IG 42 - F with RNC Feedback

Model Numbering

IG 42 A S - 32- RNC 4096 - F

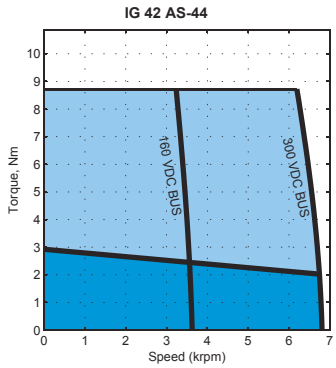
- **NEMA**
- **Motor Stack Length** [1]
  - A 
  - B 
- **Shaft** [1]
  - Imperial: S = Smooth, F = Flat, K = Keyway
  - Metric: X = Smooth, Y = Flat, Z = Keyway
- **Voltage Gradient**
  Refer To Voltage Gradient Availability Table
- **Feedback Option**
  Renco Encoder - Pulses Per Revolution w/Commutation Tracks [3]
- **Flying Leads** [2]

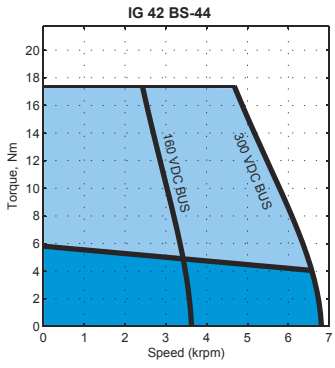
1. Refer to Dimensions for the exact length and shaft options
2. The **F** housing option comes with 6 inches (15 cm) flying leads
3. Refer to resolution table availabilty, on page 4

Voltage Gradient

Voltage Constant K_E (V/kRPM)		16	22	32	44	64	88	130	180	260	360
Frame Size	IG 34										
	IG 42										

Performance Curves





Contact factory for torque-speed curves of other motors

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IG 42 - F with RNC

Motor Specification

NEMA 42

Index	Model Number	Weight		Torque Constant (Peak) (L2L)		Voltage Constant	Cont. Stall Torque		Cont. Stall Current	Peak Stall Torque		Peak Stall Current	Max BEMF (Peak) (L2L)	Max Speed	L-to-L Resistance	L-to-L Inductance	Rotor Inertia	
		W		K_T		K_E	T_{cs}		I_{cs}	T_P		I_P	U_{max}	n_{max}	R	L	J	
		kg	lb	Nm/A	lb-in/amp	V/krpm	Nm	lb-in	A	Nm	lb-in	A	V	rpm	Ohms	mH	kg-cm^2	lb-in-sec^2
73	IG 42 AS - 32	5.50	12.13	0.35	3.12	32.00	2.90	25.67	8.22	8.70	77.00	24.65	192.00	6000	0.20	1.10	3.00	0.00266
74	IG 42 BS - 32	9.20	20.28	0.35	3.12	32.00	5.80	51.33	16.44	17.40	154.00	49.31	192.00	6000	0.16	1.40	6.00	0.00531
75	IG 42 AS - 44	5.50	12.13	0.49	4.29	44.00	2.90	25.67	5.98	8.70	77.00	17.93	264.00	6000	0.38	2.30	3.00	0.00266
76	IG 42 BS - 44	9.20	20.28	0.49	4.29	44.00	5.80	51.33	11.95	17.40	154.00	35.86	264.00	6000	0.33	2.90	6.00	0.00531
77	IG 42 AS - 64	5.50	12.13	0.71	6.25	64.00	2.90	25.67	4.11	8.70	77.00	12.33	384.00	6000	1.10	5.00	3.00	0.00266
78	IG 42 BS - 64	9.20	20.28	0.71	6.25	64.00	5.80	51.33	8.22	17.40	154.00	24.65	384.00	6000	0.69	6.40	6.00	0.00531
79	IG 42 AS - 88	5.50	12.13	0.97	8.59	88.00	2.90	25.67	2.99	8.70	77.00	8.97	528.00	6000	1.70	8.00	3.00	0.00266
80	IG 42 BS - 88	9.20	20.28	0.97	8.59	88.00	5.80	51.33	5.98	17.40	154.00	17.93	528.00	6000	1.15	10.50	6.00	0.00531
81	IG 42 AS - 130	5.50	12.13	1.43	12.69	130.00	2.90	25.67	2.02	8.70	77.00	6.07	780.00	6000	2.35	12.70	3.00	0.00266
82	IG 42 BS - 130	9.20	20.28	1.43	12.69	130.00	5.80	51.33	4.05	17.40	154.00	12.14	780.00	6000	1.80	16.70	6.00	0.00531
83	IG 42 AS - 180	5.50	12.13	1.98	17.57	180.00	2.90	25.67	1.46	7.50	66.38	3.78	1,080.00	6000	5.80	25.00	3.00	0.00266
84	IG 42 BS - 180	9.20	20.28	1.98	17.57	180.00	5.80	51.33	2.92	15.00	132.76	7.56	1,080.00	6000	3.50	32.00	6.00	0.00531
85	IG 42 AS - 260	5.50	12.13	2.87	25.38	260.00	2.90	25.67	1.01	7.50	66.38	2.62	1,560.00	6000	11.80	50.70	3.00	0.00266
86	IG 42 BS - 260	9.20	20.28	2.87	25.38	260.00	5.80	51.33	2.02	15.00	132.76	5.23	1,560.00	6000	7.50	67.00	6.00	0.00531
87	IG 42 AS - 360	5.50	12.13	3.97	35.14	360.00	2.90	25.67	0.73	7.50	66.38	1.89	2,160.00	6000	20.30	97.80	3.00	0.00266
88	IG 42 BS - 360	9.20	20.28	3.97	35.14	360.00	5.80	51.33	1.46	15.00	132.76	3.78	2,160.00	6000	14.20	128.00	6.00	0.00531

