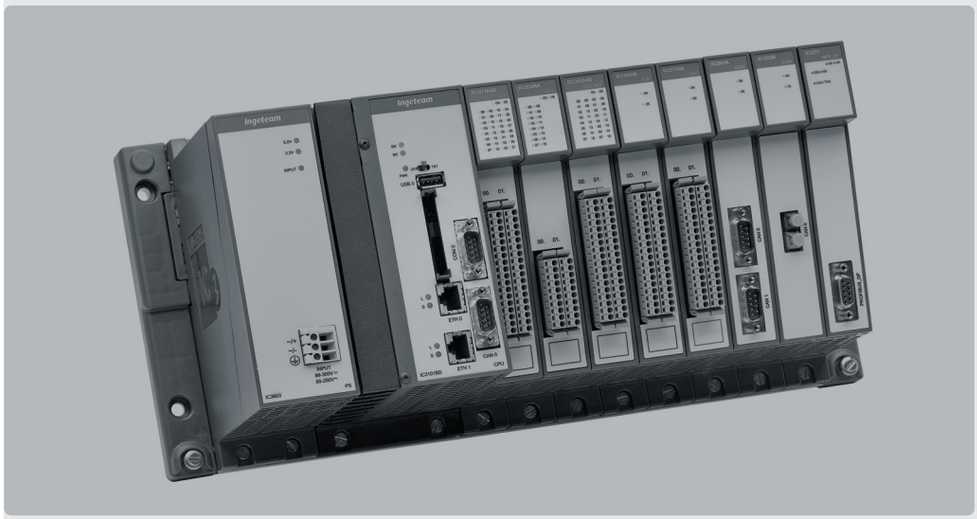
INGESYS IC3

Turbine Controller



The INGESYS™**IC3** controller has been specially designed to meet the wind turbine control requirements from the simplest to the most demanding ones in terms of processing capacity, performance and reliability. INGESYS™**IC3** is a field tested controller assuring high reliability with more than 2,500 wind turbine around the world. INGESYS™**IC3** offers you a control solution with advanced connectivity options while being open to ongoing market trends and requirements, thus ensuring instant returns on your investment.

Automation Solutions

Power and Flexibility
Thanks to its modular and flexible design, INGESYS™IC3 offers solutions adapted to the processing capacity and budget of each individual wind turbine control.

INGESYS™IC3 allows defining a wide variety of topologies with different configurations in single or redundant mode for power modules, processor units, communication networks and input/output modules.

Connectivity
INGESYS™IC3 offers a wide range of connectivity interfaces for integration with both field devices and control and management systems, based on industrial standards field buses (PROFIBUS, CANOPEN, DEVICENET, INTERBUS-S, ETHERCAT) or TCP/IP Ethernet networks (MODBUS TCP, IEC61400-25, OPC, etc.).

Reliability and Robustness
INGESYS™IC3 is specially designed to work in industrial surroundings with demanding environmental conditions. Exhaustive quality control tests and rigorous environmental and vibrational tests support its reliability and robustness. INGESYS IC3 is UL-certified and CE-marked.

Reduced Engineering Times
INGESYS™IC3 is an Open System with an advanced and user-friendly programming tool that allows you to plan and program your application reducing engineering and commissioning times.

INGESYS™IC3 offers advanced programming features:

- RTO based deterministic multitasking system
- The five languages of IEC 61131-3 standard (IL, FBD, LD, ST y SFC) could be programmed using CoDesys tool with INGETEAM´s expansions.
- Integration of MATLAB/SIMULINK programmed control tasks. Simulink models are directly downloaded to the PLC without any manual translation and office simulation with signals captured at the plant could be done. Inside the same CPU could be run Simulink models and IEC 61131-3 and C control tasks with data exchange between Simulink and the rest of the control tasks.
- Microsoft embedded visual C++ programmed control tasks, using the same resources of IEC 61131-3 language Control Tasks.
- Quick and easy oscilloscope/register tool with expandable architecture, to reduce the engineering times for commissioning and troubleshooting during machine maintenance by configuring, capturing and viewing data logs.

