

# Model 716

Now up to  
10,000 CPR!



## Features

- The Original Industry-Standard Cube
- Five Versatile Housing Styles
- Thousands of Configurations
- New Resolutions Available to 10,000!

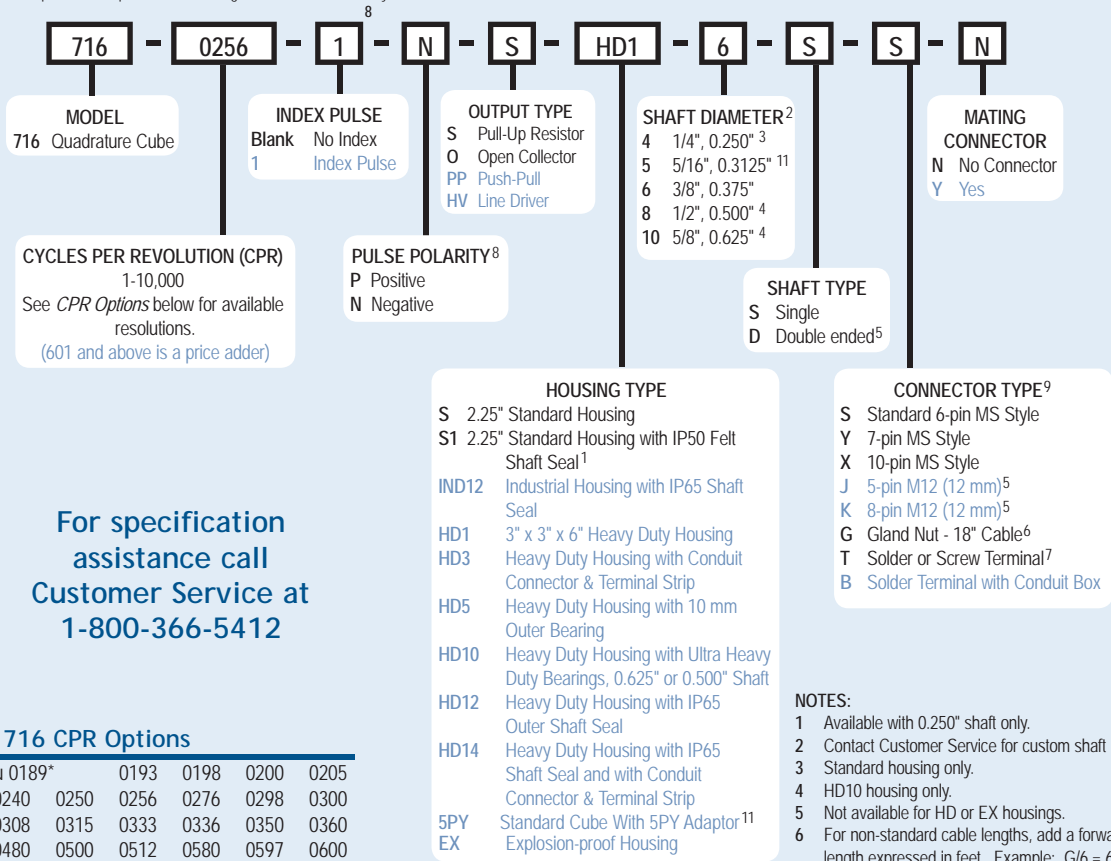
The Model 716 Accu-Coder™ is ideally suited for applications requiring a quadrature output. Designed for compatibility with most programmable controllers, electronic counters, motion controllers, and motor drives, it is ideally suited for industrial applications where it is important that the direction of rotation be known. Increasing critical performance specifications for the most popular resolutions and features advanced Opto-ASIC circuitry, a single chip design that eliminates many board level components. This increases the reliability of an already dependable and durable encoder. With new options continually being added, we just keep getting better, and better!

## Common Applications

Feedback for counters, PLC's & Motors, Cut To Length, Labeling, Measuring For Packaging, Filling & Materials Handling Machines, Wire Winding, Film Extrusion

## Model 716 Ordering Guide

Blue type indicates price adder options. Not all configuration combinations may be available. Contact Customer Service for details.



For specification assistance call  
Customer Service at  
1-800-366-5412

### Model 716 CPR Options

0001 thru 0189*	0193	0198	0200	0205
0210	0240	0250	0256	0276
0298	0300	0305	0308	0315
0333	0336	0350	0360	0400
0480	0500	0512	0580	0597
0600	0700	0720	0800	0840
0960	1000	1024	1200	1250
1270	1500	1800*	2000	2048
2500	3000	3600*	4096	5000
6000	7200*	8192	10,000	

\*Contact Customer Service For Availability

Contact Customer Service for other disk resolutions; not all disk resolutions available with all output types

### NOTES:

- 1 Available with 0.250" shaft only.
- 2 Contact Customer Service for custom shaft lengths and diameters.
- 3 Standard housing only.
- 4 HD10 housing only.
- 5 Not available for HD or EX housings.
- 6 For non-standard cable lengths, add a forward slash (/) plus cable length expressed in feet. Example: G/6 = 6 feet of cable. For CPR > 2500. Standard cable length only.
- 7 Screw terminals available for HD and EX housings. Solder terminals available for S and S1 housings.
- 8 Complete only if Index Pulse option is selected.
- 9 For Mating Connectors, Cables, and Cordsets see [www.encoder.com](http://www.encoder.com)
- 10 Only available with 5/16" (0.3125") shaft.
- 11 Standard or 5PY housing only.

