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Start Production of NJL5821R and NJL5822R, Encoder with Optical Reflection Type

Nisshinbo Micro Devices Inc. has started production of the NJL5821R and the NJL5822R, two-phase digital output encoders with optical reflection type, which are suitable for detecting rotation direction and position.

July 21, 2022

In recent years, there has been an increase in demand for rotation detection for small motors and operation dials, as well as for compact position detection to meet higher precision requirements for linear actuators and other equipment.

The NJL5821R and the NJL5822R, two-phase digital output encoders with optical reflection type, achieve low operating current thanks to a newly designed photodetector IC and a high output infrared LED. In conventional position detection such as linear or rotation direction, it is necessary to adjust the distance between the sensor and the striped mirror to be constant. The NJL5821R and the NJL5822R achieve high resistance to the distance variation thanks to the unique processing of the photo detect level of the photodetector.

Features

1. Resistant to Distance Variation to Striped Mirror

In conventional position detection such as linear or rotation direction, it is necessary to adjust the distance between the sensor and the striped mirror to be constant. The NJL5821R and the NJL5822R achieve excellent robustness (Characteristics not affected by sensor installation accuracy or external environment variation), simplified integration into equipment, and resistance to distance variation by processing the reflected

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light from the recommended reflector (striped mirror) in a unique manner. In addition, there is almost no variation in duty cycle and phase difference even when the distance between the sensor and the striped mirror is varied.

2. Integration into Motors Directly Thanks to a Wide Operating Temperature Range (Industry's Highest Temperature)

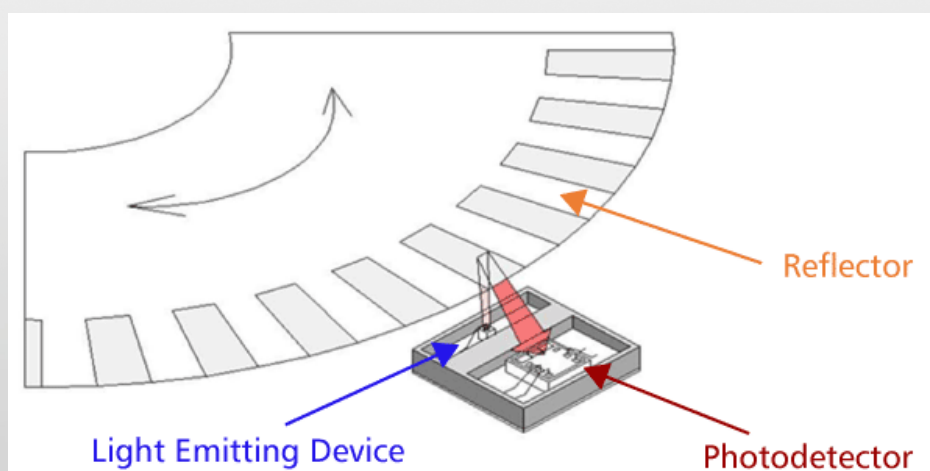
The NJL5821R and the NJL5822R have succeeded in raising the operating temperature to 105°C at the high temperature side. This allows direct integration into products such as motors that are required to operate in high temperature environments.

3. Low Operating Current Design Including Drive Current of Light Emitting Device (LED)

The NJL5821R and the NJL5822R realize low operating current design that can be used in battery-powered equipment thanks to the combination of a high-output infrared LED and a highly sensitive photodetector IC with low operating current. It can be operated with 1/5 of the drive current of conventional products from other companies (Based on Nisshinbo Micro Devices Inc. research, as of July 2022).

4. Available for Detection of Rotation (Movement) Direction and Position by Two-Phase Digital Output

The NJL5821R and the NJL5822R can obtain two-phase digital output easily using with recommended reflectors and can detect the direction of rotation (movement) and position.



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5. Available for Industrial Applications Thanks to High Resolution of 150 LPI and 180 LPI

The NJL5821R and the NJL5822R achieve higher resolution than the conventional product of NJL5820R and are available for use in wide applications such as industrial equipment and cameras.

