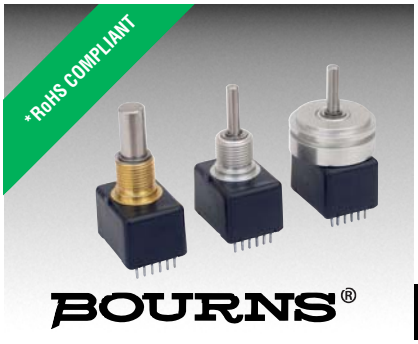


Features

- 3.3 and 5 VDC voltage supply option
- Quadrature output
- Bushing or servo mount
- Non-contacting magnetic technology
- Small size
- CMOS and TTL compatible
- Resolution from 32-256 PPR
- Long life
- High operating speed
- Highly repeatable
- Sealed option
- Magnetic technology

EMS22Q - Non-Contacting Incremental Encoder

Electrical Characteristics

Resolution ..... 32 to 256 PPR
Insulation Resistance (500 VDC) ..... 1,000 megohms
Electrical Travel ..... Continuous
Supply Voltage ..... 5.0 VDC ±10 %, 3.3 VDC ±10 %
Supply Current ..... 20 mA maximum
Output Voltage
  Low Output Level ..... Vss+0.4 V maximum
  High Output Level ..... Vdd-0.5 V minimum
Output Current
  With 4.5 VDC Supply Voltage ..... 4 mA maximum
  With 3.0 VDC Supply Voltage ..... 2 mA maximum
Rise/Fall Time (Incremental Output) ..... 500 ns maximum
Shaft RPM (Ball Bearing) ..... 10,000 rpm maximum
Hysteresis ..... 0.7 °
Accuracy
  Nominal ..... ±0.7 ° or better
  Worst Case ..... ±1.4 °
Output Transition Noise ..... 0.12 ° RMS max.

Environmental Characteristics

Operating Temperature Range ..... -40 °C to +125 °C (-40 °F to +257 °F)
Storage Temperature Range ..... -55 °C to +125 °C (-67 °F to +257 °F)
Humidity ..... MIL-STD-202, Method 103B, Condition B
Vibration ..... 15 G
Shock ..... 50 G
Rotational Life
  S Bushing (@1,000 rpm) ..... 100,000,000 revolutions
  T & W Bushings (@1,000 rpm with 250 g side load) ..... 50,000,000 revolutions
IP Rating ..... IP 65

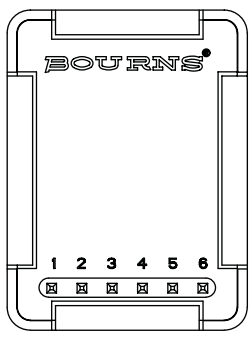
Mechanical Characteristics

Mechanical Angle ..... 360 ° Continuous
Torque
  Starting ..... 43 ±21 g-cm (0.6 ±0.3 oz-in.)
  Running ..... 29 ±14 g-cm (0.4 ±0.2 oz-in.)
Mounting Torque ..... 203 N-cm (18 lb.-in.)
Shaft End Play ..... 0.30 mm (0.012 ") T.I.R. maximum
Shaft Radial Play ..... 0.12 mm (0.005 ") T.I.R. maximum
Weight ..... 11 gms. (0.4 oz.)
Terminals ..... Axial, radial or ribbon cable
Soldering Condition
  Manual Soldering ..... 96.5Sn/3.0Ag/0.5Cu solid wire or no-clean rosin cored wire
    370 °C (700 °F) max. for 3 seconds
  Wave Soldering ..... 96.5Sn/3.0Ag/0.5Cu solder with no-clean flux
    260 °C (500 °F) max. for 10 seconds
  Wash processes ..... Not recommended
Marking ..... Manufacturer's trademark, name, part number, and date code.
Hardware ..... One lockwasher and one mounting nut supplied with each encoder, except on servo mount versions.

