IG 17- F with USX Feedback

Model Numbering

IG 17 A S - 16 - USX 1250 - F

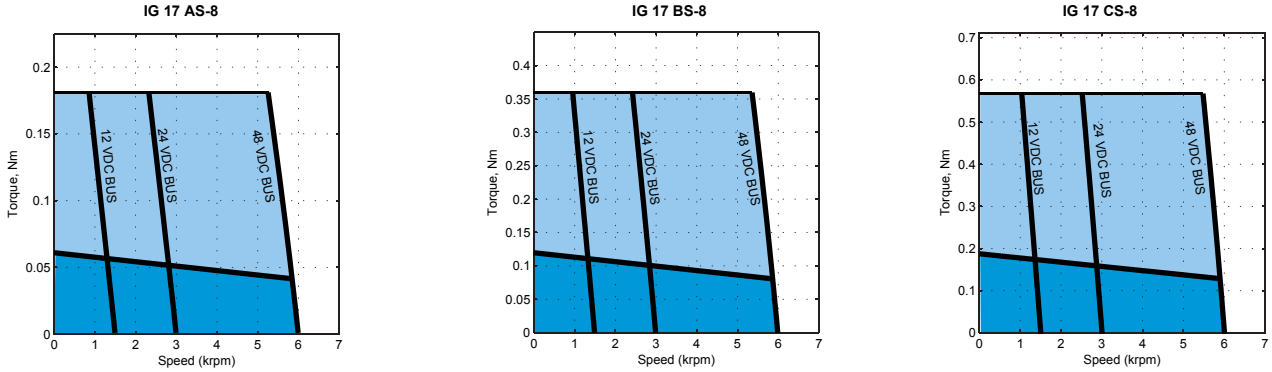
- **NEMA**
- **Motor Stack Length** [1]
  - A
  - B
  - C
- **Shaft** [1]
  - Imperial: S = Smooth, F = Flat
  - Metric: X = Smooth, Y = Flat
- **Voltage Gradient**
  - Refer To Voltage Gradient Availability Table
- **Feedback Option**
  - US Digital Encoder - Pulses Per Revolution [3]
- **Flying Leads** [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 3

Voltage Gradient

Voltage Constant K_E (V/kRPM)		4	8	11	16
Frame Size	IG 17				

Performance Curves



Contact factory for torque-speed curves of other motors

Electrical Specs

NEMA 17

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/A	V/krpm	Nm	lb-in	A	Nm	lb-in	A	V	rpm	Ohms	mH	kg-cm^2	lb-in-sec^2
1	IG 17 AS - 4	0.32	0.71	0.04	0.39	4.00	0.06	0.53	1.36	0.18	1.59	4.08	32.00	8000	0.62	0.53	0.13	0.00012
2	IG 17 BS - 4	0.48	1.06	0.04	0.39	4.00	0.12	1.06	2.72	0.36	3.19	8.16	32.00	8000	0.27	0.28	0.26	0.00023
3	IG 17 CS - 4	0.63	1.39	0.04	0.39	4.00	0.19	1.71	4.38	0.57	5.04	12.92	32.00	8000	0.14	0.13	0.39	0.00035
4	IG 17 AS - 8	0.32	0.71	0.09	0.78	8.00	0.06	0.53	0.68	0.18	1.59	2.04	64.00	8000	2.50	2.10	0.13	0.00012
5	IG 17 BS - 8	0.48	1.06	0.09	0.78	8.00	0.12	1.06	1.36	0.36	3.19	4.08	64.00	8000	1.05	1.00	0.26	0.00023
6	IG 17 CS - 8	0.63	1.39	0.09	0.78	8.00	0.19	1.71	2.19	0.57	5.04	6.46	64.00	8000	0.58	0.50	0.39	0.00035
7	IG 17 AS - 11	0.32	0.71	0.12	1.07	11.00	0.06	0.53	0.49	0.18	1.59	1.48	88.00	8000	5.90	4.70	0.13	0.00012
8	IG 17 BS - 11	0.48	1.06	0.12	1.07	11.00	0.12	1.06	0.99	0.36	3.19	2.97	88.00	8000	2.30	2.15	0.26	0.00023
9	IG 17 CS - 11	0.63	1.39	0.12	1.07	11.00	0.19	1.71	1.59	0.57	5.04	4.70	88.00	8000	0.70	1.25	0.39	0.00035
10	IG 17 AS - 16	0.32	0.71	0.18	1.56	16.00	0.06	0.53	0.34	0.18	1.59	1.02	128.00	8000	10.50	8.40	0.13	0.00012
11	IG 17 BS - 16	0.48	1.06	0.18	1.56	16.00	0.12	1.06	0.68	0.36	3.19	2.04	128.00	8000	4.10	4.00	0.26	0.00023
12	IG 17 CS - 16	0.63	1.39	0.18	1.56	16.00	0.19	1.71	1.09	0.57	5.04	3.23	128.00	8000	1.20	2.34	0.39	0.00035

