- Multiclient monitoring software, Cloud and on premises solutions.
- Software to display and customize LOVATO Electric devices.
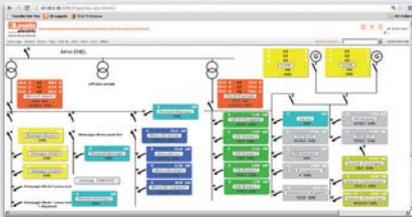- APP for display and configuration via Wi-Fi or NFC.

Synergy

Page 29-2

SUPERVISION AND ENERGY MANAGEMENT SOFTWARE
- Structure and applications based on MS SQL relational database management system
- Data consultation through popular Internet browsers
- Versatile system, accessible to a large number of users/workstations via intranets, VPN or Internet
- Cloud version available on LOVATO Electric portal.

Xpress

Page 29-5

CONFIGURATION AND REMOTE CONTROL SOFTWARE - FREE OF CHARGE
- Parameter setting
- Point-by-point monitoring
- Memory module management.

Sam1

WiFi

Page 29-6

APP FOR SMARTPHONES AND TABLETS
- Users can program the device, view alarm conditions, send commands, read measurements, download statistical data and events and send retrieved data by email
- iOS and Android compatible.

NFC

Page 29-7

APP FOR PROGRAMMING VIA NFC TECHNOLOGY
- Parameter setting with NFC technology
- Access without the need to power up the LOVATO Electric device
- Android compatible.

Synergy Synergy cloud Xpress Sam1 NFC

Lovato electric

Synergy

Synergy is supervision and energy management web-based software that provides the monitoring and control of the electrical installation, in a simple and efficient way.
It is valid software to sustain the activities indicated by the standard EN ISO 50001 "Energy management systems. Requirements with guidance for use".
In addition to electrical quantities, it allows to check all environmental and process information (operating status, alarms, etc.), acquired from LOVATO Electric products, equipped with communication port, and thereby to carry out commands and parameterising.
It is possible to create, without limitations, browsable pages of both data logging and trend graphs; it is also possible to manage alarms, exported files and e-mail and/or FTP server transmission functions for notification and reporting.
Third party softwares are able to access **S**ynergy database by means of a web API call. Third party MODBUS devices are able to access to **S**ynergy by means customizable (interface) drivers.

● FUNCTIONALITY
– Communication with all LOVATO Electric measurement and control devices, via serial ports, Ethernet or modem
– Third party MODBUS devices integration
– Database of instantaneous values
– Creation of custom graph pages
– Datalog files
– Data logging, accessible by excel export or web API applications
– Energy consumption reports
– Graphic display of trends
– Automatic reports of consumption periods (e.g. time bands) in both analytical and graphic format
– Alarm management, both locally and via e-mail
– Energy quality analysis
– Field equipment parameterising
– Access level management.

● INTERFACE
Synergy permits the creation of an unlimited number of pages to monitor the system in real time.
With great simplicity, it is possible to insert static images and dynamic objects of various types, to make pages with system overviews, synoptic and/or topographic representations of the electrical network with all detailed information. The buttons can be used to send commands to the systems (provided that there are appropriate field actuators) or navigate among the pages.

The dynamic objects available are:
– analog instruments at 90° and 270°
– digital instrumentation
– digital instrumentation with vertical or horizontal bar graphs
– 10-digit hour counter
– simple label or with dynamic image
– normal or reduced multi-measurement panel
– specific power factor controller panel
– specific generating set controller panel
– customizable page for each device
– dynamic maps
– chart of single measurements
– harmonics graph
– live data prompt
– control and/or page navigation buttons
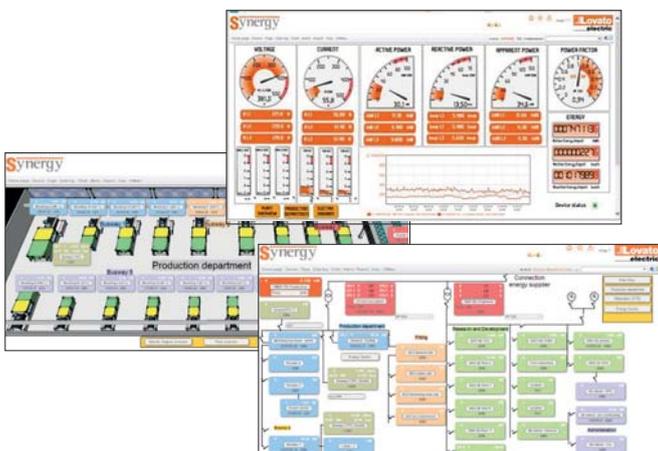
● ALARMS
Each value recorded in the archives (datalog) can be associated with one or more alarms, defining for each one: an upper and lower limit, a reference calendar (for enabling/disabling), any representation in trend graphs and the option of automatically sending an e-mail. If the limits are exceeded, **S**ynergy records the anomaly and reports it in the software header. The home page always indicates the last 10 alarms, while the specific menu allows the display of detailed information, silencing of alarms and consultation of the datalog.

