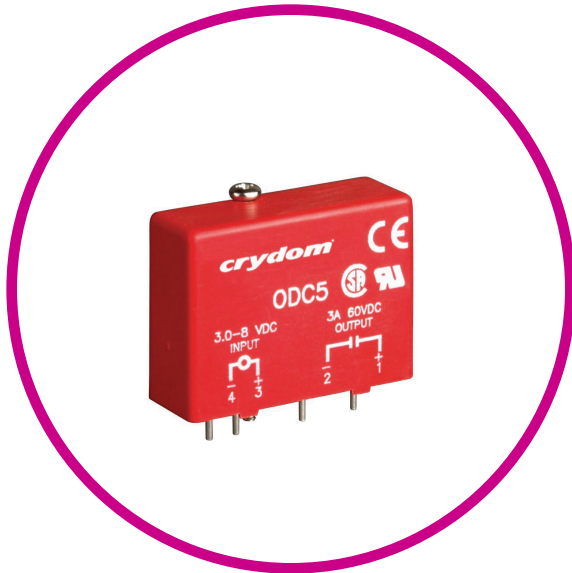




# STANDARD SERIES | OUTPUT MODULES

DIGITAL I/O MODULES



## Features

- AC Modules have High Current Thyristors with 100 Amp Surge Capability
- Plug into mounting boards for 0.6" modules
- Zero or Random Turn-On Available in AC Modules
- 4kV Optical isolation (1500 VAC Isolation for FET DC Output Modules)
- UL Recognized, CSA Certified CE Compliant
- Industry standard packaging and Color Coding Black (AC Output) Red (DC Output)

## SPECIFICATIONS

### Output <sup>(1)</sup>

Part Number	OAC5	OAC5A	OAC5AH	OAC5R	OAC24	OAC24A
<b>Nominal Line Voltage</b>	120 VAC	240 VAC	240 VAC	120 VAC	120 VAC	240 VAC
<b>Minimum Line Voltage</b>	12 VAC	24 VAC	24 VAC	12 VAC	12 VAC	24 VAC
<b>Maximum Line Voltage</b>	140 VAC	280 VAC	280 VAC	140 VAC	140 VAC	280 VAC
<b>Max Off-State Voltage</b> <sup>(5)</sup>	400 Vpeak	600 Vpeak	600 Vpeak	400 Vpeak	400 Vpeak	600 Vpeak
<b>Max Off-State Leakage</b> <sup>(6)</sup>	0.1mArms	0.1mArms	0.1mArms	0.1mArms	0.1mArms	0.1mArms
<b>Static Off-State dv/dt</b> <sup>(7)</sup>	200 V/usec	200 V/usec	200 V/usec	200 V/usec	200 V/usec	200 V/usec
<b>Maximum Rated On-State Current</b> <sup>(8)</sup>	3.5 Arms	3.5 Arms	5.0 Arms	3.5 Arms	3.5 Arms	3.5 Arms
<b>Max Surge Current</b> <sup>(9)</sup>	100 Apeak	100 Apeak	100 Apeak	100 Apeak	100 Apeak	100 Apeak
<b>On-State Voltage Drop or Resistance</b> <sup>(10)</sup>	1.6 V	1.6 V	1.6 V	1.6 V	1.6 V	1.6 V
<b>Maximum Turn-On Time [msec]</b> <sup>(13)</sup>	8.33	8.33	8.33	0.1	8.33	8.33
<b>Maximum Turn-Off Time [msec]</b> <sup>(13)</sup>	8.33	8.33	8.33	8.33	8.33	8.33
<b>Input/Output Isolation Voltage</b> <sup>(14)</sup>	4000 Vrms	4000 Vrms	4000 Vrms	4000 Vrms	4000 Vrms	4000 Vrms
<b>Input/Output Capacitance</b>	8 pF	8 pF	8 pF	8 pF	8 pF	8 pF
<b>Operating Temperature Range</b>	-30 to 80°C	-30 to 80°C	-30 to 80°C	-30 to 80°C	-30 to 80°C	-30 to 80°C
<b>Storage Temperature Range</b>	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C
<b>Line Frequency Range</b>	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz
<b>Weight</b>	1.1 oz. (31.2g)	1.1 oz. (31.2g)	1.1 oz. (31.2g)	1.1 oz. (31.2g)	1.1 oz. (31.2g)	1.1 oz. (31.2g)

