EPS Series

EtherCAT Slave System

User's Manual



Manual Rev.: 2.00

Revision Date: Aug. 2, 2015

Part No: 50-17043-1000

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Advance Technologies; Automate the World.

Revision History

Revision	Release Date	Description of Change(s)
2.00	2015/10/2	Initial Release

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Preface

Copyright 2015 ADLINK TECHNOLOGY, INC.

This document contains proprietary information protected by copyright. All rights are reserved. No part of this manual may be reproduced by any mechanical, electronic, or other means in any form without prior written permission of the manufacturer.

Disclaimer

The information in this document is subject to change without prior notice in order to improve reliability, design, and function and does not represent a commitment on the part of the manufacturer.

In no event will the manufacturer be liable for direct, indirect, special, incidental, or consequential damages arising out of the use or inability to use the product or documentation, even if advised of the possibility of such damages.

Environmental Responsibility

ADLINK is committed to fulfill its social responsibility to global environmental preservation through compliance with the European Union's Restriction of Hazardous Substances (RoHS) directive and Waste Electrical and Electronic Equipment (WEEE) directive. Environmental protection is a top priority for ADLINK. We have enforced measures to ensure that our products, manufacturing processes, components, and raw materials have as little impact on the environment as possible. When products are at their end of life, our customers are encouraged to dispose of them in accordance with the product disposal and/or recovery programs prescribed by their nation or company.

Trademarks

PC, PS/2, and VGA are registered trademarks of International Business Machines Corp. Borland®, Borland® C, C++ Builder®, and Delphi® are registered trademarks of the Borlan9 Software Corporation. LabVIEW™ is a trademark of National Instruments Corporation. Microsoft®, Visual Basic®, Visual C++®, Windows®

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

98, Windows® NT, Windows® 2000, Windows® XP, and Windows® Vista® are registered trademarks of Microsoft® Corporation. PCI™, is a registered trademark of the Peripheral Component Interconnect Special Interest Group (PCI-SIG).

Product names mentioned herein are used for identification purposes only and may be trademarks and/or registered trademarks of their respective companies.

Conventions

Take note of the following conventions used throughout this manual to make sure that users perform certain tasks and instructions properly.



Additional information, aids, and tips that help users perform tasks.



Information to prevent ***minor*** physical injury, component damage, data loss, and/or program corruption when trying to complete a task.



Information to prevent ***serious*** physical injury, component damage, data loss, and/or program corruption when trying to complete a specific task.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Table of Contents

Preface iii

List of Figures ix

List of Tables xi

1 Introduction 1

1.1 Features 2

1.2 Specifications 3

1.2.1 EPS-9905 Chassis 3

1.2.2 EPS-1132 Module 4

1.2.3 EPS-2032 Module 4

1.2.4 EPS-2132 Module 5

1.2.5 EPS-2308 Module 6

1.2.6 EPS-3032 Module 6

1.2.7 EPS-3216 Module 7

1.2.8 EPS-3504 Module 7

1.2.9 EPS-4008 Module 8

1.2.10 EPS-6000 Module 8

1.2.11 EPS-7002 Module 9

1.3 Schematics 10

1.4 EPS Slave System Composition 13

2 Getting Started 15

2.1 Package Contents 15

2.2 Cooling Considerations 16

2.3 Hardware Installation 17

2.3.1 Installing the Bus Coupler Module 17

2.3.2 Installing Peripheral Modules 17

2.4 Rack Mounting 18

2.4.1 Powering Up the System 18

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3 EPS System Modules 19
3.1 EPS-1132 20
3.1.1 Connector and Wiring 22
3.1.2 LED Indicators 23
3.1.3 Signal Connection 23
3.1.4 Object Dictionary 24
3.2 EPS-2032 24
3.2.1 Connector and Wiring 26
3.2.2 LED Indicators 27
3.2.3 Signal Connection 27
3.2.4 Object Dictionary 27
3.3 EPS-2132 28
3.3.1 Connector and Wiring 30
3.3.2 LED Indicators 31
3.3.3 Signal Connection 31
3.3.4 Object Dictionary 31
3.4 EPS-2308 32
3.4.1 Connector and Wiring 34
3.4.2 Signal Connection 35
3.4.3 Object Dictionary 35
3.5 EPS-3032 36
3.5.1 Connector and Wiring 38
3.5.2 LED Indicators 39
3.5.3 Signal Connection 39
3.5.4 Object Dictionary 39
3.6 EPS-3216 42
3.6.1 Connector and Wiring 44
3.6.2 LED Indicators 45
3.6.3 Signal Connection 45
3.6.4 Object Dictionary 46
3.7 EPS-3504 47
3.7.1 Connector and Wiring 49

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3.7.2 LED Indicators 50
3.7.3 Signal Connection 50
3.7.4 Object Dictionary 51
3.8 EPS-4008 51
3.8.1 Connector and Wiring 54
3.8.2 LED Indicators 55
3.8.3 Signal Connection 55
3.8.4 Object Dictionary 56
3.9 EPS-6000 56
3.9.1 Connector and Wiring 60
3.9.2 LED Indicators 61
3.9.3 Object Dictionary 62
3.10 EPS-7002 62
3.10.1 LED Indicators 67
3.10.2 Signal Connection 67
3.10.3 Object Dictionary 67

A Appendix: LinkMasterPro™ 69
A.1 Interface 71
A.2 Installation 72
A.3 Controls and Function 74
A.3.1 Selecting MAC Address 74
A.3.2 Scanning for Devices 75
A.3.3 Exporting ESI 76
A.3.4 Device Tree View 79
A.3.5 Error Logging and History 85
A.3.6 FOE (File Over EtherCAT) 86
A.3.7 Getting OD Info 88
A.3.8 Module I/O Panels 89
A.3.9 Exporting Log Messages 100
A.3.10 Version Information 100

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Important Safety Instructions..... 101

Getting Service 103

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

List of Figures

Figure 1-1: Front View (slots vacant) 10
Figure 1-2: Front View (EPS-6000 EtherCAT bus coupler module installed) 11
Figure 1-3: (Left) Side View 12
Figure 1-4: Top View 13
Figure 1-5: EPS System w/ Modules Installed 14
Figure 3-1: EPS-1132 Specifications 20
Figure 3-2: EPS-1132 Schematic 22
Figure 3-3: EPS-2032 Schematic 26
Figure 3-4: EPS-2132 Schematic 30
Figure 3-5: EPS-2308 Schematic 34
Figure 3-6: EPS-3032 Schematic 38
Figure 3-7: EPS-3216 Schematic 44
Figure 3-8: EPS-3504 Schematic 49
Figure 3-9: EPS-4008 Schematic 54
Figure 3-10: EPS-6000 Schematic 60
Figure 3-11: EPS-7002 Schematic 66
Figure A-1: LinkMasterPro™ Operational Overview 70
Figure A-2: LinkMasterPro™ Interface 71
Figure A-3: LinkMasterPro™ Folder 74
Figure A-4: Scan Failure Notification 75
Figure A-5: EPS Slave System in Tree View 76
Figure A-6: Save ESI Path Selection 77
Figure A-7: ESI Export Progress Display 78
Figure A-8: Export Successful Display 79
Figure A-9: EPS Slave System Panel 80
Figure A-10: EPS-6000 Product Page (default Slot 1 installation) 82
Figure A-11: EPS-2032 Product Page (exemplary Slot 2 installation) 83
Figure A-12: DC Dialog Page 84
Figure A-13: DC Parameters Page 85
Figure A-14: Error Log Page (w/ Index 0 selected) 86
Figure A-15: Binary File Selection 87
Figure A-16: Binary File Download Success Notification 88
Figure A-17: OD List 89
Figure A-18: Module Selection 90

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

This page intentionally left blank.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

List of Tables

Table 3-1: EPS Peripheral Modules 19
Table 3-2: EPS-1132 Pin Assignment 21
Table 3-3: LED Indicator Legend 23
Table 3-4: EPS-2032 Specifications 24
Table 3-5: EPS-2032 Pin Assignment 25
Table 3-6: LED Indicator Legend 27
Table 3-7: EPS-2132 Specifications 28
Table 3-8: EPS-2132 Pin Assignment 29
Table 3-9: LED Indicator Legend 31
Table 3-10: EPS-2308 Specifications 32
Table 3-11: EPS-2308 Pin Assignment 33
Table 3-12: EPS-3032 Specifications 36
Table 3-13: EPS-3032 Pin Assignment 37
Table 3-14: LED Indicator Legend 39
Table 3-15: EPS-3216 Specifications 42
Table 3-16: EPS-3216 Pin Assignment 43
Table 3-17: LED Indicator Legend 45
Table 3-18: EPS-3504 Specifications 47
Table 3-19: EPS-3504 Pin Assignment 48
Table 3-20: LED Indicator Legend 50
Table 3-21: EPS-4008 Specifications 52
Table 3-22: EPS-4008 Pin Assignment 53
Table 3-23: LED Indicator Legend 55
Table 3-24: EPS-6000 Specifications 57
Table 3-25: EPS-6000 Pin Assignment 59
Table 3-26: LED Indicator Legend 61
Table 3-27: EPS-7002 Specifications 63
Table 3-28: EPS-7002 Pin Assignment 65
Table 3-29: LED Indicator Legend 67
Table A-1: LinkMasterPro™ Interface Legend 71
Table A-2: EPS Slave System Panel Operations 81

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

This page intentionally left blank.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

1 Introduction

The ADLINK complete EtherCAT solution, from hardware to middleware to software, with every element tailored for dedicated EtherCAT functionality, includes Talos master controllers, EPS slave systems, and remote monitoring and control providers. As well, ADLINK's Softmotion one-stop control kernel delivers flexible and easy-to-use intelligent platforms for driving next-generation modern Smart Factories.

ADLINK's EPS slave system brings the power the flexibility to EtherCAT environments. State-of-the-art modular construction allows the EtherCAT slave to be configured to fulfill the needs of both small local applications and expansive distributed platforms. The EPS system monitors and controls nearly any type of I/O device and sensor as well as motors, with comprehensive and high-density I/O modules that include DI/O, AI/O, and thermal as well as pulse-chain motion modules. Leveraging ARM and FPGA technologies, the EPS slave is able to monitor and report system integrity via EtherCAT communication, while relay module lifecycle and signal integrity of analog output are monitored cyclically, and hot swappability reduces downtime significantly.

Uniquely designed for full operability in conditions from -20°C to 60°C,the EPS slave system is also fully compliant with the EN 60068-2 standard for shock and vibration and EN 61000-6 for heavy industrial EMC protection, as well as emission certification.

Corresponding ESI files for each EPS system can be generated thru ADLINK's Windows-based EtherCAT slave utility, LinkMaster-Pro™.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

1.1 Features

- Compatible with certified 3rd party EtherCAT masters
- Comprehensive slave modules include high-density digital I/O, analog I/O, thermal measurement, and motion control
- EtherCAT COE, FOE protocol support
- Compliance with industrial IEC standard
- Automatic Detection System by LinkMasterPro™ application detects and generates corresponding ESI files automatically
- Intelligent status monitoring for EPS modules
- Hot-swappable to reduce MTTR
- Operable in environments from -20°C to 60°C



NOTE:

The EPS slave system is fully capable of cooperation with not only ADLINK's Talos master controller but also 3rd party EtherCAT master controllers, by importing corresponding ESI file for eaqch individual module.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

1.2 Specifications

1.2.1 EPS-9905 Chassis

System Level		
Processor	Xillinx Zynq SoC	
Memory	RAM	512 MB DDR3
	Retain Memory #1	16MB Flash on Bus Coupler
	Retain Memory #2	128KB FRAM on every EPS module
Connectivity		
EtherCAT	2 EtherCAT ports	
Motion Protocol	Compliant with CiA402	
Miscellaneous Function		
Monitored Parameters	Relay lifecycle Analog output signal integrity System power integrity Module Status	
Power Supply		
DC Input	Built-in 9-30 VDC wide-range DC input 3P pluggable connectors with latch (GND, V-, V+)	
AC Input	Optional 40 W external AC-DC adapter for AC input	
Mechanical		
Dimensions	130 (W) x 110 (D) x 105 (H) mm	
Weight	950 g (net weight of EPS-9905)	
Mounting	DIN rail	
Environmental		
Operating Temperature	-20°C to 60°C	
Storage Temperature	-40°C to 85°C (excl. HDD/SDD/CFAST)	
Humidity	Approx. °C (non-condensing)	

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Vibration	EN 60068-2-6 certification Operating, 5 Grms, 5-500 Hz, 3 axes
ESD	Contact +/-4 kV and Air +/-8 kV
Shock	EN 60068-2-27 certification Operating, 100 G, half sine 11 ms duration (w/ mSATA)
EMC	EN 61000-2 / EN 61000-4 certification CE and FCC Class A
Safety	UL, CB

1.2.2 EPS-1132 Module

Channels	32
Input Type	Sinking
EVCC Input	24V ±10%
OFF State Input Voltage	<5V (IEC61131-2 Type1/3)
OFF State Input Current	<2.3mA
ON State Input Voltage	10V to 30V (IEC61131-2 Type1/3)
ON State Input Current	2.3mA (typ.)
IO Protection Input Voltage	Up to 30V
IO Protection Reverse Voltage	Up to -30V
IO Protection Current limit	< 2.3mA (typ.)
Response Time	150µs to 3ms
Power Consumption from Chassis	< 600mW (max.)
Thermal Dissipation (at max temp.)	< 2.55W (max.) @ EVCC=24V+10%
Isolation (Channel-to-DGND)	2kV (DC)

1.2.3 EPS-2032 Module

Channels	32
Output Type	Sourcing
EVCC Input	12 to 24V ±10%
Output Impedance (Rout)	200Ω

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Output Current (Iout)	300mA per CH 800mA per 4-CH
Output Voltage (Vout)	EVCC – (Iout x Rout)
IO Protection Reverse Voltage	None
IO Protection Current limit	1.2A for 4CH
IO Protection Short Circuit	None
Power On State	Off
Response Time	4kHz
Power Consumption: Chassis	< 400mW (max.)
Thermal Dissipation (at max temp.)	< 2.55W (max.) @ EVCC=24V+10%
Isolation (Channel-to-DGND)	2kV (DC)

1.2.4 EPS-2132 Module

Channels	32
Output Type	Sinking
EVCC Input	12 to 24V ±10%
Output Impedance (Rout)	250Ω
Output Current (Iout)	300mA per CH 800mA per 4-CH
Output Voltage (Vout)	Iout x Rout
IO Protection Reverse Voltage	None
IO Protection Current limit	1.2A for 4CH
IO Protection Short Circuit	None
Power On State	Off
Response Time	4kHz
Power Consumption from Chassis	< 450mW (max.)
Thermal Dissipation (at max temp.)	< 2.55W (max.) @ EVCC=24V+10%
Isolation (Channel-to-DGND)	2kV (DC)
Isolation (Channel-to-Chassis)	2kV (DC)

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

1.2.5 EPS-2308 Module

Channels	8
Type	SPST (Single pole single throw)
Maximum switched voltage and current	30V/2A, 240V/0.5A
Output Impedance (Rout)	50mΩ (Typ.)
IO Protection Reverse Voltage	Yes
Power On State	OFF
Response Time	Operate 10ms & release 5ms (Typ.)
Power Consumption from Chassis	< 600mW (max.)
Thermal Dissipation (at max temp.)	< 2.55W (max.) @ EVCC=24V+10%
Isolation (Channel-to-DGND)	DC 2kV 1min.
Isolation (Channel-to-Chassis)	DC 2kV 1min.
Isolation (Channel-to-Channel) adjacent relay	250Vrms 1min.
Isolation (Channel-to-Channel) adjacent pin within a single relay	250Vrms 1min.

1.2.6 EPS-3032 Module

Channels	32 Single-ended 16 Differential
Input Range	±10V
Resolution	16 bit
Offset Error	±1mV
Offset Drift	0.0004% of range per °C
Gain Error	±0.05% of FSR
Gain Drift	0.002%FSR per °C
Voltage Protection	Power On @ ±24V
Sampling Rate	100kHz
Power Consumption from Chassis	< 450mW (max.)

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Thermal Dissipation (at max temp.)	< 2.55W (max.) @ EVCC=24V+10%
Operating Temperature	-20 to 60°C
Isolation (Channel-to-DGND)	2kV (DC)
Isolation (Channel-to-Chassis)	2kV (DC)

1.2.7 EPS-3216 Module

Channels	16 Single-ended
Input Range	0-20mA
Resolution	16 bit
Offset Error	0.5μA
Offset Drift	0.0005% of range per °C
Gain Error	±0.05% of FSR
Gain Drift	0.0008%FSR per °C
Voltage Protection	Power On @ ±24V
Sampling Rate	100kHz
Power Consumption from Chassis	< 450mW (max.)
Thermal Dissipation (at max temp.)	< 2.55W (max.) @ EVCC=24V+10%
Operating Temperature	-20 to 60°C
Isolation (Channel-to-DGND)	2kV (DC)
Isolation (Channel-to-Chassis)	2kV (DC)

1.2.8 EPS-3504 Module

Channels	4 RTD
Sensor Type	PT100, PT500, PT1000
Technology	2/3/4-Wire
Resolution	24 bit
Sampling Rate	5 to 20Hz
Temperature Range	-200°C to +850°C
Path Resistance	18 to 3900Ω

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Accuracy (DC)	± 0.007% of FSR
Accuracy (Temperature)	± 0.5°C
Excitation Current (Max.)	500μA
Power Consumption from Chassis	< 450mW (max.)
Thermal Dissipation (at max temp.)	< 2.55W (max.) @ EVCC=24V+10%
Operating Temperature	-20 to 60°C
Isolation (Channel-to-DGND)	2kV (DC)
Isolation (Channel-to-Chassis)	2kV (DC)

1.2.9 EPS-4008 Module

Channels	8 Single-ended
Output Range	±10V
Resolution	16 bit
Sampling Rate	100kHz
Offset Error	± 0.2mV
Gain Error	± 0.05% of FSR
Offset Drift	± 0.0075mV /°C
Gain Drift	± 0.00025% /°C of FSR
Output Current Capacity	5 mA
Power On State	Relay off
Voltage Protection	± 24V / Relay off when error voltage occurs
Power Consumption from Chassis	< 450mW (max.)
Thermal Dissipation (at max temp.)	< 2.55W (max.) @ EVCC=24V+10%
Operating Temperature	-20 to 60°C
Isolation (Channel-to-DGND)	2kV (DC)
Isolation (Channel-to-Chassis)	2kV (DC)

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

1.2.10 EPS-6000 Module

EPS Module Support (slots)	4 (Max.)
Field Bus Connectivity	EtherCAT
Data Transmission Rate	100 Mbaud
Bus Interface	2 x RJ45
Cable for EtherCAT Connectivity	CAT5 / CAT5e (recommended)
Inner Bus Synchronization	> 0.1μs
Supply Voltage	24VDC (± 10%)
Thermal Dissipation (at max temp.)	< 6.6W (max.) @ EVCC=24V+10%
Operating Temperature	-20 to 60°C
Isolation (Channel-to-DGND)	2kV (DC)
Isolation (Channel-to-Chassis)	2kV (DC)

