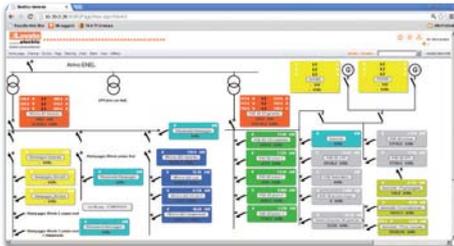


Synergy

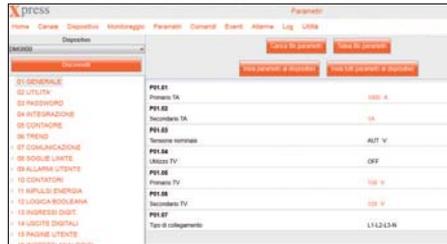


Page 27-2

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 27-5

CONFIGURATION AND REMOTE CONTROL SOFTWARE

- Parameter setting
- Point-by-point monitoring
- Memory module management.



Sam1



Page 27-6

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.

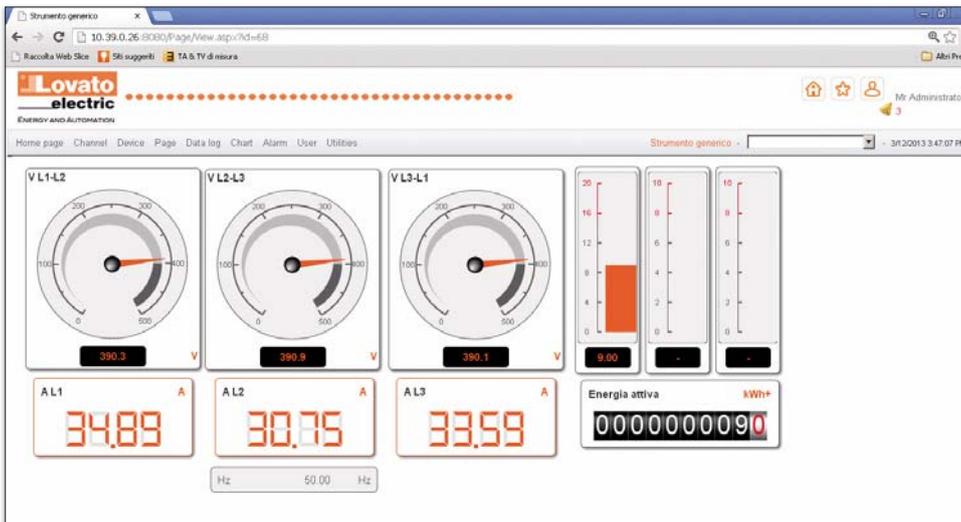


NFC

Page 27-7

APP FOR PROGRAMMING VIA NFC TECHNOLOGY

- Parameter setting with NFC technology
- Access without the need to power up the LOVATO Electric product
- Android compatible.



- Web-based and multiclient software
- Simultaneous management of multiple communication channels
- Three-level multiuser access using Internet
- Cloud version
- App for display and configuration via Wi-Fi or NFC.

Software

SEC. - PAGE

Synergy supervision and energy management software	27 - 2
Xpress configuration and remote control software	27 - 5

APP

Sam1	27 - 6
NFC	27 - 7

Synergy

Synergy is supervision and energy management web-based software that provides for 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.

● FUNCTIONALITY

- Communication with all LOVATO Electric measurement and control devices, via serial ports, Ethernet or modem
- Database of instantaneous values
- Creation of custom graph pages
- Datalog files
- 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.

● SIMPLE, GUIDED, INTUITIVE CONFIGURATION

Programming **Synergy** 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.

