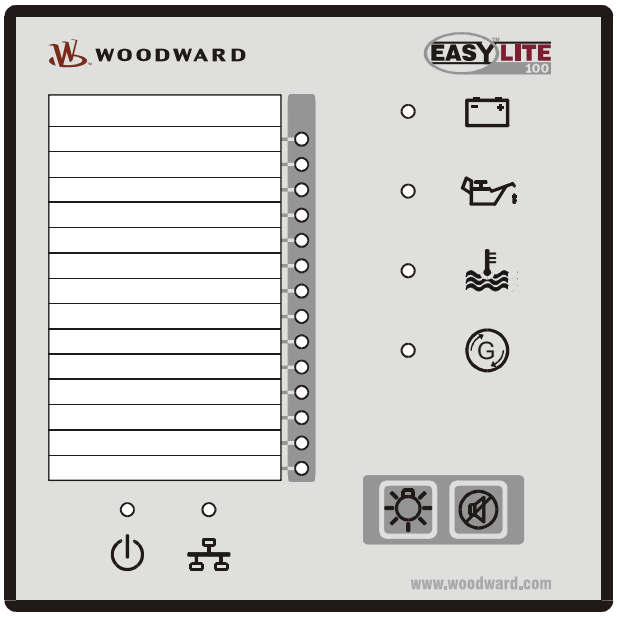
37307A

easYlite-100
Annunciator



Instruction Manual
Software Version 1.0xxx

Manual 37307A

WARNING

Read this entire manual and all other publications pertaining to the work to be performed before installing, operating, or servicing this equipment. Practice all plant and safety instructions and precautions. Failure to follow instructions can cause personal injury and/or property damage.

The engine, turbine, or other type of prime mover should be equipped with an overspeed (overtemperature, or overpressure, where applicable) shutdown device(s), that operates totally independently of the prime mover control device(s) to protect against runaway or damage to the engine, turbine, or other type of prime mover with possible personal injury or loss of life should the mechanical-hydraulic governor(s) or electric control(s), the actuator(s), fuel control(s), the driving mechanism(s), the linkage(s), or the controlled device(s) fail.

CAUTION

To prevent damage to a control system that uses an alternator or battery-charging device, make sure the charging device is turned off before disconnecting the battery from the system.

Electronic controls contain static-sensitive parts. Observe the following precautions to prevent damage to these parts.

- **Discharge body static before handling the control (with power to the control turned off, contact a grounded surface and maintain contact while handling the control).**
- **Avoid all plastic, vinyl, and Styrofoam (except antistatic versions) around printed circuit boards.**
- **Do not touch the components or conductors on a printed circuit board with your hands or with conductive devices.**

Important definitions

WARNING

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION

indicates a potentially hazardous situation that, if not avoided, could result in damage to equipment.

NOTE

Provides other helpful information that does not fall under the warning or caution categories.

Revision History

Rev.	Date	Editor	Change
NEW	05-05-09	TP	Release
A	05-06-21	TP	CE and UL/cUL listings added

Content

Illustrations and Tables

Illustrations

Tables

Chapter 1.
General Information

Related Documents

Type		English	German
easYlite-100 Series			
easYlite-100 – Manual	this manual ⇨	37307	
easYlite-100 – Brief Manual		37308	
easYgen-1000 Series			
easYgen-1000 – Installation Manual		37320	GR37320
easYgen-1000 – Configuration Manual		37321	GR37321
easYgen-1000 – Operation Manual		37322	GR37322
easYgen-1000 – Interface Manual		37262	GR37262
Additional Manuals			
LeoPC1 – User Manual PC program for configuration, parameter visualization, remote control, data logging, language upload, alarm and user management, and event recorder management. This manual describes the use of LeoPC1 software.		37146	GR37146
LeoPC1 – Engineering Manual PC program for configuration, parameter visualization, remote control, data logging, language upload, alarm and user management, and event recorder management. This manual describes the programming of LeoPC1 software.		37164	GR37164

Table 1-1: Manual - overview

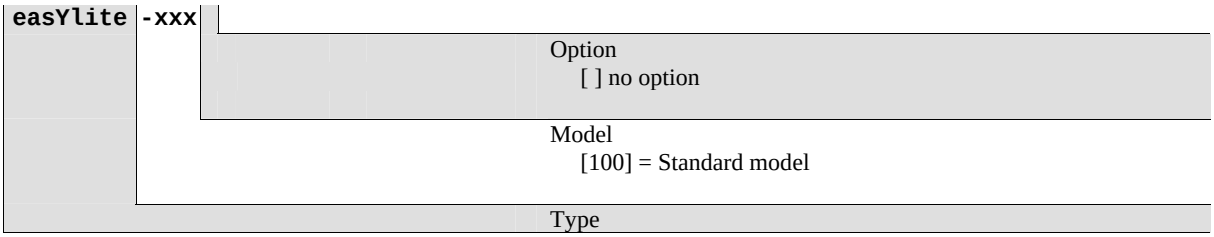
All manuals can be downloaded from the Woodward Publications Server:
http://www.woodward.com/pubs/pubpage.cfm

Overview

The easYlite-100 Series annunciator provides the following functions:

- Genset control status display
- 14 programmable status display LEDs
- 4 pre-assigned status display LEDs
- 1 CAN bus status display LED
- 1 power supply status display LED
- CAN bus communications to genset control

Type designation is as follows:



Examples:
easYlite-100 (standard easYlite 100)

Intended Use The unit must only be operated as described in this manual. The prerequisite for a proper and safe operation of the product is correct transportation, storage, and installation as well as careful operation and maintenance.

NOTE

This manual has been developed for a unit fitted with all available options. Inputs/outputs, functions, configuration screens and other details described, which do not exist on your unit may be ignored.

The present manual has been prepared to enable the installation and commissioning of the unit. Because of the large variety of parameter settings, it is not possible to cover every possible combination. The manual is therefore only a guide. In case of incorrect entries or a total loss of functions, the default settings can be taken from the enclosed list of parameters.

Chapter 2.
Electrostatic Discharge Awareness

All electronic equipment is static-sensitive, some components more than others. To protect these components from static damage, you must take special precautions to minimize or eliminate electrostatic discharges.

Follow these precautions when working with or near the control.

1. Before performing maintenance on the electronic control, discharge the static electricity on your body to ground by touching and holding a grounded metal object (pipes, cabinets, equipment, etc.).

2. Avoid the build-up of static electricity on your body by not wearing clothing made of synthetic materials. Wear cotton or cotton-blend materials as much as possible because these do not store static electric charges as much as synthetics.

3. Keep plastic, vinyl, and Styrofoam materials (such as plastic or Styrofoam cups, cup holders, cigarette packages, cellophane wrappers, vinyl books or folders, plastic bottles, and plastic ash trays) away from the control, the modules, and the work area as much as possible.

4. **Opening the control cover may void the unit warranty.**
   Do not remove the Printed Circuit Board (PCB) from the control cabinet unless absolutely necessary. If you must remove the PCB from the control cabinet, follow these precautions:

   - Ensure that the device is completely de-energized (all connectors must be disconnected).
   - Do not touch any part of the PCB except the edges.
   - Do not touch the electrical conductors, connectors, or components with conductive devices with your hands.
   - When replacing a PCB, keep the new PCB in the protective antistatic bag it comes in until you are ready to install it. Immediately after removing the old PCB from the control cabinet, place it in the protective antistatic bag.

CAUTION

To prevent damage to electronic components caused by improper handling, read and observe the precautions in Woodward manual 82715, *Guide for Handling and Protection of Electronic Controls, Printed Circuit Boards, and Modules.*