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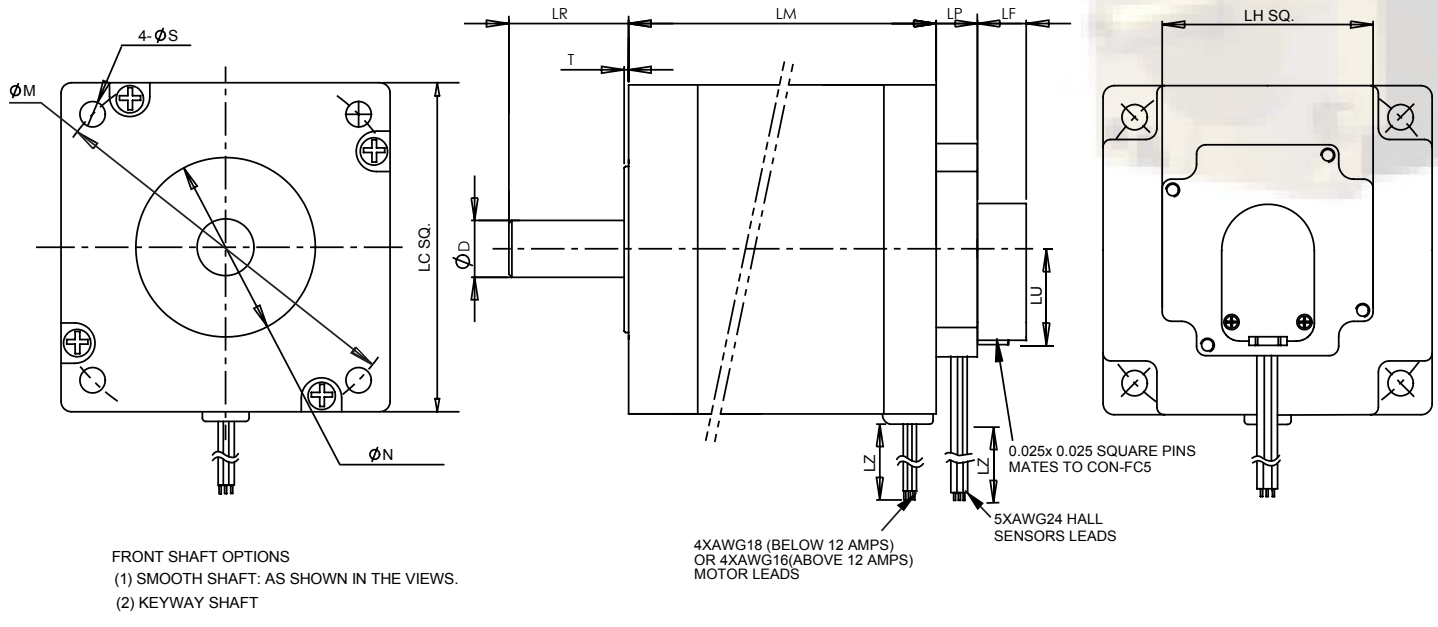
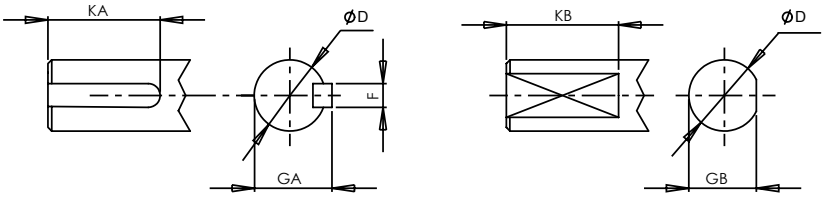
Motor Drawing



FRONT SHAFT OPTIONS
(1) SMOOTH SHAFT: AS SHOWN IN THE VIEWS.
(2) KEYWAY SHAFT



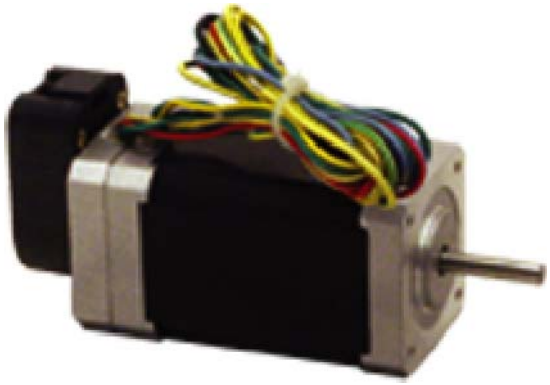
NOTE:
THE MOTOR HAS IP40 ENCLOSURE
AND SHAFT PROTECTION.

