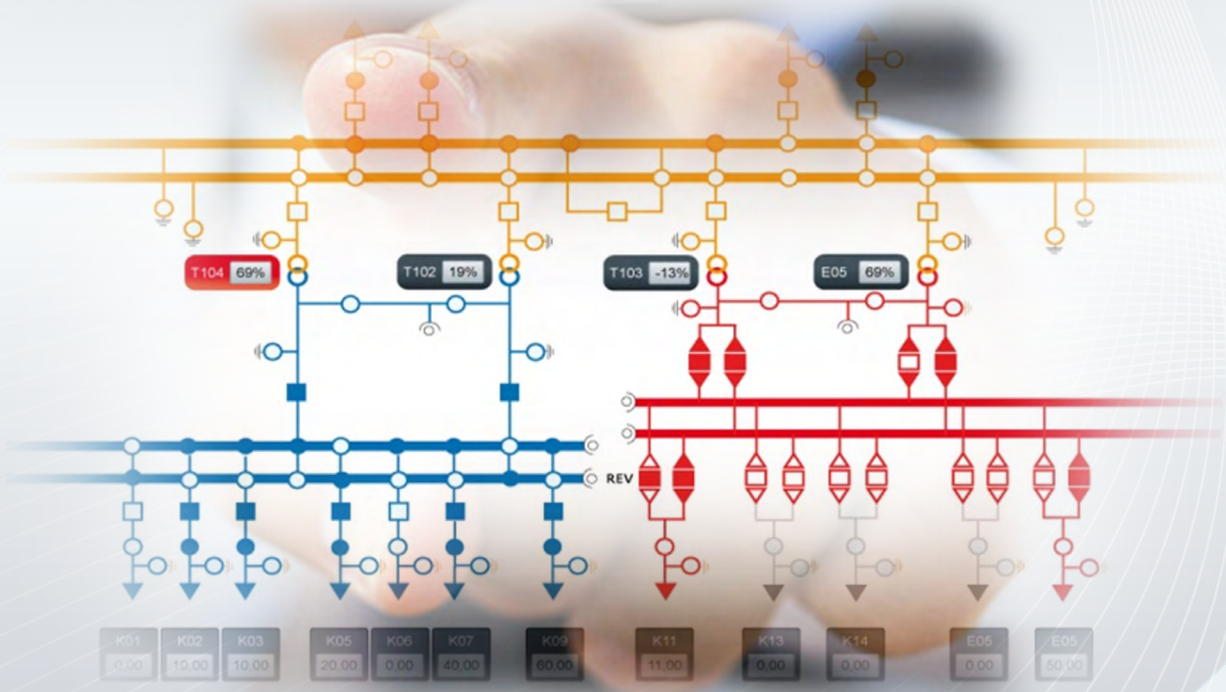
Substation Automation System



comeca

energy in motion

COMECA Group core business is to design, manufacturer and maintain complete Low and Medium voltage electrical solutions tailored to the specific needs of the industrial processes of our customers.

COMECA is a LV Original Equipment Manufacturer and also a motor management system provider with the GemStart5 unit control, with automation solutions for controlling and monitoring the electrical network.

With more than 40 years of experience in the industrial world, COMECA provides tailored solutions for all substation automation needs. COMECA offers the most up to date performing automation and supervision products, with a wide range of communication protocols.

The Substation Automation System is a complete set of equipment assembly which communicate together and can be controlled and monitored locally and remotely by a supervision software. Electrical substations differ in terms of quantity of equipment from one substation to another one. That is why all data concentrators can be easily extended to suite your needs. The supervision software, acting as an Electrical Management System, completes the global Substation Automation offer and is designed with different modules.

This forms COMECA's flexible automation solution.

« Flexible Automation System »

COMECA masters and controls the whole electrical distribution network in many sectors.

Infrastructures

Train stations
Airports
Ports
Industrial buildings
...

Energy

Nuclear
Thermal
Hydraulic
Wind
...