1.2.11 EPS-7002 Module

Channels	2
Output Frequency	4MHz
Output Modes	CW/CCW, OUT/DIR
Encoder Input Channels	2
Encoder Input Frequency	20MHz @ 4xAB
Encoder Input Modes	CW/CCW, 1/2/4x AB Phase
Encoder Input Type	TTL, Incremental
Motion I/O Interface	PEL, MEL, ORG
Servo I/O Interface	ALM, INP, RDY, SVON, ERC, RST
Input Type	Sinking
Input Current	IEC 61131-2, Type 1/3
Output Current (Single Node) (Sinking / Sourcing)	50mA
Power Consumption from Chassis	< 450mW (max.)
Thermal Dissipation (at max temp.)	< 2.55W (max.) @ EVCC=24V+10%
Operating Temperature	-20 to 60°C
Isolation (Channel-to-DGND)	2kV (DC)

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Isolation (Channel-to-Chassis)	2kV (DC)

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

1.3 Schematics

NOTE:

All dimensions are shown in mm (millimeters)

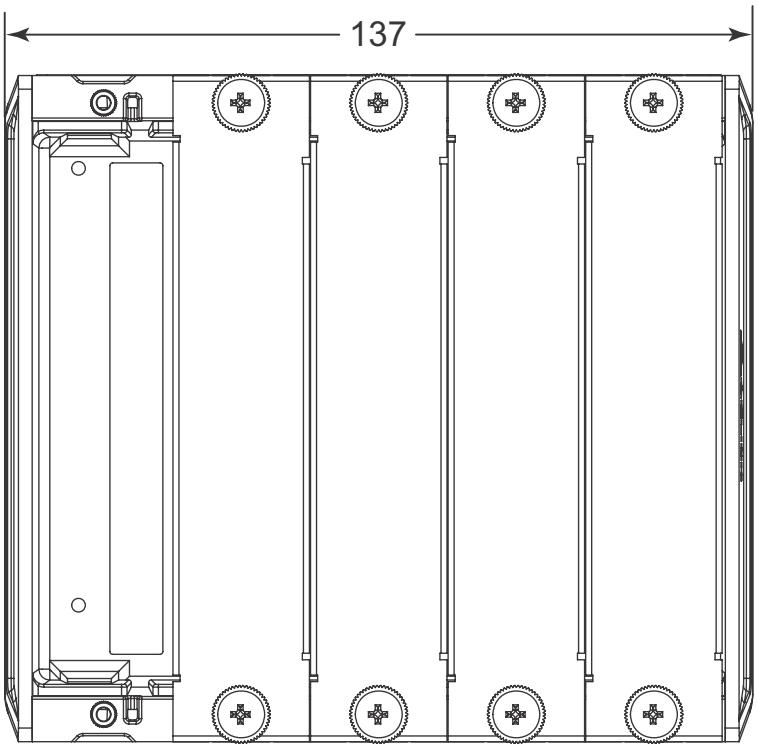


Figure 1-1: Front View (slots vacant)

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

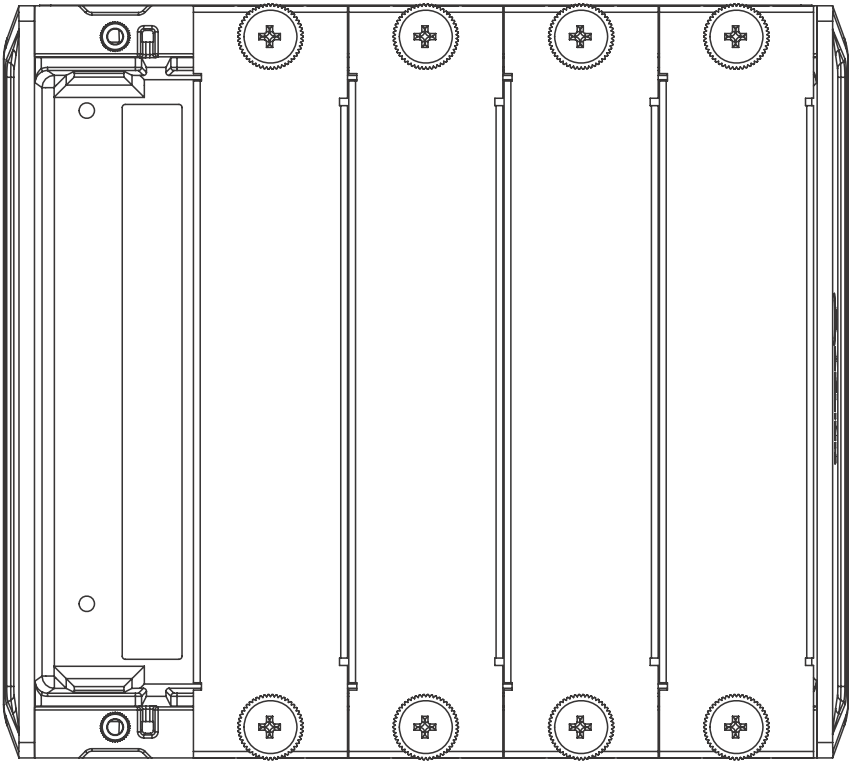


Figure 1-2: Front View (EPS-6000 EtherCAT bus coupler module installed)

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

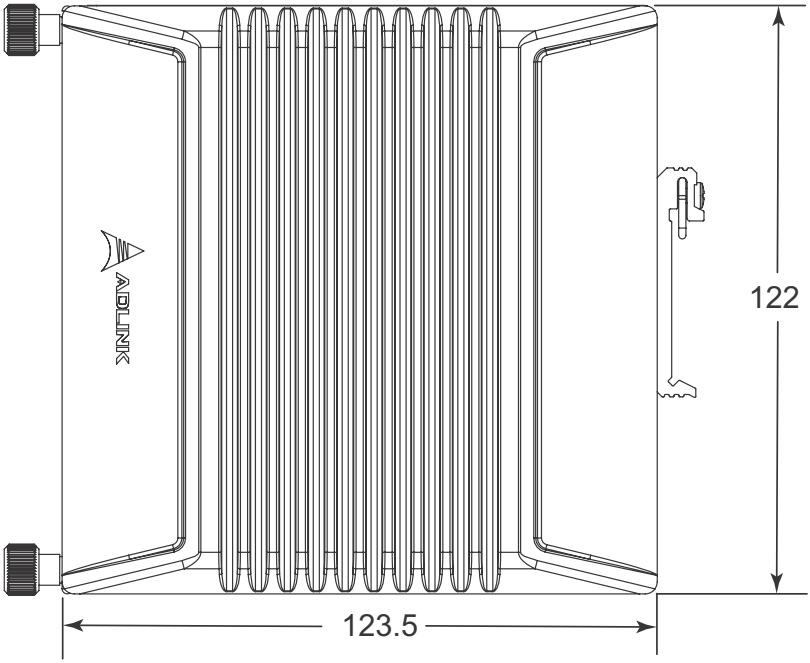


Figure 1-3: (Left) Side View

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

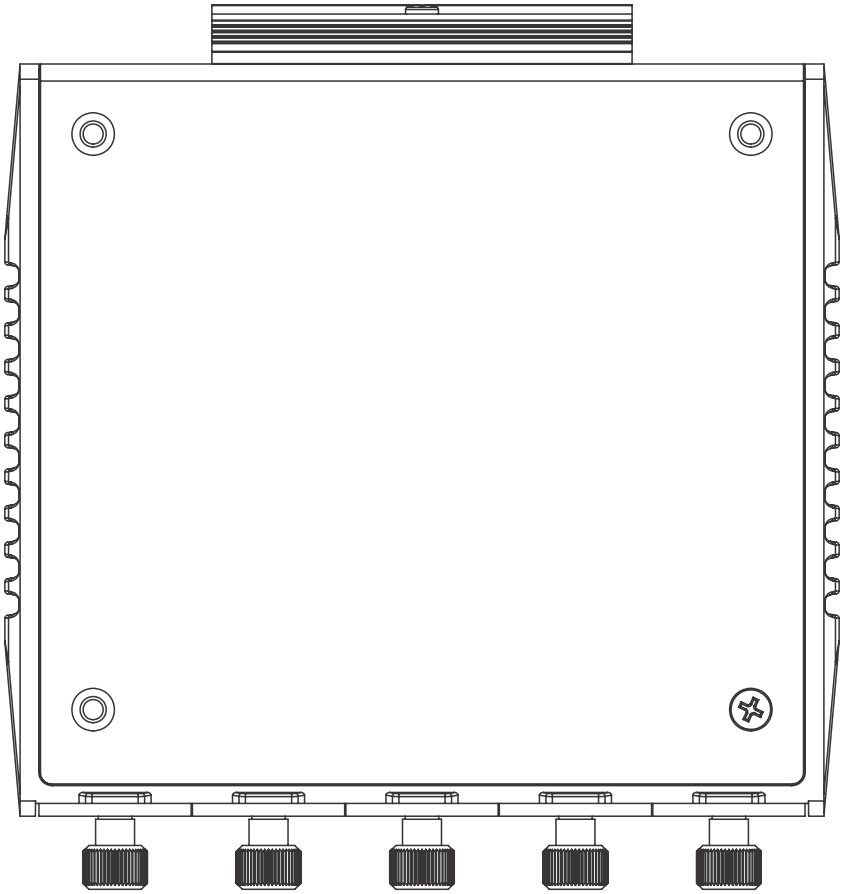


Figure 1-4: Top View

1.4 EPS Slave System Composition

Each EPS slave system provides 5 slots total, with the far left reserved for bus coupler installation. The remaining slots flexibly support a variety of EPS slave modules. For individual module details, please see Chapter 3: EPS System Modules.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

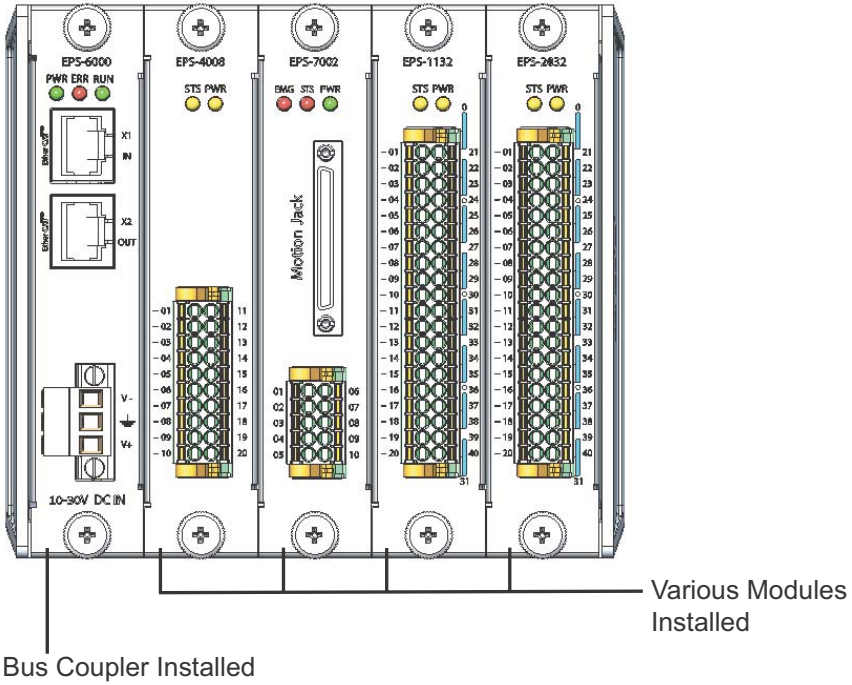


Figure 1-5: EPS System w/ Modules Installed

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

2 Getting Started

As mentioned previously, each EPS slave system can support up to 4 peripheral modules, installed to support the application. Supported EPS peripheral modules are as follows, and provide digital input, digital output, relay output, analog input, analog output, and thermal input with RTD sensor support, as well as pulse-train motion modules. All EPS peripheral modules are hot-swappable, allowing replacement with no interruption of EPS power..


NOTE:

Diagrams and illustrated equipment are for reference only. Actual system configuration and specifications may vary.

2.1 Package Contents

Before unpacking, check the shipping carton for any damage. If the shipping carton and/or contents are damaged, inform your dealer immediately. Retain the shipping carton and packing materials for inspection. Obtain authorization from your dealer before returning any product to ADLINK.

Please ensure that the following items are included in the package.

- EPS-9905 chassis with DIN rail kit
- EPS-6000 bus coupler (optional)
- 3p power connector
- Quick Start Guide for EPS slave system

If any of these items are missing or damaged, contact the dealer from whom you purchased the product. Save the shipping materials and carton in case you want to ship or store the product in the future.


WARNING:

Do not install or apply power to equipment that is damaged or missing components. Retain the shipping carton and packing materials for inspection. Please contact your ADLINK dealer/ vendor immediately for assistance and obtain authorization before returning any product.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

2.2 Cooling Considerations

Heat generated by the EPS system is conducted to the chassis on both sides. To maximize heat dissipation, maintain a minimum 2 inches (5 cm) clearance on the top of the EPS-9905 & 1 inch on either side..



Internal thermal status is monitored by onboard thermal sensors and reported to the Host automatically to ensure prompt action in the event of temperature overages.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

2.3 Hardware Installation

2.3.1 Installing the Bus Coupler Module

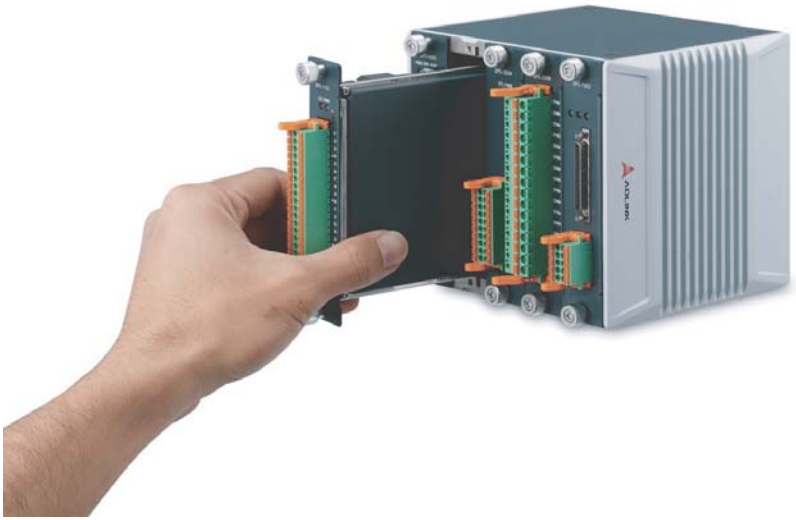
The EPS Series incorporates a system controller slot supporting a PXI Express system controller of up to 4 slot width.

1. Align the module with the slot guide in the chassis and carefully slide the module into the slot until seated.
2. Fasten the screws on the front panel and connect corresponding interfaces..

2.3.2 Installing Peripheral Modules

The EPS system supports up to 4 peripheral modules.

1. Select an available peripheral slot
2. Carefully slide the peripheral module into the chassis until seated.



3. Fasten the screws of all modules.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

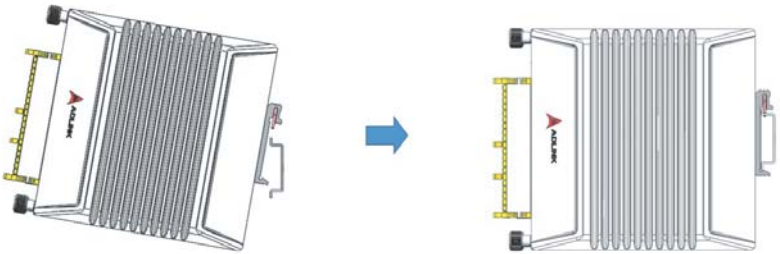
NOTE:

To improve efficiency of heat dissipation, install filler plates for any unused slots.

2.4 Rack Mounting

The EPS slave system is shipped with DIN rail mounting brackets and accessory screws pre-installed. If the installation appears incomplete, contact ADLINK technical support.

1. Insert the top of the DIN rail kit into the slots on the DIN rail attachment plate.
2. Snap the DIN rail kit into place as shown



2.4.1 Powering Up the System

WARNING:

Before providing DC power to the EPS slave system, ensure the voltage and polarity provided are compatible with the DC input. Improper input voltage and/or polarity can be responsible for system damage.

The DC power input connector of the EPS slave system utilizes V+, V- , and chassis ground pins.

1. Connect DC power cables.
2. Fix the DC connector using the 2 screws.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3 EPS System Modules

The EPS Series chassis provides advanced system monitoring and control. Chassis conditions, including internal temperature, fan speed, and DC voltage can all be monitored on the system controller or remote PC.

The EPS Series provides software configurable trigger bus bridges, whereby the user can set the status of each trigger bus line. The EPS Series backplane can also be configured between 4-link x 4 lanes or 2-link x 8 lanes by the configurable PCIe switch fabric.

Communication with the chassis monitoring control unit is available using an embedded controller, such as the ADLINK PXIe-3975, to access the SMBus located on the system slot (1st slot), or, alternatively, using a remote PC to communicate via the RS-232 serial port (D-SUB9 connector on the rear panel).

Please note that the RS-232 serial port can only monitor chassis status, but does not provide the capability to change the trigger bus bridges and PCIe switch fabric settings. Function comparison between the SMBus interface and RS-232 serial port is as follows.

Module	Description
EPS-1132	32CH, sourcing, digital input
EPS-2032	32CH, sinking, digital output
EPS-2132	32CH, sourcing, digital output
EPS-2308	8CH, SPST, relay output
EPS-3032	32CH, ±10V, 16-bit analog input
EPS-3216	16CH, 0-20mA, 16-bit analog input
EPS-3504	4CH, thermal input, RTD PT100, PT500, PT1000
EPS-4008	8CH, ±10V, 16-bit analog output
EPS-6000	EtherCAT bus coupler
EPS-7002	2CH, pulse-train motion

Table 3-1: EPS Peripheral Modules

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

CAUTION:

Unregistered EPS peripheral modules cannot be installed in slots configured and registered to a different EPS peripheral module type. EPS modules can only be swapped out for another of the same type, or the new module must be registered and the ESI file regenerated, to reconfigure the entire EtherCAT system.

3.1 EPS-1132

The EPS-1132 high density 32CH sourcing type digital input module operates in environments from -20°C to 60°C and provides high isolation protection and hot-swappability.