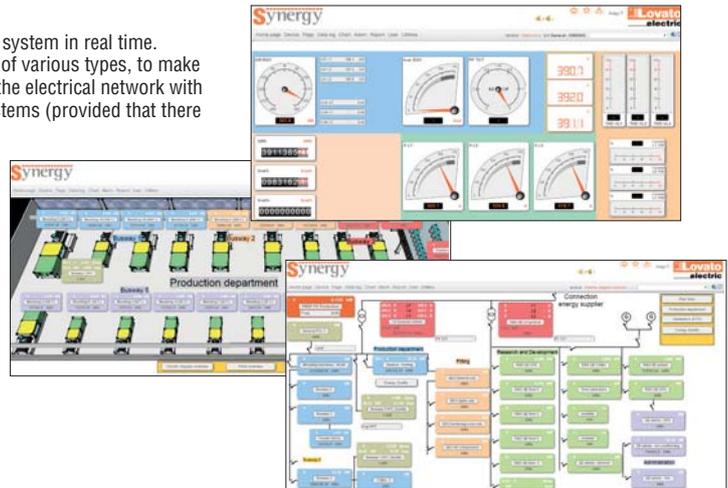
Synergy is consulted through the most popular browsers, so it's available on various platforms and operating systems. These characteristics make **Synergy** a highly versatile system, simultaneously accessible to a large number of users/workstations via intranets, VPN or Internet.

● 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
- chart of single measurements
- harmonics graph
- control and/or page navigation buttons

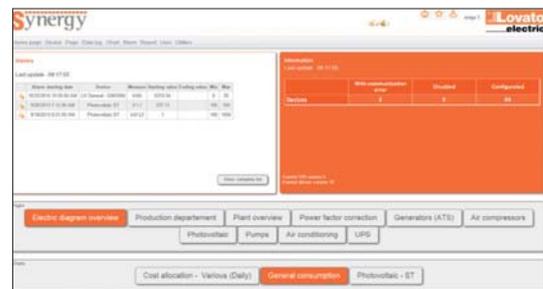


● ALARMS

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, **Synergy** 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.

● HOME PAGE

The **Synergy** start page summarises the main diagnostic information, to permit immediate verification of the state of the system.



● FURTHER INFORMATION

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



Software Synergy

Order code	Description	Qty per pack	Wt
		n°	[kg]
SYN1 SET	Supervision and energy management software (parameterising, measurement, monitoring, control, web server, e-mail and FTP file transfer) + enablement of monitoring on 1 LOVATO Electric device	1	0.210
SYN 1 S005	Enable licence of supervision function for 5 additional devices	-	-
SYN 1 S020	Enable licence of supervision function for 20 additional devices	-	-
SYN 1 S050	Enable licence of supervision function for 50 additional devices	-	-
SYN 1 S100	Enable licence of supervision function for 100 additional devices	-	-

NOTE: For the number of licences, only devices equipped with communication port can be considered.

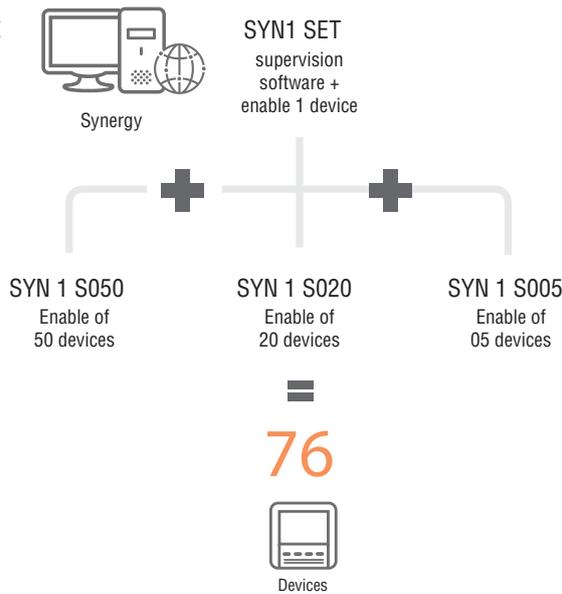
Synergy is remote control and supervision software for LOVATO Electric devices equipped with communication via serial ports, Ethernet or modem. The supported protocols are Modbus-RTU, Modbus-ASCII and Modbus-TCP.

Its structure and applications are based on MS SQL Express that uses a MS IIS Express web server to control the user interface.

The software is capable of:

- Managing multiple communication channels simultaneously
- Connecting the devices to the various channels
- Collecting data from all the devices and storing them in a database
- Displaying collected data in graphical pages and tables
- Generating graphs and alarms starting from the content of the data tables
- Allowing access to the devices and their data according to the rights of the different users.