● SIMPLE, GUIDED, INTUITIVE CONFIGURATION
Programming **S**ynergy does not require any particular computer knowledge since specific configuring instruments have been developed to guide through the configuration of product networks, graphic pages, datalog reports and charts, in a simple and intuitive way.

● SERVER-MULTICLIENT SYSTEM
Synergy structure and applications are based on a MS SQL relational database management system.
Synergy is consulted through the most popular browsers, so it's available on various platforms and operating systems. These characteristics make **S**ynergy a highly versatile system, simultaneously accessible to a large number of users/workstations via intranets, VPN or Internet.

● HOME PAGE
The **S**ynergy start page summarises the main diagnostic information, to permit immediate verification of the state of the system.
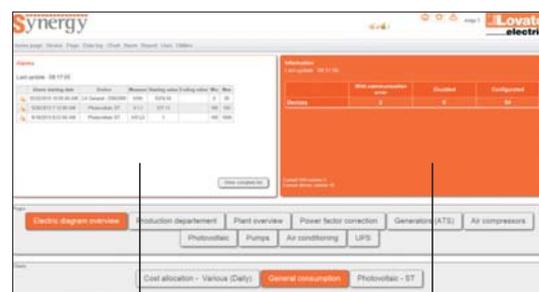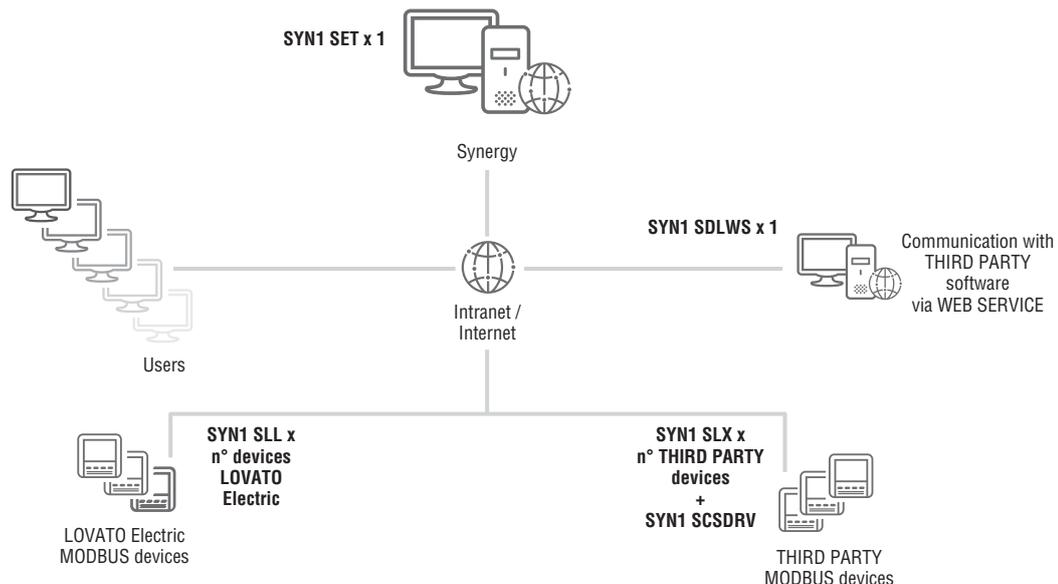

Alarms   Network Data Condition

FURTHER INFORMATION
For further information on the software, consult the site:
http://**em.LovatoElectric.com**

