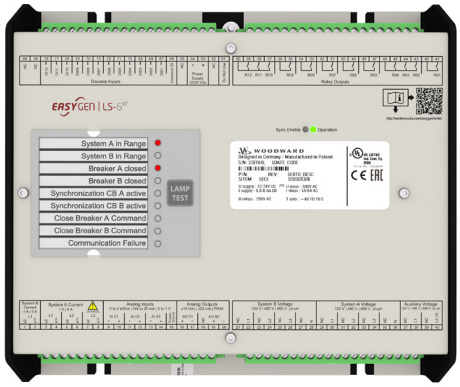
Released

WOODWARD

EASYGEN | LS-6XT

Product Specification
B37913



Salient Features

- ✔ Redundant communication (CAN-Eth, Eth-Eth)
- ✔ Connects to easYgenXT and group controller
- ✔ Manage one or two breakers
- ✔ Touch screen remote operator panel
- ✔ Power measurement class 1
- ✔ Direct connect up to 690 Vac

Multi-Breaker control for complex power management applications

Description

Woodward's easYgen | LS-6XT control is synchronizer controller with integrated mains decoupling and protection features. It enables several redundant communication schemes with peer controls. The applications range from independent synch check relay to complex power management system with multiple utility feeds, bus tie breakers and group breakers in combination with Woodward's easYgen-3400XT/3500XT equipped genset controllers and/or easYgen | GC-3400XT equipped genset groups. Redundant busses running among the peer controls ensure that availability of your power generation asset is not compromised to a single point of failure.
The LS-6XT control together with easYgen-3000XT controls are designed to support OEM switch-gear builders, generator packagers, and system integrators standardize on a single hardware for a multitude of utility parallel or island operations. Off-the-shelf LS-6XT control is software configurable for one/two breaker control, gensets / genset groups handling, and stand-alone/multi-unit application.
The LS-6XT controller is available in a rugged aluminum powder coated housing. An LED Annunciator plate is integrated to the front for local annunciation of alarms that are customizable on-site. Woodward easYview visualization panels are supported over a separate Ethernet network that works as remote operator control panel.

Features

- Up to 32 LS-6XT controls are supported with up to 32 easYgen-3400XT/3500XT.
- Up to 64 LS-6XT are supported in one network with up to 16 GC-3400XT, each group consisting up to 31 gensets.
- Purpose-built software to support single bus or redundant bus communications.
- Three independent true RMS AC measurement (system A, system B and auxiliary voltage).
- Remotely selectable breaker transition modes: Open, Closed (short parallel <100ms), Inter-change, Indefinite parallel.
- Internal power calculation with option to feed-in active power and reactive power-from external transducer.
- Phase match or slip frequency synchronization with voltage matching.
- Several built-in protection elements (including ROCOF, phase shift and flexible limits for custom protection).
- Segment control for the load sharing.
- Automatic date and time synchronization between the LS-6XT units and the connected easYgen-3400XT/3500XT controls.
- Detailed interface communication diagnostics to monitor, visualize and troubleshoot all the connected controls in the network.
- LS-6XT "Stand alone" mode without the easYgen-3400XT/3500XT is possible.
- Custom logic and configurable I/Os driven by LogicsManager and AnalogManger.
- HMI supported with RP-3000XT offering standard and customizable screens
- Ethernet interconnectivity and Modbus master functions for enhanced communication flexibility.