Part Number	ODC5	ODC5A	ODC5F	ODC5ML	ODC24	ODC24A
<b>Nominal Line Voltage</b>	4-48 VAC	5-150 VAC	5-48 VDC	5-48 VDC	5-48 VDC	5-150 VDC
<b>Minimum Line Voltage</b>	3.0 VDC	3.0 VDC	3.0 VDC	1.0 VDC	3.0 VDC	3.0 VDC
<b>Maximum Line Voltage</b>	60 VDC	250 VDC	60 VDC	50 VDC	60 VDC	250 VDC
<b>Max Off-State Voltage</b> <sup>(5)</sup>	60 VDC	250 VDC	60 VDC	60 VDC	250 VDC	60 VDC
<b>Max Off-State Leakage</b> <sup>(6)</sup>	10 µA	10 µA	10 µA	10 µA	10 µA	10 µA
<b>Static Off-State dv/dt</b> <sup>(7)</sup>	N/A	N/A	N/A	N/A	N/A	N/A
<b>Maximum Rated On-State Current</b> <sup>(8)</sup>	3.0 A	1.0 A	3.0 A	5.0 A	3.0 A	1.0 A
<b>Max Surge Current</b> <sup>(9)</sup>	5.0 A	5.0 A	5.0 A	10 A	5.0 A	5.0 A
<b>On-State Voltage Drop or Resistance</b> <sup>(10)</sup>	1.5 V	1.5 V	1.5 V	0.05 Ohms	1.5 V	1.5 V
<b>Maximum Turn-On Time [msec]</b> <sup>(13)</sup>	0.1	0.1	0.025	1.0	0.1	0.1
<b>Maximum Turn-Off Time [msec]</b> <sup>(13)</sup>	0.75	0.75	0.05	0.5	0.75	0.75
<b>Input/Output Isolation Voltage</b> <sup>(14)</sup>	4000 Vrms	4000 Vrms	4000 Vrms	1500 Vrms	4000 Vrms	4000 Vrms
<b>Input/Output Capacitance</b>	8 pF	8 pF	8 pF	8 pF	8 pF	8 pF
<b>Operating Temperature Range</b>	-30 to 80°C	-30 to 80°C	-30 to 80°C	-30 to 80°C	-30 to 80°C	-30 to 80°C
<b>Storage Temperature Range</b>	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C
<b>Line Frequency Range</b>	DC	DC	DC	DC	DC	DC
<b>Weight</b>	1.1 oz. (31.2g)	1.1 oz. (31.2g)	1.1 oz. (31.2g)	1.1 oz. (31.2g)	1.1 oz. (31.2g)	1.1 oz. (31.2g)

