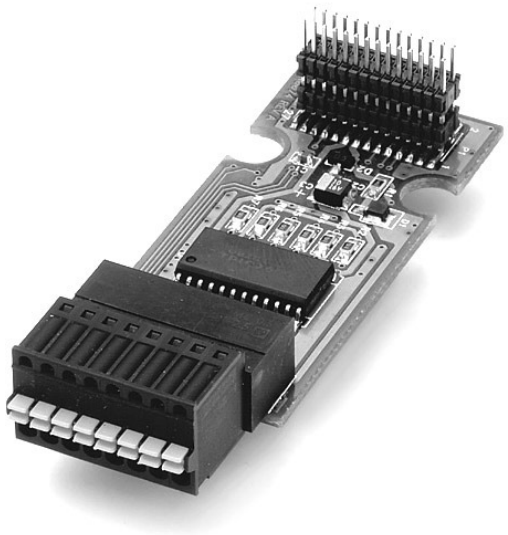
MICRO LYNX™ EXPANSION MODULE

ISOLATED DIGITAL I/O



FEATURES

- Low Cost
- Six +5 to +24 VDC Isolated I/O Channels
- I/O Lines Software Configurable as Input or Output
- I/O User Definable as Dedicated or General Purpose
- Programmable Digital Filtering for Inputs
- 350 mA Current Sink Capability per Channel
- Over Temperature and Short Circuit Protected
- Inductive Current Clamp
- Switch Selectable Pull-up to +5 VDC or External Voltage
- Plugs Directly into MicroLYNX Controller
- Removable Terminal Strip or Pin Header

DESCRIPTION

The Isolated Digital I/O Module adds an additional six +5 to +24 VDC isolated I/O channels to the MicroLYNX. All of the I/O channels can be individually programmed as either inputs or outputs, or as dedicated (ex. limit or home) or general purpose.

When used as inputs, these I/O channels have seven programmable digital filter settings ranging from 215 Hz to 27.5 kHz. As outputs, each channel can sink up to 350 mA. The I/O is isolated from the power supply ground.

A 7.5kohm switch selectable pull-up resistor is provided for each I/O channel. The six I/O channels may be pulled up to either the internal +5 VDC supply or an external voltage provided by the user. Protection circuitry includes over temperature, short circuit and inductive current clamp.

PIN & SWITCH ASSIGNMENTS

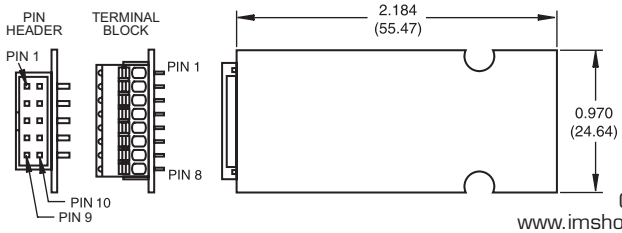
PIN	CONNECTOR OPTION	
	TERMINAL BLOCK	PIN HEADER
1	V PULL-UP	I/O CHANNEL 1
2	I/O CHANNEL 1	I/O CHANNEL 2
3	I/O CHANNEL 2	V PULL-UP
4	I/O CHANNEL 3	I/O CHANNEL 3
5	I/O CHANNEL 4	NO CONNECT
6	I/O CHANNEL 5	I/O CHANNEL 4
7	I/O CHANNEL 6	NO CONNECT
8	I/O GROUND	I/O CHANNEL 5
9		NO CONNECT
10		I/O CHANNEL 6

