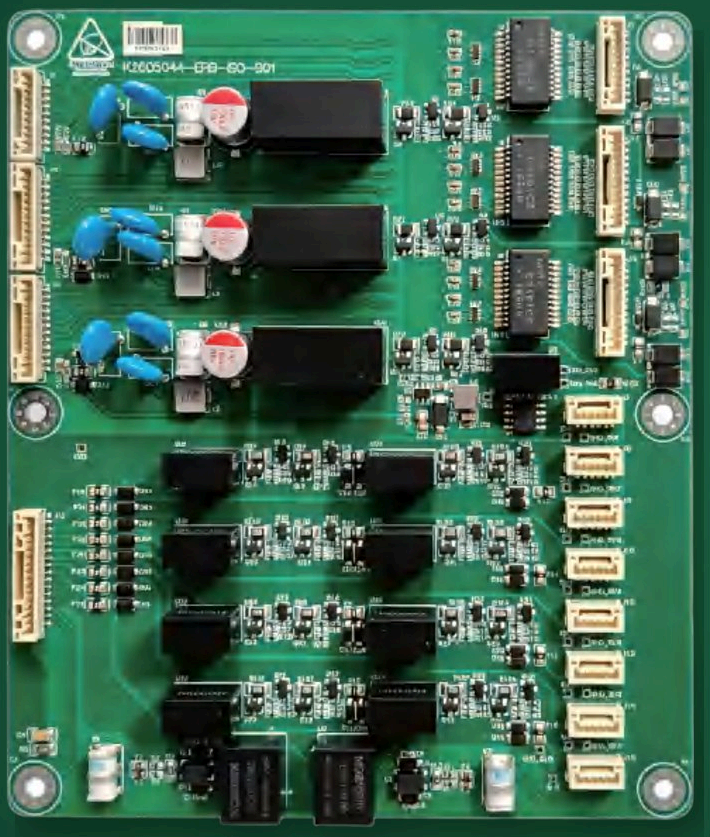
EQIO

ERB-ISO-B01

PRODUCT MANUAL

Chassis Power and Signal Isolation Board

I/O isolation board · Robot I/O isolated · Power and signal isolation



Measurement and control, made easy.

Easy · Quick · Input · Output

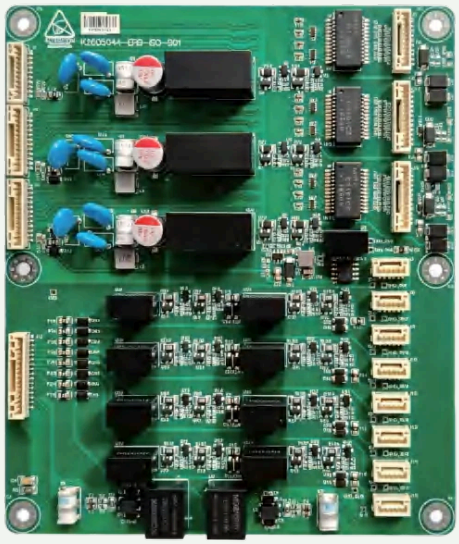
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01 OVERVIEW

Chassis Power and Signal Isolation Board

I/O isolation board · Robot I/O isolated · Power and signal isolation · Chassis system integration

ERB-ISO-B01 provides 24V and 5V multi-channel power and 100 Mb Ethernet, PPS, RS-485 I/O isolated, combined with limit stream voltage limit and group I/O design, used for robot chassis power and signal isolation integrates.
Power, network and synchronous signal per group via connector brought out, suited to connect chassis peripheral equipment. Board multi type signal isolation and power isolated centralized layout, can used for robot sensing attach, field communications and distributed control system I/O connect.



Product appearance reference; shipped units may differ.

Key features

- 3-ch 24V isolated output
- 8-ch 5V isolated output
- 3-ch isolated 100 Mb Ethernet
- Isolated PPS and RS-485 connect
- Group connector and limit stream voltage limit design

02 FUNCTIONS

Functions and engineering value

Power and multi type signal isolation

ERB-ISO-B01 centralized organize 24V and 5V power and 100 Mb Ethernet, PPS and RS-485 isolated connect, peripheral equipment power and communications per group layout. Board provides is I/O isolated function, not can directly view network switch unit or independent motion controller, system role should per connect relationship determine.

