

Oral Presentation



By

Colin K McCord

FG Wilson Timeline

- 1966:** Established in an old textile mill in Belfast.
- 1970:** Start to focus on design & manufacture of diesel generating sets.
- 1991:** FG Wilson headquarter moved from Belfast to Larne.
- 1994:** FG Wilson became part of multinational Emerson Electric group.
- 1996:** A \$25million joint venture between Emerson Electric & Caterpillar, lead to FG Wilson assembling most of Caterpillars generating set range.
- 1999:** Caterpillar acquired 100% equity of FG Wilson.

Where Are FG Wilson ?

Larne



- 700,000 square feet.
- 1,500+ Employees.
- Largest genset assembler in Europe.

Monkstown



- 300,000 square feet.
- 400+ Employees.
- fabrication, paint and canopy assembly.

Springvale



- 230,000 square feet.
- 400+ Employees.
- Largest most modern powder paint facility in Europe.

Nature of Business

FG Wilson produce a wide range of diesel generating sets converting power from 8 to 6,500 kVA.



The company is one of the largest employers and exporters in Northern Ireland with a workforce of over 2,500 and yearly sales in excess of 35,000 generating sets, which are exported to more than 170 countries worldwide.

FG Wilson lies comfortably within the UK's Top 100 Exporters and won the prestigious Queen's award for export achievement three times last decade.

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FG Wilson Worldwide

FG Wilson is a multinational company exporting to more than 170 countries worldwide.

The company is able to operate on a worldwide scale because of its extensive network of subsidiary offices and dealers.



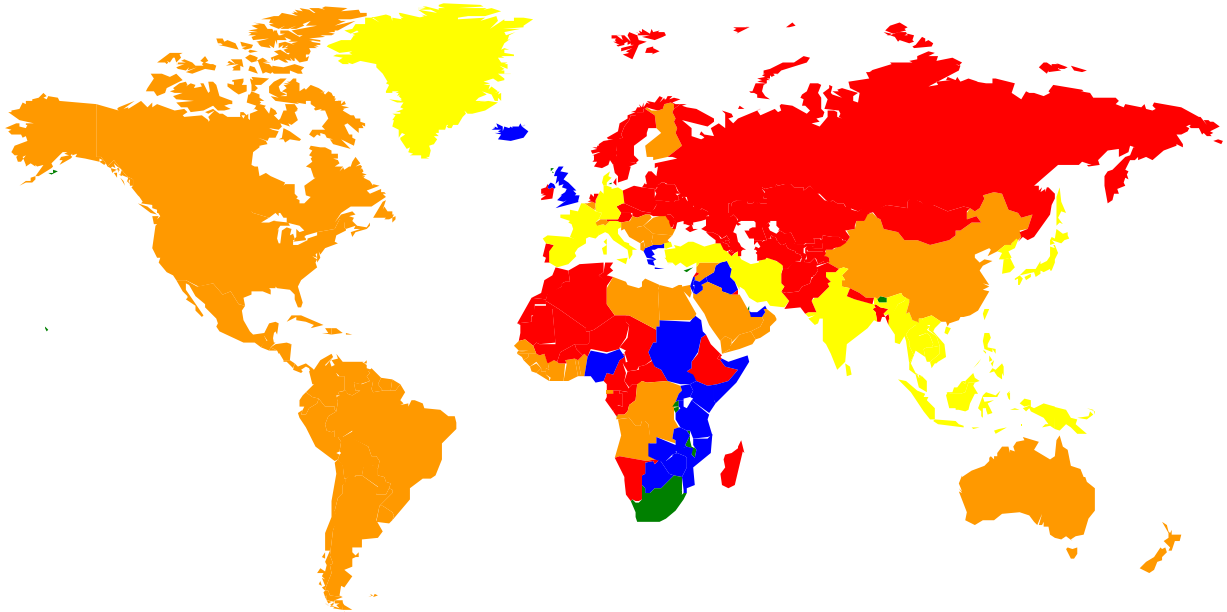
In addition to the manufacturing plants, the company has 14 major offices located around the world.