PIN	SWITCH	FUNCTION
1–6	1/O 1-6	Pull-up on/off Switches for I/O Lines 1–6

ELECTRICAL SPECIFICATIONS

Input Voltage Range ..... 0 to +24 VDC
Input Low Level ..... < 1.5 volts
Input High Level ..... > 3.5 volts
Open Circuit Input/Output Voltage
  Pull-up Switch On (internal supply)..... 4.5 volts
  Pull-up Switch Off..... 0 volts
Load Supply Voltage ..... 28 VDC max (transient protected at 60 volts)
FET on Resistance..... 2 ohm max (Tj=125°C)
Continuous Sink Current..... 350 mA max each output (Ta=25°C)
Maximum Group Sink..... 1.5 Amp (thermally limited)
Filter Cutoff Frequencies..... 27.5, 13.7, 6.89, 3.44, 1.72 kHz
860, 430, 215 Hz

INTERFACE INFORMATION



NOTE:

Terminal Block Mating Connector ***Supplied.***

Pin Header Mating Connector ***Not Supplied.***
Order Information at www.imshome.com/quick.html

ENVIRONMENTAL

Storage Temperature ..... –20 to +70° C
Operating Temperature..... 0 to +50° C
Humidity..... 0 to 90% non-condensing

ORDER INFORMATION

	TERMINAL BLOCK	PIN HEADER
PART NUMBER	***MX-DI100-000***	MX-DI200-000

Standard product shown in bold italics. Lead times may apply to other versions.

IMS™

INTELLIGENT MOTION SYSTEMS, INC.

Excellence in Motion™

MicroLYNX EXPANSION MODULE

ISOLATED DIGITAL I/O MODULE

QUICK REFERENCE

370 N. MAIN ST., PO BOX 457, MARLBOROUGH, CT 06447
PH: (860) 295-6102, FAX: (860) 295-6107
Internet: www.imshome.com, E-Mail: info@imshome.com

Isolated Digital I/O Quick Reference Guide

The primary function of this guide is to acquaint the user with the specifications and configuration of the MicroLYNX Isolated Digital I/O Module. The full MicroLYNX product manual is available in Acrobat PDF format on the IMS Product CD. It also may be downloaded from the IMS web site at www.imshome.com.

Notes And Warnings

Please observe the following when handling, connecting and using your MicroLYNX Expansion Modules. Failure to observe these points may result in damage. All warranty and disclaimer information is located in the full product manual and should be referenced for more information.

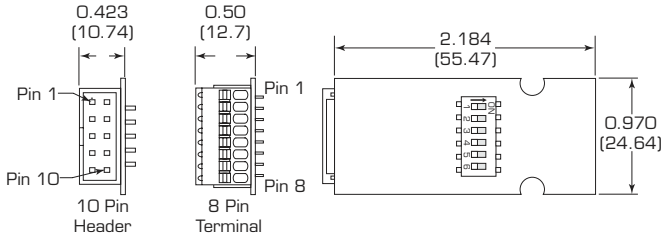
The MicroLYNX Expansion Module components are sensitive to Electrostatic Discharge (ESD). All handling should be done at an ESD protected workstation.

Hazardous Voltage Levels may be present if using an open frame power supply to power the MicroLYNX Controller and Modules.

Do not connect or disconnect the AC power or the motor leads with the AC power on.

Mechanical Specifications

Dimensions in Inches (mm)



*NOTE: The 8 Pin Terminal Block is supplied with the mating connector. The10 Pin Header is **NOT SUPPLIED** with a mating connector. (Use AMP 3-1437026 or equivalent).*

Thermal Specifications

	Range
Operating Temperature	0 to +50°C
Storage Temperature	-20 to +70°C
Humidity	0 to 90% non-condensing

