



PC3 Product Description

The PC3 provides single-ended, open collector outputs and includes a switching power regulator that accepts a power supply from 9.5 to 32 volts. The PC3 is intended for applications where 5VDC is not available to power the encoder or higher voltage output from the encoder channel is needed. To achieve the desired output voltage range, add external pull-up resistors to the PC3 open collector outputs. The PC3 provides the added benefit of being a single-ended cable driver for cables up to 500 feet in length.

Two versions of the PC3 are offered, a "header" version and an "inline" version. The header version (option H5) has connector pins on the board that plugs directly into the encoder. The inline version (options C5, FC5, LC5, and W5) connects to the encoder with a short cable.

Compatibility with US Digital products:

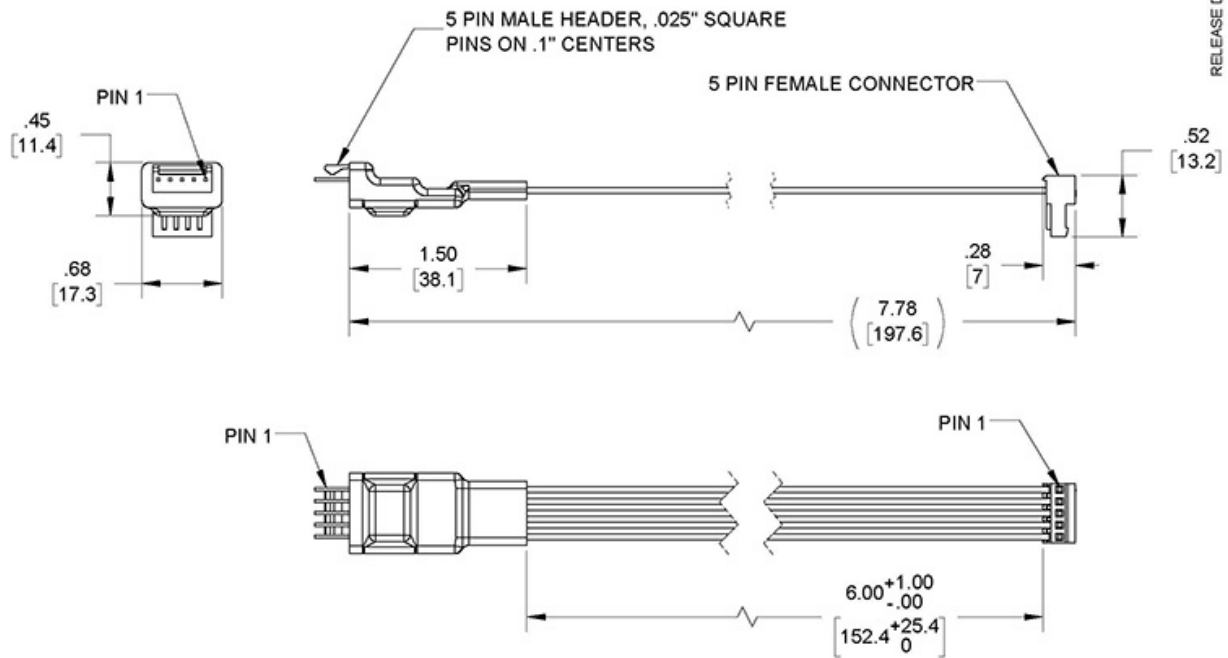
- PC3-H5 header version is used with the E2 (<https://www.usdigital.com/products/encoders/incremental/kit/e2/>) and H1 (<https://www.usdigital.com/products/encoders/incremental/shaft/h1/>). This is the version pictured above, with connector pins attached to an encoder module and a white header for output.
- PC3-C5 and PC3-LC5 inline versions can be used with S1 (<https://www.usdigital.com/products/encoders/incremental/shaft/s1/>), S2 (<https://www.usdigital.com/products/encoders/incremental/shaft/s2/>), 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/>), and H3 (<https://www.usdigital.com/products/encoders/incremental/shaft/h3/>) encoders and the HEDS and EM1 (<https://www.usdigital.com/products/encoders/incremental/modules/em1/>)/EM2 (<https://www.usdigital.com/products/encoders/incremental/modules/em2/>) optical encoder modules. Both versions have the white header pictured above, but the connector pins have been replaced with either a red right angle connector (C5) or a black high-retention connector (LC5).
- PC3-FC5 inline version is used with the "S" (single-ended) output versions of the E5 (<https://www.usdigital.com/products/encoders/incremental/kit/e5/>), E6 (<https://www.usdigital.com/products/encoders/incremental/kit/e6/>), H5 (<https://www.usdigital.com/products/encoders/incremental/shaft/h5/>), H6 (<https://www.usdigital.com/products/encoders/incremental/shaft/h6/>), HB5M (<https://www.usdigital.com/products/encoders/incremental/hollow-bore/hb5m/>), and HB6M (<https://www.usdigital.com/products/encoders/incremental/hollow-bore/hb6m/>) encoders. In this version, the connector pins have been replaced with wires terminating in a female latching connector that plugs into the listed encoders. The output is a male right angle latching receptacle.
- PC3-W5 inline version has the white header for output, and the input connector pins have been replaced with 12 in. long discrete wires.