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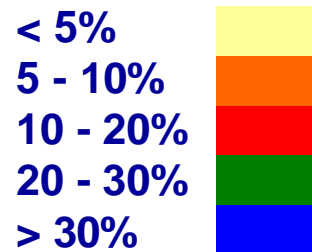


FG Wilson Market Position



Main Competitors

- Cummins
- DDC
- Geko
- Honda
- Kubota
- Caterpillar

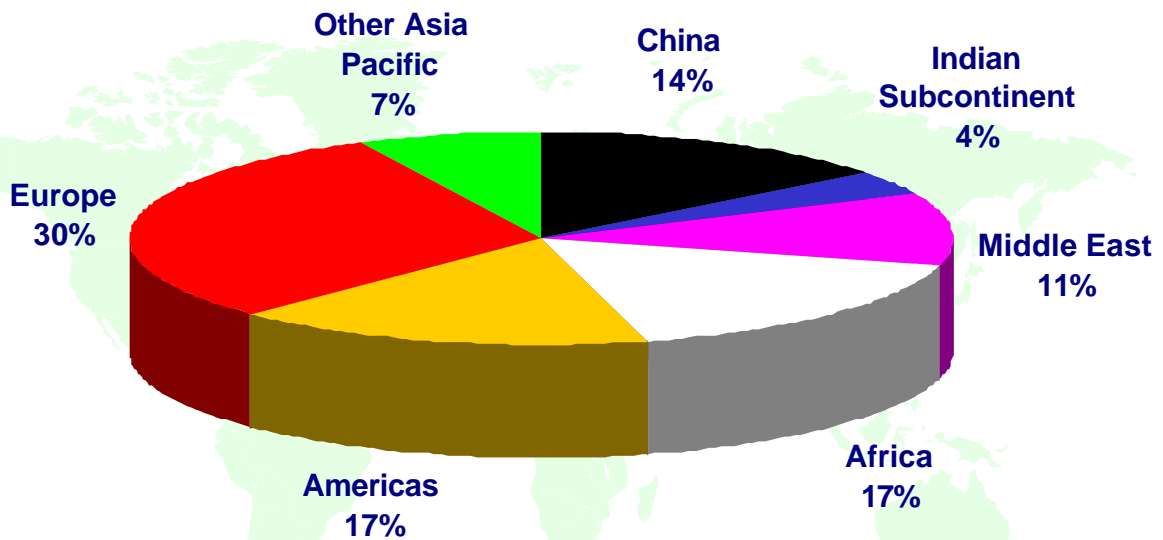
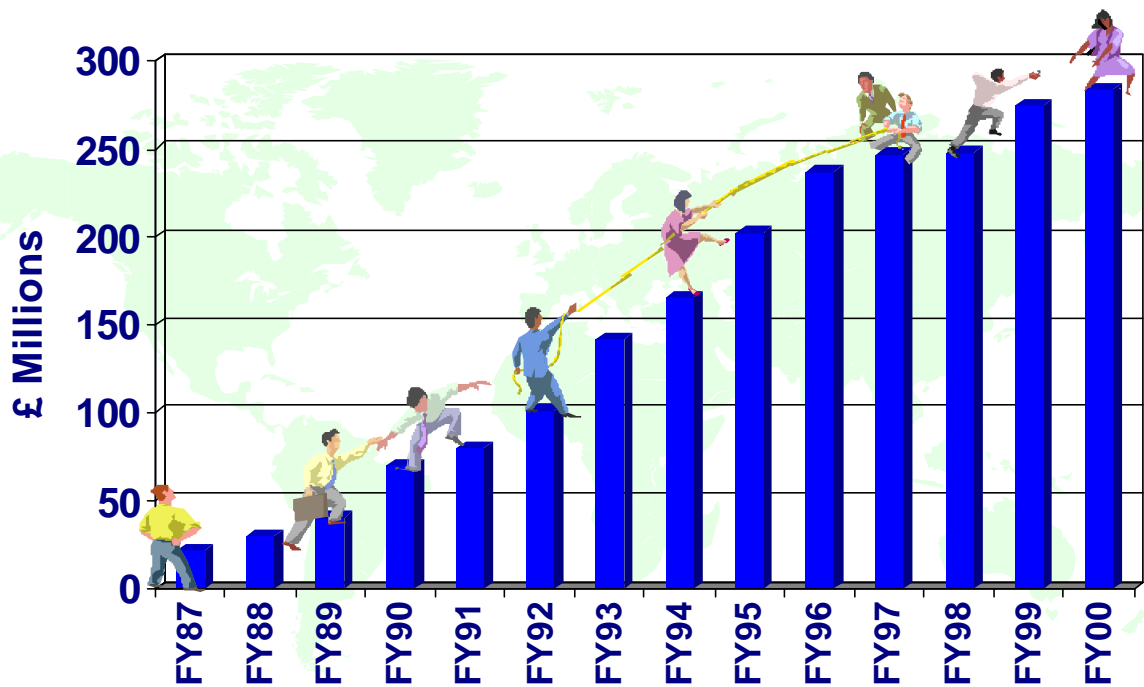


