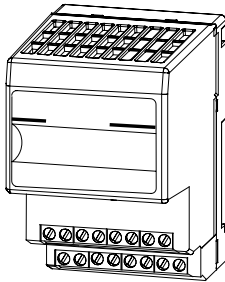




## Installation Instructions

# FLEX Integra 4 Relay Output Module

(Cat. No. 1793-OW4 and -OW4S)

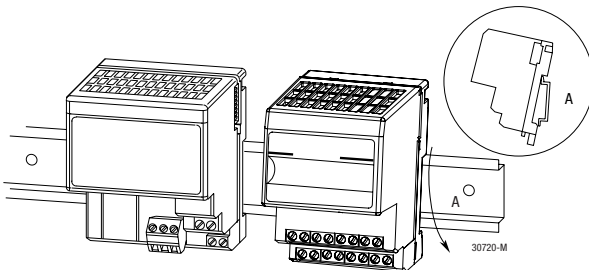


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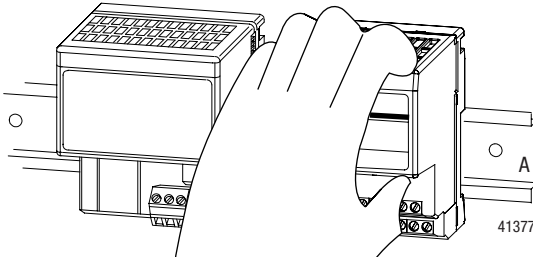
### Module Installation

This module mounts on a DIN rail. It connects to an adapter or another FLEX I/O or Integra module. Note: If using this module with FLEX I/O modules, do not mount between FLEX I/O modules. Mount Integra modules to the right of the FLEX I/O modules. To mount this module:

1. Remove the cover plug (if used) in the male connector of the unit to which you are connecting this module.
2. Position the module on the 35 x 7.5mm DIN rail A (A-B pt. no. 199-DR1).
3. Rotate the module onto the DIN rail with the top of the rail hooked under the lip on the rear of the module.

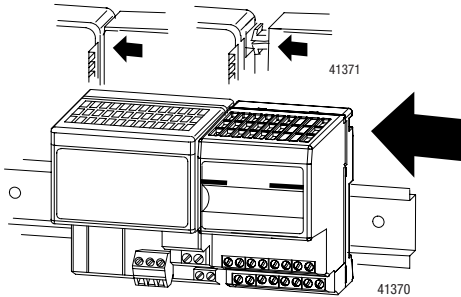


4. Press down to lock the module on the DIN rail.

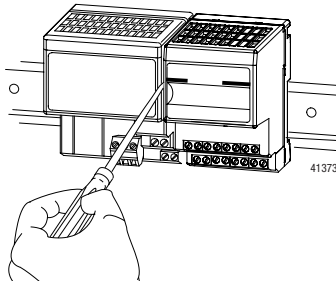


If the module does not lock in place, use a screwdriver of similar device to move the locking tab down, press the module flush with the DIN rail and release the locking tab to lock the module in place.

5. Firmly push the module into the adjacent module/terminal base until the units lock together.



6. Repeat the above steps to install the next module.
7. To remove an Integra module, you must work from the right side and remove one module at a time. To disengage a module from its neighbor, place a common flat-bladed screwdriver between the 2 modules and turn 1/4 turn to separate the modules.



8. Then slide the module away from its left neighbor, and release the locking lever to remove the module from the DIN rail.



**ATTENTION: Do not remove this module under power.** Removing this module under power will break the electrical backplane (flexbus) connections. This can cause personal injury or property damage by:

- sending an erroneous signal to your system's field devices causing unintended machine motion
  - causing an explosion in a hazardous environment
  - breaking communication to modules beyond this module
- 

## European Union Directive Compliance

If this product has the CE mark it is approved for installation within the European Union and EEA regions. It has been designed and tested to meet the following directives.

### EMC Directive

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

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

This product is intended for use in an industrial environment.

### Low Voltage Directive

This product is tested to meet Council Directive 73/23/EEC Low Voltage, by applying the safety requirements of EN 61131-2 Programmable Controllers, Part 2 - Equipment Requirements and Tests.

