



## Mixed I/O Module

IC300OCS028

12/24 Vdc In, Positive/Negative Logic  
3A Relay Out

*Mini OCS/RCS*

### 1 SPECIFICATIONS

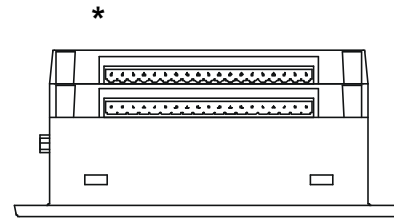
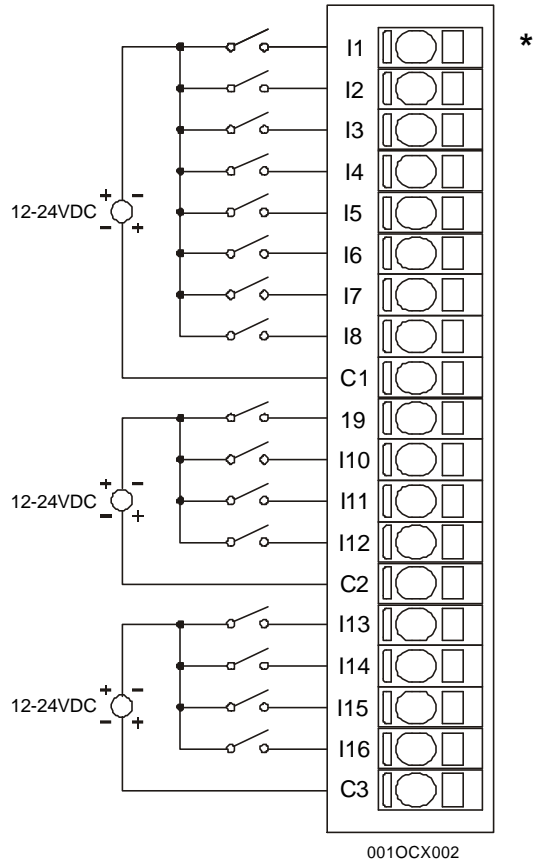
INPUT			
Inputs per Module	16 isolated	Minimum ON Current	1 mA
Isolated Commons per Module	3	Maximum OFF Current	200µA
Input Voltage Range	12/24VDC	OFF to ON Response	1 ms.
Peak Voltage	35VDC Max.	ON to OFF Response	1 ms.
ON Voltage level	Min. 9VDC	Isolation between Common and Ground	500VDC
OFF Voltage level	Max. 3VDC		
Input Impedance	> 10K Ohms		

OUTPUT			
Outputs per Module	12 relay	Maximum Load current (resistive) per output	3A
Isolated Commons per Module	4	Maximum Inrush Current	5A
Output Type	Relay	Minimum Load	None
Coil Voltage	20-28VDC	Isolation (Channel to Channel and Channel to Common)	500VDC
Contact Voltage	250VAC / 30VDC Max.	Maximum Leakage Current	5µA
ON Voltage drop	0.2V Max.		

General Specifications			
Required Power (Steady State)	230mA @ 24VDC	UL	Please refer to Compliance Table located at <a href="http://www.heapg.com/Support/compliance.htm">http://www.heapg.com/Support/compliance.htm</a>
Required Power (Inrush)	770 mA @ 10ms., 24VDC	CE	
Relative Humidity	5 to 95% Non-condensing	Terminal Type	Spring Clamp, Removable
Operating Temperature	0° to 50° Celsius	Weight	9.5 oz. (270 g)

## 2 WIRING

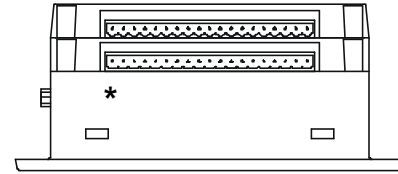
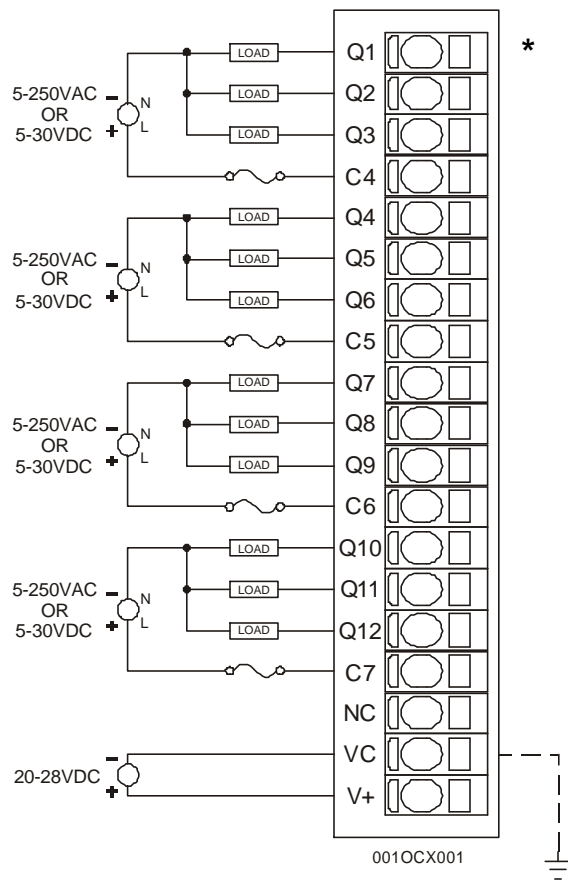
### 2.1 Input Connector Wiring



