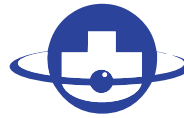


Model 711 Single Channel Model 716 Quadrature



**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!

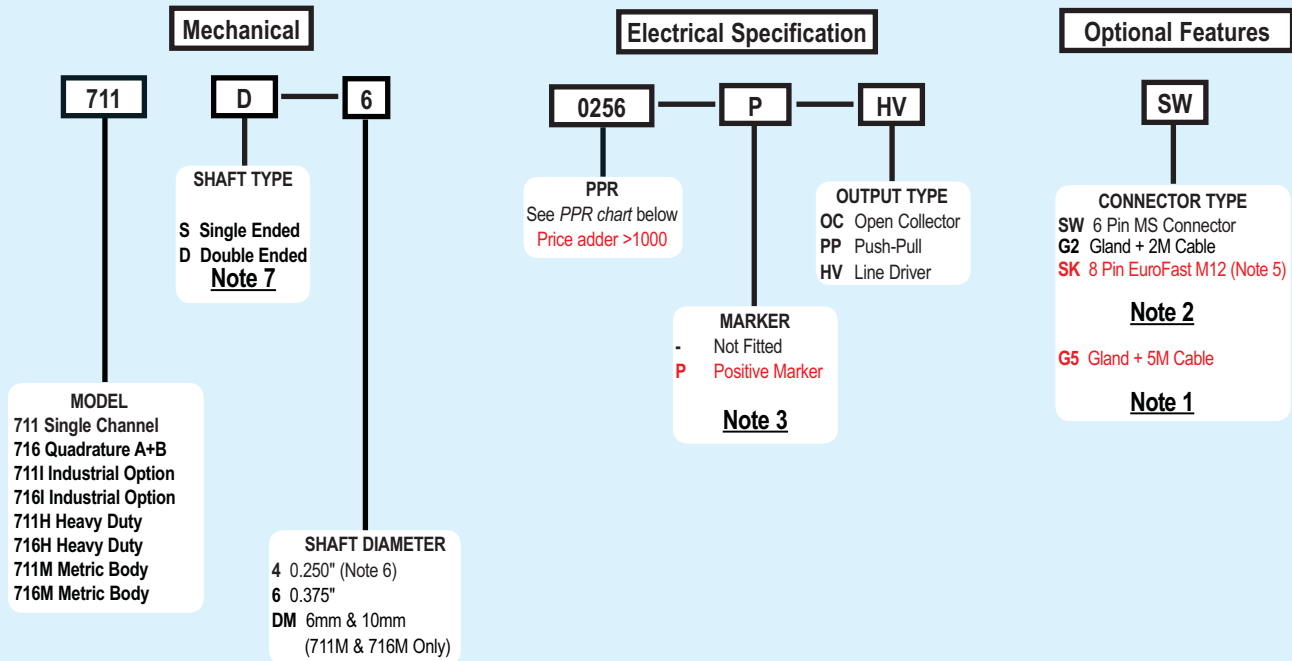
Also Available in Industrial , Heavy Duty or Metric Housings.

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.



Model 711/716 PPR Options *

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

| | | | | | |
|-----------|-------|------|-------|------|------|
| 0001 thru | ----- | 0198 | 0200 | 0205 | 0250 |
| 0256 | 0300 | 0305 | 0308 | 0315 | 0360 |
| 0400 | 0500 | 0512 | 0580 | 0600 | 0720 |
| 0800 | 1000 | 1024 | 1200 | 1250 | 1500 |
| 1800 | 2000 | 2048 | 2500 | 3000 | 4096 |
| 5000 | 6000 | 8192 | 10000 | | |

Contact Customer Service for other disk resolutions; not all disk resolutions available with all output types See [Note 4](#) for * Details

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.
- 4 For PPR between 0001 thru 0198 Call Sales office for availability.
- 5 Not Available in Heavy Duty.
- 6 Standard 711/716 Only.
- 7 Double Ended Not available in Heavy Duty.