For specific information required by EN 61131-2, see the appropriate sections in this publication, as well as the following Allen-Bradley publications:

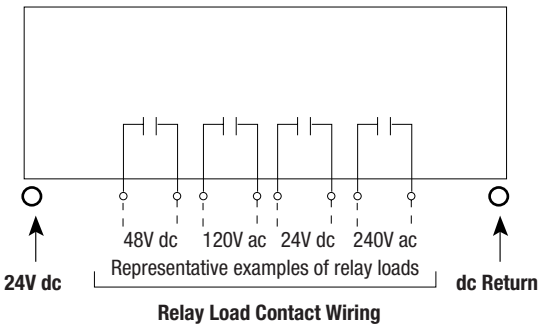
- Industrial Automation Wiring and Grounding Guidelines For Noise Immunity, publication 1770-4.1
- Automation Systems Catalog, publication B111

This equipment is classified as open equipment and must be mounted in an enclosure during operation to provide safety protection.



**ATTENTION:** Do not attempt to increase load or wattage capability beyond the maximum rating by connecting 2 or more outputs in parallel. The slightest variation in relay switching time may cause one relay to momentarily switch the total load current.

## Simplified Schematic of the Relay Module



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Load power can be obtained from a variety of sources, and can range from +5V dc to 240V ac. **Make certain that only 24V dc is applied to the module power terminals.**



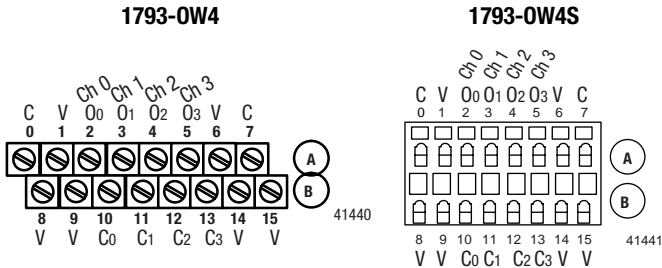
**ATTENTION:** Apply only +24V dc power to the power terminals on the module. Make certain that **all** relay wiring is properly connected before applying any power to the module.



**ATTENTION:** Total current draw through the module is limited to 10A. Separate power connections may be necessary.

## Wiring

This module is available with 2 styles of connectors; 1794-OW4 - screw-cage, and 1794-OW4S - spring-clamp. Refer to the wiring figure below.



Where: C = common, C<sub>n</sub> = relay contact, V = voltage, O<sub>n</sub> = relay contact

1. Connect individual output relay contact (customer load) wiring to numbered terminals as shown in the wiring table. Terminals 2, 3, 4 and 5 are one side of the relay contacts; terminals 10, 11, 12 and 13 are the other side of the respective relay contact.



**ATTENTION:** When using 240V power to a relay, you must connect a snubber across the load. Failure to connect a snubber across the load can result in generation of electromagnetic noise which could disrupt nearby electrical equipment, including your 1793 Integra system or 1794 FLEX I/O system. Use Allen-Bradley part number 599KA04 or 1401-NX1 snubber.

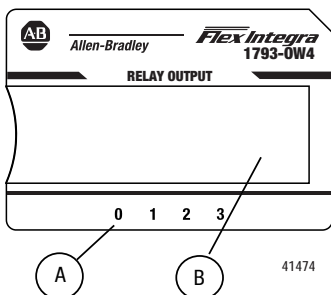
2. Connect +24V dc power to terminal 1 on row A.
3. Connect 24V dc return to terminal 0 on row A.
4. If daisy-chaining +24V dc from this module to the next FLEX Integra module, connect a jumper from terminal 15 on this module to terminal 8 on the next FLEX Integra module.
5. If daisy-chaining 24V dc return from this module to the next FLEX Integra module, connect a jumper from terminal 7 on this module to terminal 0 on the next Integra module. .



**ATTENTION:** Total current draw through the module's (+) voltage terminals is limited to 10A. Separate power connections to the module may be required.

Channel	Output	
0	2	10
1	3	11
2	4	12
3	5	13
+24V dc	Terminals 1, 6, 8, 9, 14 and 15 are internally connected together in the module	
24V dc common	Terminals 0 and 7 are internally connected together in the module.	

