



## 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 provide improved noise immunity. The **PC4** can be used with the E3 (<https://www.usdigital.com/e3>), H3 (<https://www.usdigital.com/h3>), S2 (<https://www.usdigital.com/s2>) encoders. Each board has a 5-pin socket designed to plug into the 5 pins of the encoder.

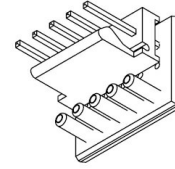
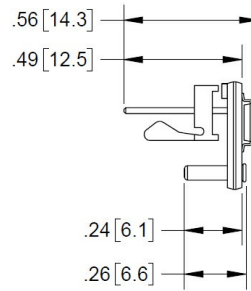
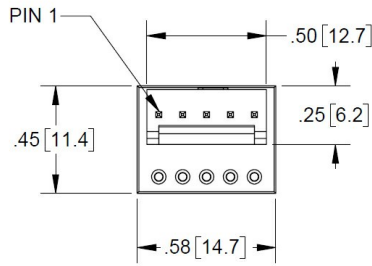
On the output side of the **PC4**, ribbon cables can be used for lengths up to 100 feet; twisted pair cables are recommended for longer lengths. An optional 120  $\Omega$  terminating resistor may be placed across each pair on the receiver side of the cable, matching the cable's characteristic impedance. When calculating the power requirements of the encoder side of the cable, include 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 $\mu$ F ceramic monolithic bypass capacitor across +5V and ground located within 1 inch of the receiver chip is recommended.

## Mechanical Drawings

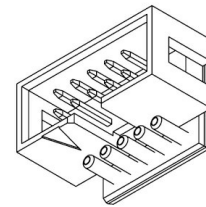
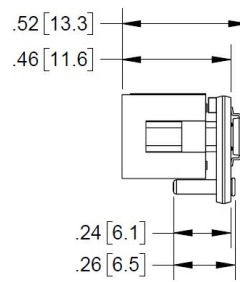
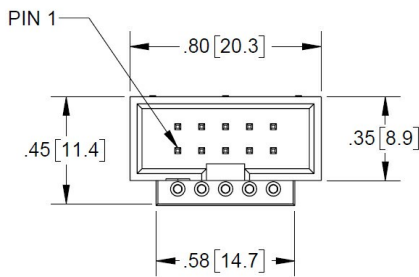


# PC4 INCREMENTAL ENCODER CABLE DRIVER

## PC4 Incremental Encoder Cable Driver



PC4-H5



PC4-H10

RELEASE DATE: 03/13/2020

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

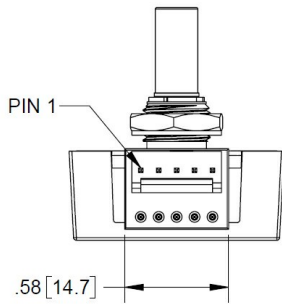
info@usdigital.com  
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Toll-free: 800.736.0194

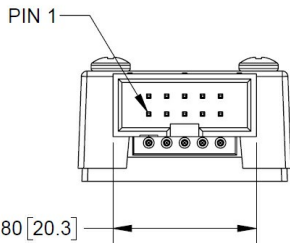
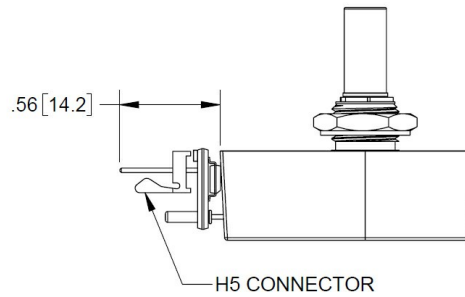
UNITS: INCHES (MM)  
METRIC SHOWN FOR REFERENCE ONLY



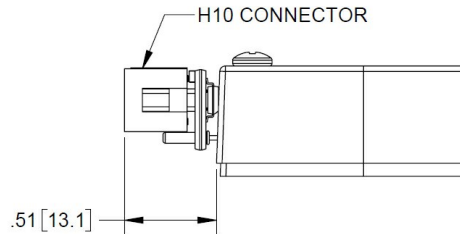
## PC4 Incremental Encoder Cable Driver



SHOWN MOUNTED ON AN S1 ENCODER



SHOWN MOUNTED ON AN E2 ENCODER



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UNITS: INCHES [MM]  
METRIC SHOWN FOR REFERENCE ONLY

## Specifications

### ENVIRONMENTAL

PARAMETER MIN. MAX. UNITS Operating Temperature -40 100 CElectrostatic Discharge, Human Body Model -22kV

