
Chapter 39

140 DAO 840 00: 24 ... 230 VAC 16x1 OUT Module

About this Chapter

The following chapter provides information on the Quantum 140 DAO 840 00 module.

What Is in This Chapter?

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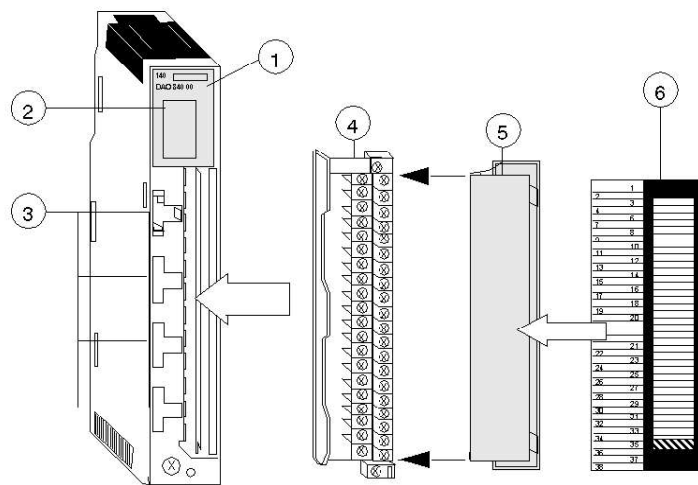
Presentation

Function

The AC Output 24 ... 230 VAC 16x1 module switches 24 ... 230 VAC powered loads.

Illustration

The following figure shows the 140 DAO 840 00 module and its components.



- 1 Model Number, Module Description, Color Code
- 2 LED Display
- 3 Fuse Cutouts
- 4 Field Wiring Terminal Strip
- 5 Removable Door
- 6 Customer Identification Label (Fold label and place it inside door)

NOTE: The field wiring terminal strip (Modicon #140 XTS 002 00) must be ordered separately. (The terminal strip includes the removable door and label.)

Indicators

Illustration

The following table shows the LED indicators for the 140 DAO 840 00 module.

Active		F	
1	9	1	9
2	10	2	10
3	11	3	11
4	12	4	12
5	13	5	13
6	14	6	14
7	15	7	15
8	16	8	16

Descriptions

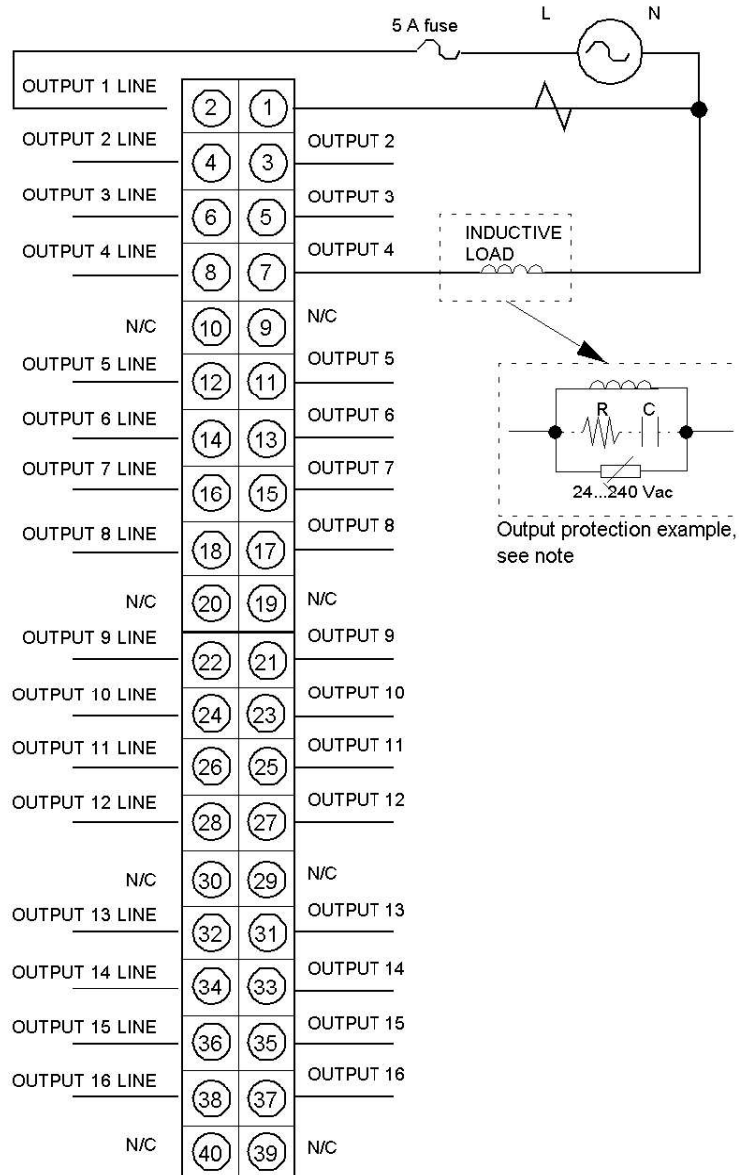
The following table shows the LED descriptions for the 140 DAO 840 00 module.