## Input<sup>(1)</sup>

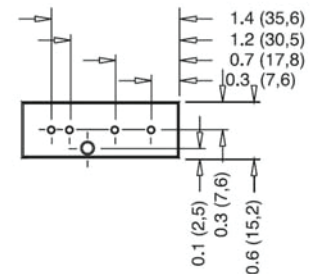
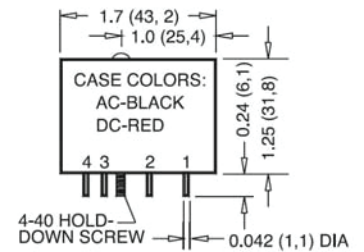
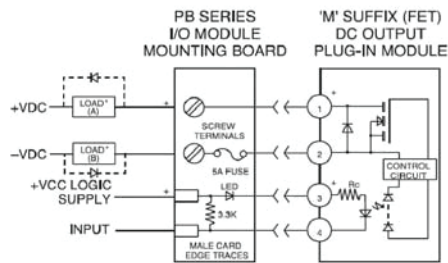
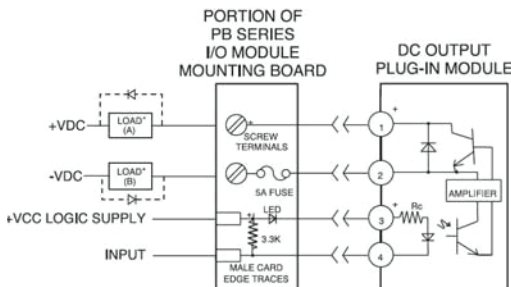
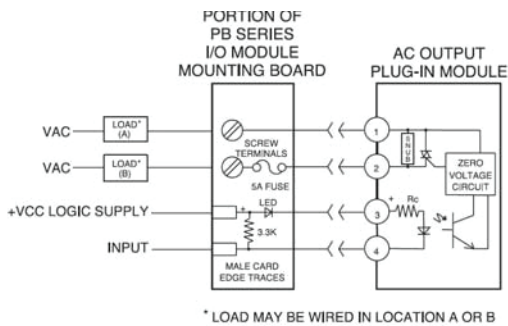
Part Number	OAC5	OAC5A	OAC5AH	OAC5R	OAC24	OAC24A
<b>Nominal Voltage [VDC]</b>	5.0	5.0	5.0	5.0	24	24
<b>Nominal Voltage [VDC]</b> <sup>(2)</sup>	2.75	2.75	2.75	2.75	18	18
<b>Maximum Voltage [VDC]</b>	8.0	8.0	8.0	8.0	32	32
<b>Drop-Out Voltage [VDC]</b>	1.0	1.0	1.0	1.0	1.0	1.0
<b>Maximum Current [mA]</b> <sup>(3)</sup>	20	20	20	20	13	13
<b>Resistance [Ohms]</b> <sup>(4)</sup>	220	220	220	220	2000	2000

Part Number	ODC5	ODC5A	ODC5F	ODC5ML	ODC24	ODC24A
<b>Nominal Voltage [VDC]</b>	5.0	5.0	5.0	5.0	24	24
<b>Nominal Voltage [VDC]</b> <sup>(2)</sup>	2.75	2.75	2.75	2.75	18	18
<b>Maximum Voltage [VDC]</b>	8.0	8.0	8.0	8.0	32	32
<b>Drop-Out Voltage [VDC]</b>	1.0	1.0	1.0	1.0	1.0	1.0
<b>Maximum Current [mA]</b> <sup>(3)</sup>	18	18	18	18	13	13
<b>Resistance [Ohms]</b> <sup>(4)</sup>	250	250	250	250	2000	2000

## GENERAL NOTES

- (1) Specifications apply to an ambient temperature of -30 to 80 °C unless otherwise noted
- (2) Without external LED status indicator. Add 1.7 volts for external LED if utilized.
- (3) At nominal input voltage, without external LED status indicator
- (4) +/-10% at 25°C.
- (5) Maximum 1 minute duration for OACmodules when applied as a DCvoltage rather than a peak ACvoltage.
- (6) At maximum line voltage, 25°Cfor OACmodules, and 80°Cfor ODCmodules
- (7) Minimum DV/DTper EIA/NARM RS433, method RS397, DV/DTratings do not apply to DCoutput models.
- (8) At 40°C, derate OACmodules 58 mA/°Cto 80°C, derate ODC. ODCxMCand ODCxML modules 50 mA/°C to 80°C. CSA rating of OACmodules is 3.0 Arms at 40°C
- (9) At 25°Cfor 1 second maximum duration: 1 ACcycle for ACmodules, 1 second for DCmodules
- (10) At maximum rated on-state current and 25°C.
- (11) At maximum line voltage, maximum rated output current, nominal input voltage and 25°C. Switching speed of OACmodules is based upon 60 Hz line frequency
- (12) At 25°Cfor 1 second maximum duration
- (13) 1/3 H.P. at 240 VAC, 1/8 H.P. at 120 VAC.
- (14) At 25°C for 1 second maximum duration

## EQUIVALENT CIRCUIT BLOCK AND WIRING DIAGRAMS



DIMENSIONS: INCHES (MILLIMETERS)  
TOLERANCE: ±0.020 (±0,50)

## AGENCY APPROVALS & CERTIFICATIONS



E46203



38595



## WARNINGS



### RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE

- The product's side panels may be hot, allow the product to cool before touching
- Follow proper mounting instructions including torque values
- Do not allow liquids or foreign objects to enter this product

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



### HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Disconnect all power before installing or working with this equipment
- Verify all connections and replace all covers before turning on power

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

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