### Indicators



**A** = Status indicators - shows status of individual inputs









**B** = Insertable label for writing individual input designations

### Memory Mappin

Bit/ Word	15	14	13	12	11	10	09	08	07	06	05	04	03	02	01	00
Read	Reserved															
Write	Reserved												03	02	01	00

Where: IO= Relay output

When bit = 0, output is off; when bit = 1, output is on

CUL Hazardous Location Approval	Approbation d'utilisation dans des environnements dangereux par la CUL
<p>CUL certifies products for general use as well as for use in hazardous locations. <b>Actual CUL certification is indicated by the product label</b> as shown below, and not by statements in any user documentation.</p>	<p>La CUL certifie des produits pour une utilisation générale aussi bien que pour une utilisation en environnements dangereux. La certification CUL en vigueur est indiquée par l'étiquette produit et non par des indications dans la documentation utilisateur.</p>
<p>Example of the CUL certification product label:</p>  <p>CL I, DIV 2 GP A,B,C,D TEMP</p> 	<p>Exemple d'étiquette de certification d'un produit par la CUL :</p>  <p>CL I, DIV 2 GP A,B,C,D TEMP</p> 
<p>To comply with CUL certification for use in hazardous locations, the following information becomes a part of the product literature for this CUL-certified industrial control product.</p> <ul style="list-style-type: none"> <li>• This equipment is suitable for use in Class I, Division 2, Groups A, B, C, D, or non-hazardous locations only.</li> <li>• The products having the appropriate CUL 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 CUL or the local inspection office having jurisdiction</li> </ul>	<p>EPour satisfaire à la certification CUL en environnements dangereux, les informations suivantes font partie intégrante de la documentation des produits de commande industrielle certifiés.</p> <ul style="list-style-type: none"> <li>• Cet équipement ne convient qu'à une utilisation dans des environnements de Classe I, Division 2, Groupes A, B, C, D ou non dangereux.</li> <li>• Les produits portant le marquage CUL approprié (c'est-à-dire Classe I, Division 2, Groupes A, B, C, D) sont certifiés pour une utilisation avec d'autres équipements, les combinaisons d'applications et d'utilisation étant déterminées par la CUL ou le bureau local d'inspection.</li> </ul>
<p>Important: Due to the modular nature of a programmable control system, the product with the highest temperature rating determines the overall temperature code rating of a programmable control system in a Class I, Division 2, location. The temperature code rating is marked on the product label as shown.</p>	<p>Important: De par la nature modulaire des systèmes de commande programmables, le produit ayant le code de température le plus élevé détermine le code de température global du système dans un environnement de Classe I, Division 2. Le code de température est indiqué sur l'étiquette produit.</p>
<p>Temperature code rating:</p>  <p>CL I, DIV 2 GP A,B,C,D TEMP</p>  <p>Look for temperature code rating here.</p>	<p>Code de température :</p>  <p>CL I, DIV 2 GP A,B,C,D</p>  <p>Le code de température est indiqué ici.</p>
<p>The following warnings apply to products having CUL certification for use in hazardous locations.</p>	<p>Les avertissements suivants s'appliquent aux produits ayant la certification CUL pour une utilisation dans des environnements dangereux.</p>

<b>CUL Hazardous Location Approval</b>	<b>Approbation d'utilisation dans des environnements dangereux par la CUL</b>
<p><b>ATTENTION: Explosion Hazard</b></p> <ul style="list-style-type: none"> <li>• Substitution of components may impair suitability for Class I, Division 2.</li> <li>• Do not replace components unless power has been switched off or the area is known to be non-hazardous.</li> <li>• Do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous.</li> <li>• 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 this equipment by 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.</li> <li>• Batteries must only be changed in an area known to be non-hazardous.</li> </ul>	<p><b>AVERTISSEMENT : Risque d'explosion</b></p> <ul style="list-style-type: none"> <li>• La substitution de composants peut rendre ce matériel inadapté à une utilisation en environnement de Classe I, Division 2.</li> <li>• Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de remplacer des composants.</li> <li>• Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher l'équipement.</li> <li>• Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher les connecteurs. Fixer tous les connecteurs fournis par l'utilisateur pour se brancher aux circuits externes de cet appareil à l'aide de vis, loquets coulissants, connecteurs filetés ou autres, de sorte que les connexions résistent à une force de séparation de 15 Newtons (1,5 kg - 3,4 lb.) appliquée pendant au moins une minute.</li> <li>• S'assurer que l'environnement est classé non dangereux avant de changer les piles.</li> </ul>
<p>CUL logo is a registered trademark of the Underwriters Laboratories.</p>	<p>Le sigle CUL est une marque déposée de la Underwriters Laboratories.</p>



