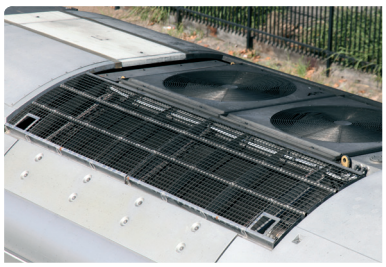
INGESYS IC2

Rolling Stock Subsystem Controller



INGESYS™ IC2 is a control system aimed at meeting subsystem automation requirements in the railway sector (tram, trains, etc.).

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

Compact controller according to rolling stock standards

INGESYS™ IC2 is a controller with a modular structure and a wide range of digital and analogue input/output modules that make possible to offer a technical solution suited to each application at an optimum cost.

A wide variety of standard communication interfaces used in the railway sector are available, which enables the integration of the controller into the train communications networks commonly used in the railway market.

IEC61131-3 standard compatible user programming tools are provided for application development and testing. A comprehensive functions library (mathematical, regulation, data filling, communications, etc.) and the possibility to incorporate user defined functions to these libraries help the user to optimize the application development.

The integration of a web server allows the user to diagnose and monitor remotely the system easily and flexibly to suit their needs.

Oriented to train subsystems control (HVAC, toilets, FDS, doors, galleys, etc.) and to tram control system.

Benefits

- ✓ Compact and robust design
- ✓ Custom-made solution with optimum costs
- ✓ Compliance to railway standards
- ✓ Cost-effective solution

www.ingeteam.com
ingesys.info@ingeteam.com

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Technical Data

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Power Source		
Main Power Supply*	224Vdc (+25% / -30%) Class S2 (EN 50155:2017) 36-48Vdc (+25% / -30%) Class S2 (EN 50155:2017) 72-110Vdc (+25% / -30%) Class S2 (EN 50155:2017)	
Maximum Consumption	24V @ 300mA / 110V @ 80mA	
Dissipated Power	8W (max.)	
Processor Module		
	IC2-HC	**IC2-P**
Main Processor	32bit, 400MHz	32bit, Dual Core 800Mhz
Memory	Up to 128MB Program: 1MB Data: up to 1MB Non-volatile data: 62KB Data logging: 32MB (up to 8GB optional)	512MB Program: 4MB Data: up to 4MB Non-volatile data: 128KB Data logging: 2GB (up to 8GB optional)
Program	IEC61131-3 (specific functions, communication and regulation library), C/C++, Matlab/Simulink	
Monitoring and Maintenance	Embedded Web Server Local LCD Text Display (optional) USB Port for upload / download: firmware, application, data register…	
LAN	2 Ethernet 10/100Base TX M12 (internal switch)	2 Ethernet 10/100Base TX M12
	Additional 1 Ethernet 10/100Base TX M12 (optional) Protocols: Modbus TCP/UDP, TRDP, Ethernet/IP, PROFINET I/O, SFTP, DHCP client, DNS Client, SNTP, Syslog	
Field buses (up to 4 *)	Up to 4 selectable Ports per CPU: CAN (CANOpen M/S,CANRaw) Profibus DP, MODBUS RTU, RS232/RS485, MVB ESD+, MVB EMD	
Input/Output Modules**		
Digital inputs	16 DI (24Vdc @ 3mA) (PNP or NPN) 8 DI (24-110Vdc) (PNP or NPN)	
Digital Outputs	16 DO (HSD 24Vdc @ 500mA) (PNP o NPN) 8 DO (24VDC @ 2A) 8 DO (24-110Vdc @ 0.5A)	
Relay Outputs	3 electromechanical Relay Outputs with switched contacts (150V @ 5A)	
Mixed Digital I/Os	8 DI (24Vdc @ 5mA) + 8 DO (HSD 24Vdc @ 500mA) 12 DI (24Vdc @ 5mA) + 4 DO (HSD 24Vdc @ 500mA) 4 DI (24Vdc @ 5mA) + 12 DO (HSD 24Vdc @ 500mA)	
Analog Inputs	8 AI (±10V or ± 20mA) 8 fast synchronous AI, up to 100Ks/s, for (±10V or ± 20mA) or IEPE accelerometers 10 Temperature inputs (PT100, NTC or Thermocouple)	
Analog Outputs	8 AO (±10V or ± 20mA)	
Motor Control	4 DI (24Vdc@ 5mA) + 1 Encoder input + 1 PWM output (up to 12A) H-bridge topology	
Audio	2 Audio outputs 2W	
Standards		
Immunity and Emission	EN 50121-3-2:2017+A1:2019	
Temperature Range	EN 50155:2021 [Class OT4 (-40ºC at +70ºC)]	
Vibrations	EN 50155:2021 [Body Mounted, Class B] / IEC 61373:2010	
Fire protection	EN 45545-2:2020+A1:2023	
Mechanical Features		
Assembly	Panel Mount	
Material	Aluminium	
Dimensions (W x H x D)	(149mm to 524mm)*** x 135mm x 34.6mm	

Optional ** A combination of up to 10 modules *** Depending on the number of I/O modules selected, each with a width of 37.5 mm.

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