



^ CANopen Communication

^ RS485 Communication

## EC042B IDEA® Motor Series

The IDEA® Motor Series integrates a high-torque, precision servo motor and IDEA Drive as a single compact unit. The IDEA Motor enables distributed control without the use of a costly PLC or external motion controller.

EC042B is offered in 3 motor lengths with continuous torque up to 0.15 Nm.

### ■ CANopen

- DS-301 / DS-402 communication
- Connect up to 127 drives on the same network
- Integrated inputs, outputs and encoder

### ■ RS485

- GUI programming interface
- Integrated trapezoidal and S-curve trajectory generator with movement profile plotter
- Program execution
- I/O-driven nested prioritized vectored interrupts
- Polled I/O for autonomous real-time control
- Connect up to 256 drives on the same network
- Integrated inputs, outputs and encoder

### ■ Drive Specifications

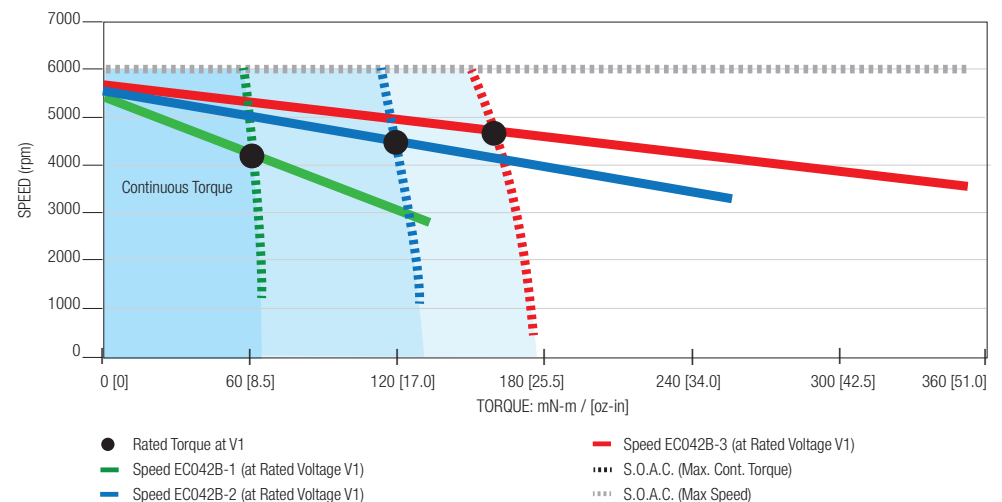
Digital I/O Voltage Range	5-24 VDC
Digital Inputs	4
Digital Outputs	4
Digital Sinking Outputs	200mA (each)
Digital Input Maximum Current	8mA (each)
Maximum Temperature	70°C (at heat sink)
Program Storage Size / Type	85 Kbytes / Flash
Max. Number of Stored Programs	85
Position Counter Range	64bit

### ■ Motor Characteristics

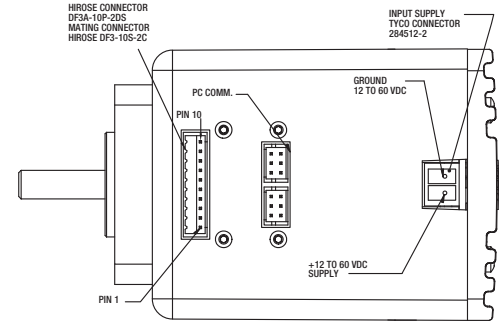
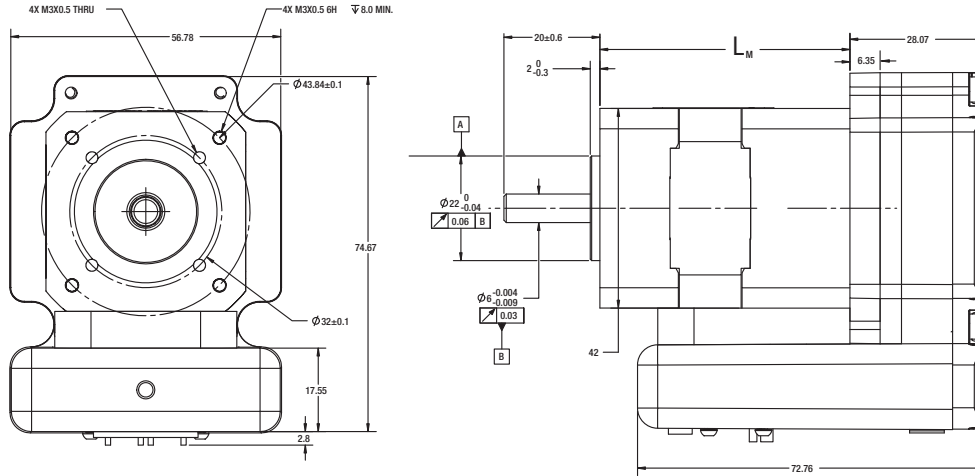
Motor Data	Units	Part No.			
		EC042B-1	EC042B-2	EC042B-3	
Length	L <sub>M</sub>	mm / inch	52.6mm / 2.071"	72.6mm / 2.8"	92.6mm / 3.646"
Rated Power Output <sup>2</sup>	P <sub>r</sub>	W	25	54	70
Input Voltage Range	V <sub>i</sub>	Vdc	12 - 60		
Rated Voltage <sup>1</sup>	V <sub>1</sub>	Vdc	24		
No Load Speed <sup>1</sup>	ω <sub>nl</sub>	rpm	4825	4856	5182
Rated Speed <sup>1</sup>	ω <sub>r</sub>	rpm	3930	4022	4460
Rated Torque <sup>1</sup>	T <sub>r</sub>	Nm	0.06	0.12	0.15
		oz-in	8.2	16.0	21.0
Rated Input Current <sup>1</sup>	I <sub>r</sub>	A	1.4	2.93	3.4
Continuous Input Power <sup>1</sup>	P <sub>cs</sub>	W	38	70	89
Rotor Inertia	J <sub>r</sub>	kg-m <sup>2</sup>	0.000014	0.000018	0.000021
		oz-in-sec <sup>2</sup>	0.0021	0.0025	0.0029
Motor Weight	W <sub>m</sub>	g	423	623	815
		oz	15	22	29