Chapter 3.
Housing

Dimensions / Panel Cut-Out

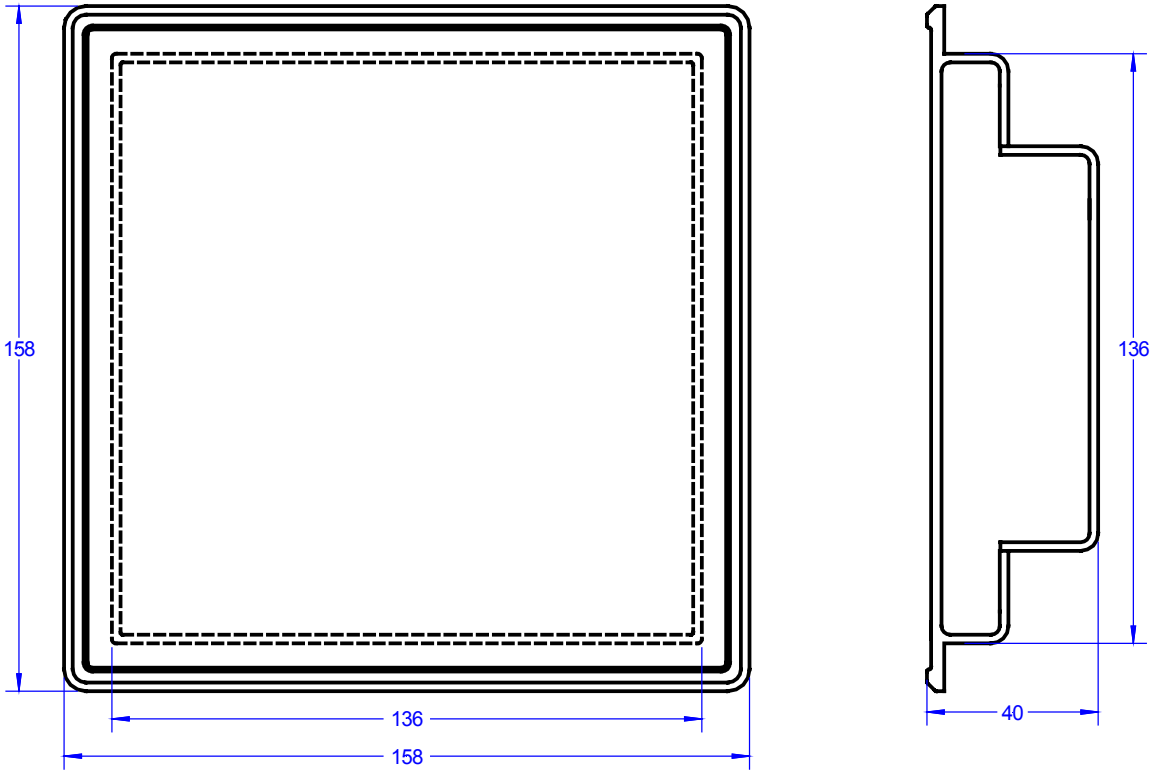


Figure 3-1: Housing - panel cut-out

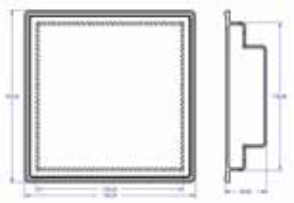
Description		Dimension	Tolerance
Height	Total	158 mm	---
	Panel cut-out	138 mm	+ 1.0 mm
	Housing dimension	136 mm	
Width	Total	158 mm	---
	Panel cut-out	138 mm	+ 1.0 mm
	Housing dimension	136 mm	
Depth	Total	40 mm	---

Table 3-1: Housing - panel cut-out

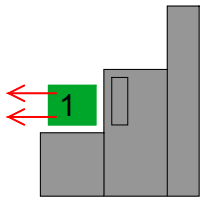
Installation

For installation into a door panel, proceed as follows:

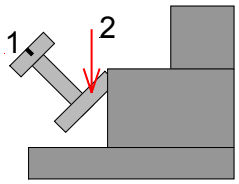
1. **Panel cut-out**
   Cut out the panel according to the dimensions in Figure 3-1.



2. **Remove terminals**
   Loosen the wire connection terminal screws on the back of the unit and remove the wire connection terminal strip if required (1).

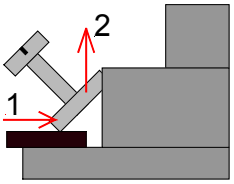


3. **Loosen clamping screws**
   Loosen the four clamping screws (1) until they are almost flush with the clamp inserts and tilt the clamp inserts down by 45° (2) to remove them from the housing. Do not completely remove the screws from the clamp inserts.

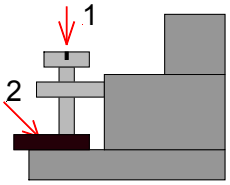


4. **Insert unit into cut-out**
   Insert the unit into the panel cut-out. Verify that the unit fits correctly in the cut-out. If the panel cut-out is not big enough, enlarge it accordingly. Ensure that the gasket is placed properly if used. Ensure that the paper strip is not pinched between gasket and panel to maintain isolation.

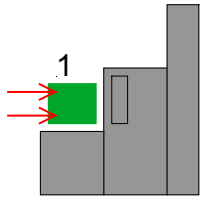
5. **Attach clamp inserts**
   Re-install the clamp inserts by tilting the insert to a 45° angle (1). Insert the nose of the insert into the slot on the side of the housing. Raise the clamp insert so that it is parallel to the control panel (2).



6. **Tighten clamping screws**
   Tighten the clamping screws (1) until the control unit is secured to the control panel (2). Over tightening of these screws may result in the clamp inserts or the housing breaking. Do not exceed the recommended tightening torque of 0.1 Nm.



7. **Reattach terminals**
   Reattach the wire connection terminal strip (1) and secure them with the side screws.



Note: If the gasket is damaged, it needs to be replaced. Use only the original gasket kit (P/N 3050-1057) for replacement.

