

型 E6B2

旋转编码器

使用说明书

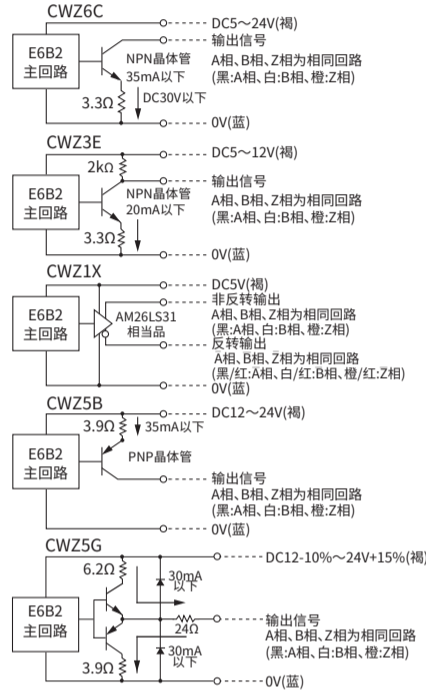
感谢您使用欧姆龙产品。以下主要记载安装和使用本产品过程中需注意事项。

使用本产品前,请仔细阅读本说明书,充分了解产品。为了您的方便,请妥善保管好本说明书。

5648894-9 D

© OMRON Corporation 2020 All Rights Reserved.

■ 输出回路图



安全上的注意

●警告表示的意思

注意 如果不正确使用的话,有可能引起轻伤、中等程度的伤害还有可能带来同样重大的物质损害。

●警告表示

注意

通电状态下请勿拆开本产品。如触及内部会造成触电死亡。

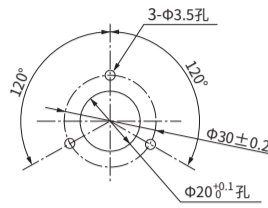
安全上的要点

- 使用时请不要超过额定电压范围。如施加额定电压以上的电压时,会引起破裂和烧损;使用时,如电源电压低于额定电压,产品会启动欠压保护,关闭输出。届时请重新启动电源。
- 高压线和动力线并行连线时,会因感应而发生误动作或破坏,所以请分开连线。
- 使用电源如发生浪涌,请在电源间接上浪涌吸收器。为了避免干扰,请尽量在短距离之内连线。
- 在接通电源或切断电源时,容易发生错误脉冲,所以在接通电源0.1秒后、及切断电源0.1秒前使用。
- 需注意电源极性,不能错误连线,以免引起破裂和烧损。
- 注意不能让负载短路,以免引起破裂和烧损。产品发生负载短路(除E6B2-CWZ1X)时,产品会关闭输出。届时请关闭电源,解除短路状态后再重新启动电源。
- 请不要在可燃性、爆炸性的环境下进行使用。
- 请不要拆卸、修理、改造本产品。

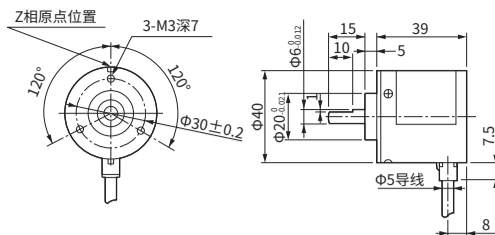
正确使用方法

- 旋转式编码器是由精密部件构成的,因此使用时要非常小心,不能跌落,以免损伤功能。
- 使用时请不要让水和油滴落在主体上。
- 连线时要在电源切断的状态下进行。电源ON时,输出线如接触电源,会引起输出回路破坏。
- 固定本体、进行导线连线时,请注意导线的拉伸力度不要超过29.4N。
- 请勿往轴上施加过大的载荷,以免引起产品破损。用链条、传送带及齿轮连接时,先通过其他轴承,再用耦合器与编码器结合。
- 如果安装误差大(偏心、偏角),就会有过大的负载加在轴上,从而造成损坏或者缩短其使用年限。
- 当耦合器插入轴时,请不要用锤子敲击等增加冲击力。
- 安装、拆卸耦合器时,请勿进行不必要的弯曲、压缩和拉伸。

