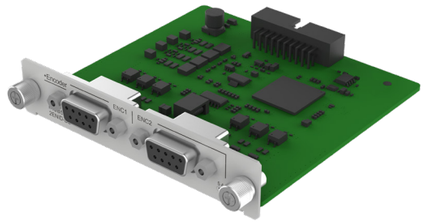
INOVANCE



IRCB501 Series 2-Channel

19012411A01

Incremental Encoder Expansion Card User Guide

1

Preface

Thank you for purchasing the IRCB501 series expansion cards.

The expansion cards are resource expansion cards developed specifically for the robot control system, including PROFINET expansion cards, encoder expansion cards, and IO expansion cards.

This guide tells how to use the product correctly. Read through this guide before use (installation, wiring, operation, maintenance, and inspection). Do not use the product before you fully understand the safety precautions. Have this guide available for the end user with the equipment.

The documents related to this product are listed as follows.

1) IRCB501 Series Robot Control Cabinet User Guide
2) ITP80 Series Teach Pendant User Guide

This guide may be updated without prior notice. You can download the latest version on the Inovance website (www.inovance.com).

1. Product Information

■ Expansion card

Expansion card description	Model	Function
2-channel incremental encoder expansion card	IRCB501-2ENID-BD	Expansion card for 2-channel incremental differential encoder

■ Installation dimensions

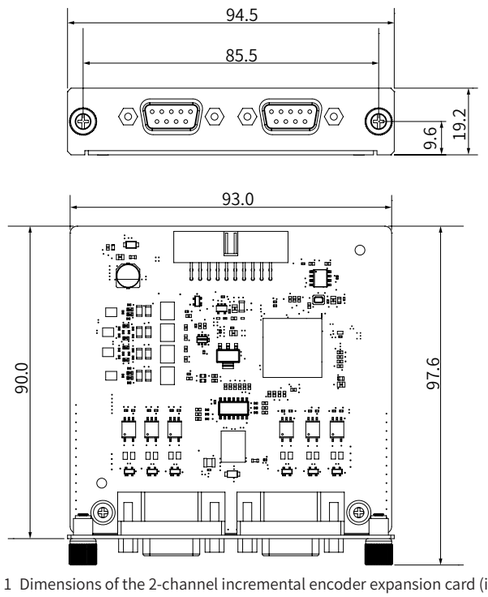
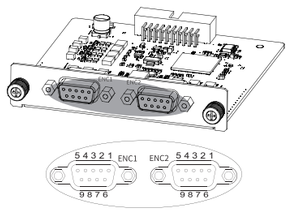


Figure 1 Dimensions of the 2-channel incremental encoder expansion card (in mm)

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■ Terminal assignment



Pin	Code	Description
1	GND	Provides 5–5.8 VDC power supply externally; ENC1 and ENC2 terminals can output a maximum current of 0.35 A in total.
2	GND	
6	5V	
5	ENC_PA+	Differential phase A input
9	ENC_PA-	
4	ENC_PB+	Differential phase B input
8	ENC_PB-	
3	ENC_PZ+	Single Index capture
7	ENC_PZ-	

Note: ENC1 and ENC2 terminals have the same assignment.

■ Terminal specifications

Item	Specification
Number of input channels	2 channels
Input connection mode	Differential/Single-ended input, 4x counting
Input voltage range (DC)	3.3 V to 5.5 V
Maximum input signal frequency	500 Kbps
Input impedance	> 440R
Input signal	Phase A/B/Z input
Isolation mode	Optocoupler isolation

2. External wiring

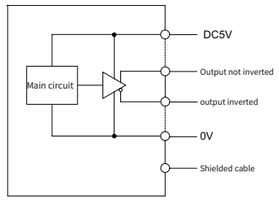
■ Wiring diagram

NOTE

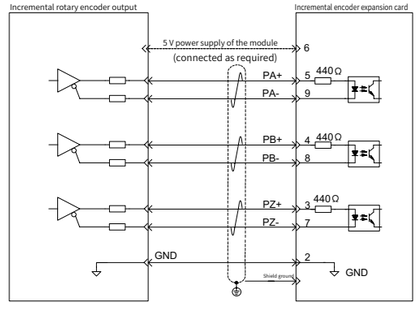
- ◆ Do not bundle the connection cables with power cables (high voltage, large current) and other cables that produce strong interference signals. Separate the connection cables from power cables or other aforementioned cables and avoid cabling in parallel.
- ◆ It is recommended to use shielded twisted pair cables for increased anti-interference ability.
- ◆ Only the encoder input signals at 5 V level are supported.