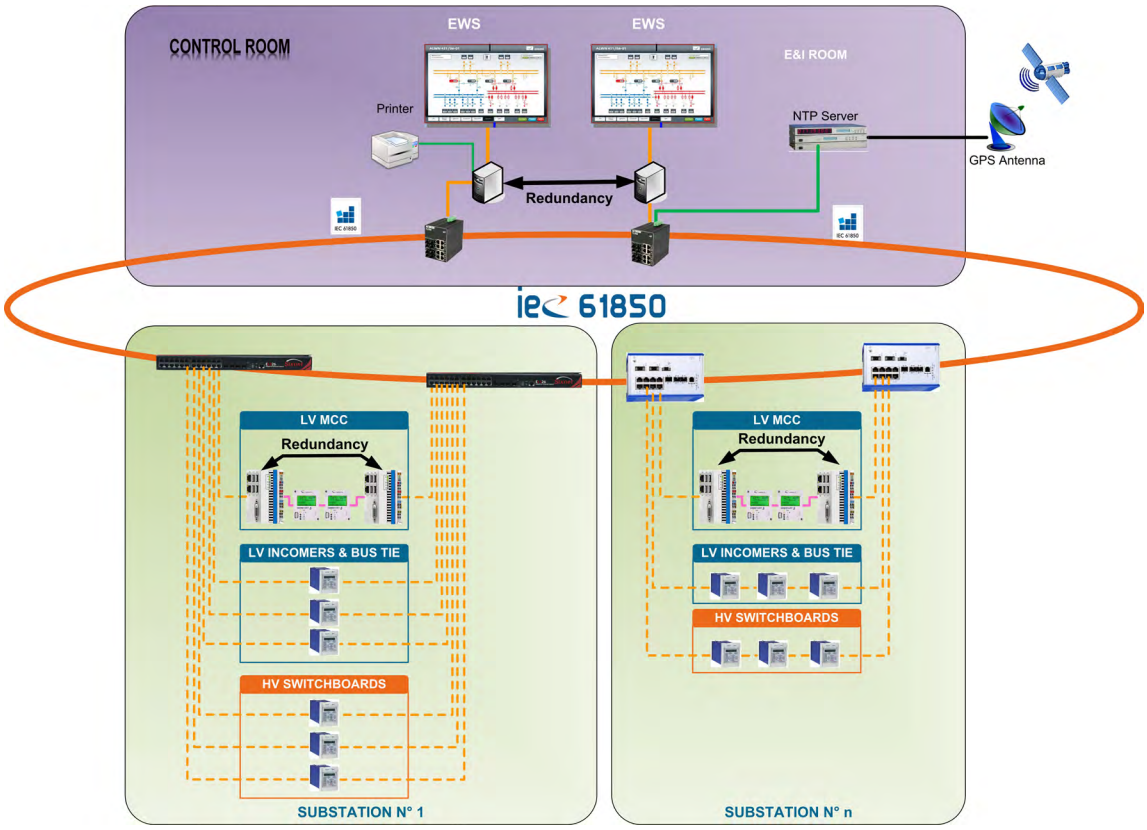
Tertiary

Hospitals
Data center
Offices / Shops
Territorial authorities
...

Industry

Oil and Gas,
Mining, Minerals, Metals
Petrochemicals
Chemicals
Agro food
...

General Substation Automation System Overview



The Substation Automation System (SAS), is also known as different names below :