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How is FG Wilson going ?



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Products, Suppliers and Customers

Products include diesel generating sets, base frames, trailers, fuel tanks, exhaust silencers, control panels, switchgear, acoustic ducts, canopies & container type enclosures.

Suppliers include Perkins, Leroy Somer, Covrad, Bearward, Elite Electronics, UK solenoid, Crompton, ABB, RS Components and IMO.

Customers include private enterprises, hospitals, factories and countries in the wake of natural disasters.



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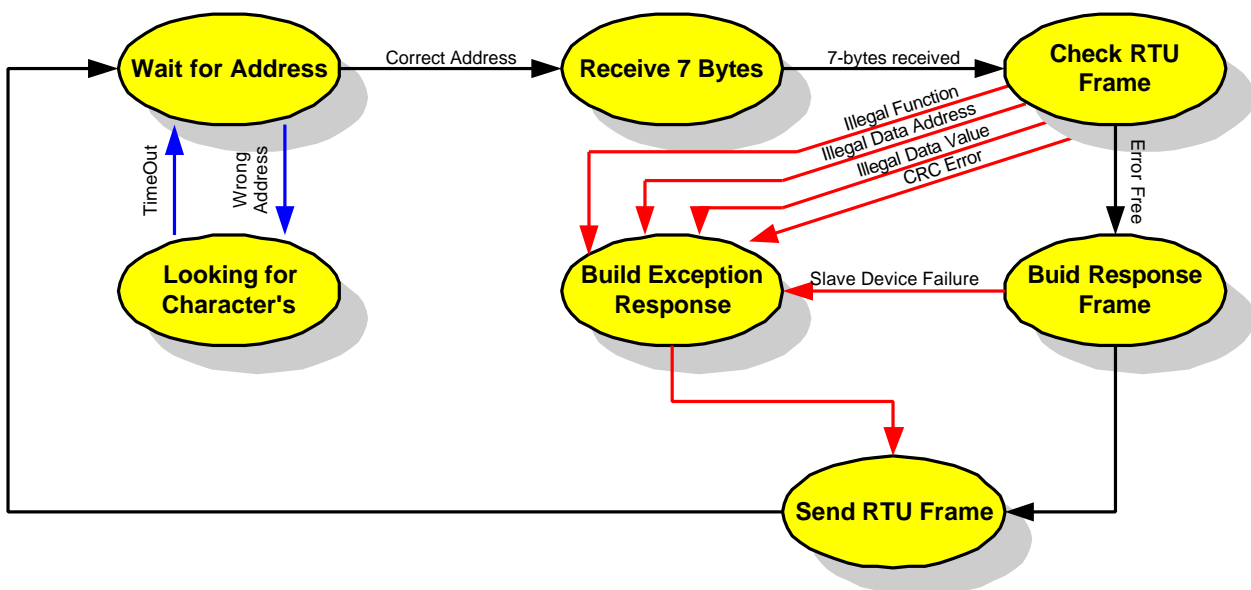