Pin Configuration

Output Type	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6
A/B Quadrature	A	B	GND	Index	VCC*	CS**

* Can be 5 or 3.3 VDC depending on the version.
** Active low chip select pin; if not used connect pin 6 to GND.



*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.
Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.

Applications

- Material handling equipment
- Brushless DC motor commutation
- Robotics
- Automotive
- Industrial automation
- Petroleum refinery
- Medical
- Office equipment
- Audio and broadcast equipment

EMS22Q - Non-Contacting Incremental Encoder

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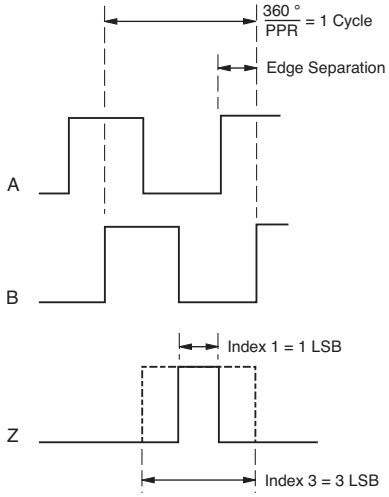
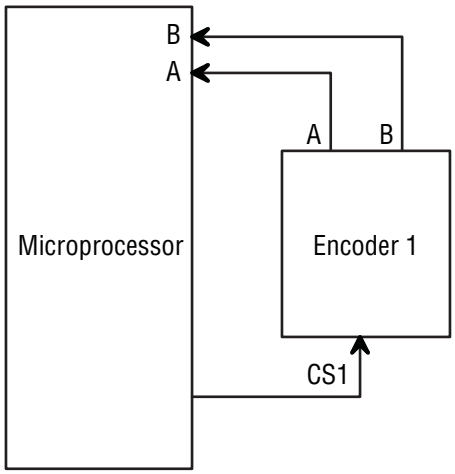
Output Type Waveform and Variant Table

Quadrature Output



Minimum edge separation = 20*256/PPR (no missing pulses)

PPR	3.3 Vcc	5.0 Vcc	Index 1	Index 3
256	X		X	
256	X			X
256		X	X	
256		X		X
128	X		X	
128	X			X
128		X	X	
128		X		X
64	X		X	
64	X			X
64		X	X	
64		X		X
32	X		X	
32	X			X
32		X	X	
32		X		X



Chip Select Hardware Sample

Consult factory for options not shown, including:

- Wire lead or cable options
- Connectors
- Non-standard resolutions
- Special shaft/bushing sizes and features
- Special performance characteristics
- PCB mounting bracket