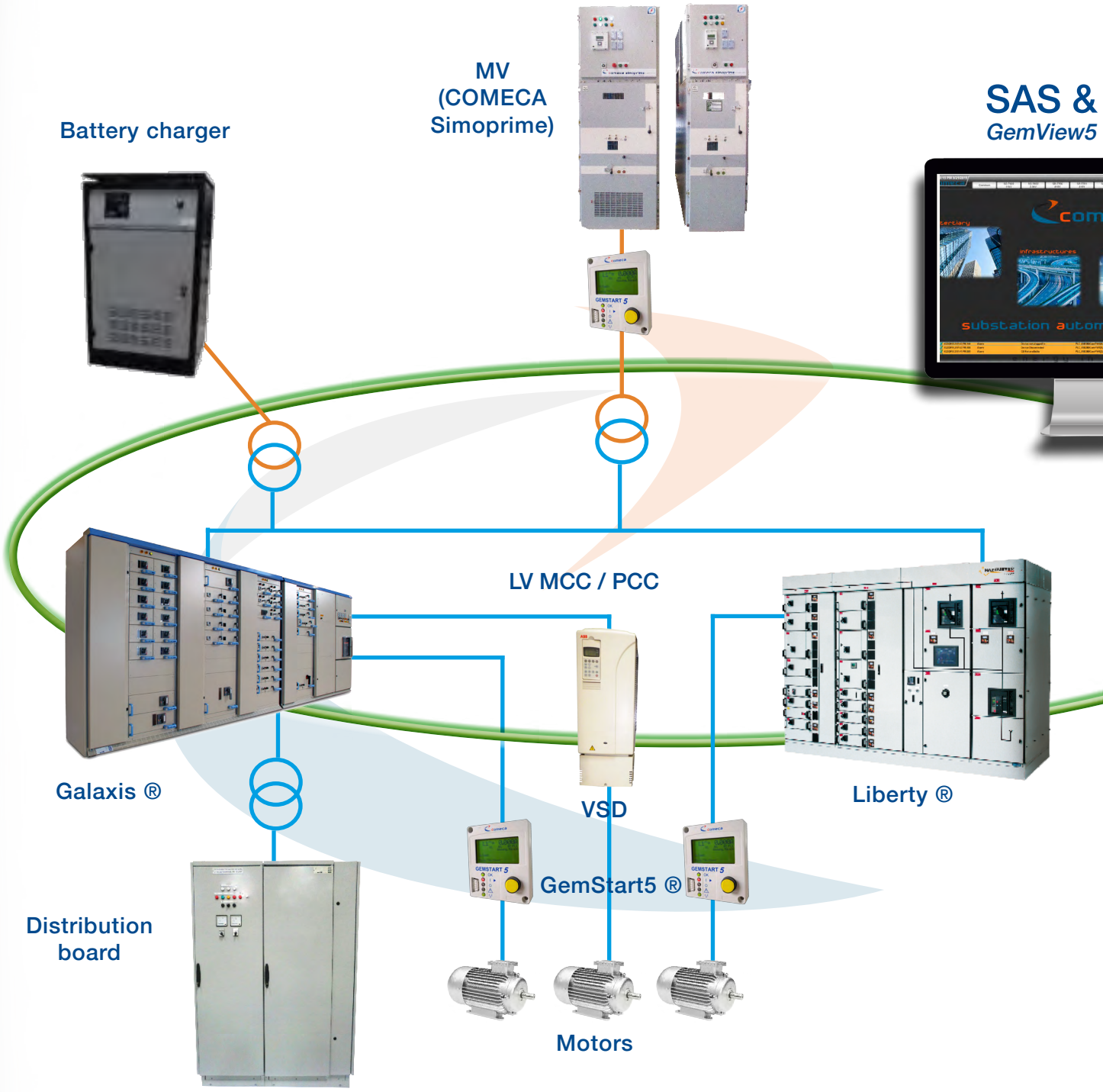
- *Integrated Power Management System (IPCMS)*
- *Power Management System (PMS)*
- *Electrical Monitoring & Control System (EMCS)*
- *Electrical and Control System (ECS)*
- *Electrical Network Monitoring & Control System (ENMCS)*
- *Substation Control & Monitoring System (SCMS)*

Whatever the name given to the automation system, the heart of the system is the Central Control Unit (CCU) which collect the equipment data. Any information from the IEDs are collected by such a system. As it is essential for Oil&Gas plants, chemical industries as well as for all industries operating with continuous processes, the CCU is generally redundant and Hot/Standby solutions are the prefered solution.

Alternatively, COMECA proposes simplified solution to meet your Industrial Process needs and helps you to define the best solution to ensure your business activity at anytime.

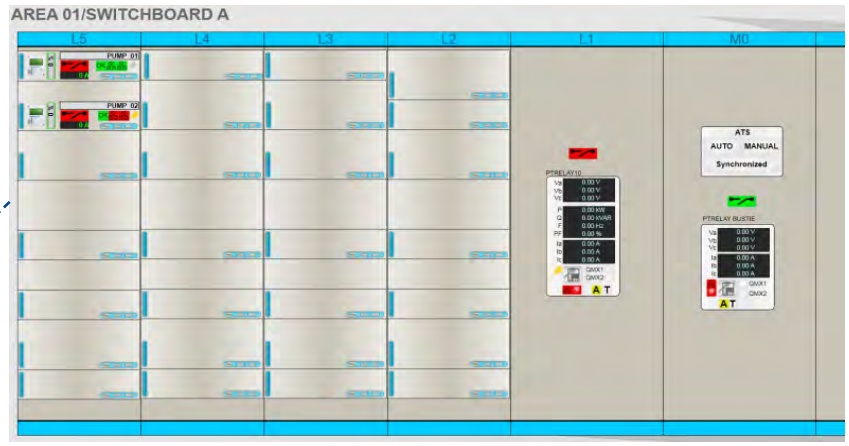
Central Control Unit is also proposed with or without IEC61850 communication protocol, according to your needs.

