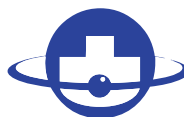


# Model 711 Single Channel Model 716 Quadrature



**BRITISH  
ENCODER**  
PRODUCTS COMPANY



## Features

- The Original Industry-Standard Cube
- Wide Choice of PPR's
- Enhanced Technology Using Opto-ASIC circuitry

The Model 711/716 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.

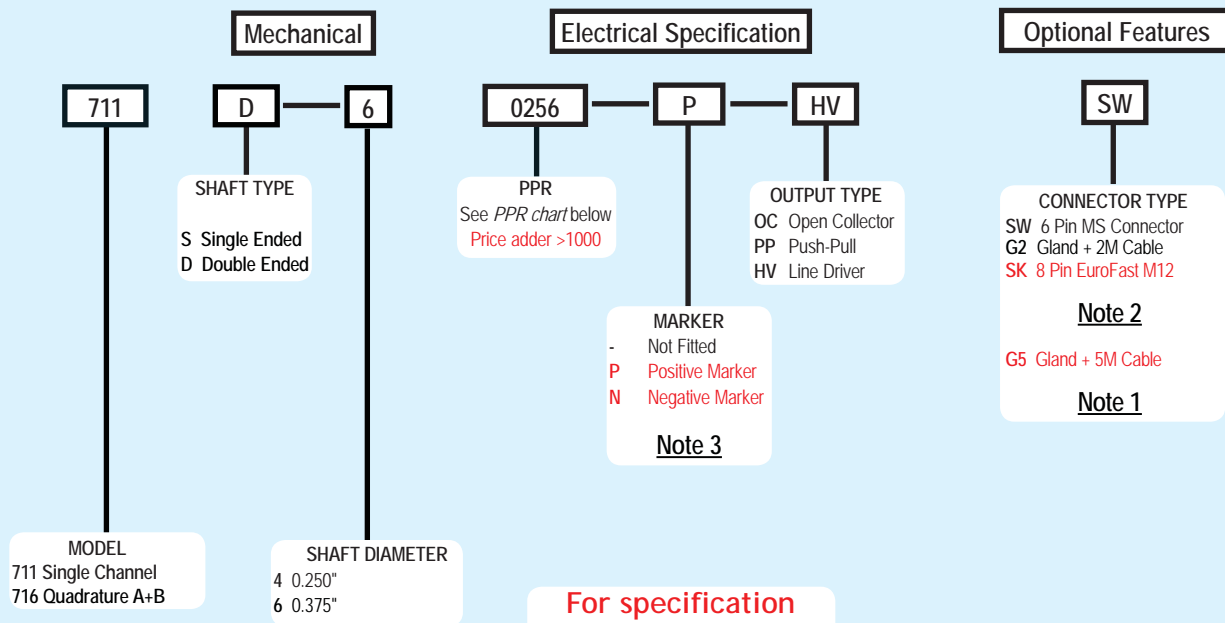
The new Opto-ASIC version increases critical performance specifications for the most popular resolutions. This version features advanced Opto-ASIC circuitry, a single chip design that eliminates many board level components. This increases the reliability of an already dependable and durable encoder. With new options continually being added, the 711/716 just keeps getting better, and better!

## Common Applications

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

## Model 711/716 Ordering Guide

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



**For specification  
assistance call  
Customer Service at  
+44 (0)1978 262100**

## Model 711/716 PPR Options

Standard Cube: All resolutions from 1 to 900 except where Opto-ASIC resolutions are available

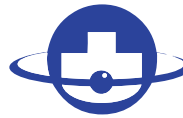
0001 thru 0189	0193	0200	0205	0210
0240	0250	0256	0276	0298
0300	0305	0308	0315	0333
0350	0360	0400	0480	
0500	0512	0580	0597	0600
0700	0720	0800	0840	0960
1000	1024	1200	1250	
1270	1800	2000	2048	2500

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

### NOTES:

- 1 For non standard cable lengths, call the sales office.
- 2 For mating connectors - see accessories page.
- 3 Call sales office for marker availability and configuration options.

