Fault32

Calculation of Network Currents and Voltages under Fault conditions

Fault32 - For Windows XP / Vista & 7.0

A powerful easy to use tool for determining fault currents magnitudes, the distribution of fault currents in a network, and the corresponding network voltages. Calculates the standard balanced and unbalanced faults, with the option of including the effect of fault impedance on the fault currents. Used by engineers and technical personnel responsible for planning, design, operation and protection of electric power networks.

Use **Fault32** *for analysing the following types of power system faults in both radial and fully meshed networks:*
- Line to Earth
- Line to Line
- Line to Line and Ground
- Three Phase

Faults may be applied to any node on the system or anywhere (from 5% to 95% of the length) along any line in the network.

Optionally, the effect impedance in the fault can be included in the calculation either for conformity with AS3851/IEC 909, or to take into account voltages known to differ appreciably from the nominal voltage.

Application

Fault32 is used to:
- Assess fault currents for the design of protective grounding systems
- Determine ratings required for plant and equipment (Switchgear etc)
- Design protection systems
- Determine protection device settings
- Review protection system performance after faults

Features

Fault32 takes full account of phase shifts through transformers and caters for the entry of data on 3-winding transformers from nameplate details. Data files can be entirely created within the program, or externally. Data used may reside in external databases, or GIS systems, in some circumstances.

Versions Available

Fault32 is available in two versions. The 200-node capacity version is suited to smaller networks, such as mines and industrial plants and for consultants whose works is generally limited to such networks. The 3000-node version meets the needs of utilities and consultants whose projects may include design of utility networks or very large industrial plants. A special Education edition is available for Universities and similar training institutions.


Ideal Training Tool

Fault32 is available is ideal for training design, protection & operating personnel, technicians and undergraduates who need to understand how a power network performs under fault conditions.

Application

Fault32 calculates fault current magnitudes and their distribution in the network and the corresponding network voltages for the following types
- Phase to Earth
- Phase to Phase
- Phase to Phase and Ground
- Three Phase
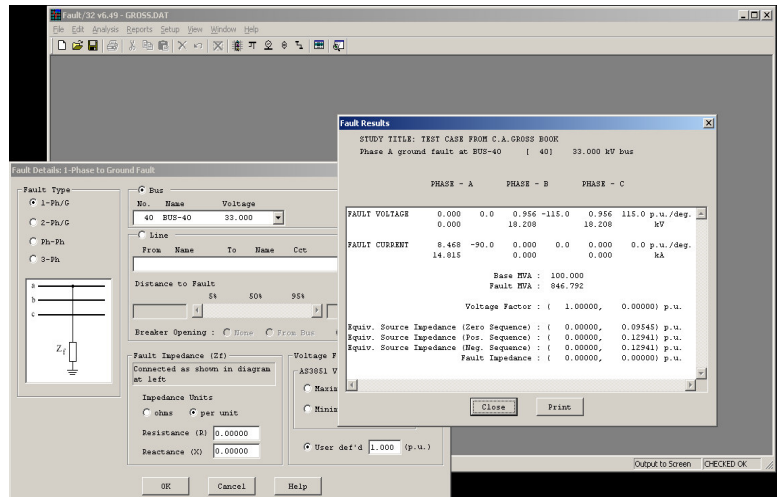
Fault32

