

Installation Instructions

Size 25 Incremental Encoder, Bulletin 845H

IMPORTANT: SAVE THESE INSTRUCTIONS FOR FUTURE USE.

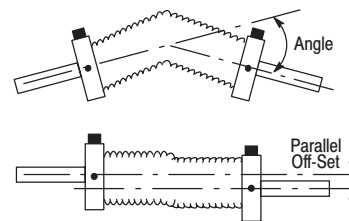
Specifications

Electrical	
Code Format	Incremental, 2 channels with zero index
Quadrature	90° ±22°; Channel A leads B CCW
Symmetry	50% ±10%
Zero Index Channel	Gated 1/2 cycle
Power Requirements	Determined by catalog number: 5V DC ±5% @ 150mA maximum 8–24V DC @ 150mA maximum
Frequency Response	Data: 210kHz Zero index: 210kHz
Operating Speed (Data)	(210kHz x 60)/pulses per rev. = RPM or 6000 RPM, whichever is lower
Resolution	Up to 5000 PPR on code disk
Output Drive Capability	PNP current source = 20mA; NPN current sink = 20mA; Differential line driver = ±20mA; NPN open collector = 20mA
Mechanical	
Starting & Running Torque	2.5Ncm typical [3.5in-oz]
Moment of Inertia	15gcm (2.1 x 10 ⁻⁴ oz-in-sec ²)
Slew Speed	6000 RPM
Shaft Loading (3/8" & 10mm Dia.)	Axial 89N [20lbs] (10lbs 5000 PPR); Radial 178N [40lbs] (20lbs 5000 PPR)
Shaft Size	6mm, 10mm, 6.4mm [1/4in] 9.517mm [3/8in] diameter
Environmental	
Housing	NEMA Type 4,13, IP66 (IEC 529)
Temperature	0°C to +60°C (+32°F to +140°F)—operating –25°C to +90°C (–13°F to +194°F)—storage
Humidity	98%, noncondensing
Shock	50g (11ms duration)
Vibration	20g (4 to 2000Hz)
Approximate Ship Weight	0.91kg (2lbs)



ATTENTION: The shielded cables, output devices, and power supplies must be properly grounded. All National Electric Code and applicable local codes and ordinances must be observed when wiring the system.

Flexible Shaft Couplings



ATTENTION: Rigidly coupling the encoder shaft to the machine shaft **will cause a failure** in either the bearings of the encoder or the bearings of the machine shaft.

Accessories

Description	Part Number
High Performance Flexible Coupling	845-FC-*-*
Measuring Wheels	845-MW-A-*
Servo Clamps	845-SC
Pre-Wired Cables	845-CA-*-*
Mating Connectors	845-7P, 845-10P
Differential Encoder Buffer Board	845-BB

*See the *Sensors* catalog for selection.

Selection

845H — S J H Z 1 4 CR Y 2 C
a b c d e f g

a

Mounting Configuration ❶	
Code	Description
D	Square Flange
E	70mm Diameter Flange
F	90mm Diameter Flange
G	Metric Servo 48mm B.C.
H	English Servo
J	Metric Servo 42mm B.C.

b

Shaft Options ❶	
Code	Description
A	6mm Diameter
B	10mm Diameter
C	1/4in Diameter
Z	3/8in Diameter
K	6mm w/Flat
L	10mm w/Flat
M	1/4in w/Flat
N	3/8in w/Flat
P	3/8in w/Double Flat

❶ Standard catalog numbers consist of either English Mounting Configurations with English Shaft Options or Metric Mounting Configurations with Metric Shaft Options.

c

Power Supply	
Code	Description
1	5V DC ±5%
2	8–24V DC Unregulated

d

Output Configuration ❷	
Code	Description
2	PNP Current Source
3	NPN Current Sink
4	DLD 5V DC RS–422
5	NPN Open Collector 24V DC Max ❸
6	DLD 8–24V DC ❹

❷ DLD = Differential Line Driver

❸ External pull-up resistor required

❹ Can not be ordered with 5V DC power supply (code 1 above)

e

Resolution	
Code	Description (PPR)
AG	1
AM	5
BG	10
CA	50
CB	60
CE	64
CF	80
CG	100
DB	120
DF	150
EB	180
CH	200
CJ	250
CC	254
CW	256
EG	300
CK	360
CL	400
CM	500
DW	512
EH	600
DG	720
DL	800
LG	900
CN	1000
FW	1024
EL	1200
CD	1250
RF	1280
CU	1472
EM	1500
FL	1600
CP	1800
DN	2000
CS	2048
HL	2400
CR	2500
CY	2540
LJ	2750
EN	3000
CT	3600
DR	5000

f

Connection Type	
Code	Description
1	Axial Connector (End)
2	Radial Connector (Side)
A	Axial Cable (End)
R	Radial Cable (Side)

g

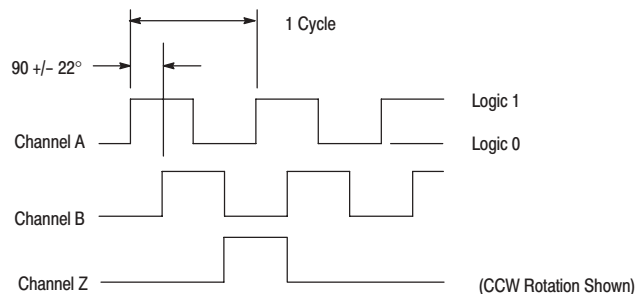
Connection Options	
Code	Description
Blank	Without Mating Connector ❺
C	With Mating Connector ❺
1	1m (3.28ft) Cable Length ❻
5	5m (16.4ft) Cable Length ❻
9	9m (29.52ft) Cable Length ❻