EMS22Q - Non-Contacting Incremental Encoder

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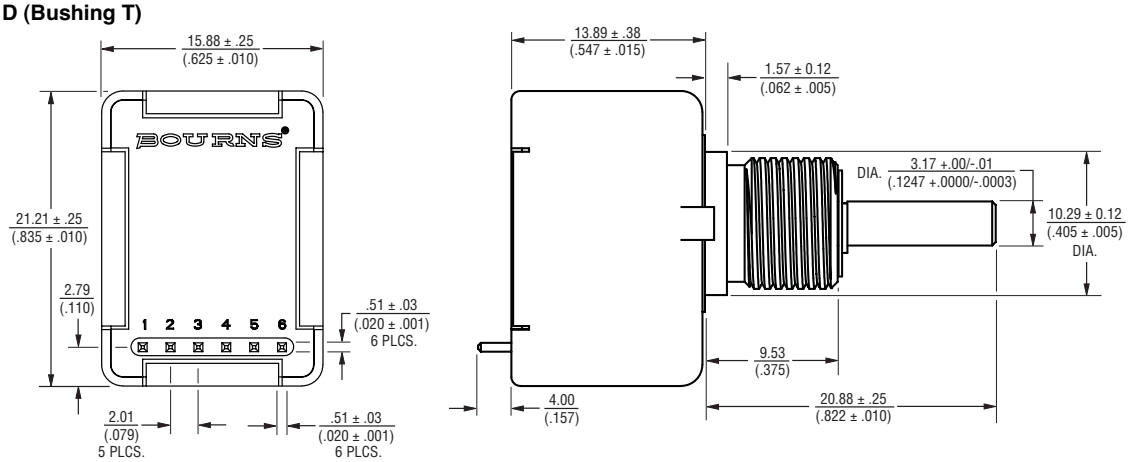
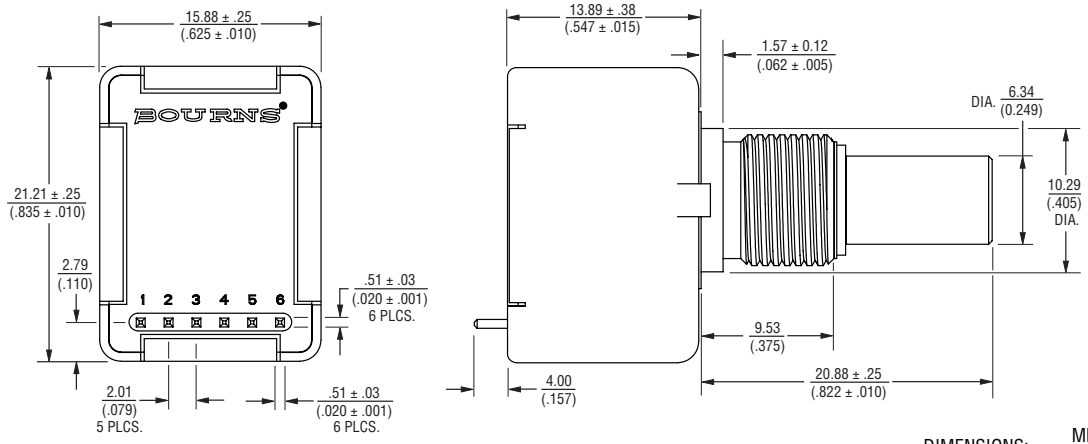
Dimensional Drawings

Shaft Style D (Bushing T)

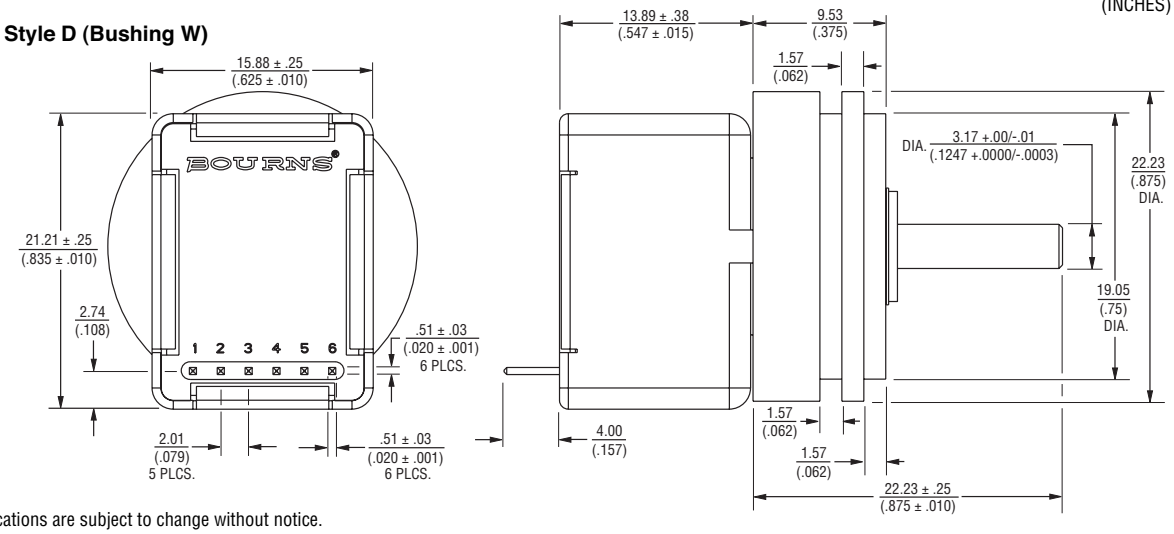


Shaft Style B (Bushing S)



