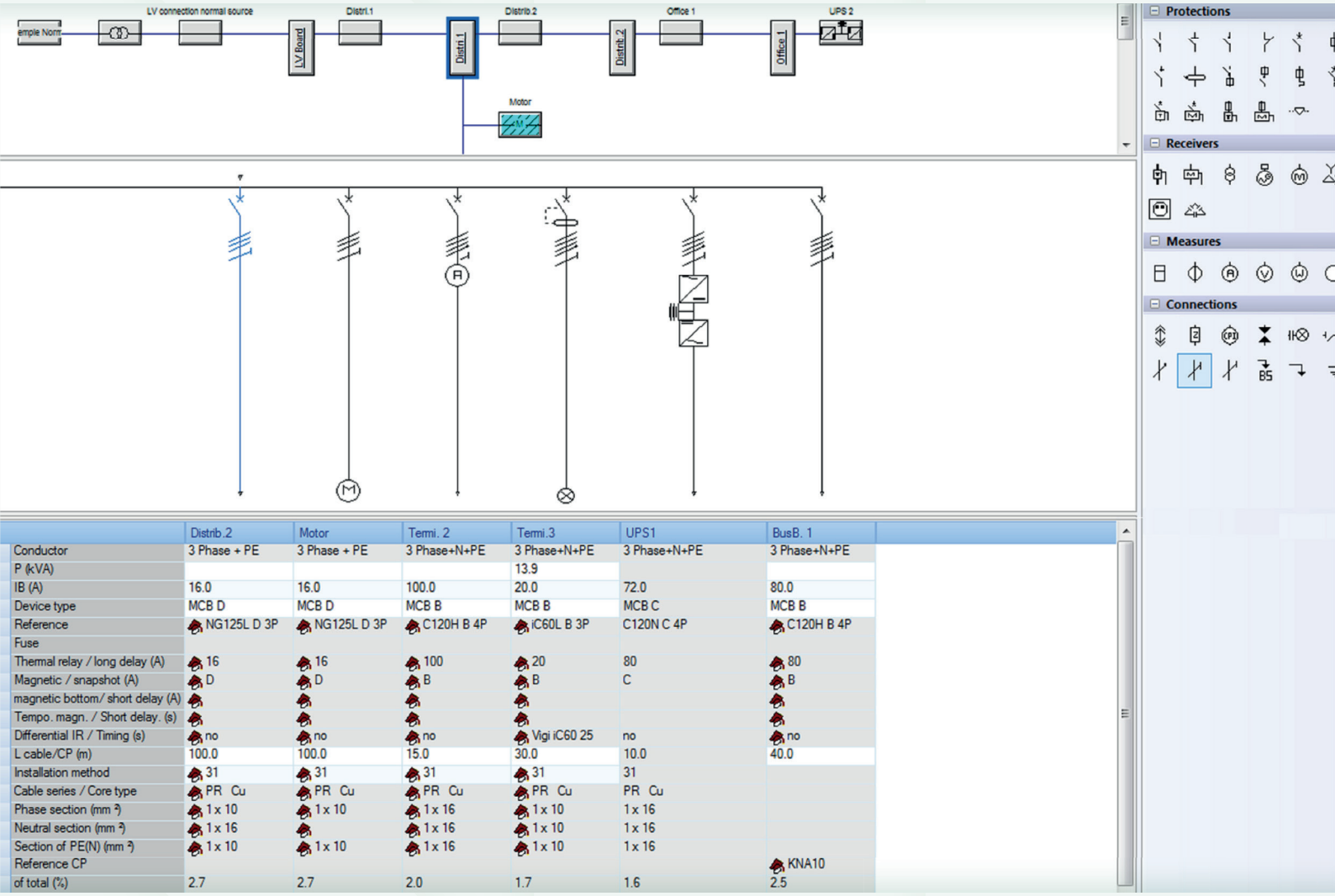
SEE Calculation



	Distrib.2	Motor	Termi. 2	Termi.3	UPS1	BusB. 1
Conductor	3 Phase + PE	3 Phase + PE	3 Phase+N+PE	3 Phase+N+PE	3 Phase+N+PE	3 Phase+N+PE
P (kVA)				13.9		
IB (A)	16.0	16.0	100.0	20.0	72.0	80.0
Device type	MCB D	MCB D	MCB B	MCB B	MCB C	MCB B
Reference	NG125L D 3P	NG125L D 3P	C120H B 4P	iC60L B 3P	C120N C 4P	C120H B 4P
Fuse						
Thermal relay / long delay (A)	16	16	100	20	80	80
Magnetic / snapshot (A)	D	D	B	B	C	B
magnetic bottom/ short delay (A)						
Tempo. magn. / Short delay. (s)						
Differential IR / Timing (s)	no	no	no	Vigi iC60 25	no	no
L cable/CP (m)	100.0	100.0	15.0	30.0	10.0	40.0
Installation method	31	31	31	31	31	
Cable series / Core type	PR Cu	PR Cu	PR Cu	PR Cu	PR Cu	
Phase section (mm²)	1 x 10	1 x 10	1 x 16	1 x 10	1 x 16	
Neutral section (mm²)	1 x 16		1 x 16	1 x 10	1 x 16	
Section of PE(N) (mm²)	1 x 10	1 x 10	1 x 16	1 x 10	1 x 16	
Reference CP						KNA10
of total (%)	2.7	2.7	2.0	1.7	1.6	2.5

