



An Overview



REGULATEURS EUROPA has over 50 years experience of providing control solutions ranging from single diesel engine governors through to complete control systems for multi-generator installations.

REGULATEURS EUROPA (RE) specialises in design, engineering, manufacturing, installation and commissioning services to meet the customer's specific requirements including Consultancy and Surveying services to assist in achieving a working solution.

REGULATEURS EUROPA's past projects have provided generator and power control solutions for many different applications. Included banks, hospitals, hotels, telecommunications centres, airports, water treatment works, sewage treatment works, nuclear power stations and process plants. Customers for these systems are not only located in the UK and Europe but around the world; from Brazil to India and Ireland to Australia.

Products – Control Systems

REGULATEURS EUROPA has the facilities to design, engineer and manufacture control systems to meet the customer's specific requirements for diesel driven generator sets.

REGULATEURS EUROPA has provided bespoke control systems for previous projects involving MAN, Rolls Royce, Wartsila and Dorman engines and have included control systems for spark ignition, dual fuel and heavy fuel engines. End users include many water utilities, banks, hospitals, and military organisations.

The control systems are designed using the latest PLC and HMI technology and, where appropriate, incorporate the fieldbus networks and serial communications in an attempt to reduce the amount of installation cabling.

The functionality of single control panels or complete control systems is tailored to meet the customers' and end users needs:

Local Instrument Panels

- Self powered tachometer
- Direct reading pressure gauges
- Direct reading temperature gauges
- Local start/stop controls

Local Engine Control Panels

- Start/stop control
- Mechanical shutdown control
- Engine governing
- Alarm indication
- Engine parameter data acquisition
- Battery backed for black start operation

Remote Engine Control Panels / Control Desks

- Remote start/stop controls
- Speed/volts control
- Alternator excitation control
- Manual/auto synchronising



- Generator electrical protection
- Alarm indication
- Electrical data acquisition
- Breaker status indication
- Digital/analogue instrumentation
- Mimic display



Power Management Systems

- Automatic mains failure
- Generator call-up/shutdown
- Active load sharing
- Reactive load sharing
- 1st stage fault replacement
- Generator synchronising control
- Mains synchronising control

- Distribution system monitoring & control
- Load shedding & application
- Frequency control
- Voltage control
- Peak lopping control
- Base load control
- Power factor control
- Import/export control



The control systems can be supplied with a comprehensive set of documentation in electronic or hard copy format including layout/installation drawings, parts schedule, circuit diagrams, external connections, PLC I/O schedules, PLC data schedules, PLC ladder diagrams and instruction manual.

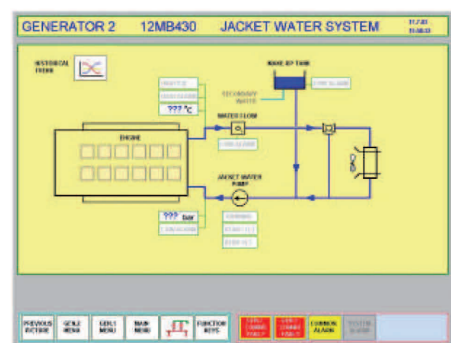
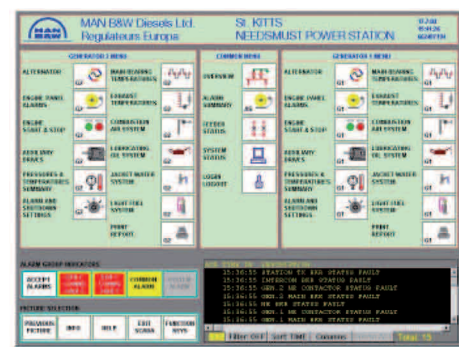
In addition to the generator control systems detailed above, REGULATEURS EUROPA can supply control panels for the control of diesel driven pumps for medias including water and oil.



REGULATEURS EUROPA can also design, configure and supply SCADA systems for other applications including building management systems and process control.

SCADA systems are designed using the latest Windows®* based application software including features such as:

- Data logging
- Real time & historical trending
- Graphical & animated displays
- Alarm monitoring
- Project reporting
- Event detection
- Security protected
- Remote monitoring via internet access
- SMS text messaging



Products – Scada

REGULATEURS EUROPA can design, configure and supply SCADA systems to meet the specific requirements of the customer to provide control and monitoring of generator installations and associated distribution from simple stand alone HMI's through to multi-terminal networked systems.

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Products – Governors

REGULATEURS EUROPA manufactures a range of mechanical and electronic governors and hydraulic actuators, which can be configured to suit the specific application.

The mechanical governor range covers work outputs within the range 8 – 250 ft lbf (11 – 339 Nm) and operating speeds between 160 - 3000 rpm and can be supplied fitted with various speed setting and fuel limitation controls to suit the application.

The **Viking35** electronic governor can be supplied with project specific software to provide a complete engine management system or standard diesel power plant (DPP) software. In its standard format with DPP software, the Viking35 provides diesel engine governing control for most medium & high speed diesel engines with enhanced features as detailed.

