

Compact Solid State Power Controller Delivers Big Performance



The DIN-A-MITE® A power controller provides a low-cost, highly compact and versatile solid state option for controlling electric heat. This controller is designed and manufactured with the quality features expected from Watlow®, DIN-rail and panel mounting is standard on every controller. There is no need to worry about mercury, the DIN-A-MITE controller is mercury free.

Features include single-phase zero cross switching up to 25 amperes at 600VAC (see rating curve). A unique integrated design removes the guesswork associated with selecting a proper heat sink and adequate terminations for the application.

Variable time-base, 4-20mA process control and VAC/VDC input contactor versions are available. All options are model number dependent and factory configurable. This power controller also includes 200KA short circuit current rating (SCCR) tested up to 480VAC to minimize damage in the event of a short circuit when used with required fusing.

Watlow's DIN-A-MITE A is available through Watlow **SELECT**®, a program that enables you to quickly identify, configure and receive your thermal products faster and easier than ever before. With **SELECT**, you use a variety of tools to guide your decision, configure products for an exact fit and quickly receive your order. Visit www.watlow.com/select to learn more.

Features and Benefits

200KA SCCR with proper fusing

- Minimizes damage in the event of a short circuit

DIN-rail and panel mounting

- Provides versatility and quick, low-cost installation

Compact size

- Reduces panel space and cost

Touch-safe terminals

- Increases safety for installer and user

Mercury free

- Assures environmental safety

Faster switching with solid state

- Saves energy and extends heater life

UL® 508 listed, C-UL®, RoHS 2 and CE with filter

- Meets applications requiring agency approval
- Reduces end product documentation cost

Back-to-back SCR design

- Ensures a rugged design

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ISO 9001



Registered Company
Winona, Minnesota USA



Specifications

Operator Interface

- Control input
- Input indication LED

Amperage

- Single-phase, see the output rating curve
- Max. I²t for fusing: 4000A²sec
- Latching current: 400mA max.
- Holding current: 200mA max.
- Power dissipation is 1.2 watts per ampere switched
- 200KA SCCR, Type 1 and 2 approved with the recommended fusing; see user manual.

Line Voltage

- 24 to 660VAC model number dependent; see ordering information
- Off-state leakage: 1mA at 77°F (25°C) max.
- 50/60Hz independent

Control Mode, Zero Cross

- Control option C: VDC input, contactor output
- Control option K: VAC input, contactor output
- To increase service life on contactor models, the cycle time should be less than three seconds
- Control option F: 4 to 20mA DC input, variable time-base control output (3 cycles on, 3 cycles off at 50% power)

Control Input

- AC contactor: 24VAC ±10%, 120VAC +10/-25%, 240VAC +10/-25% @ 25mA max.
- DC contactor: 4.5 to 32VDC: max. current @ 4.5VDC is 8mA
- Loop powered linear current 4 to 20mA DC: loop-powered, control option F0 only (requires current source with 8.0VDC available, no more than two DIN-A-MITE inputs can be connected in series)

Agency Approvals

- CE with proper filter:
204/108/EC Electromagnetic Compatibility Directive
EN 61326-1: Industrial Immunity Class A Emissions
2006/95/EC Low Voltage Directive
EN 50178 Safety Requirements
Installation category III, pollution degree 2
-  UL® 508 listed and C-UL® File E73741
- 2011/65/EU RoHS 2

Control Input Terminals

- Compression: will accept 24 to 16 AWG (0.2 to 1.5 mm²) wire

Line and Load Terminals

- Compression: will accept 18 to 8 AWG (0.8 to 8.4 mm²) wire

Operating Environment

- -4 to 176°F (-20 to 80°C); see the output rating curve chart for your application
- 0 to 90% RH (relative humidity), non-condensing
- Insulation tested to 3,000 meters
- Units are suitable for "Pollution degree 2"

Mounting

Options include DIN-rail or standard back panel mounting

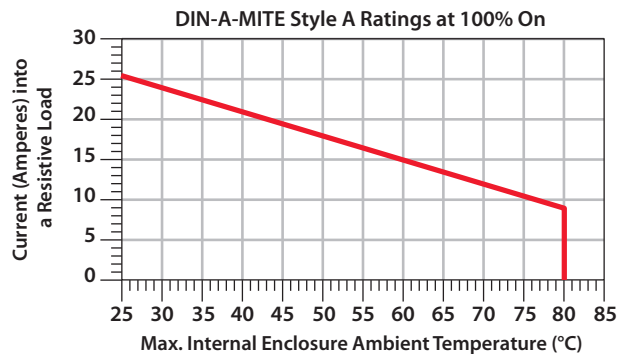
- DIN EN 50022, 35 mm by 7.5 mm
- Mount cooling fins vertically

Dimensions

- 3.7 in. (94 mm) high x 2.0 in. (50 mm) wide x 3.9 in. (98 mm) deep
- Weight: 0.71 lb (0.32kg)

Specifications are subject to change without notice.