Channels	32
Input Type	Sinking
EVCC Input	24V ±10%
OFF State Input Voltage	<5V (IEC61131-2 Type1/3)
OFF State Input Current	<2.3mA
ON State Input Voltage	10V to 30V (IEC61131-2 Type1/3)
ON State Input Current	2.3mA (typ.)
IO Protection Input Voltage	Up to 30V
IO Protection Reverse Voltage	Up to -30V
IO Protection Current limit	< 2.3mA (typ.)
Response Time	150µs to 3ms
Power Consumption from Chassis	< 600mW (max.)
Thermal Dissipation (at max temp.)	< 2.55W (max.) @ EVCC=24V+10%
Isolation (Channel-to-DGND)	2kV (DC)

Figure 3-1: EPS-1132 Specifications

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

1	DI00	**21**	DI01
2	DI02	**22**	DI03
3	DI04	**23**	DI05
4	DI06	**24**	DI07
5	EGND	**25**	EGND
6	DI08	**26**	DI09
7	DI10	**27**	DI11
8	DI12	**28**	DI13
9	DI14	**29**	DI15
10	EGND	**30**	EGND
11	DI16	**31**	DI17
12	DI18	**32**	DI19
13	DI20	**33**	DI21
14	DI22	**345**	DI23
15	EGND	**35**	EGND
16	DI24	**36**	DI25
17	DI26	**37**	DI27
18	DI28	**38**	DI29
19	DI30	**39**	DI31
20	N/C	**40**	N/C

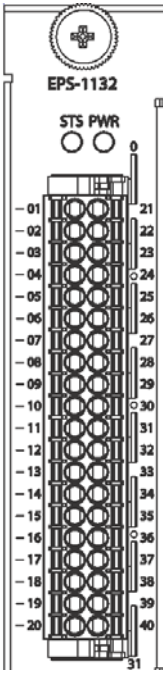


Table 3-2: EPS-1132 Pin Assignment

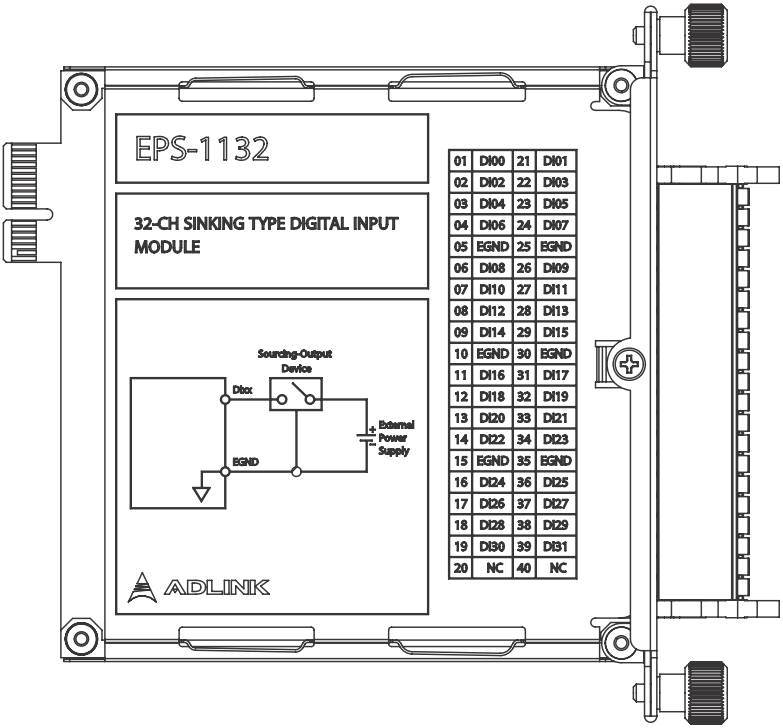


Figure 3-2: EPS-1132 Schematic

3.1.1 Connector and Wiring

- Connector: Phoenix Contact, DFMC series, 1787195
- Pitch=3.5mm
- 2x20pin
- AWG 16-24 gauge

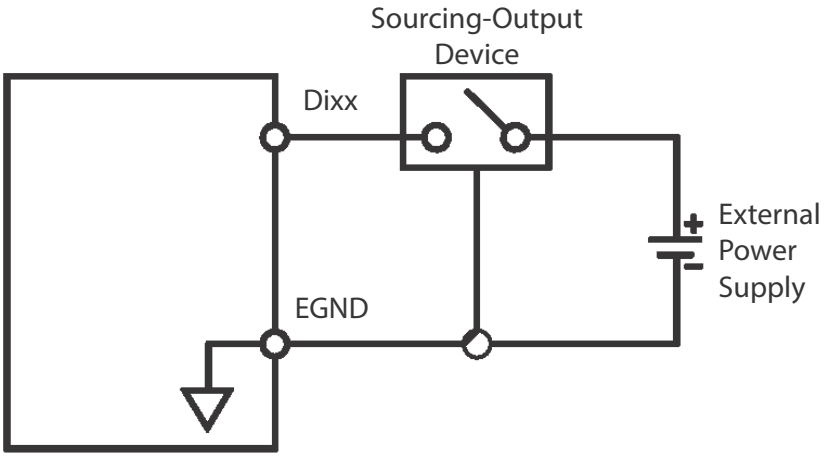
LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3.1.2 LED Indicators

LED	Action	Status
STS	Blinking	Over temperature protection Module present
PWR	Lit	Module power status
Channel (0-3, 4-7, 8-11, 12-15, 16-19, 20-23, 24-27, 28-31)	Lit	Channel active

Table 3-3: LED Indicator Legend

3.1.3 Signal Connection



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3.1.4 Object Dictionary

Index	0x3000
Sub	N/A
Type	U32
R/W	R
Name	Read digital input 32 bit
Description	Digital input channels 1 to 32

3.2 EPS-2032

The EPS-2032 high density 32CH sinking type digital output module operates in environments from -20°C to 60°C and provides high isolation protection and hot-swappability.

Channels	32
Output Type	Sourcing
EVCC Input	12V to 24V ±10%
Output Impedance (Rout)	200Ω
Output Current (Iout)	300mA per CH 800mA per 4CH
Output Voltage (Vout)	EVCC – (Iout x Rout)
IO Protection_Reverse Voltage	None
IO Protection_Current limit	1.2A for 4CH
IO Protection_Short Circuit	None
Power On State	Off
Response Time	4kHz
Power Consumption from Chassis	< 400mW (max.)
Thermal Dissipation (at max temp.)	< 2.55W (max.) @ EVCC=24V+10%
Isolation (Channel-to-DGND)	2kV (DC)
Isolation (Channel-to-Chassis)	2kV (DC)

Table 3-4: EPS-2032 Specifications

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

1	EVCC	**21**	EVCC
2	CH00	**22**	CH01
3	CH02	**23**	CH03
4	CH04	**24**	CH05
5	CH06	**25**	CH07
6	CH08	**26**	CH09
7	CH10	**27**	CH11
8	CH12	**28**	CH13
9	CH14	**29**	CH15
10	EGND	**30**	EGND
11	EVCC	**31**	EVCC
12	CH16	**32**	CH17
13	CH18	**33**	CH19
14	CH20	**345**	CH21
15	CH22	**35**	CH23
16	CH24	**36**	CH25
17	CH26	**37**	CH27
18	CH28	**38**	CH29
19	CH30	**39**	CH31
20	EGND	**40**	EGND

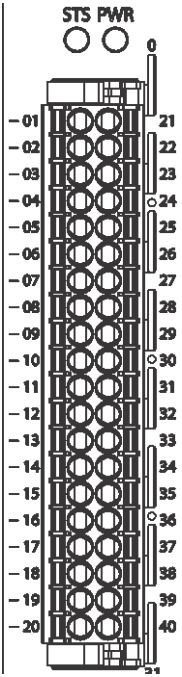


Table 3-5: EPS-2032 Pin Assignment

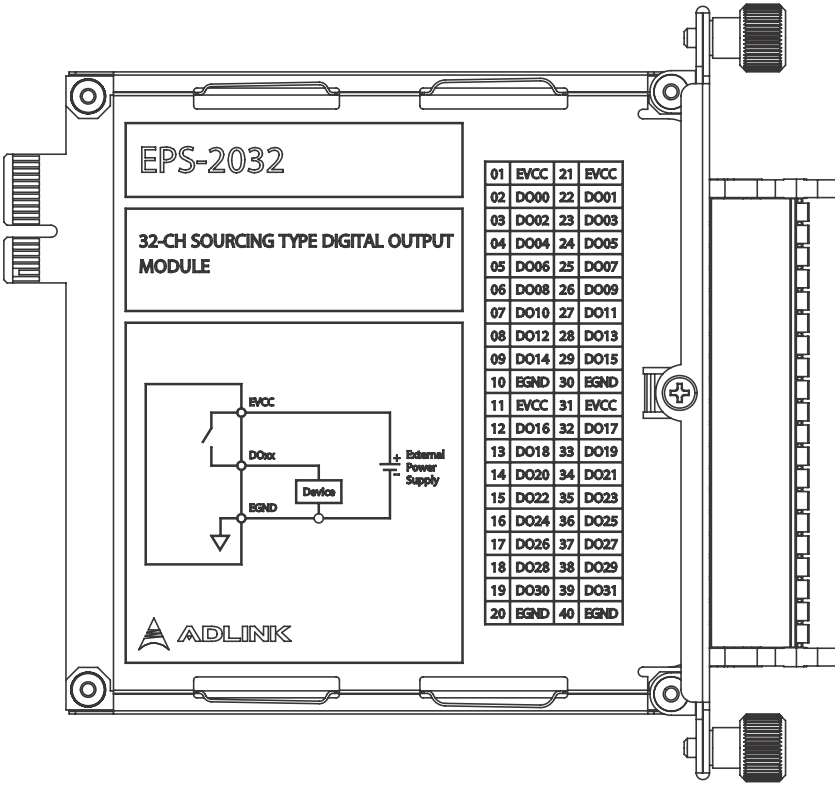


Figure 3-3: EPS-2032 Schematic

3.2.1 Connector and Wiring

- Connector: Phoenix Contact, DFMC series, 1787195
- Pitch=3.5mm
- 2x20pin
- AWG 16-24 gauge

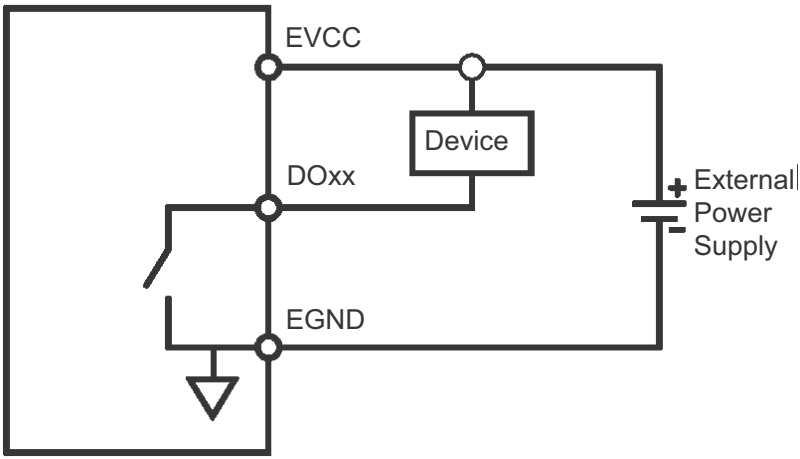
LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3.2.2 LED Indicators

LED	Action	Status
STS	Blinking	Over temperature protection Module present
PWR	Lit	Module power status
Channel (0-3, 4-7, 8-11, 12-15, 16-19, 20-23, 24-27, 28-31)	Lit	Channel active

Table 3-6: LED Indicator Legend

3.2.3 Signal Connection



3.2.4 Object Dictionary

Index	0x4000
Sub	N/A
Type	U32
R/W	RW

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Name	Write digital input 32 bit
Description	Digital input channels 1 to 32

3.3 EPS-2132

The EPS-2132 high density 32CH sourcing type digital output module operates in environments from -20°C to 60°C and provides high isolation protection and hot-swappability.

Channels	32
Output Type	Sinking
EVCC Input	12V to 24V ±10%
Output Impedance (Rout)	250Ω
Output Current (Iout)	300mA per CH 800mA per 4CH
Output Voltage (Vout)	Iout x Rout
IO Protection_Reverse Voltage	None
IO Protection_Current limit	1.2A for 4CH
IO Protection_Short Circuit	None
Power On State	Off
Response Time	4kHz
Power Consumption from Chassis	< 450mW (max.)
Thermal Dissipation (at max temp.)	< 2.55W (max.) @ EVCC=24V+10%
Isolation (Channel-to-DGND)	2kV (DC)
Isolation (Channel-to-Chassis)	2kV (DC)

Table 3-7: EPS-2132 Specifications

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

1	EGND	**21**	EGND
2	CH00	**22**	CH01
3	CH02	**23**	CH03
4	CH04	**24**	CH05
5	CH06	**25**	CH07
6	CH08	**26**	CH09
7	CH10	**27**	CH11
8	CH12	**28**	CH13
9	CH14	**29**	CH15
10	EVCC	**30**	EVCC
11	EGND	**31**	EGND
12	CH16	**32**	CH17
13	CH18	**33**	CH19
14	CH20	**345**	CH21
15	CH22	**35**	CH23
16	CH24	**36**	CH25
17	CH26	**37**	CH27
18	CH28	**38**	CH29
19	CH30	**39**	CH31
20	EVCC	**40**	EVCC

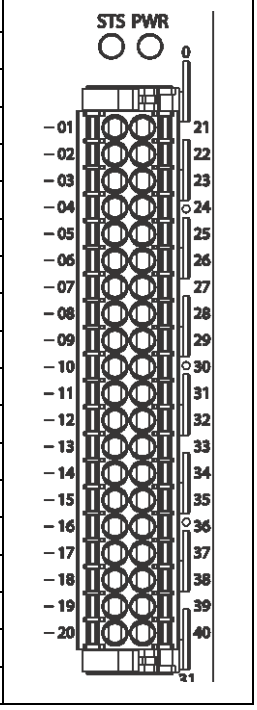


Table 3-8: EPS-2132 Pin Assignment

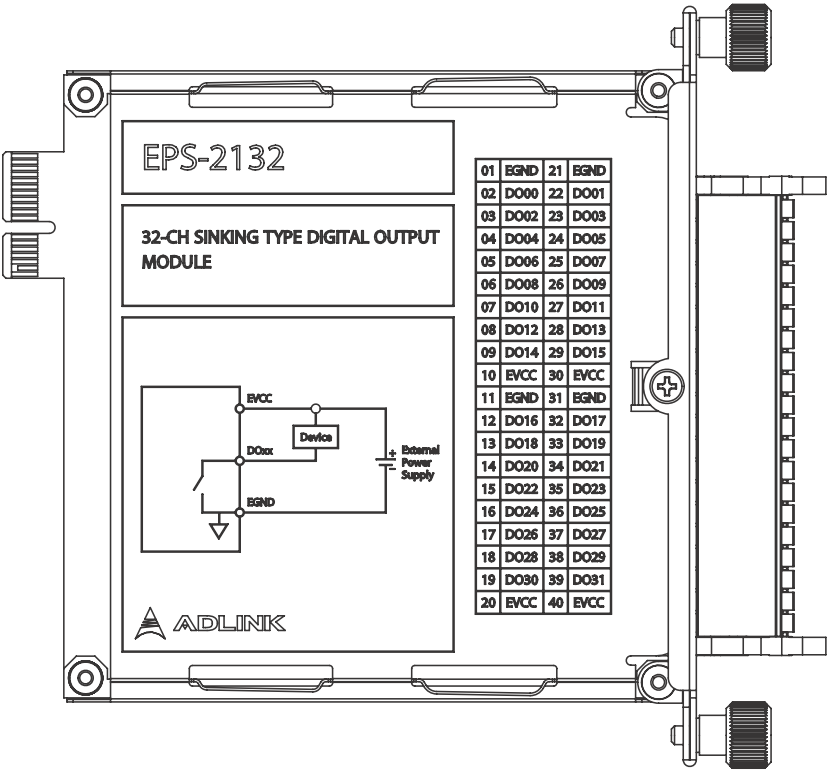


Figure 3-4: EPS-2132 Schematic

3.3.1 Connector and Wiring

- Connector: Phoenix Contact, DFMC series, 1787195
- Pitch=3.5mm
- 2x20pin
- AWG 16-24 gauge

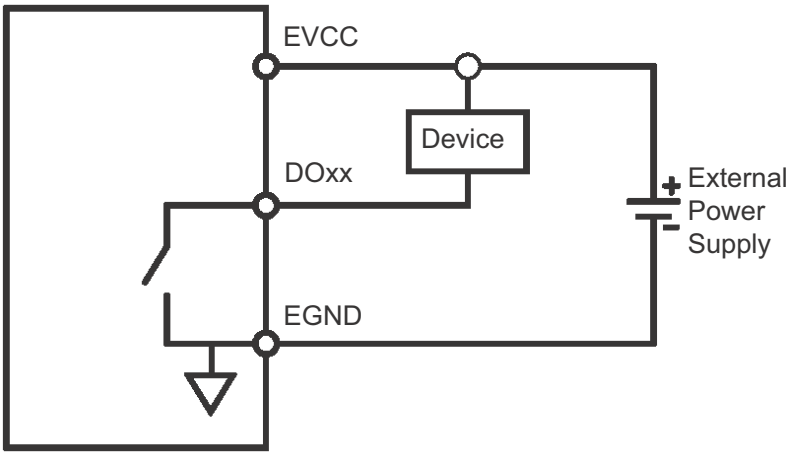
LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3.3.2 LED Indicators

LED	Action	Status
STS	Blinking	Over temperature protection Module present
PWR	Lit	Module power status
Channel (0-3, 4-7, 8-11, 12-15, 16-19, 20-23, 24-27, 28-31)	Lit	Channel active

Table 3-9: LED Indicator Legend

3.3.3 Signal Connection



3.3.4 Object Dictionary

Index	0x4000
Sub	N/A
Type	U32
R/W	RW

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Name	Write digital output 32 bit
Description	Digital output channels 1 to 32

3.4 EPS-2308

The EPS-2308 8CH SPST relay output module operates in environments from -20°C to 60°C and provides high isolation protection and hot-swappability.

Channels	8
Output Type	SPST (single pole single throw)
Maximum switched voltage and current	30V/2A, 240V/0.5A
Output Impedance (Rout)	50mΩ (Typ.)
IO Protection_Reverse Voltage	Yes
Power On State	Off
Response Time	Operate 10ms & release 5ms (Typ.)
Power Consumption from Chassis	< 600mW (max.)
Thermal Dissipation (at max temp.)	< 2.55W (max.) @ EVCC=24V+10%
Isolation (Channel-to-DGND)	DC 2kV 1 min.
Isolation (Channel-to-Chassis)	DC 2kV 1 min.
Isolation (Channel-to-Channel) adjacent relay	250Vrms 1min.
Isolation (Channel-to-Channel) adjacent pin within a single relay	250Vrms 1min.