Model 711 Single Channel Model 716 Quadrature



**BRITISH
ENCODER**
PRODUCTS COMPANY



Model 711/716 Specifications

Electrical

Input Voltage4.75 to 24 Vcc max to temperatures up to 70°C
 Input Current100 mA max (65 mA typical) with no output load
 Input Ripple100 mV peak to peak at 0 to 100 kHz
 Output Format711. 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. Response20 kHz standard
 Noise ImmunityTested to BS EN61000-6-2; BS EN50081-2; BS EN61000-4-2; BS EN61000-4-3; BS EN61000-4-6; BS EN500811
 Symmetry180° (±18°) electrical
 Quad. Phasing90° (±22.5°) electrical
 Min. Edge Sep67.5° electrical
 Accuracy.....Within 0.10° mechanical or 6 arc-minutes from true position
 Electrical Conn.....Refer to ordering guide notes

Mechanical

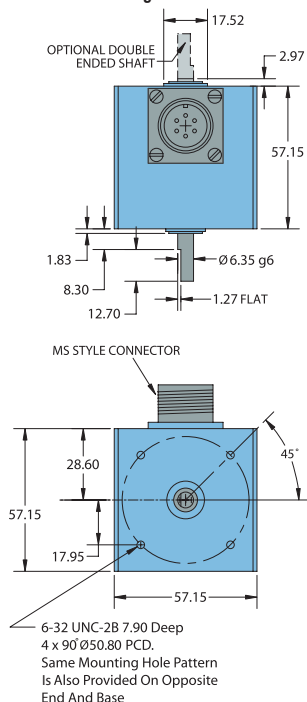
Shaft Size0.250" or 0.375"
 Shaft TypeSingle or double-ended (specify choice)
 Shaft Material.....303 stainless steel
 Radial Loading7 Kg maximum (0.250" diameter shaft)
 18 Kg maximum (0.375" diameter shaft)
 Axial Loading.....4.5 Kg maximum (0.250" diameter shaft)
 13.6 Kg maximum (0.375" diameter shaft)
 Starting Torque9.18 x 10⁻⁴ Nm typical for 0.250" shaft
 2.68 x 10⁻³ Nm typical for 0.375" shaft
 Housing.....Black non-corrosive finished 6063-T6 aluminum
 BearingsPrecision ABEC Ball Bearings
 Mounting.....Tapped mounting holes on three sides for base or face mounting
 Weight.....300 gms typical

Environmental

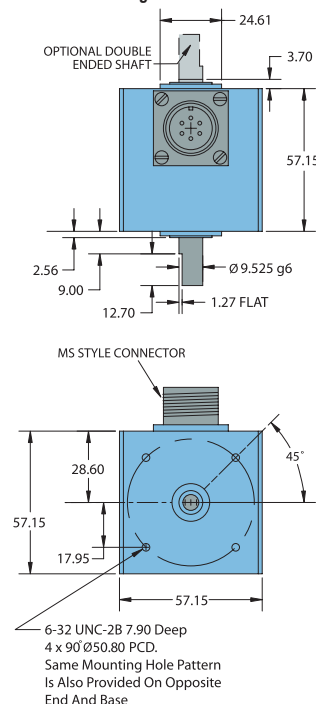
Operating Temp..... 0° to +70° C standard models
 Storage Temp.....-25° to +85° C
 Humidity.....98% RH non-condensing
 Vibration10 g @ 58 to 500 Hz
 Shock.....80 g @ 11 ms duration
 Sealing.....IP50 standard