Units: Inches (mm)

IG		LM	LF	T	LR	LC	LP	LH	LZ	LU	N	S	M
17	A	1.496 (38)	0.640 (16.3)	0.079 (2.0)	0.945 (24)	1.665 (42.3)	0.354 (9)	1.665 (42.3)	12 (304.8)	1.251 (31.7)	$0.866\ ^{0}_{-0.002}$ ($22.00\ ^{0}_{-0.05}$)	0.118 (3.0)	1.725 (43.815)
	B	2.126 (54)											
	C	2.756 (70)											

For IG17, dimension S is M3*0.5 min depth 0.2 (5.1) threaded hole

	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
17	$0.1969\ ^{0}_{-0.0005}$	-	-	-	$0.177\ ^{0}_{-0.004}$	0.50	$5\ ^{0}_{-0.013}$	-	-	-	$4.5\ ^{0}_{-0.1}$	12.7



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IG 17- F with USX Feedback

Power Cable Wire Code

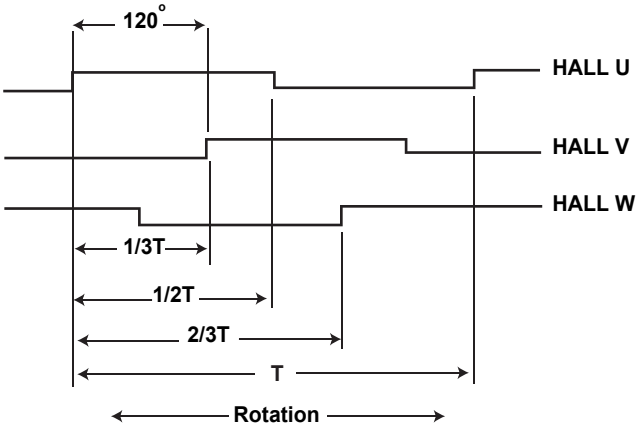
Wire Color	Function
YEL	PHASE U
GRN	PHASE V
BLU	PHASE W
GRN/YEL	PE

Hall Sensor

Hall Sensor Electrical Data

Parameter	Values
Supply Voltage, Vcc	Min. 4.5 V Max. 24 V
Supply Current	Max. 11.3 mA
Output Current	Max. 20 mA
Rise Time	Typ. 0.5 µs Max. 1.5 µs
Fall Time	Typ. 0.2 µs Max. 1.5 µs
Response Time	Typ. 4.0 µs Max. 5 µs
Operating Temperature	-40°C to 125°C (-40°F to 257°F)
Storage Temperature	-55°C to 165°C (-67°F to 329°F)

Hall Sensor Output Waveforms



T = Electrical Period

Hall Sensor Wiring Diagram

Wire Color	Function
RED	+Vcc
YEL	HALL U
GRN	HALL V
BLU	HALL W
BLK	GND

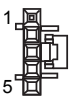
US Encoder

US Digital Encoder Data

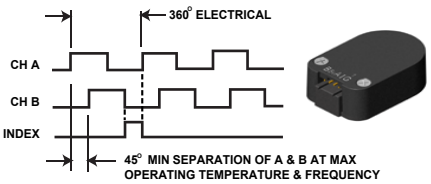
Parameter	Values
Input Voltage, Vcc	Typ. +5VDC Min. 4.5 VDC Max. 5.5 VDC
Input Current Requirement	Typ. 57 mA Min. 30 mA Max. 85 mA
Output Voltage	Min. – 0.5 VDC Max. Vcc
Output Current Per Channel	Min. – 8.0 mA Max. 8.0 mA
Output Data	Incremental - Two square waves in quadrature with channel A leading B for clockwise shaft rotation as viewed from the encoder mounting face
Output Format	TTL level output
Frequency Response	100 kHz
Minimum Edge Separation	45° electrical angle
Maximum Speed	6000 rpm
Operating Temperature	-40°C to 100°C
Storage Temperature	-15°C to 85°C
Available line counts	32 to 1250 ppr

E5S Encoder Wiring Diagram

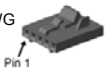
Pin No.	Function
1	GND
2	INDEX
3	CH A
4	+5VDC
5	CH B



Encoder Output Waveforms



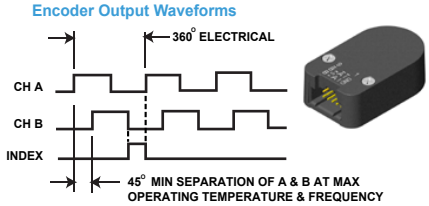
Mating Connector: CON-FC5-22AWG



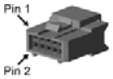
E5D Encoder Wiring Digram

Wire #	Function
1	Ground
2	Ground
3	Index-
4	Index+
5	A- channel
6	A+ channel
7	+5VDC power
8	+5VDC power
9	B- channel
10	B+ channel

Encoder Output Waveforms



Mating Connector: CON-FC10



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