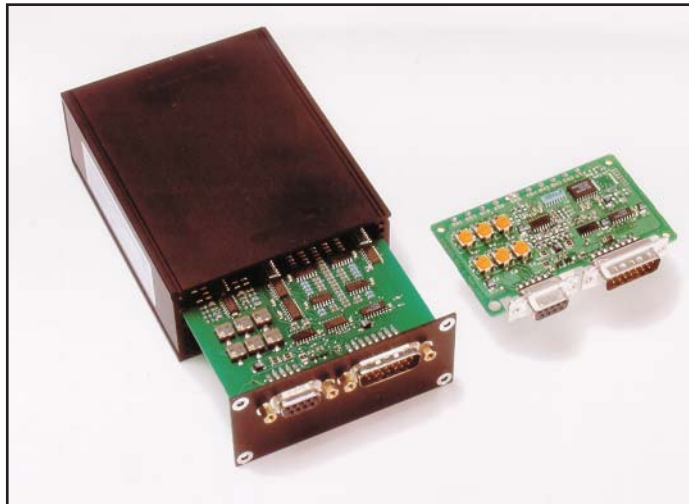


GURLEY MODELS HR2B AND HR2C HIGH RESOLUTION INTERPOLATORS



The **HR2B** and **HR2C** interpolators increase the final resolution of your **9710** modular rotary encoder or **9717** modular linear encoder by up to 80 times the line count on the disc or scale. The **HR2C** generates quadrature square waves up to 25 times the line count, and the **HR2B** provides 20X square waves. Both models include a quarter-cycle gated index and a "watchdog" circuit to monitor the analog waveforms from the encoder.

INCREASED RESOLUTION - WATCHDOG CIRCUIT

SPECIFICATIONS	HR2B	HR2C
Applicability	For use with Gurley Model 9710 and 9717 modular incremental encoders	
Input signals	Complementary phototransistor currents all channels	
Input power	+5.0 \pm 0.25V @ 125 mA max, excluding transmission line termination requirements; consult encoder data sheet for encoder power requirements	
Output signals	Quadrature square waves at INT times the line count on the disc or scale. Index , quarter-cycle-wide gated, is logic high when A & B are high. Watchdog output (FLT) is low when analog encoder waveforms are faulty or deteriorating.	
Output device	RS-422 differential line driver all channels (26ET31 or equal)	
Interpolation factor (INT)	20	1, 2, 5 or 10
*Input frequency, max	25 kHz	100 kHz
*Output frequency, max	INT = 20: 500 kHz	INT = 01: 100 kHz INT = 02: 150 kHz INT = 05: 300 kHz INT = 10: 500 kHz
Interpolation error, max	± 0.1 quantum. This is the maximum error seen at the output square wave transitions; does not include encoder error (see specific encoder data sheet), nor quantization error, which is always $\pm \frac{1}{2}$ quantum.	
Operating temperature	0° to 70°C (32° to 158°F)	
Storage temperature	-18° to 71°C (0° to 160°F)	
Humidity	98% rh, non-condensing	
Weight, pc board assy	50 g (1.8 oz)	35 g (1.2 oz)
Weight, housing	272 g (9.6 oz)	
Input connector	DE-9S; includes regulated current source to encoder LED	
Output connector	DA-15P	