Model 711/716 Encoder

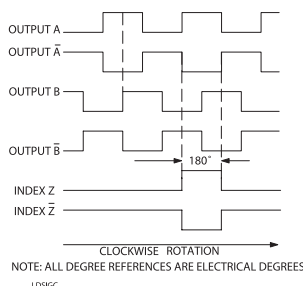
711/716 Housing With 1/4" Shaft



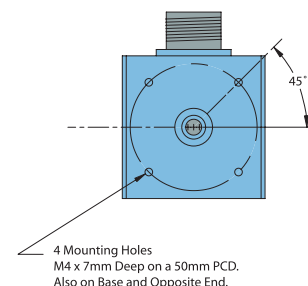
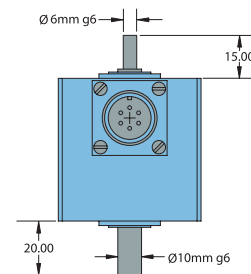
711/716 Housing With 3/8" Shaft



Waveform Diagrams



711/716 Metric Version



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 | --- |
| A | White | 3 | D | 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

Industrial Cube Housing (711I/716I)

Industrial Housing Features

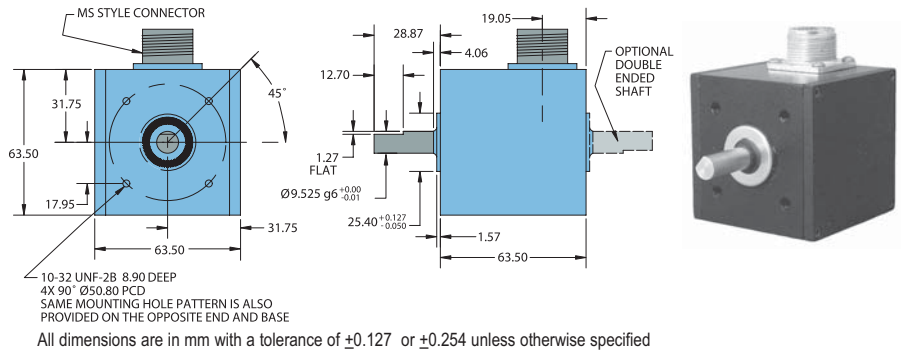
This more robust unit meets requirements between Standard and Heavy Duty housings while retaining the Cube design. The Industrial model features an IP65 shaft seal. The tough, sealed aluminum housing has a wall thickness of 4.75mm and offers greater protection from wash down, sprays, dust, moisture, shock, vibration, and other hazards found in industrial environments.

Industrial Cube Housing (711I/716I) Specifications

Refer to all Standard Cube Housing specifications except as follows:

Mechanical

- Shaft Size..... 0.375" diameter
- Shaft Type..... Single- or Double-Ended Shaft Available
- Radial Loading..... 10 Kg Maximum
- Axial Loading..... 5 Kg Maximum
- Starting Torque..... 0.0219 Nm Starting Torque w/IP65 Shaft Seal



Heavy Duty Cube Housing (711H/716H)

The Heavy Duty housing uses a separate 0.375" diameter external shaft and bearing assembly to rotate the shaft of an internally mounted Cube Housing. This provides mechanical isolation from external loads and stress. A flexible coupling between the external shaft and the encoder protects the internal unit from axial and radial loading. The 6.35mm aluminum walls protect the encoder from external shock, vibration, and the outside environment.