Mechanical Drawings

PC3 Encoder Open Collector Cable Driver

PC3-C5 Encoder Open Collector Cable Driver

RELEASE DATE: 02/04/2019



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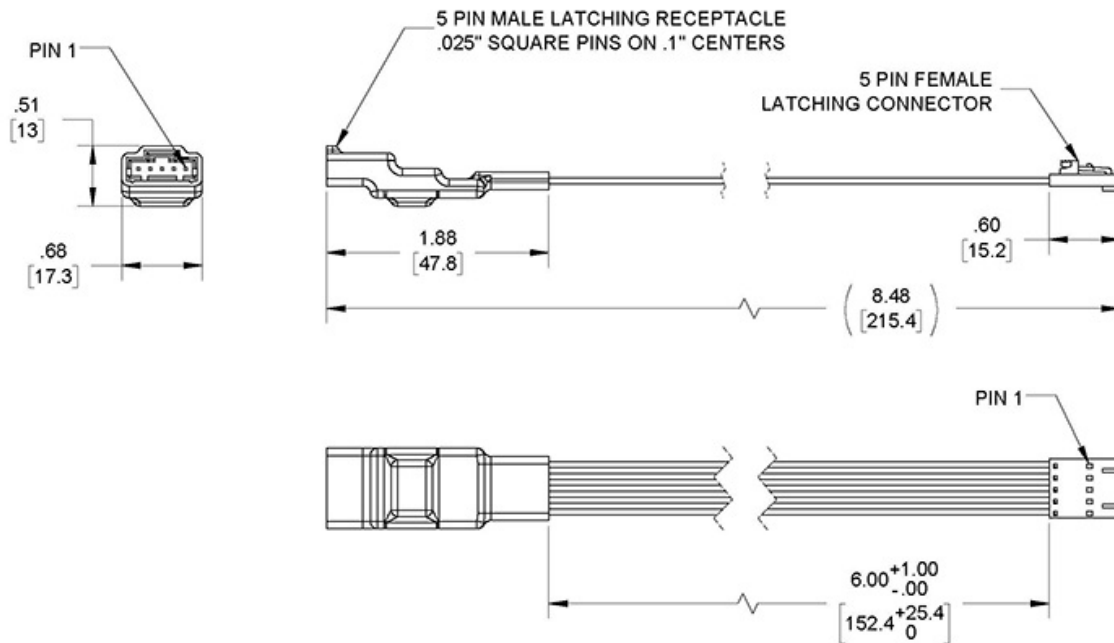
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PC3 Encoder Open Collector Cable Driver

