

AIIS-E730

32-channel Isolated Digital I/O Card

Packing List

Before installation, please make sure that you have received the following:

- AIIS-E730 card
- Quick Start User Manual

If anything is missing or damaged, contact your distributor or sales representative immediately.

Declaration of Conformity

FCC Class A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference in which case the user is required to correct interference at his own expense.

CE

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This kind of cable is available from Advantech. Please contact your local supplier for ordering information.

Overview

The AIIS-E730 offers isolated digital input channels as well as isolated digital output channels with isolation protection up to 2,500 V_{DC}, which makes them ideal for industrial applications where high-voltage isolation is required. The AIIS-E730 also features a Digital filter on each channel.

Notes

For more information on this and other Advantech products, please visit our websites at:

<http://www.advantech.com>

For technical support and service:

<http://www.advantech.com/support/>

This startup manual is for AIIS-E730.

Part No: 2003F73000

1st Edition

January 2016

Specifications

Isolated Digital Input

Number of Channel	16 (bi-directional)
Optical Isolation	2,500 V _{DC}
Opto-isolator response time	25 μ s
Over-voltage Protect	70 V _{DC}
Input Voltage	V _{IH} (max.) 30 V _{DC}
	V _{IH} (min.) 3 V _{DC}
	V _{IL} (max.) 1 V _{DC}
Input Current	3 V _{DC} 0.5 mA (typical)
	12 V _{DC} 3.1 mA (typical)
	24 V _{DC} 6.6 mA (typical)
	30 V _{DC} 9.73 mA (typical)

Digital Output

Number of Channels	16
Optical Isolation	2,500 V _{DC}
Output Voltage	Open collector 5 to 40 V _{DC}
Sink/Source Current	500 mA max./channel

General

I/O Connector Type	37-pin box header	
Dimensions	96 mm x 102 mm (3.8" x 4.0")	
Power Consumption	Typical	+3.3 V @ 265 mA
		+12 V @ 40 mA
	Max	+3.3 V @ 475 mA
Temperature		+12 V @ 75 mA
	Operation	0 ~ 50°C (32~ 122 °F)
		(refer to IEC 68 -2 - 1 ,2)
Relative Humidity	Storage	-20 ~ +70°C (-4 ~158°F)
		5 ~ 95% RH non-condensing
Certification		(refer to IEC 60068-2-3)
		CE/FCC

Specifications

Digital Filter Time

Digital Filter Time[sec.] = $2n / (8 \times 106)$ n: = setting data(0 - 20)

Setting Data (n)	Digital Filter Time	Setting Data (n)	Digital Filter Time	Setting Data (n)	Digital Filter Time
0 (00h)	The filter function is not used.	7 (07h)	16μsec	14 (0Eh)	2.048msec
1 (01h)	0.25μsec	8 (08h)	32μsec	15 (0Fh)	4.096msec
2 (02h)	0.5μsec	9 (09h)	64μsec	16 (10h)	8.192msec
3 (03h)	1μsec	10 (0Ah)	128μsec	17 (11h)	16.384msec
4 (04h)	2μsec	11 (0Bh)	256μsec	18 (12h)	32.768msec
5 (05h)	4μsec	12 (0Ch)	512μsec	19 (13h)	65.536msec
6 (06h)	8μsec	13 (0Dh)	1.024msec	20 (14h)	131.072msec

PIN Assignments

IDI 0	1		IDI 1
IDI 2	2	20	IDI 3
IDI 4	3	21	IDI 5
IDI 6	4	22	IDI 7
IDI 8	5	23	IDI 9
IDI 10	6	24	IDI 11
IDI 12	7	25	IDI 13
IDI 14	8	26	IDI 15
ECOM	9	27	EGND
EGND	10	28	EGND
IDO 0	11	29	IDO 1
IDO 2	12	30	IDO 3
IDO 4	13	31	IDO 5
IDO 6	14	32	IDO 7
IDO 8	15	33	IDO 9
IDO 10	16	34	IDO 11
IDO 12	17	35	IDO 13
IDO 14	18	36	IDO 15
PCOM	19	37	

Description of pin use:

IDI_n (n=0 ~ 15): Isolated digital input

IDO_n (n=0 ~ 15): Isolated digital output

ECOM: External common Vcc/GND of IDI

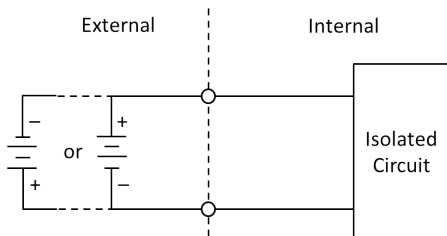
PCOM: Free wheeling common diode for IDO

EGND: External ground for IDO

Connections

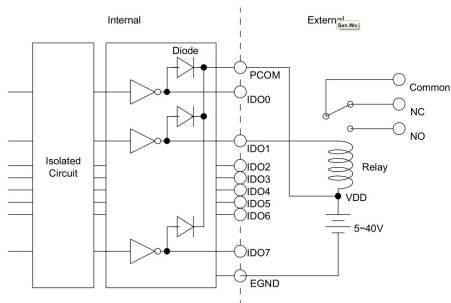
Isolated Digital Input

Each of the 16 isolated digital input channels accept voltage from 3 to 30 V for logic high, and 0 to 1 V for logic low. All input channels share one external common. The following figure shows how to connect an external input source to the card's isolated inputs.



Isolated Digital Output

The AIIS-E730 provides 16 isolated DO channels. If the external voltage (5 ~ 40V) is connected to each isolated output channel (IDO) and its isolated digital output turns on (500 mA per channel maximum), the card's current will sink from the external voltage.



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