Dedicated software for the design
of low voltage electrical installations

IGE+XAO GROUP

Shaping the Future
of the Electrical PLM,
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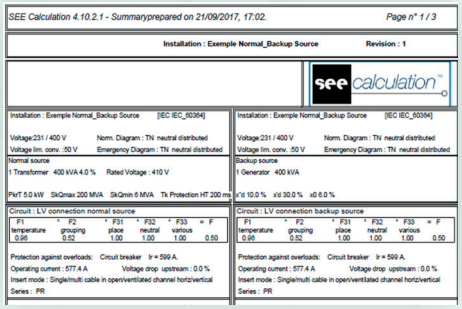
SOFTWARE PACKAGE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Installation : Exemple Normal_Backup Source Revision : 1

see calculation

Installation : Exemple Normal_Backup Source [IEC IEC_60364]

Voltage:231 / 400 V Nom. Diagram : TN neutral distributed
Voltage lim. conv. :50 V Emergency Diagram : TN neutral distributed

Normal source
1 Transformer 400 kVA 4.0 % Rated Voltage : 410 V

PWT 5.0 kW SkQmax 200 MVA SkQmin 6 MVA Tk Protection HT 200 ms

Circuit : LV connection normal source

F1 temperature	* F2 grouping	* F31 place	* F32 neutral	* F33 various	= F
0.96	0.52	1.00	1.00	1.00	0.50

Protection against overloads: Circuit breaker Ir = 599 A
Operating current : 577.4 A Voltage drop upstream : 0.0 %
Insert mode : Single/multi cable in open/ventilated channel horiz/vertical
Series : PR

Installation : Exemple Normal_Backup Source [IEC IEC_60364]

Voltage:231 / 400 V Nom. Diagram : TN neutral distributed
Voltage lim. conv. :50 V Emergency Diagram : TN neutral distributed

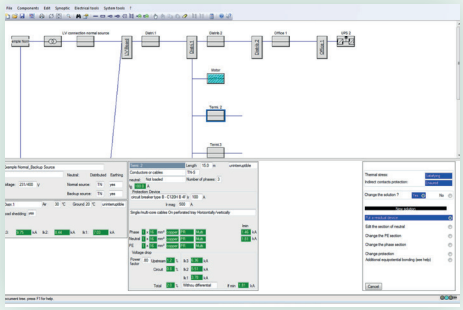
Backup source
1 Generator 400 kVA

x'd 10.0 % x'd 30.0 % x0 6.0 %

Circuit : LV connection backup source

F1 temperature	* F2 grouping	* F31 place	* F32 neutral	* F33 various	= F
0.96	0.52	1.00	1.00	1.00	0.50

Protection against overloads: Circuit breaker Ir = 599 A
Operating current : 577.4 A Voltage drop upstream : 0.0 %
Insert mode : Single/multi cable in open/ventilated channel horiz/vertical
Series : PR



A PROFESSIONAL PACKAGE

SEE Calculation is a professional package for the design and verification of all types of low voltage electrical installations in compliance with the IEC 60364 standard.

SEE Calculation notably enables, quickly and easily:

- Cable cross-section calculation,
- Voltage drop calculation,
- Sources and protection sizing,
- Short-circuit current calculation,
- Thermal stress limits verification,
- Protection against indirect contacts.

COMPLIES WITH IEC 60364

Essential package to handle current International standards requirements.

SEE Calculation performs calculations, automatically generates the corresponding synoptic and single line diagrams and publishes a complete file containing all these elements to verify compliance.

EASY-TO-USE

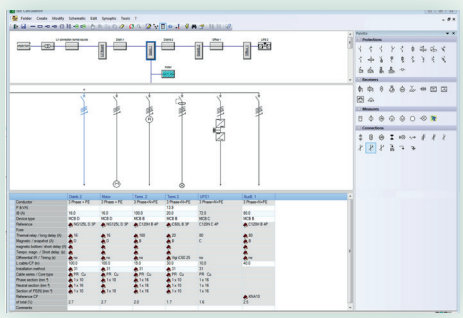
The ideal tool even for occasional use.

