DATAFORTH®

SCMD Series Single Point Discrete I/O

SPECIFICATIONS

AC/DC Input Modules

INPUT	MIAC5	MIAC5A	MIAC5E	MIAC24	MIAC24A	Units
Nominal Input Voltage	120	240	24	120	240	Vrms/Vdc
Minimum Input Voltage	90	180	10	90	180	Vrms/Vdc
Maximum Input Voltage	140	280	60	140	280	Vrms/Vdc
Maximum Input Current	10	8	30	10	8	mA rms
Drop Out Current	2.5	1.5	1.0	2.5	1.5	mA rms
Allowable Off-state Current	3.0	2.0	1.0	3.0	2.0	mA rms
Allowable Off-state Voltage	50	120	2.0	50	120	Vrms/Vdc

OUTPUT						
Nominal Logic Voltage	5	5	5	24	24	V dc
Minimum Logic Voltage*	1.5	1.5	1.5	16.5	16.5	V dc
Maximum Logic Voltage*	6	6	6	30.5	30.5	V dc
Typical Logic Supply Current	10	10	10	10	10	mA dc
Max. Logic Supply Current**	18.5	18.5	18.5	14	14	mA dc
Max. Logic Supply Leakage Cur.**	10	10	10	10	10	µA dc
Maximum Output Voltage	30	30	30	30	30	V dc
Maximum Output Current	50	50	50	50	50	mA dc
Max. Output Leakage Current**	10	10	10	10	10	µA dc
Maximum Output Voltage Drop	200	200	200	200	200	mV dc
Maximum Turn-on Time (Vac)	20	20	20	20	20	msec
Maximum Turn-off Time (Vac)	30	30	30	30	30	msec
Maximum Turn-on Time (Vdc)	1	1	1	1	1	msec
Maximum Turn-off Time (Vdc)	1	1	1	1	1	msec

- * @ nominal voltage with LED on mounting board
- ** @ maximum logic voltage

GENERAL SPECIFICATIONS

Operating Temperature Range	-30 to +80°C
Storage Temperature range	-40 to +100°C
Isolation	4,000 V rms
Capacitance input to output	8 pF
Line frequency range	0 to 63 Hz

APPLICATION NOTES

- Do not install or remove modules in live (electrically hot) circuits. High voltage may be present.
- Input Connections are non-polarized.

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SPECIFICATIONS

DC Input Modules

INPUT	MIDC5	MIDC5F	MIDC5N	MIDC24	Units
Nominal Input Voltage	24	24	24	24	Vdc
Minimum Input Voltage	3.3	3.3	10	3.3	Vdc
Maximum Input Voltage	32	32	60	32	Vdc
Nominal Input Resistance	1K	1K	1K	1K	Ohm
Maximum Input Current	32	32	30	32	mA dc
Drop Out Current	1.0	1.0	1.0	1.0	mA dc
Allowable Off-state Current	1.0	1.0	1.0	1.0	mA dc
Allowable Off-state Voltage	2.0	2.0	2.0	2.0	Vdc

OUTPUT					
Nominal Logic Voltage	5	5	5	24	V dc
Minimum Logic Voltage	1.5	1.5	1.5	16.5	V dc
Maximum Logic Voltage	6	6	6	30.5	V dc
Typical Logic Supply Current	10	10	10	10	mA dc
Maximum Logic Supply Current	18.5	18.5	18.5	14	mA dc
Max. Logic Supply Leakage Cur.	10	10	10	10	µA dc
Maximum Output Voltage	30	30	30	30	V dc
Maximum Output Current	50	50	50	50	mA dc
Max. Output Leakage Current	10	10	10	10	µA dc
Maximum Output Voltage Drop	200	200	200	200	mV dc
Maximum Turn-on Time	300	30	1000	300	µsec
Maximum Turn-off Time	600	60	1000	600	µsec

GENERAL SPECIFICATIONS

Operating Temperature Range	-30 to +80°C
Storage Temperature range	-40 to +100°C
Isolation	4,000 V rms
Capacitance input to output	8 pF

APPLICATION NOTES

- Do not install or remove modules in live (electrically hot) circuits. High voltage may be present.
- Input Connections are polarized.

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SPECIFICATIONS

AC Output Modules

INPUT	MOAC5	MOAC5A	MOAC5B	MOAC5C	MOAC24	MOAC24A	Units
Nominal Input Voltage	5	5	5	5	24	24	V dc
Minimum Input Voltage @ pin 3	2.5	2.5	2.5	2.5	16.5	16.5	V dc
Maximum Input Voltage @ pin 3	7.5	7.5	7.5	7.5	30.5	30.5	V dc
Must Turn-off Voltage	2.0	2.0	2.0	2.0	2.0	2.0	V dc
Typical Input Current	10	10	10	10	10	10	mA dc
Maximum Input Current	27	27	27	27	13.5	13.5	mA dc
Nominal Input Resistance	240	240	240	240	2.2 K	2.2 K	Ohm