LEDs	Color	Indication when ON
Active	Green	Bus communication is present.
F	Red	An error (external to the module) has been detected.
1 ... 16	Green	The indicated point or channel is turned ON.
1 ... 16	Red	There is an error on the indicated point or channel.

Wiring Diagram

Illustration

The following figure shows the 140 DAO 840 00 wiring diagram.



1. This module is not polarity sensitive.
2. N / C = Not Connected.
3. Voltages up to 133V may be different phases on adjacent output points.
4. Voltages over 133V of different phases must have an output point separation between them. For example: Output 1 and 2 - Phase A, Skip Output 3, Output 4 - Phase B.
5. When field wiring the I/O module, the maximum wire size that should be used is 1-14 AWG or 2-16 AWG; the minimum size is 20 AWG.

NOTE: The tightening torque must be between 0.5 Nm and 0.8 Nm.

NOTICE

DESTRUCTION OF ADAPTER

- Before tightening the locknut to the torque 0.50...0.80 Nm, be sure to properly position the right-angle F adapter connector.
- During tightening, be sure to maintain the connector securely.
- Do not tighten the right-angle F adapter beyond the specified torque.

Failure to follow these instructions can result in equipment damage.

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

Before accessing the fuses,

- Remove the power to the module (pre-actuators), and
- disconnect the terminal block.
- Always use a properly rated voltage sensing device at all line and load fuse clips to confirm power is off.

Failure to follow these instructions will result in death or serious injury.

CAUTION

EQUIPMENT DAMAGE

Protect each output point with an external fuse. Schneider Electric recommends a 5 A fuse with an I2T rating of less than 87.

Failure to follow these instructions can result in injury or equipment damage.

 **CAUTION**

DAMAGE TO MODULE OUTPUTS

- Ensure that the AC power energizing each group is from a common, single-phase AC power source.
- Protect the module output when an external switch is used to control an inductive load in parallel with the module output. Use an external varistor (Harris V390ZA05 or equivalent) in parallel with the switch.

Failure to follow these instructions can result in injury or equipment damage.

NOTE:

The output protection is composed of an RC filter (snubber filter) and a varistor:

- The snubber filter is optional. The values of R and C are not provided as they depend on the device used.
- Choose the varistor with appropriate electronic characteristics depending on the voltage required by the device used.

