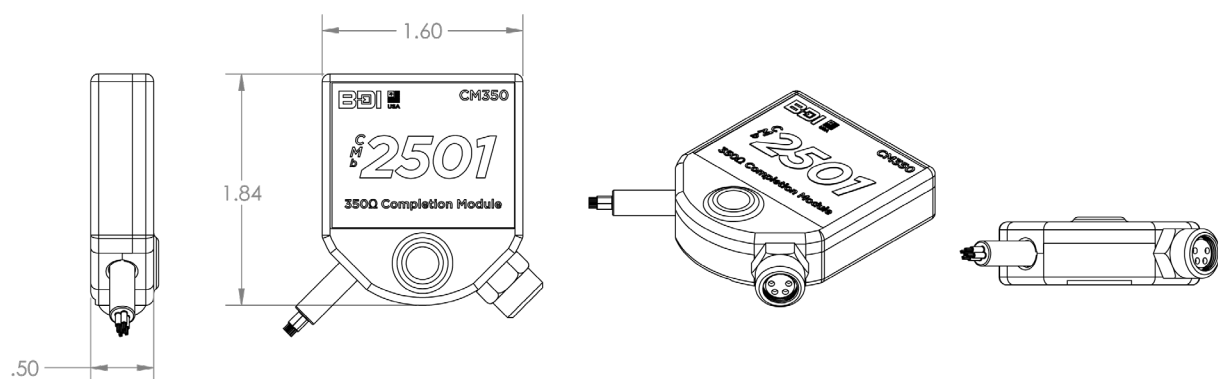
**FEATURES**

- + Completely reusable
- + Designed to exceed IP67
- + Minimizes lead wire effects
- + Rugged M8 mating connector
- + Pre-wired leads
- + Various mounting options available
- + Industrial cable, custom lengths
- + Simple to use!
- + Integrated thermistor

**APPLICATIONS**

- + Complete the Wheatstone bridge circuit near the strain gage installation location
- + Quarter Bridge Type I and Type II
- + Half Bridge Type I and Type II
- + Can be used on all types of 120Ω and 350Ω strain gages

**DIMENSIONS**



**SPECIFICATIONS**

MODEL	CM120	CM350	AC120	AC350
RESISTANCE	120Ω	350Ω	120Ω	350Ω
RESISTANCE ACCURACY	±0.02%	±0.02%	< 0.17%	< 0.17%
TEMPERATURE STABILITY <sup>1</sup>	Half -bridge: ±0.15 µε/°F (±0.27 µε/°C) Quarter-bridge: ±0.35 µε/°F (±0.63 µε/°C)		±23 PPM/°C ±0.20 µε/°F (±0.23 µε/°C)	
FOIL GAGE TYPE SUPPORTED	3-Wire hookup Quarter Bridge Type I 3-Wire hookup Quarter Bridge Type II 3- or 4-wire hookup Half Bridge Type I 3- or 4-wire hookup Half Bridge Type II		3-Wire hookup Quarter Bridge Type I 3-Wire hookup Quarter Bridge Type II 3- or 4-wire hookup Half Bridge Type I 3- or 4-wire hookup Half Bridge Type II	
FOIL GAGE INPUT CONNECTION	4-Pin M8 Connector		4-Pin M8 Connector	
EXITATION VOLTAGE <sup>2</sup>	+1.0 to +10.0 V <sub>dc</sub>		+2.0 to +5.0 V <sub>dc</sub>	
OUTPUT	mV level, ratiometric to Excitation Voltage		100X gain on mV level signal, ratiometric to Excitation Voltage	
<b>POWER RATING</b>				
MAX <sup>3</sup>	840 mW	300 mW	223 mW	85 mW
TYPICAL	210 mW @ +5.0 V <sub>dc</sub>	72 mW @ +5.0 V <sub>dc</sub>	210 mW @ +5.0 V <sub>dc</sub>	72 mW @ +5.0 V <sub>dc</sub>
INTELLIDUCER <sup>4</sup>	13 mW @ +5.0 V <sub>dc</sub>	13 mW @ +5.0 V <sub>dc</sub>	13 mW @ +5.0 V <sub>dc</sub>	13 mW @ +5.0 V <sub>dc</sub>
SHUNT RESISTOR	N/A		Internal, magnetically activated 174 kΩ shunt resistor	
TEMPERATURE SENSOR	3 kΩ - NTC (Internal)		3 kΩ - NTC (Internal)	
CABLE	Custom lead cable length made to order: IC-03-250 [24 AWG, 3 shielded pair, drain wire, green PVC jacket]		Custom lead cable length made to order: IC-03-250 [24 AWG, 3 shielded pair, drain wire, green PVC jacket]	
HOUSING	Machined 6061-Aluminum Alloy		Machined 6061-Aluminum Alloy	
CORROSION RESISTANCE	Hard Anodized Clear (MIL-A-8625 Type III)		Hard Anodized Clear (MIL-A-8625 Type III)	
ENVIRONMENTAL	Designed to exceed IP67		Designed to exceed IP67	
OPERATING TEMPERATURE <sup>5</sup>	-49° to +176 °F (45° to +80 °C)		-58° to +176 °F (-50° to +80 °C)	
SIZE	1.85 x 1.60 x 0.55 in (47 x 40.6 x 14 mm)		1.85 x 1.60 x 0.55 in (47 x 40.6 x 14 mm)	
WEIGHT	0.12 lb (54 g)		0.12 lb (54 g)	
MOUNTING	Through holes for ¼ in (M6) bolts or anchors Reusable mounting tabs (gluing/welding)		Through holes for ¼ in (M6) bolts or anchors Reusable mounting tabs (gluing/welding)	

<sup>1</sup> CM120 and CM350 temperature stability coefficients are valid over a range of 0° to 200 °F (-18° to +120 °C).

<sup>2</sup> AC120 operates on +2.0 V<sub>dc</sub> excitation only.

<sup>3</sup> Maximum power consumption is based on the maximum allowable excitation voltage.

<sup>4</sup> Intelliducer connector required with STS Intelliducer data acquisition nodes.

<sup>5</sup> Temperature limit based on instrumentation cable operating temperatures, call BDI for wide temperature range cable options.

Available in: GSA Schedule  
Contract GS07F197CA

**OPTIONS & ACCESSORIES**



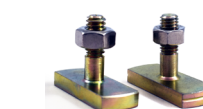
**Intelliducer Connector** - Required for use with STS Intelliducer Nodes, cable is connected and potted for a weatherproof seal.



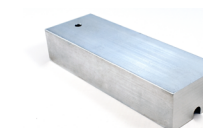
We offer **Strain Gage Lead Wire** assemblies for:

- Quarter Bridge Type I
- Quarter Bridge Type II
- Half Bridge Type I
- Half Bridge Type II

They come in Vinyl or Teflon ribbon wire.



**Reusable Mounting Tabs** - ¼-20 or M6, zinc plated steel mounting tab.



**Protective Covers** - Insulated aluminum protective covers