COMECA, your Global Energy Management Solution under control

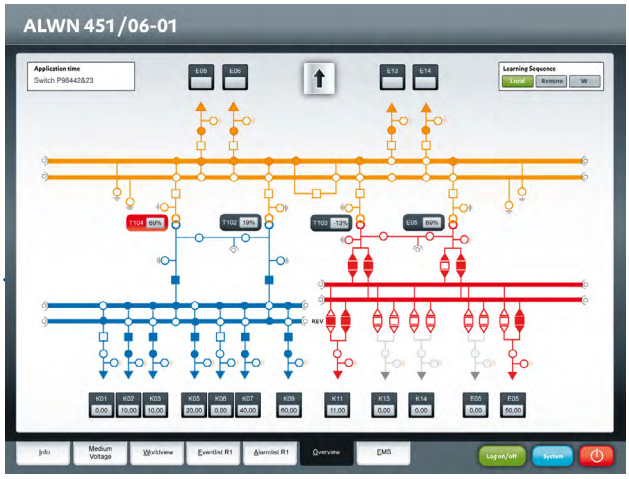


COMECA designs and delivers your own customized Substation Automation System with perfect integration of any LV & MV equipment.
All the LV and MV equipment are connected on the IEC61850 ring.
The flexible SAS System is designed to meet requirements of new IEDs communication protocols like IEC61850 and allows perfect connection with the existing conventional relays .
With the supervision software, more than 300 communication protocols are available, including those used in the past.

