

**Manual 26832 (Revision A, 6/2016)
LECM Large Engine Control Module**

See Manual 26757 for complete installation, operation, maintenance, and certification information. Publications can be found on our website at www.woodward.com/publications.

Important Definitions

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

- **DANGER**—Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
- **WARNING**—Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
- **CAUTION**—Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
- **NOTICE**—Indicates a hazard that could result in property damage only (including damage to the control).
- **IMPORTANT**—Designates an operating tip or maintenance suggestion.

**WARNING**

The engine, turbine, or other type of prime mover should be equipped with an overspeed shutdown device to protect against runaway or damage to the prime mover with possible personal injury, loss of life, or property damage.

The overspeed shutdown device must be totally independent of the prime mover control system. An overtemperature or overpressure shutdown device may also be needed for safety, as appropriate.



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.



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Any unauthorized modifications to or use of this equipment outside its specified mechanical, electrical, or other operating limits may cause personal injury and/or property damage, including damage to the equipment. Any such unauthorized modifications: (i) constitute "misuse" and/or "negligence" within the meaning of the product warranty thereby excluding warranty coverage for any resulting damage, and (ii) invalidate product certifications or listings.

NOTICE

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.

NOTICE

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*.

Regulatory Compliance & Declarations

European Compliance for CE Marking

These listings are limited only to those units bearing the CE Marking.

EMC Directive:	Declared to Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility (recast)
Low Voltage Directive:	Declared to Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits
ATEX – Potentially Explosive Atmospheres Directive:	Declared to Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres (recast) Zone 2, Category 3, Group II G, Ex nA IIC T4 Gc X IP54
Restriction of the hazardous substances (RoHS):	Declared to 2011/65/EC COUNCIL DIRECTIVE of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. Exemption in use: 7(c)-I
IECEx:	Certified for use in hazardous locations IECEx CSA 14.0047X Ex nA IIC T4 Gc X IP54

North American Compliance

These listings are limited only to those units bearing the CSA agency identification.

CSA:	CSA Certified for Class I, Division 2, Groups A, B, C, & D, T4 (refer to Table A). For use in Canada and the United States Certificate 160584-70006660
	CSA Certified for Ordinary Locations For use in Canada and the United States Certificate 160584-70006660

Table A. Configurations for Max Temperature Ambient

Configuration	Operating Temperature	Current
Aux	–40 to +105 °C	0.8 A
Aux + Main	–40 to +100 °C	6 A
Main	–40 to +100 °C	5 A
EID	–40 to +85 °C	20 A
Main + EID	–40 to + 85 °C	5 A (Main) 20 A (EID)
Aux + Main + EID	–40 to + 85 °C	6 A (Main + Aux) 20 A (EID)

General Compliance:

Please see installation manual 26757 for installation constraints on cable lengths, power bus structure, grounding and shielding requirements.

Special Conditions for Safe Use

The IP rating depends on the proper use of the mating connector. Use this manual to determine the power and maximum ambient temperature for the specific application.

Wiring must be in accordance with North American Class I, Division 2, or European or other international Zone 2, Category 3 wiring methods as applicable, and in accordance with the authority having jurisdiction.

The installer of the LECM must take responsibility for meeting Sub-Clause 26.4.2 of EN60079-0:2012 regarding impact testing. The connectors on the LECM by themselves do not meet this requirement and therefore must be sufficiently protected when installed.

Field wiring must be suitable for at least $T_{amb} + 10\text{ }^{\circ}\text{C}$.

WARNING

Explosion Hazard

Do not remove covers or connect/disconnect electrical connectors unless power has been switched off or the area is known to be non-hazardous.

Substitution of components may impair suitability for Class I, Division 2 or Zone 2 applications.

AVERTISSEMENT

Risque d'explosion

Ne pas enlever les couvercles, ni raccorder / débrancher les prises électriques, sans vous en assurez auparavant que le système a bien été mis hors tension; ou que vous situez bien dans une zone non explosive.

La substitution de composants peut rendre ce matériel inacceptable pour les emplacements de Classe I, applications Division 2 ou Zone 2.


WARNING

High Voltage

Before doing any maintenance, always disconnect power and any hazardous voltages that may be connected, and follow all appropriate lockout/lockdown procedures.

WARNING

Electric Shock

To reduce the risk of electric shock, Protective Earth (PE) must be connected to the termination point on the top of the unit next to the label with the  symbol.

The conductor providing the connection must have a properly sized ring lug and wire gauge larger than or equal to 4 mm² (12 AWG). The ring lug should be placed between the nut and star washer.

The calibration and checkout procedure should only be performed by authorized personnel. To be authorized personnel, personnel must be knowledgeable of the risks posed by live electrical equipment.

WARNING


External Fire Protection

External fire protection is not provided in the scope of this product. It is the responsibility of the user to satisfy any applicable requirements for their system.