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Ingeteam

Technical characteristics

INGESYS IC3

General data

Microprocessor	
Program memory	
Removable memory	
Ram Memory	
NVRAM memory	
Run-time system	
PLC cycle time	
Module capacity	
Ethernet communications	
Field buses	
CMS	
Programming languages	
Function libraries	
Temperature range	

IC3

Pentium 500MHz (800DMIPS) and ARM 400MHz (500DMIPS) compatible processors
Integrated (Up to 10MB flash)
Up to 2GB compact flash memory
Up to 5MB Ram memory
62kB non-volatile RAM memory
Up to 10 tasks
1ms for over 60,000 instructions, depending on application code (without I/O cycle)
Up to 256 I/O modules
TCP/IP, Modbus TCP, FTP, webservices, SNTP, IEC 61131-5, IEC 61850, IEC 61850-7-410, IEC 61400-25, IEC 60870-5 -101/104
Modbus RTU, Profibus, Interbus-S, CANopen, Ethercat
Possibility of integrating Condition Monitoring System
IEC 61131-3, C/C++, Matlab/simulink
General, Logical, Analysis and Digital processing, Regulation, Data Logging and Communications
From 0 ºC to 60 ºC without force-air cooling. Cold temperature variants (from -30 ºC to 70 ºC)

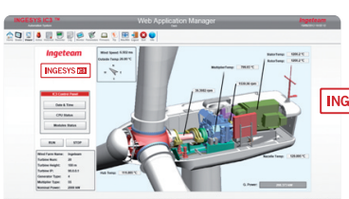
Maintenance and Diagnostics

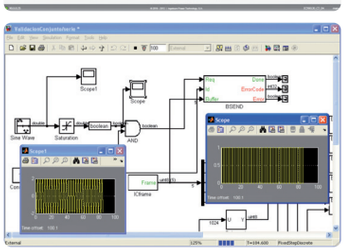
Designed to optimize maintenance costs:
Advanced analysis and diagnostic tools
Easy assembly and operation (Poka-yoke, Hot-Swap, Plug & Play)
Easy management and update of the system
(Automation Pack Generator, Replication system, Remote maintenance)

Direct Customer Support

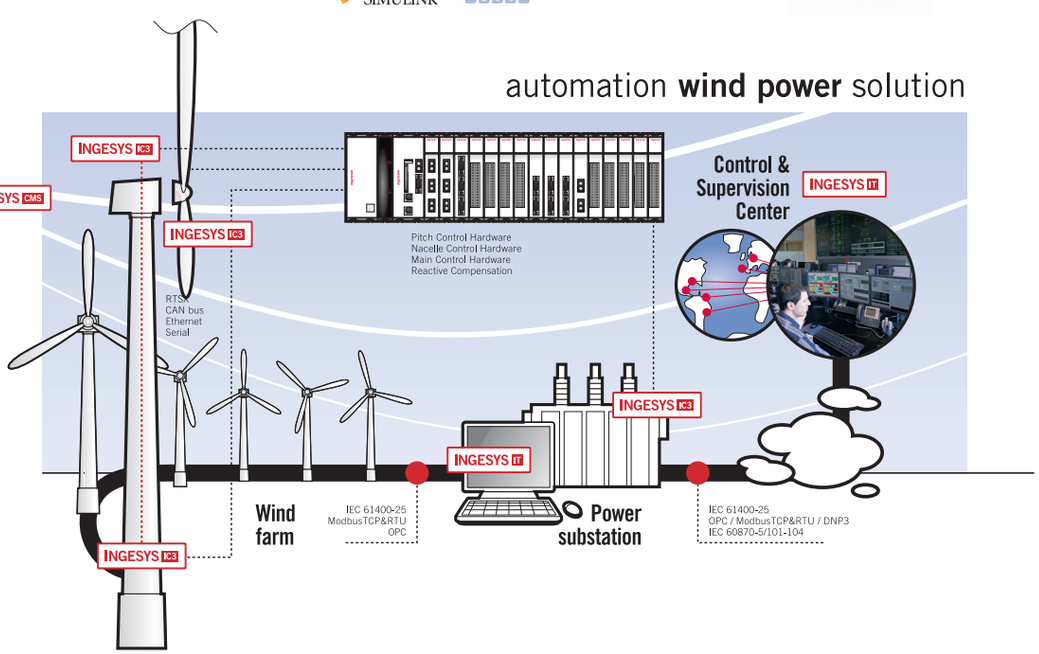
All of the products developed by INGETEAM provide client training and a direct customer support service offered by highly-qualified, dedicated personnel.

MATLAB SIMULINK · PROFIBUS · CANopen · Modbus-IDA · EtherCAT





automation **wind power** solution



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The technical data in this catalogue is subject to change without prior notice. FY05ENER01_A/0912 NJC