PC3-FC5 Encoder Open Collector Cable Driver

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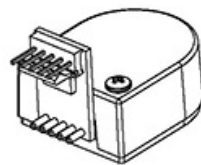
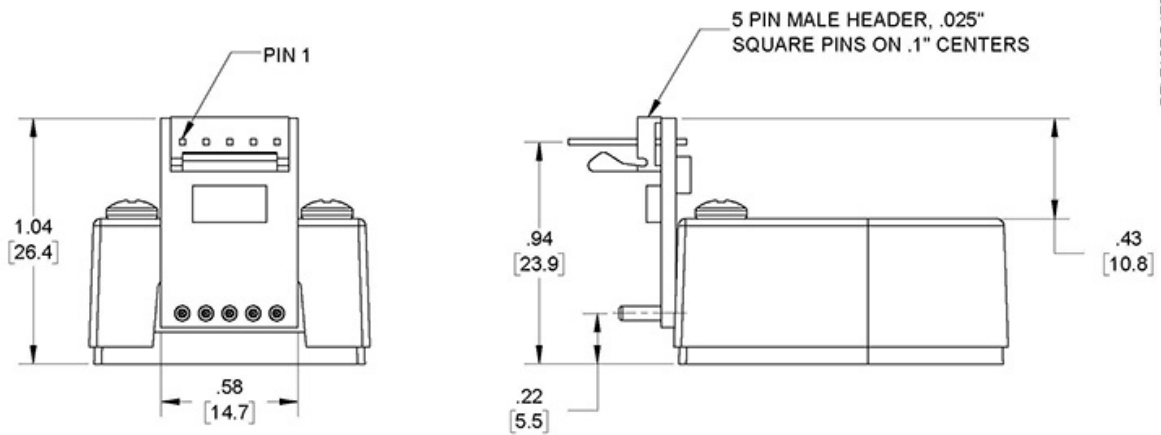
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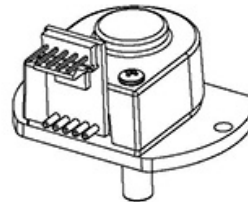
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PC3-H5 Encoder Open Collector Cable Driver

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E2 ASSEMBLY



H1 ASSEMBLY

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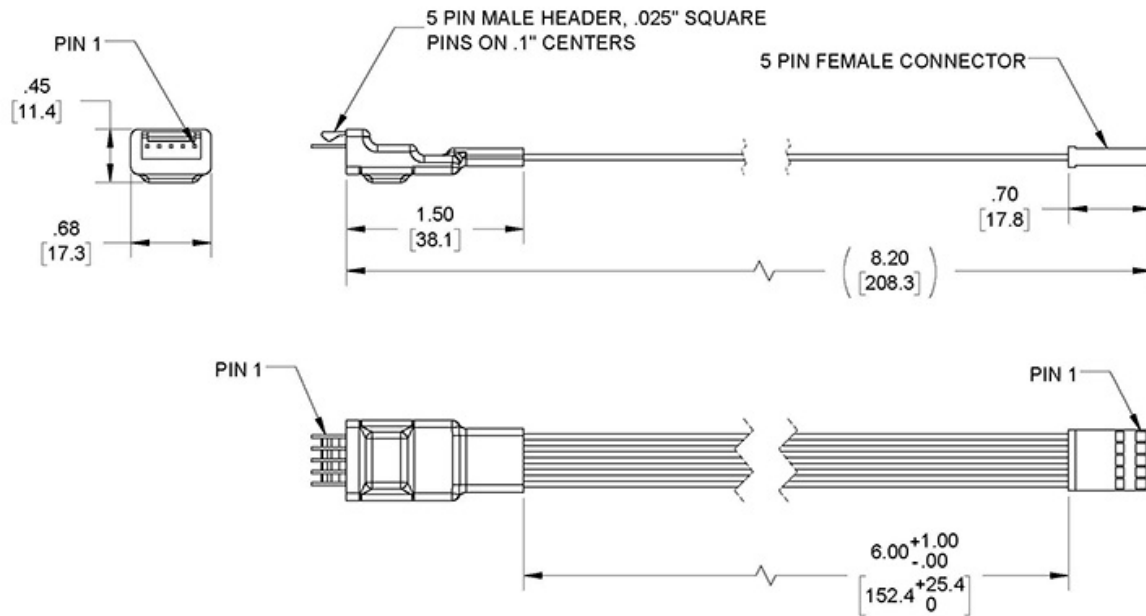
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PC3-LC5 Encoder Open Collector Cable Driver