**Specifications - 4 Relay Output Module Cat. No. 1793-0W4 and -0W4S**

Module Type	Form A relay output 1793-0W4 - screw-cage terminations 1793-0W4S - spring-clamp terminations	
Mounting Location	DIN rail mounting	
Number of Channels	1 group of 4	
Output Range (at rated power)	<b>Resistive</b>	<b>Inductive</b>
	5-30V dc @ 2.0A 48V dc @ 0.5A 125V dc @ 0.25A 125V ac @ 2.0A 240V dc @ 2.0A	5-30V dc @ 2.0A; L/R = 7ms 48V dc @ 0.5A; L/R = 7ms 125V dc @ 0.25A; L/R = 7ms 125V ac @ 2.0A; 15A make; PF = $\cos \theta = 0.4$ 240V ac @ 2.0A; 15A make; PF = $\cos \theta = 0.4$
Maximum Power Ratings (steady state)	<b>Resistive</b>	<b>Inductive</b>
	60W @ 30V dc 24W @ 48V dc 31W @ 125V dc 250W @ 125V ac 480W @ 240V ac	60VA @ 30V dc 24VA @ 48V dc 31VA @ 125V dc 250VA @ 125V ac 480VA @ 240V ac
Minimum Contact Load	100 $\mu$ A @ 100mV dc	
Off-state Leakage Current	1mA @ 240V ac (through a snubber)	
Initial Contact Resistance	30m $\Omega$	
Expected Contact Life	100,000 operations minimum at rated loads	
Switching Frequency	0.3Hz maximum at rated load	
Operate/Release Time	10ms maximum	
Bounce Time	1.2ms (mean)	
Delay Times	Off to On	8ms maximum (from valid output ON signal to relay coil activation)
	On to Off	26ms (from valid output OFF signal to relay coil deactivation)
Isolation Voltage		
Between any 2 contacts	2550V dc for 1s	
Customer load to logic	2550V dc for 1s	
Customer load to 24V dc	2550V dc for 1s	
Customer 24V dc to logic	850V dc for 1s	
Fuse Recommendations	3.0A, 250V ac slow blow fuse (Littelfuse pn 239003)	
Flexbus Current	70mA maximum	
Power Dissipation	5.0W @ 31.2V dc	
Thermal Dissipation	17.1 BTU/hr @ 31.2V dc	

**Specifications - 4 Relay Output Module Cat. No. 1793-0W4 and -0W4S**

Indicators	None	
External dc Power	Voltage	19.2-31.2V dc (5% ac ripple)
	Current	125mA maximum
Dimensions	2.72H x 3.15D x 2.17W (69H x 80D x 55W)	
Environmental Conditions		
Operational Temperature	0 to +55°C (32 to +131°F)	
Storage Temperature	-40 to +85°C (-40 to +185°F)	
Relative Humidity	5 to 95% noncondensing	
Shock	Operating	Tested to 12g peak acceleration, 11(±1)ms pulse width
	Nonoperating	Tested to 50g peak acceleration, 11(±1)ms pulse width
Vibration	Tested 2g @ 10-500Hz per IEC68-2-6	
Conductors	Wire Size	12 gauge (4mm <sup>2</sup> ) stranded wire
		3/64 in (1.2mm) maximum insulation
	Category	2
Screw Terminal Torque	7-9 lb-in	
Agency Certification (when product is marked)	<ul style="list-style-type: none"> <li>• CUL Listed</li> <li>• CUL Class I, Division 2 Groups A, B, C and D certified</li> <li>• UL listed</li> <li>• CE marked for all applicable directives</li> </ul>	

<sup>1</sup> Use this category information for planning conductor routing as described in publication 1770-4.1, "Wiring and Grounding Guidelines for Noise Immunity."

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