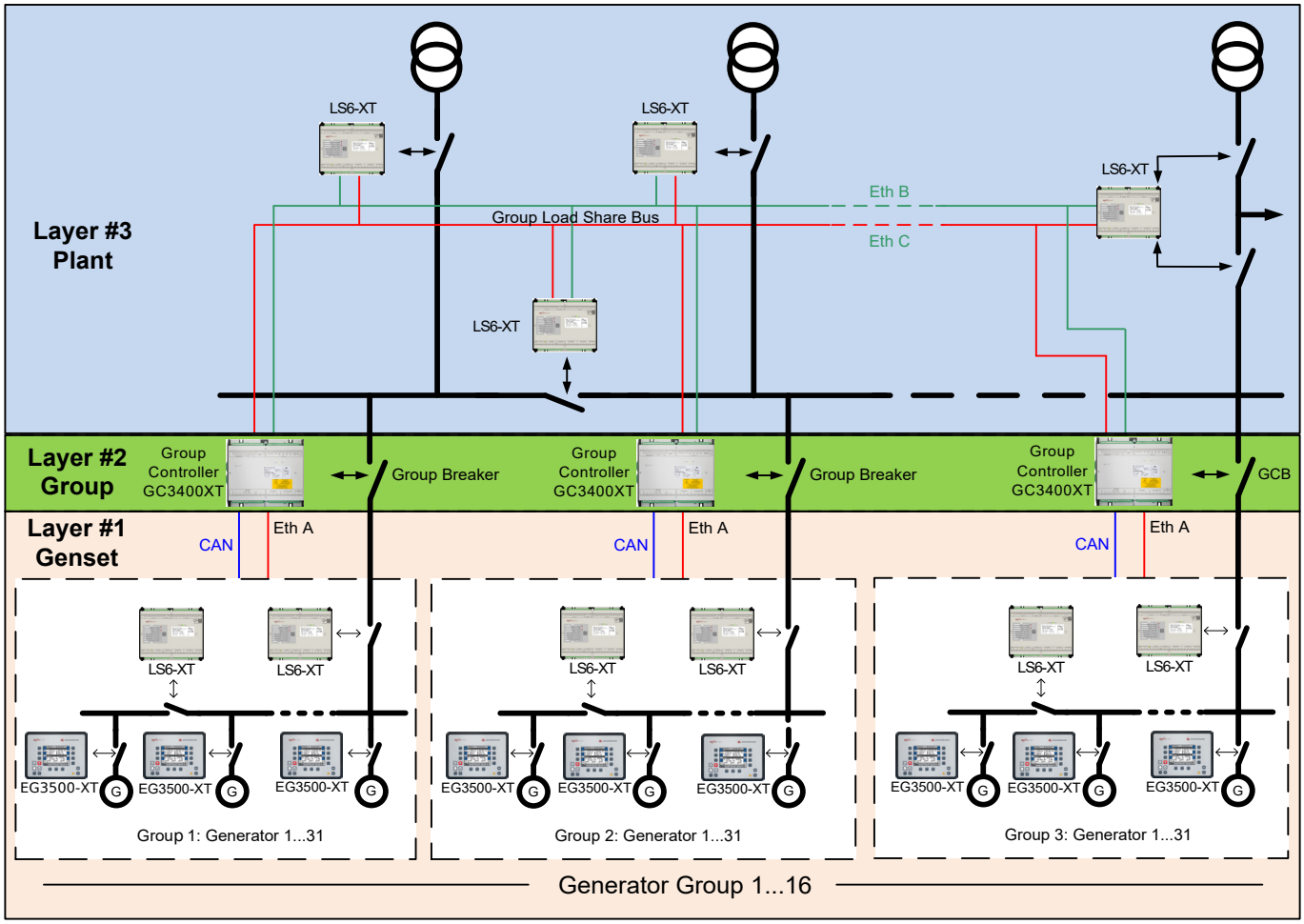
- Premium circuit breaker control for reliability demanding complex power management applications
  - Peak shaving operation
  - Import/Export operation
  - Islanded & Utility parallel operation
- Control up to 64 breakers on up to 128 bus segments in an application
- Purpose built application schemes
  - One/two breaker control
  - Gensets/genset groups handling
  - Stand-alone/multi-unit operation
- Forward and reverse synchronization between utility and genset group
- Redundant Ethernet communication
- Ethernet and RS-485 interfaces for remote control and visualization
- Customizable logic, HMI screens (with easYview) and alarms
- Modbus Master and Interconnect Mapper support
- Expandable I/Os over CAN interface (IKD support)

