

SERIES HC20

Dynapar™ brand

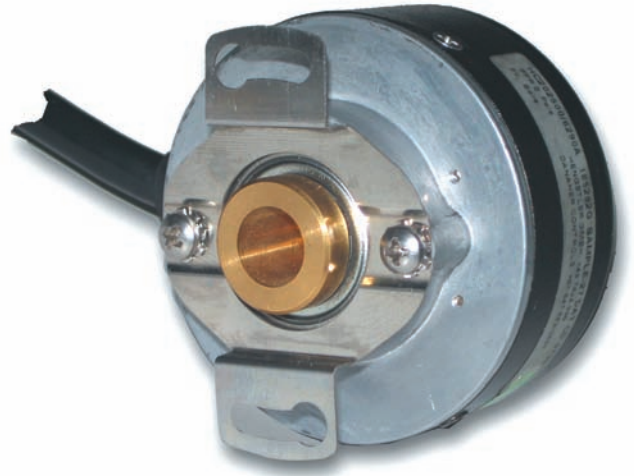
For Stepper & Small Servo Motors

Key Features

- Economical Servomotor Feedback with New Phased Array ASIC
- High 120°C Operating Temperature Won't Limit Motor Performance
- Up to 2500PPR Direct-Read with Commutation Channels



NEW!



SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS

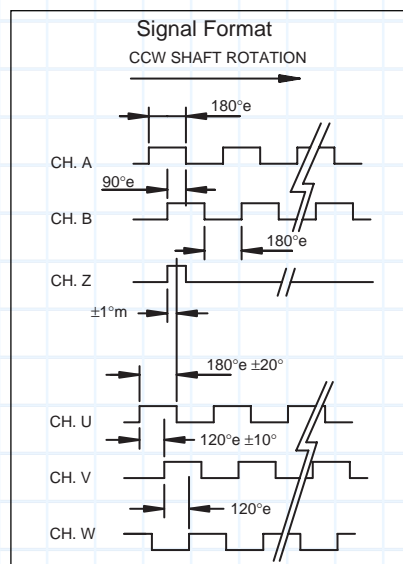
Code: Incremental
Resolution: 500 to 2500 PPR
Commutation: 4/6/8 pole
Format: Two channel quadrature (AB) with optional Index (Z) and complementary outputs
Phase Sense: Phasing for CCW rotation of motor shaft (viewing from encoder cover side): A leads B by $90^\circ \pm 22.5^\circ$ electrical, and U leads V leads W by 90°
CCW Direction:
Accuracy:
 • Incremental: 40 arc-sec. max. edge to any edge;
 • Commutation: ± 6 arc minutes max.
Index: 90° electrical (gated A and B high)
Waveforms: Squarewave with rise and fall times less than 1 microsecond into a load capacitance of 1000 pf

ELECTRICAL

Supply Voltage: DC 5V $\pm 10\%$ (SELV)
Max. Current (w/o load):
 • Incremental: 150mA
 • Incremental + Commutation: 175mA
Max. Output Frequency:
 • 250 kHz (up to 1024 ppr)
 • 500 kHz (> 1024 ppr)

Signal Level:

- NPN: Open Collector
- Differential Line Driver: RS 422
- Output Current:** RS422: ± 40 mA (26LS31); NPN O.C.: 16mA (2k. int. pull up)
- Connection:** Axial or Raidal cable available



MECHANICAL

Weight: 120g typical
Dimensions:
 • Outside Diameter with Cover: 50 mm
 • Mounting Depth: 36mm
Material:
 • Bearing Housing: Aluminium;
 • Cover: Aluminium;
 • Shaft: Brass: 699477-0001
Shaft Style (dependant on model):
 • Blind Hole Shaft: 8.00mm dia; 20mm depth
 • Hollow Shaft: 6.00 or 8.00mm dia
 • Taper Shaft: 9.00mm dia. nominal; $2.8624^\circ \pm 0.2289^\circ$ Taper
Mating Shaft Runout: ± 0.2 mm max. (Includes shaft perpendicularity to mounting surface)
Mating Shaft Axial Movement: max. ± 0.8 mm.
Max. Velocity: RPM = (Frequency/PPR) x 60 or 2000 min⁻¹, whichever is less

ENVIRONMENTAL

Operating Temperature: 0...+120°C
Storage Temperature: -40...+120°C
Shock Resistance: 1000 m/s² (6 ms)
Vibration Resistance: 25 m/s² (5...2000 Hz)
Protection Class: IP51 (cable must be oriented downwards)



Satellite Locations:

- **North America:** North Carolina, South Carolina, Connecticut, Massachusetts, New York, Canada, British Virgin Islands
- **West Indies:** St. Kitts • **Europe:** United Kingdom, Italy, France, Germany, Spain, Slovakia
- **South America:** Brazil • **Asia:** China, Japan, Korea, Singapore

