Installation Instructions

1747 Open Controller IDE Interface Module

for IDE-Compatible ATA Devices (PC Cards) (Catalog Number 1747-OCIDE1)

Before You Begin

The IDE interface module provides additional drive options for an open controller system. The 1747-OCIDE1 module supports as many as two, user-supplied ATA devices (flash memory or drive PC Cards). You can install only one IDE interface module per open controller chassis (either the 1747-OCIDE1 or the 1747-OCIDE25 interface module).

Important: Before you install the IDE interface module, you must have already installed a PCI expansion bus and an open controller CPU module in the chassis.

What this package contains

- one 1747-OCIDE1 IDE interface module

What you need

- 1746 series B I/O chassis with a 1747-OCPCI*x* expansion bus and 1747OC-*xxxxx* open controller CPU module already installed
- commercially-available IDE-compatible ATA flash memory or drives (Type I, Type II, or Type III PC Cards) to insert into the IDE interface module
- grounding wriststrap

Important: The specifications of commercially-obtained PC Cards (flash or rotating memory) require you to derate the overall system specifications to that of the PC Card.

1747-5.29 June 1997

Handling the module

ATTENTION: Electrostatic discharge (ESD) might be present whenever you handle the module. ESD can cause internal circuit damage that might not be apparent during installation or initial use. Wear a grounding wriststrap while handling the module.

Take these precautions to guard against ESD damage:

- Before handling the module, wear a grounding wriststrap and touch a grounding object to discharge any built-up static charge.
- Avoid touching the backplane connector or module connector pins on the module.
- If the module is not in use, store it in the anti-static packaging in which it was shipped.

Installing PC Cards in the IDE Interface Module

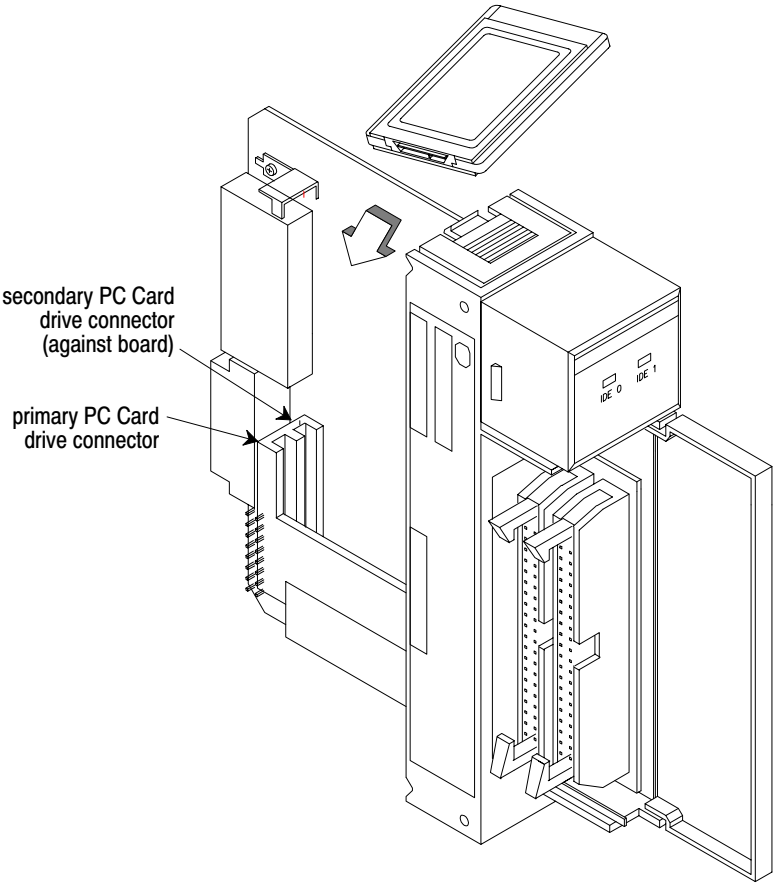
Before you install the IDE interface module in the open controller chassis, you must install the IDE-compatible ATA devices. The IDE interface module has slots for as many as two PC Cards that correspond to a primary IDE channel and a secondary IDE channel. If there is no FlashDrive in the open controller CPU module, you can use both PC Card slots in the IDE interface module.

