

PC6 Product Description

The PC6 decodes the quadrature outputs of an incremental shaft encoder to drive standard up/down counters. The PC6-U, up count / down count version, can be connected to the inputs of common counters such as a 74193 or 40193. The PC6-C, clock, and direction version, can connect directly to the counters such as 4516 or 74169.

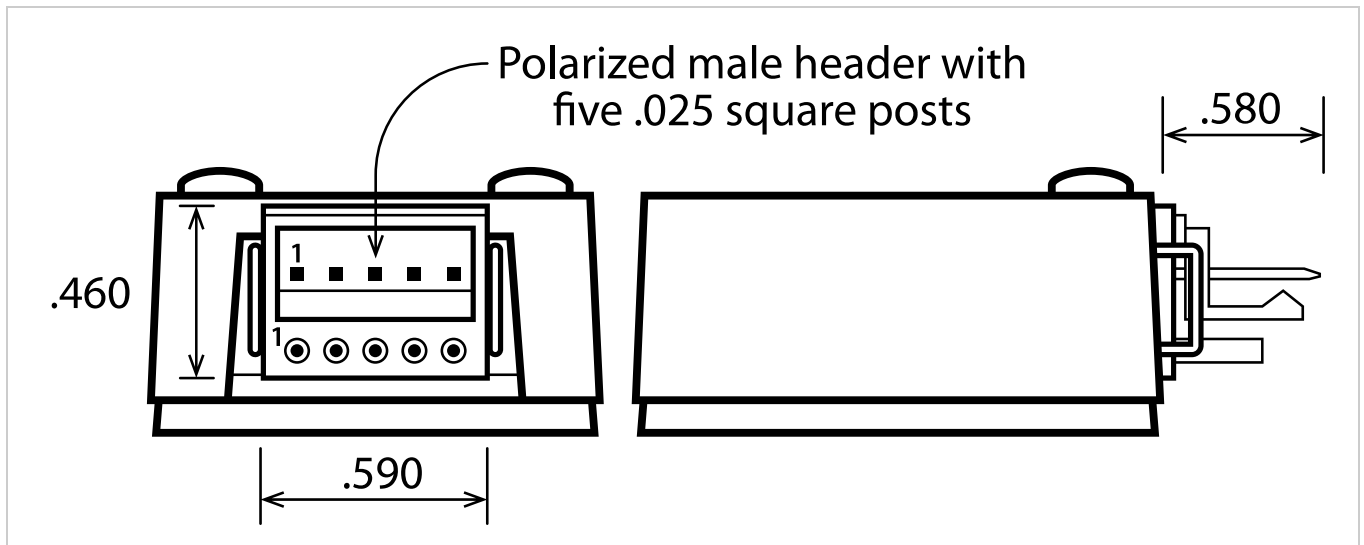
Please note: The encoder interface IC used in this product can be purchased separately (see the LS7183N-S (<https://www.usdigital.com/products/accessories/interfaces/ics/ls7183n-s/>) & LS7184N-S (<https://www.usdigital.com/products/accessories/interfaces/ics/ls7184n-s/>) pages).

Specifications

ENVIRONMENTAL

PARAMETER	MIN.	MAX.	UNITS
Operating Temperature	-40	70	°C
Electrostatic Discharge, Human Body Model	-2	2	kV