Synergy Software

Order code	Description	Details	Provisioning
Software.			
SYN1 SET	Supervision and energy management software	Installation on PC with server function and Windows operating system. Customization, measurement, monitoring and control via web by sending e-mail notifications or FTP file. Monitoring of one LOVATO Electric device included	Permanent licence purchasing
Licence.			
SYN1 SLL	Synergy licence for LOVATO Electric device	Monitoring function for each LOVATO Electric device equipped by MODBUS-RTU communication port	Permanent licence for single device
SYN1 SLX	Synergy licence for THIRD PARTY devices	Monitoring function for each THIRD PARTY device equipped by MODBUS-RTU communication port	Permanent licence for single device
SYN1 SDLWS	Licence to access to Synergy database	Access function by WEB API to Synergy MS SQL database by THIRD PARTY software	Permanent licence for single device
SYN1 SLM	Licence to access to Synergy updates	Access to Synergy updates (e.g. compliant with new operating systems and new Synergy features for each LOVATO Electric or THIRD PARTY devices)	Annual subscription licence for single device
Technical support.			
SYN1 SCS00	Synergy technical support	Synergy technical support by phone or team viewer	Hourly rate
SYN1 SCS11	Synergy on site commissioning	On site Synergy technical support: – check on field devices configuration – SYN1 SET setup on customer PC – check of exchanging data between Synergy and on field devices – Synergy configuration based on customer needs – travel costs and labour hours to set up Synergy and on field devices	On site cost
SYN1 SCSDRV	Interface driver development for THIRD PARTY devices	Synergy support to develop the interface driver between Synergy and THIRD PARTY devices for a maximum of 5 measurements and feasibility study by LOVATO Electric Technical support (Tel. + 39 035 4282422; E-mail: service@LovatoElectric.com)	Cost for each driver
SYN1 TRAINING	Synergy training sessions (basic and advanced courses)	Introduction to energy management topics. Measurement devices: range and selection criteria with case studies. Synergy software key features for monitoring and supervisioning: architecture and access, channels, tools, graphs, data logs, pages and access criteria. Practical exercises. For further information visit EVENTS section on **www.LovatoElectric.com**	To be confermed

Synergy cloud

The **Synergy** cloud solution is specifically designed to make the **Synergy** software functions described previously available and accessible via PC or tablet on the **cloud.LovatoElectric.com** Internet portal.

With **Synergy** Cloud, it is possible to collects and view production and consumption data for energy supplies such as electricity, water, gas and air, using hardware measurement equipment which monitors the main parameters and communicates with the management software without installing software and without a physical server. This saves on server purchasing, configuration and maintenance costs and eliminates commissioning time and costs.

The on field devices are configured as Clients sending monitored data to **Synergy** Cloud server, according to two possible configurations:
– directly through a specific communication port assigned by Cloud server
– indirectly via FTP thanks to the local datalogger gateway EXC GL A01 (see details in section 24)

Further details on **Synergy** Cloud offer are available at **http://em.LovatoElectric.com/**

● SECURITY

The security of the data is guaranteed by HTTPS encryption with certificate between server and client PC, by daily backup of the data collected and by state-of-the-art firewall for server access.

The **Synergy** Cloud solution:

Devices — Internet — https — Firewall — Cloud — Synergy — User
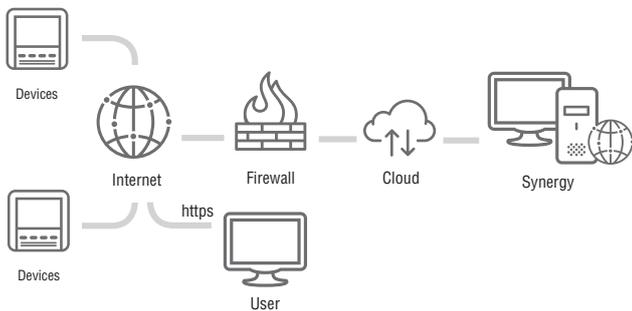
● FEATURES

– Extremely intuitive interface: no particular technical background required
– Data access from all over the world thanks to the Internet and common browsers
– Specific design for client requirements (selection of measurement scenarios)
– Low data traffic thanks to the extreme economy of the protocol used (Modbus)
– Instantaneous data acquisition from various devices that can even be located in different sites
– Simple and clear reporting of all energy data
– No investment in software database or server
– Extremely secure data thanks to HTTPS and daily backup
– Automatic updates included
– Limited subscription cost.

Order code	Description	Details	Provisioning
Licence.			
SYN1 CLL	**Synergy** Cloud licence for LOVATO Electric device	Monitoring function for each LOVATO Electric device equipped by MODBUS-RTU communication port	Annual subscription licence for each device
SYN1 CLX	**Synergy** Cloud licence for THIRD PARTY devices	Monitoring function for each THIRD PARTY device equipped by MODBUS-RTU communication port	Annual subscription licence for each device
SYN1 SDLWS	Licence to access to **Synergy** database	Access function by WEB API to **Synergy** MS SQL database by THIRD PARTY software	Annual subscription licence for each device
Technical support.			
SYN1 SCS00	**Synergy** technical support	**Synergy** technical support by phone or team viewer	Hourly rate
SYN1 SCS11	**Synergy** on site commissioning	On site **Synergy** Technical support: – check on field devices configuration – SYN1 SET setup on customer PC – check of exchanging data between **Synergy** and on field devices – **Synergy** configuration based on customer needs – travel costs and labour hours to set up **Synergy** and on field devices	On site cost
SYN1 SCSDRV	Interface driver development for THIRD PARTY devices	**Synergy** support to develop the interface driver between **Synergy** and THIRD PARTY devices for a maximum of 5 measurements and feasibility study by LOVATO Electric Technical support	Cost for each driver
SYN1 TRAINING	**Synergy** training sessions (basic and advanced courses)	Introduction to energy management topics. Measurement devices: range and selection criteria with case studies. **Synergy** software key features for monitoring and supervision architecture and access, channels, tools, graphs, data logs, pages and access criteria. Practical exercises. For further information visit EVENTS section on **www.LovatoElectric.com**	To be confermed