Work

- ModBus Communication Protocol.
- Functional testing of 3 Modular control units.
- Tel panel communication test program.
- Access 4000 database program.
- Access Annunciator test program.
- Serial generator for GenAccess 1.1.
- Access 4000 language text editor.
- Load program.
- Design of relay board PCB.
- ModBus & A4k Database technical reports.
- Functional and voltage transient tests of Tel Panel.

ModBus Communication Protocol for Access 4000

- Written in Turbo C for dos 3.0



ModBus protocol is a messaging structure, widely used to establish master-slave communication between intelligent device.

Later I wrote the windows based master program GenModbus using MS Visual C++ 6.0.

Access 4000 Database Program

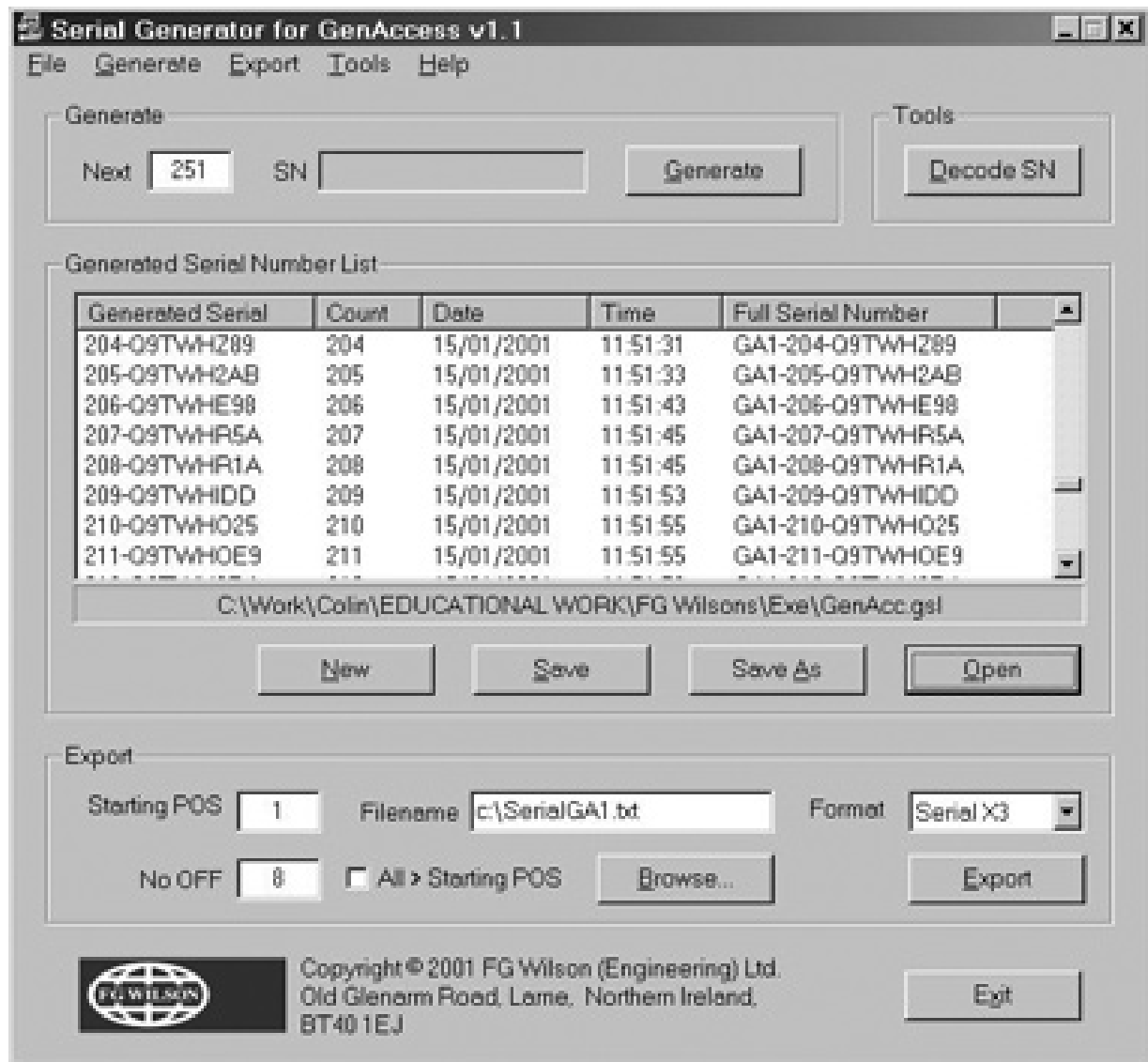
- Written in Microsoft Visual C++ 6.0.
- Microsoft Access *.MDB file used as a data source which was accessed by the program using DAO.
- This database contains the configuration of every Access 4000 sold.
- Up to 30 engineer use the program daily, to access the data in real-time throughout the local area network.
- Configuration and text file can be exported from the database, which then are uploaded directly to the Access 4000 control panel using my load program.
- Detailed technical report was written.

