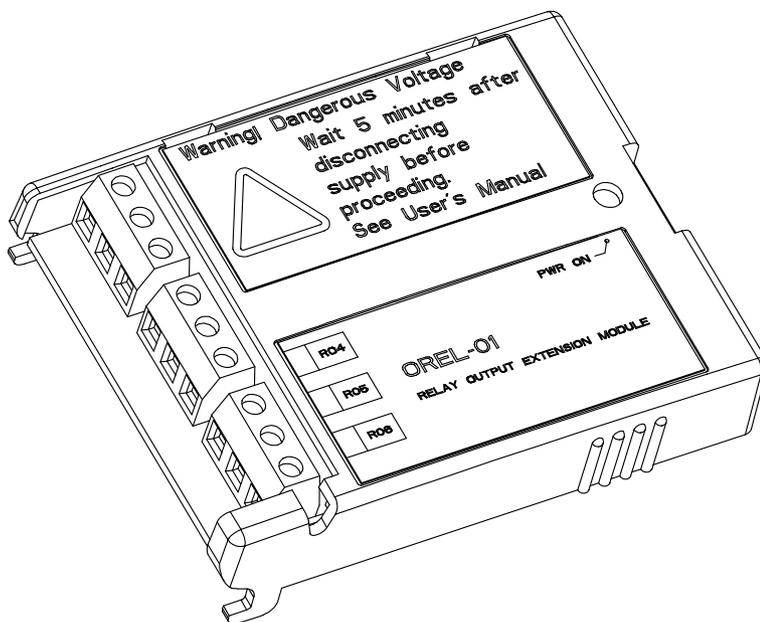


Drive^{IT} Low Voltage AC Drives

User's Manual

Relay Output Extension Module OREL-01



Safety



WARNING! All electrical installation and maintenance work on the drive should be carried out by qualified electricians only.



WARNING! The drive and adjoining equipment must be properly grounded.



WARNING! Do not attempt any work on a powered drive. After switching off the mains, always allow the intermediate circuit capacitors 5 minutes to discharge before working on the drive, the motor or the motor cable. It is good practice to check (with a voltage indicating instrument) that the drive is in fact discharged before beginning work.



WARNING! The motor cable terminals of the drive are at a dangerously high voltage when mains power is applied, regardless of motor operation.



WARNING! There can be dangerous voltages inside the drive from external control circuits even when the drive mains power is shut off. Exercise appropriate care when working on the unit. Neglecting these instructions can cause physical injury or death.

Use of Warnings and Notes

There are two types of safety instructions throughout this manual:

- Notes draw attention to a particular condition or fact, or give information on a subject.
- Warnings caution you about conditions which can result in serious injury or death and/or damage to the equipment. They also tell you how to avoid the danger. The warning symbols are used as follows:



Dangerous voltage warning warns of high voltage which can cause physical injury and/or damage to the equipment.