Table 3-10: EPS-2308 Specifications

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

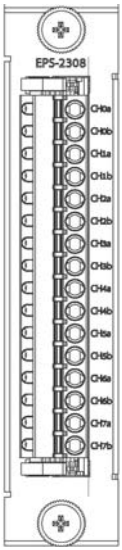
1	RO0a	
2	RO0b	
3	RO1a	
4	RO1b	
5	RO2a	
6	RO2b	
7	RO3a	
8	RO3b	
9	RO4a	
10	RO4b	
11	RO5a	
12	RO5b	
13	RO6a	
14	RO6b	
15	RO7a	
16	RO7b	

Table 3-11: EPS-2308 Pin Assignment

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

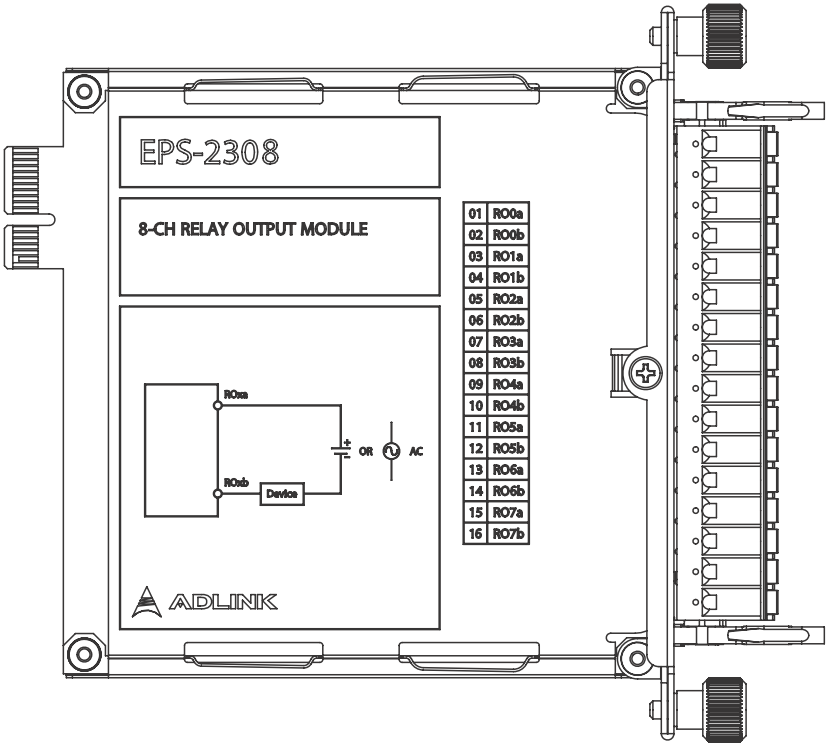


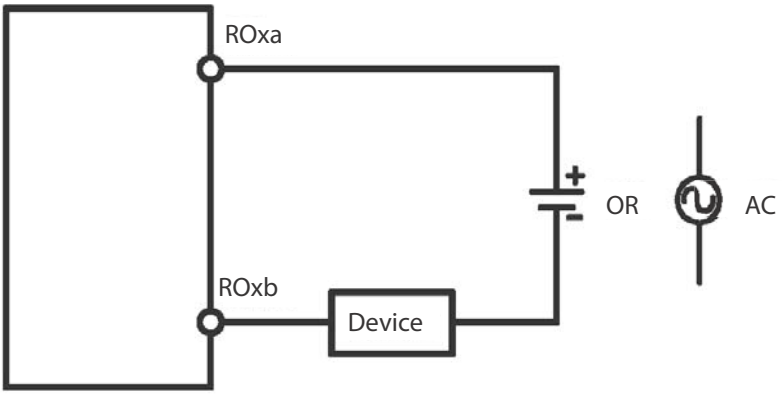
Figure 3-5: EPS-2308 Schematic

3.4.1 Connector and Wiring

- Connector: Weidmuller, OMNIMATE Signal series BL/SL 5.08, 10145300000
- Pitch= 5.08mm
- 1x16 pin
- AWG 12-26 gauge

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3.4.2 Signal Connection



3.4.3 Object Dictionary

Index	0x4000
Sub	N/A
Type	U32
R/W	RW
Name	Write RO data
Description	RO Output Bits 0 to 7, Bits 8 to 31 are reserved

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3.5 EPS-3032

The EPS-3032 high density 32CH ±10V @ 16-bit, analog input module operates in environments from -20°C to 60°C and provides high isolation protection and hot-swappability.

Channels	32 single-ended 16 differential
Input Range	±10V
Resolution	16 bit
Offset Error	±1mV
Offset Drift	0.0004% of range per °C
Gain Error	±0.05% of FSR
Gain Drift	0.002%FSR per °C
Voltage Protection	Power On @ ±24V
Sampling Rate	100kHz
Power Consumption from Chassis	< 450mW (max.)
Thermal Dissipation (at max temp.)	< 2.55W (max.) @ EVCC=24V+10%
Operating Temperature	-20 - 60°C
Isolation (Channel-to-DGND)	2kV (DC)
Isolation (Channel-to-Chassis)	2kV (DC)

Table 3-12: EPS-3032 Specifications

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

1	N/C	**21**	N/C
2	AI00	**22**	AI16
3	AI01	**23**	AI17
4	AI02	**24**	AI18
5	AI03	**25**	AI19
6	AI04	**26**	AI20
7	AI05	**27**	AI21
8	AI06	**28**	AI22
9	AI07	**29**	AI23
10	AGND	**30**	AGND
11	AI08	**31**	AI24
12	AI09	**32**	AI25
13	AI10	**33**	AI26
14	AI11	**345**	AI27
15	AI12	**35**	AI28
16	AI13	**36**	AI29
17	AI14	**37**	AI30
18	AI15	**38**	AI31
19	AISE	**39**	AGND
20	RSV	**40**	AGND

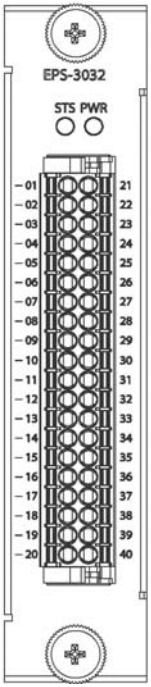


Table 3-13: EPS-3032 Pin Assignment

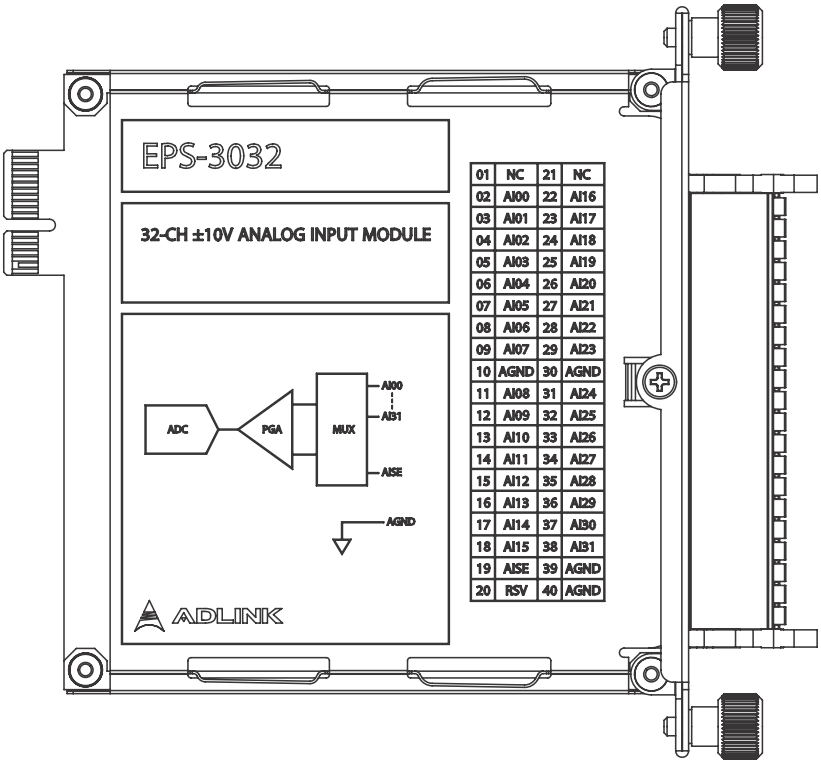


Figure 3-6: EPS-3032 Schematic

3.5.1 Connector and Wiring

- Connector: Phoenix Contact, DFMC series, 1787195
- Pitch=3.5mm
- 2x20pin
- AWG 16-24 gauge

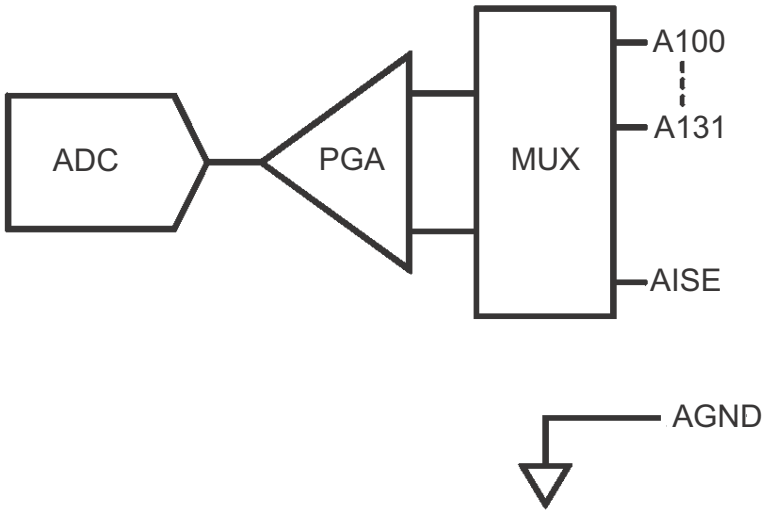
LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3.5.2 LED Indicators

LED	Action	Status
STS	Blinking	Over temperature protection Module present
PWR	Lit	Module power status

Table 3-14: LED Indicator Legend

3.5.3 Signal Connection



3.5.4 Object Dictionary

Index	Sub	Type	RW	Name	Description
0x3000	0	U8	R	Read Analog Input 16 Bit	
	1	U16	R	Read Analog Input 16 Bit	Analog Input Channel 0

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Index	Sub	Type	RW	Name	Description
	2	U16	R	Read Analog Input 16 Bit	Analog Input Channel 1
	3	U16	R	Read Analog Input 16 Bit	Analog Input Channel 2
	4	U16	R	Read Analog Input 16 Bit	Analog Input Channel 3
	5	U16	R	Read Analog Input 16 Bit	Analog Input Channel 4
	6	U16	R	Read Analog Input 16 Bit	Analog Input Channel 5
	7	U16	R	Read Analog Input 16 Bit	Analog Input Channel 6
	8	U16	R	Read Analog Input 16 Bit	Analog Input Channel 7
	9	U16	R	Read Analog Input 16 Bit	Analog Input Channel 8
	10	U16	R	Read Analog Input 16 Bit	Analog Input Channel 9
	11	U16	R	Read Analog Input 16 Bit	Analog Input Channel 10
	12	U16	R	Read Analog Input 16 Bit	Analog Input Channel 11
	13	U16	R	Read Analog Input 16 Bit	Analog Input Channel 12
	14	U16	R	Read Analog Input 16 Bit	Analog Input Channel 13
	15	U16	R	Read Analog Input 16 Bit	Analog Input Channel 14
	16	U16	R	Read Analog Input 16 Bit	Analog Input Channel 15
	17	U16	R	Read Analog Input 16 Bit	Analog Input Channel 16
	18	U16	R	Read Analog Input 16 Bit	Analog Input Channel 17
	19	U16	R	Read Analog Input 16 Bit	Analog Input Channel 18

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Index	Sub	Type	RW	Name	Description
	20	U16	R	Read Analog Input 16 Bit	Analog Input Channel 19
	21	U16	R	Read Analog Input 16 Bit	Analog Input Channel 20
	22	U16	R	Read Analog Input 16 Bit	Analog Input Channel 21
	23	U16	R	Read Analog Input 16 Bit	Analog Input Channel 22
	24	U16	R	Read Analog Input 16 Bit	Analog Input Channel 23
	25	U16	R	Read Analog Input 16 Bit	Analog Input Channel 24
	26	U16	R	Read Analog Input 16 Bit	Analog Input Channel 25
	27	U16	R	Read Analog Input 16 Bit	Analog Input Channel 26
	28	U16	R	Read Analog Input 16 Bit	Analog Input Channel 27
	29	U16	R	Read Analog Input 16 Bit	Analog Input Channel 28
	30	U16	R	Read Analog Input 16 Bit	Analog Input Channel 29
	31	U16	R	Read Analog Input 16 Bit	Analog Input Channel 30
	32	U16	R	Read Analog Input 16 Bit	Analog Input Channel 31

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3.6 EPS-3216

The EPS-3216 high density 16CH 0-20mA @ 16-bit, analog input module operates in environments from -20°C to 60°C and provides high isolation protection and hot-swappability.

Channels	16 single-ended
Input Range	0-20mA
Resolution	16 bit
Offset Error	0.5µA
Offset Drift	0.0005% of range per °C
Gain Error	±0.05% of FSR
Gain Drift	0.0008%FSR per °C
Voltage Protection	Power On @ ±24V
Sampling Rate	100kHz
Power Consumption from Chassis	< 450mW (max.)
Thermal Dissipation (at max temp.)	< 2.55W (max.) @ EVCC=24V+10%
Operating Temperature	-20 - 60°C
Isolation (Channel-to-DGND)	2kV (DC)
Isolation (Channel-to-Chassis)	2kV (DC)

Table 3-15: EPS-3216 Specifications

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

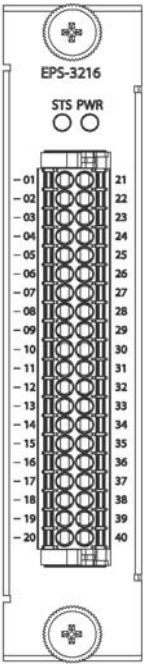
1	N/C	**21**	N/C	
2	AI00	**22**	N/C	
3	AI01	**23**	N/C	
4	AI02	**24**	N/C	
5	AI03	**25**	N/C	
6	AI04	**26**	N/C	
7	AI05	**27**	N/C	
8	AI06	**28**	N/C	
9	AI07	**29**	N/C	
10	AGND	**30**	AGND	
11	AI08	**31**	N/C	
12	AI09	**32**	N/C	
13	AI10	**33**	N/C	
14	AI11	**345**	N/C	
15	AI12	**35**	N/C	
16	AI13	**36**	N/C	
17	AI14	**37**	N/C	
18	AI15	**38**	N/C	
19	N/C	**39**	AGND	
20	RSV	**40**	AGND	

Table 3-16: EPS-3216 Pin Assignment

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

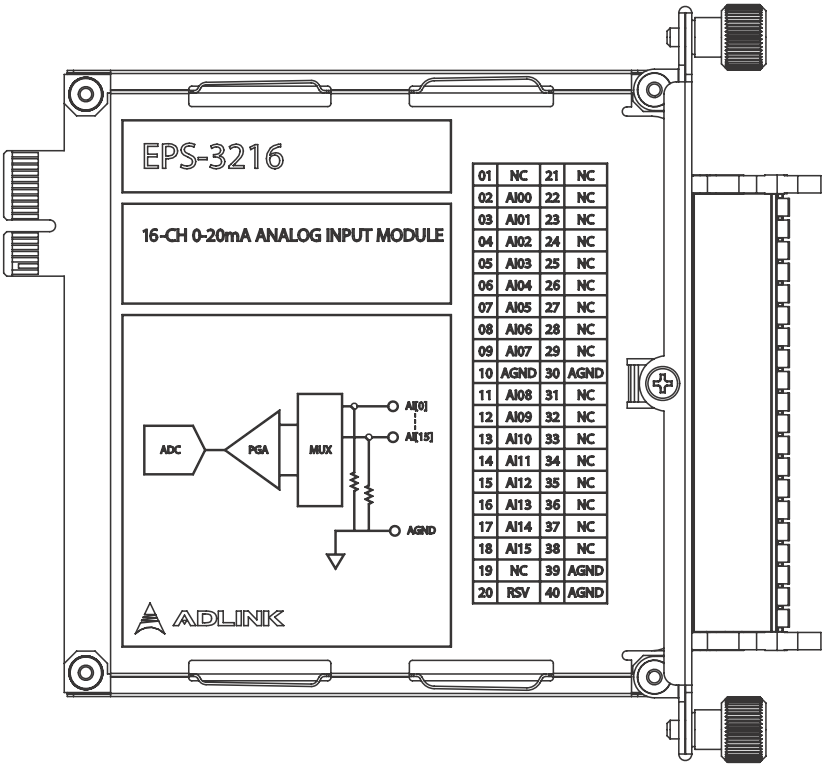


Figure 3-7: EPS-3216 Schematic

3.6.1 Connector and Wiring

- Connector: Phoenix Contact, DFMC series, 1787195
- Pitch=3.5mm
- 2x20pin
- AWG 16-24 gauge

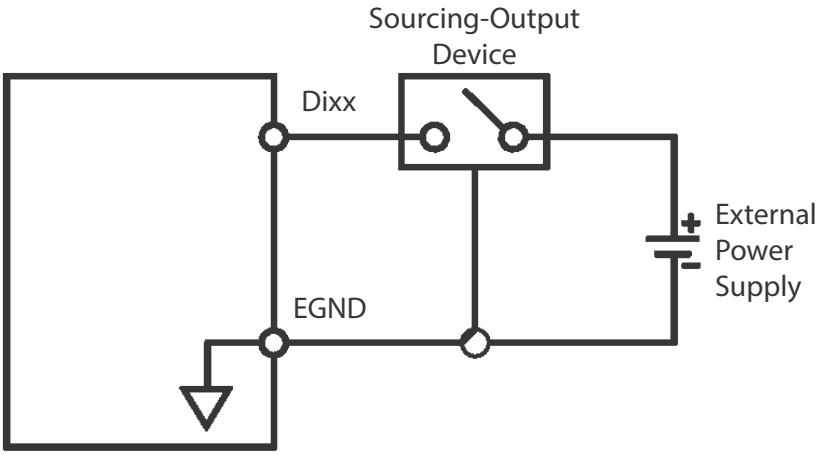
LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3.6.2 LED Indicators

LED	Action	Status
STS	Blinking	Over temperature protection Module present
PWR	Lit	Module power status

Table 3-17: LED Indicator Legend

3.6.3 Signal Connection



3.6.4 Object Dictionary

Index	Sub	Type	RW	Name	Description
0x3000	0	U8	R	Read Analog Input 16 Bit	
	1	U16	R	Read Analog Input 16 Bit	Analog Input Channel 0
	2	U16	R	Read Analog Input 16 Bit	Analog Input Channel 1
	3	U16	R	Read Analog Input 16 Bit	Analog Input Channel 2
	4	U16	R	Read Analog Input 16 Bit	Analog Input Channel 3
	5	U16	R	Read Analog Input 16 Bit	Analog Input Channel 4
	6	U16	R	Read Analog Input 16 Bit	Analog Input Channel 5
	7	U16	R	Read Analog Input 16 Bit	Analog Input Channel 6
	8	U16	R	Read Analog Input 16 Bit	Analog Input Channel 7
	9	U16	R	Read Analog Input 16 Bit	Analog Input Channel 8
	10	U16	R	Read Analog Input 16 Bit	Analog Input Channel 9
	11	U16	R	Read Analog Input 16 Bit	Analog Input Channel 10
	12	U16	R	Read Analog Input 16 Bit	Analog Input Channel 11
	13	U16	R	Read Analog Input 16 Bit	Analog Input Channel 12
	14	U16	R	Read Analog Input 16 Bit	Analog Input Channel 13
	15	U16	R	Read Analog Input 16 Bit	Analog Input Channel 14
	16	U16	R	Read Analog Input 16 Bit	Analog Input Channel 15

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3.7 EPS-3504

The EPS-3504 4CH 24-bit, RTD thermal input module supports PT100, PT500 and PT1000 sensors, operates in environments from -20°C to 60°C, and provides high isolation protection and hot-swappability.