**Mini Input Connector  
(top connector only) – Shows  
corresponding I/O pin location**

Pin	Signal
*I1	Input 1
I2	Input 2
I3	Input 3
I4	Input 4
I5	Input 5
I6	Input 6
I7	Input 7
I8	Input 8
C1	Input common for inputs 1-8 (isolated)
I9	Input 9
I10	Input 10
I11	Input 11
I12	Input 12
C2	Input common for inputs 9-12 (isolated)
I13	Input 13
I14	Input 14
I15	Input 15
I16	Input 16
C3	Input common for inputs 13-16 (isolated)

## 2.2 Output Connector Wiring



**Mini Output Connector  
(bottom connector only) – Shows  
corresponding I/O pin location**

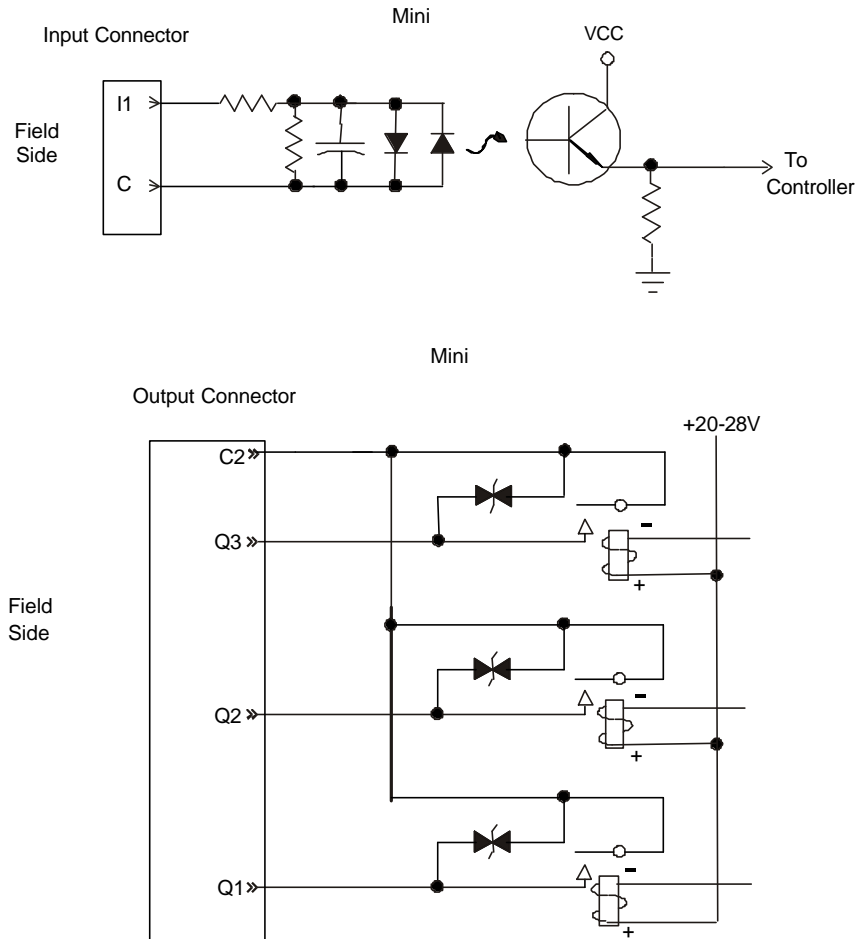
Pin	Signal
*Q1	Output 1
Q2	Output 2
Q3	Output 3
C4	Output common for Outputs 1-3 (Isolated)
Q4	Output 4
Q5	Output 5
Q6	Output 6
C5	Output common for Outputs 4-6 (Isolated)
Q7	Output 7
Q8	Output 8
Q9	Output 9
C6	Output common for Outputs 7-9 (isolated)
Q10	Output 10
Q11	Output 11
Q12	Output 12
C7	Output common for Outputs 10-12 (isolated)
NC	No Connection
VC	Relay power common, connected internally to digital ground
V+	Relay power, 20-28VDC, 100ma nominal

**Warning:** To protect the module and associated wiring from load faults, use external fuse (**10 A**) as shown.

**Warning:** Connecting high voltage to any I/O pin may cause high voltage to appear at other I/O pins.

**Warning:** Wiring the line side of the AC source to loads connected to outputs 1 through 12 and the neutral side of the AC source to the output common(s) would create a Negative Logic condition, which may be considered an unsafe practice.