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Serial Generator for GenAccess v1.1



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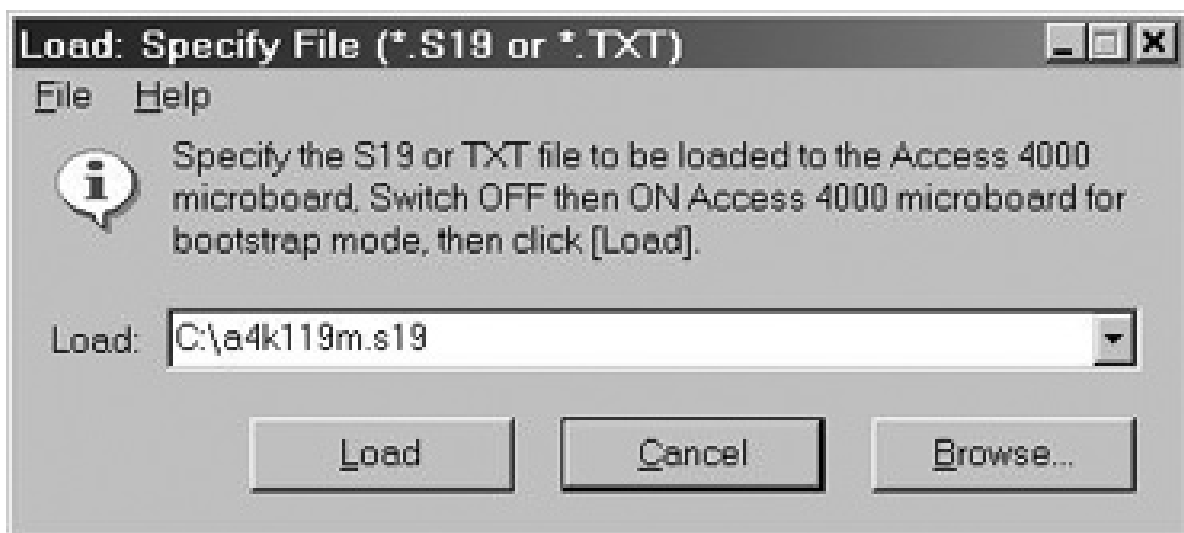


Load Program

- Written in Microsoft Visual C++ 6.0.
- Replaces old MS dos based version.
- Released and in-use throughout the world.
- Easy to use.

