Landis+Gyr
manage energy better

L540

G3-PLC Control Switch

Landis+Gyr L540 is a G3-PLC Control Switch for Demand Side Flexibility applications to optimize the distribution network infrastructure and energy usage. The device is an integrated part of the Landis+Gyr Gridstream solution suite for smart metering and distribution grid management such as GridFlex Control.

L540 is based on Landis+Gyr longstanding expertise as a leading supplier of load and flexibility management solutions. The device is easy to install and offers a high configuration flexibility due to free allocation of control applications to the individual relays.

Applications

- Load control e.g. boilers, heat pumps, ventilation, air conditioning, direct and storage heating, etc. for load curve and congestion management
- Street light control
- Integration of electric mobility, decentralized energy resources and battery storage systems
- Self-Consumption optimization for prosumers and consumer communities

Robust and maintenance free control device based on reliable technology and hardware platform

Gridstream
Full integration in Landis+Gyr Gridstream AIM and GridFlex Control solution allowing active Demand Side Flexibility Management

G3
Proven G3-PLC communication with DLMS/COSEM protocol

Same well-established .MAP configuration tool for control switches and electricity meters

Same proven security mechanism as Gridstream AIM Smart Metering System

Easy installation and flexible configuration to meet your specific on-site needs. Easy replacement of ripple control receivers thanks to the same housing dimensions and installation concept

Efficient and optimized use of grid infrastructure and energy through active demand-side management of decentralized generation, loads and energy storage

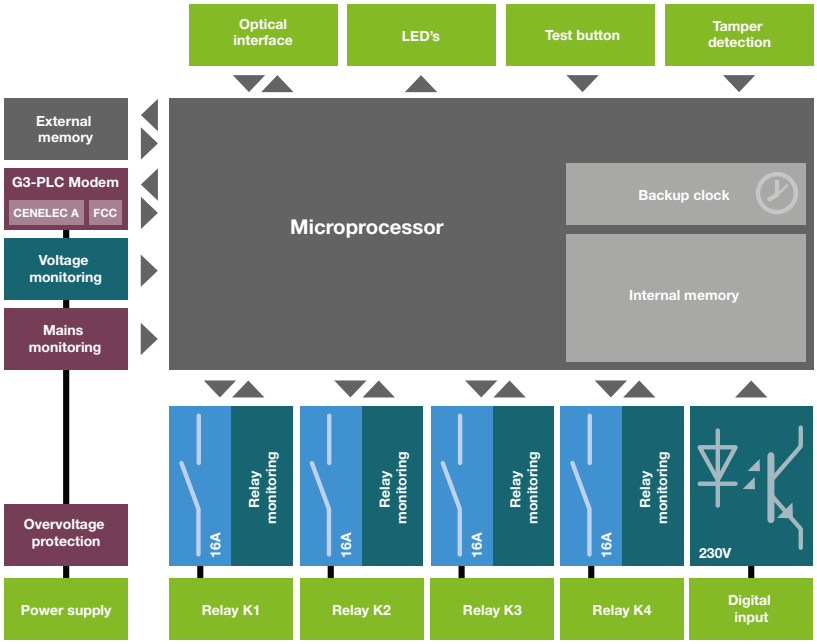
High operational reliability thanks to the combination of central control and local autonomous switching intelligence

Interaction with on-premise peripheral ecosystem (e.g. sensors, PV inverters, twilight switch, home automation system, etc.) via digital input for local control or alarming purposes (local event forwarding to Gridstream)

Added value to your existing Gridstream AIM Smart Metering System by expanding its operation as a common communication and application platform for grid management

Future-proof solution to replace traditional ripple control technology
Open for future extensions and features via remote firmware upgrade

Integration of demand-side flexibility management in a Smart Grid environment



L540 Block Diagram

After more than 70 years of experience in load management, we are taking the logical step to integrate this key functionality in a smart grid environment and enlarge the scope for new and future applications.

In choosing L540, you benefit from a future-proof long-life control switch which combines proven technology with the advantages and opportunities of modern communication technology.

Integration in Landis+Gyr Gridstream AIM and GridFlex Control Smart Metering System is easy and highly cost-efficient.

L540 typical applications

L540 enables simple and reliable control of applications, either individually or grouped, according to your specific needs.