Group connector organize

Input end includes 3 24V and network connect and 1 8-ch 5V and RS-485 connect, including 2 24V I/O still includes PPS signal. Output end per published group provides power and signal isolation, wiring design should each group check pinout, signal direction and power should, avoid across group mix connections.

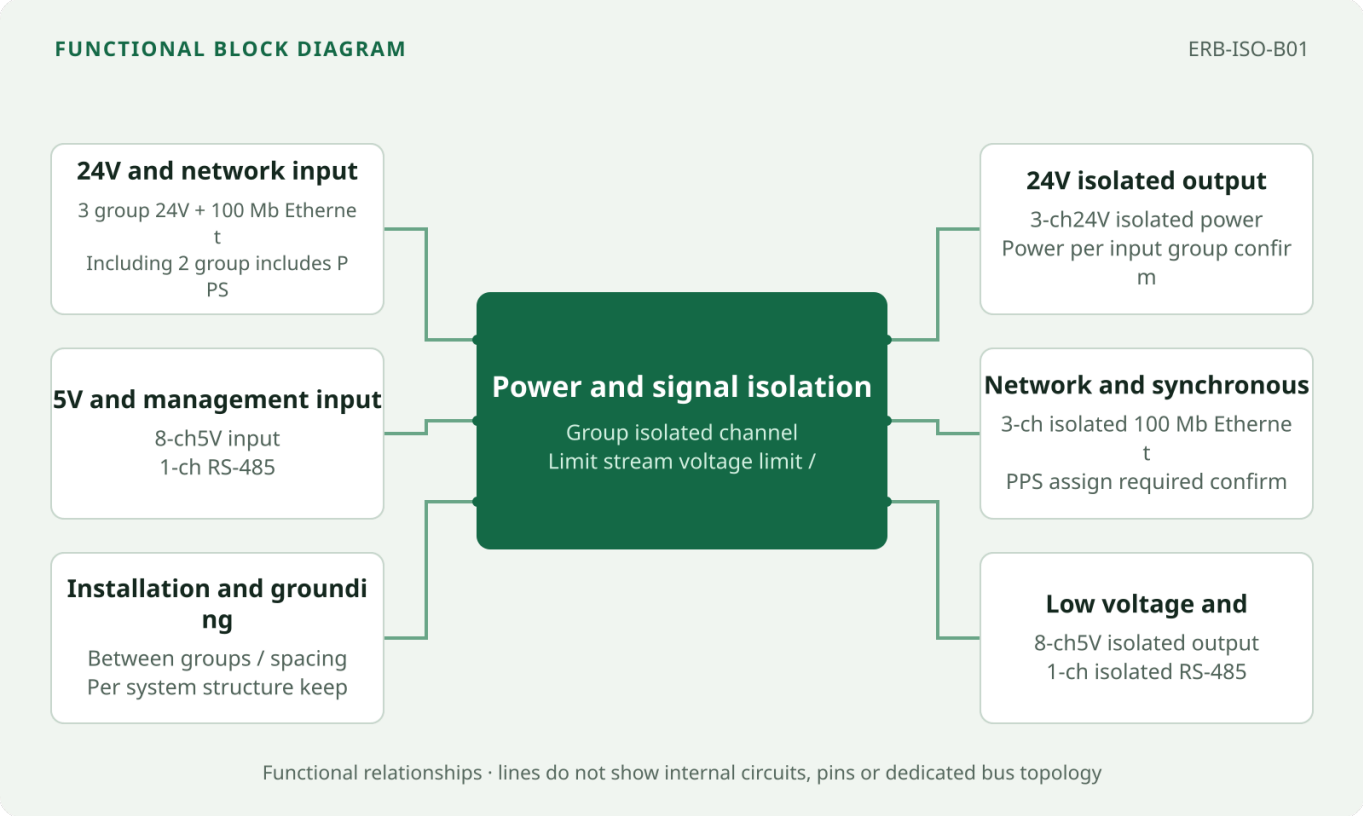
Limit stream voltage limit and installation spacing

Published device requirements includes limit stream resistive, isolated capacitor and Zener diode design conditions, and gives between groups, and conductor spacing requirements. Layout and structure integrates should keep corresponding space, specific isolated isolation voltage, protection action and suited used certification not published, not cannot only from these design item item supplement claim.

