M 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

Part Number	M-OAC5	M-OAC5A	M-OAC5AH	M-OAC24A
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]	20	20	20	13
Resistance [Ohms] [4]	220	220	220	2000

Part Number	M-ODC5	M-ODC5A	M-ODC5F	M-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

Copyright © 2024 Sensata Technologies, Inc.

Output

Part Number	M-OAC5	M-OAC5A	M-OAC5AH	M-OAC24A
Nominal Line Voltage	120 VAC	240 VAC	240 VAC	240 VAC
Minimum Line Voltage	12 VAC	24 VAC	24 VAC	24 VAC
Maximum Line Voltage	140 VAC	280 VAC	280 VAC	280 VAC
Max Off-State Voltage [5]	400 Vpeak	600 Vpeak	600 Vpeak	600 Vpeak
Max Off-State Leakage [6]	0.1mArms	0.1mArms	0.1mArms	0.1mArms
Static Off-State dv/dt [7]	200 V/usec	200 V/usec	200 V/usec	200 V/usec
Maximum Rated On-State Current [8]	3.5 Arms	3.5 Arms	5.0 Arms	3.5 Arms
Minimum On-State Current	50 mArms	50 mArms	50 mArms	50 mArms
Max Surge Current [9]	100 Apeak	100 Apeak	100 Apeak	100 Apeak
On-State Voltage Drop or Resistance [10]	1.6 V	1.6 V	1.6 V	1.6 V
Maximum Turn-On Time [msec] [13]	8.33	8.33	8.33	8.33
Maximum Turn-Off Time [msec] [13]	8.33	8.33	8.33	8.33
Input/Output Isolation Voltage [14]	4000 Vrms	4000 Vrms	4000 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	47 to 63 Hz	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)	1.1 oz. (31.2g)

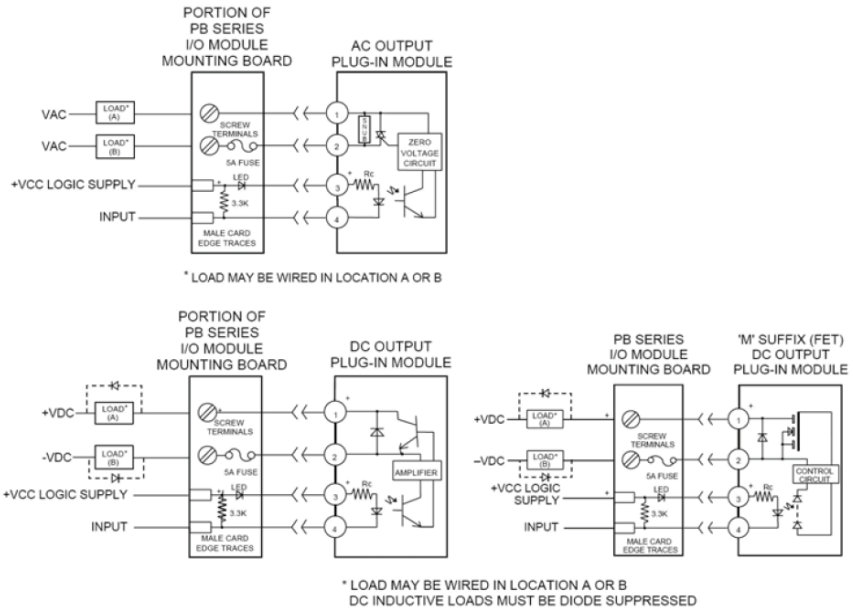
Part Number	M-ODC5	M-ODC5A	M-ODC5F	M-ODC24
Nominal Line Voltage	5-48 VDC	5-150 VDC	5-48 VDC	5-48 VDC
Minimum Line Voltage	3.0 VDC	3.0 VDC	3.0 VDC	60 VDC
Maximum Line Voltage	60 VDC	250 VDC	60 VDC	60 VDC
Max Off-State Voltage [5]	60 VDC	250 VDC	60 VDC	60 VDC
Max Off-State Leakage [6]	10 uA	10 uA	10 uA	10 uA
Static Off-State dv/dt [7]	N/A	N/A	N/A	N/A
Maximum Rated On-State Current [8]	3.0 A	1.0 A	3.0 A	3.0 A
Minimum On-State Current	10 mA	10 mA	10 mA	10 mA
Max Surge Current [9]	5.0 A	5.0 A	5.0 A	5.0 A
On-State Voltage Drop or Resistance [10]	1.5 V	1.5 V	1.5 V	1.5 V
Maximum Turn-On Time [msec] [13]	0.1	0.1	0.025	0.1
Maximum Turn-Off Time [msec] [13]	0.75	0.75	0.05	0.75
Input/Output Isolation Voltage [14]	4000 Vrms	4000 Vrms	4000 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)