1) Differential input (recommended)

An example encoder is shown as follows.



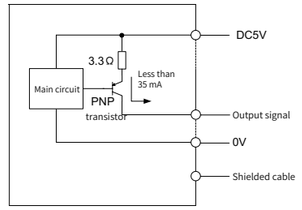
Wiring method:



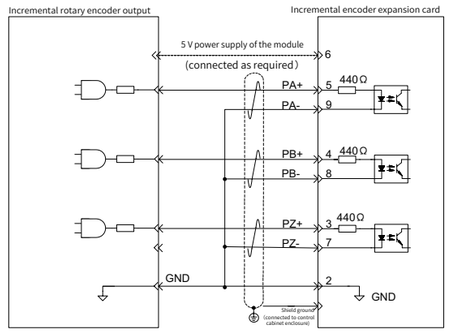
3

2) Single-ended PNP 5 V input

An example encoder is shown as follows.

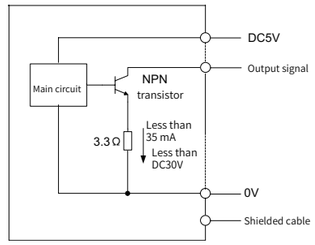


Wiring method:

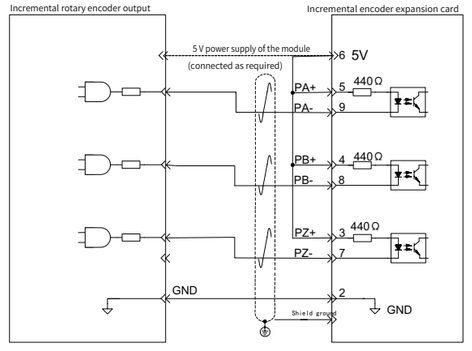


3) Single-ended NPN 5 V input

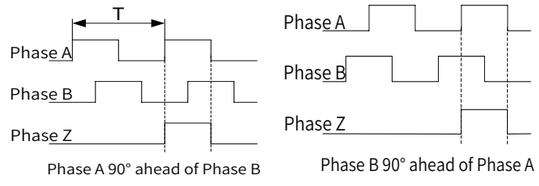
An example encoder is shown as follows.



Wiring method:



Single-ended input waveforms



4

INOVANCE Warranty Agreement

Inovance provides an 18-month gratis warranty term from the date of manufacturing (subject to information indicated by the barcode on the product) for any failure or damage under normal use conditions given in the user guide.

Even within the gratis warranty term, maintenance will be charged for the following damage:

1) Damage caused by improper use and unauthorized disassembly, repair, or retrofit
2) Damage caused by fire, flood, abnormal voltage, other disasters, and secondary disasters
3) Hardware damage caused by equipment fall-off or caused during transportation
4) Damage caused by failure to operate the product according to the user guide from Inovance
5) Faults and damage caused by the factors other than the equipment itself (for example, external device factors)

If there is any failure or damage to the product, properly fill out the Product Warranty Card.

Maintenance is charged according to the latest Maintenance Price List of Inovance.

This card is not re-issued. Keep the card properly and present it to the maintenance personnel for future maintenance needs.

Contact Inovance or Inovance agents for any issues arising during the service.

By purchasing this product, you are considered to agree on this agreement. The interpretation of this agreement shall be at the sole discretion of Inovance.

INOVANCE Warranty Card

Customer Information	Company address:	
	Company name:	Contact:
	Postcode:	Tel.:
Product Information	Product model:	
	Product barcode (attached here):	
	Agent name:	
Fault Information	(Maintenance date and description): Maintained by:	

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