



PC4 Product Description

The PC4 is a small, plug-in RS-422 cable driver board that drives long cables up to one thousand feet using differential signaling to improve noise immunity. The PC4 can be used with the E2

(<https://www.usdigital.com/products/encoders/incremental/kit/e2/>), E3

(<https://www.usdigital.com/products/encoders/incremental/kit/e3/>), H1

(<https://www.usdigital.com/products/encoders/incremental/shaft/h1/>), H3 (<https://www.usdigital.com/products/encoders/incremental/shaft/h3/>), S1

(<https://www.usdigital.com/products/encoders/incremental/shaft/s1/>), and S2 (<https://www.usdigital.com/products/encoders/incremental/shaft/s2/>) encoders. Each board has a 5-pin socket designed to plug into the 5 pins of the encoder.

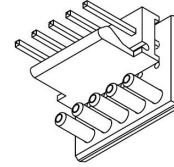
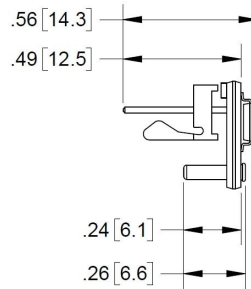
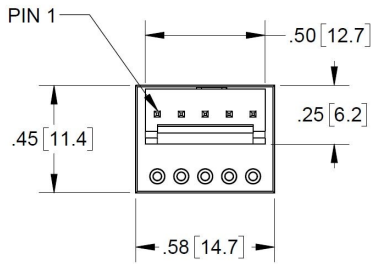
On the output side, the PC4 can use ribbon cables for lengths up to 100 feet; twisted pair cables are recommended for longer lengths. An optional 120 Ω terminating resistor may be placed across each pair on the receiver side of the cable, matching the cable's characteristic impedance. When calculating the power requirements of the encoder side of the cable, including the current consumed by the module, the driver IC and any terminating resistors. Be sure to supply sufficient voltage to compensate for the voltage drop due to the resistance of the power and ground wires. If an RS-422 receiver chip such as 26C32 is used on the receiver side of the cable, a 0.1 μ F ceramic monolithic bypass capacitor across +5V and ground located within 1 inch of the receiver chip is recommended.



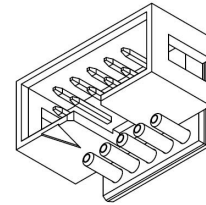
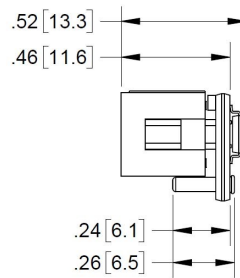
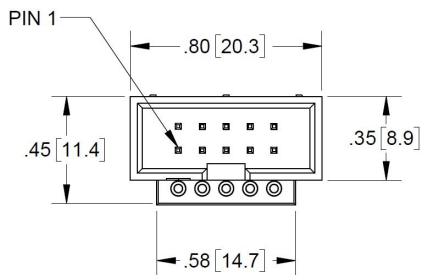
Mechanical Drawings

PC4 Incremental Encoder Cable Driver

RELEASE DATE: 03/13/2020



PC4-H5



PC4-H10

US DIGITAL 1400 NE 136th Avenue
Vancouver, Washington 98684, USA

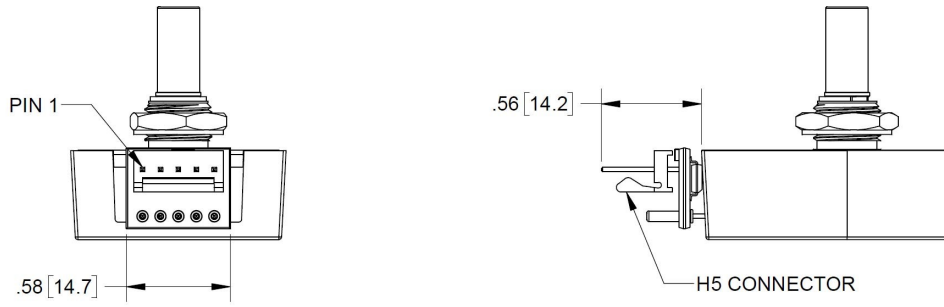
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UNITS: INCHES [MM]
METRIC SHOWN FOR REFERENCE ONLY

PC4 Incremental Encoder Cable Driver

RELEASE DATE: 03/13/2020



SHOWN MOUNTED ON AN S1 ENCODER



SHOWN MOUNTED ON AN E2 ENCODER

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Specifications

ENVIRONMENTAL

PARAMETER	MIN.	MAX.	UNITS
Operating Temperature	-40	100	C
Electrostatic Discharge, Human Body Model	-2	2	KV



ELECTRICAL

PARAMETER	MIN.	TYP.	MAX.	UNITS	NOTES
Supply Voltage	4.5	-	5.5	Volts	-
Supply Current (26C31)	-	1	2	mA	-
Output High Voltage	2.5	-	-	Volts	IOH = -20 mA
Output Low Voltage	-	-	0.8	Volts	IOL = 20 mA
Propagation Time	-	-	15	ns	-