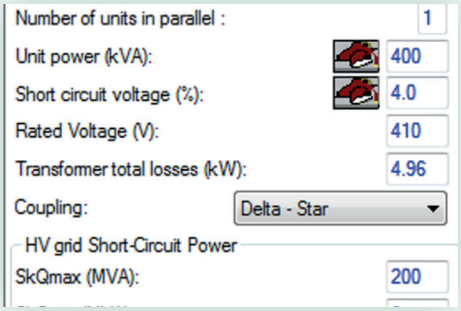
Particularly user-friendly and intuitive, **SEE Calculation** walks users through the steps required to define and document the project, offering a well-defined and easy to use help system.

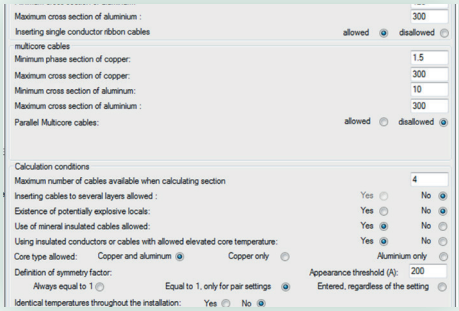
SEE Calculation offers different solutions to establish the best technical and economical choices to be implemented.

The user follows the progress of the design in real-time on the synoptic, which is generated automatically as the input dialogue window is validated. The synoptic can also be used to copy, move or sort the circuits. The power distribution single-line diagram, is automatically generated and can be completed with a library of standard symbols.

Editing from the single-line diagram view, saves time by allowing access to all the circuits simultaneously and simply editing their properties without having to repeat the multi-stage wizard. The copy/paste functions avoid re-creating circuits which are regularly used.







COMPLETE AND EFFECTIVE

SEE Calculation was designed to quickly and efficiently handle any type of low voltage electrical installation, up to 1000V, whatever the level of complexity. It calculates conductors cross-sections, voltage drops, short-circuit currents, and sizes sources and protection, etc.

SEE Calculation takes into account, in real-time, the source configuration and operation, manages the protection selectivity and back-up, takes into account potentially explosive areas, mineral insulated cables, and allows the calculation to start from a given value of short circuit current (IK).

ADAPTABLE

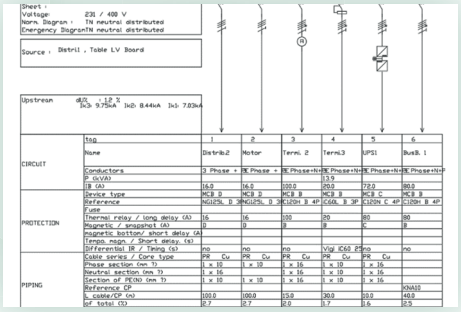
Created for designers of electrical distribution systems for industrial and commercial buildings, **SEE Calculation** is used by both engineering firms and installers for new projects and maintenance for building owners. **SEE Calculation** adapts to the habits of each user. A custom configuration file allows different working preferences to be taken into account (brand equipment, maximum cable cross sections, presentation of published documents, etc.)

OPEN

SEE Calculation is delivered with multi-manufacturers protection data base including (ABB, Gewiss, Hager, Legrand, Moeller, Schneider Electric, Siemens, and more), containing more than 23,000 references of regularly updated circuit breakers. This catalog can be edited by the user. Schematics, created in **SEE Calculation**, can be exported to DXF format.

RELIABLE

SEE Calculation allows the user to choose from certified standard values. Operations are linked to ensure designs always adhere to the IEC 60364 standard rules. When the result of a calculation indicates non-compliance to the standards, the user is guided to the possible solutions.



SEE Calculation functions
Intuitive user interface
Simultaneous display of properties input dialog window and the system synoptic
Editable single-line diagram
Power requirement
Calculation note and summary
Multi-manufacturer catalogue containing more than 23,000 references
Add or change protection properties
Export Single-Line Schema to DXF (AutoCAD)
Export of circuit characteristics to a database manager or spreadsheet (Excel, Access)
Compatibility: Windows 7, Windows 8 in 32 bits and 64 bits versions
Possibility of installation on a computer network
Possibility of using Internet licensing
CALCULATION PARAMETERS TAKEN INTO ACCOUNT
Protection Selectivity
Protection Back-up
Back-up Source
CALCULATION CONDITION
Areas at risk of explosion (French factor BE3) (simplified factor)
International Standard IEC 60364
CENELEC TR 50-480
Calculation on a predetermined value of Ik
Calculation from Public utility supply (monitored power source)
Calculation for Residential Installation (limited power)
Single and multicore cables up to 630mm^2
Conductors up to 630mm^2
INSTALLATION
TN (TN-S et TN-C), IT, TT Earthing systems
Taking into account third order harmonics
Taking into account the symmetry factor
Types of circuits: cable, busbar trucking systems, mixed (Cable and Busbar), with transformer, with an UPS (Uninterruptible Power Supply), Motor.
CHARACTERISTICS
Supply voltage up to 1000V
Voltage drop Calculation with predefined maximum value
Help for problem solving
Calculation of reactive energy compensation
Copy / Paste from one installation to another

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