Chapter 4.
Wiring Diagram

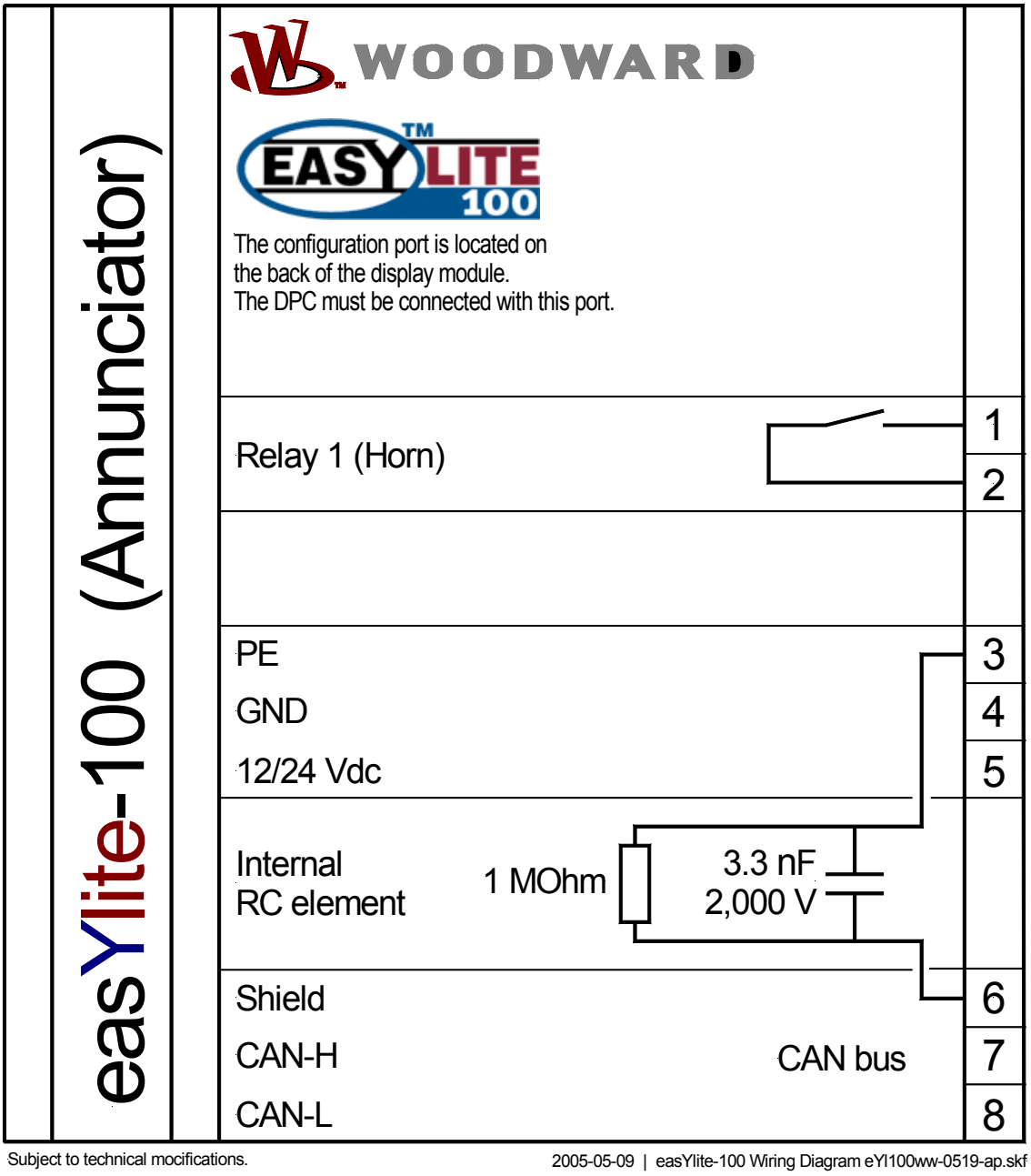


Figure 4-1: Wiring diagram – easYlite-100

Chapter 5.
Connections

Terminal Arrangement

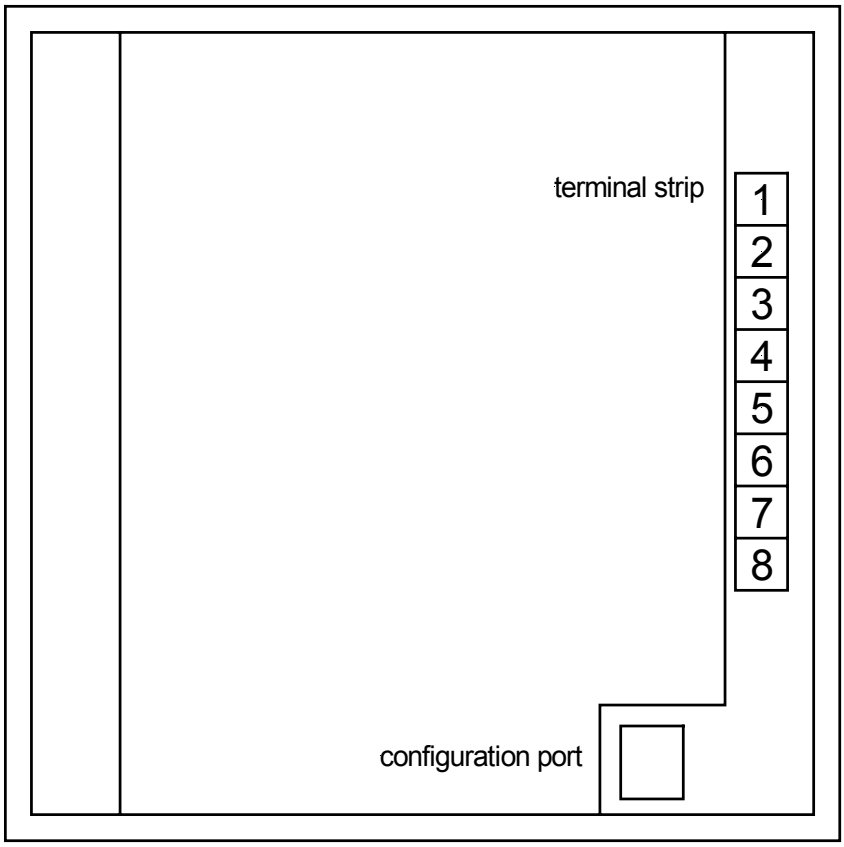


Figure 5-1: easYlite-100 back view - terminal arrangement

Power supply

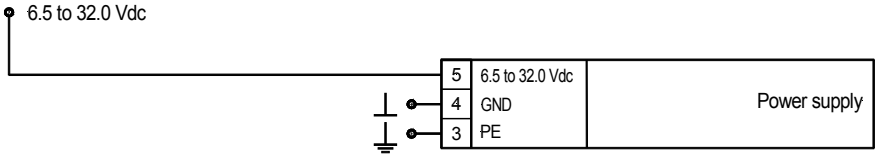


Figure 5-2: Power supply

Terminal	Description	A_{max}
5	12/24 Vdc	2.5 mm²
4	GND	2.5 mm²
3	PE	2.5 mm²

Table 5-1: Power supply - terminal assignment

For a proper operation of the device, a minimum initial voltage of 10.5 Vdc is necessary when switching on the easYlite. After this, a continuous operating voltage between 6.5 and 32.0 Vdc is possible to operate the easYlite safely. The unit is capable of handling voltage drops to 0 V for a maximum of 10 ms.

Relay Output

The easYlite-100 provides one galvanically isolated relay output. The relay output is pre-assigned to the external alarm/horn.

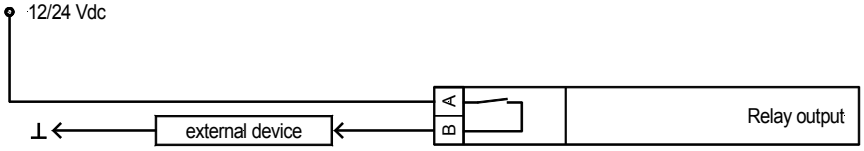


Figure 5-3: Relay outputs

Terminal		Description	A_{max}
Term.	Com.		
A	**B**		
1	2	Relay 1	2.5 mm²

Table 5-2: Relay outputs - terminal assignment

Interfaces

Overview

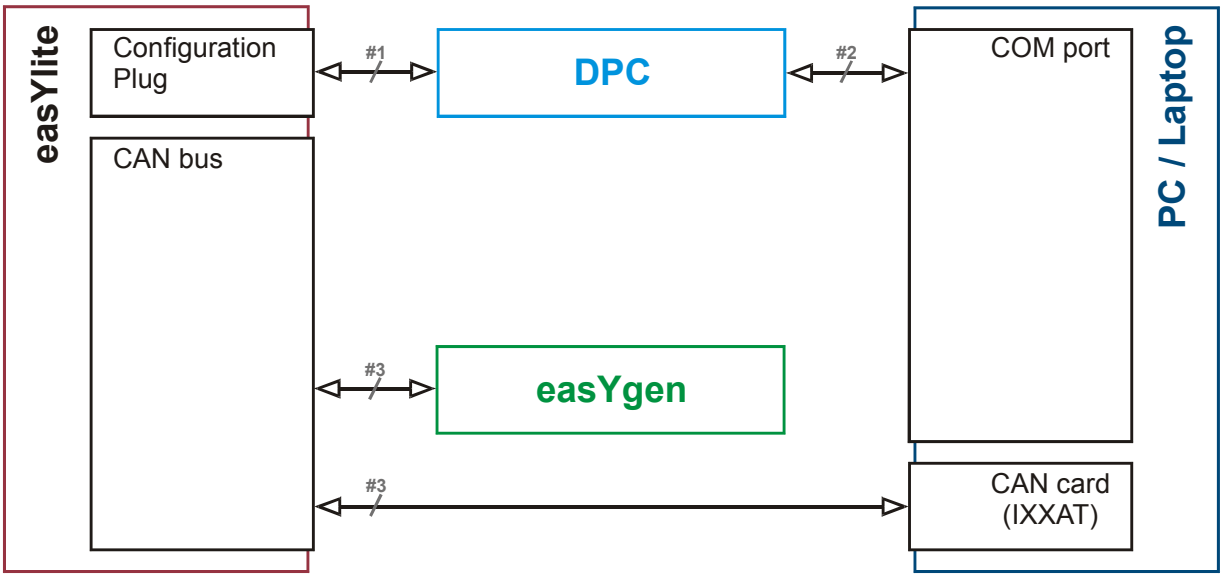


Figure 5-4: Interfaces - overview

No.	Connection from ...	to ...
#1	easYlite [DPC connector]	DPC
#2	DPC	PC [COM-Port]
	PIN 1 ----------	PIN 4 (connect with PIN 8)
	PIN 2 ----------	PIN 3
	PIN 3 ----------	PIN 2
	PIN 4 ----------	PIN 1
	PIN 5 ----------	PIN 5
	N/A ----------	N/A
	PIN 7 ----------	PIN 8 (connect with PIN 4)
	PIN 8 ----------	PIN 7
	PIN 9 ----------	PIN 9
		Connect PIN4/8
#3	easYlite [CAN terminals]	PC [CAN port, submin-D, 9pole, female]
	Terminal 8 - CAN-L ----------	PIN 7 - CAN-H
	Terminal 7 - CAN-H ----------	PIN 2 - CAN-L
	CAN termination resistor between terminals 8/7	CAN termination resistor between terminals 2/7

Table 5-3: Interfaces - connection overview

NOTE

The DPC cable (P/N 5417-557) is intended for service operation only. Do not operate the easYlite-100 with the DPC plugged into the unit during regular operation.

CAN Bus

Wiring

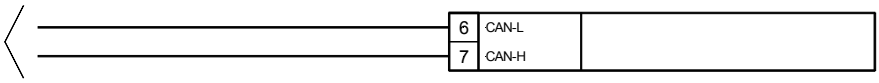


Figure 5-5: Interfaces - CAN bus

Terminal	Description		A_{max}
8	CAN bus	CAN-L	2.5 mm²
7		CAN-H	2.5 mm²
6		Shield	2.5 mm²

Table 5-4: CAN bus - terminal assignment

Shielding

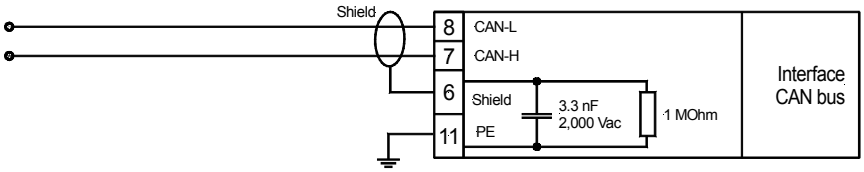


Figure 5-6: Interfaces - CAN bus - wiring of shielding

Please note that the CAN bus must be terminated at each end of the bus! Figure 5-7 is a schematic of the CAN bus with the termination resistors installed.