Electrical Specifications

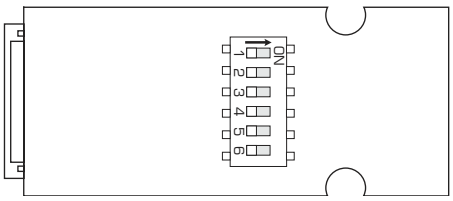
Input Voltage Range	0 to +24 VDC
Input Low Level	< 1.5 Volts
Input High Level	> 3.5 Volts
Open Circuit Input Voltage	
Pull-up Switch ON	4.5 Volts
Pull-up Switch OFF	0 Volts
Load Supply Voltage	28 VDC Maximum (Transient protected at 60 volts)
FET On Resistance	2Ω Maximum (Tj=125°C)
Continuous Sink Current	350 mA max each output (Ta = 25°C)
Maximum Group Sink	1.5 A (Thermally Limited)
Filter Cutoff Frequencies	27.5, 13.7, 6.89, 3.44, 1.72 kHz, 860, 430, 215 Hz

Pin Assignments

Pin #	Connector Option	
	8 Pin Terminal Block	**10 Pin Header**
1	V Pull-up	I/O Channel 1
2	I/O Channel 1	I/O Channel 2
3	I/O Channel 2	V Pull-up
4	I/O Channel 3	I/O Channel 3
5	I/O Channel 4	NC
6	I/O Channel 5	I/O Channel 4
7	I/O Channel 6	NC
8	I/O Ground	I/O Channel 5
9		NC
10		I/O Channel 6

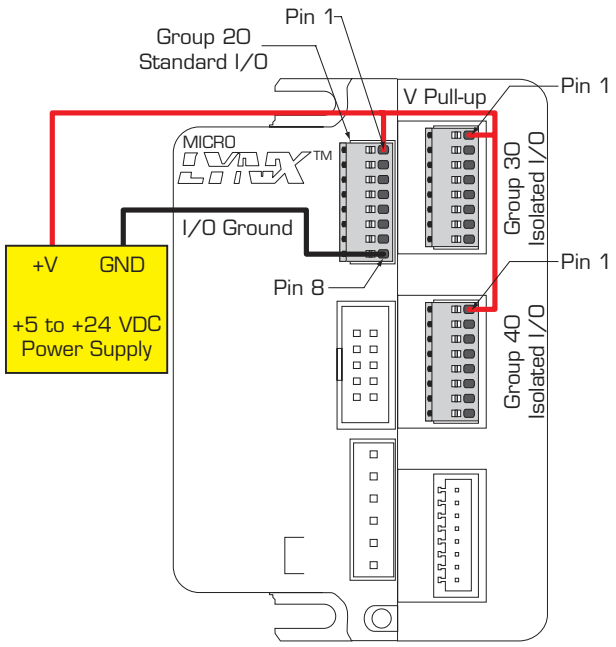
Pull-up Switches

The Isolated Digital I/O Module is equipped with Pull-up switches which are located on the bottom of the Module. The switches operate in the same manner as the standard Isolated I/O. Please see the complete LYNX Product Family Operating Manual for detailed descriptions.



For More Information:
See the complete LYNX Product Family Operating Manual on the IMS Product CD or at www.imshome.com

Powering Multiple Isolated Digital I/O Modules

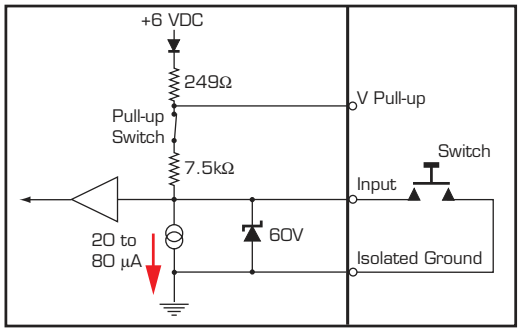


In the illustration above, the Standard Isolated I/O and two Isolated I/O Modules are shown.