Channels	4 RTD
Sensor Type	PT100, PT500, PT1000
Technology	2-/3-/4-Wire
Resolution	24 bit
Sampling Rate	5-20Hz
Temperature Range	-200°C to +850°C
Path Resistance	18 – 3900Ω
Accuracy (DC)	± 0.007% of FSR
Accuracy (Temperature)	± 0.5°C
Excitation Current (Max.)	500μA
Power Consumption from Chassis	< 450mW (max.)
Thermal Dissipation (at max temp.)	< 2.55W (max.) @ EVCC=24V+10%
Operating Temperature	-20 - 60°C
Isolation (Channel-to-DGND)	2kV (DC)

Table 3-18: EPS-3504 Specifications

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

1	AGND
2	EX0+
3	SI0+
4	EX1+
5	SI1+
6	EX2+
7	SI2+
8	EX3+
9	SI3+
10	AGND
11	AGND
12	EX0-
13	SI0-
14	EX1+
15	SI1+
16	EX2+
17	SI2+
18	EX3+
19	SI3+
20	AGND

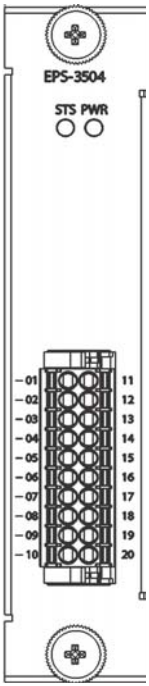


Table 3-19: EPS-3504 Pin Assignment

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

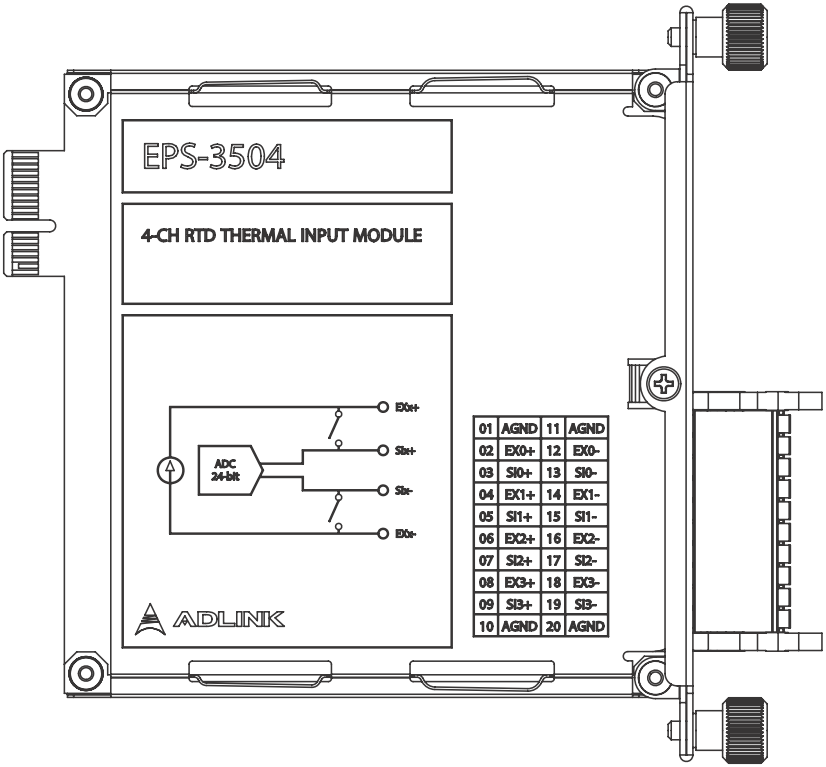


Figure 3-8: EPS-3504 Schematic

3.7.1 Connector and Wiring

- Connector: Phoenix Contact, DFMC series, 1787195
- Pitch=3.5mm
- 1x20pin
- AWG 16-24 gauge

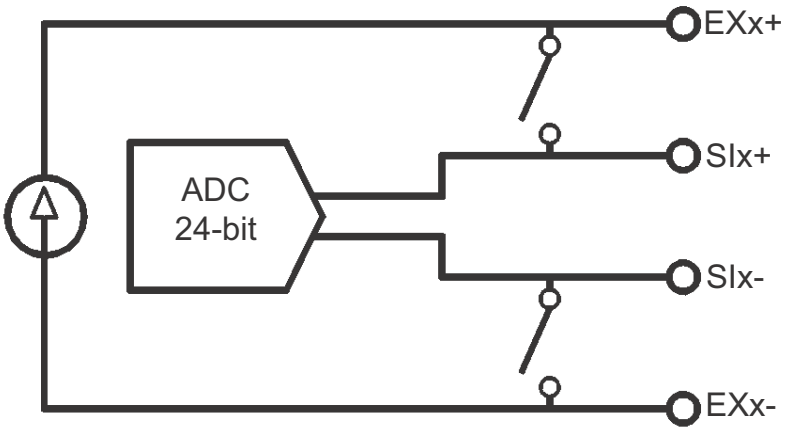
LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3.7.2 LED Indicators

LED	Action	Status
STS	Blinking	Over temperature protection Module present
PWR	Lit	Module power status

Table 3-20: LED Indicator Legend

3.7.3 Signal Connection



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3.7.4 Object Dictionary

Index	Sub	Type	RW	Name	Description
0x3000	0	U8	R	RTD Data	
	1	U32	R	Ch-0	Channel 0 Data
	2	U32	R	Ch-1	Channel 1 Data
	3	U32	R	Ch-2	Channel 2 Data
	4	U32	R	Ch-3	Channel 3 Data

3.8 EPS-4008

The EPS-4008 8CH ±10V @ 16-bit, analog output module operates in environments from -20°C to 60°C, and provides high isolation protection and hot-swappability. The EPS-4008 also offers onboard loopback circuitry ensuring integrity of analog output signals.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Channels	8CH Single-ended
Output Range	±10V
Resolution	16 bit
Sampling Rate	100kHz
Offset Error	± 0.2mV
Gain Error	± 0.05% of FSR
Offset Drift	± 0.0075mV /°C
Gain Drift	± 0.00025% /°C of FSR
Output Current Capacity	5 mA
Power On State	Relay off
Voltage Protection	± 24V / Relay off when error voltage occurs
Power Consumption from Chassis	< 450mW (max.)
Thermal Dissipation (at max temp.)	< 2.55W (max.) @ EVCC=24V+10%
Operating Temperature	-20 - 60°C
Isolation (Channel-to-DGND)	2kV (DC)
Isolation (Channel-to-Chassis)	2kV (DC)

Table 3-21: EPS-4008 Specifications

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

1	N/C
2	AO01
3	AO02
4	AO03
5	AO04
6	AO05
7	AO06
8	AO07
9	AO08
10	N/C
11	N/C
12	AGND
13	AGND
14	AGND
15	AGND
16	AGND
17	AGND
18	AGND
19	AGND
20	N/C

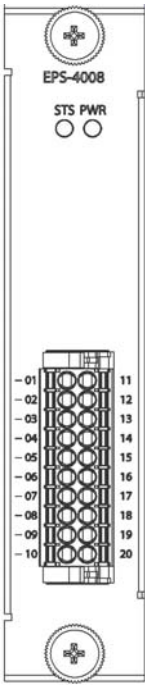


Table 3-22: EPS-4008 Pin Assignment

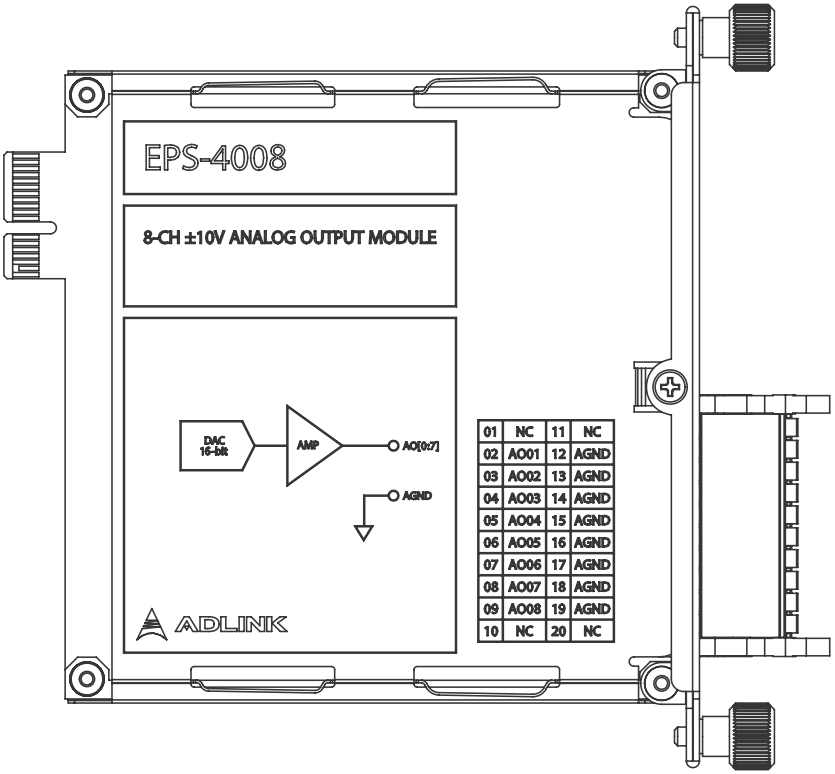


Figure 3-9: EPS-4008 Schematic

3.8.1 Connector and Wiring

- Connector: Phoenix Contact, DFMC series, 1787195
- Pitch=3.5mm
- 1x20pin
- AWG 16-24 gauge

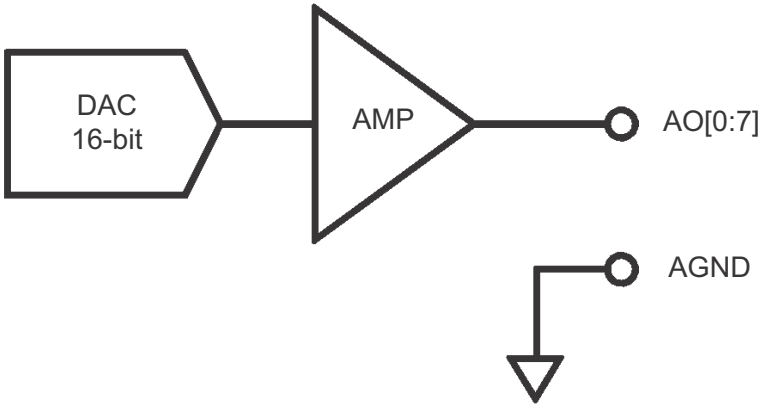
LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3.8.2 LED Indicators

LED	Action	Status
STS	Blinking	Over temperature protection Module present
PWR	Lit	Module power status

Table 3-23: LED Indicator Legend

3.8.3 Signal Connection



LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3.8.4 Object Dictionary

Index	Sub	Type	RW	Name	Description
0x3000	0	U8	RW	Write Analog Output 16 Bit	
	1	U16	RW	Write Analog Output 16 Bit	Analog Output Channel 0
	2	U16	RW	Write Analog Output 16 Bit	Analog Output Channel 1
	3	U16	RW	Write Analog Output 16 Bit	Analog Output Channel 2
	4	U16	RW	Write Analog Output 16 Bit	Analog Output Channel 3
	5	U16	RW	Write Analog Output 16 Bit	Analog Output Channel 4
	6	U16	RW	Write Analog Output 16 Bit	Analog Output Channel 5
	7	U16	RW	Write Analog Output 16 Bit	Analog Output Channel 6
	8	U16	RW	Write Analog Output 16 Bit	Analog Output Channel 7

3.9 EPS-6000

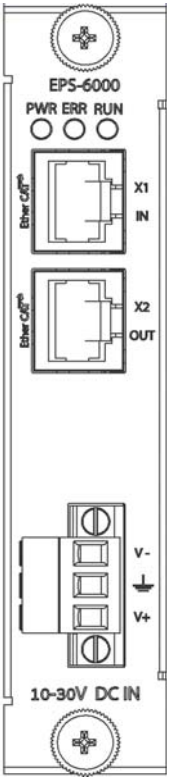
The EPS-6000 EtherCAT bus coupler module, powered by Xilinx Zynq SoC, supports not only EtherCAT transmission but also EPS peripheral module control and measurement functions. The EPS-6000 sustains DC power to the entire EPS slave system and grounds the system to reduce radiation noise, operating in environments from -20°C to 60°C and providing high isolation protection and hot-swappability

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

EPS Module Support	Up to 4 (slots)
Ethernet Connectivity	N/A
Field Bus Connectivity	EtherCAT
Data Transmission Rate	100 Mbaud
Bus Interface	2 x RJ45
Cable for EtherCAT Connection	CAT5 / CAT5e (recommended)
Inner Bus Synchronization	> 0.1µs
Supply Voltage	24V DC (± 10%)
Thermal Dissipation (at max temp.)	< 6.6W (max.) @ EVCC=24V+10%
Operating Temperature	-20 to 60°C
Isolation (Channel-to-DGND)	2kV (DC)
Isolation (Channel-to-Chassis)	2kV (DC)

Table 3-24: EPS-6000 Specifications

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



X1 & X2

Pin	Description
08	Termination
07	Termination
06	TX-
05	Termination
04	Termination
03	TX+
02	RX-

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Pin	Description
01	RX+

Power

Pin	Description
01	External Ground
02	Shielding Ground
03	External Power Input

Table 3-25: EPS-6000 Pin Assignment

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

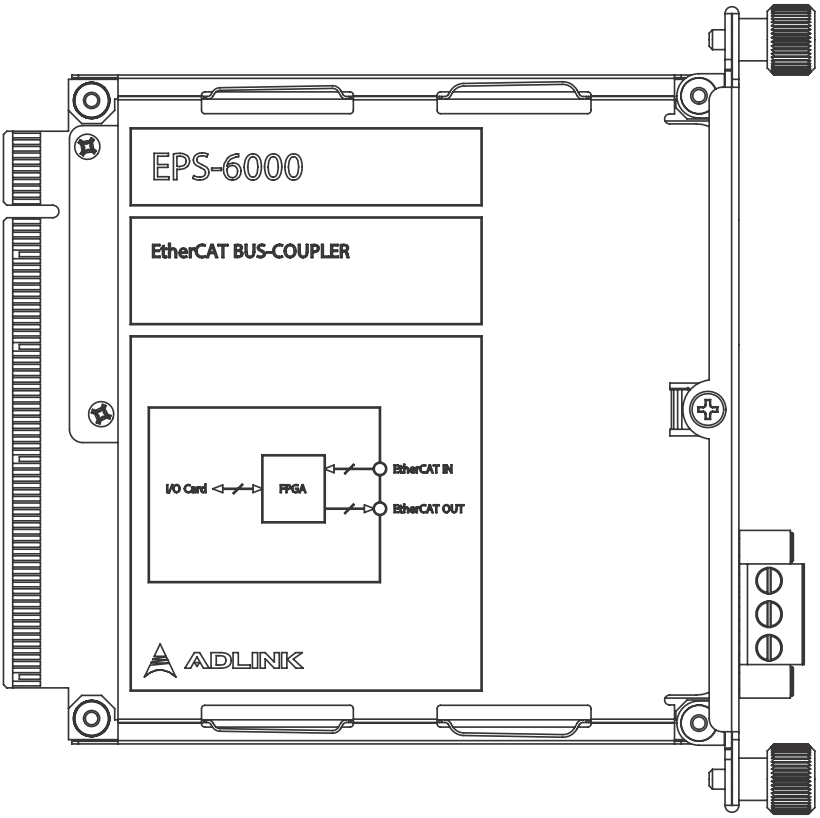


Figure 3-10: EPS-6000 Schematic

3.9.1 Connector and Wiring

Connector: Phoenix Contact, DFMC series, 1787195, pitch=3.5mm, 2x5 pin, AWG 16-24 gauge

SCSI VHDCI 68p: Y cable accessory (for servo connection)

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3.9.2 LED Indicators

LED	Display	Function	Description
PWR	Lit	System Power Status	Power ON
	Off		Power OFF / Power level below 20V
ERR	Lit	System Error Handling	Error
	Blinking		Warning (XXXX for details)
	Off		No warning and error
RUN	Lit	EtherCAT Communication Status	Normal operation
	Off		No power Under configuration Watchdog counter expired (1 sec)

Table 3-26: LED Indicator Legend

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3.9.3 Object Dictionary

Index	Sub	Type	RW	Name	Description
0x4000	0	U8	RW	Write Analog Output 16 Bit	
	1	U16	RW	Write Analog Output 16 Bit	Analog Output Channel 0
	2	U16	RW	Write Analog Output 16 Bit	Analog Output Channel 1
	3	U16	RW	Write Analog Output 16 Bit	Analog Output Channel 2
	4	U16	RW	Write Analog Output 16 Bit	Analog Output Channel 3
	5	U16	RW	Write Analog Output 16 Bit	Analog Output Channel 4
	6	U16	RW	Write Analog Output 16 Bit	Analog Output Channel 5
	7	U16	RW	Write Analog Output 16 Bit	Analog Output Channel 6
	8	U16	RW	Write Analog Output 16 Bit	Analog Output Channel 7

3.10 EPS-7002

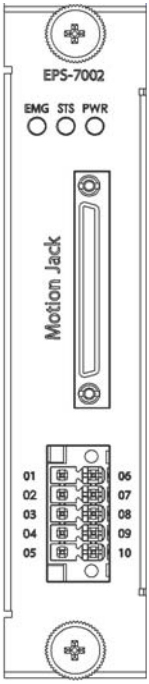
The EPS-7002 2CH pulse-train motion module supports up to 4MHz pulse output frequency, 20MHz encoder input speed (@ 4xAB phase mode), and dedicated motion and servo I/O interface, and complies with the CiA402 standard. Operating in environments from -20°C to 60°C, it provides high isolation protection and hot-swappability.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Channels	2
Output Frequency	4MHz
Output Modes	CW/CCW, OUT/DIR
Encoder Input Channels	2
Encoder Input Frequency	20MHz @ 4xAB
Encoder Input Modes	CW/CCW, 1x/2x/4x AB Phase
Encoder Input Type	TTL, Incremental
Motion I/O Interface	PEL, MEL, ORG
Servo I/O Interface	ALM, INP, RDY, SVON, ERC, RST
Input Type	Sinking
Input Current	IEC 61131-2, Type 1/3
Output Current (Single Node) (Sinking / Sourcing)	50mA
Power Consumption from Chassis	< 450mW (max)
Thermal Dissipation (at max temp)	< 2.55W (max) @ EVCC=24V+10%
Operating Temperature	-20 - 60°C
Isolation (Channel-to-DGND)	2kV (DC)
Isolation (Channel-to-Chassis)	2kV (DC)

Table 3-27: EPS-7002 Specifications

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



Motion I/O

Pin	Description
01	GND
02	MEL1
03	PEL2
04	MEL2
05	GND
06	PEL1
07	ORG1
08	COM
09	ORG2
10	EMG

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

D-SUB26P

#	Name	I/O	Function
1	SVON	O	Servo On signal
2	INP	I	In-position signal
3	ERC	O	Dev ctr, clr. Signal
4	RDY	I	servo ready signal
5	OUT-	O	Pulse signal (-)
6	OUT+	O	Pulse signal (+)
7	EA-	I	Encoder A-phase(-)
8	EA+	I	Encoder A-phase(+)
9	Rsv	-	Reserved
10	RST	O	Reset driver signal
11	ALM	I	Servo alarm signal
12	COM	-	Ext. power supply, +24V
13	GND	-	Ext. power ground
14	Rsv	-	Reserved
15	GND	-	Ext. power ground
16	EB-	I	Encoder B-phase(-)
17	EB+	I	Encoder B-phase(+)
18	GND	-	Ext. power ground
19	EMG	O	Emergency signal
20	GND	-	Ext. power ground
21	GND	-	Ext. power ground
22	GND	-	Ext. power ground
23	DIR-	O	Dir. Signal(-)
24	DIR+	O	Dir. Signal(+)
25	EZ-	I	Encoder Z-phase(-)
26	EZ+	I	Encoder Z-phase(+)

Table 3-28: EPS-7002 Pin Assignment

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

NOTE:

It is recommended to connect signal to specific servo drives with dedicated cables. Docking connector is DSUB-26p.