Product Overview

Item	NJL5821R / NJL5822R
Package	2.6 x 2.5 x 0.8 mm COB package
Operating Voltage	2.7 V to 5.5 V
Operating Temperature Range	-30°C to 105°C
Output Type	Incremental Output Type
Output	Two-Phase Digital Output: A, B phase
Resolution	NJL5821R: 150 LPI NJL5822R: 180 LPI
Sample Price (per 100 pieces)	NJL5821R: JPY 495 (Tax included) NJL5822R: JPY 550 (Tax included)
Monthly Production	100,000 pieces

* Price is based on the consumption tax rate as of July 2022.

Availability and Pricing

More availability and pricing info please visit email: sales.europe@macnica.com.

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About Nisshinbo Micro Devices Inc.

Nisshinbo Micro Devices Inc. is the result of the integration of former New Japan Radio Co., Ltd. and former RICOH Electronic Devices Co., Ltd. Both companies, having contributed to expanding the Nisshinbo Group's microdevices business so far, will further grow as an "Analog Solution Provider" for growing markets by strengthening our structure and achieving synergies through business integration.

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Nisshinbo Micro Devices will provide analog solutions through electronic devices and microwave products based on the strength of analog technology in accordance with the Nisshinbo Group's corporate philosophy of "Change and Challenge! For the creation of the future of Earth and People". We will contribute to developing connected society, and aim to be a company with value and presence that is expected by customers around the world.

For more information, go to <https://www.nisshinbo-microdevices.co.jp/en/>.

About Macnica ATD Europe GmbH, (former Macnica GmbH)

Macnica's ATD Europe GmbH, (former Macnica GmbH), was originally established in the UK in 2006, and moved to Germany in July 2008, to increase efficacy of its service for European customers.

By its acquisition of the Munich based company Scantec Mikroelektronik in 2014 Macnica Europe formed a powerful semiconductor distribution with headquarter in Ingolstadt and offices in Munich, Regensburg, Milton Keynes (UK) and Warsaw offering an attractive and competitive portfolio of highly sophisticated devices.

Macnica provides end to end support from design-in to production through its global service network to its customers, regardless of the final destination of the product shipment to customers' manufacturing locations.

About Macnica ATD Europe S.A.S.

Founded in 1990 as ATD Electronique, Macnica ATD Europe headquarter offers innovative components dedicated to imaging applications for the European market. Its product portfolio includes: image sensors (CCD, CMOS, InGaAs, Thermal etc.), optics, interface circuits, FPGA & IPs, imaging processors, cables and OLED microdisplays.

It also covers development tools and design services enabling fast and efficient realization of new high-performance camera systems for markets such as machine vision, medical, life sciences, surveillance, automotive and others. After the acquisition of the company by Macnica Inc. as of October 1, 2020 the company operates under the name Macnica ATD Europe.

About Macnica, Inc.

Macnica was established in 1972 as a semiconductor distribution company headquartered in Yokohama, Japan, and has over 85 sales offices worldwide in eastern Asia, Europe and the USA. Total number of employees is over 3,000 and its consolidated revenue for fiscal 2020 was approximately US\$ 5.5 B.

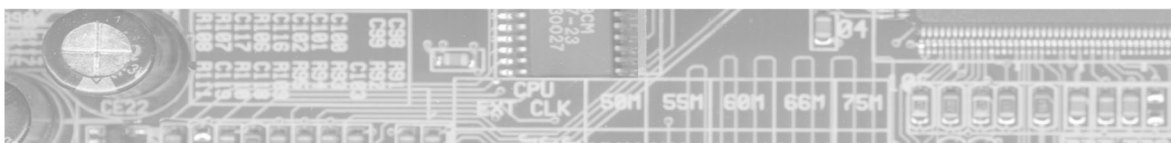
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Macnica is famous for having an excellent engineering team of more than 900 application support engineers, IC designers and software developers with strong focus on providing technical support for its customers including custom design services. Macnica is continuing to extend its presence globally by having successful partners in strategic areas in the electronics market.

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