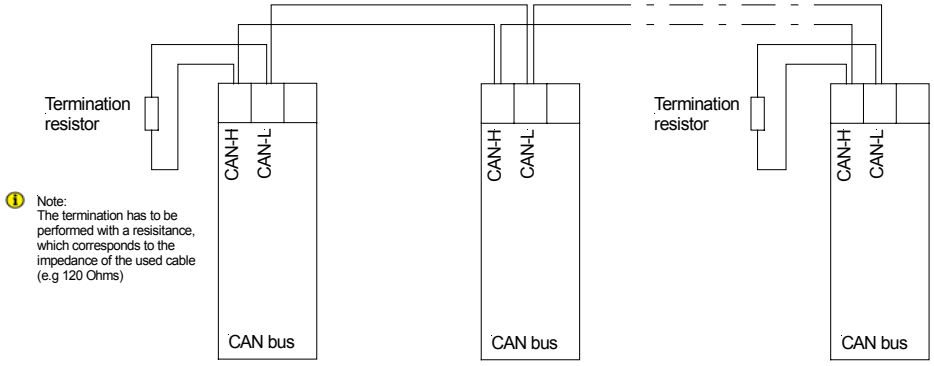


Figure 5-7: Interfaces - CAN bus - schematic wiring and termination

DPC - Direct Configuration Cable

NOTE

Please note that configuration using the direct configuration cable DPC (product number 5417-557) is possible starting with revision B of the DPC (first delivered July 2003). If you have an older model please contact our sales department.

NOTE

The connection cables delivered with the DPC must be used to connect between the control unit and the computer to ensure a proper function of the easYlite. Utilization of an extension or different cable types for the connection between easYlite and DPC can result in a malfunction of the easYlite. This may possibly result in damage to components of the system. If an extension of the data connection line is required, only the serial cable between DPC and notebook/PC may be extended.

Unplug the DPC after configuration to ensure a safe operation!

Chapter 6.
Operation

Front Panel

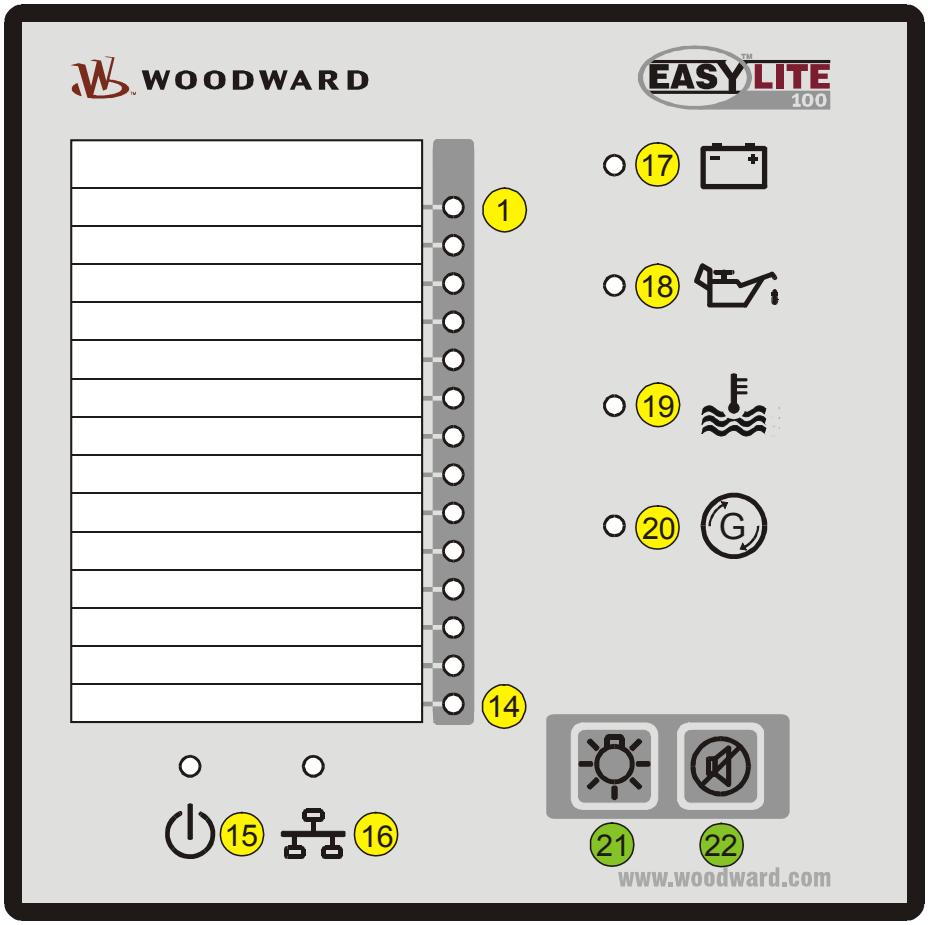


Figure 6-1: Front panel

Figure 6-1 illustrates the front panel which includes push-buttons and LEDs. A short description of the front panel is given below.

1 to 20 **LEDs**

The LEDs indicate operating states of the unit and alarm messages.

21 and 22 **Push-buttons**

The push buttons on the front panel are assigned to fixed functions of the unit.

Operation and Display

Purpose of the Status LEDs

The easYlite has several status LEDs to indicate the operating state. The LEDs indicate the following conditions:

LEDs 1 to 14: 14 separately configurable alarm, warning, and status LEDs (red)

LED 15: Power LED (green)

LED 16: CAN bus status bicolor LED (green/red) for indication of several CAN bus states:

Color	Mode	CANOpen status	Description
green	single flash	STOPPED	CANOpen bus is stopped
green	flashing	PREOPERATIONAL	CANOpen bus is ready for operation
green	on	OPERATIONAL	CANOpen bus is in operation, a connection to the easYlite is established
red	on	Bus off	No bus connection existing
red	quad flash	No easYgen connected	Bus connection is OK, but no PDOs are received from an easYgen

Table 6-1: CAN bus status LED signals

LED 17: Configurable alarm LED for battery alarm (red)

LED 18: Configurable alarm LED for oil pressure alarm (red)

LED 19: Configurable alarm LED for coolant temperature alarm (red)

LED 20: Configurable alarm LED for EPS supplying load indication (red)

Purpose of the Buttons

The easYlite provides two buttons to operate the unit. The buttons have the following functions:

Button 21: Lamp test

Button 22: Horn silence

Operating the easYlite

- When the easYlite annunciator is powered up, LED 15 is illuminated.
- The CAN bus status is indicated by LED 16.
- If a warning, alarm, or operational state is present, which is configured to one of the LEDs 1 through 14, or 17 through 20, the assigned LED will illuminate.
- If the horn is enabled by an alarm condition, it may be silenced with the horn silence button 22.
- A function test of all LEDs may be conducted by pressing the button 21.

Chapter 7.
Functional Description

Overview

The easYlite annunciator is able to display warning, alarm or status messages of a Woodward genset control remotely (for example in a remote control station). Up to 128 easYlites can be connected to one genset control via a CAN bus. All genset control messages are transmitted permanently to the easYlite via CANopen. One easYlite is able to display 18 different warning, alarm or status messages using freely configurable LEDs.

Furthermore, the easYlite allows to connect a signaling device like a horn via relay 1. The signaling device indicates an alarm issue at the genset and/or a failure of the CAN connection between easYlite and genset control.

Issuing a warning, alarm or status message at the genset control enables the horn bit of the genset control. If the horn bit is assigned to a relay, this relay will be energized when such a message is issued. The relay 1of the easYlite will also be energized if this is configured to "Horn" or "CAN fail or horn".

LED Test

A test of the easYlite LEDs may be performed by pressing button 21. All LEDs must be illuminated in the color indicated under Purpose of the Status LEDs on page 17 while this button is pressed. The bicolor CAN bus status LED 16 must be illuminated yellow (green + red) when it is functioning correctly. The functionality of this button is always enabled.

Silencing the Horn

If a warning, alarm or status message has enabled the horn, this can be silenced by pressing button 22. This disables only the horn bit of the genset control and, if configured, relay 1. A complete acknowledgement of the alarm can only be performed on the genset control. CAN failures, which may result the energizing of relay 1 if configured so, cannot be silenced.

Function of the Pre-Assigned LEDs

The easYlite has four pre-assigned LEDs which must be configured correctly do indicate the intended warning, alarm or status message, which is transmitted from the connected easYgen genset control via the CAN bus. It is not possible to use general standard values since the configuration depends on the individual wiring of the genset control. Therefore, the LEDs have to be configured to the respective discrete or analog inputs of the connected easYgen using LeoPC1 when commissioning the annunciator.

If the oil pressure sensor is connected to discrete input 3 (refer to Figure 7-1) at the genset control for example, the parameter "Displayed alarm LED18" (LED 18 with oil pressure icon on the front panel, refer to Figure 6-1) must be configured to "Digital input 3" in LeoPC1 (refer to Figure 7-2). Refer to the LeoPC1 manual 37146 for more information.