❺ These options not available with Connection Options code: "A" & "R."

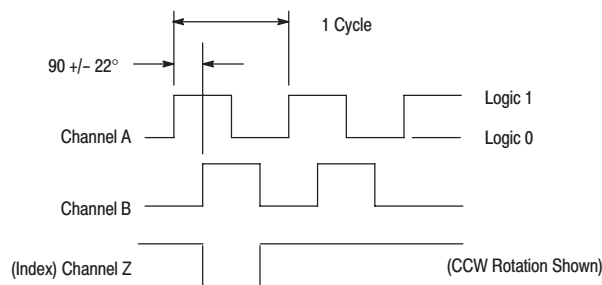
❻ These options not available with Connection Options code: "1" & "2."

Electrical Connections

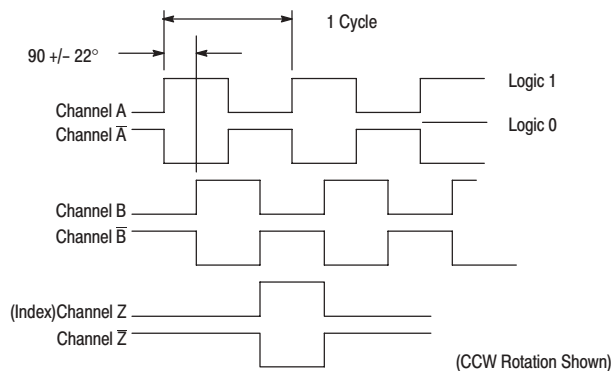
Current Sink and Open Collector Output Waveform:



Current Source Output Waveform:



Differential Line Driver Output Waveform:



7-Pin Connector ACS02E16S-1P (023) or Equivalent

Current Source, Current Sink, Open Collector Outputs

Pin	Function	Pin	Function
A	Channel A Output	E①	—
B	Channel B Output	F	DC Return
C	Channel Z Output	G	Case Ground
D②	DC+ Input	—	—

Cable

Current Source, Current Sink, Open Collector Outputs

Wire Pair	Wire Color	Function
Red/Black	Red	DC+ Input
	Black	DC Return
White/Black	White	Channel A Output
	Black	Not Connected
Blue/Black	Blue	Channel B Output
	Black	Not Connected
Green/Black	Green	Channel Z Output
	Black	Not Connected

10-Pin Connector ACS02E18-1P (023) or Equivalent

Differential Line-Driver Outputs

Pin	Function	Pin	Function
A	Channel A Output	F	DC Return
B	Channel B Output	G	Case Ground
C	Channel Z Output	H	Channel A-bar Output
D①	DC+ Input	I	Channel B-bar Output
E①	—	J	Channel Z-bar Output

Cable

Differential Line Driver Outputs

Wire Pair	Wire Color	Function
Red/Black	Red	DC+ Input
	Black	DC Return
White/Black	White	Channel A Output
	Black	Channel A-bar Output
Blue/Black	Blue	Channel B Output
	Black	Channel B-bar Output
Green/Black	Green	Channel Z Output
	Black	Channel Z-bar Output

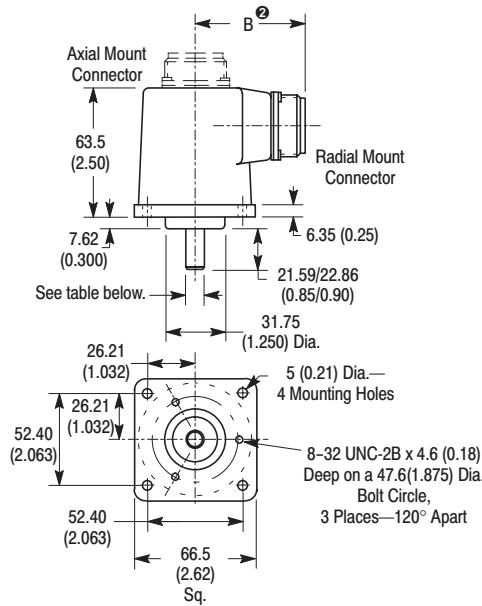
Connector Type

Output Code	Output Type	Connector Type	Number of Pins	Dimension "B"—mm (in)②
2	Current Source	ACS02E16S-1P (023)	7	63 (2.48)
3	Current Sink	ACS02E16S-1P (023)	7	63 (2.48)
4	Diff. Line Driver	ACS02E18-1P (023)	10	73.9 (2.91)
5	Open Collector	ACS02E16S-1P (023)	7	63 (2.48)

