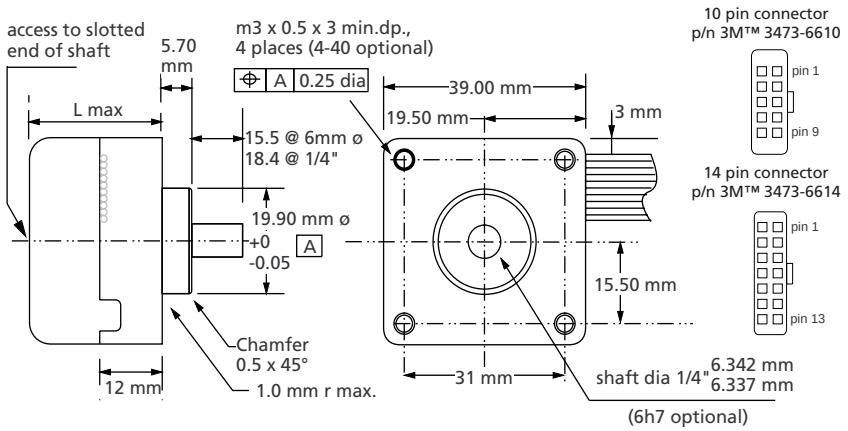
CP-300 Series Housed Encoders

Description:

The CP-300 series encoder is a small, rugged device, with a package form factor identical to that of a 39 mm stepper motor. The light source is a single light emitting diode, the sensor a monolithic silicon array. Up to 4,096 counts per revolution (16,384 measuring steps) are available for the incremental models and up to 10 bits for the absolute units.

Options:

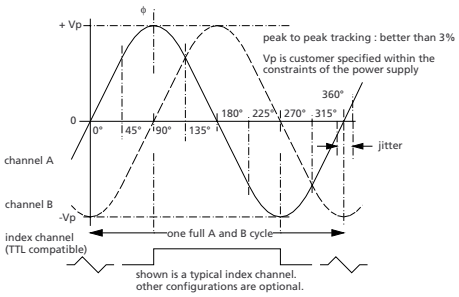
- custom linecounts and index configurations
- through shaft
- custom shaft and cable configurations
- extended temperature range (-30 °C to +100°C)
- integral brushless DC motor version (CM-320-x)
- shaft seal



shaft diameter:	1/4", 6.342 / 6.337 mm	housing material:	diecast aluminum
shaft options:	6 mm	cover:	1.5 mm wall, Ryton 4
shaft loading:	10 N axial , 20 N radial (2 lbs and 4 lbs resp.)	bearing life:	manufacturer's specs
		moment of inertia:	1.7 gcm ^{2}
shaft runout:	0.0125 mm T.I.R.	weight:	approx. 0.120 kg
starting torque:	0.1 Ncm @20°C max	temperature:	operating: -20°C to+85°C
shaft rotation:	continuous,reversible	shock:	50 G's @ 11 ms
slew speed:	160 rev/sec ^{2}	vibration:	5-2,000 Hz @ 20 G's
bearings:	ABEC 5	humidity:	98% without condensation
shaft material:	416 stainless	protection:	IP 64 (w/o shaft extension)

CP-300, Incremental, Sine/Cosine

all waveforms shown for cw rotation, as seen from load end- degrees are in electrical degrees unless otherwise designated.



Electrical Data:

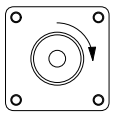
power supply:	± 12 Vdc @ 50 mA max.
code:	incremental
cycles per revolution:	up to 2048
output format:	A and B channel in quadrature, Index
output:	TIL 084 op-amp
frequency response:	flat up to 75 kHz
absolute accuracy of zero-crossings:	± 25 acseconds typ.

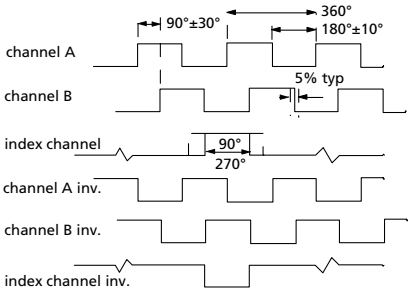
1	ground
2	channel A
3	n/c
4	- 12 Vdc
5	n/c
6	channel B
7	n/c
8	+ 12 Vdc
9	V reference input (servo ground)
10	index