MECHANICAL

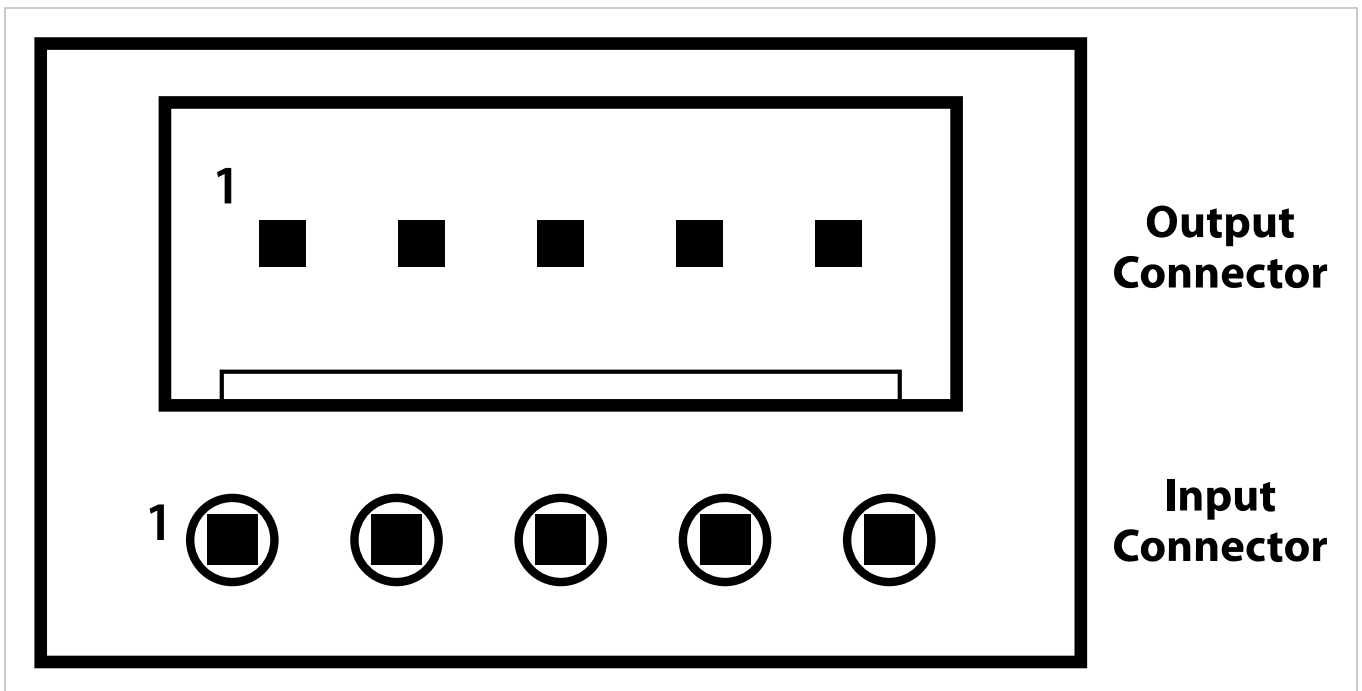


ELECTRICAL

PARAMETER	MIN.	MAX.	UNITS	NOTES
Supply Voltage	4.5	5.5	Volts	-
Supply Current	-	100	μ A	A,B = 100KHz
A,B Logic Low	-	0.6	Volts	-
A,B Logic High	3.1	-	Volts	-
A,B Frequency	-	180	kHz	-
Sink Output Current	1.75	-	mA	Vout = 0.4V
Source Output Current	1.0	-	mA	Vout = 4.5V
Pulse Width of Clock Output	4.0	8.0	μ S	6 μ S typical

* The clock output pulse width is 6 μ S.

PIN DESCRIPTIONS



PC6-X-X-X INPUT PIN-OUT



PIN	NAME	DESCRIPTION
1	GND	Ground
2	I	Index
3	A	A channel
4	VCC	+5 VCC
5	B	B channel

PC6-U-X-X OUTPUT PIN-OUT. UP COUNT / DOWN COUNT (LFLS7183)

PIN	NAME	DESCRIPTION
1	GND	Ground
2	I	Index
3	/DNCK	Down clock
4	VCC	+5 VCC
5	/UPCK	Up clock

PC6-C-X-X OUTPUT PIN-OUT. CLOCK, UP/DN (LFLS7184)

PIN	NAME	DESCRIPTION
1	GND	Ground
2	I	Index
3	UP/DN	Up/Down
4	VCC	+5 VCC
5	/CLK	Clock output

INDEX (PIN 2)

The index signal is routed unchanged, directly from the encoder.

PC6-U-X, PIN 3 (LFLS7183).



Normally high, low-true. Down counts are enabled only when B leads A (clockwise rotation). One pulse is generated per encoder cycle using the PC6-U-1 and four pulses are generated using the PC6-U-4. For example, a 500 CPR encoder will produce five hundred clocks/rev. using the PC6-U-1 and 2000 clocks/rev. using the PC6-U-4. The external counter should count on the rising (high-going) edge of this output.

PC6-U-X, PIN 5 (LFLS7183).

Normally high, low-true. Up counts are enabled only when A leads B (counterclockwise rotation). One pulse is generated per encoder cycle using the PC6-U-1 and four pulses are generated using the PC6-U-4. For example, a 500 CPR encoder will produce 500 clocks/rev. using the PC6-U-1 and 2000 clocks/rev. using the PC6-U-4. The external counter should count on the rising (high-going) edge of this output.

PC6-C-X, PIN 3 (LFLS7184)

This output steers the external counter up or down. High = Up (A leads B), Low = Down (B leads A).

PC6-C-X, PIN 5 (LFLS7184)

Normally high, low-true. One pulse is generated per encoder cycle using the PC6-C-1 and four pulses are generated using the PC6-C-4. For example, a 500 CPR encoder will produce 500 clocks/rev. using the PC6-C-1 and 2000 clocks/rev. using the PC6-C-4. The external counter should count on the rising (high-going) edge of this output.