<sup>1</sup>Values specified at Rated Voltage. <sup>2</sup>Values specified at Rated Voltage, Speed and Torque.  
Drive input current is capable up to 8Arms continuous and 20A peak (1 sec) when within motor capabilities maximum winding temperature at 25°C ambient and without heatsink.

### ■ Performance Graph



■ Dimensional Drawings (mm)



■ Factory Options



Optional PLG42S Gearbox

■ I/O Pin Positions

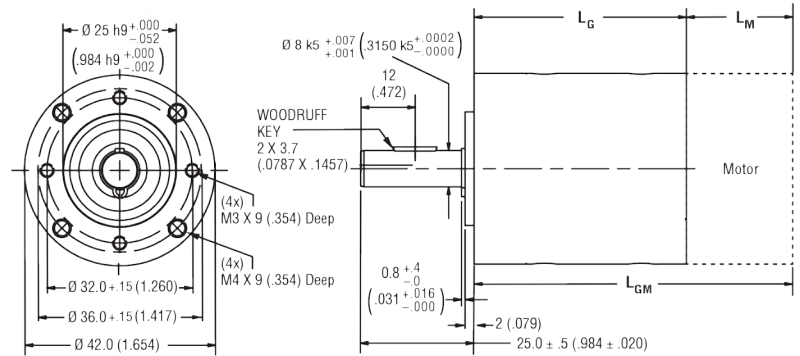
<b>PIN 1</b>	GROUND I/O SUPPLY (5 to 24 Vdc)	<b>PIN 6</b>	INPUT 4
<b>PIN 2</b>	I/O SUPPLY (5 to 24 Vdc)	<b>PIN 7</b>	OUTPUT 1
<b>PIN 3</b>	INPUT 1	<b>PIN 8</b>	OUTPUT 2
<b>PIN 4</b>	INPUT 2	<b>PIN 9</b>	OUTPUT 3
<b>PIN 5</b>	INPUT 3	<b>PIN 10</b>	OUTPUT 4

- Gearbox-ready for PLG42S, PLG52
- Lead screws, linear rails and slides

■ Optional Accessories

Part No.	Option	Description
56-1346	Cables	USB Cable (A to mini B), 2 meters (78.74)
56-1348		Power cable, 1 meter (39.37)
56-1352		I/O Cable, 1 meter (39.37)
56-1536-1		RS485 Cable, 0.25 meter (9.84)
56-1536-4		RS485 Cable, 1 meter (39.37)
84-152		USB to CANopen Cable, 2 meters (78.74) Use with 52-870
PLG42S	Gearboxes	Configured to be integrated directly with EC042B IDEA Motor
PLG52		
UTR4852	Converters	USB to RS485 Converter
52-870		USB to CANopen Converter

■ Dimensions: Optional Gearbox, PLG42S



Add L from EC042B IDEA Motor Dimensional Drawing above to determine  $L_M$  and  $L_G$  motor lengths

■ PLG42S Characteristics

SPECIFICATION	UNITS	4:1	8:1	16:1	25:1	32:1	50:1	64:1	100:1	128:1	156:1	200:1	256:1	400:1	512:1
Maximum Load	Nm	3.5	3.5	6	6	6	6	6	14	14	14	14	14	14	14
	oz-in	496	496	850	850	850	850	850	1983	1983	1983	1983	1983	1983	1983
Weight (Mass)	g	270	270	370	370	370	370	370	880	880	880	880	880	880	880
	oz	9.52	9.52	13.1	13.1	13.1	13.1	13.1	31.0	31.0	31.0	31.0	31.0	31.0	31.0
Length (L <sub>G</sub> )	mm	47.6	47.6	59.4	59.4	59.4	59.4	59.4	71.2	71.2	71.2	71.2	71.2	71.2	71.2
	in	1.87	1.87	2.34	2.34	2.34	2.34	2.34	2.80	2.80	2.80	2.80	2.80	2.80	2.80
Stage	–	1	1	2	2	2	2	2	3	3	3	3	3	3	3
Ratio	–	4 / 1	8 / 1	16 / 1	25 / 1	32 / 1	50 / 1	64 / 1	100 / 1	128 / 1	156.25 / 1	200 / 1	256 / 1	400 / 1	512 / 1
Efficiency	–	0.90	0.90	0.81	0.81	0.81	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Shaft Rotation	–	CW	CW	CW	CW	CW	CW	CW	CW	CW	CW	CW	CW	CW	CW

Notes:

- Maximum load represents gearbox capability only. Continuous load torque capability will vary with gear ratio, motor selection, and operating conditions.
- Shaft rotation is designated while looking at output shaft with motor operating in a clockwise direction. Gearboxes have bi-directional capability.