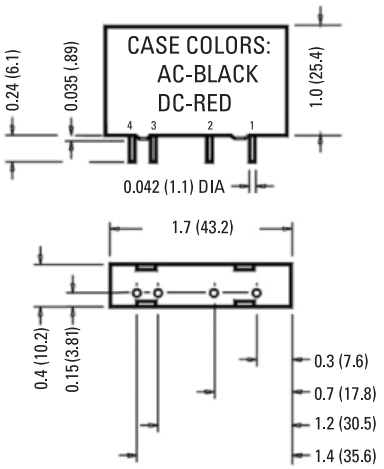
Copyright © 2024 Sensata Technologies, Inc.

GENERAL NOTES

[1] Specifications apply to an ambient temperature of -30 to 80 °C unless otherwise noted.
[2] Whitout 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 peek 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 raitings 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 50mA/°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] At 25°C for 1 second maximum duration.
[13] 1/3 HP at 240 VAC 1/8 HP at 120 VAC.
[14] At 25°C for 1 second maximum duration.

EQUIVALENT CIRCUIT DIAGRAMS / MECHANICAL SPECIFICATIONS





UNLESS OTHERWISE SPECIFIED
DIMENSIONS: INCHES (MILLIMETERS)
TOLERANCE: ±0.020 (±0.50)

AGENCY APPROVALS & CERTIFICATIONS

E46203 38595

Copyright © 2024 Sensata Technologies, Inc.

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.

Datasheets provided by Sensata Technologies, Inc., its subsidiaries and/or affiliates ("Sensata") are solely intended to assist third parties ("Buyers") who are developing systems that incorporate Sensata products (also referred to herein as "components"). Buyer understands and agrees that Buyer remains responsible for using its independent analysis, valuation, and judgment in designing Buyer's systems and products. Sensata datasheets have been created using standard laboratory conditions and engineering practices. Sensata has not conducted any testing other than that specifically described in the published documentation for a particular datasheet. Sensata may make corrections, enhancements, improvements, and other changes to its datasheets or components without notice.
Buyers are authorized to use Sensata datasheets with the Sensata component(s) identified in each particular datasheet. HOWEVER, NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE TO ANY OTHER SENSATA INTELLECTUAL PROPERTY RIGHT, AND NO LICENSE TO ANY THIRD PARTY TECHNOLOGY OR INTELLECTUAL PROPERTY RIGHT, IS GRANTED HEREIN. SENSATA DATASHEETS ARE PROVIDED "AS IS". SENSATA MAKES NO WARRANTIES OR REPRESENTATIONS WITH REGARD TO THE DATASHEETS OR USE OF THE DATASHEETS, EXPRESS, IMPLIED, OR STATUTORY, INCLUDING ACCURACY OR COMPLETENESS. SENSATA DISCLAIMS ANY WARRANTY OF TITLE AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, QUIET POSSESSION, AND NON-INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS WITH REGARD TO SENSATA DATASHEETS OR USE THEREOF.
All products are sold subject to Sensata's terms and conditions of sale supplied at www.sensata.com. SENSATA ASSUMES NO LIABILITY FOR APPLICATIONS ASSISTANCE OR THE DESIGN OF BUYERS' PRODUCTS. BUYER ACKNOWLEDGES AND AGREES THAT IT IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL LEGAL, REGULATORY, AND SAFETY-RELATED REQUIREMENTS CONCERNING ITS PRODUCTS, AND ANY USE OF SENSATA COMPONENTS IN ITS APPLICATIONS, NOTWITHSTANDING ANY APPLICATIONS-RELATED INFORMATION OR SUPPORT THAT MAY BE PROVIDED BY SENSATA.
Mailing Address: Sensata Technologies, Inc., 529 Pleasant Street, Attleboro, MA 02703, USA

CONTACT US

Americas
+1 (877) 502 5500 – Option 2
sales.crydom@sensata.com
Europe, Middle East & Africa
+44 (1202) 416170
ssr-info.eu@sensata.com
Asia Pacific
sales.isasia@list.sensata.com
China +86 (21) 2306 1500
Japan +81 (45) 277 7117
Korea +82 (31) 601 2004
India +91 (80) 67920890
Rest of Asia +886 (2) 27602006 ext 2808

Copyright © 2024 Sensata Technologies, Inc.

Rev:03/25/24_ ECN 20395 FDE-07-01 Rev. B