EXAMPLE



Synergy cloud

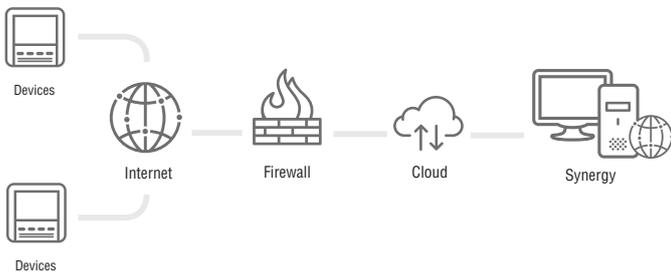
The **Synergy** cloud solution is specifically designed to make the **Synergy** software functions described previously available and accessible via PC or tablet on the **cloud.LovatoElectric.com** Internet portal.

With **Synergy** cloud, it is possible to check and view the electrical and energy data for the measurements and statuses recorded by the LOVATO Electric measurement and/or control devices without installing software and without a physical server. This saves on server purchasing, configuration and maintenance costs and eliminates commissioning time and costs.

The cloud portal is extremely simple and self-configuring and meets the most common measurements requirements of energy managers. To create it, various sampling scenarios were designed and can be assigned to the individual devices in accordance with the logic most appropriate to the needs of the user. For detail of the LOVATO Electric devices that can be monitored and the scenarios that can be assigned during registration, please consult the **cloud.LovatoElectric.com** site in the product guide section. Communication between the field instrumentation and cloud server is carried out through the typical rules of the Modbus protocol. A Master Modbus is activated on the Cloud which collects the data from the field devices (slave Modbus) configured as clients directed at the server: consequently, they don't require a public static IP address, just I/O access to the Internet.

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.



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.

Synergy cloud software

Order code	Description
Fixed type annual licence: pages, datalogger, graphs predefined.	
SYN1 C005 F	For 5 devices monitored
SYN1 C010 F	For 10 devices monitored
SYN1 C020 F	For 20 devices monitored
Customisable type annual licence: pages, datalogger, graphs can be customised	
SYN1 C020 C	For 20 devices monitored
SYN1 C050 C	For 50 devices monitored

Order codes

The services offered depend on the annual (365 days from activation date) subscription activated. There are two types of licence: FIXED and CUSTOMISABLE.

Fixed licence

For each device connected, there are monitoring scenarios in which the values monitored and consequent representations (device web page, online measurements, datalogger, graphs, report) are defined. The system is self-configuring and cannot be modified by the user. The maximum number of devices monitored is 20. This solution is most suited to those who find their requirements met among the various scenarios proposed. The skills required to manage the system are extremely limited.

Customisable licence

It offers the same services as the FIXED solution, with the difference that the client is free to modify the proposed measurement scenarios, web pages, data loggers and reports as they see fit. The client can also create sub-users and assign them with specific access. The maximum number of devices monitored is 50. This solution is most suited to those who need a flexible solution that can be customised in accordance with their requirements. The ability to manage the system can be acquired by downloading the tutorial from the video section on the site: **em.LovatoElectric.com**.

Maintaining the default configurations, whatever the scenarios selected, the energy data is kept online for at least a year and the measurement data (e.g. V, I, PF, kW) for at least two months. The automatic export function allows the transfer of the data collected via e-mail so that the datalog is preserved. To find out the composition of the various scenarios, please access the site: **cloud.LovatoElectric.com**.

Synergy cloud therefore meets both basic requirements with a preconfigured product with only the possibility of seeing and collecting the data and complex requirements where it is necessary to perform customisation, including complex customisation, in terms of data processing, graphic interfaces, creation of sub-users, etc.