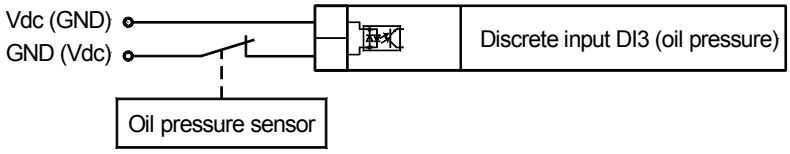


Figure 7-1: Discrete input for oil pressure sensor

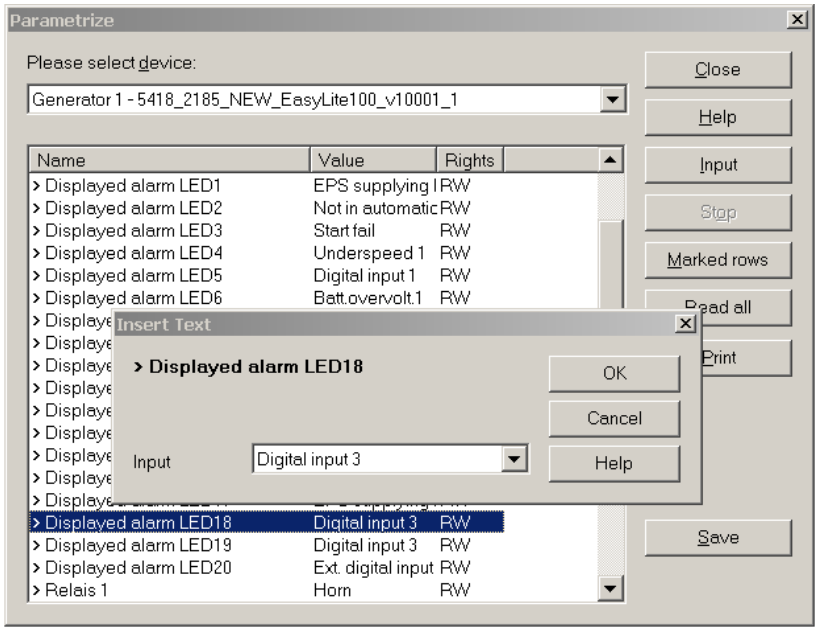


Figure 7-2: LED configuration in LeoPC1

The alarm message indications for battery (LED 17), coolant temperature (LED 19), and EPS supplying load (LED 20) must be configured accordingly.

Chapter 8.
Configuration

Restoring Default Values

I may be desirable to configure the easYlite from a known state if the unit has been previously configured for another application. Restoring factory default settings can be accomplished easily.

Resetting Via LeoPC1

Connect the easYlite with your PC and start LeoPC1 as described in Configuration Using the PC on page 21.
Set the parameter Factory settings to YES.
Set the parameter Set default values to YES.
The factory default values have been restored.
This can be verified by reading out the values from the unit with the "Read all" button.

Configuration Using the PC

CAUTION

For the configuration of the unit via a PC please use the LeoPC1 software with the following software version:

LeoPC1 3.1 or higher

NOTE

Please note that configuration using the direct configuration cable DPC (product number 5417-557) is possible starting with revision B of the DPC (first delivered July 2003). If you have an older model please contact our sales department.

For configuration of the unit via PC program please proceed as follows:

- Install the LeoPC1 program on your notebook/PC according to the provided user manual 37146. Consider the options that are given during the installation.
- Prior to the completion of the installation you will be prompted to select the language with which you want to start the PC program. The language of LeoPC1 may be changed at any time. The selection of the language refers only to language with which the menus and subprograms that LeoPC1 program works with. This setting will not change the configured language of the control unit.
- After the installation of LeoPC1 has been completed it is necessary to reboot your notebook/PC.
- Establish a connection between your notebook/PC and the control unit via the DPC cable. Insert the RJ45 plug into the RJ45 port on the unit (see DPC - Direct Configuration Cable on page 15 for details) and the serial cable to the COM1 port of your notebook/PC.
- You can now start the PC program as follows:
  - by "Start/Program/Woodward/LeoPC1" (version 3.1 or higher) and opening the respective cfg file, or
  - by a double click on the respective file ending ".cfg" in the subdirectory "/LeoPC1".
  The cfg files differ in their language used. Use the file on the enclosed floppy disk or CD with the language you want, i.e. US for US English or DE for German.
- After the LeoPC1 program has started, establish communication by pressing the F2 button or selecting Communication -> Connect from the menu. This will establish a data link between the control unit and the notebook/PC.
- Start the configuration routine by pressing the F3 button or selecting Devices -> Parameterize from the menu and adjust the parameter of the unit to your application using this manual.

NOTE

Detailed information about LeoPC1 and the utilization of the software may be found in the user manual 37146 belonging to it.

NOTE

The connection cables delivered with the DPC must be used to connect it to ensure a proper function of the easYlite. An extension or utilization of different cable types for the connection between easYlite and DPC may result in a malfunction of the easYlite. This may further result in damage to components of the system. If an extension of the data connection line is required, only the serial cable between DPC and notebook/PC may be extended.

NOTE

Unplug the DPC after configuration to ensure a safe operation! If the DPC remains plugged into the easYlite100 unit, a safe operation of the unit cannot be guaranteed.

Configuration of the Genset Controller

easYlite-100 and easYgen-1500

Setting the Bus Parameters:

Configure both devices to the following settings:

Parameter	Setting in easYlite	Setting in easYgen
Device number	65	1
Protocol	---	CAN Open
Baudrate	125 kBd	125 kBd
CAN Open Master	---	YES

Table 8-1: Configuration settings for easYlite-100 and easYgen-1500 - bus parameters

NOTE

The baud rate must be configured the same for all participants on one bus.
Each participant must have an individual device number.
The CAN Open Node-ID of the device is the device number.

After a correct CAN bus connection between the easYlite and the easYgen has been established and the same baud rate has been configured, the CAN bus status LED at the easYlite flashes green four times to indicate the missing PDOs.

Data Transmission Settings

Configure the easYlite for CAN Open RPDO (receive PDO) and the easYgen for CAN Open TPDO (transmit PDO) 1, 2, 3, or 4 (default setting 3) according to the following settings:

Parameter	Setting in easYlite	Setting in easYgen
COB-ID	897 dec / 381 hex	897 dec / 381 hex
Transmission type	---	255
Event timer	---	20 ms
1. mapped object	---	3196
2. mapped object	---	0
3. mapped object	---	0
4. mapped object	---	0

Table 8-2: Configuration settings for easYlite-100 and easYgen-1500 - transmission parameters

NOTE

A different COB-ID may be used but the same COB-ID must be used for all devices.

If the above settings have been configured correctly, the easYlite CAN bus status LED will illuminate green. The CAN bus status LED does not indicate whether the data transmitted with the PDO is correct. It only indicates that a PDO is received. In order to test whether the data is correct, energize a discrete input at the easYgen and check the indication of this DI at the easYlite.

Horn Silencing

Configure the easYlite for CAN Open RPDO (receive PDO) according to the following settings:

Parameter	Setting in easYlite	Setting in easYgen
1st Client->Server COB-ID	1537 dec / 601 hex	---
1st Server->Client COB-ID	1409 dec / 581 hex	---
1st Node-ID of the Server	1	---
Max answer time ext. devices	3.0 s	---

Table 8-3: Configuration settings for easYlite-100 and easYgen-1500 - transmission parameters

The COB-IDs are calculated as follows:
1st Client->Server COB-ID = 600 hex + Node-ID (device number) of the easYgen
1st Server->Client COB-ID = 580 hex + Node-ID (device number) of the easYgen

Examples:	Node-ID	1st Client->Server COB-ID	1st Server->Client COB-ID
	1	601 hex	581 hex
	2	602 hex	582 hex
	3	603 hex	583 hex
	and so on …		

After setting these parameters, the horn may be silenced.

easYlite-100, easYgen-1500, and a PLC

The PLC may receive or send data with PDOs to the easYgen.
This enables the PLC to send start/stop signals with a PDO (for details refer to manual 37262).
It is not recommended to write or read easYgen data with the SDO (1st Client->Server COB-ID) because this is used by the easYlite.

The PLC is Not the CAN Open Master

The easYgen starts the communication by setting all devices on the CAN bus to an operational state.
(easYgen setting CAN-Open Master must be configured YES)

The PLC is the CAN Open Master

The PLC must set the easYgen and the easYlite to an operational state.
(easYgen setting CAN-Open Master must be configured NO)

Chapter 9.
Parameters

The following is a description of the easYlite parameters. Note that these parameters may only be viewed and/or changed through LeoPC1.

Main Menu

NOTE

The following parameter is not configurable. It may be viewed using LeoPC1 for information purposes only.

Random number for password	**display only**

This is a randomly generated number which can be used to calculate the password if it is lost.

The unit is equipped with a multi-level code and configuration hierarchy, which allows different user access to the control. A distinction is made between:

User Level
This code level allows for monitoring of the system and does not permit access to the parameters. Configuration is blocked.

Commissioning Level
Allows direct access to all parameters (displaying and changing). In addition, the user may also set the password for the code levels. This password expires two hours after entering the password and the user is returned to the user level.

Temporary Commissioning Level
Allows direct access to all parameters (displaying and changing). This password expires two hours after entering the password and the user is returned to the user level.

NOTE

Once the code level is entered, access to the configuration menus will be allowed for two hours or until another password is entered into the control. If a user needs to exit a code level then user code level should be entered. This will block any configuration of the control. A user may return to user code level by allowing the entered password to expire after two hours or by changing any one digit on the random number generated on the password screen and entering it into the unit.

By entering "0000" the current password level remains active until another password is entered into the control unit.

Password CAN	**0000 to 9999**

The password for enabling access through the CAN interface must be entered here.