### 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	-



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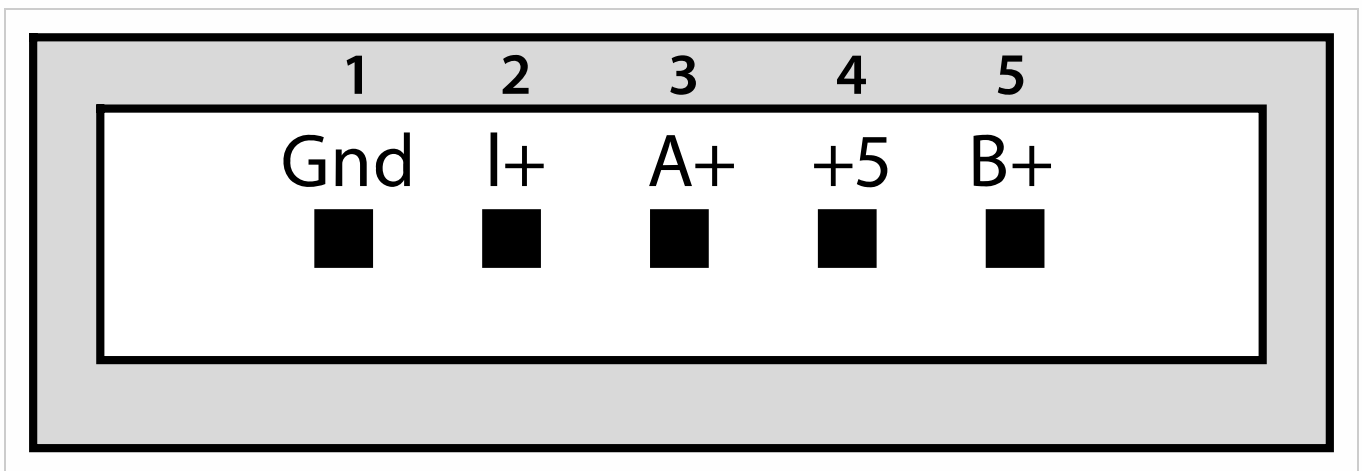
## CONNECTORS

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.

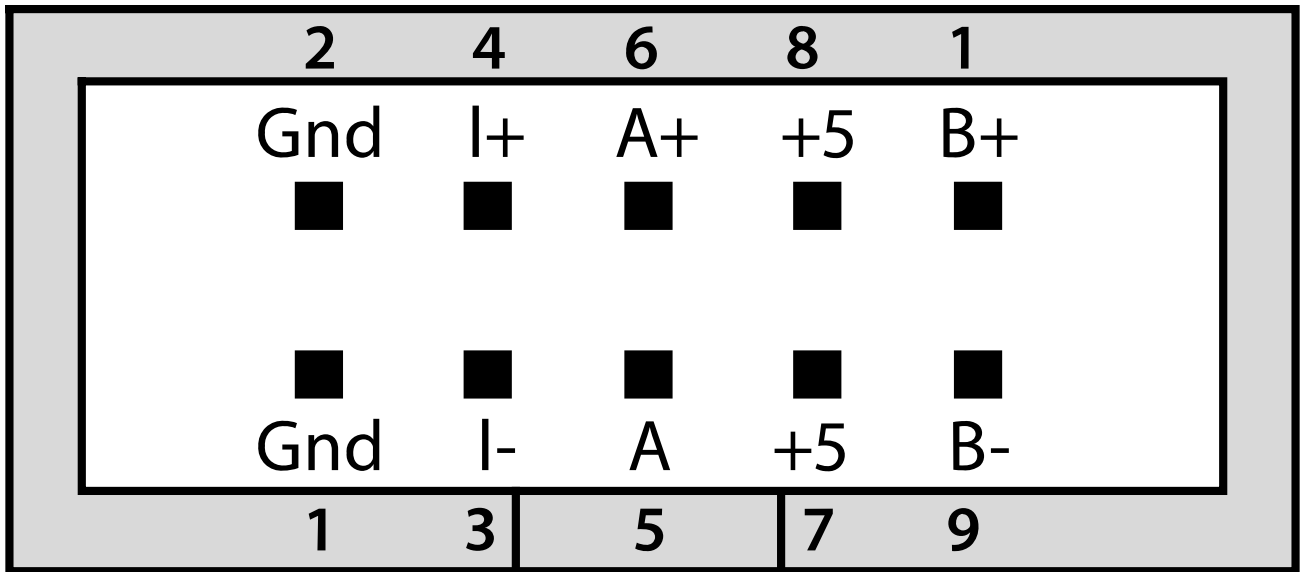
## PIN-OUTS

### 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

## ORDERING INFORMATION

PC4 -

- Connector  
H5  
H10

## 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



# PC4 INCREMENTAL ENCODER CABLE DRIVER

warranty (<https://www.usdigital.com/company/warranty>) for details.