Function: -

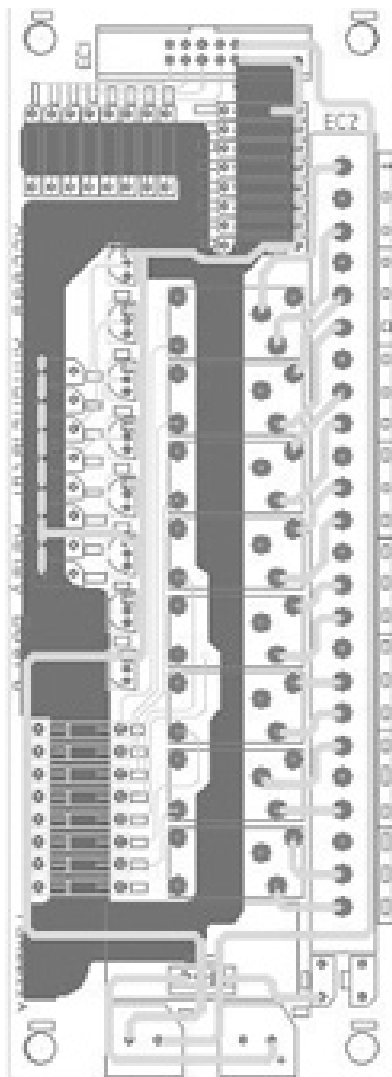
- Load main code (S19) to Access 4000.
- Load Configuration (TXT) to Access 4000.
- Load Language (TXT) to Access 4000.



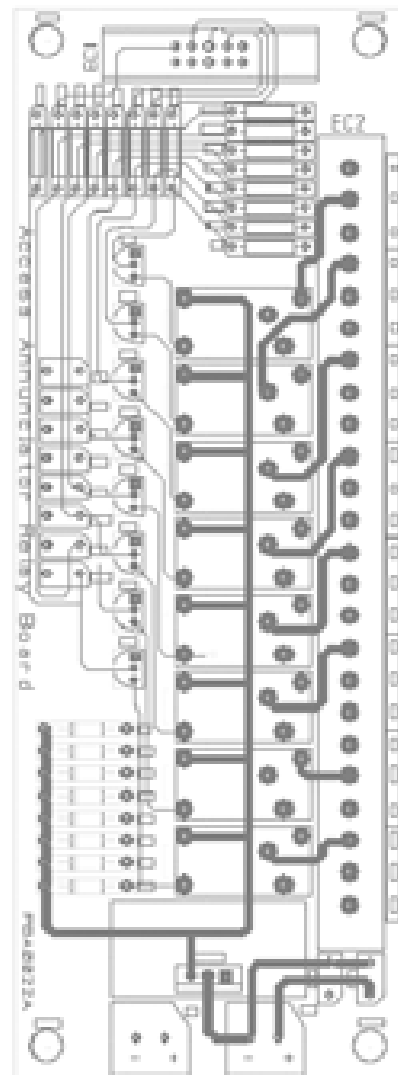
Design of Relay Board PCB

- Designed using Zuken CADStar 4.5.

Top Layer



Bottom Layer



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Other Work Activities

- I attended various meetings: (e.g. Training and team briefs).
- Demonstration of ModBus communication protocol for several FG Wilson customers.
- Population and testing of prototype PCBs.
- Costing of PCB components (e.g Access Annunciator).
- It was my responsibility to order components and build 5 prototype relay boards.
- Design of mail merge document for printing GenAccess labels.
- Design of MS Word template for printing Access Annunciator Labels.
- Design of Access 3000 Configuration Program.

Skills Acquired

- C Programming using Borland Turbo C 3.0.
- Microsoft Visual C++ 6.0
- Zuken CADstar 4.5
- AutoCAD Release 14
- Report Writing
- People Skills
- Electronic Workbench 5.0a
- Embedded software
- Soldering.
- Use of electronic metering equipment such as Multimeters, Oscilloscopes, etc...
- Internet searching.
- Technical jargon.
- Communication.
- Use of a dairy to keep track of meeting etc...
- Working as a team.