Note: every monitored devices has a defined set of measures that are stored and available for a customizable period.
Further information available on: **http://em.LovatoElectric.com.**

Xpress is parameter configuration and remote monitoring software shared by the entire latest generation of LOVATO Electric products with communication port. It can be installed in the Windows environment and connect individually (one node at a time) to the LOVATO Electric products connected to the network.

– Supports connection via CX01 (USB) or CX02 (Wi-Fi) dongle, USB, RS232, RS485, Ethernet or modem.
– Product configuration:
  • Parameter setting
  • Project file management for the family of controllers for RGK series generating sets
– Product firmware update (via CX01)
– Remote control:
  • Monitoring of main measurements
  • Measurements graphic trends
  • Sending commands to products
– Reading alarms and events memory
– Memory modules management EXP10 30, EXM10 30, EXP10 31.

Consult the **www.LovatoElectric.com** site for the list of products supported by **Xpress** .

Xpress can be ordered using code SYN1 XP00 or downloaded for free from:
http://www.LovatoElectric.com/xpressdownload.aspx

● MONITORING

The measurements of the product connected are divided into context menus to make searching for the right value easy and shown on appropriate graphical gauges. It is also possible to show measurements trends.
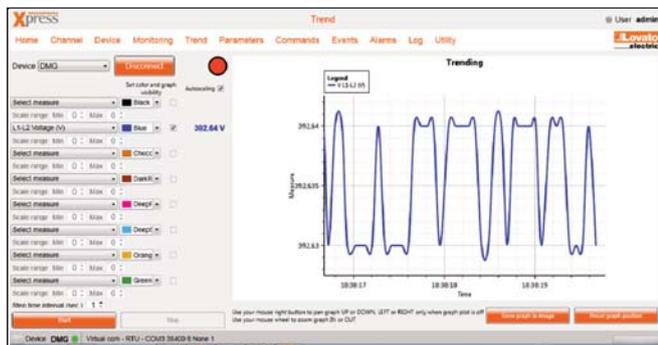
● PARAMETERS

The options in the setup menu and parameters on the product connected are replicated in the software to allow the user to operate using the terms that they already know. Parameters that differ from the factory values are highlighted in a different colour.
The parameters can be saved to a file and recalled in subsequent installations, or defined even in the absence of a connection to the product, to permit preparation of a project to send later.

● EVENTS

If the product connected features an event memory, the complete list can be downloaded for saving as an external file, in text or spreadsheet format.

● DATA-LOGGER MEMORY MANAGEMENT

Xpress can be used to configure and manage the EXP10 30 and EXM10 30 memory modules, in order to create tables indicating the history of the measurements selected by the user.
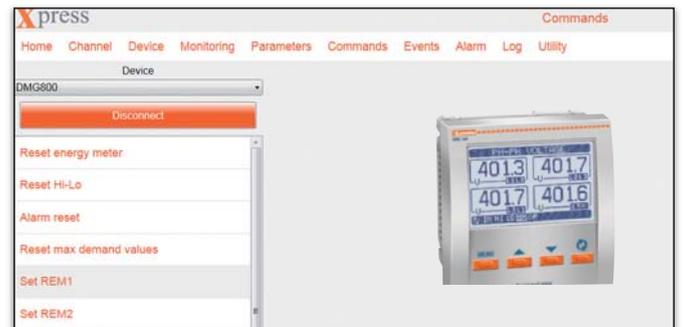In particular, the software can be used to set:
• the measurements to be sampled
• the sampling time
• the event that triggers and ends sampling
• memory capacity management (FIFO or stop when memory is full).
The data acquired can be displayed in graphs and exported to text files or spreadsheets.

● COMMANDS

A command can be sent to the product connected to energise outputs or reset energy consumption or operating time counters for maintenance.

● ALARMS

The alarms active on the product connected can be displayed in the software, for a single screen with the complete list of the faults detected.