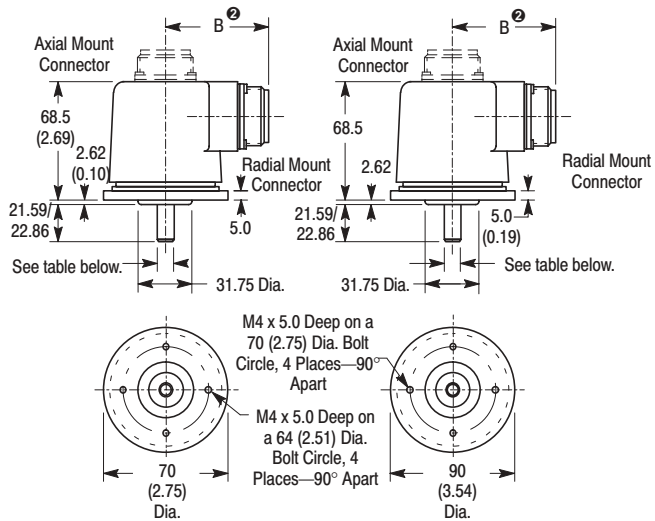
① Pins D and E internally connected.

② Dimension "B" is shown on page 4.

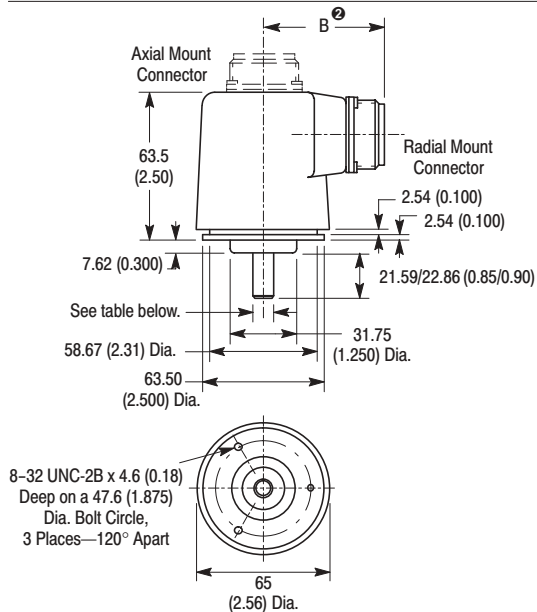
Dimensions—mm (inches)



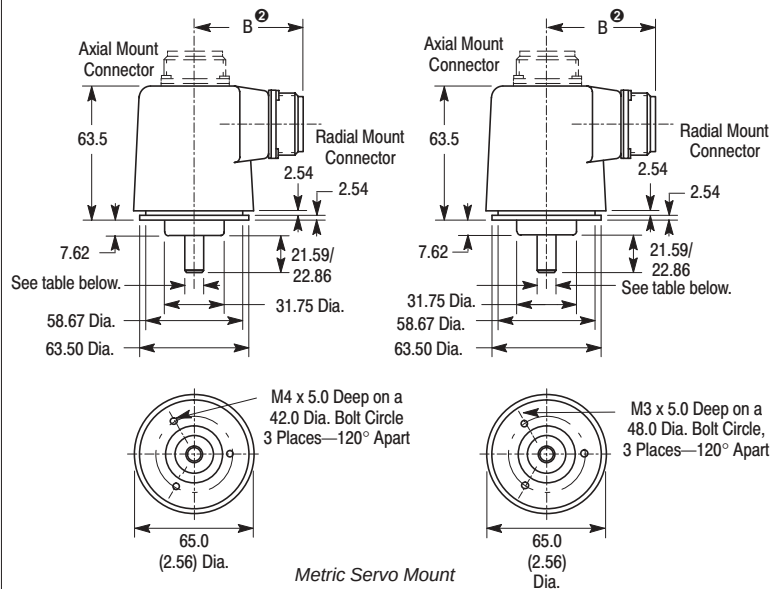
Square Flange Mount



Metric Flange Mount



English Servo Mount

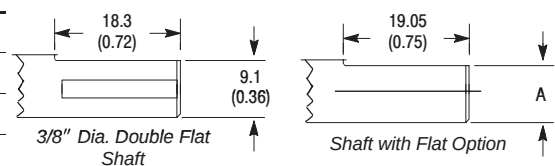


Shaft Diameter Options

Code	Shaft Diameter
A or K	6mm +0.00mm, -0.013mm
B or L	10mm +0.00mm, -0.013mm
C or M	6.35 (0.2499) +0.0000, -0.0005
Z or N	9.52 (0.3749) +0.0000, -0.0005

Flat Dimensions

Code	Dimension "A"
K	5.3mm (0.21in)
L	9.1mm (0.36in)
M	5.5mm (0.22in)
N	8.6mm (0.34in)



② For Dimension "B," see table on page 3.