

# INGESYS

# IC2 RIO

## EN50155 Distributed I/O



INGESYS™ IC2 RIO is a distributed inputs and outputs system designed to meet the automation needs of the railway sector (trams, trains, etc.).

Its compact robust design, compliant with the EN50155 and EN45545-2 standards, is adapted to the demanding mechanical, environmental and fire prevention requirements of the railway sector.

### RIO System of Railways Applications

The INGESYS™ IC2 RIO system provides an optimal response to the automation requirements of applications needing distributed I/Os such as in the railway sector.

It is a system designed for the railway sector in which extreme environmental and vibrational conditions exist and is compliant with the sector's EN50155 and EN 45545-2 standards.

It includes a wide range of digital and analogue input and output modules and a high capacity for integration with the main field buses (CAN, MVB, RS485) and Ethernets (TCP/IP, UDP, MODBUS TCP, CIP, TRDP, PROFINET, etc.) used in the railway sector.

The INGESYS™ IC2 RIO system's compact modular design (a maximum of 10 I/O modules) making it possible to achieve an ideal solution for each application. A compact design enables adaptation to the space restrictions found in this type of applications.

#### Benefits

- ✓ Reduced wiring costs
- ✓ Compact design to maximise space
- ✓ Comprehensive range of the most commonly used communication buses in the railway sector

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**Ingeteam**

Hardware Features	
Main Power Supply	24Vdc (+25% / -30%) Class S1 (EN 50155:2007)
Maximum Consumption	24V @ 300mA / 110V @ 80mA
Dissipated Power	8W (max.)
Communications Interfaces	
Field Buses Interfaces	CANOPEN RS485 MVB ESD+, MVB EMD
Ethernet Interfaces	1 x 10/100Mbps M12 Ethernet Port
Protocols	TCP/IP, UDP Modbus TCP/IP TRDP CIP PROFINET
Redundancy	Communication ports redundancy
Node addressing	Using rotary switches
Input/Output Modules*	
Digital Inputs	16 x DI (24Vdc @ 3mA) with status LEDs
Digital Outputs	16 x DO (HSD 24Vdc @ 500mA) with status LEDs
Relay Outputs	3 outputs (150V @ 5A) with status LEDs
Digital I/Os (Mixed)	8 x DI (24Vdc @ 5mA) + 8 x DO (HSD 24Vdc @ 500mA) with status LEDs 12 x DI (24Vdc @ 5mA) + 4 x DO (HSD 24Vdc @ 500mA) with status LEDs
Analog Inputs	8 x AI (±10V or ± 20mA) 8 x AI (PT100, NTC or Thermocouple)
Analog Outputs	8 x AO (16bit, ±10V or ± 20mA)
Standards	
Immunity and Emission	EN 50121-3-2:2007
Temperature Range	EN 50155:2007 [Class TX (-40°C to +70°C)]
Vibrations	EN 50155:2007 [Body Mounted, Class B] / IEC 61373:2007
Fire Prevention	EN 45545-2
Mechanical Features	
Assembly	Panel
Material	Aluminium
Dimensions (L x W x D)	(149mm up to 524mm)** x 135mm x 34.6mm
Expansion	Up to 10 I/O modules per node
Terminal Type	Spring PUSH IN connection with screw latching

\* Combination of up to 10 modules \*\* Depending on the number of I/O modules selected, each with a width of 37.5 mm