L2L: Line-to-Line

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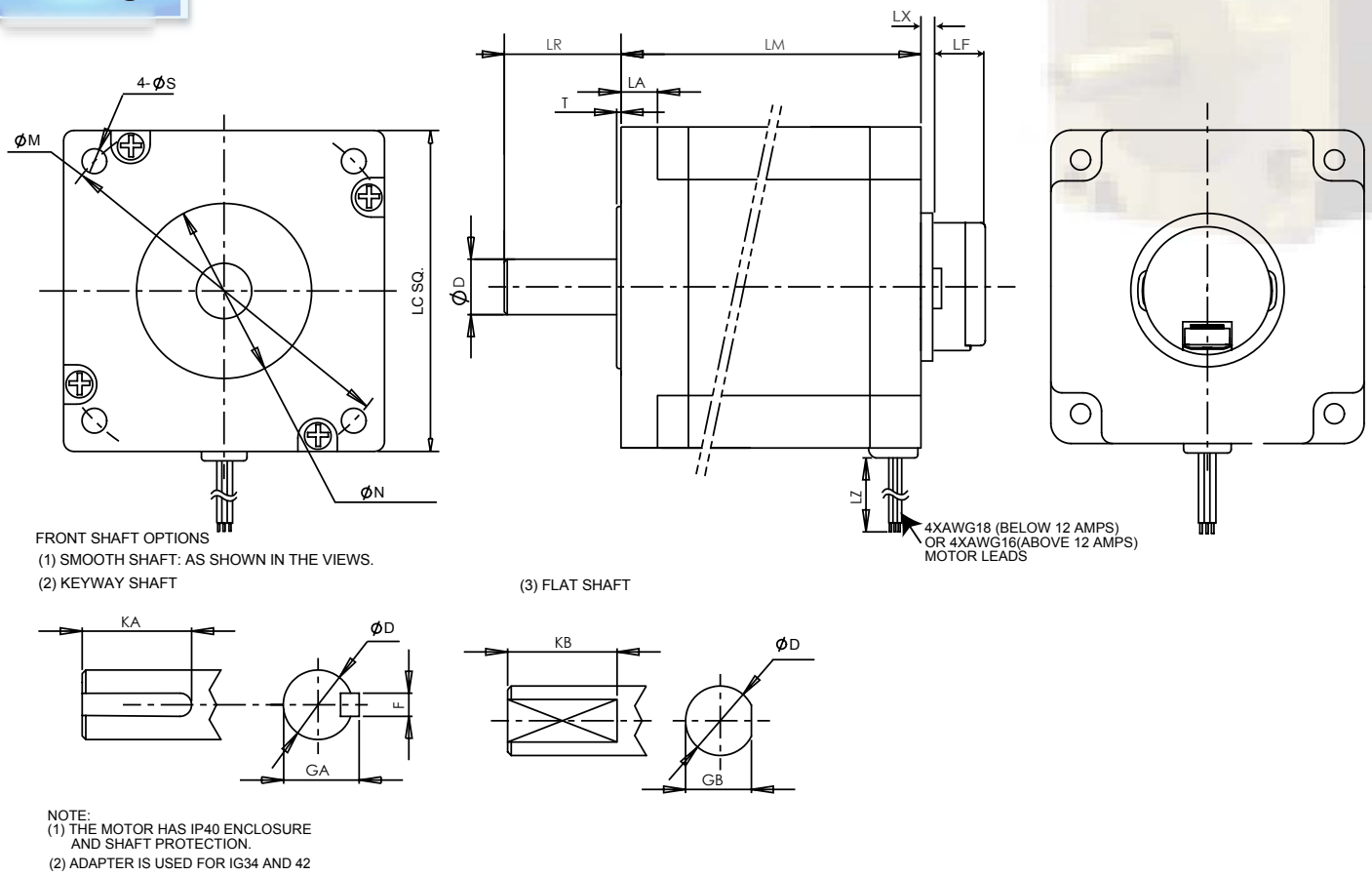
IG 42 - F with RNC Feedback

