

Remote I/O unit

RIO600 for switchgear applications



RIO600 is a flexible and rugged Remote I/O unit for power distribution substations. It can be used in various distribution and grid automation applications using IEC 61850 and Modbus TCP communication.

01 Remote I/O unit RIO600, with RJ-45 communication, digital input and digital output modules

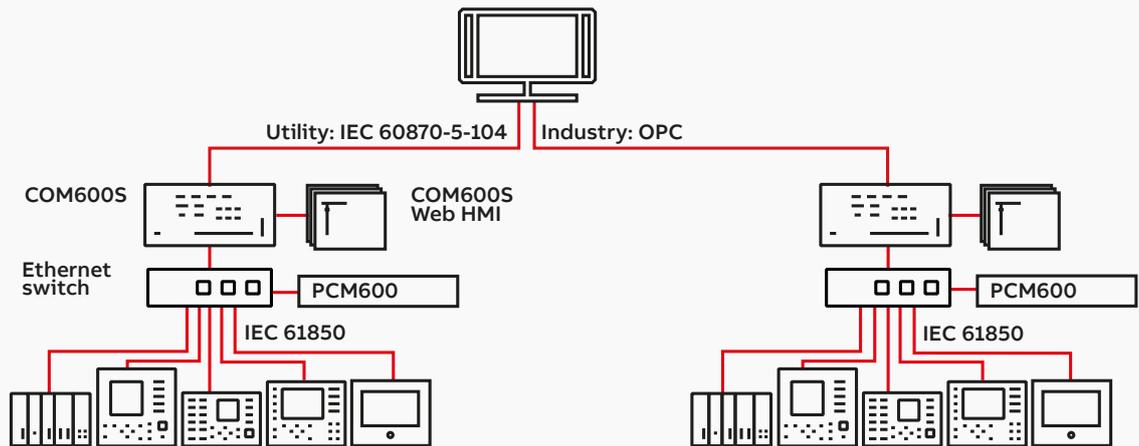
RIO600

RIO600 is designed to expand the digital I/O (Input/Output) of ABBs Relion® series protection relays and to provide I/O for the station automation unit COM600 in primary substations. It can be also used in secondary distribution substations as a combined I/O and fault passage indication device as part of the grid automation solutions.

Key benefits

RIO600 helps simplifying the substation wiring and provides additional flexible I/O within the switch-gear. It can use IEC 61850 horizontal GOOSE communication or Modbus TCP. The data can be transmitted with better supervision and in a faster manner than when signals are wired in the traditional way.

Module type	Description
Power supply modules	PSMH High-voltage range power supply module
	PSML Low-voltage range power supply module
Communication modules	LECM Communication module with RJ-45 Ethernet port
	LECM Communication module with multimode fiber-optic LC Ethernet port
I/O modules	Digital input module
	DIM8H High-voltage range, eight optically isolated binary inputs with common return for pair of two inputs
	DIM8L Low-voltage range, eight optically isolated binary inputs with common return for pair of two inputs
	Digital output module
RTD module	DOM4 Four output contacts in each digital output module with two pairs of potential free contacts with common return
Analog output module	RTD4 Four optically isolated channels supporting RTD sensors (Pt100, Pt250, Ni100, Ni120 and Ni250) and mA input (0...20 mA configurable). Individual channels are non-isolated from each other
Sensor input module	AOM4 Four individually isolated channels of configurable mA outputs driving 0...20 mA signal
	SIM8F Sensor Input module with combined three-phase current and voltage for fault passage indication and metering function
Smart control module	SIM4F Sensor input module for fault passage indication by using current information only
	SCM8H High-voltage range, four optically isolated binary inputs with common return for a pair of two inputs and four fast power outputs that can be used in different motor control applications
	SCM8L Low-voltage range, four optically isolated binary inputs with common return for pair of two inputs and four fast power outputs that can be used in different motor control applications



01

01 Connection overview of RIO600 in typical system

Hardware

RIO600 is built on the industrial hardware platform which provides the same reliability, performance and real-time functionality as ABB protection and control relays.

RIO600 has modular design suitable for electrically harsh and climatically demanding utility substation and industrial environments. Single RIO600 can have up to 40 I/O channels and different type of I/O modules can be stacked in a totally flexible way allowing a wide range of applications.

Communication

The RIO600 supports the fast real-time horizontal GOOSE communication of the IEC 61850 Edition 1 and Edition 2 substation automation standard. RIO600 also supports Modbus TCP communication to one Modbus TCP client. Both of them can be used in parallel in the same Ethernet-based station bus.

RIO600 is designed to send and receive binary signals to or from the ABB Relion® protection relays and the station automation unit COM600 using the IEC 61850-8-1 GOOSE profile. RIO600 can subscribe from five devices and publish to multiple devices as configured by the user.

Using the same Ethernet port, RIO600 can be connected in parallel to PCM600 and a web browser over the same communication bus. RIO600 communication includes a galvanic RJ-45 port or fiber optic LC Ethernet for IEC 61850 GOOSE and Modbus TCP communication. RIO600 Web HMI is used for monitoring and diagnostic purposes wherein with PCM600 user can configure all parameters.

For more information please contact :

ABB Distribution Solutions Distribution Automation

P.O. Box 699
65101 Vaasa, Finland
Phone: +358 10 22 11

ABB Distribution Automation

Maneja Works
Vadodara 390 013, India
Phone: +91 265 2604386
Fax: +91 265 2638922