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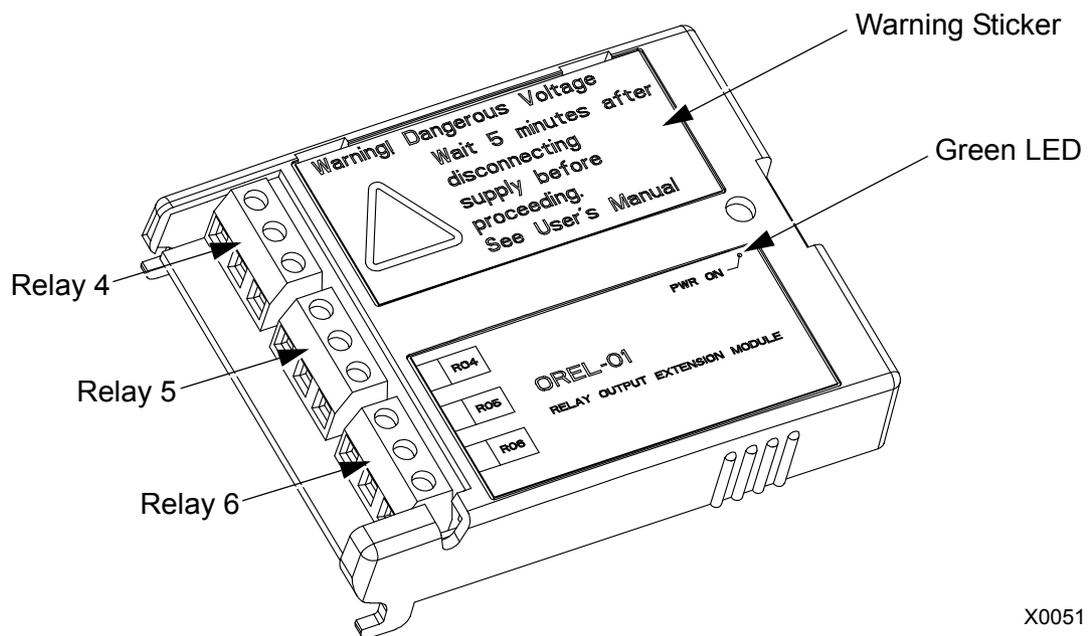
Installation

Preparing for Installation

The OREL-01 Module

The Relay Output Extension module (OREL) is an interface for connecting three relay outputs to an ACS550 or ACH550 drive.

Module Layout



Compatibility

The OREL-01 is compatible with all ACS550 and ACH550 drives.

Installing the Module

Delivery Check

The option package contains:

- OREL-01 module
- Warning stickers in several languages
- This manual

Mounting

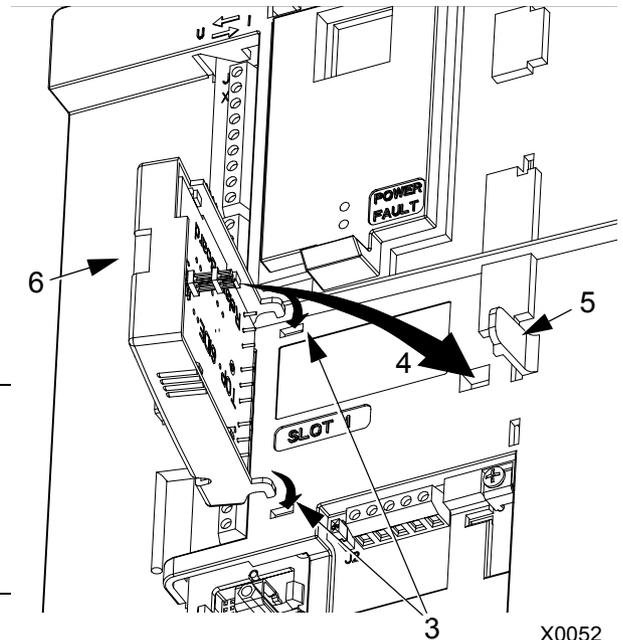


WARNING! Follow the safety instructions given in this guide and in the ACS550 or ACH550 User's Manual.

To mount the OREL-01 module:

1. If not already off, remove mains power from the drive.
2. Remove the drive cover. (See instructions in the drive User's Manual.)
3. Insert the OREL-01 module's plastic hooks into the front of the drive at SLOT 1.
4. Carefully fit the connector at the other end of the module into the drive connector.
5. Press until the retaining clip locks the module into position.

NOTE! Signal and power connections to the drive are automatically made through a 6-pin connector.



6. Non-English speaking locations: Add a warning sticker in the appropriate language over the existing warning on the top of the module.

Wiring

Use 0.5 to 1.5 mm² (20 to 16 AWG) cable with an appropriate voltage rating for digital signals.

1. Refer to “Terminal Designations” on page 6 and connect control wires to the OREL-01 module.

Terminal Designations

Use the following table for reference when wiring terminals.

