

I/O Circuit Diagrams

Model	E6C3-AG5C/-AG5C-C	E6C3-AG5B	E6C3-AN5C	E6C3-AN5B
Output Circuits	Note: The circuit is the same for all bit outputs. Each E6C3-A Rotary Encoder has one main circuit.	Note: The circuit is the same for all bit outputs. Each E6C3-A Rotary Encoder has one main circuit.	Note: The circuit is the same for all bit outputs. Each E6C3-A Rotary Encoder has one main circuit.	Note: The circuit is the same for all bit outputs. Each E6C3-A Rotary Encoder has one main circuit.
Output mode	Direction of rotation: CW (as viewed from the end of the shaft) Address 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65			Direction of rotation: CW (as viewed from the end of the shaft) Resolution/40 Resolution of 32 A = 11.25° B = 6° C = 3°

Connection Specifications

Connector Models

Model	E6C3-AG5C-C		
Pin No.	Output signal		
	8-bit (256)	9-bit (360)	10-bit (720)
1	Connected internally	Not connected	2 ⁹
2		2 ⁸	2 ⁸
3		2 ⁵	2 ⁵
4		2 ¹	2 ¹
5	2 ⁰	2 ⁰	2 ⁰
6	2 ⁷	2 ⁷	2 ⁷
7	2 ⁴	2 ⁴	2 ⁴
8	2 ²	2 ²	2 ²
9	2 ³	2 ³	2 ³
10	2 ⁶	2 ⁶	2 ⁶
11	Shield (ground)		
12	12 to 24 VDC		
13	0 V (common)		

* Connector: RP13A-12PD-13SC (Hirose Electric Co., Ltd.)
Note: Normally connect GND to 0 V or to an external ground.

Pre-wired Models

Model	E6C3-AG5C/E6C3-AG5B		
Wire color	Output signal		
	8-bit (256)	9-bit (360)	10-bit (720 or 1,024)
Brown	2 ⁰	2 ⁰	2 ⁰
Orange	2 ¹	2 ¹	2 ¹
Yellow	2 ²	2 ²	2 ²
Green	2 ³	2 ³	2 ³
Blue	2 ⁴	2 ⁴	2 ⁴
Purple	2 ⁵	2 ⁵	2 ⁵
Gray	2 ⁶	2 ⁶	2 ⁶
White	2 ⁷	2 ⁷	2 ⁷
Pink	Not connected	2 ⁸	2 ⁸
Light blue	Not connected	Not connected	2 ⁹
---	Shield (ground)		
Red	12 to 24 VDC		
Black	0 V (common)		

I/O Circuit Diagrams

Model	E6C3-AB5C	E6C3-AB5B	E6C3-AN1E	E6C3-AN2E
Output circuits	Note: The circuit is the same for all bit outputs.	Note: The circuit is the same for all bit outputs.	Note: The circuit is the same for all bit outputs.	Note: The circuit is the same for all bit outputs.
			Rotation Direction Input Circuit Note: If the input is connected to Vcc, the output will increase for CW rotation and if the input is connected to 0 V, the output code will decrease for CW rotation.	
Output mode	Direction of rotation: CW (as viewed from end of shaft) Resolution/12 Resolution of 8 A = 45°, B = 22.5° C = 11.25° Resolution of 6 A = 60°, B = 30° C = 15°		Direction of rotation: CW (as viewed from end of shaft) if rotation direction input is high and CCW (as viewed from end of shaft) if rotation direction input is low. Shaft angle: $\frac{360^\circ}{256}$ $T = 360^\circ / 256 = 1.4^\circ$	

Connection Specifications

Pre-wired Models

Wire color	Model	E6C3-AN5C/-AN5B		E6C3-AB5C/-AB5B		E6C3-AN1E/-AN2E
		Output signal		Output signal		Output signal
		6-bit (32 or 40)		3-bit (6 or 8)	5-bit (12)	8-bit (256)
Brown		2^0		2^0	2^0	2^0
Orange		2^1		2^1	2^1	2^1
Yellow		2^2		2^2	2^2	2^2
Green		2^3		Not connected	2^3	2^3
Blue		2^4		Not connected	$2^0 \times 10$	2^4
Purple		2^5		Not connected	Not connected	2^5
Gray		Parity		Positioning	Positioning	2^6
White		Strobe		Strobe	Strobe	2^7
Pink		Not connected		Not connected	Not connected	Rotation Direction Input
Light blue		Not connected		Not connected	Not connected	Not connected
---		Shield (ground)				
Red		12 to 24 VDC				5 or 12 VDC
Black		0 V (common)				

Note: Normally connect GND to 0 V or to an external ground.