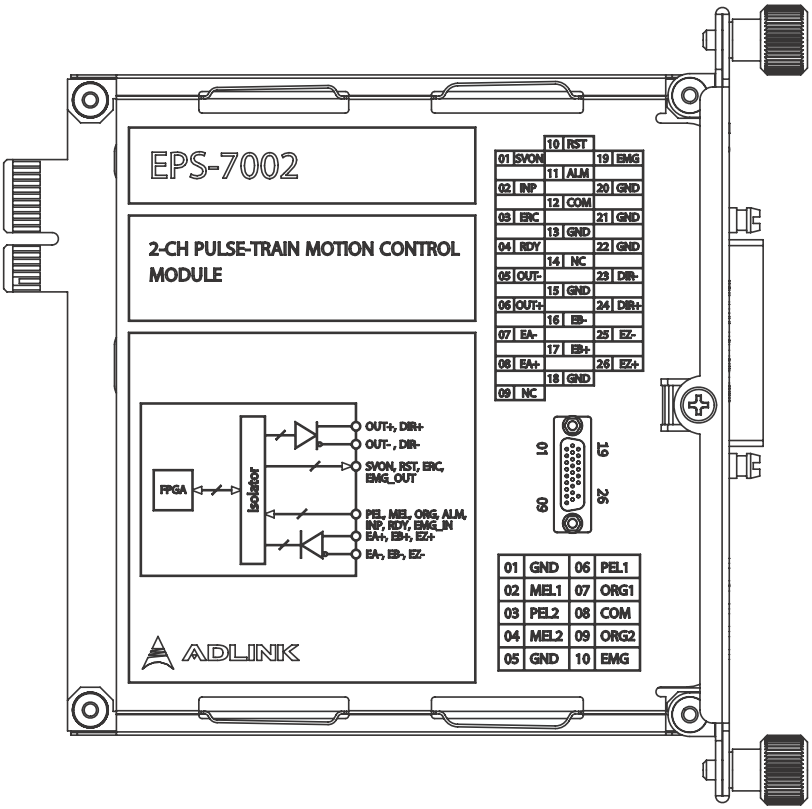


Figure 3-11: EPS-7002 Schematic

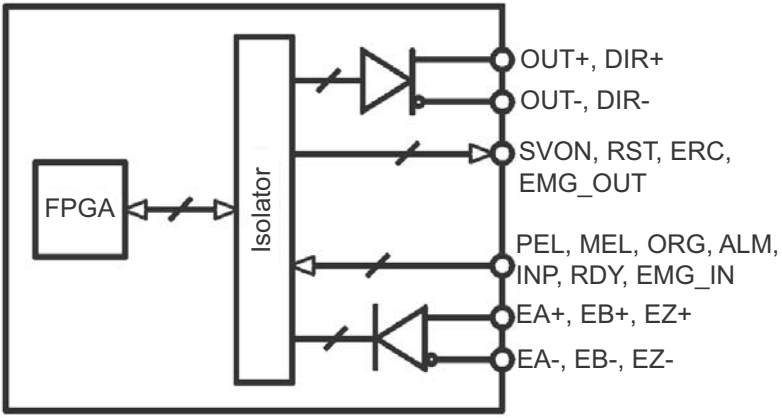
LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3.10.1 LED Indicators

LED	Status	Function
EMG	Lit	Emergency Stop Input
STS	Blinking	Over Temperature Protection Module Present
PWR	Lit	Module Power Status

Table 3-29: LED Indicator Legend

3.10.2 Signal Connection



3.10.3 Object Dictionary

Index	Sub	Type	RW	Name
0x6040		U16	RW	Control Word
0x6041		U32	R	Status Word
0x6064		U32	R	Position Actual Value
0x607A		U32	RW	Target Position
0x60B8		U16	RW	Touch Probe Ctrl
0x60B9		U16	R	Touch Probe Response

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Index	Sub	Type	RW	Name
0x60BA		U32	R	Touch Probe 0 Positive Edge Value
0x60BB		U32	R	Touch Probe 1 Positive Edge Value
0x60BC		U32	R	Touch Probe 0 Negative Edge Value
0x60BD		U32	R	Touch Probe 1 Negative Edge Value
0x60FD		U32	RW	Axis 0 Motion Output
0x60FE		U32	R	Axis 0 Motion Input
0x6840		U16	RW	Control Word
0x6841		U32	R	Status Word
0x6864		U32	R	Position Actual Value
0x687A		U32	RW	Target Position
0x68B8		U16	RW	Touch Probe Ctrl
0x68B9		U16	R	Touch Probe Response
0x68BA		U32	R	Touch Probe 0 Positive Edge Value
0x68BB		U32	R	Touch Probe 1 Positive Edge Value
0x68BC		U32	R	Touch Probe 0 Negative Edge Value
0x68BD		U32	R	Touch Probe 1 Negative Edge Value
0x68FD		U32	RW	Axis 1 Motion Output
0x68FE		U32	R	Axis 1 Motion Input

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Appendix A - LinkMasterPro™

LinkMasterPro™, ADLINK's EtherCAT utility, enables configuration of EPS slave systems and generation of corresponding ESI files for EtherCAT master controllers.

LinkMasterPro™ further provides intuitive I/O control dialogues to assess the integrity of each EPS peripheral module's wiring.



Ensure that all hardware setup and wiring is complete before executing LinkMasterPro™.

LinkMasterPro™ enables:

- Identification of all EPS elements in the EtherCAT system
- Export of ESI (EtherCAT Slave Information) files and conversion of content to EEPROM
- Complete EtherCAT communication
- CAN application protocol over EtherCAT (COE)
- File access over EtherCAT (FOE)
- Direct access to general purpose I/O

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

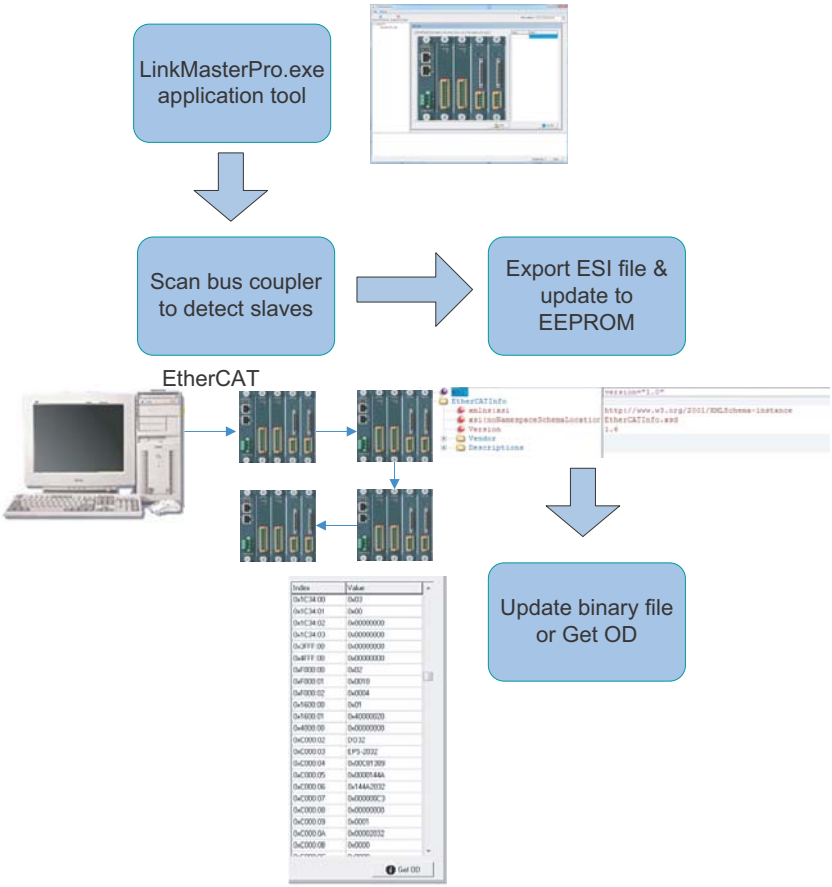


Figure A-1: LinkMasterPro™ Operational Overview

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

A.1 Interface

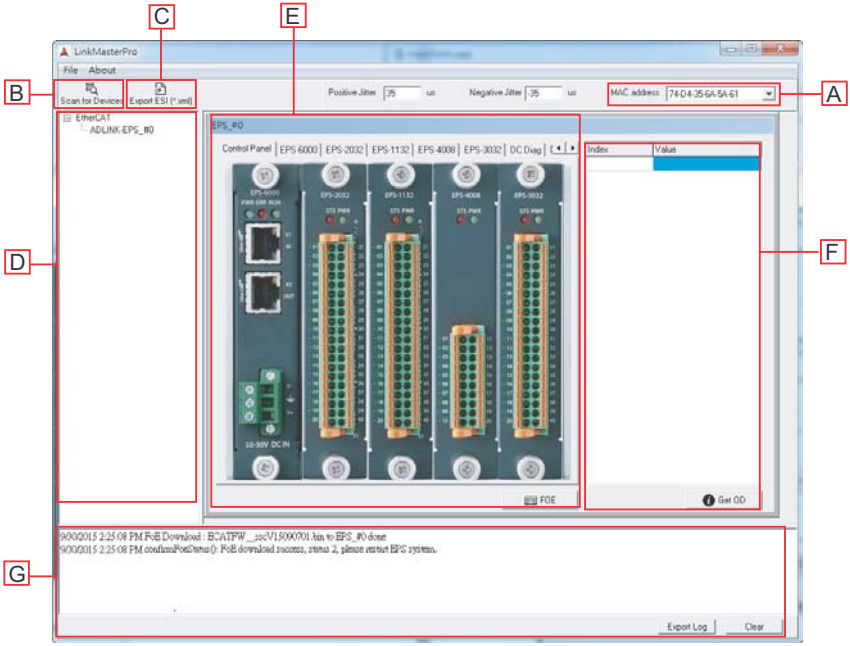


Figure A-2: LinkMasterPro™ Interface

A	MAC Address Selection
B	Scan for Devices Button
C	Export ESI (*.xml) Button
D	Tree View Window
E	Device Window
F	Object Dictionary Window
G	Message Window

Table A-1: LinkMasterPro™ Interface Legend

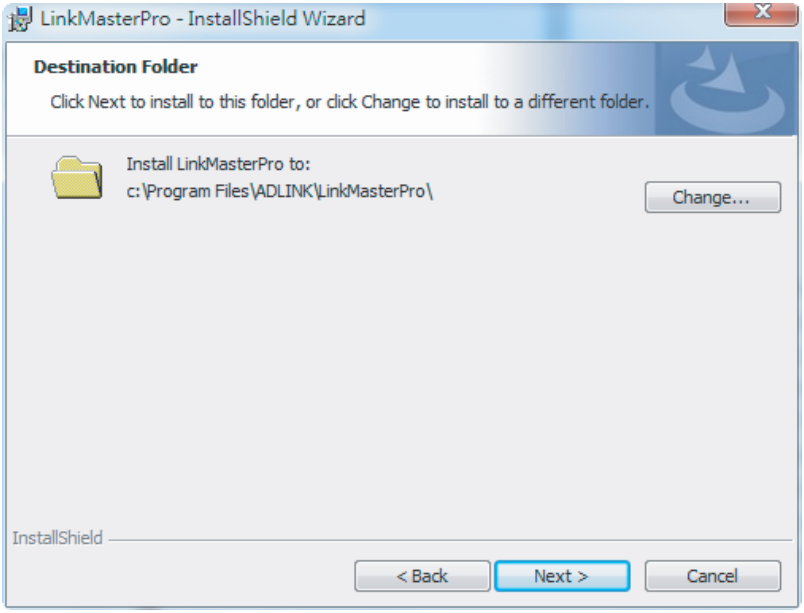
LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

A.2 Installation

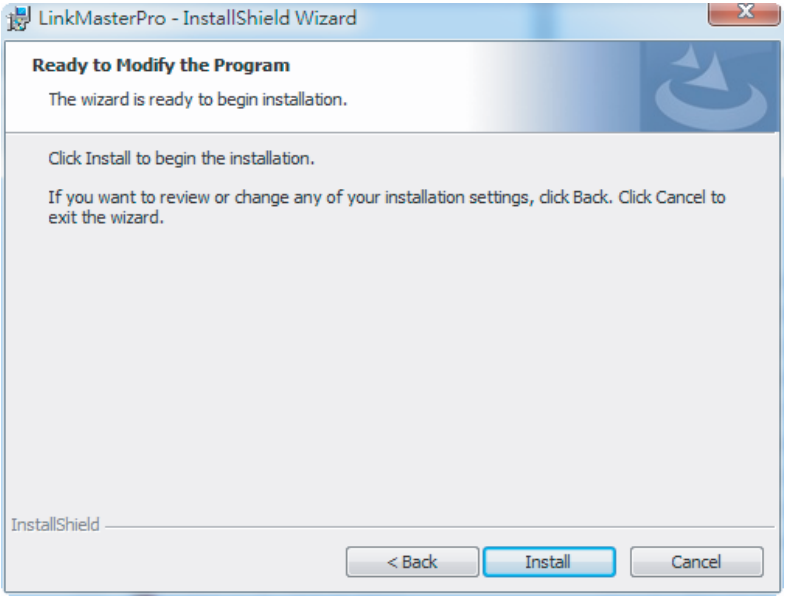
Install the LinkMasterPro_v1.0.exe SDK to the suggested path

C:\Program Files\ADLINK\LinkMasterPro

Click Next and Install through until installation is complete.



LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



Once installation is complete, the application can be launched by following Start>All Programs>ADLINK>LinkMasterPro or by going to C:\Program Files\ADLINK\LinkMasterPro and executing LinkMasterPro.exe.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

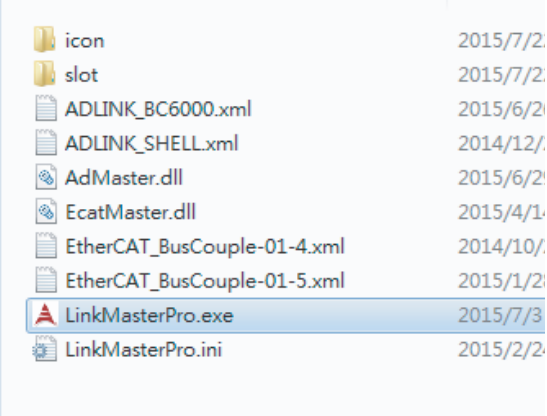


Figure A-3: LinkMasterPro™ Folder

A.3 Controls and Function

A.3.1 Selecting MAC Address

To begin with LinkMasterPro™, the physical MAC address on the master must be entered, or hte application is unable to scan the EtherCAT device properly. If the incorrect MAC is entered, an error message appears as shown.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

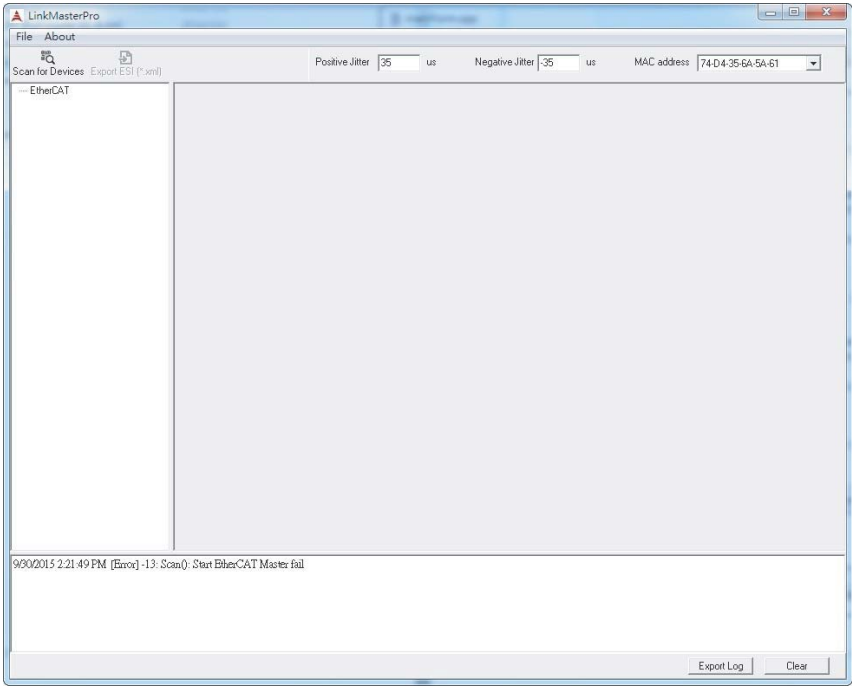


Figure A-4: Scan Failure Notification

CAUTION:

Before operating any controls, ensure all slave modules are properly connected and no other fieldbus devices or applications are in use.