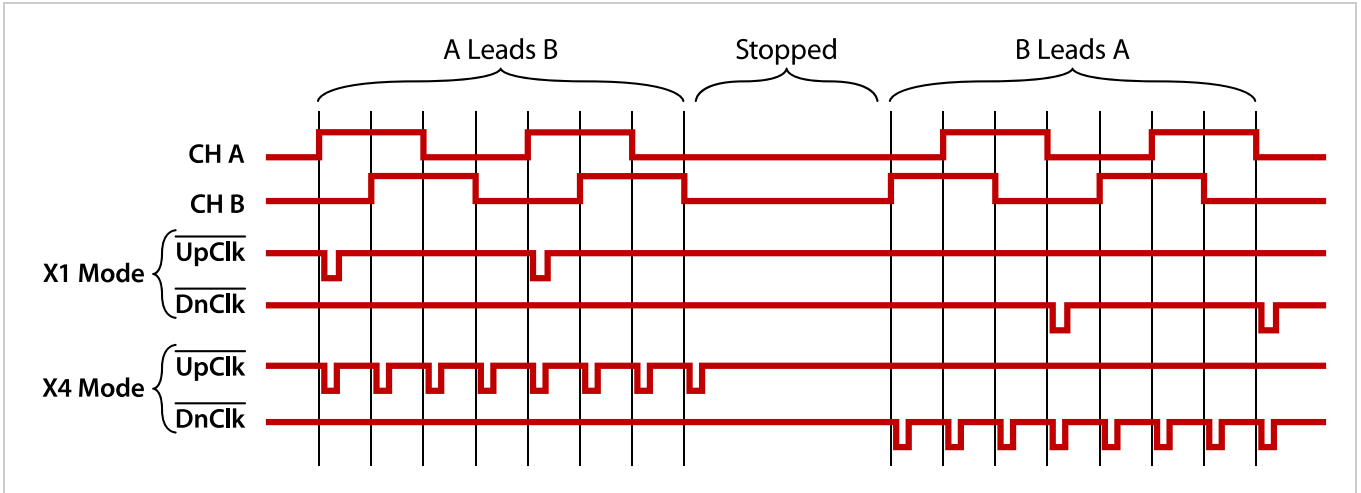
CONNECTOR

The output connector on the PC6 is TE#640456-5.

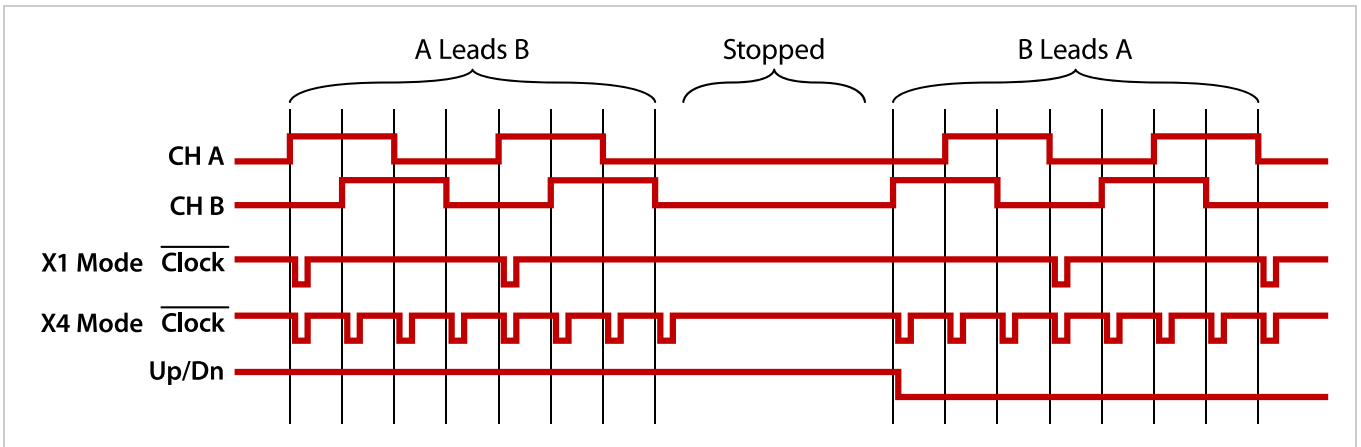


TIMING DIAGRAMS

PC6-U-X-X, UP COUNT / DOWN COUNT (LFLS7183)



PC6-C-X-X, CLOCK, UP/DN (LFLS7184)



Notes

- For ordering information please see the Compatible Cables / Connectors section above.
- 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

PC6	-	Output	-	Mode	-	Connector
		U (<i>Up and Down Clock</i>)		1 (<i>X1 Multiplication</i>)		H5 (<i>H5 Header</i>)
		C (<i>Clock and Direction</i>)		4 (<i>X4 Multiplication</i>)		

PLEASE NOTE: This chart is for informational use only. Certain product configuration combinations are not available. Visit the PC6 product page (<https://www.usdigital.com/products/PC6>) for pricing and additional information.