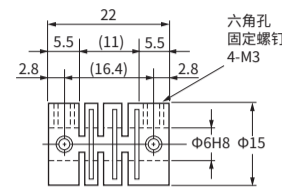
■ 安装



■ 外形尺寸图



■ 耦合器外形尺寸图



■ 类型和规格

规格	E6B2-CWZ3E	E6B2-CWZ6C	E6B2-CWZ1X	E6B2-CWZ5G	E6B2-CWZ5B
电源电压	DC5~12V (+10%/-5%)	DC5~24V (+15%/-5%)	DC5V (±5%)	DC12~24V (+15%/-10%)	DC12~24V (+15%/-10%)
消费电力及消费电流	0.6W以下 (100mA以下)	0.6W以下 (80mA以下)	160mA以下	0.8W以下 (100mA以下)	0.8W以下 (100mA以下)
输出状态	电压输出	NPN开路集电极输出	线性驱动输出	互补输出	PNP开路集电极输出
输出容量	输出电阻: 2kΩ 残留电压: 0.4V以下 (输出电流: 20mA时)	外加电压: DC30V以下 吸入电流: 35mA以下 残留电压: 0.4V以下 (吸入电流35mA时)	AM26LS31相当品 输出电流 H位: I _o = -20mA L位: I _s = 20mA 输出电压 V _o = 2.5V以上 V _s = 0.5V以下	输出电压: V _H = V _{cc} - 3V (I _o = 30mA) V _L = 2V以下 (I _o = -30mA) 输出电流: ±30mA	源电流: 35mA以下 残留电压: 0.4V以下
最高响应频率	100kHz			50kHz	
输出相位差	A相、B相相位差 90±45°				
起动扭矩	0.98mN·m以下				
惯性力矩	1×10 ⁻⁶ kg·m ² 以下				
允许最高转速	6000r/min				
允许力	径向.....30N 轴向.....20N				
环境温度	-10~+70°C				
环境湿度	35~85%RH				

■ 接线

外部接线时,请注意不要错误连线。

线色	端子名
褐	电源(+Vcc)
黑	输出A相
白	输出B相
橙	输出Z相
蓝	0V

线色	端子名
褐	电源(+Vcc)
黑	输出A相
白	输出B相
橙	输出Z相
黑/红绿边	输出A相
白/红绿边	输出B相
橙/红绿边	输出Z相
蓝	0V

Precautions on safety

●Meaning of Signal Words

CAUTION Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage.

●Alert statements

CAUTION

Do not attempt to take ant unit apart while the power is being supplied. Doing so may result in electric shock.

Precautions for Safe Use

- Do not use the product in excess of the rated voltage. Applying voltages beyond the rated voltage range may cause the product to break or burn; During operating, if applying voltages below the rated voltage range may cause the output to shut down. At that time, please restart the power.
- Avoid wiring the product's cables parallel to power lines or high-voltage lines. Doing so may cause the product to malfunction due to induction or may cause the damage the product.
- If surge occurs in the power supply, connect a surge absorber between the power supply terminals to absorb the surge. Minimize the wiring length to prevent the product from being affected by noise, etc.
- Since improper pulses may occur when the power is turned on or off, use the devices connected to this product at least 0.1 seconds before or after the power is turned on or off.
- Be careful when wiring, such as being careful with the polarities of the power supply. Incorrect wiring may break or burn the product.
- Do not short-circuit the load. Doing so may break or burn the product. In case of load short-circuit(except E6B2-CWZ1X), the product will shut down the output. At that time, please solve the short-circuit and restart the power.
- Do not use the encoder under the environment with explosive or ignition gas.
- NEVER disassemble, repair nor tamper with the product.

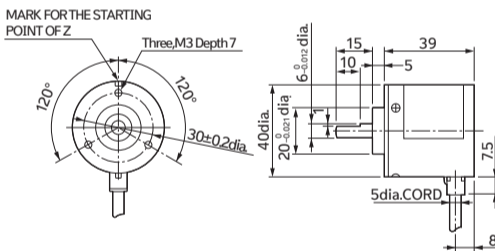
Precautions for Correct Use

- Since the product consists of high-precision components, handle it with utmost care.
- Be careful not to expose the product to water or oil.
- Be sure to turn off the power supply before wiring. If the output line contacts the power supply line while the power is being supplied, the output circuit may be damaged.
- If the product is mounted and wired with a cord, do not pull the cord with force greater than 29.4 N.
- Be careful not to apply excessive load to the shaft. Excessive load may cause the product break. Especially when linking with a chain, timing belt, or gears, connect a separate bearing before the coupling to the product.
- If an installation error such as misalignment is too large, (incase using the coupling or without coupling) the shaft will be subjected to an excessive load which will damage it or shorten its service life. Be careful when installing.
- When inserting the shaft in the coupling, do not use excessive force (by striking it with hammer, for example).
- When installing or removing the coupling, do not apply an excessive being, compressing, or tensile force.

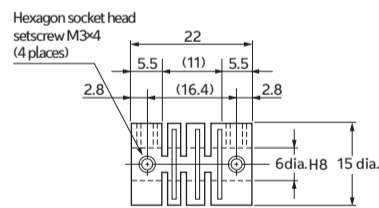
■ MOUNTING



■ OUTLINE DRAWING



■ COUPLING



Model E6B2

ROTARY ENCODER

INSTRUCTION SHEET

Thank for you selecting OMRON product. This sheet primarily describes precautions required in installing and operating the product.