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## Model 716 Specifications Common to All Cube Housing Styles

### Electrical

Input Voltage.....4.75 to 28 VDC max for temperatures up to 85° C  
4.75 to 24 VDC for temperatures between 85° C and 100° C.  
Input Current.....80 mA maximum with no output load  
Input Ripple.....100 mV peak-to-peak at 0 to 100 kHz  
Output Format.....Incremental- Square wave with single channel  
Output Types.....Open Collector- 250 mA max per channel  
Pull-Up- 250 mA max per channel  
Push-Pull- 20 mA max per channel  
Line Driver- 20 mA max per channel (Meets RS 422 at 5 VDC supply)  
Max Frequency.....1 to 2500 CPR 125 kHz, 2501 to 5000 CPR 250 kHz, 5001 to 10,000 CPR 500 kHz  
Standard Cube- 0 to 20 kHz

Index.....Standard Cube- Once per revolution, 180° electrical gated to Channel A.  
*See waveform diagrams.*  
Quadrature.....67.5° electrical or better is typical, 54°  
Edge Separation.....electrical minimum at temperatures > 99° C  
Rise Time.....Less than 1 microsecond  
Accuracy.....Within 0.05° mechanical from one cycle to any other cycle, or 3 arc minutes

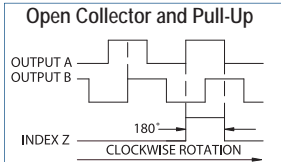
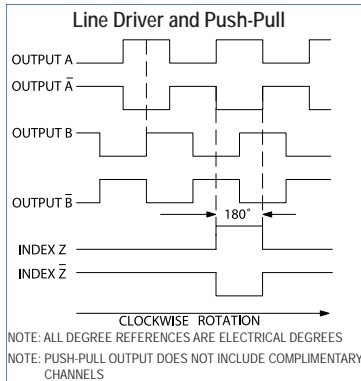
### Environmental

Operating Temp.....0° to 85° C or 0° to 100° C at 5 to 24 VDC  
Storage Temp.....-25° to +85° C  
Humidity.....98% RH non-condensing  
Vibration.....10 g @ 58 to 500 Hz  
Shock.....50 g @ 11 ms duration

### Mechanical

Max Speed.....6000 RPM. Higher shaft speeds achievable, contact Customer Service.  
Shaft Material.....303 stainless steel  
Housing.....Black non-corrosive finished 6063-T6 aluminum  
Bearings.....Precision ABEC Ball Bearings  
Electrical Conn.....Refer to ordering guide notes

### Waveform Diagrams



### Wiring Table

Function	Gland Cable Wire Color	5-pin M12	8-pin M12	10-pin MS	7-pin MS HV	7-pin MS O, S PP	6-pin MS HV No Index	6-pin MS O, S PP	Term. Block O, S No Index	Term. Block O, S PP
Com	Black	3	7	F	F	F	A	A, F	1	1, 6
+VDC	Red	1	2	D	D	D	B	B	2	2
A	White	4	1	A	A	A	C	D	3	4
A'	Brown	---	3	H	C	---	D	---	4	---
B	Blue	2	4	B	B	B	E	E	5	5
B'	Violet	---	5	I	E	---	F	---	6	---
Z	Orange	5	6	C	---	C	---	C	---	3
Z'	Yellow	---	8	J	---	---	---	---	---	---
Case	Green <sup>1</sup>	---	---	G	G	G	---	---	---	---
Shield	Bare	---	---	---	---	---	---	---	---	---

### Cube Pivot Bracket

- 176430-01 Single Pivot Mounting Bracket
- 176431-01 Double Pivot Mounting Bracket
- 176430-02 Spring Loaded Single Pivot Mounting Bracket
- 176431-02 Spring Loaded Double Pivot Mounting Bracket



Single Wheel, Stainless Steel Spring, Mounting Bracket

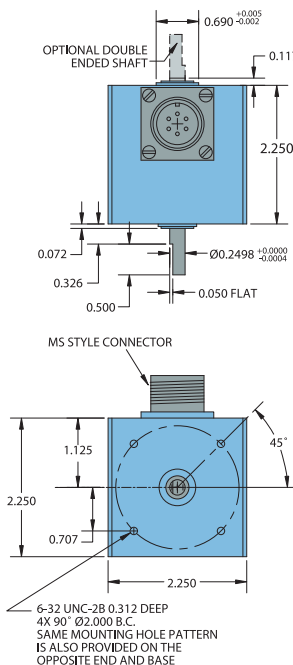
## Standard Cube Housing (S, S1)

### Standard Cube Housing (S, S1) Specifications

#### Mechanical

Shaft Size.....0.250" or 0.375"  
Shaft Type.....Single or double-ended (specify choice)  
Radial Loading.....15 lb maximum (0.250" diameter shaft)  
40 lb maximum (0.375" diameter shaft)  
Axial Loading.....10 lb maximum (0.250" diameter shaft)  
30 lb maximum (0.375" diameter shaft)  
Starting Torque.....0.13 oz-in typical for 0.250" shaft  
0.38 oz-in typical for 0.375" shaft  
Moment of Inertia.....6.5 x 10<sup>-6</sup> oz-in-sec<sup>2</sup>  
Mounting.....Tapped mounting holes on three sides for base or face mounting  
Weight.....10 oz for standard housing

#### Cube Housing With 1/4" Shaft (4)



#### Cube Housing With 3/8" Shaft (6)