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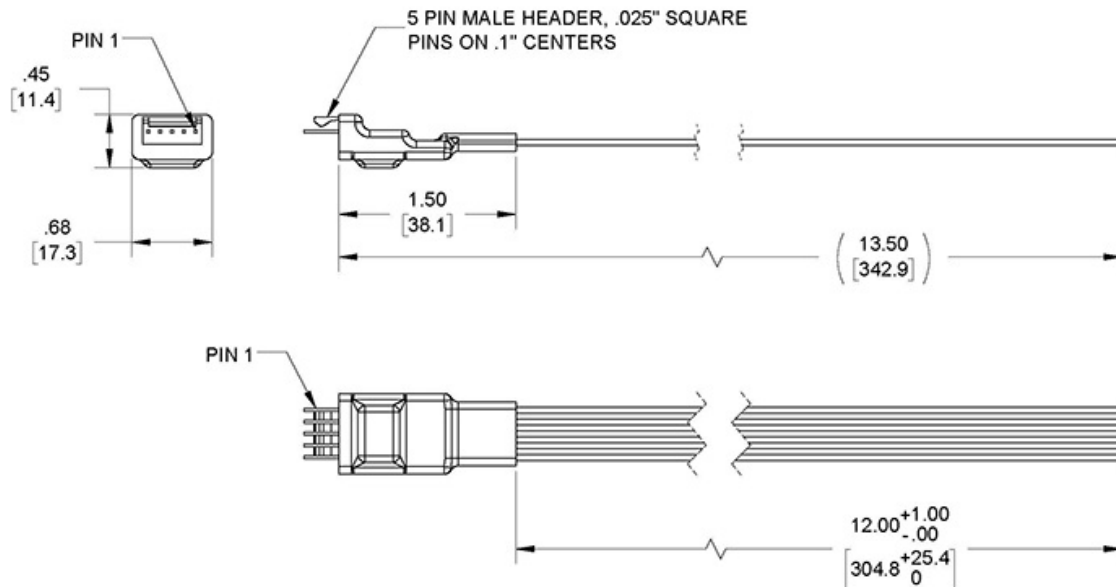
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PC3-W5 Encoder Open Collector Cable Driver

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Specifications

ENVIRONMENTAL

PARAMETER	MIN.	MAX.	UNITS
Operating Temperature	-40	85	C

ELECTRICAL CHARACTERISTICS

PARAMETER	MIN.	TYP.	MAX.	UNITS	NOTES
Supply Voltage (PWR)	9.5	-	32	Volts	-
Supply Current (PWR)	-	4	-	mA	12V input, no load
+5V Output Supply Current	-	-	75	mA	-
Conversion Efficiency	-	85	-	%	12V input
Output Voltage Low	-	-	0.4	Volts	100mA
Open-collector Sink Current	-	-	200	mA	-
Open-collector Voltage	-	-	35	V	-
A/B Output Frequency	-	-	71	kHz	-

PIN DESCRIPTION

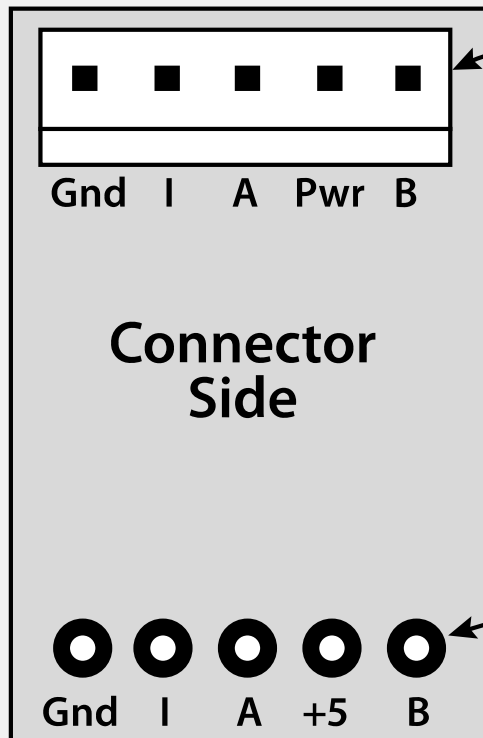
INPUT CONNECTOR PINS

PIN	NAME	DESCRIPTION
1	GND	Ground
2	I	Index
3	A	A channel
4	+5VOUT	+9.5 to +32VDC converted to +5VDC for encoder
5	B	B channel

OUTPUT CONNECTOR PINS



PIN	NAME	DESCRIPTION
1	GND	Ground
2	I	Open collector Index output
3	A	Open collector A channel output
4	PWR	+9.5 to +32VDC
5	B	Open collector B channel output



Output
(customer's connector)

Input
(encoder connector)

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

PC3	-	Connector
		C5 (<i>Inline Version with C5 Connector</i>)
		FC5 (<i>Inline Version with FC5 Connector</i>)
		H5 (<i>H5 Header</i>)
		LC5 (<i>Inline Version with LC5 Connector</i>)
		W5 (<i>12" discrete wires</i>)

PLEASE NOTE: This chart is for informational use only. Certain product configuration combinations are not available. Visit the PC3 product page (<https://www.usdigital.com/products/PC3>) for pricing and additional information.