Identification		Hardware Description	
1	RO4C		RELAY OUTPUTS RO4 TO RO6: <ul style="list-style-type: none"> • Max. continuous current: 2 A rms ($\cos \varphi = 1$), 1 A rms ($\cos \varphi = 0.4$) • Max. switching capability: 6 A (24 V DC, resistive load) 1500 VA (250 V AC) • Galvanically isolated from each other (2.5 kV AC, 1 min.)
2	RO4A		
3	RO4B		
4	RO5C		
5	RO5A		
6	RO5B		
7	RO6C		
8	RO6A		
9	RO6B		

Replace Drive Cover

1. Refer to the drive’s User’s manual and replace the drive’s cover.

Apply Power

1. Turn on the mains power to the drive.

Note! When power is applied to the drive, the LED on the OREL module should light.

2. Continue with the next section, Start-Up.

Start-Up

To configure the operation of the relays added using the OREL-01 module:

1. Power up the drive.
2. Use the control panel on the drive and set the parameters for relay outputs 4 to 6 in Group 14 – Relay Outputs. Refer to the drive's User's Manual for parameter descriptions, and for instruction on the control panel operation.

Diagnostics

Diagnostic LED

There is one diagnostic LED on the OREL-01 module. If the OREL-01 is properly installed, the green LED lights when the drive is powered up. If the LED does not light within 5 seconds after power-up, there is no communication with the drive.

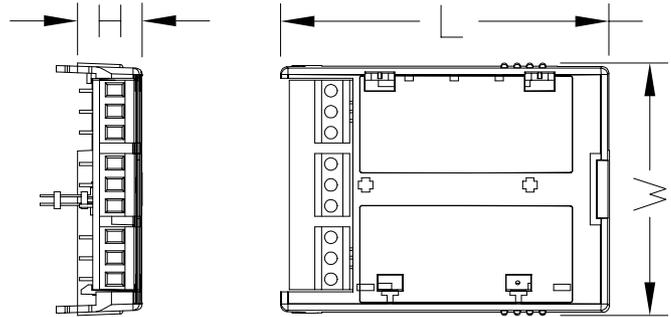
Step down this column. If an item is TRUE, look to the RIGHT for suggestions.	Corrective Action
The module connection may be damaged	 <p>Warning! Dangerous voltages are present on the connector. Power down before attempting to repair connector pins.</p> <ul style="list-style-type: none"> • Power down. • Remove the module and check the condition of the pins in the 6-pin connector. • Reconnect and retest.
The module may have failed.	Replace the module.

Technical Data

Dimensions

Module dimensions are:

Ref.	mm	in
H	9.2	0.4
L	46.4	1.8
W	36.2	1.4



X0053

Enclosure Degree of Protection

The module is mounted inside the drive enclosure. Refer to the drive's rating.

Ambient Conditions

The module is mounted inside the drive enclosure. Refer to the drive's requirements.

Connectors

Connectors on the module:

- 6-pin connector.
- Three, 3-pin, screw-type, non-detachable terminal blocks that accept wire connectors up to 1.5 mm² (16 AWG).

Specifications

Module Specifications

- Estimated min. lifetime: $\geq 200,000$ cycles/relay, at maximum continuous current operation.
- All materials are UL/CSA-approved.
- Module complies with EMC standards EN 50081-2 and EN 50082-2.

Relay Outputs

The specifications for the module relay outputs are:

- Max. contact voltage: 30 V DC, 250 V AC
- Max. switching capability: 6 A (24 V DC, resistive load)
1500 VA (250 V AC)
- Max. continuous current: 2 A rms ($\cos \varphi = 1$), 1 A rms ($\cos \varphi = 0.4$)
- Minimum current: 10 mA, 12 V DC
- Contact material: Silver-nickel (AgN)
- Isolation between relay digital outputs, test voltage: 2.5 kV rms, 1 minute



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