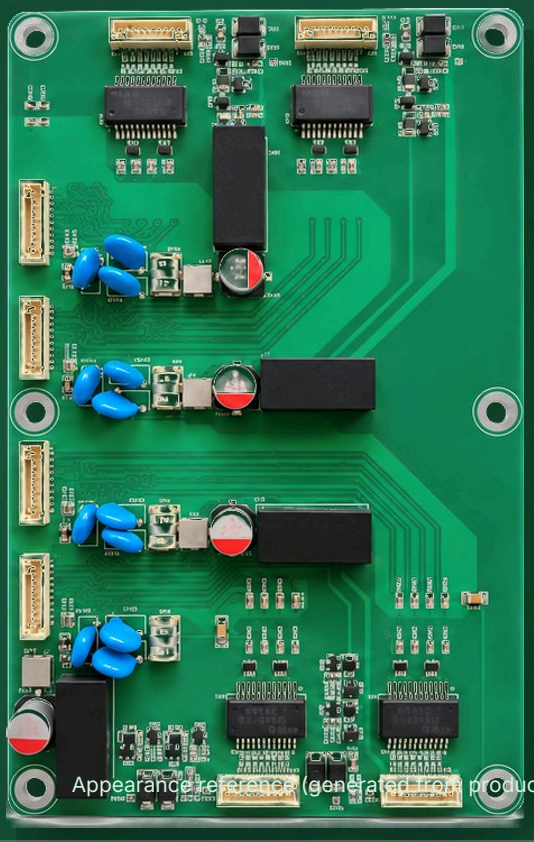
EQIO

ERB-UISO-U01

PRODUCT MANUAL

Upper-Body Power and Network Isolation Board

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



Appearance reference (generated from product photos); shipped units may differ.

Measurement and control, made easy.

Easy · Quick · Input · Output

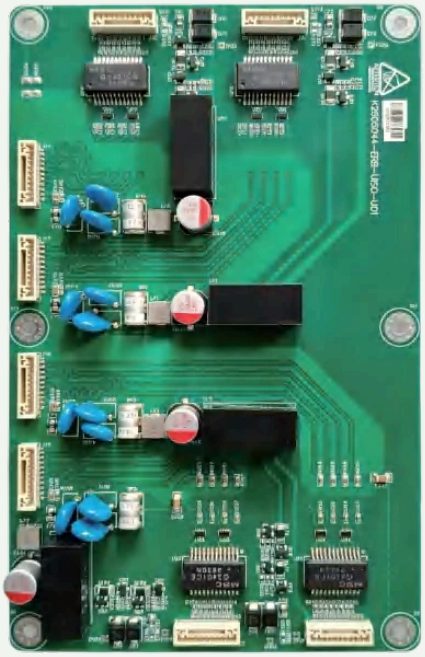
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01 OVERVIEW

Upper-Body Power and Network Isolation Board

I/O isolation board · Robot I/O isolated · Power and network isolation · Upper body system integration

ERB-UISO-U01 provides 4-ch 24V isolated output and 4-ch isolated 100 Mb Ethernet, each group power and network via independent connector brought out, combined with limit stream voltage limit design, used for robot upper body equipment I/O isolated integrates.
Each output group 1-ch power and 1-ch network centralized connect, facilitates arrangement upper body sensing and communications equipment routing. Board compact dimensions internal settings 4 independent channel, can used for robot peripheral equipment attach, distributed control node and industrial signal isolation unit.



Product appearance reference; shipped units may differ.

Key features

- 4-ch independent 24V isolated output
- 4-ch isolated 100 Mb Ethernet
- Each group power and network shared connector
- Limit stream voltage limit design
- 100 × 160mm compact board outline

02 FUNCTIONS

Functions and engineering value

4 power network isolation

ERB-UISO-U01 provides 4-ch independent 24V isolated output and 4-ch isolated 100 Mb Ethernet, each output connector centralized 1-ch power and 1-ch network. Group method facilitates to peripheral equipment establish stated connect relationship, but not indicates board has network switch or standard PoE function, attach method still requires per pinout definition confirm.