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## Model 711/716 Specifications

### Electrical

Input Voltage ..... 4.75 to 28 VCC max for temperatures up to 70° C  
 Input Current ..... 100 mA max (65 mA typical) with no output load  
 Input Ripple ..... 100 mV peak-to-peak at 0 to 100 kHz  
 Output Format ..... 711. Square wave with single channel  
 716. Quadrature two square waves, channel A leading B for clockwise shaft rotation, as viewed from the encoder mounting face. See *Waveform Diagrams* below.  
 Output Types ..... Open Collector- 20 mA max per channel  
 Push-Pull- 20 mA max per channel  
 20 mA max per channel  
 Line Driver- 20 mA max per channel (Meets RS 422 at 5 VCC supply)  
 Index ..... Once per revolution.  
 Freq. Response ..... 20 kHz standard  
 Noise Immunity ..... Tested to BS EN61000-6-2; BS EN50081-2; BS EN61000-4-2; BS EN61000-4-3; BS EN61000-4-6; BS EN500811  
 Symmetry ..... 180° (±18°) electrical  
 Quad. Phasing ..... 90° (±22.5°) electrical  
 Min. Edge Sep ..... 67.5° electrical  
 Accuracy ..... Within 0.10° mechanical or 6 arc-minutes from true position  
 Electrical Conn. .... Refer to ordering guide notes

### Mechanical

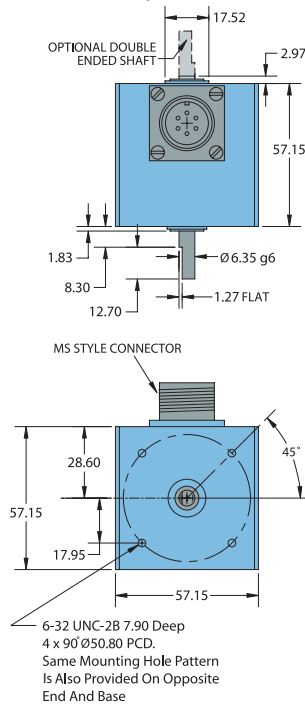
Shaft Size ..... 0.250" or 0.375"  
 Shaft Type ..... Single or double-ended (specify choice)  
 Shaft Material ..... 303 stainless steel  
 Radial Loading ..... 7 Kg maximum (0.250" diameter shaft)  
 18 Kg maximum (0.375" diameter shaft)  
 Axial Loading ..... 4.5 Kg maximum (0.250" diameter shaft)  
 13.6 Kg maximum (0.375" diameter shaft)  
 Starting Torque ..... 9.18 x 10<sup>-4</sup> Nm typical for 0.250" shaft  
 2.68 x 10<sup>-3</sup> Nm typical for 0.375" shaft  
 Housing ..... Black non-corrosive finished 6063-T6 aluminum  
 Bearings ..... Precision ABEC Ball Bearings  
 Mounting ..... Tapped mounting holes on three sides for base or face mounting  
 Weight ..... 300 gms typical

### Environmental

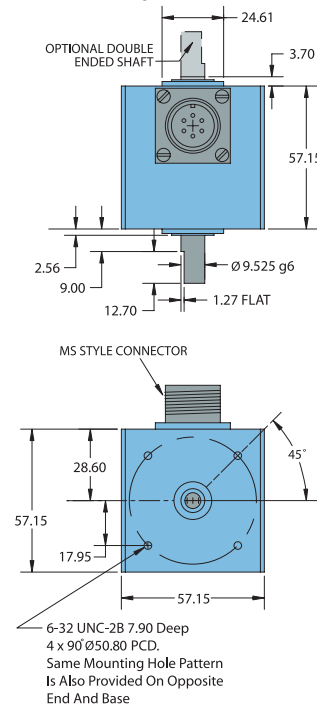
Operating Temp ..... 0° to +70° C standard models  
 Storage Temp ..... -25° to +85° C  
 Humidity ..... 98% RH non-condensing  
 Vibration ..... 10 g @ 58 to 500 Hz  
 Shock ..... 80 g @ 11 ms duration  
 Sealing ..... IP50 standard

## Model 711/716 Encoder

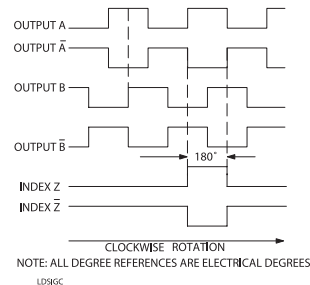
711/716 Housing With 1/4" Shaft



711/716 Housing With 3/8" Shaft



### Waveform Diagrams



### Wiring Table

Function	Gland Cable Wire Color	8-pin M12 HV A,B,Z	6-pin MS HV A+B	6-pin MS HV A+Z	6-pin MS OC PP
Com	Black	7	A	A	A
+VDC	Red	2	B	B	B
A'	Brown	1	C	C	D
A	White	3	D	D	---
B	Blue	4	E	---	E
B'	Violet	5	F	---	---
Z	Orange	6	---	E	C
Z'	Yellow	8	---	F	---
Shield	Screen	---	---	---	---

**CAUTION - Always check wiring colour code against Encoder Label due to changes in specification since September 2006**