

Compatible Cables & Connectors:

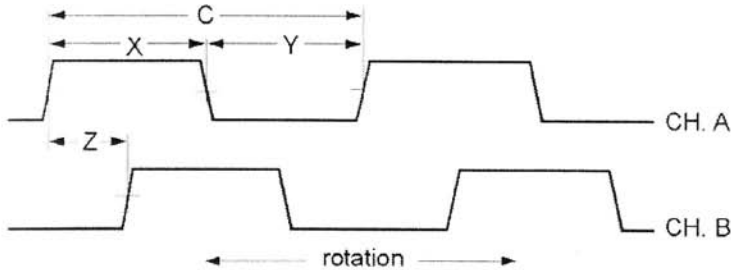
4-pin Micro:	
CON-MIC4	Connector
CA-3285	Connector on one end with 4 12" wires
CA-3286	Connector on one end of a 6' round twisted pair cable

Note: See **Cables & Connectors** data sheet for more information.

- > The connector built into the encoder is Molex# 53048-0410.
- > The mating connector is made up of housing (Molex# 51021-0400) and 4 individual crimp-on pins (Molex# 50079-8100).
- > Special crimp tool (Molex# 50079) is needed to install connector pins.

Installation Note:

Connector is polarized and should attach smoothly to the encoder, do not force.



Note: A leads B for clockwise shaft rotation, and B leads A for counterclockwise shaft rotation viewed from the cover/label side of the encoder.

CPR (N): The number of Cycles Per Revolution.

One Shaft Rotation: 360 mechanical degrees, N cycles.

One Electrical Degree (°e): 1/360 of one cycle

One Cycle (C): 360 electrical degrees (°e). Each cycle can be decoded into 1 or 4 codes, referred to as X1 or X4 resolution multiplication.

Symmetry: A measure of the relationship between (X) and (Y) in electrical degrees, nominally 180°e.

Quadrature (Z): The phase lag or lead between channels A & B in electrical degrees, nominally 90°e.

Cycle Error: An indication of cycle uniformity. The difference between an observed shaft angle which gives rise to one electrical cycle, and the nominal angular increment of 1/N of a revolution.

Torque Specifications:

Parameter	Torque
Hub Set Screw to Shaft	1.5-2.0 in.-lbs.
Cover	1.5-2.0 in.-lbs.
Base to Mounting Surface	2-3 in.-lbs.

Electrical Specifications:

Parameter	Min.	Typ.	Max	Units	Notes
Supply Voltage	4.5	5.0	5.5	VDC	Ripple < 100mVp-p. See note 1.
Supply Current	15	21	29	mA	
Load Capacitance	-	-	100	pF	See note 2.
Count Frequency	-	-	30	kHz	RPM/60 x cycles/rev.
High Level Output Voltage	2.4	-	-	VDC	$I_{OH} = -640 \mu A$ max. See note 2.
Low Level Output Voltage	-	-	0.4	VDC	$I_{OL} = 3.86$ mA
Rise Time	-	150	200	ns	25pF. See note 2.
Fall Time	-	50	60	ns	
Operational Temperature	-10°C	-	85°C	-	

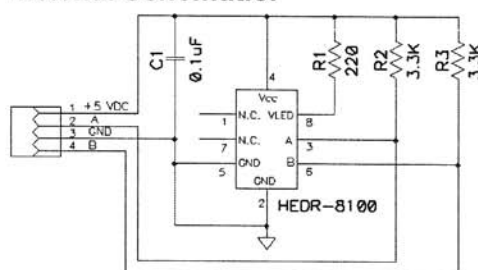
Note 1: Standard internal .1uF bypass capacitor is installed between power and ground.

Note 2: Standard internal 3.3KOhm pull-ups are installed on channels A and B.

Max Shaft Speed:

Electrical		Mechanical	
CPR	RPM	CPR	RPM
100	18000	100	50000
108	16500	108	50000
120	15000	120	50000
125	15000	125	50000
128	15000	128	50000
200	9000	200	50000
250	7200	250	50000
256	7200	256	50000
288	6250	288	50000
300	6000	300	50000

Internal Schematic:



Encoder Characteristics:

Accuracy	Min.	Typ.	Max.	Units
Symmetry	130	180	230	°e
Quadrature	15	90	165	°e
Symmetry*	95	180	265	°e
Quadrature*	5	90	175	°e
Cycle Error	-90	0	+90	arc min.

* For resolutions <110 CPR.