Access 4000 Control Panel

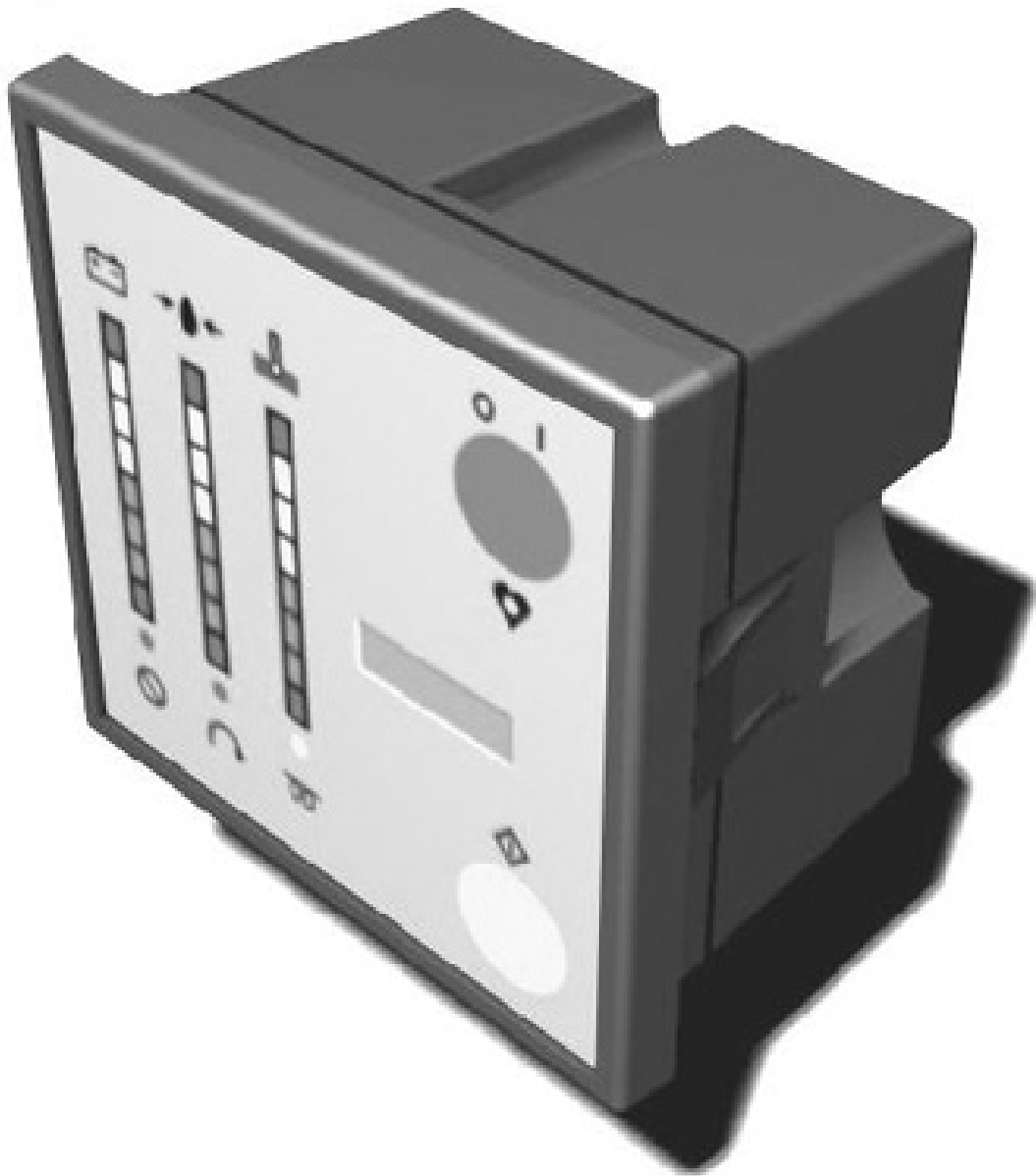


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Access 2000 - Autostart Module