Mechanical Data:

dimensions: L_{max} = 26 mm

CP-350, Incremental, Digital





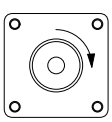
Electrical Data:

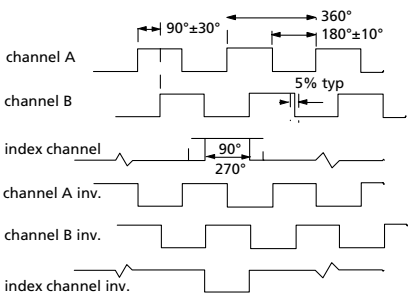
power supply:	+ 5Vdc ± 10% @ 50 mA max (no load)
output format:	incremental
cycles/revolution:	100, 200, 256, 360, 500, 600, 1000, 1024, 1728, 2048, 2500 and 4096 std.
freqency response:	150 kHz min. @ 85 °C
linedriver output:	26LS31,EIA std. RS 422 and DIN 66259 compatible
TTL output:	74LS04
open collector output:	LM 339, 6 mA max. sink
overall length:	L_{max} = 26 mm

pinout linedrivers:	pinout TTL:
1 + 5Vdc	channel A
2 + 5Vdc	+ Vcc
3 channel A inv.	ground
4 channel A	ground
5 channel B inv.	ground
6 channel B	ground
7 index channel	+ Vcc
8 ground	channel B
9 index channel inv.	n/c
10 ground	index channel

CP-350-(linecount)-(1)-(2)-(3)
(1): linedriver=L,TTL=T,open collector=O
(2): Vcc=5V, 12V or 24V, "O" version only
(3):optional through-shaft extension in mm

CP-360, Incremental, Linedriver 5V to 30V





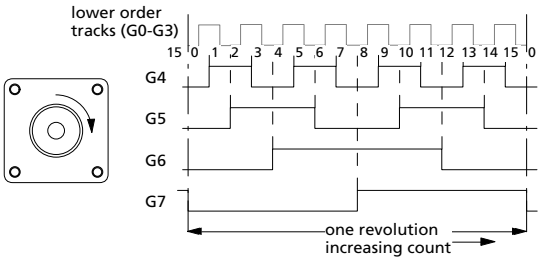
Electrical Data:

power supply:	V_{in} =+ 4.75 Vdc to 30 Vdc @ 50 mA max (no load)
output format:	incremental
cycles/revolution:	100, 200, 256, 360, 500, 600, 1000, 1024, 1728, 2048, 2500 and 4096 std.
freqency response:	150 kHz min. @ 85 °C
output:	EIA std. RS 422 and DIN 66259 (part 3) compatible
output @ Vin=4.75V:	$V_{lo} \leq$ 0.5 V@20 mA sink $V_{hi} \geq$ 2.5V@20 mA source
output @ Vin=30 V:	$V_{lo} \leq$ 0.5 V@20 mA sink $V_{hi} \geq$ 27 V@20 mA source
overall length:	L_{max} = 26 mm

pinout
1 + V_{in}
2 channel A
3 channel A inv.
4 channel B
5 channel B inv.
6 index channelground
7 index channel inv.
8 ground
9 n/c
10 n/c

CP-360-(linecount)-(1)
(1):optional through-shaft extension in mm

CP-350-08GC, Absolute, 8 bit Gray Code



Electrical Data:

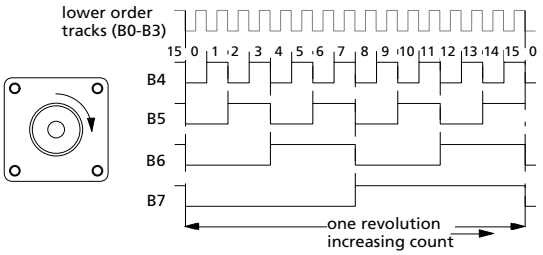
power supply: + 5Vdc ± 10% @ 50 mA max (no load)
+ 24 Vdc ± 10 % @ 70 mA max (option)
output format: 8 bit parallel, Gray code
freqency response: 100 kHz min. wordrate
output: LM 339, with pullup resistor, 6 mA max. sink
overall length: L_{max} = 26 mm

Ordering Information:

CP-350-08GC-(1)-(2)-(3)
(1): R= with pull-ups, blank if no pullups
(2): 5 = 5 Vdc, 12 = 12 Vdc, 24 = 24 Vdc power supply
(3): optional through-shaft extension in mm

pinout :
1 G4
2 G6
3 G0 (lsb)
4 G3
5 ground
6 G2
7 + 5Vdc
8 G5
9 G7 (msb)
10 G1

CP-350-08NB, Absolute, 8 bit Binary



Electrical Data:

power supply: + 5Vdc ± 10% @ 50 mA max (no load)
output format: 8 bit parallel, binary
freqency response: 100 kHz min. wordrate
output: standard TTL/CMOS

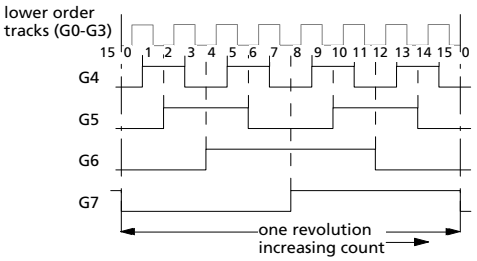
overall length: L_{max} = 36 mm

Ordering Information:

CP-350-08NB

pinout:
1 B4
2 B6
3 B0 (lsb)
4 B3
5 ground
6 B2
7 + 5Vdc
8 B5
9 B7 (msb)
10 B1

CP-350-8GC180, Absolute, 1° Position



Electrical Data:

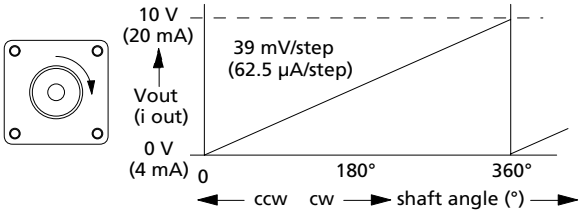
power supply: + 5Vdc ± 10% @ 50 mA max (no load)
+ 24 Vdc ± 10% @ 70 mA max (option)
output format: 8 bit parallel, Gray code,
1°/position,repeated twice per revolution.
freqency response: 100 kHz min. wordrate
output: LM 339, with pullup resistor, 6 mA max. sink
overall length: L_{max} = 26 mm

Ordering Information:

CP-350-08GC180-(1)-(2)-(3)
(1): R= with pull-ups, blank if no pullups
(2): 5 = 5 Vdc, 12 = 12 Vdc, 24 = 24 Vdc power supply
(3): optional through-shaft extension in mm

pinout :
1 G4
2 G6
3 G0 (lsb)
4 G3
5 ground
6 G2
7 + 5Vdc
8 G5
9 G7 (msb)
10 G1

CP-350-8AN, Absolute, Analog



Electrical Data:

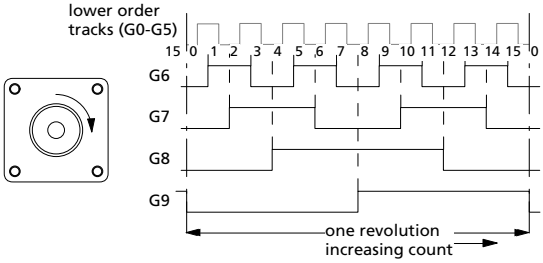
power supply V_{in}: 12.6 Vdc to 16.6 Vdc @ 100 mA max
voltage output V_{out}: 0 - 10 V standard,
current output I_{out}: 4 - 20 mA(optional)
resolution: 8 bits (256 steps)
stability: ± 0.2 %
direction control
input: TTL/CMOS (5 V)
overall length: L_{max} = 36 mm

Ordering Information:

CP-350-08AN-(1)
(1) : blank=V_{out} only, I= V_{out} and I $_{out}$

pinout:
1 n/c
2 + V_{in}
3 n/c
4 n/c
5 direction control
6 power ground
7 I_{out}
8 n/c
9 V_{out}
10 I_{out} return

CP-350-10GC, Absolute, 10 bit Gray Code



Electrical Data:

power supply: + 5Vdc ± 10% @ 100 mA max (no load)
output format: 10 bit parallel, Gray code,
freqency response: 50 kHz min. wordrate
output: standard TTL/CMOS

overall length: L_{max} = 36 mm

Ordering Information:

CP-350-10GC

pinout :
1 G1
2 G8
3 G6
4 G7
5 ground
6 G5
7 + 5Vdc
8 G0 (lsb)
9 G9 (msb)
10 G3
11 G4
12 G2
13 n/c
14 G9 inverted