IMPORTANT

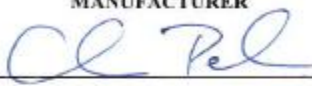
This unit is not qualified for use in residential installations due to EMC compliance. It is only allowed in non-residential applications.

DECLARATION OF CONFORMITY

DoC No.: 00433-04-EU-02-01.DOCX
Manufacturer's Name: WOODWARD INC
Manufacturer's Address: UL SKARBOWA 32, 32-005 NIEPOLOMICE, POLAND
Model Name(s)/Number(s): LECM Family
3 Stack Aux/Main/EID, 2 Stack AUX/Main & Main/EID
Stand Alone AUX, Main or EID
Conformance to Directive(s): Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility (EMC)
The object of the declaration described above is in conformity with the following Directives of the European Parliament and of the Council:
Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres
Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits
Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment
Exemption in use: 7(c)-I
Markings in addition to CE mark:  Category 3 Group II G, Ex nA IIC T4 Gc IP 54
Applicable Standards: EN61000-6-4, (2011): EMC Part 6-4: Generic Standards - Emissions for Industrial Environments
EN61000-6-2, (2005): EMC Part 6-2: Generic Standards - Immunity for Industrial Environments
EN60079-0: (2012) - Explosive Atmospheres - Part 0: Equipment - General requirements
EN60079-15: (2010) - Explosive Atmospheres - Part 15: Equipment protection by type of protection "n"
EN61010-1, (2010): Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General Requirements
Last two digits of the year in which the CE marking was affixed for the first time: 15

This declaration of conformity is issued under the sole responsibility of the manufacturer
We, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s).

MANUFACTURER


Signature

Christopher Perkins
Full Name

Engineering Manager
Position

Woodward, Fort Collins, CO, USA
Place

16-JUN-2016
Date

Contacting Woodward

Replacement/Exchange: Replacement/Exchange is a premium program designed for the user who is in need of immediate service. It allows you to request and receive a like-new replacement unit in minimum time (usually within 24 hours of the request), providing a suitable unit is available at the time of the request, thereby minimizing costly downtime.

This option allows you to call your Full-Service Distributor in the event of an unexpected outage, or in advance of a scheduled outage, to request a replacement control unit. If the unit is available at the time of the call, it can usually be shipped out within 24 hours. You replace your field control unit with the like-new replacement and return the field unit to the Full-Service Distributor.

Flat Rate Repair: Flat Rate Repair is available for many of the standard mechanical products and some of the electronic products in the field. This program offers you repair service for your products with the advantage of knowing in advance what the cost will be.

Flat Rate Remanufacture: Flat Rate Remanufacture is very similar to the Flat Rate Repair option, with the exception that the unit will be returned to you in "like-new" condition. This option is applicable to mechanical products only.

Returning Equipment for Repair

If a control (or any part of an electronic control) is to be returned for repair, please contact your Full-Service Distributor in advance to obtain Return Authorization and shipping instructions.

When shipping the item(s), attach a tag with the following information:

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

Contacting Woodward's Support Organization

For the name of your nearest Woodward Full-Service Distributor or service facility, please consult our worldwide directory published at www.woodward.com/directory.

You can also contact the Woodward Customer Service Department at one of the following Woodward facilities to obtain the address and phone number of the nearest facility at which you can obtain information and service.

Products Used In Electrical Power Systems		Products Used In Engine Systems		Products Used In Industrial Turbomachinery Systems	
<u>Facility</u> -----	<u>Phone Number</u>	<u>Facility</u> -----	<u>Phone Number</u>	<u>Facility</u> -----	<u>Phone Number</u>
Brazil -----	+55 (19) 3708 4800	Brazil -----	+55 (19) 3708 4800	Brazil -----	+55 (19) 3708 4800
China -----	+86 (512) 6762 6727	China -----	+86 (512) 6762 6727	China -----	+86 (512) 6762 6727
Germany:		Germany -----	+49 (711) 78954-510	India -----	+91 (129) 4097100
Kempen----	+49 (0) 21 52 14 51	India -----	+91 (129) 4097100	Japan-----	+81 (43) 213-2191
Stuttgart -	+49 (711) 78954-510	Japan-----	+81 (43) 213-2191	Korea-----	+82 (51) 636-7080
India -----	+91 (129) 4097100	Korea-----	+82 (51) 636-7080	The Netherlands--	+31 (23) 5661111
Japan-----	+81 (43) 213-2191	The Netherlands--	+31 (23) 5661111	Poland -----	+48 12 295 13 00
Korea-----	+82 (51) 636-7080	United States-----	+1 (970) 482-5811	United States-----	+1 (970) 482-5811
Poland -----	+48 12 295 13 00				
United States-----	+1 (970) 482-5811				

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