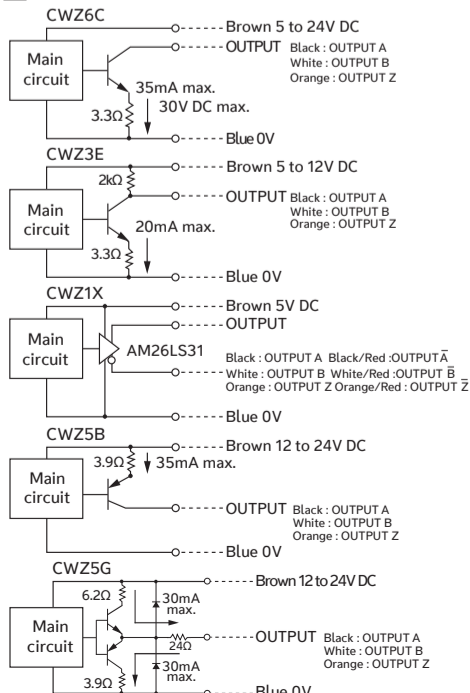
Before operating the product, read the sheet thoroughly to acquire sufficient knowledge of the product. For your convenience, keep the sheet at your disposal.

TRACEABILITY INFORMATION:
Representative in EU: OMRON EUROPE B.V., Wegalaan 67-69, 2132 JD Hoofddorp, The Netherlands
Manufacturer: OMRON CORPORATION, Shioikoji Horikawa, Shimogyo-ku, Kyoto 600-8530 JAPAN
Shanghai Factory No. 789 Jinji Road, China (Shanghai) Pilot Free Trade Zone, Shanghai, 201206 CHINA

The following notice applies only to products that carry the CE mark: Notice: This is a class A product. In residential areas it may cause radio interference, in which case the user may be required to take adequate measures to reduce interference.

© OMRON Corporation 2020 All Rights Reserved.

■ OUTPUT CIRCUIT DIAGRAM



■ RATING

Item	Type	E6B2-CWZ3E	E6B2-CWZ6C	E6B2-CWZ1X	E6B2-CWZ5G	E6B2-CWZ5B
Supply voltage		5 to 12V DC (±10%/-5%)	5 to 24V DC (±15%/-5%)	5V DC (±5%)	12 to 24V DC (±15%/-10%)	12 to 24V DC (±15%/-10%)
Power consumption and Current consumption		0.6W max. (100mA max.)	0.6W max. (80mA max.)	160mA max.	0.8W max. (100mA max.)	0.8W max. (100mA max.)
Output circuit configuration		Voltage output	NPN Open-collector output	Line driver output	Complementary output	PNP Open-collector output
Output capacity		Output resistance: 2kΩ Residual voltage: 0.4V max. Output current: 20mA max.	Applied voltage: 30V DC max. Sink current: 35mA max. Residual voltage: 0.4V max.	AM26LS31: "H" level output voltage: 2.5V min. (at output current: -20mA) "L" level output voltage: 0.5V max. (at output current: 20mA)	Output resistance: "H" level output voltage: V _{cc} - 3V min. (at output current: +30mA) "L" level output voltage: V _{cc} - 2V max. (at output current: -30mA) Output current: ±30mA max.	Source current: 35mA max. Residual voltage: 0.4V max.
Maximum response frequency		100kHz			50kHz	
Phase different of output		between output A and output B 90±45°				
Starting torque		0.98mN·m max.				
Moment of inertia		1×10 ⁻⁶ kg·m ² max.				
Stewing speed		6000r/min				
Shaft loading		Radial: 30N Axial: 20N				
Ambient temperature		-10 to +70°C				
Ambient humidity		35 to 85%RH				

Suitability for Use

Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY OR IN LARGE QUANTITIES WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM. See also Product catalog for Warranty and Limitation of Liability.

- EUROPE: OMRON EUROPE B.V., Wegalaan 67-69, 2132 JD Hoofddorp The Netherlands Phone: (31)2356-80-300 Fax: (31)2356-80-388
- NORTH AMERICA: OMRON ELECTRONICS, LLC One Commerce Drive Schaumburg, IL 60173-5302 U.S.A. Phone: 1-847-843-7900 Fax: 1-847-843-7387
- ASIA-PACIFIC: OMRON ASIA PACIFIC PTE. LTD. No. 43B Alexandra Road #05-05-08 (Lobby 2), Alexandra Technopark, Singapore 119967 Phone: 65-6835-3011 Fax: 65-6835-2711
- CHINA: OMRON(CHINA) CO., LTD. Room 2211, Bank of China Tower, 200 Yin Cheng Zhong Road, Pudong New Area, Shanghai, 200120, China Phone: 86-21-6023-0333 Fax: 86-21-5037-2388

OMRON Corporation