Password RS232/DPC	**0000 to 9999**

The password for enabling access through the serial interface or direct configuration must be entered here.

Application

Display alarm LED [x] **one message from list**

One warning/alarm/status message from the message list in Table 9-1 can be assigned to the alarm LED [x] here. The LED [x] will be illuminated if the assigned warning/alarm/status is detected.

[x] = 1 to 14

Display alarm LED 17 **one message from list**

One warning/alarm/status message from the message list in Table 9-1 can be assigned to the alarm LED 17 here. The LED 17 will be illuminated if the assigned warning/alarm/status is detected.

Note: A battery related alarm must be configured to this LED to comply with the battery icon on the front panel.

Warning/alarm/status message	Description
EPS supplying load	Genset is running and breaker is closed
Not in automatic mode	easYgen is not in automatic mode
CAN fail	A CAN connection failure occurred
Horn	An alarm is triggered at the genset control
Centralized alarm	easYgen alarm classes B to F
Stopping alarm	easYgen alarm classes C to F
Warning alarm	easYgen alarm classes A and B
Gen.overfreq. 1	Alarm messages of the generator monitoring
Gen.overfreq. 2	
Gen.underfreq. 1	
Gen.underfreq. 2	
Gen.overvolt. 1	
Gen.overvolt. 2	
Gen.undervolt. 1	
Gen.undervolt. 2	
Gen. overcurr. 1	
Gen. overcurr. 2	
Gen. overcurr. 3	
Gen. Rv/Rd pow.1	
Gen. Rv/Rd pow.2	
Gen. Overload 1	
Gen. Overload 2	
Unbal. load 1	
Unbal. load 2	
Gen. asymmetry	
Ground fault 1	
Ground fault 2	
Gen. phase rot. misw.	
Inv.time ov.curr.	
Timeout dead bus start	
Mains phase rot. misw.	Genset alarm message of the mains monitoring
GCB fail to close	Various alarm bits of the genset
GCB fail to open	
MCB fail to close	
MCB fail to open	
Overspeed 1	
Overspeed 2	
Underspeed 1	
Underspeed 2	
Speed det. alarm	
Start fail	
Shutdwn malfunct.	
Unintended stop	

Warning/alarm/status message	Description
Batt.undervolt.1	Alarm bits of the analog inputs
Batt.undervolt.2	
Batt.overvolt.1	
Batt.overvolt.2	
CAN Open Fault	Various alarm bits of the genset
CAN-Fault J1939	
Digital input 1	Alarm messages triggered by discrete inputs at the genset
Digital input 2	
Digital input 3	
Digital input 4	
Digital input 5	
Digital input 6	
Digital input 7	
Digital input 8	
Ext. digital input 1	Alarm messages triggered by external discrete inputs at the genset by connecting IKDs
Ext. digital input 2	
Ext. digital input 3	
Ext. digital input 4	
Ext. digital input 5	
Ext. digital input 6	
Ext. digital input 7	
Ext. digital input 8	
Ext. digital input 9	
Ext. digital input 10	
Ext. digital input 11	
Ext. digital input 12	
Ext. digital input 13	
Ext. digital input 14	
Ext. digital input 15	
Ext. digital input 16	
Mainten. days exceeded	Various alarm bits of the easYgen
Mainten. hours exceeded	
Lv1: Analog inp. 1	Alarm messages triggered by analog inputs at the genset
Lv2: Analog inp. 1	
Lv1: Analog inp. 2	
Lv2: Analog inp. 2	
Wb: Analog inp. 1	
Wb: Analog inp. 2	
Firing speed	

Table 9-1: Configurable warning/alarm/status messages

A detailed description of these warning/alarm or status messages can be found in the easYgen-1000 Operation manual 37181 in Appendix A.

Display alarm LED 18 **one message from list**

One warning/alarm/status message from the message list in Table 9-1 can be assigned to the alarm LED 18 here. The LED 18 will be illuminated if the assigned warning/alarm/status is detected.

Note: An oil pressure related alarm must be configured to this LED to comply with the oil pressure icon on the front panel.

Display alarm LED 19 **one message from list**

One warning/alarm/status message from the message list in Table 9-1 can be assigned to the alarm LED 19 here. The LED 19 will be illuminated if the assigned warning/alarm/status is detected.

Note: An coolant temperature related alarm must be configured to this LED to comply with the oil temperature icon on the front panel.

Display alarm LED 20 **one message from list**

One warning/alarm/status message from the message list in Table 9-1 can be assigned to the alarm LED 20 here. The LED 20 will be illuminated if the assigned warning/alarm/status is detected.

Note: EPS supplying load must be configured to this LED to comply with the coolant temperature icon on the front panel.

Relay 1 **Horn / CAN fail / CAN fail or horn**

The functionality of relay 1 is configured here.

Horn..... The relay 1 will be energized when an alarm is issued at the genset control.
CAN fail..... The relay 1 will be energized when a CAN connection failure occurs.
CAN fail or horn.... The relay 1 will be energized when an alarm is issued at the genset control or a CAN connection failure occurs.

NOTE

If the relay is configured to "Horn" or "CAN fail or horn", relay 1 will be energized with any occurring genset alarm regardless whether the alarm is assigned to an easYlite LED or not. It is recommended to assign the configurable alarm message "Horn" to one of the easYlite LEDs to prevent an enabling of the horn without an alarm indication at the easYlite!

Comm. Interfaces

CAN Interfaces

Device number	1 to 128

The CAN bus device number is configured here. Each participant on the CAN bus needs an individual device number.

Baudrate	20/50/100/125/250/500/800/1000 kBd

The CAN bus baud rate is configured here. The baud rate must be configured the same for all participants on the CAN bus.

Producer heartbeat time	0 to 65530

The producer heartbeat time is configured here.

CAN Open RPDO 1

COB-ID	1 to 4294967295

The CAN ID on which the data is received is configured here. The same ID must be configured as TPDO (Transmit PDO) in the easYgen (refer to Configuration of the Genset Controller starting on page 22).

Additional C-SDO

1st Client->Server COB-ID	1408 to 4294967295

The 1st client -> server COB ID is configured here.

1st Server->Client COB-ID	1408 to 4294967295

The 1st server -> client COB ID is configured here.

1st Node-ID of the Server	1 to 127

The 1st node ID of the server is configured here.

Max answer time ext. devices	1 to 99

The maximum answer time of external devices is configured here. If the acknowledge message of the easYlite is not replied within this time, it will be repeated.

NOTE

Refer to Configuration of the Genset Controller on page 22 for detailed information about the configuration of the easYlite and the connected genset controller.

System

Codes

Code level CAN port **display only**

This value displays the code level which is currently selected for the access via the CAN bus.

Code level serial port / DPC **display only**

This value displays the code level which is currently selected for the access via the serial RS-232 (DPC) interface.

NOTE

The following passwords are valid for all access possibilities (via serial RS-232 (DPC) interface and via CAN bus). The passwords can be used for the access control systems of the different configuration access methods.

Commissioning level code **0000 to 9999**

The password for the commissioning code level is configured here.

Temp. commissioning level code **0000 to 9999**

The password for the temporary commissioning code level is configured here. The temporary commissioning code level allows the same configurations like the commissioning code level except the change of passwords.

Factory settings **YES/NO**

This parameter enables the easYlite to have the factory default setting restored.

YES.....The unit will be prepared for resetting to factory settings.
NO.....The unit will not be prepared for resetting to factory settings.

Set default values **YES/NO**

This parameter restores the factory default settings.

YES.....The unit will be reset to factory settings.
NO.....The unit will not be reset to factory settings.

Version

NOTE

The following parameters are not configurable. They may be viewed using LeoPC1 for information purposes only.

Serial number **display only**

This is the serial number of the easYlite and identifies the unit.

Boot item number **display only**

This is the item number of the firmware, which is stored on the easYlite.

Boot revision **display only**

This is the revision of the firmware, which is stored on the easYlite.

Boot version **display only**

This is the version (Vx.xxxx) of the firmware, which is stored on the easYlite.

Program item number **display only**

This is the item number of the application software of the easYlite.

Program revision **display only**

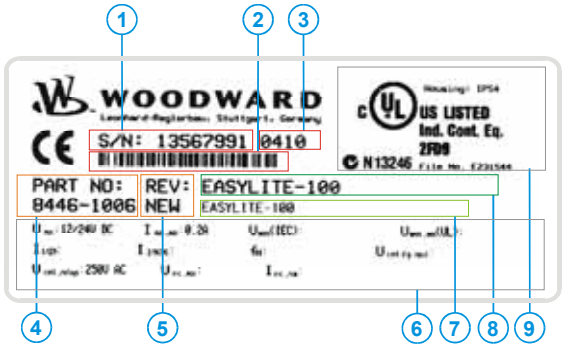
This is the revision of the application software of the easYlite.

Program version **display only**

This is the version (Vx.xxxx) of the application software of the easYlite.

