

# INGESYS

# RCM

## Online monitoring & data logging for rolling stock market



INGESYS™ RCM is a remote condition monitoring solution which allows user to capture and log operational data on the various elements of a train, for subsequent analysis in a remote, cloud-based data centre using advanced monitoring and analysis tools.

It is designed to improve the preventive maintenance of assets on a train with the aim of increasing their availability and reducing operational costs.

### Remote Condition Monitoring

#### Main Functional Features

- Modular architecture that can be adapted to the needs of each application
- Designed for the rolling stock market
- Open system, programmable by the user in SIMULINK or IEC61131
- Capture and processing of a wide range of signals (position, accelerometers, temperatures, analogue values in V/I, digital signals, speed, etc.)
- Distributed capturing via Ethernet RT
- Data logger functionality
- Integration with other automation elements using fieldbuses (CAN, RS485, etc.), Ethernet networks with MODBUS TCP, ETHERNET/IP or ETHERNET RT with PROFINET or ETHERCAT
- Communication protocols for connection to the cloud (SFTP, MQTT, HTTPS)
- Expandable memory for logging information
- Local web application suite for monitoring and parameterising

#### Benefits

- ✓ A wide range of protocols for the acquisition and transmission of data
- ✓ System adapted to the requirements of the railway sector
- ✓ Optimum cost solution
- ✓ Compliance with EN50155 and EN45545-2 standards

[www.ingeteam.com](http://www.ingeteam.com)  
[ingesys.info@ingeteam.com](mailto:ingesys.info@ingeteam.com)

# Ingeteam

	System
<b>Main Power Supply</b>	24Vdc (+25% / -30%) Class S1
<b>Maximum Consumption</b>	24V @ 300mA / 110V @ 80mA
<b>Dissipated Power</b>	8W (max.)
<b>Memory</b>	Program: 1Mb Data: 1Mb Non-volatile data: 62Kb Register: 32Mb expandable to 4Gb
<b>Programming</b>	Simulink, IEC61131-3 languages
<b>Data Logger</b>	Recordable variables: 1024 Consecutive logs: 32 Maximum number of variables that can be recorded in a log configuration: 64 Log buffer: 512kb Simultaneous logs: 2 Maximum number of log configurations: 32
<b>Monitoring and Maintenance</b>	Integrated local web applications for operation & maintenance and parameterization purpose USB port for loading/unloading firmware, application, data log, etc.
<b>Ethernet Interfaces</b>	2 x 10/100Base TX RJ45 Ethernet ports with internal switch + 1 x 10/100Base TX RJ45 Ethernet port* Protocols: SFTP, MQTT, Modbus TCP/IP, Ethernet/IP, PROFINET, ETHERCAT
<b>Fieldbus Interfaces</b>	Up to 4 DB9 ports: CANOPEN(Master/Slave), Profibus DP Slave, RS232/RS485
<b>Wireless Interfaces</b>	WiFi, 3G
<b>Physical Inputs</b>	DI (24Vdc @ 3mA) Incremental input encoder 24Vdc, 24-bit counter AI ( $\pm 10V$ or $\pm 20mA$ ) AI (PT100, NTC or Thermocouple) AI (fast synchronous) up to 100Ks/s, for ( $\pm 10V$ or $\pm 20mA$ ) or IEPE accelerometers
<b>Physical Outputs</b>	Relay outputs (150V @ 5A)
	Standards
<b>Labelling</b>	CE
<b>Immunity and Emission</b>	EN 50121-3-2:2007
<b>Temperature Range</b>	EN 50155:2007 [Class TX (-40°C at +70°C)]
<b>Vibrations</b>	EN 50155:2007 [Body Mounted, Class B] / IEC 61373:2007
<b>Protection Against Fire</b>	EN 45545-2
	Mechanical Features
<b>Assembly</b>	Panel, DIN Rail
<b>Material</b>	Aluminium
<b>Dimensions (H x W x D)</b>	(149mm to 524mm)** x 135mm x 34.6mm
<b>Design</b>	Internally modular. Maximum 10 I/O modules

\* Optional \*\*Depending on the number of I/O modules selected, each with a width of 37.5 mm.