



Description:

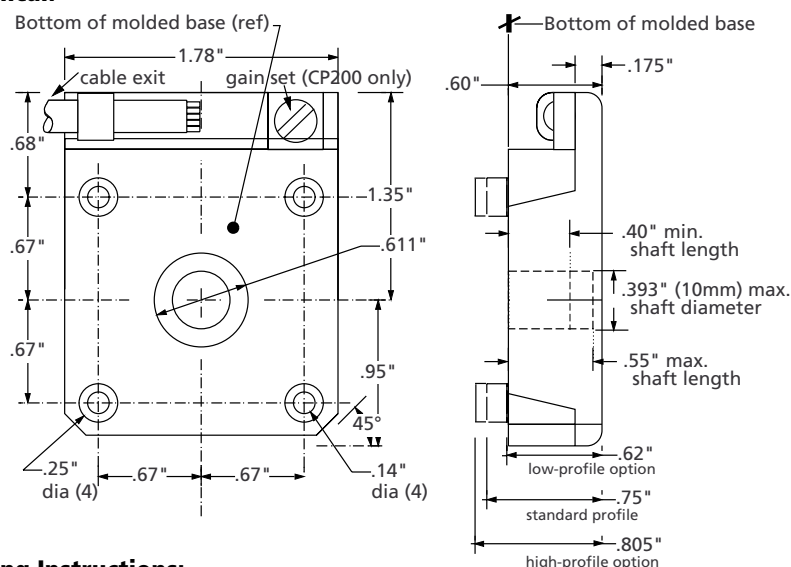
The CP-200 series modular encoders are easy to mount, rugged and with high datarates. The CP-200 is a sinusoidal "infinite resolution" encoder, specifically designed for digitizing the waveform. The CP-260 encoder, in addition to the traditional incremental output, also generates a DC tachometer signal proportional to the RPM's.

The CP-270 is very fast with a 500 kHz min. frequency @ 85°C for applications such as scanners etc. All models except the CP-260 are "through-shaft" capable for added flexibility.

Options:

- custom linecounts and index configurations
- custom shaft configurations
- custom cable configurations

Mechanical:



Mounting Instructions:

- 1/ open cover by gently wedging the cover off with a small screwdriver at the slot opposite the wire exit.
Leave the PCB in place.
- 2/ loosely mount the encoder to a motor with four mounting screws through the PCB
- 3/ unlock the locking ring by turning ccw (view from encoder end), access ring from the side
- 4/ gently press down hub into the locking mechanism and lock the hub by turning locking ring clockwise
- 5/ tighten set screw
- 6/ tighten the four mounting screws
- 7/ unlock the locking ring by turning ccw until it stops
- 8/ snap on cover



CP-200, Incremental, Sine/Cosine

Description:

The CP-200 encoder/ transducer is a cost-effective feedback device especially suited for applications where continuous position information is required, such as low and ultra-low speed servo control loops. As opposed to digital encoders where no information is available between transitions, the CP-200 supplies continuous information about the angular position of the system with a resolution only restricted by the digitizing electronics. With a guaranteed linearity of better than 1% up to the 45° crossover points it is possible, even with relatively simple digitizing schemes, to obtain equivalent resolutions of 256,000 discrete points per revolution. For "ditherless" detenting into a zero-crossing or an offset zero-crossing, either the A or B channel can be directly switched into the error amplifier of the system. This unit interfaces directly with the SGS™ low-cost servo-control L-290, L291& L292 chipset. The CP-200 is a drop-in replacement for the Eleprint™ / MAE™ encoder type 100E.

Ratings:

supply voltage: ± 18 Vdc max,
operating: ± 12 Vdc nominal
temperature range: -30°C to $+85^{\circ}\text{C}$
storage temperature: -40°C to $+95^{\circ}\text{C}$
operating relative humidity: 90% @ 35°C
storage relative humidity: 80% @ 45°C
moment of inertia: 0.2×10^{-4} in.-oz sec²
frequency response: ± 0.424 dB @ 20 kHz
output current: 10 mA sink or source
output voltage: Vp nom = ± 0.5 V,
zero centered. Other
output levels are
optional.