If you have a FlashDrive installed in the open controller CPU module:

- the FlashDrive is automatically configured as Primary Master (see the FlashDrive Installation Instructions, publication 1747-5.17)
- you can only use the secondary IDE channel in the IDE interface module
- leave the primary connector (CN1) on the IDE interface module empty
- leave the external primary IDE connector on the IDE interface module empty
- remove the IDE Primary Channel jumper (JW3 position 1)

You can insert the following combinations of PC Cards (flash memory or drive cards) into the IDE module:

- two Type I or two Type II cards, simultaneously
- one Type I and one Type II card, simultaneously
- one Type III in the primary slot and one Type I or Type II card in the secondary slot
- one Type III card in the secondary slot (the card covers the primary slot, making it unavailable)



Setting Jumpers on the IDE Interface Module

You need to set the configuration jumpers on the IDE interface module to define the primary and secondary slots. See Table A on the next page for jumper positions.

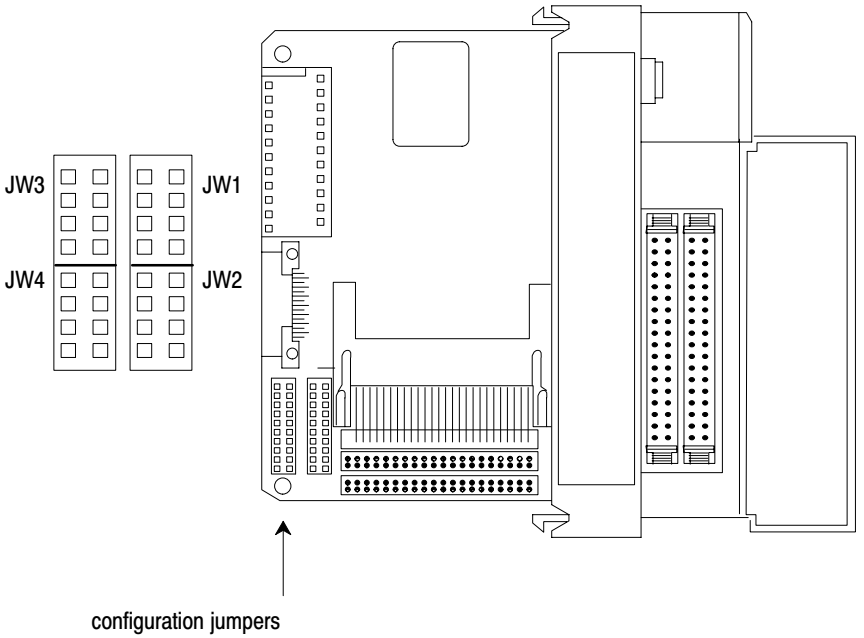
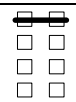
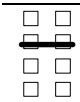
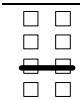
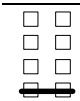


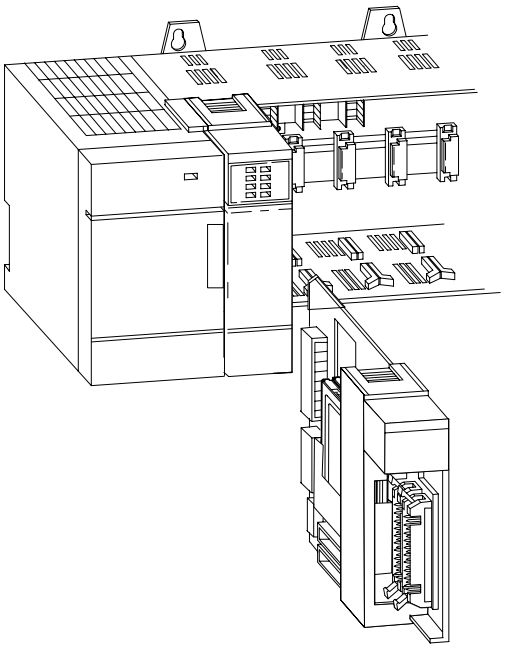
Table A
Setting Jumpers on the IDE Interface Module for PC Cards