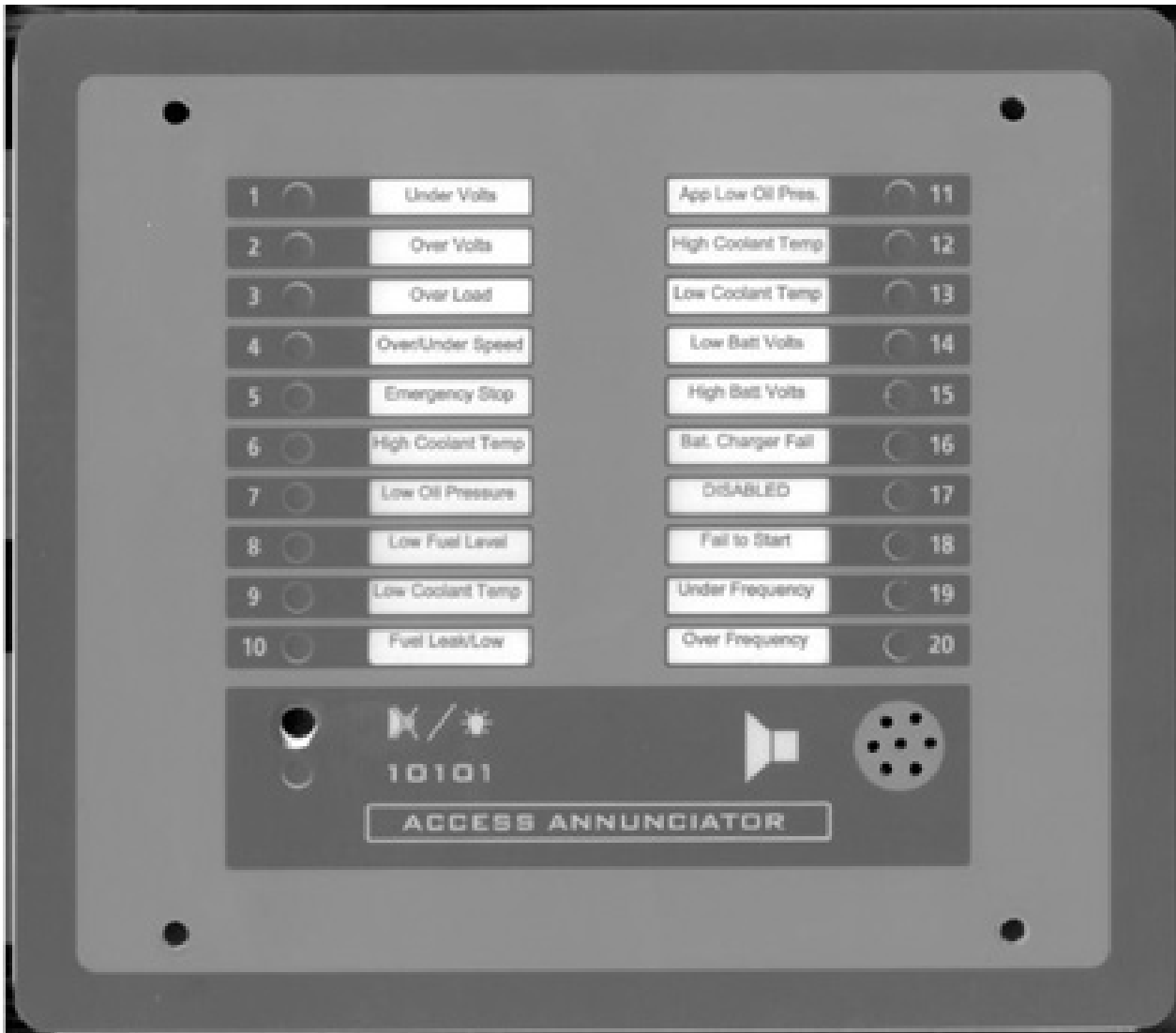


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Access Annunciator



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