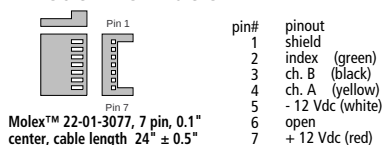
Standard Linecounts / rev:

96, 100, 110, 120, 128, 155, 192, 200, 210, 240, 254,
256, 280, 288, 300, 360, 384, 400, 480, 500, 512,
576, 1000, 1024

Ordering Information:

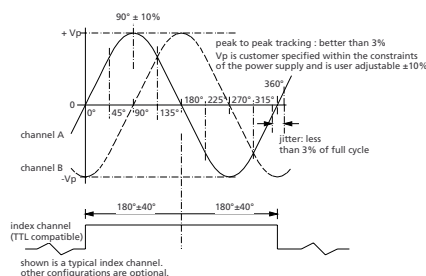
CP-200-(counts/rev.)-(hub size, inch or mm)-(cable length, inch or mm). Maximum hubsize is 0.3935" Or 10 mm. Maximum shaft length is 0.55" or 14 mm, for longer shafts specify hole in cover.

Pinout Information:

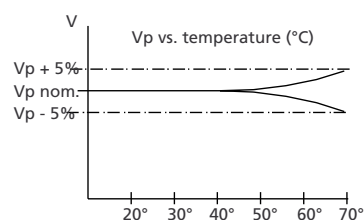


Waveform:

ccw seen from cover end



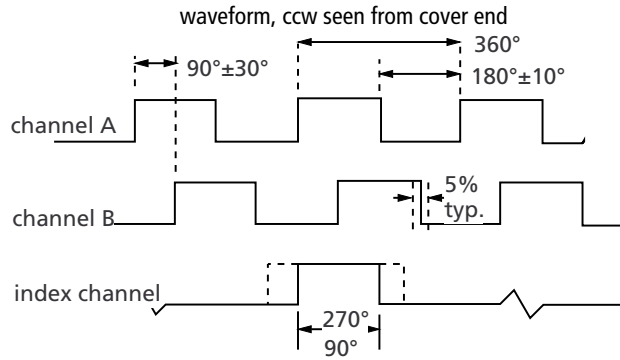
Temperature Characteristics:



Modular/Kit Encoders

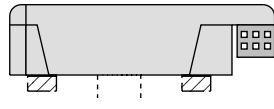
CP-250, Incremental, Digital

2



shown is a typical index channel, other configurations are optional

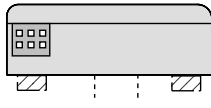
side exit pin option
ordering: (SE)



1	2	3
□	□	□
□	□	□
4	5	6

pin 1: A channel
pin 2: + Vdc
pin 3: ground
pin 4: B channel
pin 5: index
pin 6: n/c

rear exit pin option
ordering: (RE)



1	2	3
□	□	□
□	□	□
4	5	6

pin 1: ground
pin 2: + Vdc
pin 3: index
pin 4: n/c
pin 5: A channel
pin 6: B channel

cable option
ordering: (C)

connector: Molex™ p/n 22-10-2071
cable length 24" standard, different
cable lengths and terminations available
on request.



pin 6:
n/c or
key

pin 1: n/c
pin 2: index
pin 3: B channel
pin 4: A channel
pin 5: ground
pin 7: + 5Vdc

Specifications:

supply voltage: 5 V @ 50 mA maximum
operating temp. range: -30°C to +85°C
storage temperature: -40°C to +95°C
operating relative humidity: 90% @ 35°C
storage relative humidity: 80% @ 45°C
moment of inertia: 0.2×10^{-4} in.oz sec²
frequency response: 150 KHz (index)
output format: incremental
output: open collector with 4.7k pullup resistors

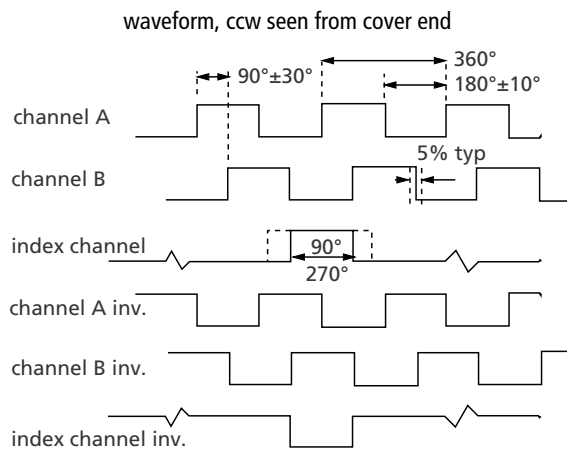
Standard counts / revolution:

16, 32, 50, 96, 100, 110, 120, 128, 155, 192, 200,
210, 220, 240, 254, 256, 280, 288, 300, 310,
360, 384, 400, 480, 500, 508, 512, 560, 576, 600,
720, 768, 800, 850, 960, 1000, 1024 c/r.

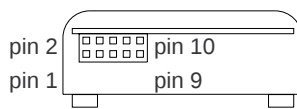
Ordering Information:

CP-250-(c/r)-(SE/RE/C)-(hub size, inch or mm)*
* maximum hub size : 0.3935" or 10 mm.

CP-270, Incremental, Digital, 5-30V



shown is a typical index channel, other configurations are optional



pin 1	+ V _{in}
pin 2	channel A
pin 3	channel A inverted
pin 4	channel B inverted
pin 5	channel B
pin 6	index
pin 7	index inverted
pin 8	ground
pin 9	n/c
pin 10	n/c

Specifications:

supply voltage V_{in} : 4.75 Vdc to 30 Vdc @ 50 mA max.
operating temp. range: -30°C to +85°C
storage temperature: -40°C to +95°C
operating relative humidity: 90% @ 35°C
storage relative humidity: 80% @ 45°C
moment of inertia: 0.2×10^{-4} in.oz sec²
frequency response: 500 KHz (A & B)
250 KHz (index)
output format: incremental
output: linedriver

Output Levels:

outputs @ V_{in} = 4.75 Vdc: V_{low} 0.5 V @ 20 mA sink
V_{high} 2.5 V @ 20 mA source
(all 6 outputs)
outputs @ V_{in} = 30 Vdc: V_{low} 0.5 V @ 20 mA sink
V_{high} 27 V @ 20 mA source
(EIA standard RS422 and DIN 66259 part 3 compatible, thermally protected).

Standard counts / revolution:

16, 32, 50, 96, 100, 110, 120, 128, 155, 192, 200, 210, 220,
240, 254, 256, 280, 288, 300, 310, 360, 384, 400, 480,
500, 508, 512, 560, 576, 600, 720, 768, 800, 850, 960,
1000, 1024, 2000, 2048 c/r.

Ordering Information:

CP-270-(c/r)- (hub size, inch or mm*)-T (through hole)
* maximum hub size : 0.3935" or 10 mm

CP-3500, Kit Encoder



Description:

The CP-3500 encoder was specifically designed to be mounted on 39 mm square and size 22 (2.2" diameter) BDC / stepper motors. Two covers are available: a 39 mm square version with a flat ribbon cable and a 2.2" round cover with a flat ribbon or shielded round cable. All available CP-300/500 series encoder electronics are available in this configuration: digital incremental, sinusoidal incremental, 8 and 10 bit absolute, incremental + commutation. Factory installation and alignment with the motor BEMF is included in the prices quoted.

Mechanical Data:

hub diameter: up to 0.25" (6.35 mm)
moment of inertia: 2.6×10^{-5} oz.in.sec²
maximum
acceleration: 500,000 radians/sec²
maximum
slew speed: 10,000 RPM maximum
base material: Ryton 4™ (PPS with a 40 % glassfill)
cover material: Ryton 4™ (PPS with a 40 % glassfill)
mounting: two tabs at 1.812" or four holes on a 1" BC
shaft extension
(no hole in cover): 0.5" ± .1" (12.7mm ± 1.3mm)

Electrical Data:

per CP-300/500 datasheets:

incremental digital: CP-3500-(linecount)
incremental sine/cosine: CP-3000-(linecount)
absolute: CP-3500-08GC, -10GC
absolute linear: CP-3500-08AN
commutating: CP-5X50-(linecount)
- (polecount)

Environmental Data:

temperature: operating: -20°C to +100°C
shock: 50 G's @ 11 ms
vibration: 5-2,000 Hz @ 20 G's
humidity: 98% without condensation