Specifications

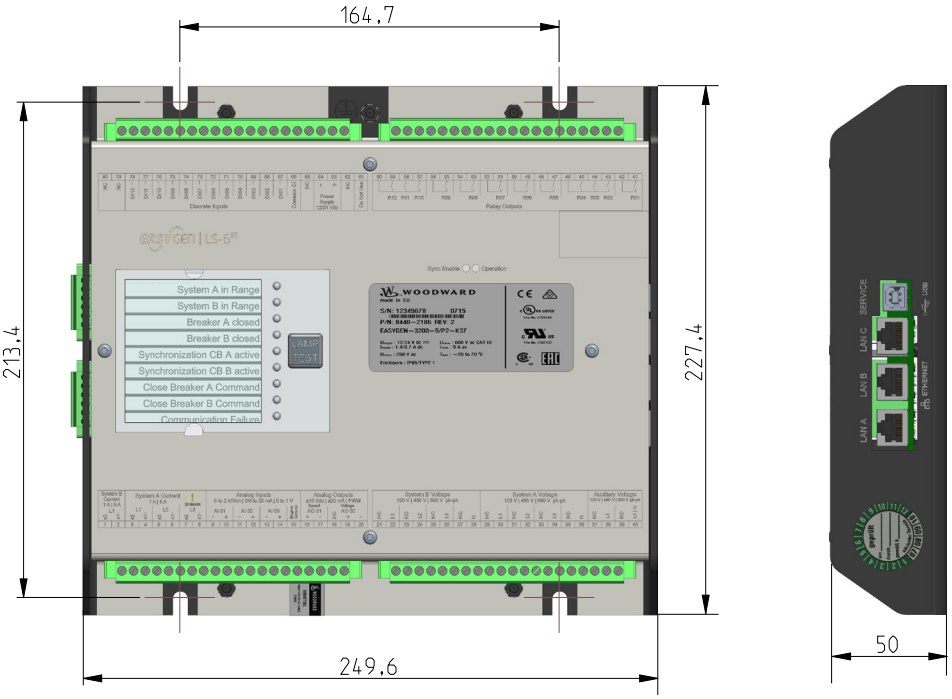
Power supply.....12/24 Vdc (8 to 40 Vdc)
Intrinsic consumption.....max. 22 W
Ambient temp. (operation).....-40 to 70 °C / -40 to 158 °F
Ambient temp. (storage).....-40 to 80 °C / -40 to 176 °F
Ambient humidity.....95 %, non-condensing
Voltage (software configurable) .....(Y / Δ)
100Vac Rated (Vrated).....69 / 120 Vac
Max value (Vmax).....86 / 150 Vac
400 / 600 VAC Rated (Vrated).....400 / 690 VAC
Max. value (Vmax).....520 / 897 VAC
Rated surge Volt. (Vsurge).....6.0 kV
Accuracy.....Class 0.5
Measurable alternator windings
3p-3w, 3p-4w, 3p-4w OD, 1p-2w, 1p-3w
Setting range primary.....50 to 650,000 Vac
Linear measuring range.....1.25×Vrated
Measuring frequency.....50/60 Hz (30 to 85 Hz)
High Impedance Input; Resistance per path.....2.5 MΩ
Max. power consumption per path.....< 0.15 W
Current (Isolated, software configurable)
Rated (Irated) .....1 A or 5 A
Linear measuring range.....IsystemA = 3.0×Irated
IsystemB = 1.5×Irated
Setting range .....1 to 32,000 A
Burden .....< 0.10 VA
Rated short-time overcurrent (1 s).....[1] 50×Irated,
[5] 10×Irated
Accuracy.....Class 0.5