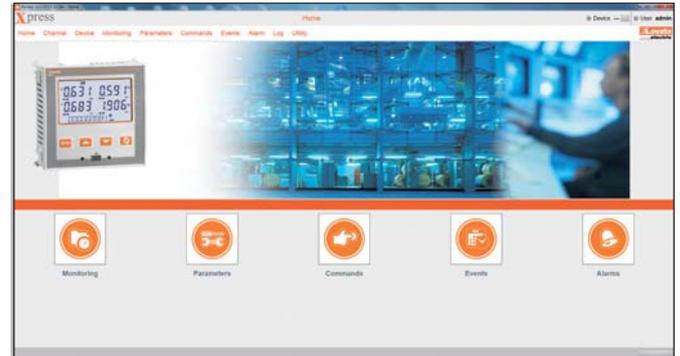
Xpress

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
 - Sending commands to products
- Reading alarms and events memory.

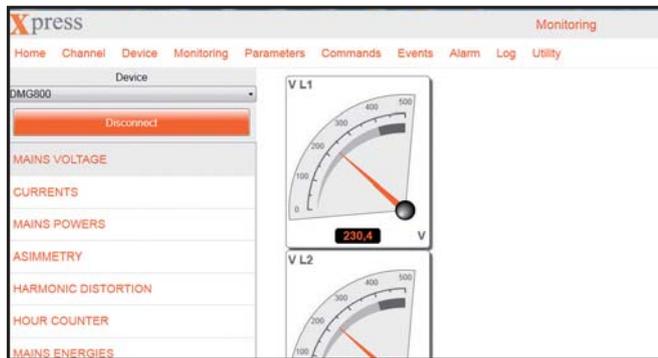
Consult the www.LovatoElectric.com site for the list of products supported by Xpress.

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.



● COMMANDS

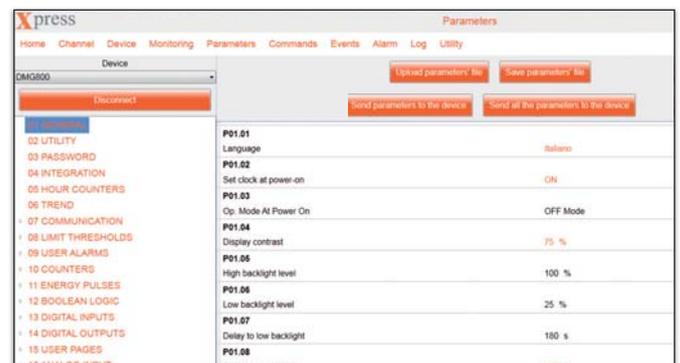
A command can be sent to the product connected to energise outputs or reset energy consumption or operating time counters for maintenance.



● 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 subsequently.



● 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.

● 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.

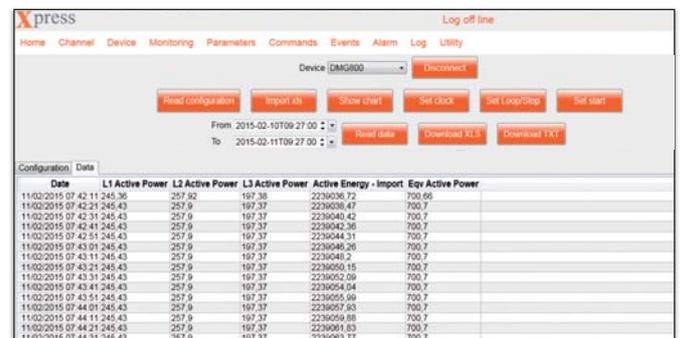
● DATA-LOGGER MEMORY MANAGEMENT

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.



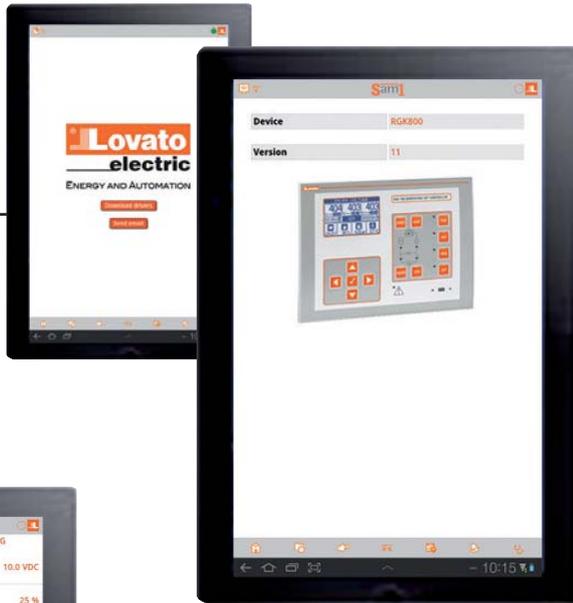
APP

Sam1

Updating driver



Sending e-mail (events, parameters)

