

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	REV A	DESCRIPTION ECN 299	DATE 09/05/07	APPROVED JWM

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CONTRACT NO.		QUAD TRON, INC.			
APPROVALS	DATE	MICRO PCM ENCODER SERIES, MODEL MI BRIDGE COMP. 2 CH. SIGNAL CONDITIONING MODULE			
DRAWN MJC	09/05/07				
CHECKED RHM	09/05/07				
ISSUE JWM	09/05/07	SIZE A	FSCM NO. OBPE4	DRAWING NO. 57-2567	REV A
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MICRO PCM ENCODER SERIES

TWO (2) CHANNEL SIGNAL CONDITIONING MODULE, MI_BRIDGE COMP

The 2-channel configuration is intended for strain gages, pressure transducers potentiometers, etc. that require significant signal conditioning flexibility. The unit provides programmable anti-aliasing six-pole filtering, programmable gain and programmable offset. All modules in a stand alone or distributed system are programmed via one PCM base unit (MI_BASE3 Module) connected to a PC running Windows Software. Bridge voltage excitation is provided by other modules such as the MI_EXC Module.

Electrical Specifications:

Analog Inputs:

2 Differential Inputs with full signal conditioning, programmable simultaneous sampling.

Gain: High resolution programmable with >16,000 possible gains from 1 to 10,000.

Offset: High resolution programmable with >8,000 offsets from -4.5V to +4.5V.

Anti Aialiasing Filters: High resolution programmable with >8,000 cutoff frequencies from 2 Hz to 20 kHz.

Allowable input signal levels on either input from -5V to + 5V.

Maximum Input \pm 40 volts will not damage any analog input.

Input Impedance: 1.0 Gig ohm (Power On)

System Gain Accuracy: \pm 0.2% maximum over the operating temperature range.

A/D: 16 Bits, 0 + 5.0 Volts

Amplifier 3dB Bandwidth:	Gain 1 to 10 = full 20 kHz bandwidth
	Gain 10 to 100 = full 20 kHz bandwidth
	Gain 100 to 1000 = 10 kHz
	Gain 1000 to 10000 = 1.0 kHz

CMRR:	90 db typical, gain=1 to 10
	96 db typical, gain=10 to 100
	106 db typical, gain=100 to 10,000

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Environmental:

Operating Temperature: -40°C to +85°C
Storage Temperature: -55°C to +125°C
Humidity: Relative humidity of 85% for two hours at 65°C.
Altitude: Unlimited
Vibration: 20g's RMS from 5 to 2000Hz in each major axis.
Acceleration: Constant acceleration of 100g's in each axis.
Shock: 100g's for 10m second in each major axis.

Mechanical:

2 Channel Signal Conditioning Module:
Length: 3.50 inches; Width: 1.25 inches; Height: 0.310 inches.

Engraving:
MI BRIDGE COMP.

Connecting Module Straps

The module address is programmed via three straps at the connector. They are STP0 (pin 23), STP1 (pin 24) and STP2 (pin 25). Valid modules addresses are 1 through 7. The base unit defaults to module address 0. All three straps are pulled high. To obtain a binary 1, leave unconnected. Connect to DGND (pin 22) to obtain a binary 0. STP0 is the least significant bit. Avoid module address conflicts by assigning a unique module address to each module attached to a base unit.

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J1 pin connections

Connector P.N.: Nanonics # STM025M6HN; TYCO # 3-1589487-2

Mate P.N.: P.N.: Nanonics # STM025PC2DC024N; TYCO # 8-1589473-9

1	AGND	14	TCK_CPLD
2	IN2-	15	TDO_CPLD
3	AGND	16	TMS_CPLD
4	IN2+	17	TDI_ATMEL
5	AGND	18	TDO_ATMEL
6	AGND	19	TCK_ATMEL
7	AGND	20	TMS_ATMEL
8	IN1-	21	RESET_ATMEL_N
9	AGND	22	DGND
10	IN1+	23	STP0
11	AGND	24	STP1
12	AGND	25	STP2
13	TDI_CPLD		

<u>PIN</u>	<u>SIGNAL</u>	<u>FUNCTION</u>
2	IN2-	Differential Input -, Channel 2
4	IN2+	Differential Input +, Channel 2
8	IN1-	Differential Input -, Channel 1
10	IN1+	Differential Input +, Channel 1
1,3,5,6	AGND	Analog Ground
7,9,11,12	AGND	Analog Ground
13	TDI_CPLD	CPLD JTAG
14	TCK_CPLD	CPLD JTAG
15	TDO_CPLD	CPLD JTAG
16	TMS_CPLD	CPLD JTAG
17	TDI_ATMEL	Micro Controller JTAG & Reset
18	TDO_ATMEL	Micro Controller JTAG & Reset
19	TCK_ATMEL	Micro Controller JTAG & Reset
20	TMS_ATMEL	Micro Controller JTAG & Reset
21	RESET_ATMEL_N	Micro Controller JTAG & Reset
22	DGND	Digital Ground
23	STP0	Strapping Pins for Card Address, Pulled High. Connect to DGND for Binary 0.
24	STP1	Strapping Pins for Card Address, Pulled High. Connect to DGND for Binary 0.
25	STP2	Strapping Pins for Card Address, Pulled High. Connect to DGND for Binary 0.

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