Calculation of Network Currents and Voltages under Fault conditions

Fault32 - For Windows XP / Vista & 7.0

Features

- Node/Bus or line faults can be applied
- Line faults can be located from 5% to 95% along the length of the line
- Option to set breaker open condition with line faults
- Optional fault impedances
- User selected option to work with Feeder and Grounding impedance in ohms per unit
- Optional automatic conversion of existing data when Feeder & Grounding Impedance option is changed from ohm to per unit, or vice versa. This allows data to be entered in either units as required.
- Extensive support for data entry and calculations conforming to requirements of Australian standard AS3851 "The calculation of short circuit currents in three phase a.c. systems
- Calculations validated against standard text book examples and AS3851. Files provided for user verification
- Handles transformer phase shifts for various start and delta winding combinations
- 3-winding transformers directly supported with data entry based on "Nameplate details"
- Results available in Phase or Sequence values(i.e Phase A, B & C or Positive, Negative & Zero sequence)
- Fault currents reported in kA, MVA and per unit of system base
- Quick and easy "switching" (i.e setting status) of network component to be IN or OUT of service
- All data files needed can be created and edited within Fault32 or can be sourced externally – for example, from Datashares' "ViewNet" (Database of network Impedance and Network connectivity) software or, in some circumstances, data can be accessed from external databases, GIS systems etc. (Details on accessing external data sources available on request)
- Feeder to store and retrieve common line/cable impedance data. Data stored in ohm/unit length and automatically converted to user selected units for Line/Feeder data, i.e ohms per unit
- Transformer database to store and retrieve impedance data. Any transformers details available in the Transformer details available in the Transformer data editor in Fault32 can be directly added to the transformer database
- Database categories can be defined to group entries and simplify descriptions and selection
- Copy and Paste to duplicate any network component (ie Node/Bus, Source, Transformer, Line/Feeder)
- Tool-bars for quick access to all main functions in the program
- Context (Right mouse button) menus when in data editors for easy access to editor functions
- Extensible data validity checking
- Data is compatible with Datashares' PowSys32 and Relcord32
- Network wide reports, or reports based on area & zone identification, as well as the Bus/Node list (a user selected list of nodes)
- Graphical and tabular presentation of results
- Reports can be directed to Screen, Printer or File
- Reports to file are ASCII text files able to be imported into spreadsheets for further processing, graphing, word processors for inclusion in report documents
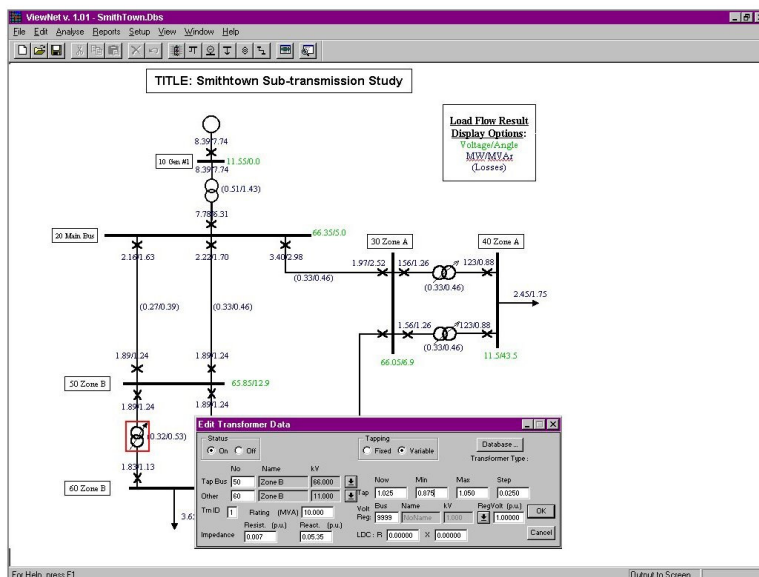
System Requirements

- IBM compatible computer with Windows XP / Vista or 7.0
- At least the minimum memory required by the operating system
- Approximately 16mb Hard disk space
- Printer or plotter (Colour preferred)

Edition / Capacity	200 Node	3000 Node
Nodes / Buses	200	3000
Sources	50	600
Transformers	150	1500
Lines/Feeders	200	3000
Larger systems sizes may be available, by arrangement		

Power Consultants Ltd NZ 64 9 4440663
Power Consultants PTY Ltd. Aus. 61 2 99296019
email: Info@Datashare.com.au - website: www.datashare.com.au

24/02/2010