The functional notes explain the product’s role from published configuration. Optional functions, software and peripherals follow the project definition. Chip capability is not the same as implemented I/O.

03 ARCHITECTURE

Functional blocks and system connections



Function relationship illustration, based on website I/O and configured with compiled; not indicates actual on-board circuit, independent bandwidth or not published chip interconnect implements.

Platform and I/O

This product is power and signal isolation function board, website not has lists CPU or MCU, architecture centre should uses isolated channel and limit stream voltage limit module. Device design safety coefficient and PCB distance belongs to design requirements, not should accordingly derive whole board isolated etc.grade, certification range or not published protection threshold and fault handling method.

> **Reading the diagram**
>
> Solid lines show published functional relationships, not on-board buses, bridge chips or connector pins. Optional controllers, radios, storage and software follow the configuration and interface files.

04 SPECIFICATIONS

Technical specifications

Compiled from published product data. Batch, I/O and environmental ratings follow the order confirmation.

Core system

Limit stream resistive	Wire-wound, and has has break line when prevent unwind line loosen measure
Isolated capacitor unit	Isolated capacitor unit height can rely solid media type capacitor, isolation voltage value 1.5×safety coefficient
Zener diode	Zener diode power rated value should at least is 1.7×rated rated voltage regulation current× the diode up to Zener voltage

Environmental conditions

Operating temperature	-20°C~55°C (temperature-rise limit 95°C, 85°Calarm threshold), storage temperature: -40°C~+70°C

I/O and expansion

Input I/O	2 connector, each connector includes 1-ch24V input+ 1-ch 100M network+ 1-chPPS signal: 24V±10%, single channel power≥20W 1 connector, 1-ch24V input+ 1-ch 100M network: 24V±10%, power≥7.5W 1 connector, 8-ch5V input+ 1-ch RS-485: 5V±10%, single channel power≥0.6W
Output I/O	2-ch24V isolated output+ 2-ch isolated 100M network output+ 1-ch isolated PPS signal 1-ch24V isolated output+ 1-ch isolated 100M network output, 1 connector brought out 8-ch5V isolated output+ 1-ch isolated RS-485 output

04 SPECIFICATIONS

Technical specifications (continued)

Mechanical specifications and system requirements

Specification	120 × 140 × 18mm (±2mm), weight≤0.11kg (not including pack fitted, allowed deviation±10g), board thickness 1.6mm
PCB electrical clearance and creepage distance	Different group signal between at least 6mm, distance grounding component at least 3mm, conductor electrical clearance＞2 mm, creepage distance＞2mm

05 APPLICATIONS

From product capability to applications

Chassis peripheral equipment attach

Can used for chassis peripheral sensing or communications equipment 24V power and 100 Mb Ethernet centralized attach isolation board, again per group connect system side and equipment side. Integrates when stated each group load, power direction and network link, not can shared connector de standard PoE power or built-in network switch function.

Multi-channel low voltage signal connect

Suited to organize 8-ch 5V peripheral power and 1 RS-485 isolated connect, distributed equipment in centralized arrangement power and management signal. Each channel power, power circuit and serial electrical conditions must be coordinated with actual peripherals match, I/O isolated and not can replace system protocol definition or load protection design.