A.3.2 Scanning for Devices

When the Scan for Devices button is activated, the EPS slave system is displayed in the device tree view as shown.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

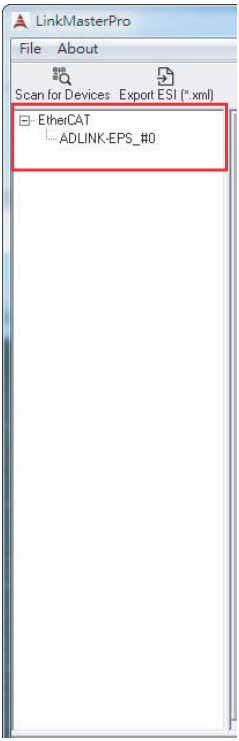


Figure A-5: EPS Slave System in Tree View

A.3.3 Exporting ESI

When the Export ESI button is activated, the ESI file (*.xml) is saved to disk and the EPS system simultaneously, with the Save path selected as shown.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

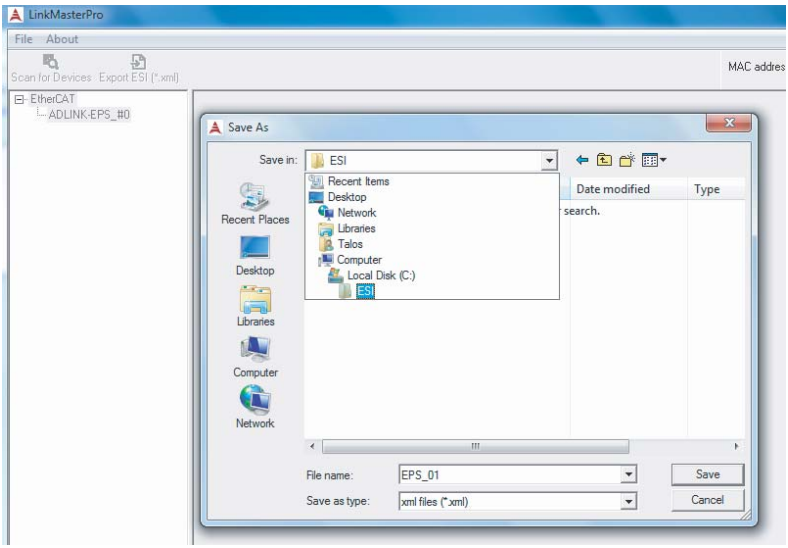


Figure A-6: Save ESI Path Selection

The ESI (EtherCAT slave information) file includes product code, vendor ID, TxPDO/RxPDO, and other slave data. It recognizes peripheral module types and locates memory space required to control the I/O on the EPS peripheral modules thru EtherCAT. When ESI export begins, a progress bar appears as shown.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

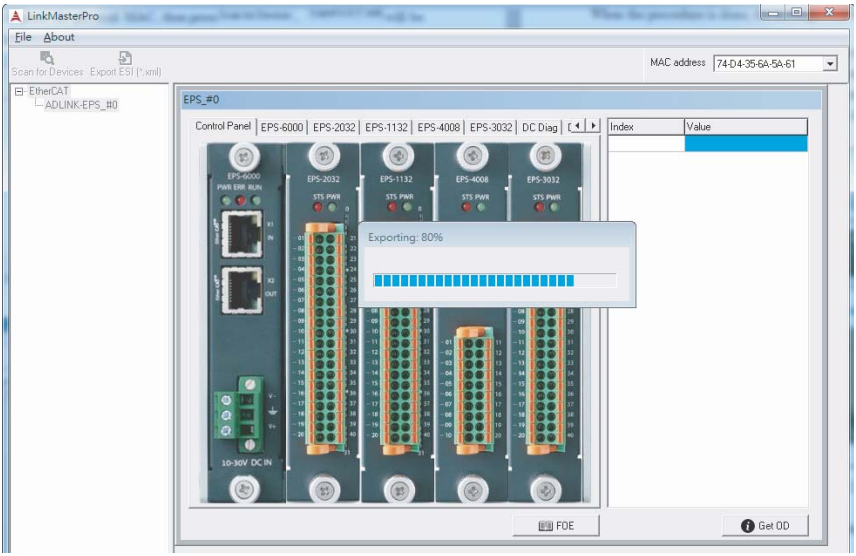


Figure A-7: ESI Export Progress Display

The action also programs the content to EEPROM on the individual EPS slave system. When ESI generation is complete a notification appears as shown.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

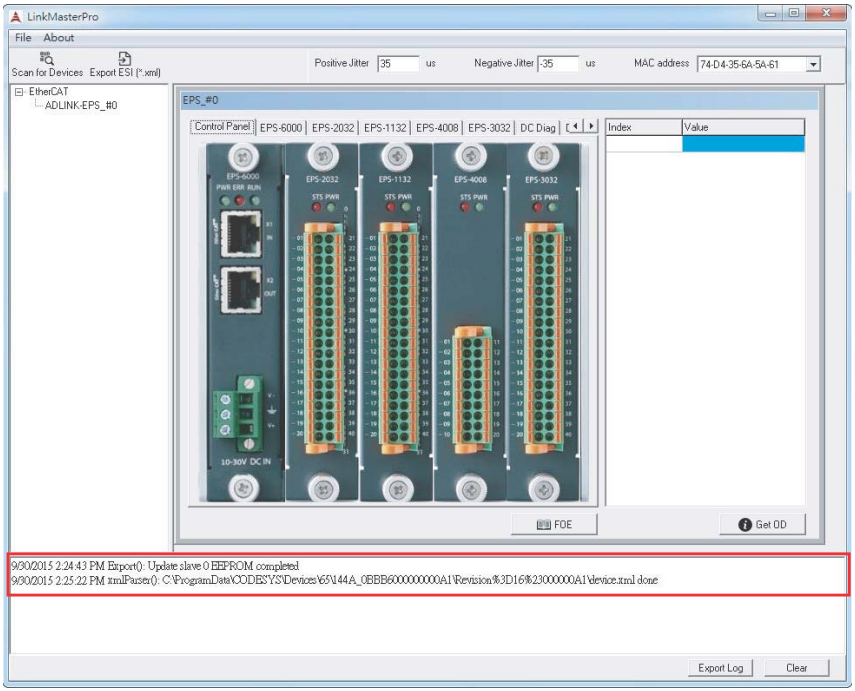


Figure A-8: Export Successful Display

The ESI file can further be used for CoDeSys, configuring EtherCAT for integration into the IEC 61131-3 Development System. To save time, LinkMasterPro automatically copies the ESI file of EPS system to the specific CoDeSys path, named device.xml.

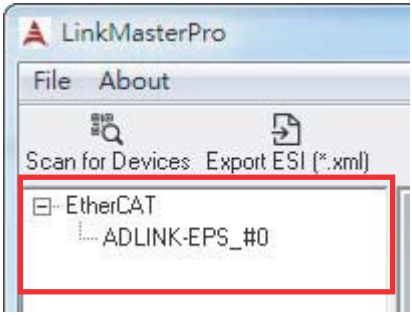
NOTE:

The CoDeSys environment must be properly installed and functional before exporting ESI files.

A.3.4 Device Tree View

The device tree view displays the entire installed EPS slave system in the EtherCAT line.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



Corresponding EPS module dialogue appears when the specific slave system is selected.

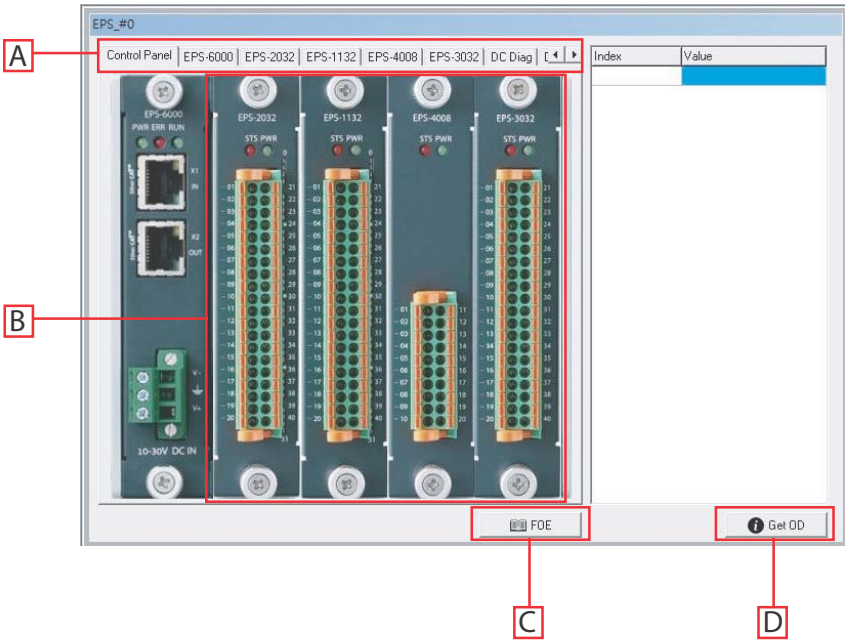


Figure A-9: EPS Slave System Panel

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

	Item	Function
A	Module Tab Panel	Switching tab panel displays individual module information
B	I/O Panel	Opens I/O display
C	FOE (File Over EtherCAT) Button	Transfers files over EtherCAT (write *.bin file over EtherCAT)
D	OD Info Button	Displays OD info <index: value> above list

Table A-2: EPS Slave System Panel Operations

When the tab is switched, information for the specific module is displayed. If the EPS-6000 bus coupler module (the default installation in Slot 1) tab is opened, the configuration page that appears includes vendor ID, product code, revision number, serial number, HW version, FW version, SW version, and ADLINK serial number, as well as error code, as shown.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

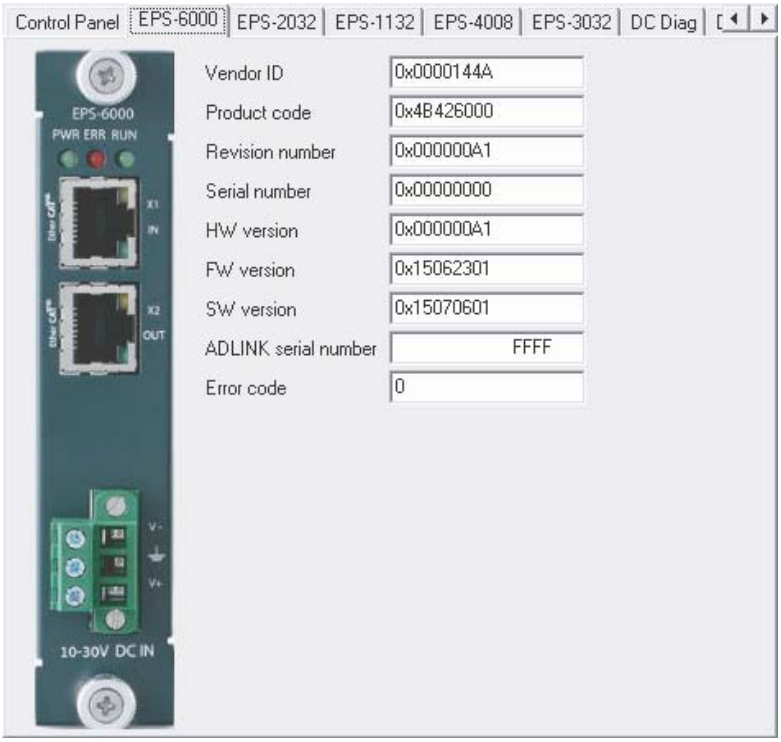


Figure A-10: EPS-6000 Product Page (default Slot 1 installation)

Generally, individual EPS module pages display the module type, module identification, HW version, SW version, and ADLINK serial number, as well as error code. The page for the EPS-2032 module (installed here in Slot 2) is shown as an example.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

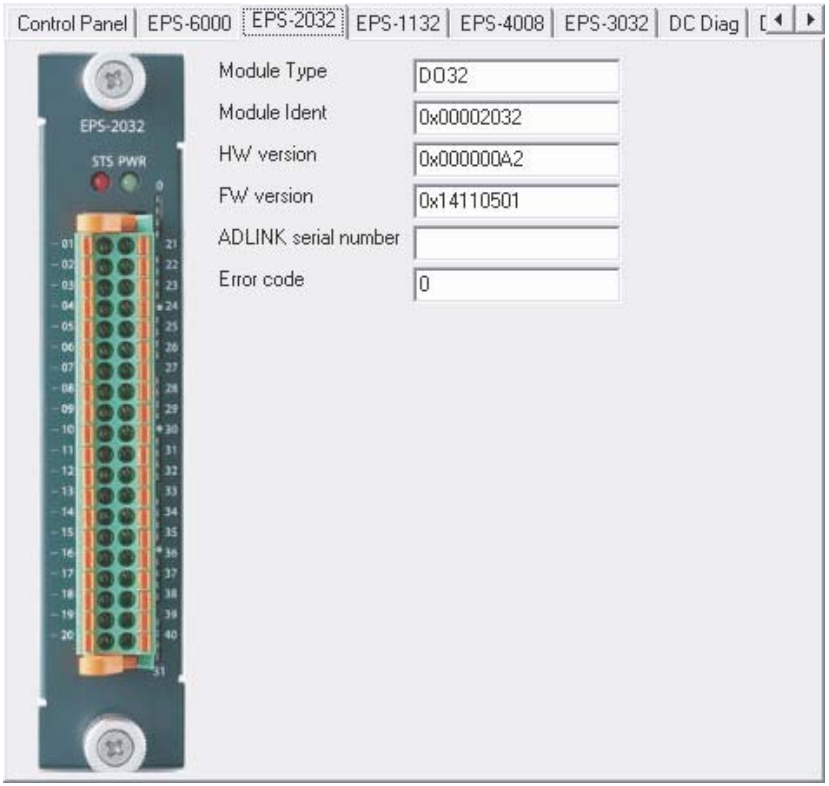


Figure A-11: EPS-2032 Product Page (exemplary Slot 2 installation)

To optimize data transmission between the EtherCAT master and EPS slave system, time offset can be adjusted via the Distribute Clock (DC) tab, as shown.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

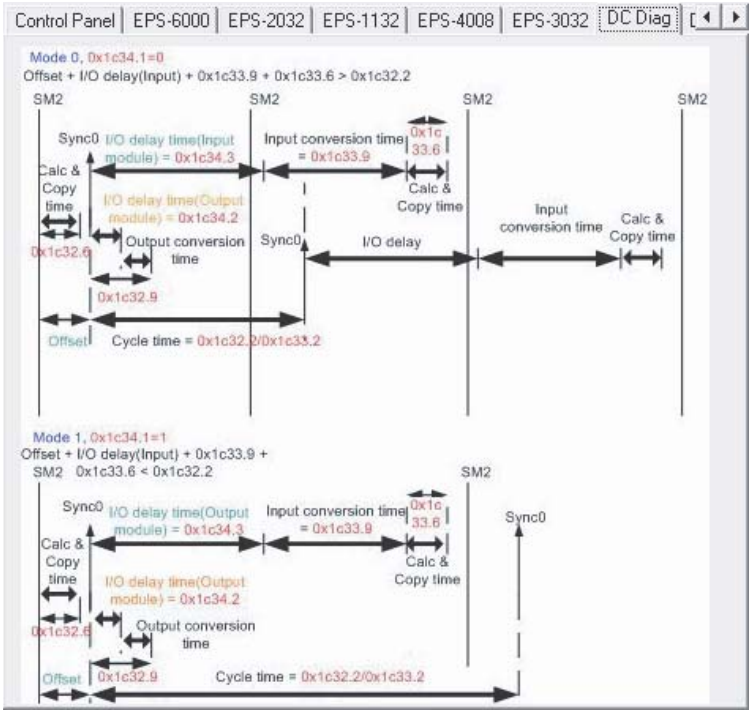


Figure A-12: DC Dialog Page

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

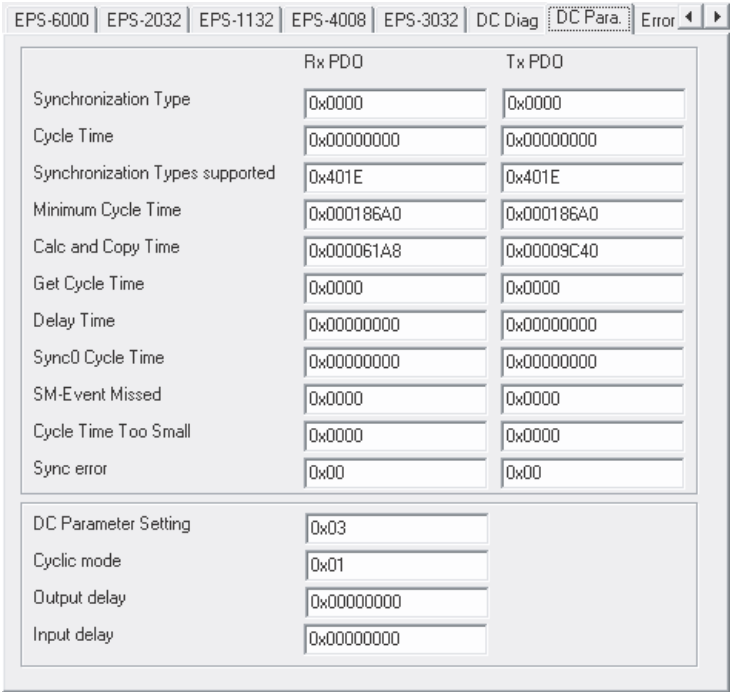


Figure A-13: DC Parameters Page

A.3.5 Error Logging and History

Error logging provides error history saved in the EPS-6000's onboard flash memory. Capacity in the memory is 256 error codes. Refresh displays the error data and corresponding description in the Information Panel (right side) when each value is selected. Clear removes data from both the display and flash memory.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

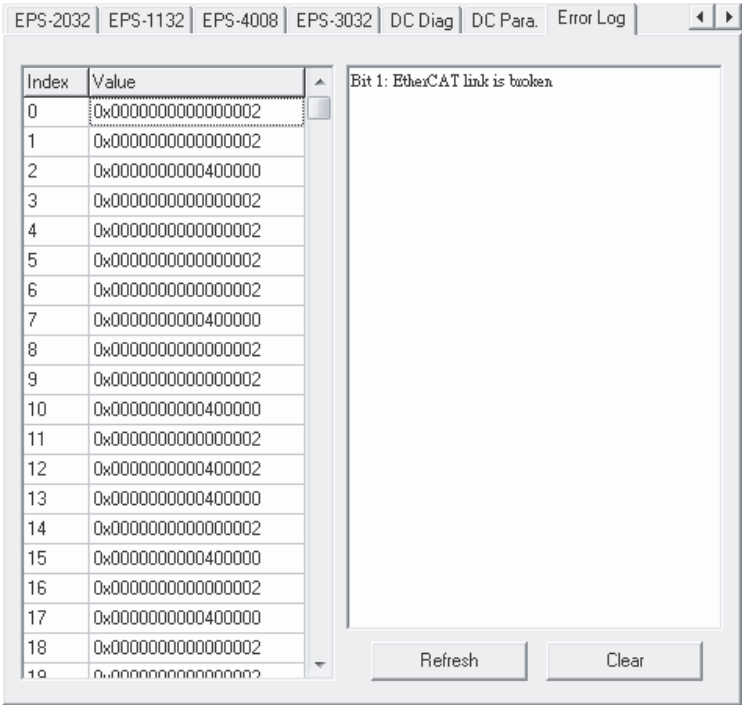


Figure A-14: Error Log Page (w/ Index 0 selected)

A.3.6 FOE (File Over EtherCAT)

Slave functions can be reprogrammed dynamically by updating slave code (*bin). The FOE button opens the binary file listing and enables download to the EEPROM of the EPS slave system.

CAUTION:

Ensure that no other LinkMasterPro™ operations are active during the procedure.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

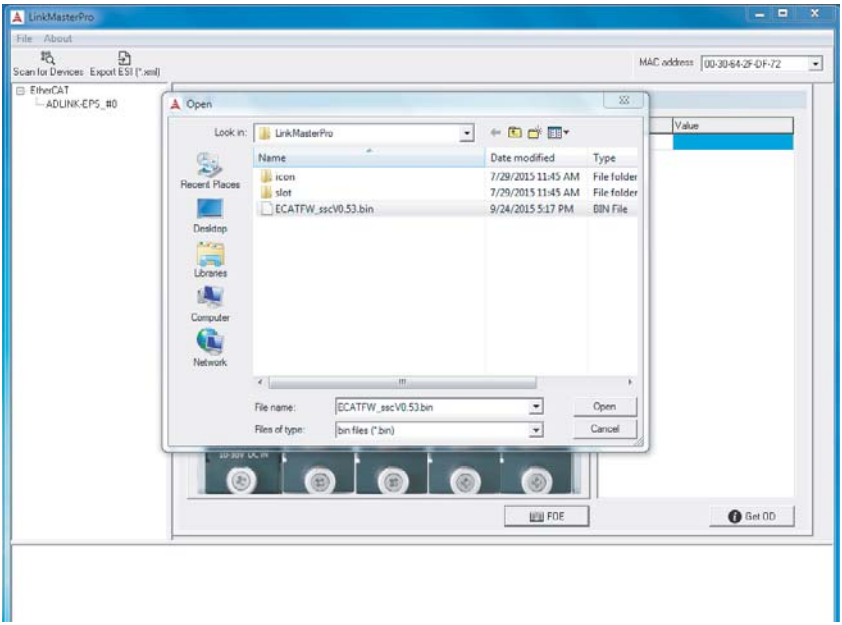


Figure A-15: Binary File Selection

When the procedure is complete, a notification appears, as shown.

