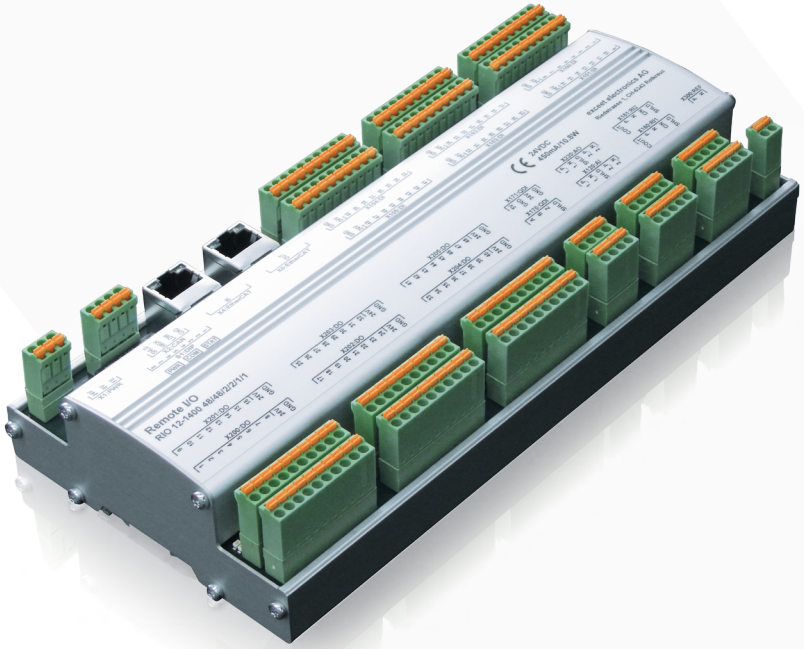
RIO Remote I/O Module



Intelligent, Cost-Effective I/O Module

- Voltage, current, resistance and temperature measurement
- PWM inputs and outputs, Namur inputs
- Protected inputs and outputs
- CODESYS-ready
- Integrated EtherCAT-CAN-Gateway

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The Power of IoT

Technical Information

INTERFACES & PROTOCOLS	Galvanically isolated CAN bus (CAN, CANopen) and/or EtherCAT
16X GALVANIC SEPARATED DIGITAL INPUTS (DI0..15)	Voltage 24 VDC, LED status indication per input, 1-pole connection, per 8 channels 24 V supply and 0 V Cycle time 1 ms over all inputs, DI0..1 can also be used as frequency, counter or quadrature encoder inputs
2X GALVANIC SEPARATED SQUARE DECODER (QDI0..1)	Voltage 5 VDC, 4-pole connection (A, B, Z, 0 V) Cycle time 1 ms over all inputs, QDI0...1 can also be used as frequency, counter or digital inputs
2X GALVANIC SEPARATED FREQUENCY/COUNTER INPUTS (FI0..1)	FI0..1 can be acquired via DI0..1 or QDI0..1 Cycle time 1 ms over all inputs, frequency 10 ... 100 kHz, counter up/down Switchable via a digital input
16X GALVANIC SEPARATED DIGITAL OUTPUTS (DO0..15)	Voltage 12-24 VDC, 1-pole connection, per 8 channels 24 V supply and 0 V, LED status indication per output High-side / 0.5 A per channel, 4 A over all 8 channels, all outputs short-circuit proof and overload protected
4X ANALOG INPUTS (AI0..3)	Voltage 0...+10 V, current 0/4...20 mA, 2-pole connections, per 2 channels one shield connection, resolution 12 bit, accuracy 0.5 % @ 25 °C Input resistance 120 kΩ (voltage), 200 Ohm (current), single ended, 1 ms sampling over all channels AI0...1 switchable between voltage and current, AI2...3 voltage only, together with logic galvanically isolated
4X ANALOG OUTPUTS (AO0..3)	Voltage 0...+10 V, 2-pole connections, per 2 channels one shield connection, resolution 12 bit, accuracy 0.5 % @ 25 °C Imax 25 mA at voltage output, cycle time 1 ms over all outputs All outputs short-circuit proof and overload protected, together with logic galvanically insulated
4X RTD INPUTS (RI0..3)	PT100/1000, NI100/1000, potentiometer, 4-pole connections, one shield connection per 2 channels, resolution 16 bit, accuracy 0.2 % @ 25 °C Measuring current adjustable 100...1000 uA, cycle time < 0.2s, 2-, 3-, or 4-wire wiring
SUPPLY, MECHANICS, OPERATING CONDITIONS	Supply 24 VDC ±20 %, power consumption typ. 2.4 W, operating temperature 0...+55 °C [extended range], protection class IP20 Pluggable push-in spring-cage terminal blocks, pitch 3.81 mm, max. 1 mm² with wire end ferrule incl. plastic collar Profile 110x45 mm, DIN rail mounting, LED for power supply, operating status and communication
OPTIONS	Local signal preprocessing and monitoring, relay outputs, Namur inputs, frequency measurement directly from encoder Free definition of number and specification of I/O's, interfaces, protocols, potential isolation, terminal type, housing, design Customized OEM versions

Product Highlights

Remote I/O modules are used for universal and industry-independent process acquisition and control. They communicate via EtherCAT, CANopen or USB with the higher control level. The connectable EtherCAT CAN gateway enables simple and cost-effective integration of CAN modules into an EtherCAT network. Additional devices can also be integrated via a serial interface. In addition to the immediately available standard versions, customized versions with short time-to-market can be realized.

The I/Os and the associated firmware can be customized in terms of quantity, functionality, and electrical characteristics.

In addition to preprocessing process signals, the integrated microcontroller can also execute a CODESYS project, thereby ensuring the availability of important local emergency functions, for example in the event of a communication failure.

Customer benefits

- Optimal adaptation to process data
- Easy integration into existing equipment and systems
- Cost-efficient connection of process and machine data
- High operational reliability through galvanic isolation
- Tool-free replacement without the need for a PC
- Long-term availability
- Also available as an OEM solution

Applications

- Embedded control systems
- Machine and plant control systems
- Stand-alone control systems
- Modular plant concepts
- Process data acquisition and condition monitoring
- Extension of control panels and control units

About Kontron

Kontron AG is a leading IoT technology company. For more than 20 years, Kontron has been supporting companies from a wide range of industries to achieve their business goals with intelligent solutions. From automated industrial operations, smarter and safer transport to advanced communications, connectivity, medical, and energy solutions, the company delivers technologies that add value for its customers. With the acquisition of Katek SE in early 2024, Kontron significantly strengthens its portfolio with the new GreenTec division, focusing on solar energy and eMobility, and grows to around 7,000 employees in over 20 countries worldwide. Kontron is listed on the SDAX® and TecDAX® of the German Stock Exchange.

For more information, please visit: **www.kontron.com/en**

About Kontron Electronics

Kontron Electronics AG acts as a provider of automation solutions. The enterprise is at home in a variety of sectors, such as industrial machinery and device manufacturing, medical technology and building automation. Our portfolio includes proprietary and client-specific products, development and design services for complex electronics components, modules and systems, as well as production and assembly services for entire devices. The company is part of the technology corporation Kontron AG.

For more Information please visit: **www.kontron-electronics.com**

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