Power
Setting range.....0.5 to 99,999.9 kW/kvar
Accuracy.....Class 1.0
Discrete inputs.....isolated
Input range.....12/24 VDC (8 to 40 VDC)
Input resistance.....approx. 20 kΩ
Relay outputs.....isolated
Contact material.....AgNi
Load (GP).....2.00 Aac@250 Vac 2.00 Adc@24 VDC
Analog inputs (isolated).....freely scalable
Type 1.....0 to 1 V / 0 to 2000 Ohms / 0 to 20 mA
Resolution.....16 Bit
Maximumpermissible voltage against genset Ground.....9 V
Maximum permissible voltage genset Ground to PE ...100 V
Analog outputs (isolated) freely scalable
Type 1.....± 10 V / ± 20 mA / PWM
Basic insulation voltage (AO#2).....500 Vac
Reinforced insulation voltage (AO#2).....300 Vac
Insulation voltage (AO#1).....100 Vac
Resolution.....12 Bit
Output ± 10 V (scalable).....Internal resistance
Output ± 20 mA (scalable).....Maximum load 500 Ω
Housing.....Back panel mounting,
Powder Coated Sheet metal housing
Dimensions W x H x D (P1):.....250 × 228 × 50 mm
Connection.....screw/plug terminals 2.5 mm²
Protection system.....IP 20
Weight.....approx. 1,750 g
Listings.....CE, UL, cUL, LR/ABS

