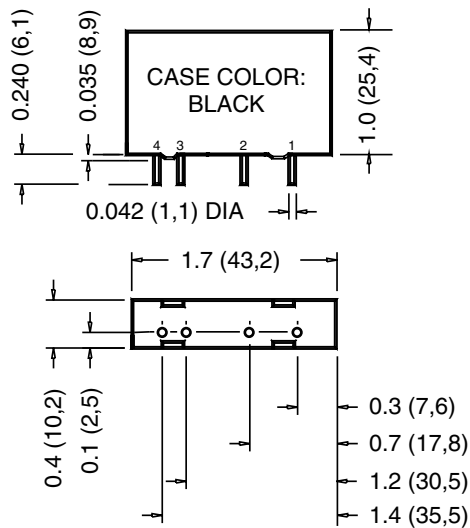
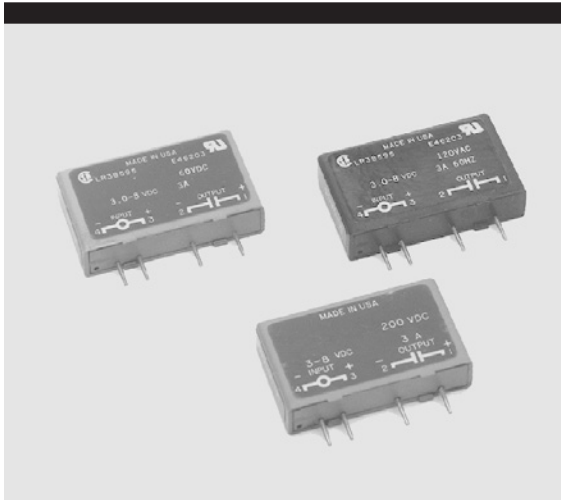


DIGITAL I/O MODULES

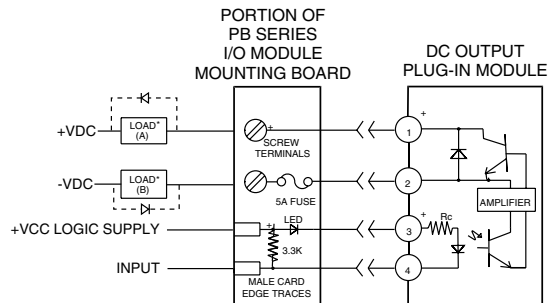
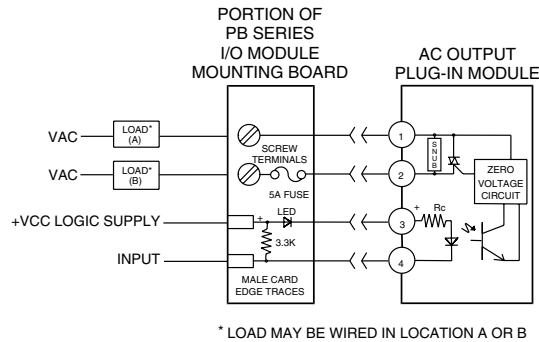
M SERIES OUTPUT MODULES



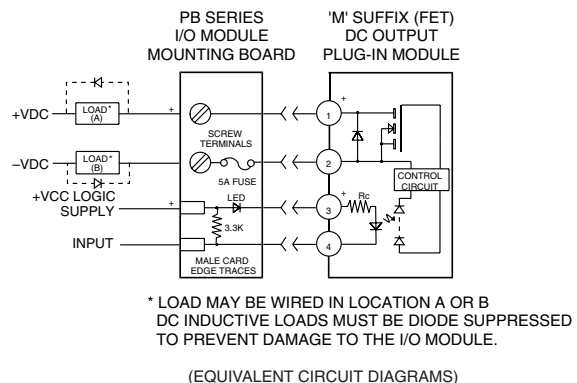
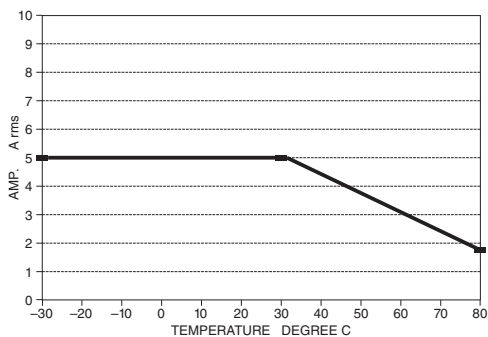
DIMENSIONS: INCHES (MILLIMETERS)
TOLERANCE: ± 0.020 ($\pm 0,50$)

FEATURES:

- CE Compliant
- 5.0 Amp AC (MOAC5AH) and DC Modules Available
- UL Recognized/Horse Power Rated (E79183)/CSA Certified (38595)
- AC Modules have High Current Thyristor with 100 Amp Surge Capability
- Zero or Random Turn-On Available in AC Modules
- Plug into Mounting Boards for M Series Modules
- 4 kV Optical Isolation (1500 VAC Optical Isolation for FET DC Output Modules)
- Industry Standard Packaging



DERATING CURVE FOR MOAC5AH:



(EQUIVALENT CIRCUIT DIAGRAMS)

Products and specifications subject to change without notice.
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DIGITAL I/O MODULES

M SERIES OUTPUT MODULES

INPUT SPECIFICATIONS: (1)