Install this jumper:		For this characteristic:
JW1		All positions are reserved and must not have jumpers installed.
JW2		All positions are reserved and must not have jumpers installed.
JW3		Position 1 (IRQ14) Install this jumper when enabling the IDE primary channel. Remove this jumper when disabling the IDE primary channel. Remove this jumper if the open controller CPU module has an embedded FlashDrive.
		Position 2 (IRQ15) Install this jumper when enabling the IDE secondary channel. Remove this jumper when disabling the IDE secondary channel. Remove this jumper if you do not use the IDE secondary channel.
		All other JW3 jumper positions are reserved and must not have jumpers installed.
JW4		Position 1 (PRI) **Disables** the IDE primary channel. Install this jumper when the open controller CPU module has an embedded FlashDrive. (This jumper works opposite of the jumper in position 2). Remove this jumper to enable the IDE primary channel.
		Position 2 (SEC) **Enables** the IDE secondary channel. (This jumper works opposite of the jumper in position 1). Remove this jumper to disable the IDE secondary channel.
		Position 3 (M/S1) Defines the primary PC Card device as a slave, assuming that an external IDE drive on the primary channel is the master. Remove this jumper (default) to define the primary PC Card IDE drive as master.
		Position 4 (M/S2) Defines the secondary PC Card device as a slave, assuming that an external IDE drive on the secondary channel is the master. Remove this jumper (default) to define the secondary PC Card IDE drive as master.

Important: The primary master and the primary slave drives share IRQ14. The secondary master and secondary slave drives share IRQ15.

Installing the IDE Interface Module in an Open Controller Chassis

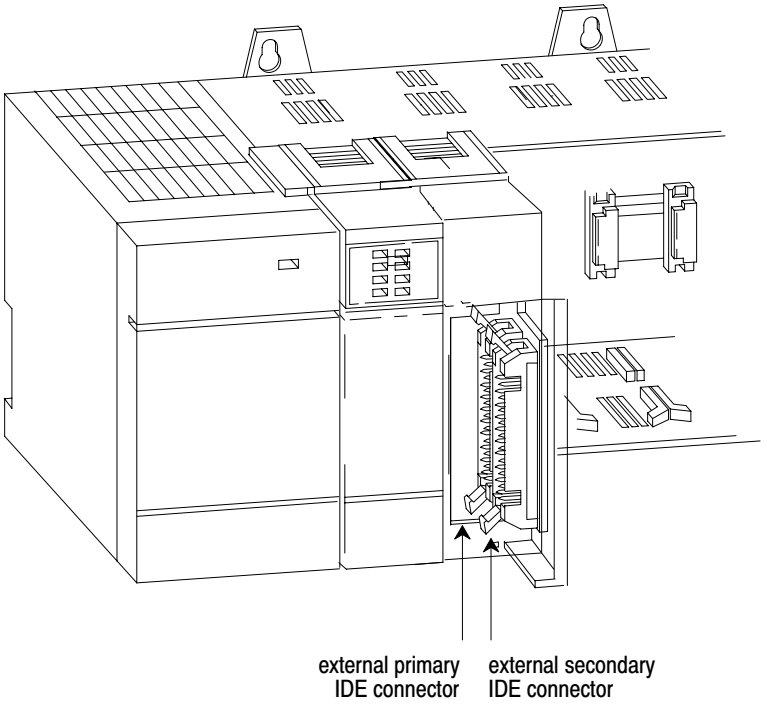
1. Turn off power to the open controller chassis.
2. Determine which slot on the PCI expansion bus to use for the IDE interface module:
   - If you use a third party PCI master bus driver, the IDE interface module must be in the first three slots (1–3) to the right of the open controller CPU module (which resides in slot 0).
   - If you are using DOS, Windows 95, or Windows NT, place the IDE interface module into any PCI slot other than the first slot (far left). These operating systems use a PCI slave bus driver, which is supported in any slot.
3. Slide the IDE interface module into the selected slot of the PCI expansion bus.



30061–M

4. Attach external IDE drives to the primary and secondary IDE channels.

Important: The external connectors are intended for development use only.



See the documentation for the external IDE drive for master/slave jumper settings.

You can configure the internal drive as a master with the external drive as a slave. Or you can configure the internal drive as a slave with the external drive as a master.

Getting an external 3.5” drive to work

If an external 3.5” drive isn’t working properly, try this:

1. Disconnect the 3.5” drive from the external IDE connector on the IDE interface module.
2. Apply power to the 3.5” drive.
3. Connect the 3.5” drive to the external IDE connector on the IDE interface module.
4. Apply power to the open controller.

Changing BIOS

After you install the IDE interface module and power-up the open controller, you need to make BIOS changes. During the boot-up process, the monitor displays several messages. When you see the following message, press [DEL]:

```
Hit <DEL> if you want to run SETUP
```

The following table shows the required settings for the IDE interface module. The BIOS settings not shown don’t affect booting from an IDE interface module. For more information about changing BIOS settings, see the Open Controller CPU Module User Manual, publication 1747-6.16.