Chapter 10.
Technical Data

Name plate



(Example for a typical name plate)

1	S/N	Serial number (numerical)
2	S/N	Serial number (Barcode)
3	S/N	Date of production (YYMM)
4	P/N	Item number
5	REV	Item revision number
6	Details	Technical data
7	Type	Unit name
8	Type	Extended description
9	UL	UL sign

Ambient variables

- Power supply ..... 12/24 Vdc (6.5 to 32.0 Vdc)
- Intrinsic consumption ..... max. 3 W
  Battery minus must be grounded
- Ambient temperature
  Storage ..... -20 to +85 °C / -4 to +185 °F
  Operation..... -20 to +70 °C / -4 to +158 °F
- Ambient humidity..... 95 %, non condensing

Relay outputs ---------- potential free

- Contact material..... AgCdO
- General purpose (GP) ($V_{Cont, relay output}$) DC.....2.00 Adc@24 Vdc
- Pilot duty (PD) ($V_{Cont, relay output}$) DC.....1.00 Adc@24 Vdc

Interface

Service interface..... **non isolated**

- Version RS-232
- Signal level 5V
  Level conversion and insulation by using DPC (P/N 5417-557)

CAN bus interface ..... **isolated**

- Insulation voltage .....500 Vdc
- Version .....CAN bus
- Internal line termination ..... not available
- Internal cable screen connection with Ground (terminal 3) ..... RC element (1MΩ; 3.3 nF)

Housing ----------

- Type ..... Woodward easYpack 158x158
- Dimensions (W × H × D) ..... 158 × 158 × 40 mm
- Front cutout (W × H) ..... 138 [+1.0] × 138 [+1.0] mm
- Connection ..... screw and plug terminals 2.5 mm²
- Recommended tightening torque
  Connectors ..... 0.5 Nm
  Housing clamps ..... 0.1 Nm
  use only 60/75 °C copper leads
  use only class 1 cables (or similar)
- Weight ..... approx. 450 g

Vibration ----------

- Sinusoidal ..... 4 G, 5 Hz to 150 Hz
- Random ..... 1.04 Grms, 10 Hz to 500 Hz, 2 h

Shock ----------

- Shock ..... 40 G peak, 11 ms

Protection ----------

- Protection system ..... IP54 from front for proper installation with gasket
- Front folio ..... insulating surface

- EMC test (CE) ..... tested according to applicable EN guidelines
- Listings ..... CE marking; UL listing for ordinary locations
- Type approval ..... UL/cUL, Ordinary Locations, File No.: 231544

Standards ----------

- Shock ..... EN 60255-21-2
- Vibration ..... EN 60255-21-1; EN 60255-21-3
- Temperature ..... IEC 60068-2-30; IEC 60068-2-2; IEC 60068-2-1

Appendix A. Common

Alarm Classes

The easYlite does not generate alarms. It only displays alarms generated by the easYgen genset control. The easYgen distinguishes between the following alarm classes:

Alarm class	Visible in the display	LED "Alarm" & horn	Relay "Command: open GCB"	Shut-down engine	Engine blocked until ack. sequence has been performed
A	**yes**	**no**	**no**	**no**	**no**
	Warning Alarm This alarm does not interrupt the unit operation. A message output without a centralized alarm occurs: ⇨ Alarm text.				
B	**yes**	**yes**	**no**	**no**	**no**
	Warning Alarm This alarm does not interrupt the unit operation. An output of the centralized alarm occurs: ⇨ Alarm text + flashing LED "Alarm" + Relay centralized alarm (horn).				
C	**yes**	**yes**	**following power reduction** not available in the easYgen-1000	**after cooling phase**	**yes**
	Responding Alarm With this alarm the GCB is opened and the engine is stopped. Coasting occurs. ⇨ Alarm text + flashing LED "Alarm" + Relay centralized alarm (horn) + Coasting + GCB open + Engine stop.				
D	**yes**	**yes**	**immediately**	**after cooling phase**	**yes**
	Responding Alarm With this alarm the GCB is opened and the engine is stopped. Coasting occurs. ⇨ Alarm text + flashing LED "Alarm" + Relay centralized alarm (horn) + Coasting + GCB open + Engine stop.				
E	**yes**	**yes**	**following power reduction** not available in the easYgen-1000	**immediately**	**yes**
	Responding Alarm With this alarm the GCB is opened immediately and the engine is stopped. ⇨ Alarm text + flashing LED "Alarm" + Relay centralized alarm (horn)+ GCB open + Engine stop.				
F	**yes**	**yes**	**immediately**	**immediately**	**yes**
	Responding Alarm With this alarm the GCB is opened immediately and the engine is stopped. ⇨ Alarm text + flashing LED "Alarm" + Relay centralized alarm (horn)+ GCB open + Engine stop.				

Appendix B.
Front Customization

The easYlite-100 series is designed to be adapted to any desired language and can be customized to your demands using a paper strip. The paper strip is intended for labeling the configurable LEDs.

The paper strip is divided into 14 lines, one for each LED. You can customize the paper strip to reflect the warning/alarm/status message configured to the respective LED in the desired language.

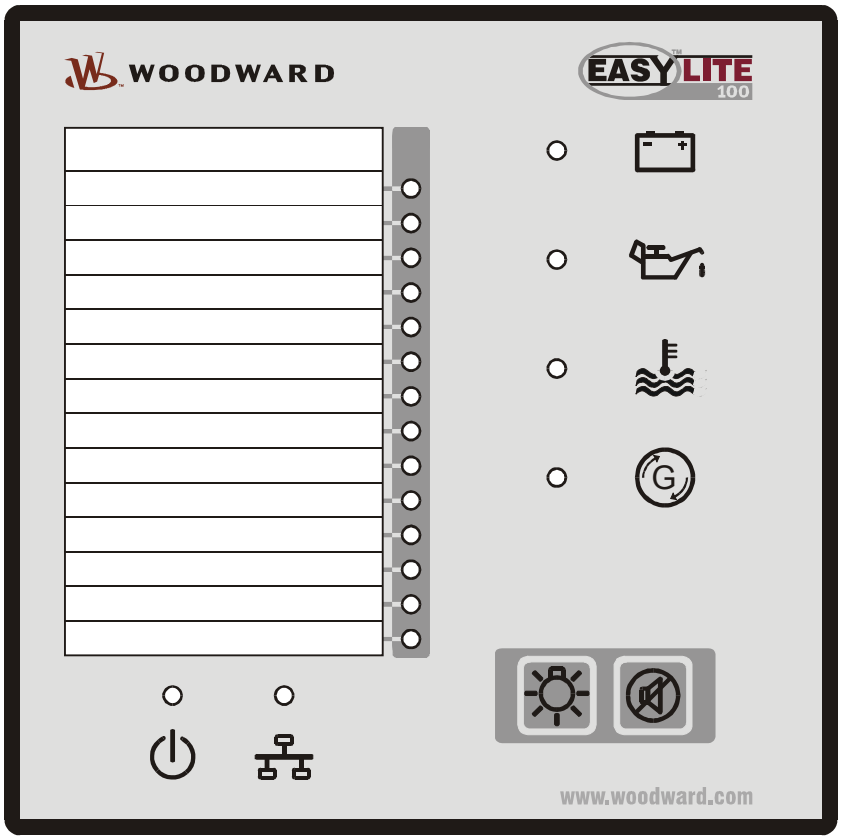


Figure 10-1: Front panel with paper strip

The unit is delivered with an English paper strip with the factory default messages which are assigned to the LEDs.

Templates for paper strips in different languages can be found in the "Paper Strips" directory on the CD delivered with the unit. The templates are in Microsoft Word format and can be customized to your requirements. Please note that the paper strip size must not be modified in the templates. Just edit the text for the paper strips, print them out, cut out the paper strips where indicated, and insert them into the openings at the side of the unit.

Appendix C. Troubleshooting

If problems are encountered while commissioning or operating the easYlite-100, please refer to the troubleshooting table below and LeoPC1 prior to contacting Woodward for technical assistance. The most common problems and their solutions are described in the troubleshooting table. If problems are encountered between the easYlite-300 and its wiring and the engine or other devices, refer to the respective manuals for solving the problem.

Symptom	Possible cause	Possible solution	Verify
Unit does not power up (power LED is not illuminated).	Power supply outside operating range.	With power supply voltage connected to terminals 5(+) and 4(-) of the easYlite-100, measure the voltage at these terminals.	Voltage must be no less than 6.5 Volts and no greater than 32 Volts.
	Power supply polarity reversed.	With power supply voltage connected to terminals 5(+) and 4(-) of the easYlite-100, measure the voltage at these terminals.	Voltage measurement reads (+) polarity when meter is connected to terminal 5(+) and 4(-).
	Power supply not connected.	Connect the correct power supply to terminals 5(+) and 4(-).	Check for proper connection of the power supply.
	The LED is defective.	Press the LED test button to check all LEDs.	Check that all LEDs illuminate. Return the unit to Woodward for repair if any LEDs fail to illuminate.
Horn does not sound with the occurrence of an alarm	Horn is not connected to the relay output terminals 1 and 2.	Connect the horn to the relay output terminals 1 and 2.	Check for proper connection of the horn.
	Power supply to the horn not connected.	Connect the horn power supply between horn and relay output terminals 1 and 2.	Check for proper connection of the horn power supply.
An LED does not illuminate when it should be.	The LED is defective.	Press the LED test button to check all LEDs.	Check that all LEDs illuminate. Return the unit to Woodward for repair if any LEDs fail to illuminate.
	The LED is misconfigured.	Configure the LED to the desired warning/alarm/status.	Check the configuration of the LED in LeoPC1.
The CAN status LED is not illuminated green or illuminated red (refer to Purpose of the Status LEDs on page 17 for details on the status indication.).	The LED is defective.	Press the LED test button to check all LEDs.	Check that all LEDs illuminate. Return the unit to Woodward for repair if any LEDs fail to illuminate.