Group load and I/O should

Input end same sample uses 4 connector, each group includes 1-ch 24V input and 1-ch 100 Mb Ethernet, power range 24V±10%, single channel power requirements at least 7.5W. System can per equipment group routing, and item by item check power direction, network link and should output, avoid because connector like and mix connections.

Isolated device and structure requirements

Published design requirements involve and limit stream resistive, solid media isolated capacitor and Zener diode, and specified different group signal, grounding component and conductor between spacing. Equipment structure and routing should keep these conditions, specific isolated isolation voltage, protection threshold and certification range not listed out, not should from device name derive.

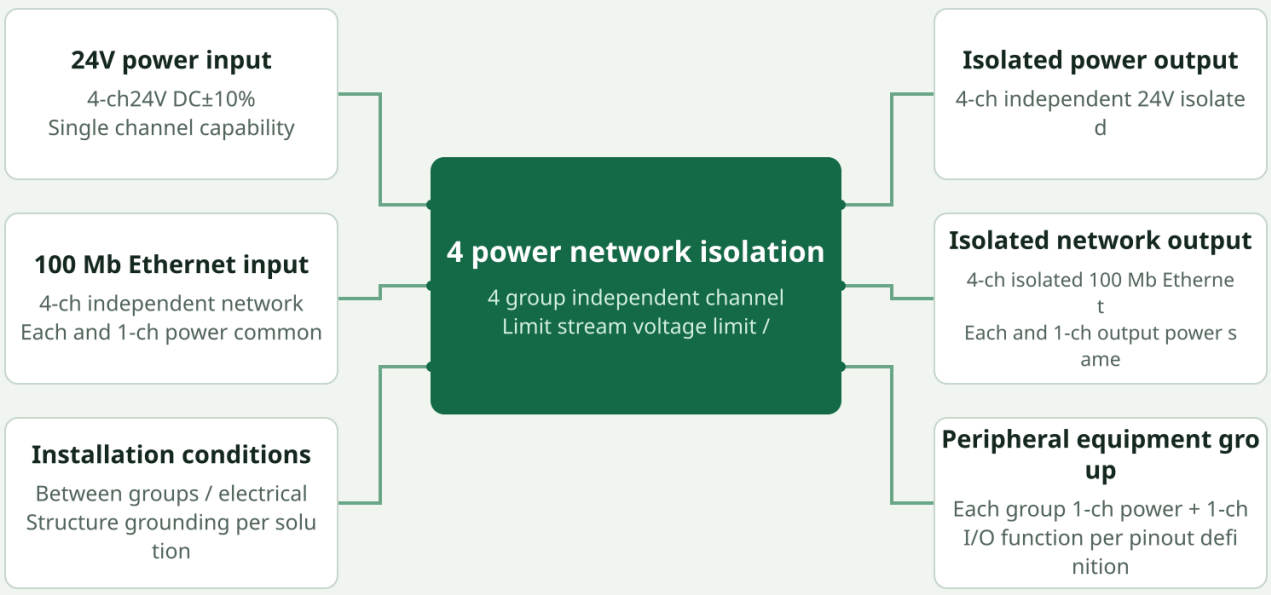
The functional notes explain the product’s role from published configuration. Optional functions, software and peripherals follow the project definition. Chip capability is not the same as implemented I/O.

03 ARCHITECTURE

Functional blocks and system connections

FUNCTIONAL BLOCK DIAGRAM

ERB-UISO-U01



Functional relationships · lines do not show internal circuits, pins or dedicated bus topology

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

The product is 4 power and 100 Mb Ethernet isolation board, published data not listed compute processor or network switch core, therefore architecture should highlight group isolated and power signal should relationship. Device design safety coefficient and PCB distance not can replace whole board isolated test data, also not forms PoE compatible, switch performance or certification state.