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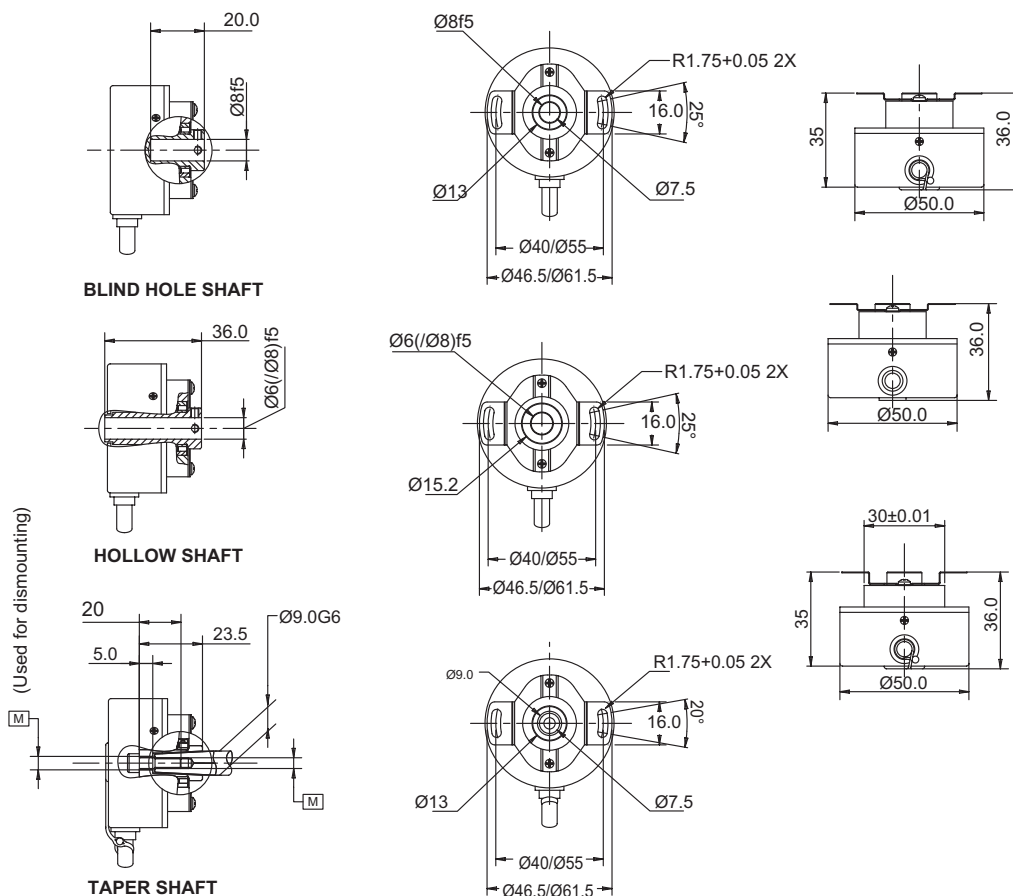
Ordering Information

To order, complete the model number with code numbers from the table below:

Code 1: Model	Code 2: PPR Incremental ²	Code 3: Poles Commutation ²	Code 4: Mounting	Code 5: Electrical ¹	Code 6: Shaft	Code 7: Connection		
HC20	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Ordering Information								
HC20 Compact Hollowshaft Encoder	0500 2000 0512 2048 1000 2500 1024	0 None 4 4 Pole 6 6 Pole 8 8 Pole	0 No tether Tether 1 1.575" (40mm) TK 2 2.166" (55mm) TK	incremental only, <=2048/0 (ppr/poles) 0 U _{inc} = DC 5V; output _{inc} = NPN-O.C. incremental only without commutation 2 U _{inc} = DC 5-26V; output _{inc} = RS 422 3 U _{inc} = DC 5V; output _{inc} = RS 422 incremental plus commutation signals 6 U _{inc} = DC 5V; output _{inc} = RS 422 U _{com} = DC 5V; output _{com} = NPN-O.C. 9 U _{inc} = DC 5V; output _{inc} = RS 422 U _{com} = DC 5V; output _{com} = RS 422	0 Taper shaft(Ø9,1:10) 1 Blind vertical shaft Ø6 2 Blind vertical shaft Ø8 3 Hollow shaft Ø6 4 Hollow shaft Ø8	Axial plug 1 1 Ft. cable 2 2 Ft. cable 3 3 Ft. cable 4 4 Ft. cable 5 5 Ft. cable 6 6 Ft. cable 7 7 Ft. cable 8 8 Ft. cable	Radial plug A 1 Ft. cable B 2 Ft. cable C 3 Ft. cable D 4 Ft. cable E 5 Ft. cable F 6 Ft. cable G 7 Ft. cable H 8 Ft. cable	
	Available Combinations (PPR/Poles)							
		Number of Poles						
		Incremental	0	4	6	8		
		PPR						
		0500	x	x	x	x		
		0512				x		
		1000	x	x	x	x		
		1024	x	x	x	x		
		2000	x	x	x	x		
		2048	x	x	x	x		
		2500	x	x	x	x		

1 U_{inc}: Supply voltage incremental, U_{com}: Supply voltage commutation (only if commutation is selected); 2 See available combinations (pulses/poles)

Dimensions (mm)



Connection:

Pin	Signal	Color
1	V _{cc}	Red
2	U	Brown
3	GND	Black
4	V	Gray
5	A	Blue
6	W	White
7	A̅	Blue/Black
8	N.C.	—
9	B	Green
10	U̅	Brown/Black
11	B̅	Green/Black
12	V̅	Gray/Black
13	Z	Violet
14	W̅	White/Black
15	Z̅	Violet/Black
16	N.C.	—