Model Number	MOAC5 MOAC5A MOAC5AR MOAC5R MOAC5AH	MODC5 MODC5A MODC5F MODC5MA MODC5MC MODC5ML	MOAC24 MOAC24A MODC24	Units
Nominal Voltage	5.0	5.0	24.0	VDC
Minimum Voltage (2)	2.75	2.75	18.0	VDC
Maximum Voltage	8.0	8.0	32.0	VDC
Drop-Out Voltage	1.0	1.0	1.0	VDC
Maximum Current (3)	20.0	18.0	13.0	mA
Resistance (4)	220	250	2000	Ohms

OUTPUT SPECIFICATIONS: (1)

Model Number	MOAC5 MOAC5R MOAC24	MOAC5A MOAC5AR MOAC24A	MOAC5AH	MODC5 MODC24	MODC5A	MODC5F	MODC5MA	MODC5MC	MODC5ML
Nominal Line Voltage	120 VAC	240 VAC	240 VAC	5-48 V	5-150 V	5-48 V	5-150 V	5-90 V	5-48 V
Minimum Line Voltage	12 VAC	24 VAC	24 VAC	3.0 V	3.0 V	3.0 V	1.0 V	1.0 V	1.0 V
Maximum Line Voltage	140 VAC	280 VAC	280 VAC	60 V	250 V	60 V	200 V	100 V	50 V
Max Off-State Voltage (5)	400 Vpeak	600 Vpeak	600 Vpeak	60 V	250 V	60 V	200 V	100 V	50 V
Max Off-State Leakage (6)	.1 mArms	.1 mArms	.1 mArms	10 µA	10 µA	10 µA	10 µA	10 µA	10 µA
Static Off-State dv/dt (7)	200 V/µsec	200 V/µsec	200 V/µsec	N/A	N/A	N/A	N/A	N/A	N/A
Maximum Rated On-State Current (8)	3.5 Arms	3.5 Arms	5.0 A	3.0 A	1.0 A	3.0 A	3.0 A	5.0 A	5.0 A
Min On-State Current	50 mArms	50 mArms	50 mArms	10 mA	10 mA	10 mA	1.0 mA	1.0 mA	1.0 mA
Max Surge Current (9)	100 Apeak	100 Apeak	100 Apeak	5.0 A	5.0 A	5.0 A	10 A	10 A	10 A
On-State Voltage Drop or Resistance (10)	1.6 V	1.6 V	1.6 V	1.5 V	1.5 V	1.5 V	0.25 Ω	0.10 Ω	0.05 Ω
H.P. Rating (13)	1/8 H.P.	1/3 H.P.	1/2 H.P.	N/A	N/A	N/A	N/A	N/A	N/A

GENERAL SPECIFICATIONS: (1)

Model Number	MOAC5 MOAC5A MOAC5AH MOAC24 MOAC24A	MOAC5R MOAC5AR	MODC5 MODC5A MODC24	MODC5F	MODC5MA MODC5MC	Units
Operating Temperature Range	-30 to 80	-30 to 80	-30 to 80	-30 to 80	-30 to 80	°C
Storage Temperature Range	-40 to 100	-40 to 100	-40 to 100	-40 to 100	-40 to 100	°C
Maximum Turn-on Time (11)	8.33	0.1	0.1	0.025	1.0	mSec
Maximum Turn-off Time (11)	8.33	8.33	0.75	0.05	0.05	mSec
Input/Output Isolation Voltage (12)	4000	4000	4000	4000	1500	VAC
Input/Output Capacitance (typical)	8	8	8	8	8	pF
Line Frequency Range	47 to 63	47 to 63	DC	DC	DC	Hertz
Weight	.65 oz	.65 oz	.65 oz	.65 oz	.65 oz	

TABLE OF MODEL NUMBER SUFFIXES IDENTIFYING OPTIONAL FEATURES

Suffix	Feature
A	High voltage versions (240 VAC for AC modules, 250 VDC for DC modules).
AH	High voltage AC 5 amp
F	Fast-switching version of DC modules.
MA	FET output version of DC module, 3.0 A, 200 VDC.
MC	FET output version of DC module, 5.0 A, 100 VDC.
ML	FET output version of DC module, 5.0 A, 50 VDC.
R	Random AC voltage turn-on.

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 volt 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 MOAC modules when applied as a DC voltage rather than peak AC voltage.
- (6) At maximum line voltage, 25°C for MOAC modules, and 80°C for MODC modules.
- (7) Minimum dv/dt per EIA/NARM RS443, method RS397. dv/dt ratings do not apply to MODC modules.
- (8) At 40°C, derate MOAC modules by 58 mA/°C to 80°C; derate MODC and MODCxMA modules by 50 mA/°C to 80°C; derate MODCxMC and MODCxML modules by 125 mA/°C to 80°C. CSA rating of MOAC modules is 3.0 Arms at 40°C. For MOAC5AH see derating curve.
- (9) At 25°C. Maximum duration: 1 AC cycle for MOAC modules, 1 second for MODC modules.
- (10) At maximum rated on-state current and 25°C.
- (11) At maximum line voltage, maximum rated output current, nominal input voltage, 25°C. Switching speed of MOAC modules based upon 60 Hz line frequency.
- (12) At 25°C for 1 second maximum duration.
- (13) 1/3 H.P. at 240 VAC, 1/8 H.P. at 120 VAC.

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