Drawing



NOTE:
(1) THE MOTOR HAS IP40 ENCLOSURE AND SHAFT PROTECTION.
(2) ADAPTER IS USED FOR IG34 AND 42

Units: inches (mm)

IG		LM	LF	LA	T	LR	LC	LZ	LX	N	S	M
42	A	4.449 (113)	0.55 (14.0)	0.49 (12.44)	0.059 (1.5)	2.126 (54)	4.332 (110.0)	12 (304.8)	0.15 (4)	$2.186\ ^{0}_{-0.0018}$ ($55.52\ ^{0}_{-0.046}$)	0.335 (8.5)	4.950 (125.73)
	B	6.811 (173)										
	C	-										

	Imperial Shaft Option (S/F/K), Units: inches						Metric Shaft Option (X/Y/Z), Units: mm					
IG	D	F	GA	KA	GB	KB	D	F	GA	KA	GB	KB
42	$0.7500\ ^{0}_{-0.0005}$	$0.1875\ ^{0}_{-0.0012}$	$0.830\ ^{0}_{-0.004}$	1.5	$0.709\ ^{0}_{-0.004}$	1.5	$19\ ^{0}_{-0.013}$	$6\ ^{0}_{-0.030}$	$21.5\ ^{0}_{-0.1}$	45	$18.0\ ^{0}_{-0.10}$	45.0

Jan, 19, 07

IG 42 - F with RNC Feedback

Power Cable Wire Code

Wire Color	Function
YEL	PHASE U
GRN	PHASE V
BLU	PHASE W
GRN/YEL	PE

Renco Encoder

Renco Encoder Data

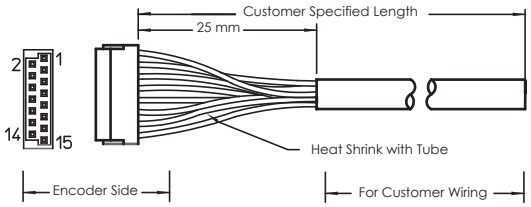
Parameter	Values
Input Voltage	5 VDC ± 10% Single Supply
Input Current Requirement	175 mA
Output Data	Line driver
Output Format	Square wave two channel quadrature with index & commutation signals
Frequency Response	500 kHz
Minimum Edge Separation	45°electrical angle
Commutation Format	Three commutation channels, 4 cycles/360 electrical angle for eight poles
Termination	15 pins JAE P/N F1_W15P_HF interface
Operating Temperature	-30°C to 115°C
Storage Temperature	-40°C to 125°C
Available line counts	250, 256, 500, 512, 1000, 1024, 2000, 2048, 4000, 4096, 8000, 8192 ppr

Encoder Wiring Diagram

Pin #	Function	* Color
1	CH A	BRN with BLK
2	CH A-	BLK with BRN
3	CH B	BLU with BLK
4	CH B-	BLK with BLU
5	INDEX	ORN with BLK
6	INDEX-	BLK with ORN
7	CH U	YEL with BLK
8	CH U-	BLK with YEL
9	CH V	GRN with BLK
10	CH V-	BLK with GRN
11	CH W	RED with BLK
12	CH W-	BLK with RED
13	+5VDC	WHT with BLK
14	GND	BLK with WHT
15	SHIELD	SHIELD

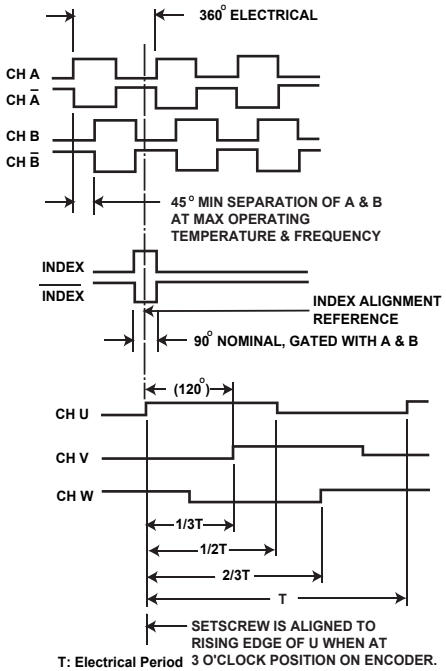
*** Optional:**

Connector with shielded 3M cable per customer specified length



Mating Connector: JAE P/N F1-W15P-HF

Encoder Output Waveforms



Sep, 26, 07