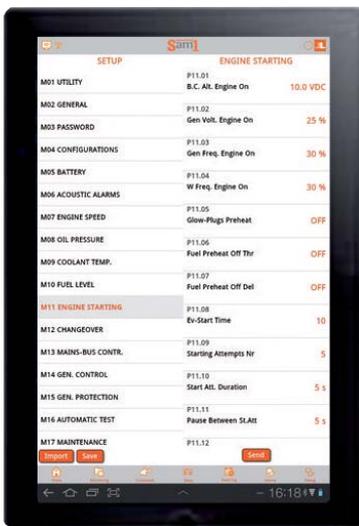


General characteristics

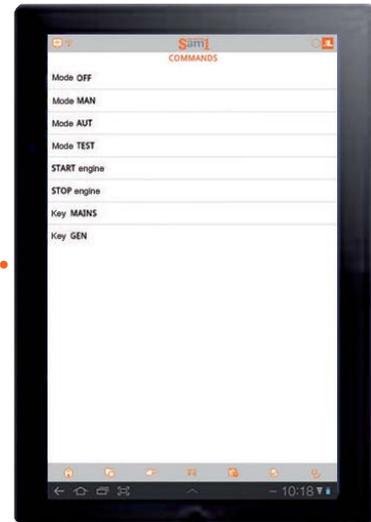
Configuration and maintenance operations, often done in intolerable or awkward environments due to weather or noisy conditions or narrow places, are now easier to do for all LOVATO Electric devices with communication interface on front, compatible with CX02 dongle. Tablets and smartphones with Android or iOS operating systems can connect to them using the new application called **Sam1** (Setting And Maintenance 1). 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



MEASUREMENTS VIEWING



ALARMS VIEWING



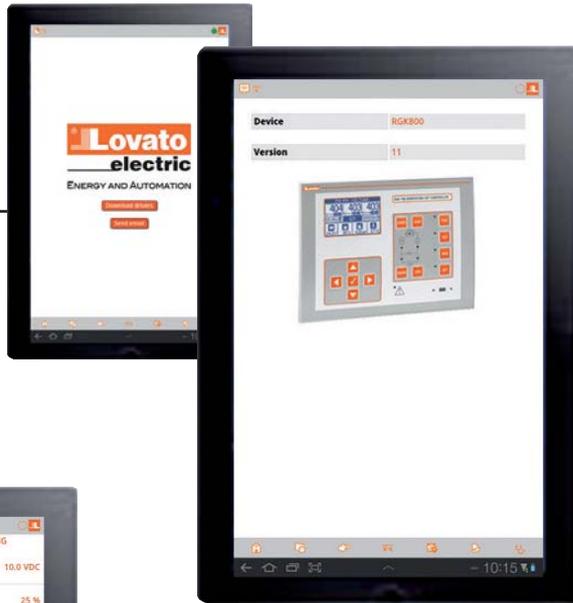
APP



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.

Bringing the display of a smartphone or tablet (with NFC connection enabled) close 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.

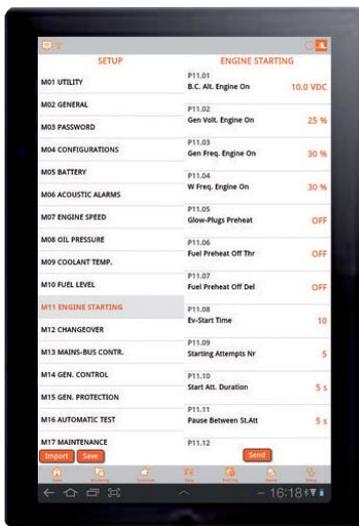
The application allows you to:

- 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.



PARAMETERS SETTING



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