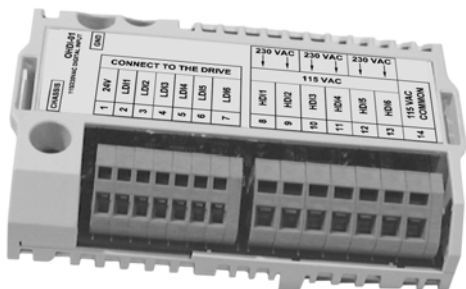


# Drive<sup>IT</sup> Low Voltage AC Drives

## User's Manual

### 115/230 VAC Digital Input Module OHD1-01



OHD4

**ABB**

## Safety

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**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

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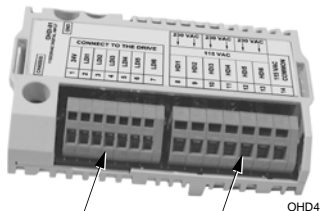
## Preparing for Installation

### The OHDI-01 Module

The 115/230 VAC Digital Input module (OHDI) is an interface for connecting six high voltage digital inputs to an ACS550, ACH550 or ACS800 drive. The OHDI accepts 115 or 230 VAC inputs and converts them to 24 VDC for inputs to the drive. The input can be either of the following:

- Up to six 115 VAC inputs
- Up to three 230 VAC inputs

### Module Layout



Low Voltage Side  
24 VDC  
Outputs (6)

High Voltage Side  
115/230 VAC  
Digital Inputs

### Compatibility

The OHDI-01 is compatible with all ACS550, ACH550 and ACS800 drives.

## Installing the Module

### Delivery Check

The option package contains:

- OHDI-01 module
- Two mounting screws
- This manual

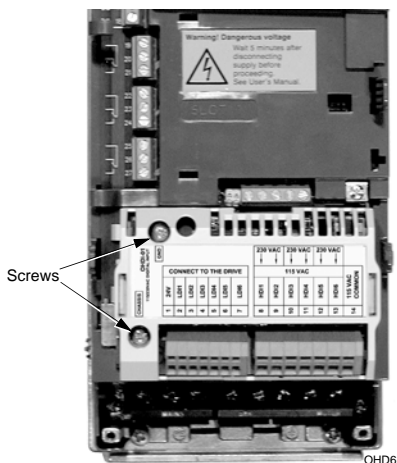
### Mounting



**WARNING!** Follow the safety instructions given in this guide and in the drive manual: ACS800 Hardware Manual, ACS550 User's Manual or ACH550 User's Manual.

To mount the OHDI-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. Position the OHDI-01 module on the front of the drive:
  - ACS800: at Optional Module 1 or Optional Module 2.
  - ACS550/ACH550: at SLOT 2.
4. Attach using the two mounting screws provided.



OHDI-01

## Wiring

Connect 115/230 VAC inputs to the OHDI high voltage side. Connect the outputs from the OHDI low voltage side to the drive digital inputs.

For wiring, use:

- Appropriate voltage rated wiring (115 or 230 VAC) for the inputs to the high voltage side.
- 0.5 to 1.5 mm<sup>2</sup> (20 to 16 AWG) cable with 24 V rating for connections between the low voltage side and the drive terminals.

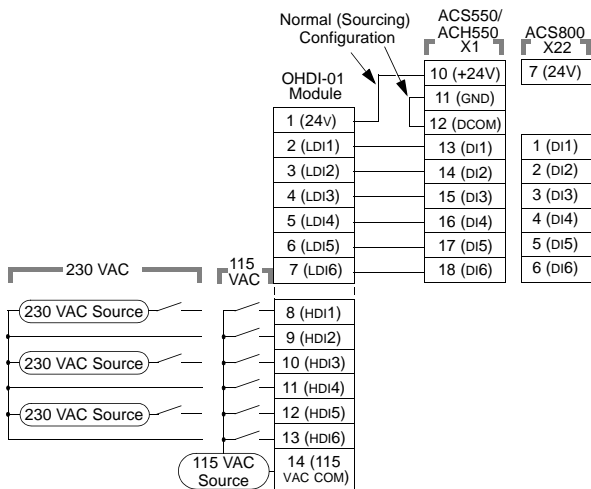
To determine the proper routing for wiring, refer to the following sources:

- Either the "Terminal Designations – 115 VAC" section, or the "Terminal Designations – 230 VAC" section below for the OHDI-01 module's terminal designations.
- The drive's terminal designations in the appropriate manual:
  - ACS550 User's Manual
  - ACH550 User's Manual
  - ACS800 Hardware Manual
- The table below for alternatives.
- The diagram below for an overview of the connections.
- The illustrations below for a view of typical wiring connections.