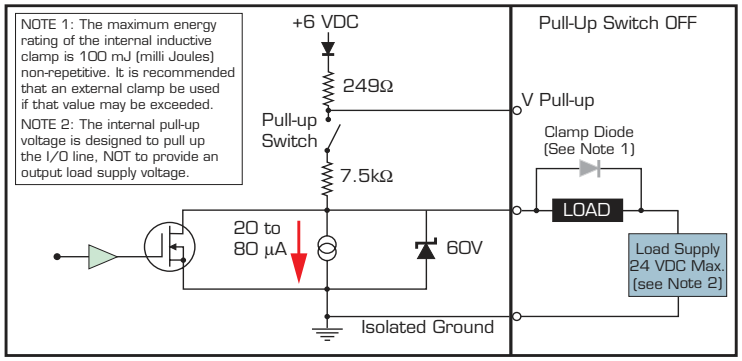
The I/O ground is common internally in the MicroLYNX. Only one ground connection is necessary.

The V Pull-up is NOT common between the modules. This allows the user to power each I/O Group as shown or separately if he chooses.

I/O Configuration



Typical Isolated Input With Pull-up Closed and Dry Input



Typical Isolated Output With Pull-up Open

MicroLYNX Slot Usage

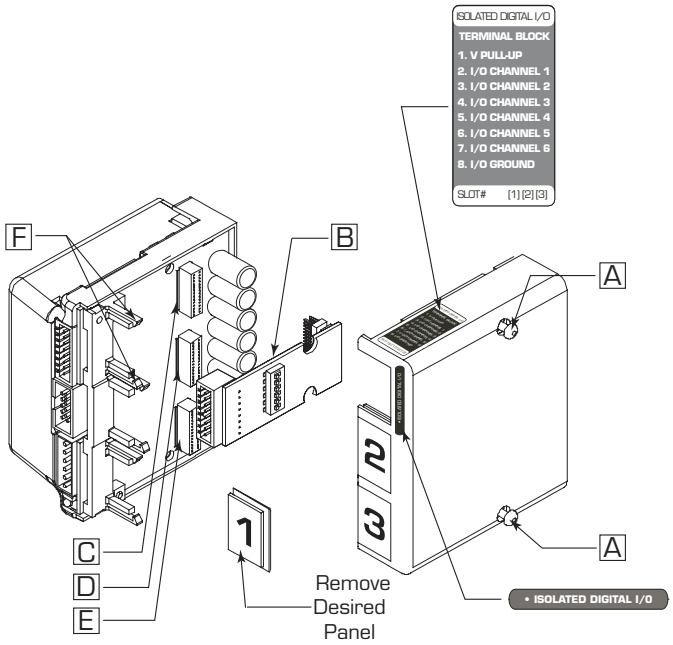
The Isolated Digital I/O Expansion Module may be used in any expansion slot in the MicroLYNX, with a maximum of three Modules per MicroLYNX for an additional 18* Isolated I/O.

Slot 1: A Module installed in Slot 1 will be Group 30 I/O.
Slot 2: A Module installed in Slot 2 will be Group 40 I/O.
Slot 3: A Module installed in Slot 3 will be Group 50 I/O.

MicroLYNX Expansion Slot Usage				
Expansion Module	**Slot 1**	**Slot 2**	**Slot 3**	**Maximum Allowed**
Isolated Digital I/O	**Yes**	**Yes**	**Yes**	**3***
High Speed Differential I/O	No	Yes	Yes	2
Analog Input/Joystick	Yes	Yes	Yes	1
Isolated Communication	No	Yes	No	1
Analog Output	Yes	Yes	Yes	2
12 Channel I/O	Yes	Yes	No	1*

** The MicroLYNX is capable of handling up to 24 I/O signals. If you should opt to use a 12 Channel I/O Module, you can only use one Isolated Digital I/O Module.*

Installing the Isolated Digital I/O Module



To Install the Module:

1) Remove the two retaining screws (A) from the cover.
2) Remove the blank panel (1, 2, or 3) from the desired slot you want to use.
3) Carefully press the Expansion Module (B) into place by plugging the 28 pin connector into the desired receptacle (C, D, or E) and snapping it into place under the retaining clips (F).
4) Reinstall the MicroLYNX cover.
5) Affix the labels supplied with the Module as shown.