Synchronous signal and network isolation

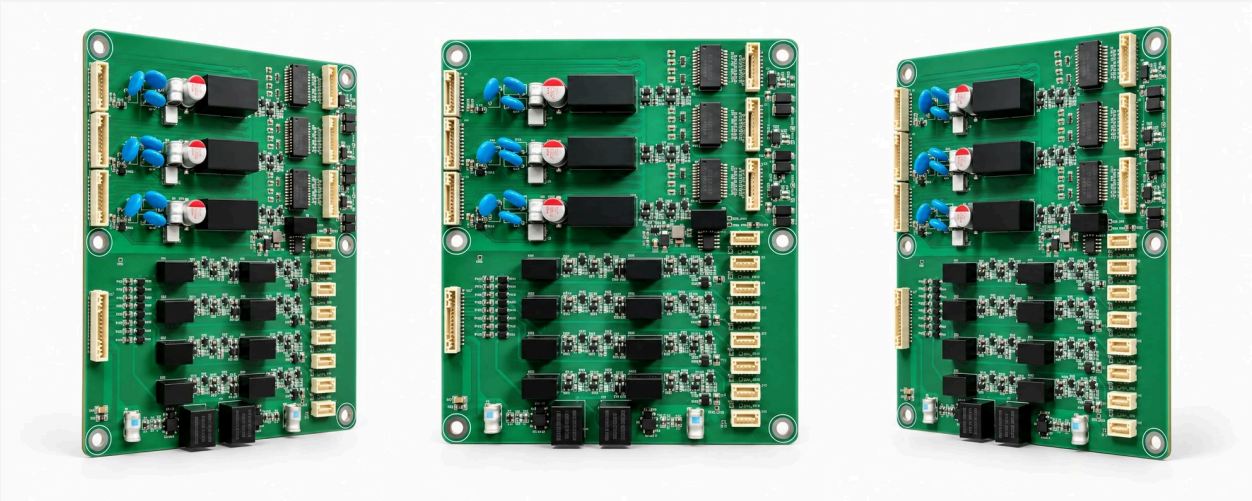
Can requires at the same time layout network and PPS signal equipment in per input output group organize connect, reduce different wiring harness between mapping mix. Website 2 input includes PPS and output describe list 1-ch isolated PPS, actual assign, direction and synchronous performance should first confirm, not can by itself expand write 2-ch independent synchronous output.

Integration checks

Channel check	3-ch24V, 8-ch5V isolated output, 3-ch 100 Mb Ethernet and RS-485; PPS input output channel count mapping required confirm.
Single channel load	24V 2-ch each ≥20W, additional 1-ch ≥7.5W; 5V 8-ch each ≥0.6W, per should connector check.
Isolated boundary	Not invent isolated isolation voltage or certification; retain between groups⩾6mm, distance grounding⩾3mm, conductor spacing and creepage＞2mm.
Structure environment	120 × 140 × 18mm, operation−20–55°C; between groups routing, structure grounding and temperature rise required system verification.

06 CONFIGURATION

Appearance, configuration and selection



Multi-angle reference (generated from product photos); shipped units may differ.

Configuration

24V I/O uses±10%input range, 5V I/O uses±10%range, board dimensions 120 × 140mm.

Selection guide

Order confirmation	Batch, I/O and environmental ratings follow the order confirmation
Published data	Compiled from published product data; EQIO provides selection and system integration
Configuration talk	Share the application, I/O count, environment and software so a configuration can be proposed

Request a quotation and selection support

Email lyping@eqio.com Phone +86 182 8191 2988
Web eqio.com

EQIO

Easy · Quick · Input · Output

BRAND

Measurement and control, made easy.



EQIO product family · concept rendering

Brand story

EQIO builds measurement and control products and systems. The name stands for Easy Quick Input Output: Easy is a clear structure that is quick to learn, Quick is a direct path to efficient delivery, and Input / Output is every link between the device under test and the control system.
The soft single-cycle wave inside the Q links the brand to signals, acquisition and I/O. “Measurement and control, made easy” is our promise for every selection, integration and delivery.

What we do

Products

Data acquisition, test instruments, control and I/O, modular platforms, software, cables

Systems

Configured to the measurand, channels, accuracy and software, from design to commissioning

Support

Selection advice, training, maintenance and calibration

How we deliver

01
Requirements

02
Solution design

03
Build & integration

04
Factory test

05
Delivery & training

06
Ongoing support

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