This CMOS area:	Should have these settings:

Standard CMOS Setup	`Pri Master:` `Auto`
	`Pri Slave:` `Not Installed` (if not used)
	`Auto` (if used)
	`Sec Master:` `Auto`
	`Sec Slave:` `Not Installed` (if not used)
	`Auto` (if used)
	`LBA Mode` `On`
	Most drives are auto-detected correctly if you select Auto for the drive type. If the drive isn't auto-detected properly, place the cursor on the drive type and press [Enter].
	If a drive is greater than 512Mbyes, make sure LBA mode is ON.

Peripheral Setup	If you use the FlashDrive:
	`OnBoard IDE:` `Primary`
	If you use the primary channel on the IDE interface module (which means the open controller is not using a FlashDrive):
	`OnBoard IDE:` `Disabled`

PCI / Plug and Play	`1747-OCIDE Module` `slot 1,slot 2, slot 3 slot 4, or slot 5`
	Select slot number where IDE interface module is installed (slot 0 is where the open controller CPU is installed)
	`1747-OCIDE Primary Master`
	To enable the primary channel: `Enabled`
	If you use a FlashDrive or to disable the primary channel: `Disabled`
	`1747-OCIDE Secondary Master`
	To enable the secondary channel: `Enabled`
	To disable the secondary channel: `Disabled`
	If the primary channel of the IDE interface module is enabled or you are using a FlashDrive:
	`IRQ 14` `PCI/PnP`
	If the secondayr channel of the IDE interface module is enabled:
	`IRQ 15` `PCI/PnP`

Additional Documentation

The following documents are available for additional information about using the video module in an open controller system:

This book:	Has this publication number:
Open Controller CPU Module User Manual	1747-6.16
Open Controller PCI Expansion Bus Installation Instructions	1747-5.16
Open Controller IDE Interface Module for an Internally-Mounted 2.5" IDE Drive Installation Instructions	1747-5.30
Open Controller System Overview	1747-2.22

Environmental Specifications

Important: The specifications of commercially-obtained PC Cards (flash or rotating memory) require you to derate the overall system specifications to that of the PC Card.

Characteristic:		Values/Ranges:		
slot temperature				
	operating	**with chassis fan**	0° to 60° C	(32 to 140° F)
	storage	-40° to 85° C	(-40 to 185° F)	
relative humidity		5% to 95% noncondensing		
vibration		10 to 500 Hz 2.0 G maximum peak acceleration .012 in (peak-to-peak) displacement		
shock				
	operating	30G peak for 11ms		
	storage	50G peak for 11ms		
weight		5.99 oz (170.09 g)		
power dissipation		0.10 A @ 5V dc **Note:** this does not include the power dissipation for the ATA flash memory or drive cards you use		
agency certification		UL A191 identified CE for all applicable directives CSA Class 1, Division 2, Groups A, B, C, D, Temp Code T5		

European Union Directive Compliance

If this product is installed within the European Union or EEA regions and has the CE mark, the following regulations apply.

EMC directive

This apparatus is tested to meet Council Directive 89/336 Electromagnetic Compatibility (EMC) using a technical construction file and the following standards, in whole or in part:

- EN 50081-2 EMC – Generic Emission Standard, Part 2 – Industrial Environment
- EN 50082-2 EMC – Generic Immunity Standard, Part 2 – Industrial Environment

The product described in this manual is intended for use in an industrial environment.

Low voltage directive

This apparatus is also designed to meet Council Directive 73/23 Low Voltage, by applying the safety requirements of EN 61131–2 Programmable Controllers, Part 2 – Equipment Requirements and Tests.

For specific information that the above norm requires, see the appropriate sections in this manual, as well as the following Allen-Bradley publications:

- Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1
- Automation Systems Catalog, publication B111