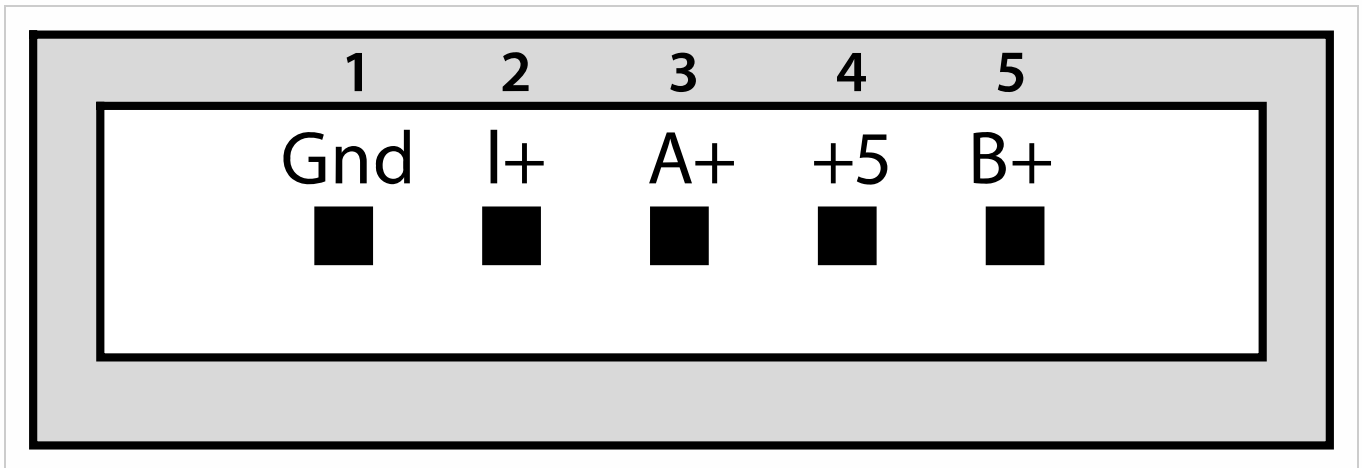
CONNECTORS

PRODUCT	DRIVER HEADER	CONNECTOR MATES WITH
PC4-H10	TE# 103309-1	CON-C10*
PC4-H5	TE# 640456-5	CON-C5*

* US Digital part number. For more information see the Cables (<https://www.usdigital.com/products/accessories/cables/>) / Connectors (<https://www.usdigital.com/products/accessories/connectors/>) page.

PIN-OUTS

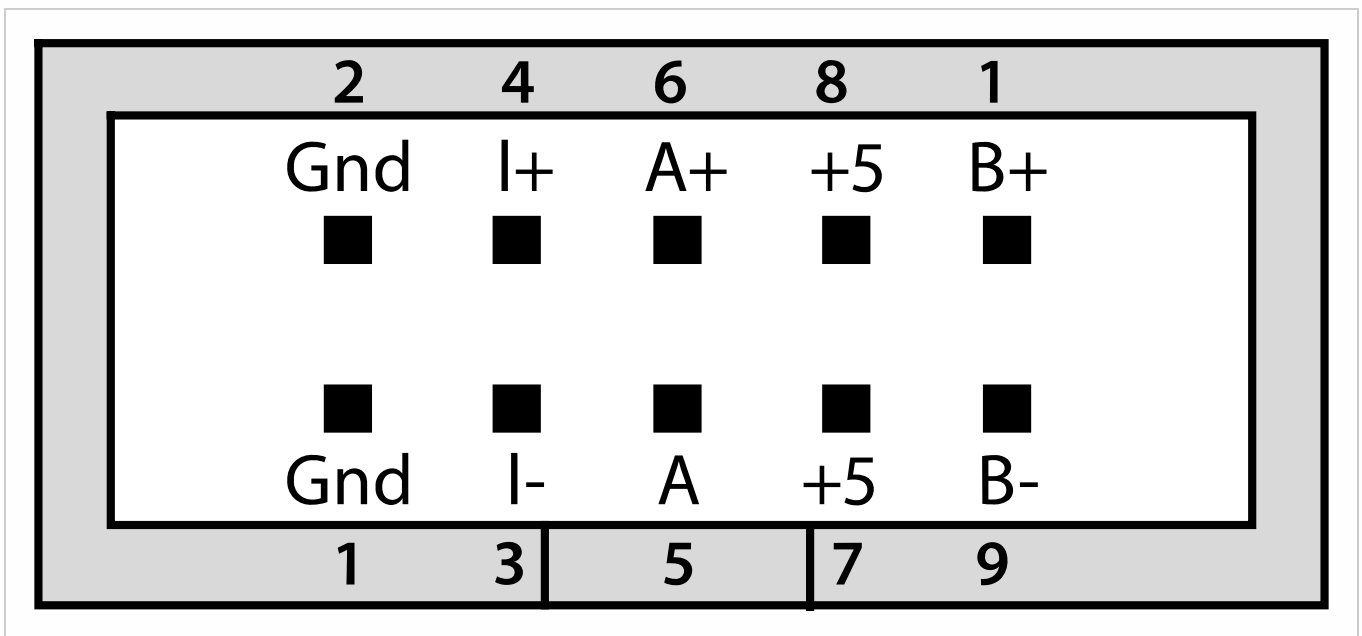
PC4-H5 OUTPUT CONNECTOR





PIN	DESCRIPTION
1	Ground
2	Index
3	A channel
4	+5VDC power
5	B channel

PC4-H10 OUTPUT CONNECTOR





PIN	DESCRIPTION
1	Ground
2	Ground
3	Index-
4	Index+
5	A- channel
6	A+ channel
7	+5VDC power
8	+5VDC power
9	B- channel
10	B+ channel

Notes

- Cables and connectors are not included and must be ordered separately.
- US Digital® warrants its products against defects in materials and workmanship for two years. See complete warranty (<https://www.usdigital.com/company/warranty>) for details.

Configuration Options

PC4

Connector

H10 (H10 Header)

H5 (H5 Header)

PLEASE NOTE: This chart is for informational use only. Certain product configuration combinations are not available. Visit the PC4 product page (<https://www.usdigital.com/products/PC4>) for pricing and additional information.