- Dual dynamics
- Coupling break detection
- Actuator wire break detection
- Four slope programmable speed ramp
- Load variable gain function



- Second speed variable gain function
- Additional fuel limit function
- Isochronous and droop load sharing
- Start fuel limit function
- Base load operation

These features are customer configurable to meet specific applications via the optional Viking Operator Interface or via a PC installed with Viking Vision Windows®* based software.

To compliment the Viking35 electronic governor, REGULATEURS EUROPA manufactures a range of hydraulic actuators based on the mechanical governors and with similar work outputs and speed range. For added security there are models with a ballhead governor in reserve for power failure conditions. These can be arranged to work on a lowest or highest wins basis.



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Type	Output ft lbs (Nm)	Speed r/min	Application
400	9 (12), 18 (24), 37 (50)	900 - 3000	High performance generator sets Fast transient response
1100	8(11), 15(20), 25(34), 34(46), 40(53)	300 - 1600	General purpose Suitable for almost all applications
1500	120(162), 200(271), 250(339)	160 - 1150	General purpose High power, medium speed diesel engines
1800	60(81), 80(108)	200 - 1200	General purpose Medium speed diesel engines
2100	8(11), 12(16)	300 - 1800	General purpose Smaller diesel engines

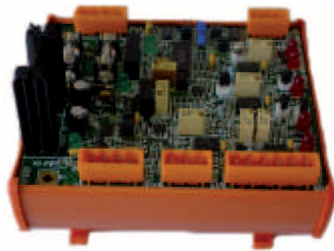
Complimentary Products

Speed Switches

REGULATEURS EUROPA manufactures a range of speed switches for speed detection of rotating equipment which can be supplied with passive or active perception heads if required.

The REGULATEURS EUROPA speed switch range includes the following key features:

- 2 or 4 level speed switch outputs
- Transistor or relay outputs
- Pulsed input signal from passive or active perception heads
- LED indication of activated levels
- 0-20 or 4-20 mA speed output
- Overspeed and idle test facility
- Continuity protection of input signal
- DIN rail mounting
- Solid state electronics
- 24 Volt DC supply



ICENI Distributed I/O Modules

The ICENI range of distributed I/O modules can be used to communicate with PC or PLC equipment or extend the range of the RE Viking35 ECU. The DIN rail mounted modules are designed to be cost effective and easy to configure, via a colour display keypad, without the need for a program-



mer or laptop. "ICENI" has been built to a high specification to encompass the extended temperature range of an engine environment but be equally suited to a much wider role; both to enhance RE Control and Monitoring Solutions or as a product for other OEMs.

- Open protocols to PLCs, PCs etc.
- Extended temperature range (-20 to +70 °C)
- Inbuilt user interface for commissioning and support
- Robust construction
- Independent electrical isolation
- Redundant power supply capability
- "Plug and play" automatic configuration
- Cost effective solution for a wide range of applications

Services – Surveying and Consultancy

REGULATEURS EUROPA has a team of highly experienced project engineers available to survey your existing generator installation and electrical power distribution network and provide a detailed report. The report will highlight any problems and offer solutions to correct and improve the installation to increase reliability and enhance the control functionality.

Surveys can be tailored to suit the customer's requirements and can cover all aspects of the generator installation including:

- Engine protection
- Electrical protection
- Engine governing
- Excitation control
- Manual control functions
- Auto control functions
- Synchronising
- Load control
- Neutral earthing
- PLC systems
- SCADA systems
- Serial comms networks



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REGULATEURS EUROPA can also offer a Consultancy Service to advise customer on all aspects of new generator installations.



Services – Control Panel Refurbishment and Upgrade

REGULATEURS EUROPA offer refurbishment and upgrade services for customers existing generator and electrical power distribution control systems to extend their supportability and functionality.

Our team of project engineers can design and implement modifications to the existing control systems to suit the customer's requirements including the following:

- Additional monitoring
- Relay logic replacement with PLCs
- Alarm annunciator replacement with
- HMI
- PLC replacement due to obsolescence

Control systems can also be modified to include additional functionality such as mains parallel operation, back synchronising, peak lopping and export control.

Detailed drawings of the required modifications are provided prior to the work being carried out for customer approval. REGULATEURS EUROPA also offers a re-drawing service for customers existing drawings including any modifications.

REGULATEURS EUROPA offer diesel engine governor upgrades utilising its own range of electronic governors and

hydraulic actuators, thus providing improved emissions, overall fuel savings, improved transient load response and lower lifetime maintenance costs.



Services – Installation and Commissioning

REGULATEURS EUROPA has a team of highly experienced field project engineers available to install and commissioning new equipment, refurbish existing equipment or provide fault diagnosis of existing generator control systems.

As part of the installation and commissioning activities, REGULATEURS EUROPA can provide method statements, risk assessments, commissioning procedures and CDM requirements where applicable.

REGULATEURS EUROPA's field project engineers can also provide on-site training for customer's operators for new installations and refurbished equipment.



Visit our web site at www.regulateurseuropa.com or ask for details of our marine and rail traction control systems.

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