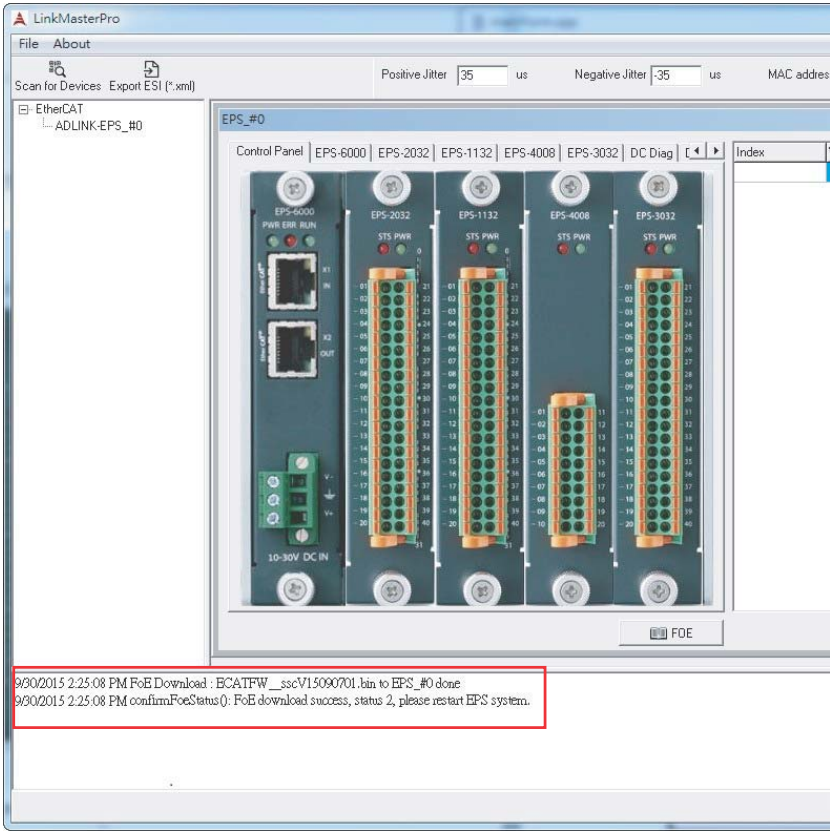


Figure A-16: Binary File Download Success Notification

Restart the EPS system to activate the functions. If the procedure fails,the slave code may need to be downloaded again. If failure persists, please contact ADLINK technical support.

A.3.7 Getting OD Info

The Get OD button displays values corresponding to each index/ sub-index in the table for review.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

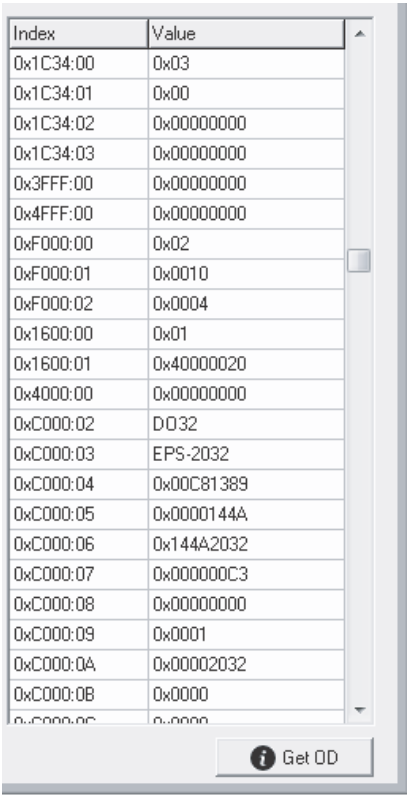


Figure A-17: OD List

A.3.8 Module I/O Panels

Selecting a module in the Device Window opens the I/O panel for that module.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

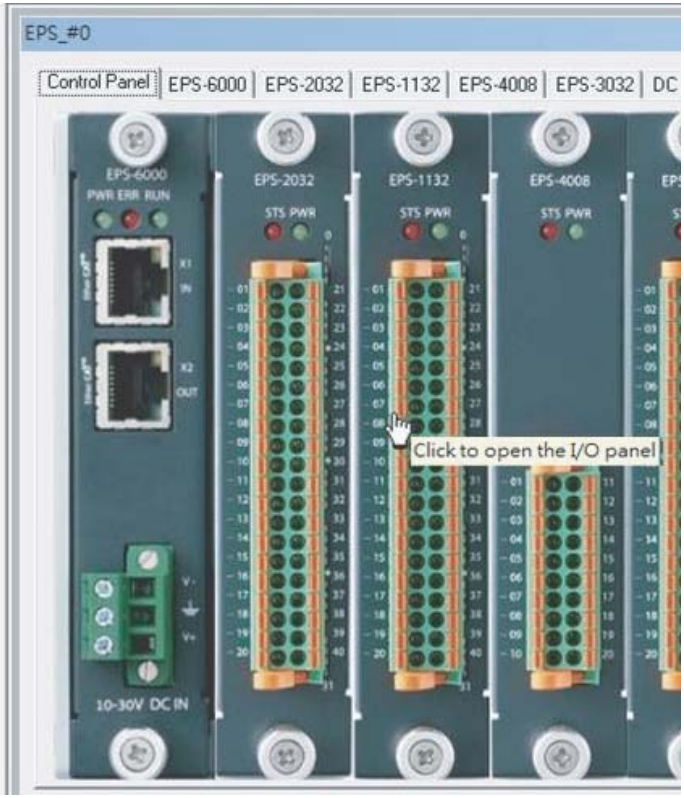


Figure A-18: Module Selection

Each module's I/O panel displays its I/O information, as shown.

EPS-2032



Indicator represents 1 bit, clicking allows status to be changed.

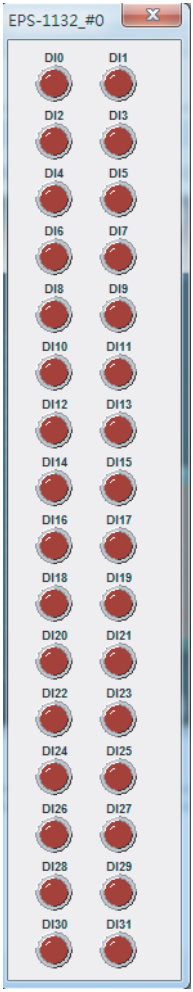
EPS-2132



Indicator represents 1 bit, clicking allows status to be changed.

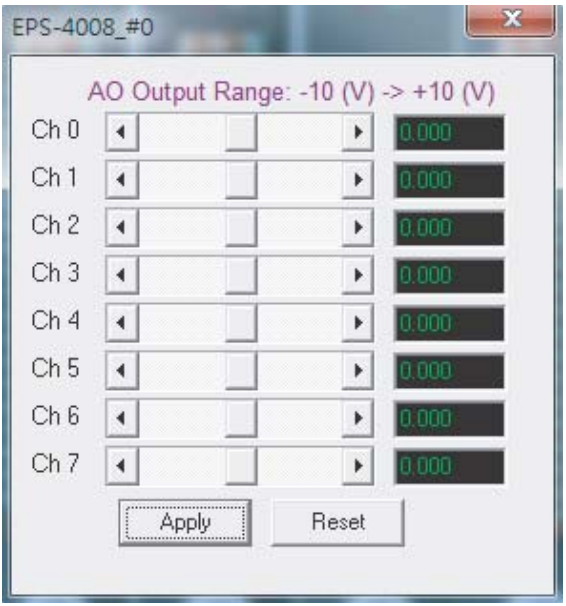
LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

EPS-1132



Indicator represents 1 bit, and is read-only.

EPS-4008



Enables voltage to be changed, with current value displayed on the right. Apply implements changes, and Reset rolls values back to 0.

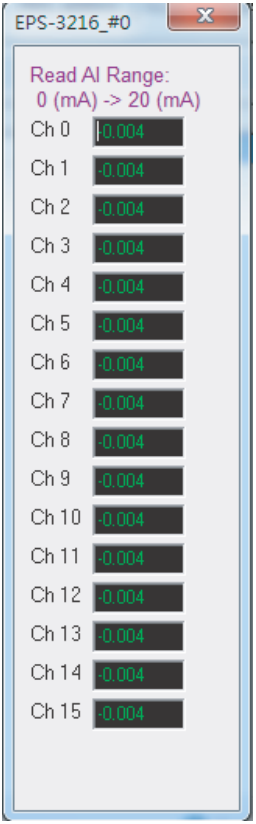
LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

EPS-3032



Displays voltage data, and is read-only.

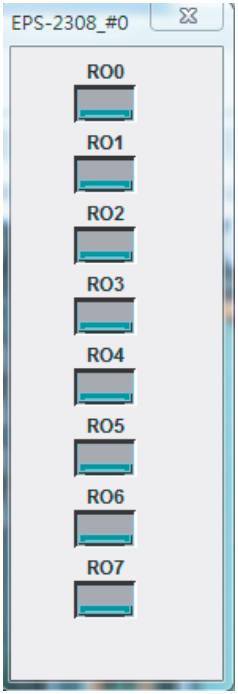
EPS-3216



Displays current data, and is read-only.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

EPS-2308



Enables status to be switched on and off.

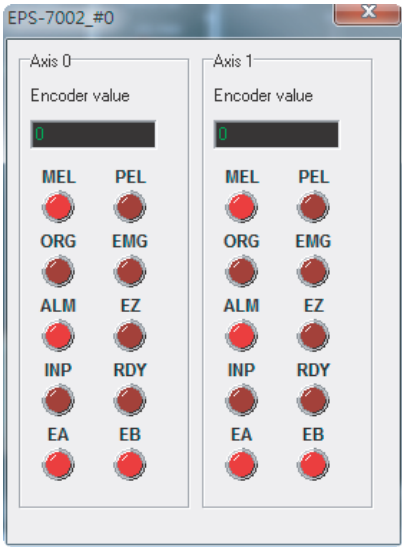
EPS-3504



Displays channel data in ohms (Ω).

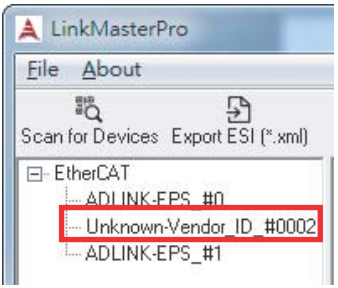
LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

EPS-7002

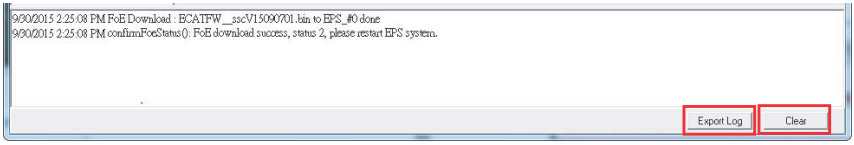


Displays Softmotion encoder data and status.

3rd party EtherCAT devices installed in the same line merely show vendor ID in the tree view.

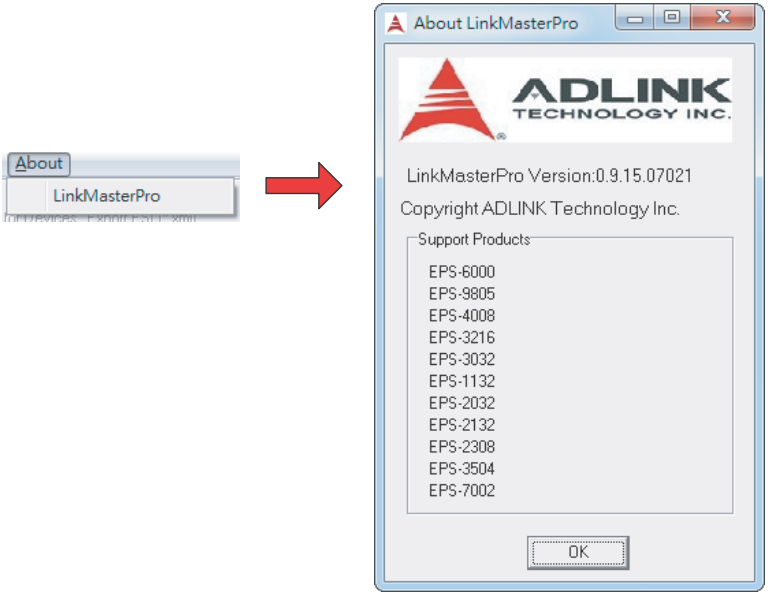


A.3.9 Exporting Log Messages



All currently displayed messages can be exported by clicking Export Log. Log filenames follow a “Log_year-month-date_hour-min-sec.txt” format. Files are saved in the LinkMasterPro™ directory. All current messages can be cleared by clicking Clear.

A.3.10 Version Information



LinkMasterPro™ version information, as well as that of supported modules is displayed when About is selected from the toolbar.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Important Safety Instructions

For user safety, please read and follow all **instructions**, **WARNINGS**, **CAUTIONS,** and **NOTES** marked in this manual and on the associated equipment before handling/operating the equipment.

- Read these safety instructions carefully.
- Keep this user's manual for future reference.
- Read the specifications section of this manual for detailed information on the operating environment of this equipment.
- When installing/mounting or uninstalling/removing equipment:
  - Turn off power and unplug any power cords/cables.
- To avoid electrical shock and/or damage to equipment:
  - Keep equipment away from water or liquid sources;
  - Keep equipment away from high heat or high humidity;
  - Keep equipment properly ventilated (do not block or cover ventilation openings);
  - Make sure to use recommended voltage and power source settings;
  - Always install and operate equipment near an easily accessible electrical socket-outlet;
  - Secure the power cord (do not place any object on/over the power cord);
  - Only install/attach and operate equipment on stable surfaces and/or recommended mountings; and,
  - If the equipment will not be used for long periods of time, turn off and unplug the equipment from its power source.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

- Never attempt to fix the equipment. Equipment should only be serviced by qualified personnel.
- A Lithium-type battery may be provided for uninterrupted, backup or emergency power.



Risk of explosion if battery is replaced with an incorrect type; please dispose of used batteries appropriately.

- Equipment must be serviced by authorized technicians when:
  - The power cord or plug is damaged;
  - Liquid has penetrated the equipment;
  - It has been exposed to high humidity/moisture;
  - It is not functioning or does not function according to the user's manual;
  - It has been dropped and/or damaged; and/or,
  - It has an obvious sign of breakage.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Getting Service

Contact us should you require any service or assistance.

ADLINK Technology, Inc.
Address: 9F, No.166 Jian Yi Road, Zhonghe District
New Taipei City 235, Taiwan
新北市中和區建一路 166 號 9 樓
Tel: +886-2-8226-5877
Fax: +886-2-8226-5717
Email: service@adlinktech.com

Ampro ADLINK Technology, Inc.
Address: 5215 Hellyer Avenue, #110
San Jose, CA 95138, USA
Tel: +1-408-360-0200
Toll Free: +1-800-966-5200 (USA only)
Fax: +1-408-360-0222
Email: info@adlinktech.com

ADLINK Technology (China) Co., Ltd.
Address: 上海市浦东新区张江高科技园区芳春路 300 号 (201203)
300 Fang Chun Rd., Zhangjiang Hi-Tech Park
Pudong New Area, Shanghai, 201203 China
Tel: +86-21-5132-8988
Fax: +86-21-5132-3588
Email: market@adlinktech.com

ADLINK Technology Beijing
Address: 北京市海淀区上地东路 1 号盈创动力大厦 E 座 801 室(100085)
Rm. 801, Power Creative E, No. 1 Shang Di East Rd.
Beijing, 100085 China
Tel: +86-10-5885-8666
Fax: +86-10-5885-8626
Email: market@adlinktech.com

ADLINK Technology Shenzhen
Address: 深圳市南山区科技园南区高新南七道 数字技术园
A1 栋 2 楼 C 区 (518057)
2F, C Block, Bldg. A1, Cyber-Tech Zone, Gao Xin Ave. Sec. 7
High-Tech Industrial Park S., Shenzhen, 518054 China
Tel: +86-755-2643-4858
Fax: +86-755-2664-6353
Email: market@adlinktech.com

LiPPERT ADLINK Technology GmbH
Address: Hans-Thoma-Strasse 11, D-68163
Mannheim, Germany
Tel: +49-621-43214-0
Fax: +49-621 43214-30
Email: emea@adlinktech.com

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

ADLINK Technology, Inc. (French Liaison Office)
Address: 6 allée de Londres, Immeuble Ceylan
91940 Les Ulis, France
Tel: +33 (0) 1 60 12 35 66
Fax: +33 (0) 1 60 12 35 66
Email: france@adlinktech.com

ADLINK Technology Japan Corporation
Address: 〒101-0045 東京都千代田区神田鍛冶町 3-7-4
神田 374 ビル 4F
KANDA374 Bldg. 4F, 3-7-4 Kanda Kajicho,
Chiyoda-ku, Tokyo 101-0045, Japan
Tel: +81-3-4455-3722
Fax: +81-3-5209-6013
Email: japan@adlinktech.com

ADLINK Technology, Inc. (Korean Liaison Office)
Address: 137-881 서울시 서초구 서초대로 326, 802 (서초동, 모인터빌딩)
802, Mointer B/D, 326 Seocho-daero, Seocho-Gu,
Seoul 137-881, Korea
Tel: +82-2-2057-0565
Fax: +82-2-2057-0563
Email: korea@adlinktech.com

ADLINK Technology Singapore Pte. Ltd.
Address: 84 Genting Lane #07-02A, Cityneon Design Centre
Singapore 349584
Tel: +65-6844-2261
Fax: +65-6844-2263
Email: singapore@adlinktech.com

ADLINK Technology Singapore Pte. Ltd. (Indian Liaison Office)
Address: #50-56, First Floor, Spearhead Towers
Margosa Main Road (between 16th/17th Cross)
Malleswaram, Bangalore - 560 055, India
Tel: +91-80-65605817, +91-80-42246107
Fax: +91-80-23464606
Email: india@adlinktech.com

ADLINK Technology, Inc. (Israeli Liaison Office)
Address: 27 Maskit St., Corex Building
PO Box 12777
Herzliya 4673300, Israel
Tel: +972-54-632-5251
Fax: +972-77-208-0230
Email: israel@adlinktech.com

ADLINK Technology, Inc. (UK Liaison Office)
Tel: +44 774 010 59 65
Email: UK@adlinktech.com

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000