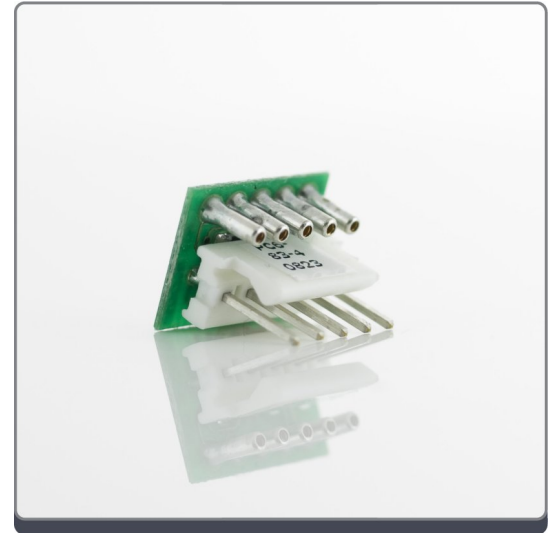


## Description

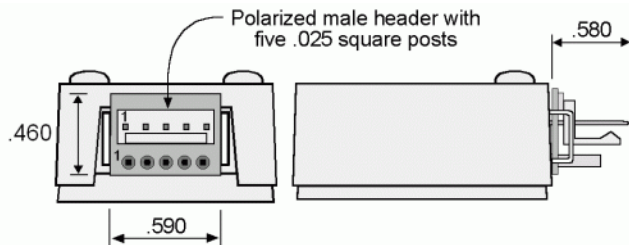
The PC6 decodes the quadrature outputs of an incremental shaft encoder to drive standard up/down counters. The PC6-U, up count / down count version, can be connected to the inputs of common counters such as a 74193 or 40193. The PC6-C, clock and direction version, can connect directly to the counters such as 4516 or 74169. Note: The encoder interface IC used in this product can be purchased separately (see the LFLS7183 & LFLS7184 pages).



## Environmental

Parameter	Min.	Max.	Units
Operating Temperature	-40	70	° C
Electrostatic Discharge, Human Body Model	-2	2	kV

## Mechanical



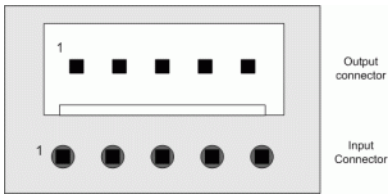
## Electrical

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	-

Parameter	Min.	Max.	Units	Notes
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 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-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.

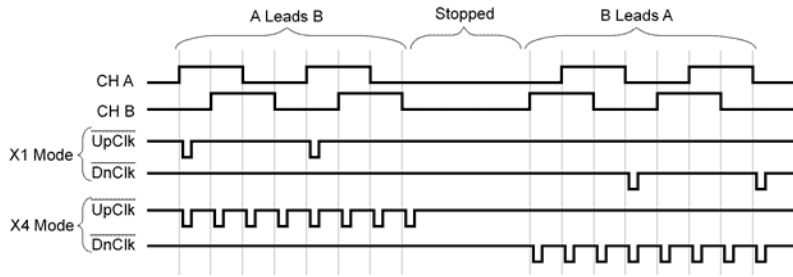
### Connector

The output connector on the PC6 is TE#640456-5. The mating connector with five 12" wires attached is the CA-C5-W5-NC-1, which uses TE#640442-5 ( see *the Cables / Connectors page*).

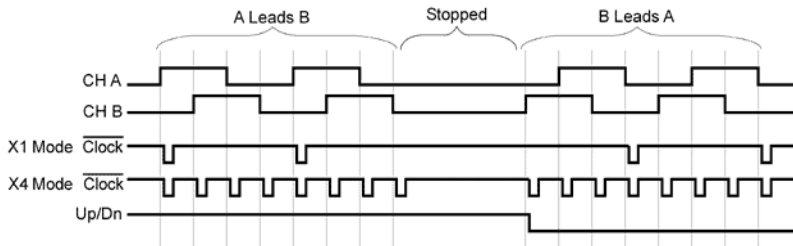


## Timing Diagrams

### PC6-U-X-X, Up count / Down count (LFLS7183)



PC6-C-X-X, Clock, Up/Dn (LFLS7184)



**Ordering Information**

PC6 -  -  -

**Output**

U = *Up and Down Clock*  
C = *Clock and Direction*

**Mode**

1 = *X1 Multiplication*  
4 = *X4 Multiplication*

**Connector**

H5 =

**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 for details.