Heavy Duty Housing Measurement

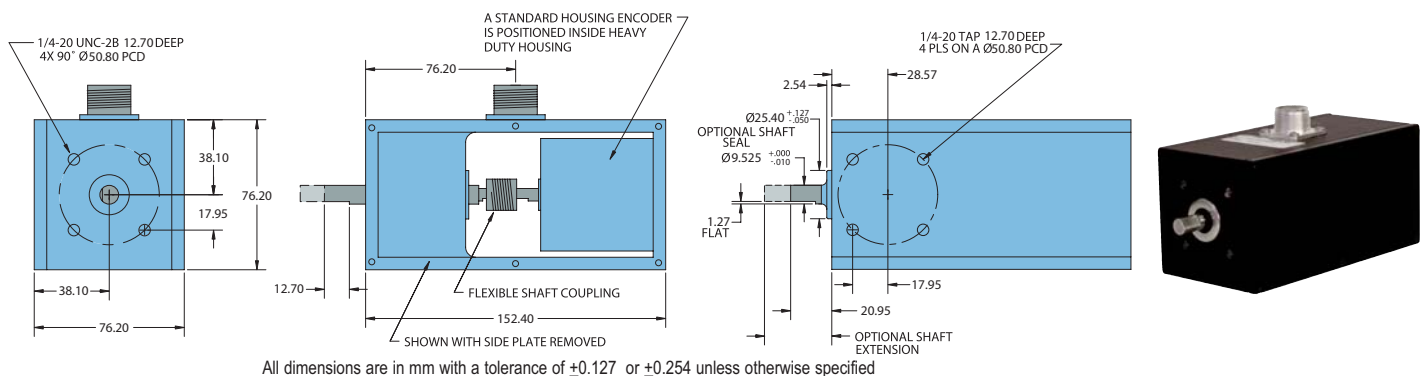
- Heavy Duty 76.20mm X 152.40mm housing

Heavy Duty Cube Housing (711H/716H) Specifications

Refer to all cube specifications except as follows:

Mechanical

- Max Speed..... 6000 RPM
- Shaft Size..... 0.375"
- Rotation..... Either direction
- Radial Loading..... 15 Kg maximum
- Axial Loading..... 10 Kg maximum
- Bearings..... Precision ABEC ball bearings
- Mounting..... Tapped holes face and base
- Weight..... 2.0 Kg



Cube Housings Pivot Brackets

700 Series Pivot Brackets

Gravity Driven Pivot Brackets allow an Encoder and Measuring Wheel to adjust to variations in the material surface being measured.

A spring loaded version is also available

These Brackets replace our original Pivot brackets (140039 & 140040)

These are for Standard Cube and Industrial Cube Housing's Only

176430-01
Single Pivot Mounting Bracket

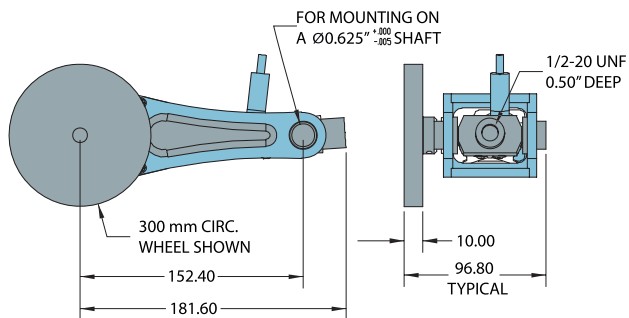
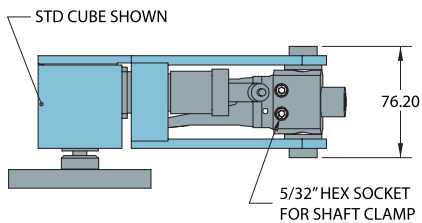
176431-01
Double Pivot Mounting Bracket

176430-02
Spring Loaded Single Pivot Mounting Bracket

176431-02
Spring Loaded Double Pivot Mounting Bracket

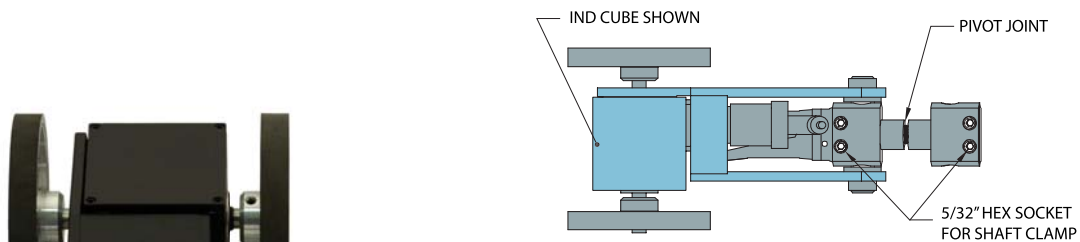


Single Wheel Bracket



Single Wheel, Stainless Steel Spring, Mounting Bracket

Dual Wheel Bracket



Dual Wheel