CSA Hazardous Location Approval

CSA Hazardous Location Approval	Approbation d'utilisation dans des emplacements dangereux par la CSA
CSA certifies products for general use as well as for use in hazardous locations. **Actual CSA certification is indicated by the product label** as shown below, and not by statements in any user documentation.	La CSA certifie les produits d'utilisation générale aussi bien que ceux qui s'utilisent dans des emplacements dangereux. **La certification CSA en vigueur est indiquée par l'étiquette du produit** et non par des affirmations dans la documentation à l'usage des utilisateurs.
Example of the CSA certification product label 	Exemple d'étiquette de certification d'un produit par la CSA 
To comply with CSA certification for use in hazardous locations, the following information becomes a part of the product literature for CSA-certified Allen-Bradley industrial control products. • This equipment is suitable for use in Class I, Division 2, Groups A, B, C, D, or non-hazardous locations only. • The products having the appropriate CSA markings (that is, Class I Division 2, Groups A, B, C, D), are certified for use in other equipment where the suitability of combination (that is, application or use) is determined by the CSA or the local inspection office having jurisdiction.	Pour satisfaire à la certification de la CSA dans des endroits dangereux, les informations suivantes font partie intégrante de la documentation des produits industriels de contrôle Allen-Bradley certifiés par la CSA. • Cet équipement convient à l'utilisation dans des emplacements de Classe 1, Division 2, Groupes A, B, C, D, ou ne convient qu'à l'utilisation dans des endroits non dangereux. • Les produits portant le marquage approprié de la CSA (c'est à dire, Classe 1, Division 2, Groupes A, B, C, D) sont certifiés à l'utilisation pour d'autres équipements où la convenance de combinaison (application ou utilisation) est déterminée par la CSA ou le bureau local d'inspection qualifié.
Important: Due to the modular nature of a PLC control system, the product with the highest temperature rating determines the overall temperature code rating of a PLC control system in a Class I, Division 2 location. The temperature code rating is marked on the product label as shown.	**Important:** Par suite de la nature modulaire du système de contrôle PLC), le produit ayant le taux le plus élevé de température détermine le taux d'ensemble du code de température du système de contrôle d'un PLC dans un emplacement de Classe 1, Division 2. Le taux du code de température est indiqué sur l'étiquette du produit.

CSA Hazardous Location Approval	**Approbation d'utilisation dans des emplacements dangereux par la CSA**
Temperature code rating  Look for temperature code rating here	Taux du code de température  Le taux du code de température est indiqué ici
The following warnings apply to products having CSA certification for use in hazardous locations.	Les avertissements suivants s'appliquent aux produits ayant la certification CSA pour leur utilisation dans des emplacements dangereux.
ATTENTION: Explosion hazard — • Substitution of components may impair suitability for Class I, Division 2. • Do not replace components unless power has been switched off or the area is known to be non-hazardous. • Do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous. • Do not disconnect connectors unless power has been switched off or the area is known to be non-hazardous. Secure any user-supplied connectors that mate to external circuits on an Allen-Bradley product using screws, sliding latches, threaded connectors, or other means such that any connection can withstand a 15 Newton (3.4 lb.) separating force applied for a minimum of one minute.	**AVERTISSEMENT:** Risque d'explosion — • La substitution de composants peut rendre ce matériel inacceptable pour lesemplacements de Classe I, Division 2. • Couper le courant ou s'assurer quel'emplacement est désigné non dangereux avant de remplacer lescomposants. • Avant de débrancher l'équipement, couper le courant ou s'assurer que l'emplacement est désigné non dangereux. • Avant de débrancher les connecteurs, couper le courant ou s'assurer que l'emplacement est reconnu non dangereux. Attacher tous connecteurs fournis par l'utilisateur et reliés aux circuits externes d'un appareil Allen-Bradley à l 'aide de vis, loquets coulissants, connecteurs filetés ou autres moyens permettant aux connexions de résister à une force de séparation de 15 newtons (3,4 lb. - 1,5 kg) appliquée pendant au moins une minute.

FlashDrive is a trademark of SanDisk

Rockwell *Automation*

Allen-Bradley

Worldwide representation.

Argentina • Australia • Austria • Bahrain • Belgium • Brazil • Bulgaria • Canada • Chile • China, PRC • Colombia • Costa Rica • Croatia • Cyprus • Czech Republic • Denmark • Ecuador • Egypt • El Salvador • Finland • France • Germany • Greece • Guatemala • Honduras • Hong Kong • Hungary • Iceland • India • Indonesia • Ireland • Israel • Italy • Jamaica • Japan • Jordan • Korea • Kuwait • Lebanon • Malaysia • Mexico • Netherlands • New Zealand • Norway • Pakistan • Peru • Philippines • Poland • Portugal • Puerto Rico • Qatar • Romania • Russia–CIS • Saudi Arabia • Singapore • Slovakia • Slovenia • South Africa, Republic • Spain • Sweden • Switzerland • Taiwan • Thailand • Turkey • United Arab Emirates • United Kingdom • United States • Uruguay • Venezuela • Yugoslavia

Allen-Bradley Headquarters, 1201 South Second Street, Milwaukee, WI 53204 USA,
Tel: (1) 414 382-2000 Fax: (1) 414 382-4444

1747-5.29 June 1997 PN 955129-71
Supersedes 1747-5.29 May 1997