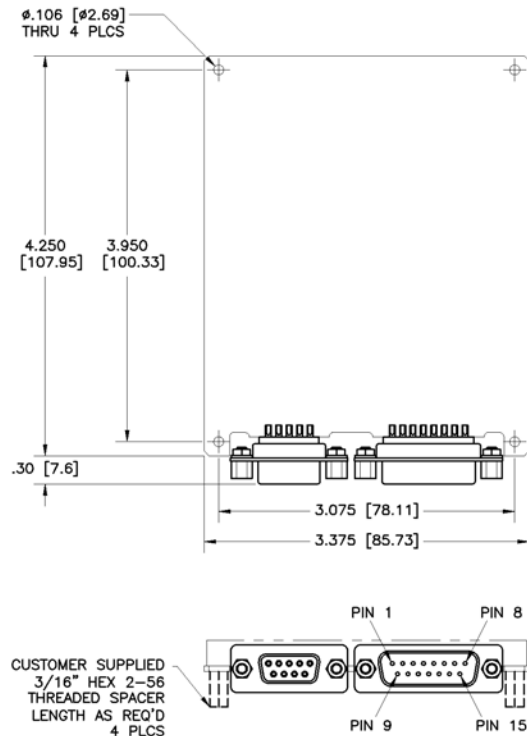
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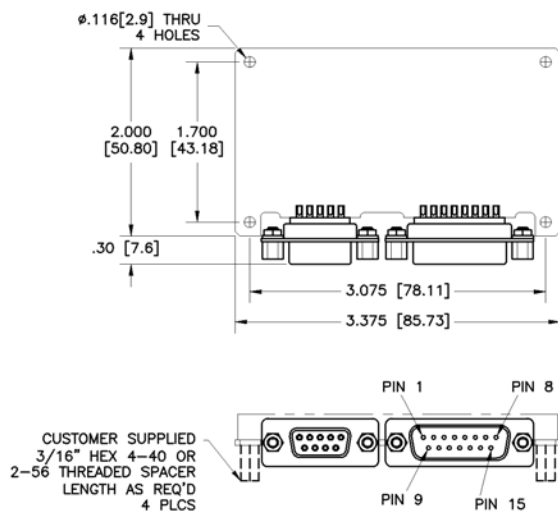
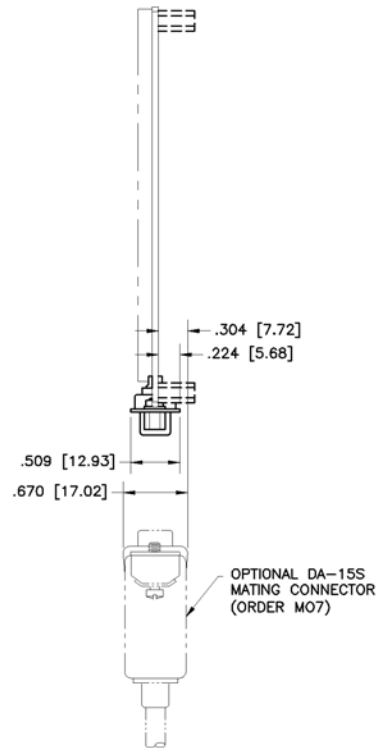
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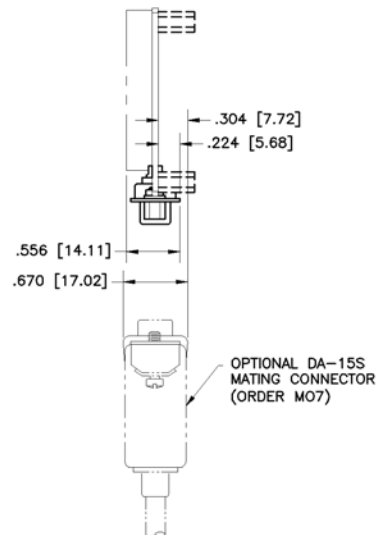
HR2B/HR2C OUTLINE DIMENSIONS