Specifications

General Specifications

General Specifications

Module Type	16 OUT isolated
External Power	Not required for this module
Power Dissipation	$1.85 \text{ W} + 1.1 \text{ V} \times \text{Total module load Currents}$
Bus Current required (Module)	350 mA
I/O map	1 output words

Absolute Maximum Input

Absolute Maximum Input

10 s	300 VAC
1 Cycle	400 VAC

Voltage

Voltage

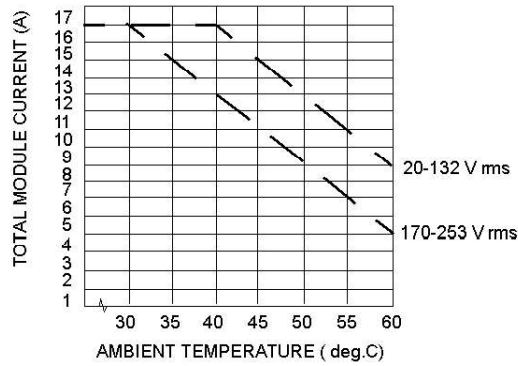
Operating Voltage (max.)	20 ... 253 VAC
ON State Drop / Point	1.5 VAC

Maximum Load Current

Maximum Load Current

Each Point	24 to 115 VAC, 4 Amps per output 200 to 230 VAC, 3 Amps per output
Any four contiguous Points	4.0 A max. continuous for the sum of the four points.
Per Module	16 A continuous (see chart below)

The following figure shows the 140 DAO 840 00 operating curve.



*The specifications stated are pending UL/CSA approval. This module was originally approved at 2 A each point; and 12 A, 0 ... 50° C (115 VAC) and 0 ... 50° C (230 VAC) per module.

Frequency and Minimum Load Current

Frequency and Minimum Load Current

Frequency	47 ... 63 Hz
Minimum Load Current	5 mA

OFF State Leakage / Point (max.)

OFF State Leakage / Point (max.)

OFF State Leakage / Point (max.)	2.5 mA @ 230 VAC 2 mA @ 115 VAC 1 mA @ 48 VAC 1 mA @ 24 VAC
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Surge Current (max. rms)

Surge Current (max. rms)

One Cycle	30 A per point
Two Cycles	20 A per point
Three Cycles	10 A per point
Applied DV/DT	400 V / μ s

Isolation / Protection

Isolation / Protection

Output to Output	1500 VAC rms for 1 minute
Output to Bus	1780 VAC rms for 1 minute
Output Protection (internal)	RC snubber suppression

Response

Response

OFF - ON	0.5 of one line cycle max.
ON - OFF	0.5 of one line cycle max.

Fuses

Fuses

Internal	None
External	Protect each output with an external 5 amp fuse with an I2T rating of less than 87.

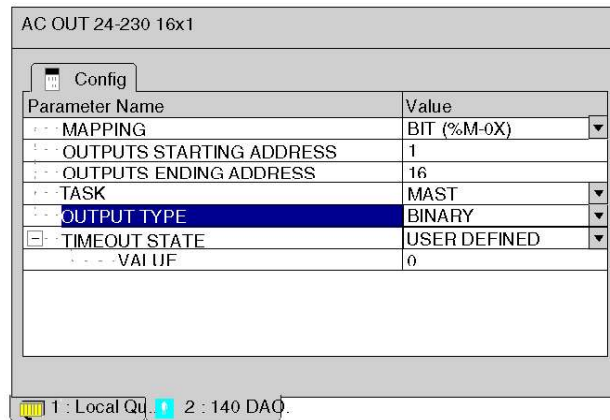
⚠ CAUTION**OVER CURRENT TO OUTPUTS**

Protect each point with a 5 A, 250 V fuse

Failure to follow these instructions can result in injury or equipment damage.

140 DAO 840 00 Parameter Configuration

Parameter Configuration Window



Parameter and Default Values

Name	Default Value	Options	Description
Mapping	BIT (%M-0x)	WORD (%MW-4X)	
Output Starting Address	1	1	
Output Ending Address	16	1	
Output Type	BINARY	BCD	
Task (Grayed if module in other than local)	MAST	FAST AUX0 AUX1 AUX2 AUX3	fixed to MAST if module in other than local
Timeout State	USERDEFINED	HOLD LAST VALUE	
Value	0	0-65535	only enabled if Timeout State=USERDEFINED

I/O Mapping

More information on the I/O mapping is provided in the general information on Quantum addressing modes ([see page 49](#)).