EMS

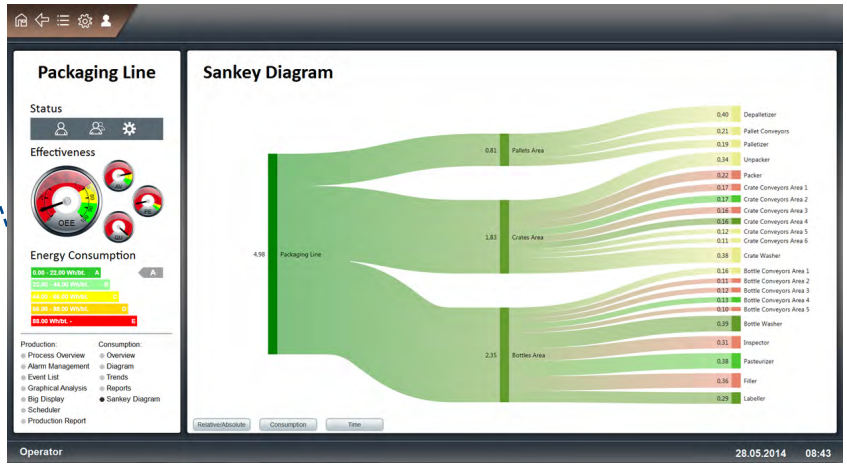


Identifying



Controlling & Monitoring

iec 61850



Managing

DATA concentrator unit

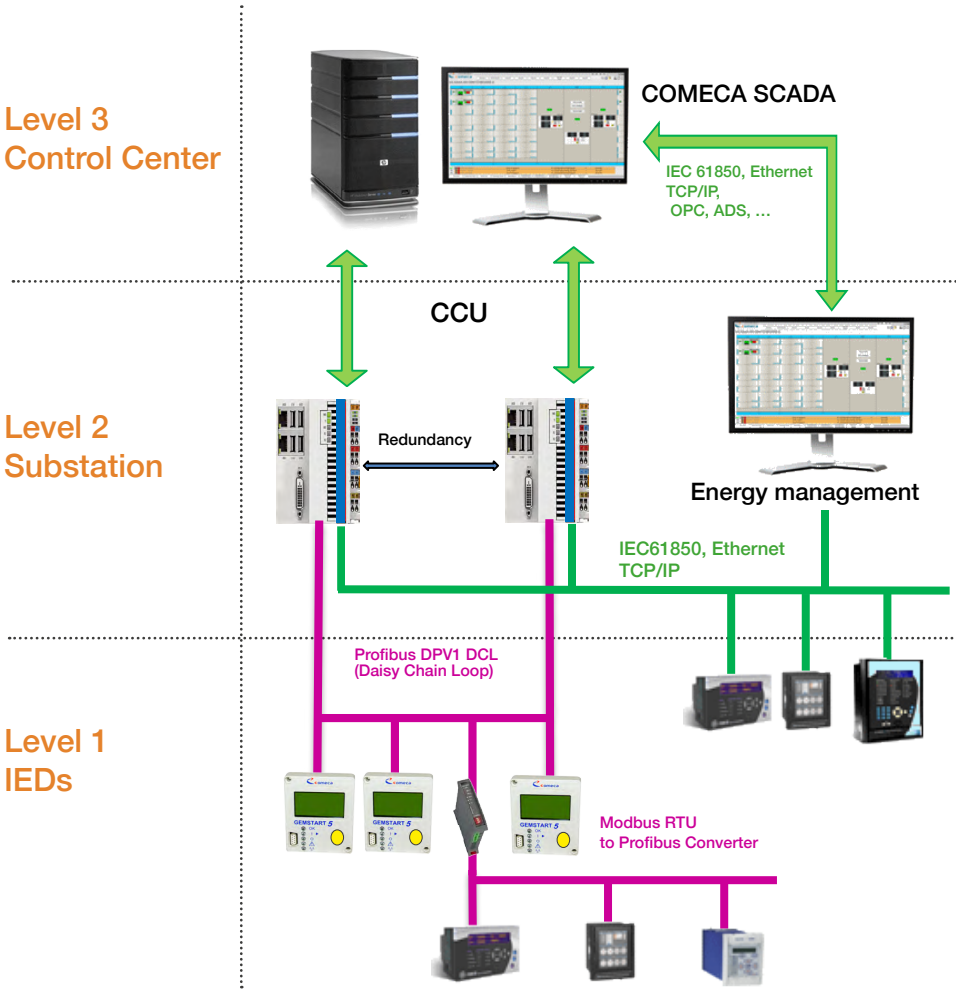
The data acquisition system or central concentrator unit (CCU) made by COMECA is an harmonious selection of equipment that facilitates the integration of any communicating and non communicating equipment in an electrical substation.The data acquisition system is suitable to be installed in the LV and MV switchboards thanks to its high integration level.

Main characteristics

The platform used by COMECA combines the worlds of industrial PC and hardware PLC and is suitable for all performance tasks. Complete PLC is then configured in a modular manner, only to propose what is needed for the project. Such a modular system can be expanded without limitations.

- Large selection of PC based solution, from Intel® Celeron® single-core up to Intel© CoreTM, quad cores
- 2 GB DDR3 RAM / 4 GB DDR3 RAM
- 8 GB Cfast flash card (expandable) to store process data if needed
- Windows Embedded Standard 7 P or Compact 7
- Large selection of communication interface cards with DCS, ECS, and enterprise applications
- Large selection of communication cards to interface with field equipment
- Time stamping with 1ms accuracy
- 1s UPS to store the data in case of a shutdown

SAS communication protocols



Level 3 protocols

The communication protocols the most used from 300 drivers available are :

- Modbus TCP/IP
- IEC61850 (Kema certified)
- SNMP (switches diagnostics)
- Modbus RTU

Level 2 protocols

The level 2 protocols comprise all the level 3 protocols + all the protocols to communicate with level 1 :

- Modbus TCP/IP
- IEC61850 (Kema certified)
- SNMP (switches diagnostics)
- Profibus DPV1 to link CCU to GemStart5® for example
- Modbus RTU

Level 1 protocols

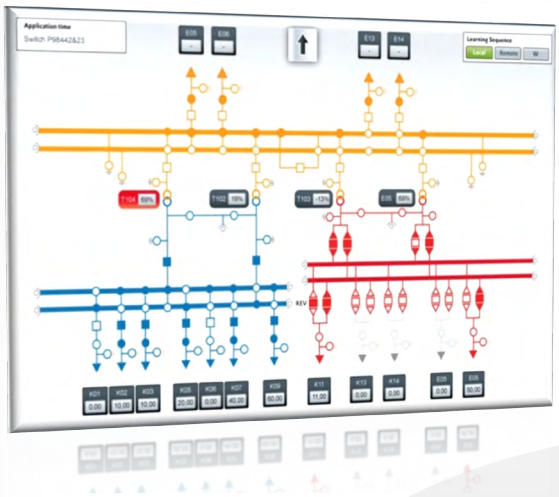
Interfaces to the SCADA can be done with :

- Modbus TCP/IP
- Profibus DPV1 in a daisy chain loop
- Modbus RTU

Direct Interfaces to the Energy Management can be proposed when IEC6150 from HV protections relays and from LV or HV ACB for Incomers & Bus Ties is mandatory.