APP

Updating driver

Sending e-mail
(events,
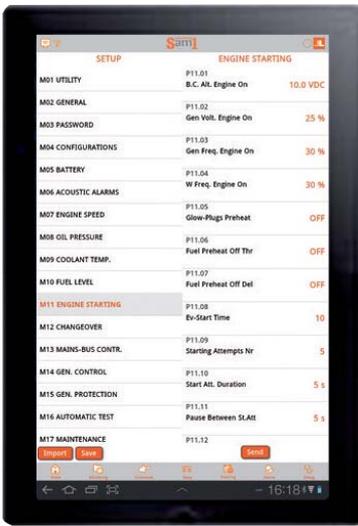parameters)
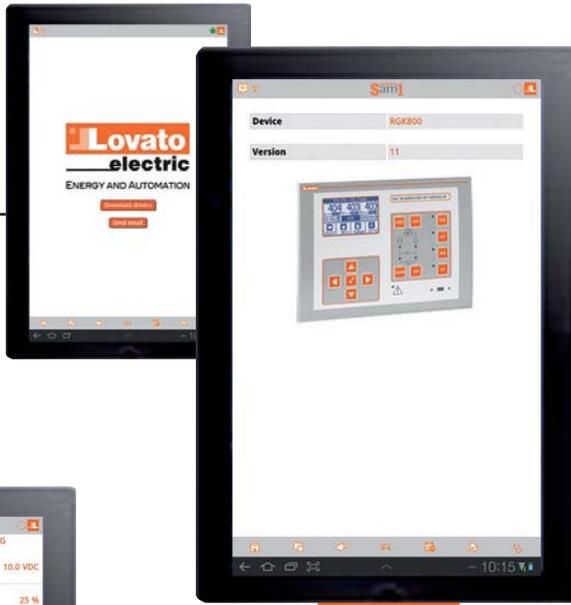
General characteristics

Configuration and maintenance operations, often done in intolerable or awkward environments due to weather or noisy conditions or narrow places, are now easier to do for all LOVATO Electric devices with communication interface on the front, compatible with CX02 dongle. Tablets and smartphones with Android or iOS operating systems can connect to them using the new application called **Sam1**. Therefore, it is no longer necessary to connect and switch on a PC using cables to change configurations, set up parameters etc.

With this APP, a file previously saved can be uploaded; commands can be sent; measured quantities can be read from LOVATO Electric devices. The events can be viewed and saved in a text file and later copied and sent by email or to FTP servers.

The **Sam1** app can be downloaded from Google Play Store or Apple iTunes store.

PARAMETERS SETTING

SENDING COMMANDS

EVENT LOG VIEWING

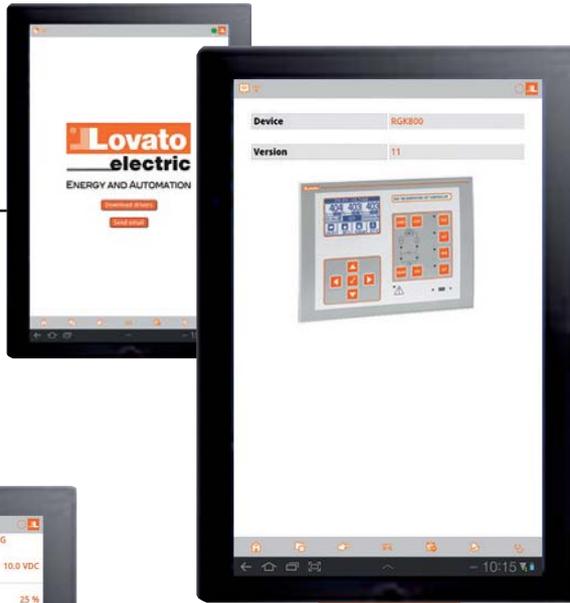## ALARMS VIEWING

MEASUREMENTS VIEWING

APP

NFC

Updating driver

Sending e-mail
(parameters)

General characteristics
The parameter setting for some LOVATO Electric products is now possible via tablet and smartphone through NFC wireless technology.
This features is available for the following families: ATL, FFL, ADXL, TM, PM.
Bringing the display of a smartphone or tablet (with NFC connection enabled) in close proximity to a LOVATO Electric product, activates the NFC app and the device connected is recognised automatically.
The parameters can be set without powering up the LOVATO Electric device.
The application allows you to:
– Set the parameters for the product connected
– Save the parameters in a file and send it via e-mail
– Load a parameter file saved previously.
The app can be downloaded from Google Play Store.

ANDROID APP ON
Google play

PARAMETERS SETTING

NFC