



SM 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

Input ⁽¹⁾

Part Number	SM-OAC5	SM-OAC5A	SM-OAC5AR
Nominal Voltage [VDC]	5.0	5.0	5.0
Minimum Voltage [VDC] ⁽²⁾	2.75	2.75	2.75
Maximum Voltage [VDC]	8.0	8.0	8.0
Drop-out Voltage [VDC]	1.0	1.0	1.0
Maximum Current [mA] ⁽³⁾	20	20	20
Resistance [Ohms]	220	220	220

Part Number	SM-ODC5	SM-ODC5A	SM-ODC5MC	SM-ODC24
Nominal Voltage [VDC]	5.0	5.0	5.0	24
Minimum Voltage [VDC] ⁽²⁾	2.75	2.75	2.75	18
Maximum Voltage [VDC]	8.0	8.0	8.0	32
Drop-out Voltage [VDC]	1.0	1.0	1.0	1.0
Maximum Current [mA] ⁽³⁾	18	18	18	13
Resistance [Ohms] ⁽⁴⁾	250	250	250	2000

Output ⁽¹⁾

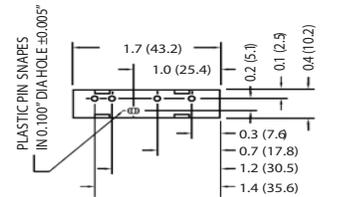
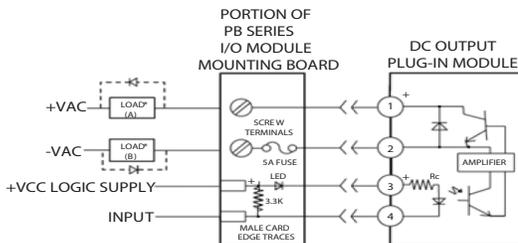
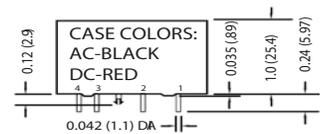
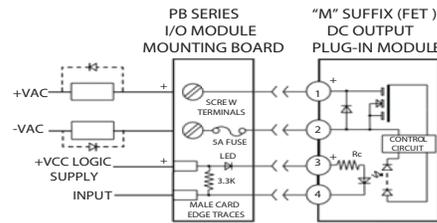
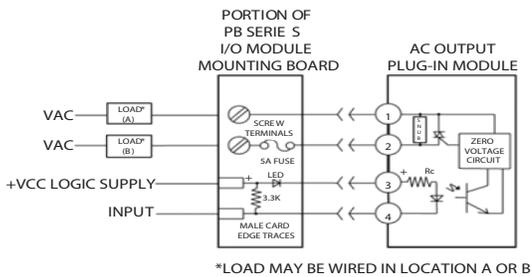
Part Number	SM-OAC5	SM-OAC5A	SM-OAC5AR
Nominal Line Voltage	120 VAC	240 VAC	240 VAC
Minimum Line Voltage	12 VAC	24 VAC	24 VAC
Max Off-State Voltage ⁽⁵⁾	400 V _{peak}	600 V _{peak}	600 V _{peak}
Max Off-State Leakage ⁽⁶⁾	0.1 mArms	0.1 mArms	0.1 mArms
Static Off-State dv/dt ⁽⁷⁾	200 V/usec	200 V/usec	200 V/usec
Maximum Rated On-State Current ⁽⁸⁾	3.5 Arms	3.5 Arms	3.5 Arms
Maximum Surge Current ⁽⁹⁾	100 A _{peak}	100 A _{peak}	100 A _{peak}
On State Voltage Drop or Resistance ⁽¹⁰⁾	1.6 V	1.6 V	1.6 V
Maximum Turn-On Time [msec] ⁽¹²⁾	8.33	8.33	0.1
Maximum Turn-Off Time [msec] ⁽¹²⁾	8.33	8.33	8.33
Input/Output Isolation Voltage ⁽¹³⁾	4000 Vrms	4000 Vrms	4000 Vrms
Input/Output Capacitance	8 pF	8 pF	8 pF
Operating Temperature Range	-30 to 80°C	-30 to 80°C	-30 to 80°C
Storage Temperature Range	-40 to 80°C	-40 to 80°C	-40 to 80°C
Line Frequency Range	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz
Weight	1.1 oz. (31.2g)	1.1 oz. (31.2g)	1.1 oz. (31.2g)

Part Number	SM-ODC5	SM-ODC5A	SM-ODC5MC	SM-ODC24
Nominal Line Voltage	5-48 VAC	5-150 VAC	5-90 VDC	5-48 VDC
Maximum Line Voltage	3.0 VAC	3.0 VAC	100 VDC	60 VDC
Max Off-State Voltage ⁽⁵⁾	60 V _{peak}	250 V _{peak}	100 VDC	60 VDC
Max Off-State Leakage ⁽⁶⁾	10 uA	10 uA	10 uA	10 uA
Static Off-State dv/dt ⁽⁷⁾	N/A	N/A	N/A	N/A
Maximum On-State Current	3.0 A	1.0 A	5.0 A	3.0 A
Maximum Surge Current ⁽⁹⁾	5.0 A	5.0 A	10 A	5.0 A
On State Voltage Drop or Resistance ⁽¹⁰⁾	1.5 V	1.5 V	0.10 Ohms	1.5 V
Maximum Turn-On Time [msec] ⁽¹²⁾	0.1	0.1	1.0	0.1
Maximum Turn-Off Time [msec] ⁽¹²⁾	8.33	8.33	0.05	0.75
Input/Output Isolation Voltage ⁽¹³⁾	4000 Vrms	4000 Vrms	1500 Vrms	4000 Vrms
Input/Output Capacitance	8 pF	8 pF	8 pF	8 pF
Operating Temperature Range	-30 to 80°C	-30 to 80°C	-30 to 80°C	-30 to 80°C
Storage Temperature Range	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C
Line Frequency Range	DC	DC	DC	DC
Weight	1.1 oz. (31.2g)	1.1 oz. (31.2g)	1.1 oz. (31.2g)	1.1 oz. (31.2g)

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 OAC modules when applied as a DC voltage rather than a peak AC voltage.
- (6) At maximum line voltage, 25°C for OAC modules, and 80°C for ODC modules.
- (7) Minimum DV/DT per EIA/NARM RS433, method RS397, DV/DT ratings do not apply to DC output models
- (8) At 40°C, derate OAC modules 58 mA/°C to 80°C, derate ODC. ODCxMC and ODCxML modules 50 mA/°C to 80°C. CSA rating of OAC modules is 3.0 Arms at 40°C.
- (9) At 25°C for 1 second maximum duration: 1 AC cycle for AC modules, 1 second for DC modules.
- (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 OAC modules is based upon 60 Hz line frequency
- (12) 1/3 H.P. at 240 VAC, 1/8 H.P. at 120 VAC.
- (13) At 25°C for 1 second maximum duration..

EQUIVALENT CIRCUIT DIAGRAMS / MECHANICAL SPECIFICATIONS



UNLESS OTHERWISE SPECIFIC D
DIMENSIONS: INCHES (MILLIMETERS)
TOLERANCE: $\pm 0.020 (\pm 0.50)$

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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