Supervision software

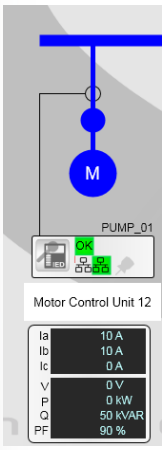
Single line diagram

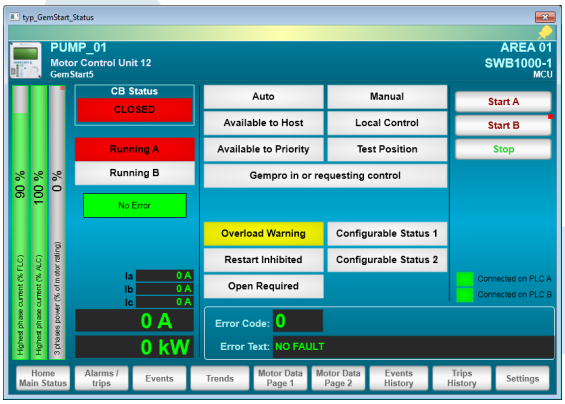


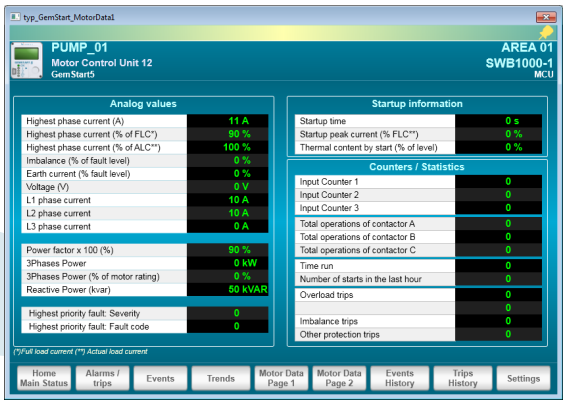
The single line diagram represents all the consumers that are present on the electrical network of your production site with :

- Real time data monitoring for HV, MV and LV equipment
- Dynamic status and measurement of major equipment
- Time stamping with 1ms accuracy
- Automatic line colouring topology, depending on the voltage level or range
- Symbols following IEC standard representation
- Controlling the main Air Circuit Breakers with SBO (Select Before Operate) and interlock facilities

Equipment detailed characteristics







Equipment details can be easily displayed from the different views, either from SLD, or column views.
Any hardwired I/Os are monitored, all alarms are reported and measurement values are shown in the dedicated views.

Trends can also be set up as per your needs with selection of the analogue signals in a pre-filtered table applicable to the Motor protection relay you have prior selected. Remote configuration is also possible.

Energy Management System

The Energy Management System for electrical energy is based on time line analysis. It analyses at all time the energy consumption of any consumers and extrapolates what will be the need for the future. Load shedding of non essential consumers will be performed in case power peaks are detected. The deviation from the power supply timetable can be very expensive for consumers. The EMS helps capping the power peaks and saving money.

Key benefits

- PC/ server application compatible with windows based operating systems from windows CE or 7 or 8.1 and windows server
- Password protection in Runtime & Editor, with up to 128 different user levels
- Multilanguage, multi-screen interface, multi-touch technology, zooming and de-cluttering functionalities
- Client/Server application with centralized development
- Redondant server application possible for continuous availability of the system (Circular redundancy for a maximum availability)
- Online modification allowed, administrator functionality
- Convivial environment and intuitive user interface
- Time stamping of all events and all alarms at 1ms accuracy
- Post-it function to share messages between operators
- Maintenance plan operations
- Open and reliable connectivity to more than 300 protocols
- GOOSE messages available for fast controls
- Alarms and Events pre-filtered and filters can be personalized
- SMS, mail when alarms or events occurred
- Reports can be proposed upon request
- Unlimited tags
- Traceability of any action, of any modification at all time
- Remote access to any IED using IED configuration software
- Simulation of the application in runtime

About COMECA Group

Since **1974**

1200 employees on **4** continents

20 production units in France

7 subsidiaries worldwide

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energy in motion

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