Appendix D.
List of Parameters

Unit number P/N _____ Rev _____

Version easYlite- _____

Project _____

Serial number S/N _____ Date _____

Parameter	Setting range	Default value	Customer setting	
MAIN MENU				
Random number for password	Info	---		
Password CAN	0000 to 9999	0000		
Password DPC	0000 to 9999	0000		
APPLICATION				
Displayed alarm LED1	from message list *	EPS supplying load		
Displayed alarm LED2	from message list *	Not in automatic mode		
Displayed alarm LED3	from message list *	Start fail		
Displayed alarm LED4	from message list *	Underspeed 1		
Displayed alarm LED5	from message list *	Digital input 1		
Displayed alarm LED6	from message list *	Batt.overvolt 1		
Displayed alarm LED7	from message list *	Batt.undervolt 1		
Displayed alarm LED8	from message list *	Horn		
Displayed alarm LED9	from message list *	Digital input 3		
Displayed alarm LED10	from message list *	Digital input 3		
Displayed alarm LED11	from message list *	Digital input 3		
Displayed alarm LED12	from message list *	Digital input 3		
Displayed alarm LED13	from message list *	Digital input 3		
Displayed alarm LED14	from message list *	Digital input 3		
Displayed alarm LED17	from message list *	Digital input 3		
Displayed alarm LED18	from message list *	Digital input 3		
Displayed alarm LED19	from message list *	Digital input 3		
Displayed alarm LED20	from message list *	Digital input 3		
Relay 1	Horn CAN fail CAN fail or horn	Horn	☐ Horn ☐ CAN fail ☐ CAN / horn	☐ Horn ☐ CAN fail ☐ CAN / horn
COMM. INTERFACES				
CAN INTERFACES				
Device number	1 to 128	065		
Baudrate	20/50/100/125/250/ 500/800/1000 kBd	125 kBd		
Producer heartbeat time	0 to 65530	02000 ms		
CAN OPEN RPDO 1				
COB-ID	1 to 4294967295	0000000897		
ADDITIONAL C-SDO				
1st Client->Server COB-ID	1408 to 4294967295	0000001537		
1st Server->Client COB-ID	1408 to 4294967295	0000001409		
1st Node-ID of the Server	1 to 127	001		
Max answer time ext. devices	1 to 99	3.0 s		

Parameter	Setting range	Default value	Customer setting	
SYSTEM				
CODES				
Code level CAN port	Info	0		
Code level serial port / DPC	Info	5		
Commissioning level code	0000 to 9999	0003		
Temp. commissioning level code	0000 to 9999	0200		
Factory settings	YES / NO	No	☐ YES / ☐ NO	☐ YES / ☐ NO
Set default values	YES / NO	No	☐ YES / ☐ NO	☐ YES / ☐ NO
VERSION				
Serial number	Info	---		
Boot item number	Info	---		
Boot revision	Info	---		
Boot version	Info	---		
Program item number	Info	---		
Program revision	Info	---		
Program version	Info	---		

* refer to Table 9-1 for the messages which may be configured here

Appendix E.
Service Options

Product Service Options

The following factory options are available for servicing Woodward equipment, based on the standard Woodward Product and Service Warranty (5-01-1205) that is in effect at the time the product is purchased from Woodward or the service is performed. If you are experiencing problems with installation or unsatisfactory performance of an installed system, the following options are available:

- Consult the troubleshooting guide in the manual.
- Contact Woodward technical assistance (see "How to Contact Woodward" later in this chapter) and discuss your problem. In most cases, your problem can be resolved over the phone. If not, you can select which course of action you wish to pursue based on the available services listed in this section.

Returning Equipment For Repair

If a control (or any part of an electronic control) is to be returned to Woodward for repair, please contact Woodward in advance to obtain a Return Authorization Number. When shipping the unit(s), attach a tag with the following information:

- name and location where the control is installed;
- name and phone number of contact person;
- complete Woodward part numbers (P/N) and serial number (S/N);
- description of the problem;
- instructions describing the desired type of repair.

CAUTION

To prevent damage to electronic components caused by improper handling, read and observe the precautions in Woodward manual 82715, *Guide for Handling and Protection of Electronic Controls, Printed Circuit Boards, and Modules.*

Packing a Control

Use the following materials when returning a complete control:

- protective caps on any connectors
- antistatic protective bags on all electronic modules
- packing materials that will not damage the surface of the unit
- at least 100 mm (4 inches) of tightly packed, industry-approved packing material
- a packing carton with double walls
- a strong tape around the outside of the carton for increased strength

Return Authorization Number RAN

When returning equipment to Woodward, please telephone and ask for the Customer Service Department in Stuttgart [+49 (0) 711 789 54-0]. They will help expedite the processing of your order through our distributors or local service facility. To expedite the repair process, contact Woodward in advance to obtain a Return Authorization Number, and arrange for issue of a purchase order for the unit(s) to be repaired. No work can be started until a purchase order is received.

NOTE

We highly recommend that you make arrangement in advance for return shipments. Contact a Woodward customer service representative at +49 (0) 711 789 54-0 for instructions and for a Return Authorization Number.

Replacement Parts

When ordering replacement parts for controls, include the following information:

- the part numbers P/N (XXXX-XXX) that is on the enclosure nameplate
- the unit serial number S/N, which is also on the nameplate

How To Contact Woodward

Please contact following address if you have questions or if you want to send a product for repair:

Woodward Governor Company
Leonhard-Reglerbau GmbH
Handwerkstrasse 29
70565 Stuttgart - Germany

Phone: +49 (0) 711 789 54-0 (8:00 - 16:30 German time)
Fax: +49 (0) 711 789 54-100
eMail: sales-stuttgart@woodward.com

For assistance outside Germany, call one of the following international Woodward facilities to obtain the address and phone number of the facility nearest your location where you will be able to get information and service.

Facility	Phone number
USA	+1 (970) 482 5811
India	+91 (129) 230 7111
Brazil	+55 (19) 3708 4800
Japan	+81 (476) 93 4661
The Netherlands	+31 (23) 566 1111

You can also contact the Woodward Customer Service Department or consult our worldwide directory on Woodward's website (**www.woodward.com**) for the name of your nearest Woodward distributor or service facility. [For worldwide directory information, go to **www.woodward.com/ic/locations**.]

Engineering Services

Woodward Industrial Controls Engineering Services offers the following after-sales support for Woodward products. For these services, you can contact us by telephone, by e-mail, or through the Woodward website.

- Technical support
- Product training
- Field service during commissioning

Technical Support is available through our many worldwide locations, through our authorized distributors, or through GE Global Controls Services, depending on the product. This service can assist you with technical questions or problem solving during normal business hours. Emergency assistance is also available during non-business hours by phoning our toll-free number and stating the urgency of your problem. For technical engineering support, please contact us via our toll-free or local phone numbers, e-mail us, or use our website and reference technical support.

Product Training is available on-site from several of our worldwide facilities, at your location, or from GE Global Controls Services, depending on the product. This training, conducted by experienced personnel, will assure that you will be able to maintain system reliability and availability. For information concerning training, please contact us via our toll-free or local phone numbers, e-mail us, or use our website and reference ***customer training***.

Field Service engineering on-site support is available, depending on the product and location, from our facility in Colorado, or from one of many worldwide Woodward offices or authorized distributors. Field engineers are experienced on both Woodward products as well as on much of the non-Woodward equipment with which our products interface. For field service engineering assistance, please contact us via our toll-free or local phone numbers, e-mail us, or use our website and reference ***field service***.

Technical Assistance

If you need to telephone for technical assistance, you will need to provide the following information. Please write it down here before phoning:

Contact

Your company_____

Your name_____

Phone number _____

Fax number _____

Control (see name plate)

Unit no. and revision: P/N:_____ REV: _____

Unit type easYlite- _____

Serial number S/N _____

Description of your problem

_____

_____

_____

_____

_____

_____

Please be sure you have a list of all parameters available. You can print this using LeoPC1. Additionally you can save the complete set of parameters (standard values) and send them to our Service department via e-mail.

We appreciate your comments about the content of our publications.

Please send comments to: stgt-documentation@woodward.com

Please include the manual number from the front cover of this publication.

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Homepage

http://www.woodward.com/smart-power

Woodward has company-owned plants, subsidiaries, and branches, as well as authorized distributors and other authorized service and sales facilities throughout the world.

Complete address/phone/fax/e-mail information for all locations is available on our website (www.woodward.com).

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