

I/O Circuit Diagrams

Model	E6C3-AG5C/-AG5C-C	E6C3-AG5B	E6C3-AN5C	E6C3-AN5B
Output Circuits	<p>Note: The circuit is the same for all bit outputs. Each E6C3-A Rotary Encoder has one main circuit.</p>	<p>Note: The circuit is the same for all bit outputs. Each E6C3-A Rotary Encoder has one main circuit.</p>	<p>Note: The circuit is the same for all bit outputs. Each E6C3-A Rotary Encoder has one main circuit.</p>	<p>Note: The circuit is the same for all bit outputs. Each E6C3-A Rotary Encoder has one main circuit.</p>
Output mode	<p>Direction of rotation: CW (as viewed from the end of the shaft)</p> <p>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</p>	<p>Direction of rotation: CW (as viewed from the end of the shaft)</p> <p>Resolution/40</p> <p>Resolution of 32 $A = 11.25^\circ$ $B = 6^\circ$ $C = 3^\circ$</p>		

Connection Specifications

Connector Models

Model	E6C3-AG5C-C		
	Output signal		
Pin No.	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	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		
	Output signal		
Wire color	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	<p>Note: The circuit is the same for all bit outputs.</p>	<p>Note: The circuit is the same for all bit outputs.</p>	<p>Note: The circuit is the same for all bit outputs.</p>	<p>Note: The circuit is the same for all bit outputs.</p>
Rotation Direction Input Circuit	<p>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.</p>			
Output mode	<p>Direction of rotation: CW (as viewed from end of shaft) Resolution/12</p> <p>Resolution of 8 A = 45°, B = 22.5° C = 11.25° Resolution of 6 A = 60°, B = 30° C = 15°</p>		<p>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.</p> <p>T = 360°/256 = 1.4°</p>	

Connection Specifications

Pre-wired Models

Wire color	Model	E6C3-AN5C/-AN5B	E6C3-AB5C/-AB5B		E6C3-AN1E/-AN2E
	Output signal	Output signal	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 × 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.