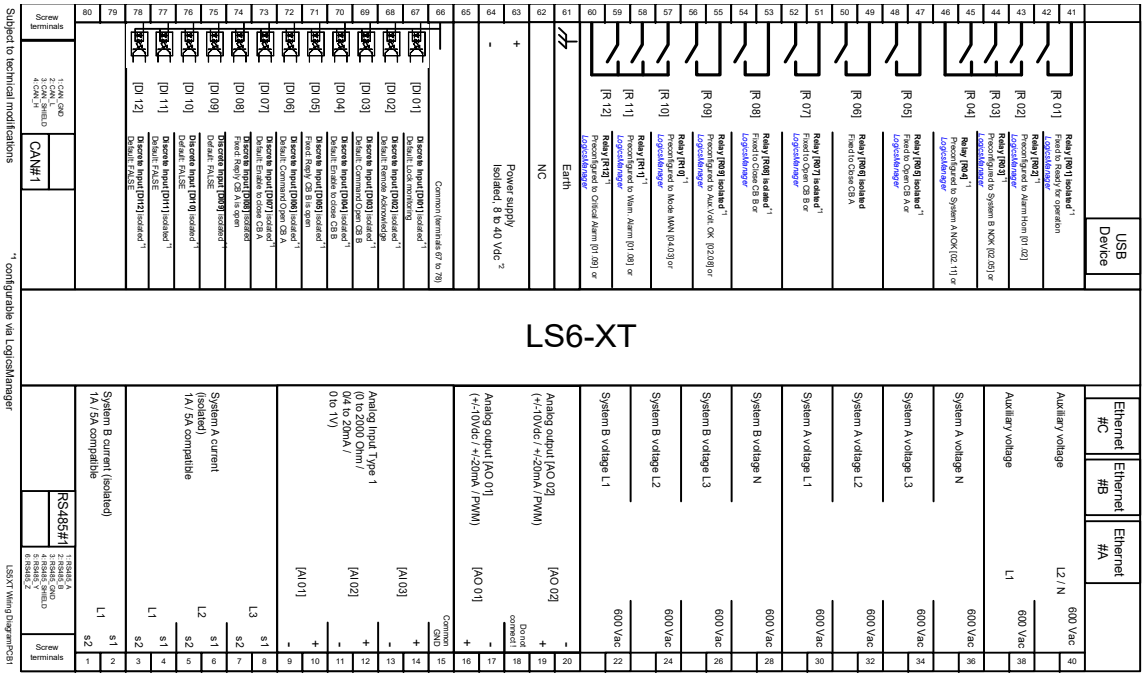
APPLICATION



DIMENSIONS



TERMINAL DIAGRAM



RELATED PRODUCTS

- Genset Controller easYgen-3400/3500XT (Product Specification # 37583)
- Group Controller easYgen | GC-3400XT-P1 (Product Specification # 37896)
- ToolKit (Product Specification # 03366)
- LDSS Emulation Tool (Product Specification #37897)
- easYview (Product Specification #37951)
- DataTelegramMapper Tool (Application Note #37684)
- Localization tool (P/N: 10-011-569)
- Modbus master tool (Application Note #37919)
- Ethernet Interconnect Mapper tool (P/N: 10-031-249)
- I/O Expansion Board IKD1 (Product spec. #37171, #37984, #37985)
- Remote Annunciator easYlite-200 (Product spec.#37907)

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FEATURES OVERVIEW

EASYGEN | LS-6XT	easYgen LS-6XT	easYgen LS-6XT
Model	LS-612	LS-612
Package	P1	P2
Measuring		
System A voltage (up to 690 VAC)	3-ph	3-ph
System A current (1 A or 5 A software selectable)	3-ph	3-ph
System B voltage (up to 690 VAC)	3-ph	3-ph
System B current (1 A or 5 A software selectable)	1-ph	1-ph
Auxiliary voltage (up to 690 VAC)	1-ph	1-ph
Control		
Breaker control logic (open and closed transition <100 ms) FlexApp™	1 / 2	1 / 2
Number of supported Woodward LS-6 units (Layer 1 / Layer 3)	32 / 64	32 / 64
Single and multiple-unit operation	✔	✔
Auto, Manual operating modes	✔	✔
Breaker synchronization (+/- slip frequency / phase matching)	✔	✔
Vector group adjustment for synchronization	✔	✔
Configurable dead bus closure direction	✔	✔
GGB (Generator Group Breaker) Control	✔	✔
Import / export control (kW and kvar)	✔	✔
Active synchronization (frequency and voltage control)	-	✔
HMI		
easYview support	✔	✔
Configuration via PC	✔	✔
Event recorder with real time clock (battery backup)	✔	✔
Date & Time Sync. between LS-6XT, easYgen-3400XT/3500XT and GC-3400XT	✔	✔
Configurable LEDs on Faceplate, x8	✔	✔
Protection (Equivalent ANSI #)		
Voltage / frequency (59/27/810/81U)	✔	✔
Voltage asymmetry (47)	✔	✔
Phase shift / df/dt (ROCOF) (78/81)	✔	✔
QV monitoring and Time-dependent voltage	✔	✔
Mains voltage increase and Synch-Check (25)	✔	✔
Import / export power (32R)	-	✔
Instantanoues overcurrent (50)	-	✔
Time-overcurrent (IEC 255 complinant) (51/51V)	-	✔
Unbalanced load (46)	-	✔
Monitoring		
Breaker open/close monitoring	✔	✔
Synchronization time out monitoring	✔	✔
Voltage and System Plausibility	✔	✔
Freely configurable alarms	✔	✔
Flexible Limits	✔	✔
I/Os		
Discrete alarm inputs (configurable) LogicsManager™	12 (11)	12 (11)
Discrete outputs (configurable) LogicsManager™	12 (11)	12 (11)
External discrete inputs / outputs via CANopen	16/16	32/32
easYlite -200 via CAN1 or CAN2	-	2
Analog inputs configurable FlexIn™	3	3
Analog outputs: ±10V, ±20mA, PWM; configurable AnalogManager™	2	2
CAN bus communication interfaces FlexCAN™	1	2
Ethernet Modbus TCP Slave interface	3	3
USB Serial interface	1	1
RS-485 Modbus RTU Slave interface	1	1
Listings/Approvals		
CE declaration, UL / cUL Listing (61010 ,6200)	✔	✔
Marine (LR/ABS)	✔	✔
Part Numbers P/N		
Cabinet back mounting w / o display	8440-2222	8440-2317
Spare connector KIT	8923-2319	8923-2319