Ordering Information:

CP-3500-(linecount)-(1)-(2)

(1) : linedriver=L, TTL=T, open collector=O
(2) : square cover with tabs=T, without tabs=NT, round cover=R

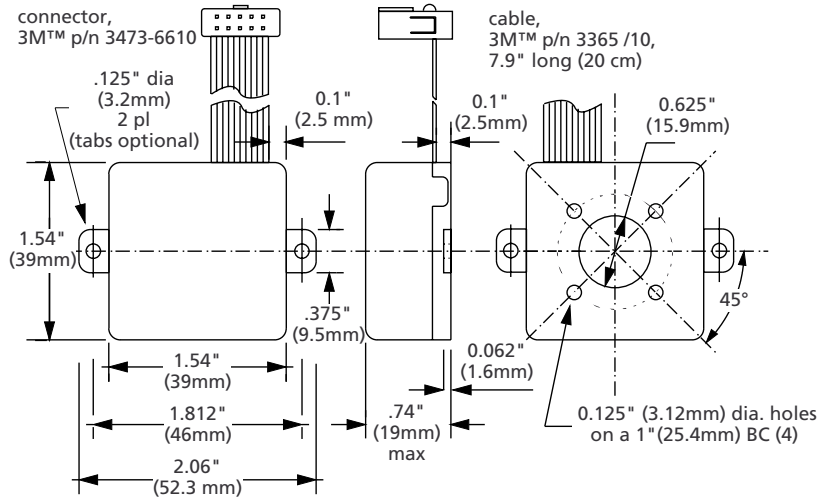
for cable, connector or rear shaft extension options, contact the factory.

Standard Linecounts:

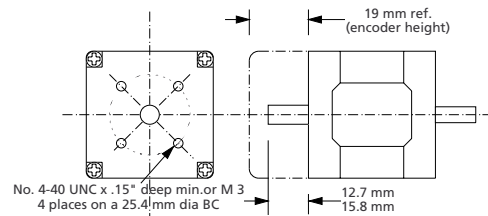
256,360,500,600,1000,1024, 2048, 2500, 4096 c/r.

Special linecounts and index configurations available on request.

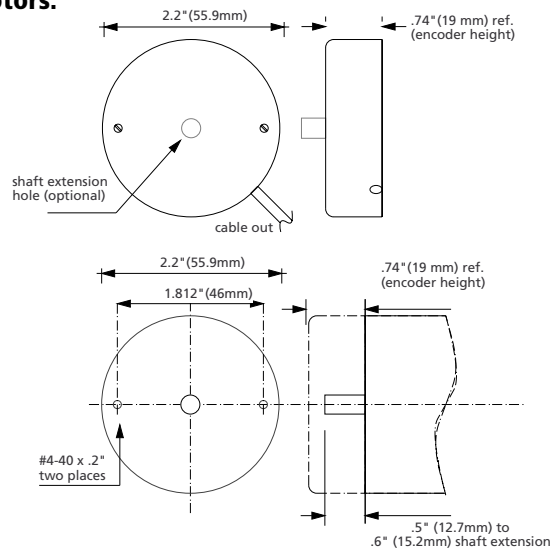
Mechanical:



Recommended hole pattern for square BDC/stepper motors:

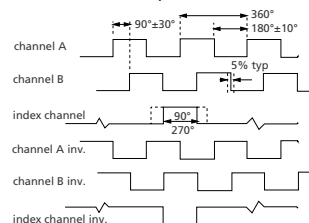


Recommended hole pattern for 2.2 inch motors:

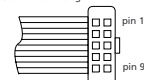


Incremental Digital Waveforms

(CW from encoder end)



cable, 3M™ p/n 3365 /10, 20 cm ± 1 cm long
connector, 3M™ p/n 3473-6610



pinout line drivers:

1 +5 Vdc
2 +5 Vdc
3 channel A inv.
4 channel A
5 channel B inv.
6 channel B
7 index channel
8 ground
9 index channel inv.
10 ground

pinout TTL:

1 channel A
2 +5 Vdc
3 ground
4 channel A
5 ground
6 ground
7 +5Vdc
8 channel B
9 n/c
10 index channel