HR2B OUTLINE DIMENSIONS



HR2C OUTLINE DIMENSIONS

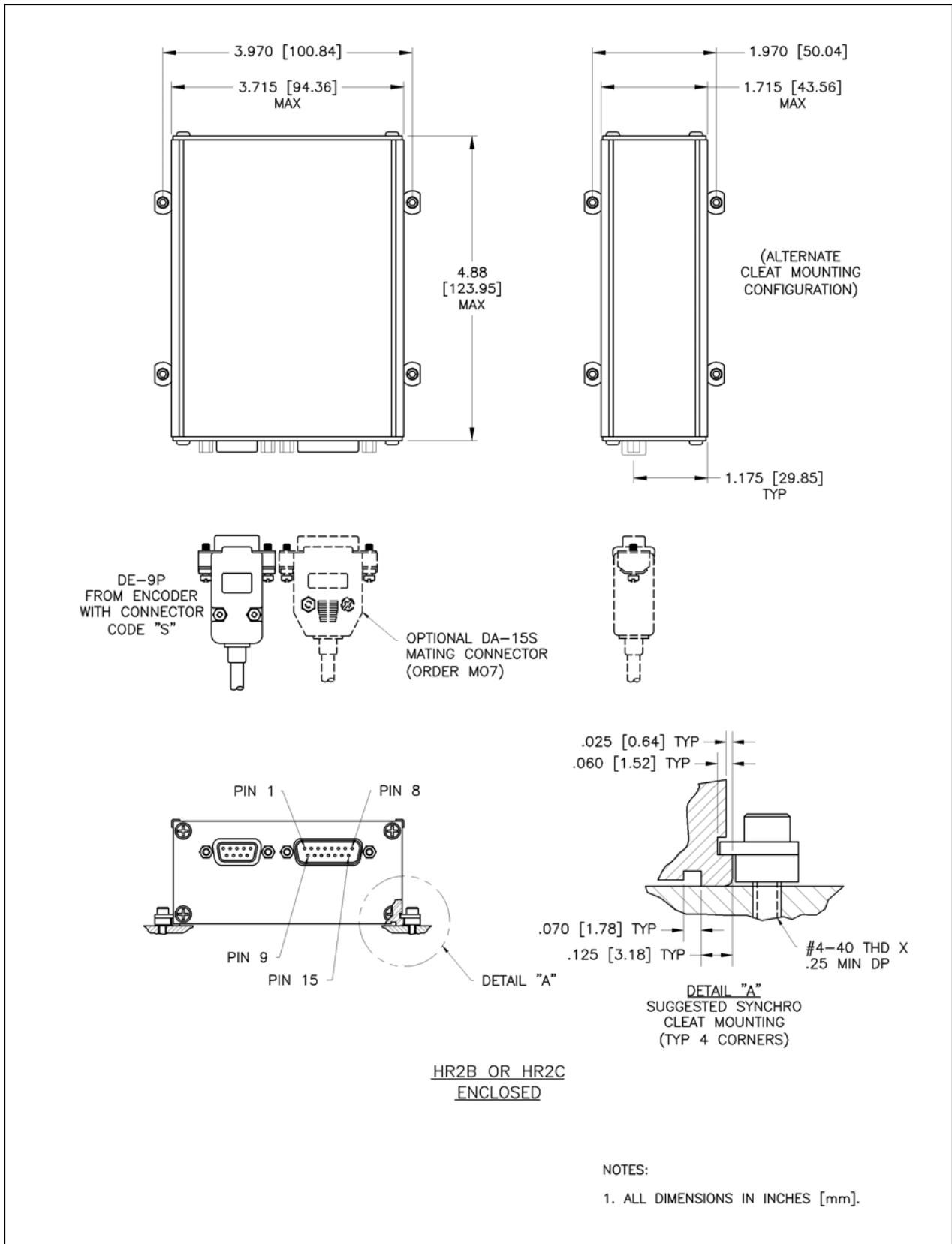


NOTES:

1. ALL DIMENSIONS IN INCHES [mm].



HR2B/HR2C ENCLOSED



OUTPUT CONNECTIONS

PIN #	FUNCTION	PIN #	FUNCTION
1	/IND	9	CSE
2	IND	10	+5V
3	+5V	11	/FLT
4	/CHB	12	FLT
5	CHB	13	GND
6	GND	14	GND
7	/CHA	15	N/C
8	CHA	SHELL	CSE

Multiple supply and return pins simplify the use of parallel conductors to reduce IR voltage drops and the implementation of remote sensing to improve voltage regulation. This feature is especially helpful when using mass-terminated connectors.

ORDERING INFORMATION

VERS **INT** **INDEX** **POWER INPUT** **PKG** **SF**
 HR2

<u>VERS</u>	B	3" x 4¼" board; 20X interpolation
	C	3" x 2" board; 1, 2, 5 or 10X interpolation
<u>INT</u>	01, 02, 05, 08, 10, 12, 16, or 25	Interpolation factors available with <u>VERS</u> = C
	20	Interpolation factor available with <u>VERS</u> = B
	Q	Quarter-cycle gated index
<u>INDEX</u>	Q	Quarter-cycle gated index
<u>POWER</u>	5	5Vdc input power
<u>INPUT</u>	A	Differential photocurrents
<u>PKG</u>	0	PC board assembly, for mounting inside user's enclosure
	1	Mounted in aluminum enclosure, IP 40
<u>SF</u>	#	Issued at time of order to cover special customer requirements
	N	No special features

SPECIAL CAPABILITIES

For special situations, we can optimize encoders to provide higher frequency response, greater accuracy, wider temperature range, reduced torque, non-standard line counts, or other modified characteristics. In addition, we regularly design and manufacture custom encoders for user-specific requirements. These range from high-volume, low-cost, limited-performance commercial applications to encoders for high-performance, high-reliability conditions. We welcome the opportunity to help you with your special encoder needs.

WARRANTY

Gurley Precision Instruments offers a limited warranty against defects in material and workmanship for a period of one year from the date of shipment.

HR2B/HR2C
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V3.1

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