> **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 form	Film-type/wire-wound, and has has break line when prevent unwind line loosen measure/coating or potting
Isolated capacitor unit	Isolated capacitor unit should 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

Mechanical specifications and system requirements

Specification	100 × 160 × 18mm (±2mm), weight≤0.09kg (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 large to 2mm, creepage distance large to 2mm

I/O and expansion

Input I/O	4 connector, each connector includes 1-ch24V input+ 1-ch 100M network, 24V±10%, single channel power≥7.5W
Output I/O	4-ch24V isolated output (4-ch respective independent connector) 4-ch isolated 100M network output (4-ch respectively and 4-ch24V the same connector)

Environmental conditions

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

05 APPLICATIONS

From product capability to applications

Upper body peripheral equipment attach

Can robot upper body 4 peripheral equipment power and 100 Mb Ethernet via independent connector organize, use each group wiring harness and equipment stated should. Integrates when combined with load and network interfaces definition performs inspection, board responsible for isolated connect, not can replace switch equipment, on grade controller or device communications protocol.

Distributed node routing

Suited to distributed sensing or communications node provides group power and network isolation path, the same board on centralized management wiring harness should relationship. Each group 24V load should single independent check power and boot conditions, network per 100M capability design, not 4 independent connect misstate shared high-speed switch port.

Equipment I/O isolated unit

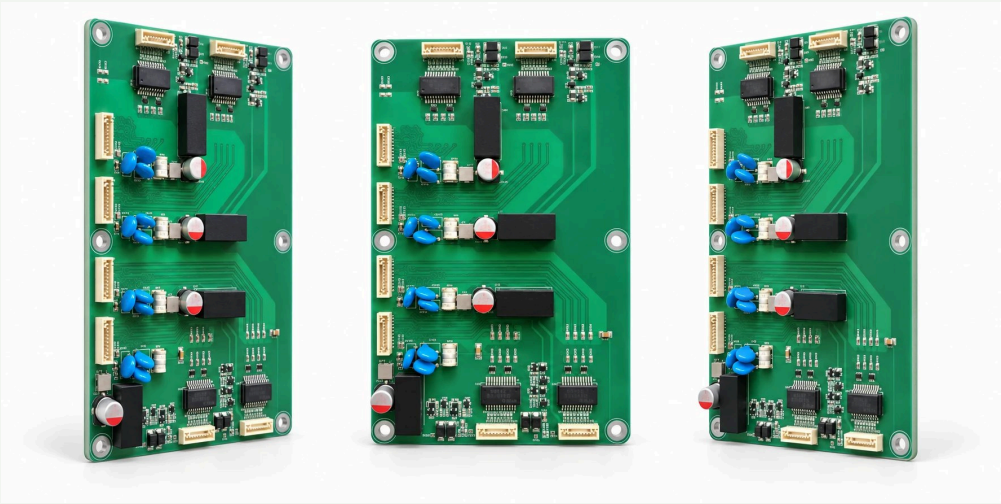
Can as industrial equipment or robot I/O layer one part, around 4 power and network connect arrangement isolated boundary and structure space. Routing, grounding and installation method requires keep published electrical distance requirements, product isolated performance and protection should via specific design and test confirm.

Integration checks

I/O should	4 group 24V plus 100 Mb Ethernet input, should 4 group power and network isolation output; per group check direction and pinout.
Power load	24V±10%, each channel power≥7.5W; confirm connector and actual load, not claim not published short-circuit protection.
Isolated and spacing	Between groups⩾6mm, distance grounding⩾3mm, conductor electrical clearance and creepage＞2mm; isolated isolation voltage and certification pending stated.
Structure and environment	100 × 160 × 18mm, ≤0.09kg; operation−20–55°C, storage−40–70°C, per system keep cooling.

06 CONFIGURATION

Appearance, configuration and selection



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

Configuration

Input uses 24V±10%, each channel power at least 7.5W, operating temperature -20–55°C.

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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