OUTPUT							
Nominal Line Voltage	120	240	240	240	120	240	V rms
Maximum Line Voltage	140	280	280	300	140	280	V rms
Minimum Line Voltage	12	24	24	24	12	24	V rms
Maximum Peak Off-state Voltage	400	600	600	600	400	600	V peak
Max. Off-state leakage Current	2.5	4.5	1.5	4.5	2.5	4.5	mA rms
Static Off-state (dv/dt)	200	200	200	200	200	200	V/µs
Maximum On-state Current*	3	3	3	3	3	3	A rms
Minimum On-state Current	50	50	50	50	50	50	mA rms
Maximum 1 Cycle Surge	100	100	100	100	100	100	A peak
Peak On-state Voltage	1.6	1.6	1.6	1.6	1.6	1.6	V peak
Response Time	0.5	0.5	0.5	0.5	0.5	0.5	Cycle

** Derate 33mA/deg. above 25C*

GENERAL SPECIFICATIONS

Operating Temperature Range	-30 to +80°C
Storage Temperature range	-40 to +100°C
Isolation	4,000 V rms
Capacitance input to output	8 pF
Line frequency range	47 to 63 Hz

APPLICATION NOTES

- Do not install or remove modules in live (electrically hot) circuits. High voltage may be present.
- Output connections are non-polarized.
  - All units are zero-cross outputs.
  - All units are normally open.

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SPECIFICATIONS

DC Output Modules

INPUT	MODC5	MODC5A	MODC5ML	MODC24	Units
Nominal Input Voltage	5	5	5	24	V dc
Minimum Input Voltage @ pin 3	2.5	2.5	2.5	16.5	V dc
Maximum Input Voltage @ pin 3	7.5	7.5	7.5	30.5	V dc
Must Turn-off Voltage	1.0	2.0	2.0	1.0	V dc
Typical Input Current	10	10	10	11	mA dc
Maximum Input Current	27	27	27	15	mA dc
Nominal Input Resistance	240	240	240	2.2 K	Ohm

OUTPUT					
Nominal Line Voltage	24	100	24	24	V dc
Maximum Line Voltage	60	200	50	60	V dc
Minimum Line Voltage	3	5	0	3	V dc
Maximum Peak Off-state Voltage	60	200	50	60	V
Max. Off-state leakage Current	1.0	2.0	0.01	1.0	mA dc
Maximum On-state Current	3*	1**	5†	3*	A dc
Minimum On-state Current	10	10	10	10	mA dc
Maximum 1 Second Surge	5	5	10	5	A peak
Peak On-state Voltage @ 25°C	1.5	1.5	0.25	1.5	V peak
Maximum Turn-on Time	25	50	1000	25	µ sec
Nominal Turn-on Time	10	10	50	10	µ sec
Maximum Turn-off Time	50	100	2000	50	µ sec
Derating per ° Above 60°C	33*	20**	50†	33*	mA

** Derate 33mA/deg. above 25°C* *** Derate 20mA/deg. above 60°C* *† Derate 50mA/deg. above 60°C*

GENERAL SPECIFICATIONS

Operating Temperature Range	-30 to +80°C
Storage Temperature range	-40 to +100°C
Isolation	4,000 V rms
Capacitance input to output	8 pF

APPLICATION NOTES

- Do not install or remove modules in live (electrically hot) circuits. High voltage may be present.
- Output connections are polarized.
  - An externally located commutating diode must be installed across inductive loads.

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DATAFORTH®

SCMD Series Single Point Discrete I/O

SPECIFICATIONS

Relay Output Modules

INPUT	MORO5	MORC5	MORO24	MORC24	Units
Nominal Input Voltage	5	5	24	24	V dc
Minimum Input Voltage @ pin 3	3	3	18	18	V dc
Maximum Input Voltage @ pin 3	5.5	5.5	30.5	30.5	V dc
Must Turn-off Voltage	1.0	1.0	3.0	3.0	V dc
Typical Input Current	1.3	1.3	2.2	2.2	mA dc
Maximum Input Current	2.2	2.2	2.5	2.5	mA dc
Nominal Input Resistance	2K	2K	10K	10K	Ohm
Typical V+ supply current	50	50	15	15	mA dc

OUTPUT					
Nominal Line Voltage	5	5	5	5	V dc/Vrms
Maximum Line Voltage	100/125	100/125	100/125	100/125	V dc/Vrms
Minimum Line Voltage	0	0	0	0	V dc/Vrms
Maximum Peak Off-state Voltage	100/125	100/125	100/125	100/125	V dc/Vrms
Max. Off-state leakage Current	0	0	0	0	mA dc
Maximum On-state Current	1A, 30 Wdc, 62.5 VA	1A, 30 Wdc, 62.5 VA	1A, 30 Wdc, 62.5 VA	1A, 30 Wdc, 62.5 VA	Resistive Load
Minimum On-state Current	0	0	0	0	mA
Maximum 1 Second Surge	2.5	2.5	2.5	2.5	A peak
Peak On-state Voltage	0.25	0.25	0.25	0.25	V dc
Maximum Turn-on Time	2	2	2	2	msec
Maximum Turn-off Time	1	1	1	1	msec

Notes:
1. SCMD-MORO5 and SCMD-MORO24 contacts normally open (N/O).
2. SCMD-MORC5 and SCMD-MORC24 contacts normally closed (N/C).

GENERAL SPECIFICATIONS

Operating Temperature Range	-30 to +80°C
Isolation	1000 V rms
Capacitance input to output	8 pF

APPLICATION NOTES

- Relay output modules are rated for resistive loads only.

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