Alternatives:

Situation	Wiring
All digital inputs are from 115 or 230 VAC sources.	Connect inputs according to the diagram below. Use as many as required (up to 3 230 VAC inputs or up to 6 115 VAC inputs).
Digital inputs are from a mixture of low voltage (24 VDC) sources and high voltage (115 or 230 VAC) sources.	Route high voltage digital inputs through OHDI module. Route low voltage digital inputs directly to X1 (on the ACS550/ACH550) or to X22 (on the ACS800).

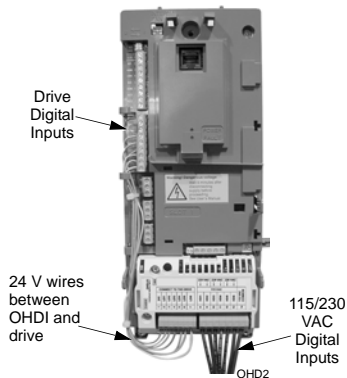
Connections overview:



The following illustration shows a sample of typical wiring.



Insert screwdriver in slot above wire clip to open clip.



## Terminal Designations – 115 VAC

Use the following table for reference when wiring terminals.

Identification		Typical Connection	
Low Voltage Side		Digital Input Terminal	
		ACS550 / ACH550	ACS800
1	24 V	10 (+24V)	7 (24V)
2	LdI1	13 (DI1)	1 (DI1)
3	LdI2	14 (DI2)	2 (DI2)
4	LdI3	15 (DI3)	3 (DI3)
5	LdI4	16 (DI4)	4 (DI4)
6	LdI5	17 (DI5)	5 (DI5)
7	LdI6	18 (DI6)	6 (DI6)
High Voltage Side		External Digital Input Source (115 VAC)	
8	HdI1		
9	HdI2		
10	HdI3		
11	HdI4		
12	HdI5		
13	HdI6		
14	115 VAC Common		



## Terminal Designations – 230 VAC

Use the following table for reference when wiring terminals.

Identification		Typical Connection	
Low Voltage Side		Digital Input Terminal	
		ACS550 / ACH550	ACS800
1	24 V	10 (+24V)	7 (24V)
2	LdI1	13 (DI1)	1 (DI1)
3	N/A	14 (DI2)	2 (DI2)
4	LdI3	15 (DI3)	3 (DI3)
5	N/A	16 (DI4)	4 (DI4)
6	LdI5	17 (DI5)	5 (DI5)
7	N/A	18 (DI6)	6 (DI6)
High Voltage Side		External Digital Input Source (230 VAC)	
8	HdI1		
9	HdI2		
10	HdI3		
11	HdI4		
12	HdI5		
13	HdI6		
14			

## Replace Drive Cover

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

## Apply Power

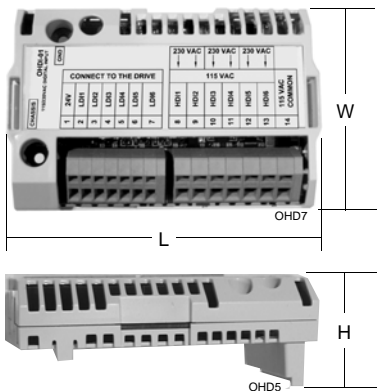
1. Turn on the mains power to the drive.
2. Refer to the Start-Up section in the drive's User's Manual for configuration of digital inputs.

# Technical Data

## Dimensions

Module dimensions are:

Ref.	mm	in
H	35	1.4
L	95	3.7
W	62	2.4



## 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:

- Low voltage side: 6-pin, spring cage, non-detachable terminal block that accepts wire connectors up to 1.5 mm<sup>2</sup> (16 AWG).
- High voltage side: 6-pin, spring cage, non-detachable terminal block that accepts wire connectors up to 2.5 mm<sup>2</sup> (14 AWG).

## Specifications

### *Module Specifications*

- Module is UL/CUL-approved.
- Module complies with EMC standards EN 50081-2 and EN 50082-2.
- Input voltage: 115 to 230 VAC  $\pm 10\%$
- Max. current leakage in digital off state: 2 mA.
- Isolation between low and high voltage side terminals, test voltage: 2.5 kV rms, 1 minute.



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