- Boilers
- Direct / storage heating
- Heat pumps
- Ventilation
- Air conditioning
- Charging stations for electric vehicles
- Photovoltaic inverters
- Battery storage
- Street lighting
- Various control applications

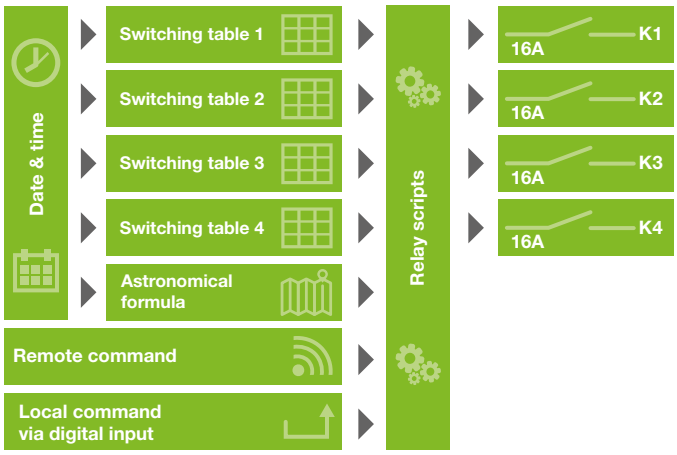
Distribution grid management

- Asset utilization and grid operation optimization
- Load balancing
- Peak load reduction
- Load curve shaping
- Congestion management
- Supports the integration of electric mobility and decentralized energy resources

Self-Consumption optimization for prosumers and consumer communities

Prosumers produce a part of their energy consumption, e.g. as private owners of a photovoltaic installation. L540 enables utilities to offer such customers attractive self-consumption optimization services contributing to strengthening customers' loyalty.

L540 flexible configuration and installation meet your specific needs



L540 configuration overview

Easy parameterization

L540 is equipped with 4 independent relays. Free allocation of controlled applications to the relays offers significant operational advantages:

- Straightforward definition of application control groups and corresponding switching times
- L540 configuration easily adapted to the requirements of each specific installation site
- Lean and easy parameterization data administration

L540 can be parameterized either at our factory according to your instructions, or directly on-site during installation by your own technicians using Landis+Gyr .MAP parameterization tool.

L540 fulfills the core aspects of flexibility management

- Access to distributed loads, decentralized energy generation and storage installations for various use cases
- Aggregation of distributed loads, decentralized energy generation and storage installations
- Flexible and dynamic grouping options
- Status of individual loads, load groups and distributed generation and storage installations
- Remote device configuration and application group management

L540 G3-PLC Control Switch

Functions

Communication module
- Integrated two-way G3-PLC power line communication
- G3-PLC repeater function

Calendar clock
- Intelligent perennial time switch with synchronization via PLC commands
- Astronomical calendar for lighting applications
- Backup clock: Supercap buffered real time clock with 7 days reserve

Operating modes
- Independent remote time switch with holiday calendar and summer/winter time change-over
- Remote control and query via G3-PLC communication
  - Remote switching commands (e.g. command override in case of spontaneous event)
  - Relay monitoring
  - Relay status information

System functions over G3-PLC communication
- Role-based device access
- Add, change and remove time program entries (TOU): Own time program per relay featuring 24 switching times per day (daily, weekly, seasonal and annual programs taking weekdays, holidays and special days into account)
- Event and alarm notification pushes (e.g. digital input state, mains voltage alarm)
- Tamper detection alerts
- Event log
- Read device status information
- Remote firmware download

Programmable features
With .MAP configuration tool
- Relay supervision (contact monitoring)
- Mains monitor (over-/undervoltage detection)
- Programmable relay position for power down, power up
- Random delays
- Relay behavior based on undervoltage and overvoltage events and digital input state
- Astronomical calendar

Service interfaces
- Optical interface
- Relay test button

Communication

Optical interface
- Serial, bi-directional optical port

G3-PLC interface
- Frequency band 1 CENELEC A
- Frequency band 2 G3-500 (150-500 Hz FCC)
- Application Layer Protocol: DLMS/COSEM

Full integration in Landis+Gyr Gridstream AIM and GridFlex Control solution

Technical Specifications

Voltage
- Nominal voltage 230 V (+15/-20%)

Frequency
- Nominal frequency 50 Hz (±2%)

Relays
- 4 x 16 A make-contact relays, soldered

Calendar clock
- Accuracy in normal operation 0.2s/day
- Accuracy in reserve operation <1s/day
- 7 days power reserve (supercapacitor buffered)

AC input
for interaction with on-premise peripheral ecosystem
- 1 isolated digital input 230 V
- Logical «LOW» < 50 VAC
- Logical «HIGH» > 80 VAC

Status LED
- Power (PWR)
- Communication (COM)
- Status digital AC Input (IN)

Temperature range
- Storage: -30 °C … +70 °C
- Operation: -20 °C … +60°C

Ingress protection
- Standard mounting IP52
- Landscape mounting IP50

Product safety
- Electrical safety according to IEC 62052-31

Case sealing
- Breakable plastic pin seal

Dimensions
- 175 x 105 x 78 mm

Mounting
- DIN Rail
- 3-point fixation