DIMENSIONS: MM / (INCHES)

Shaft Style D (Bushing W)



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EMS22Q - Non-Contacting Incremental Encoder

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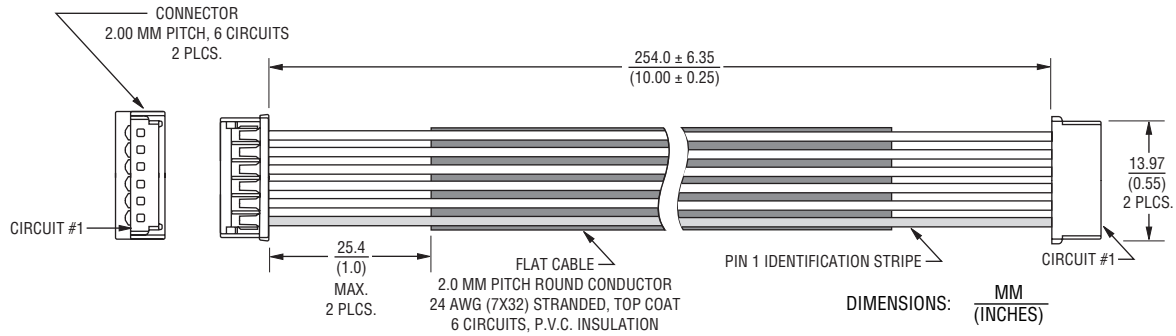
Product Dimensions

Cable Assembly



How To Order

BOURNS EMS22 22 MM NON-CONTACTING INCREMENTAL ENCODER

E	M	S	2	2	Q	5	1	-	B	2	8	-	L	S	4

INDEX CHANNEL	
Code	**Description**
1	**1 LSB**
3	3 LSB

VOLTAGE SUPPLY	
Code	**Description**
3	3.3 VDC
5	**5 VDC**

SHAFT LENGTH DESIGNATOR*	
Code	**Description**
16	1/2 " Long
20	5/8 " Long
28	**7/8 " Long**
25	25 mm Long (Available with D Bushing Only)

RESOLUTION	
Code	**PPR**
1	32
2	64
3	128
4	**256**

BUSHING DESIGNATOR	
Code	**Description**
S	**3/8 " D X 3/8 " L Threaded (Single Ball Bearing)**
T	3/8 " D X 3/8 " L Threaded (Dual Ball Bearing)
W	Servo Mount 7/8 " D (Dual Ball Bearing)
D	9 mm D X 7.94 mm L Threaded (Single Ball Bearing)

TERMINAL CONFIGURATION**	
Code	**Description**
L	**Axial, Multi-Purpose Pin**
M	Rear Ribbons Cable with Connector
W	Rear Ribbons Cable - No Connector

SHAFT STYLE		
Code	**Description**	**Available With Bushings (Code)**
B	**1/4 " Dia., Plain End**	**S**
C	1/4 " Dia., Flatted End	S
D	1/8 " Dia., Plain End	T, W
R	6 mm Dia., Slotted End	D
M	6 mm Dia., Flatted End	D

OUTPUT TYPE	
Code	**Description**
Q	**Quadrature**

* Shaft length measured from mounting surface.

** Standard ribbon cable is 10 inches long. Consult factory for other lengths.

REV. 07/12

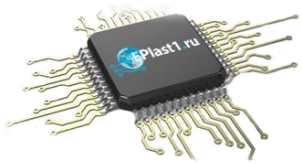
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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