

847 Incremental Optical Encoders

High resolution and robust design simplifies complex, demanding applications

Features and Benefits

- Robust mechanical design with metal code disk technology and unique bearing system helps the encoder tolerate shock, vibration and wide range of operating temperatures to reduce machine downtime
- Compact 2- and 2.5-inch design allows for limited installation space
- Square flange, servo flange and hollow shaft mounting options
- Choice of output signal phasing and output driver available for all form factors and resolutions
- Integer resolution from 1 to 65,536 counts per revolution for precision applications
- Backward compatible with our 844A, 844B and 845 incremental encoders
- M12, Military Style (MS) and flying-lead connection options

Applications

- Converting print and web
- Packaging
- Cutting machines



To expand the depth and breadth of our current encoder offering, Rockwell Automation is proud to introduce the Allen-Bradley® 847 Incremental Optical Encoder family.

Equipped with a robust mechanical design and the latest metal code disk technology, these encoders have a rugged bearing system that is built to withstand shock, vibration and a wide range of operating temperatures.

The 847 family is available in six models and offered in 2- and 2.5-inch housings with flange, hollow shaft and blind hollow shaft options. With high integer resolutions from 1 to 65,536 counts per revolution, the 847 family offers accurate positioning for applications that require exact precision. They are also backward compatible with our 844A, 844B and 845 incremental encoders and offer M12, MS and flying-lead connection options.

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Product Selection

To build a catalog number, select specs from tables a, b, c, d, e, f, g and h.

847 - - - - -
 a b c d e f g h

Family Line	
Code	Description
847	Incremental Encoder family line

a

Encoder Diameter/Type	
Code	Description
A	2 in. diameter, blind hollow shaft
B	2 in. diameter, through hollow shaft
T	2 in. diameter, solid shaft
H	2.5 in. diameter, solid shaft

b

Mounting Configuration	
Code	Description
D	Standard square flange
E	70 mm diameter servo mount (64 mm bolt circle)
I	90 mm diameter servo mount (70 mm bolt circle)
G	65 mm diameter servo mount (48 mm bolt circle)
H	Standard servo mount
F	Bell housing and coupler
J	65 mm diameter servo mount (42 mm bolt circle)
P	5 PY mounting *
Q	3-point mounting
R	2-point mounting

* P can be ordered only with option Y from table c.

c

Shaft Size	
Code	Description
3	3/8 in. diameter metal hollow shaft
4	1/2 in. diameter metal hollow shaft
Y	5/16 in. diameter extended shaft with flat **
K	6 mm diameter shaft with flat
L	10 mm diameter shaft with flat
M	1/4 in. diameter shaft with flat
N	3/8 in. diameter shaft with flat
B	1/4 in. diameter bore helical coupler (standard)
E	3/8 in. diameter bore helical coupler (standard)
F	1/4 in. diameter bore bellows coupler (high performance)
G	3/8 in. diameter bore bellows coupler (high performance)

** Y can be ordered only with option P from table g.

d

Power Supply	
Code	Description
1	4.5...5.5V DC
2	8...30V DC

e

Output Configuration	
Code	Signal Phasing A-leads-B, clockwise rotation viewed from shaft end, Z gated A
4	4.5...5.5V line driver outputs (TTL)
5	4.5...5.5V open collector outputs ¹
6	8...30V line driver outputs (HTL) ²
7	8...30V open collector outputs ²
Code	Signal Phasing B-leads-A, clockwise rotation viewed from shaft end, Z gated BN
A	4.5...5.5V line driver outputs (TTL)
B	4.5...5.5V open collector outputs ¹
C	8...30V line driver outputs (HTL) ²
D	8...30V open collector outputs ²

¹ Options 5 and B cannot be ordered with option 2 from table d.
² Options 6, 7, C and D cannot be ordered with option 1 from table d.

f

Connector/Cable Exit	
Code	Description
A	Axial exit
R	Radial exit

g

Connector/Cable Type	
Code	Description
A	M12 connector, 8 pin with mating connector
B	M12 connector, 8 pin
C	MS connector, 6 pin with mating connector
D	MS connector, 6 pin
E	MS connector, 7 pin with mating connector
F	MS connector, 7 pin
G	MS connector, 10 pin with mating connector
H	MS connector, 10 pin
P	1.5 m (4.9 ft) cable
Q	5 m (16.4 ft) cable
R	10 m (32.8 ft) cable

h

Code	Resolution
00001...65536	00001...65536 pulses/revolution

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