### 3 INTERNAL CIRCUIT SCHEMATIC



Specification for transient voltage suppressors (transorbs) used on output circuitry is 400VDC bi-directional 400 watts.

Note: Electro-mechanical relays comply with IEC1131-2.

### 4 CONFIGURATION

**Note:** The status of the I/O can be monitored in Cscape Software.

Preliminary configuration procedures that apply to SmartStack™ Modules are contained in the hardware manual of the controller you are using. Refer to the **Additional References** section in this data sheet for a listing of hardware manuals.

Selecting the **I/O Map** tab provides information about the I/O registers. The I/O Map is not edited by the user.

The **Module Setup** is used in applications where it is necessary to change the default states of the outputs when the controller (e.g., Mini) enters idle/stop mode. The default turns the outputs OFF when the controller enters idle/stop mode. By selecting the Module Setup tab, each output can be set to either turn ON, turn OFF or to hold the last state. Generally, most applications use the default settings.

**Warning:** The default turns the outputs OFF when the controller enters idle/stop mode. To avoid injury of personnel or damages to equipment, exercise extreme caution when changing the default setting using the **Module Setup** tab.

## 5 INSTALLATION / SAFETY

**Warning:** Previous versions of this product provided internal fuses on the output circuits (relay contacts). Due to CE Low Voltage Directive (LVD) marking requirements, these fuses have been removed and replaced with solid wire. Therefore, it is now the responsibility of the user of this equipment to ensure that adequate fusing is installed *externally* on each relay output circuit.

- a. When using the OCS028, mount on flat surface Type 1, 12, or 4X Indoor Use Only Enclosure.
- b. All applicable codes and standards are to be followed in the installation of this product.
- c. Use the following wire type or equivalent: Belden 8917, 16 AWG or larger.

For detailed installation and a handy checklist that covers panel box layout requirements and minimum clearances, refer to the hardware manual of the controller you are using. (See the **Additional References** section in this document.)



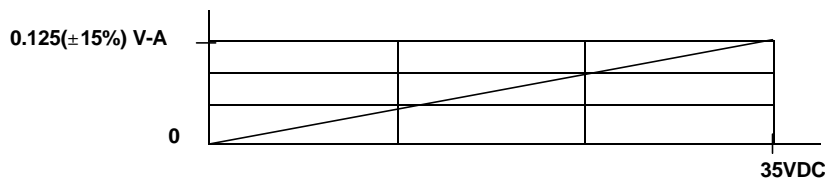
**Warning:** Consult user documentation.



**Warning:** Electrical Shock Hazard.

## 6 INPUT / OUTPUT CHARACTERISTICS

Digital Input Chart



## 7 ADDITIONAL REFERENCES

For detailed installation, configuration and other information, refer to the hardware manual of the controller you are using. See the **Technical Support** section in this document for the web site address to download references and to obtain revised editions.

Additional References	
Controller	Manual Number
<b>Operator Control Station Hardware (OCS, OCX)</b> e.g., OCS1XX / 2XX; Graphic OCS250	MAN0227
<b>Remote Control Station Hardware (RCS [except RCS116], RCX)</b> e.g., RCS210, RCS250	
<b>Color Touch OCS Hardware</b> e.g., OCS300, OCS301, OCS350, OCS351 e.g., OCS451, OCS551, OCS651	MAN0465
<b>OCS LX Series Hardware</b> e.g., LX280 / LX300; RCS116	MAN0755
<b>MiniOCS / MiniRCS / MiniOCX / MiniRCX Hardware</b> e.g., HE500OCSxxx	MAN0305
Other Useful References	
Cscape Programming and Reference	MAN0313
DeviceNet™ Implementation	SUP0326
Wiring Accessories and Spare Parts Manual	MAN0347

## 8 TECHNICAL SUPPORT

For assistance and manual up-dates, contact Technical Support at the following locations:

**North America:**  
(317) 916-4274  
[www.heapg.com](http://www.heapg.com)

**Europe:**  
(+) 353-21-4321-266  
[www.horner-apg.com](http://www.horner-apg.com)