Output Rating Curve



Ordering Information

Part Number

①	②	③	④	⑤ ⑥	⑦ ⑧	⑨	⑩	⑪ ⑫
D	A	1	0			0		

③	Phase
1 =	1-phase, 1 controlled leg

④	Cooling and Current Rating (see rating curve)
0 =	Natural convection current rating 18A @50°C

⑤ ⑥	Line and Load Voltage
02 =	24 to 48VAC
24 =	120 to 240VAC
60 =	277 to 600VAC

⑦ ⑧	Control
C0 =	4.5 to 32VDC input, contactor output
F0 =	4 to 20mA DC input, variable time-base output
K1 =	22 to 26VAC input, contactor output
K2 =	100 to 120VAC input, contactor output
K3 =	200 to 240VAC input, contactor output

⑩	User Manual
0 =	English
1 =	German
2 =	Spanish
3 =	French

⑪ ⑫	Custom Options
00 =	Standard part
XX =	Any letter or number, custom options

Recommended Fuses and Fuse Holders

Semiconductor Fuses and Holders

Part Nbr.	Description
17-8025	25A fuse
17-5110	10-25A holder

DFJ Combination Fuses and Holders

Part Nbr.	Description
0808-0325-0020	20A fuse
0808-0325-0030	30A fuse
0808-0326-1530	15-30A holder



Single- and Three-Phase Power in a Compact and Safe Package



The DIN-A-MITE® B power controller provides a low-cost, highly compact and versatile solid state option for controlling electric heat. This controller is designed and manufactured with the quality features expected from Watlow®. DIN-rail and panel mounting are standard on every control. There is no need to worry about mercury, the DIN-A-MITE controller is mercury free.

Features include single-phase and three-phase zero cross switching up to 40 and 22 amperes, respectively, at 600VAC (see rating curve). A unique, integrated design removes the guesswork associated with selecting a proper heat sink and adequate terminations for the application.

Variable time-base, 4-20mA process control and VAC/VDC input contactor versions are available. A shorted output alarm option is also available. All options are model number dependent and factory configurable. This power controller includes 200KA short circuit current rating (SCCR) tested up to 480VAC to minimize damage in the event of a short circuit when used with required fusing.

Watlow's DIN-A-MITE B is available through Watlow **SELECT**®, a program that enables you to quickly identify, configure and receive your thermal products faster and easier than ever before. With **SELECT**, you use a variety of tools to guide your decision, configure products for an exact fit and quickly receive your order. Visit www.watlow.com/select to learn more.

Features and Benefits

200KA SCCR with proper fusing

- Minimizes damage in the event of a short circuit

DIN-rail and panel mounting

- Provides versatility and quick, low-cost installation

Compact size

- Reduces panel space and cost

Touch-safe terminals

- Increases safety for installer and user

Single- and three-phase power

- Permits use in a variety of applications

Mercury free

- Assures environmental safety

Faster switching with solid state

- Saves energy and extends heater life

UL® 508 listed, C-UL®, RoHS 2 and CE with filter

- Meets applications requiring agency approval
- Reduces end product documentation cost

Back-to-back SCR design

- Ensures a rugged design

Shorted output alarm (optional)

- Simplifies troubleshooting and reduces downtime

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ISO 9001



Registered Company
Winona, Minnesota USA

 **WATLOW®**
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Specifications

Operator Interface

- Control input and indication light
- Alarm output and indication light

Amperage Rating

- See the output rating curve
- Max. surge current for 16.6ms, 380A peak
- Max. I²t for fusing is 4,000A²s
- Latching current: 400mA max.
- Holding current: 200mA max.
- Off-state leakage 1mA at 77°F (25°C) max.
- Power dissipation = 1.2 watts per ampere per leg switched
- 200KA SCCR, Type 1 and 2 approved with the recommended fusing; see user manual.

Line Voltage

- 24 to 660VAC model number dependent; see ordering information

Control Mode, Zero Cross

- Control option C: VDC input, contactor output
- Control option K: VAC input, contactor output
- To increase service life on contactor models, the cycle time should be less than three seconds
- Control option F: 4 to 20mA DC input, variable time-base control output

Control Input

- AC contactor: 24VAC ±10%, 120VAC +10/-25%, 240VAC +10/-25% @ 25mA max. per controlled leg
- DC contactor: 4.5 to 32VDC: max. current @ 4.5VDC is 6mA per leg. Add 2mA per LED used to the total current
- Loop powered linear current 4 to 20mA DC: loop-powered, control option F0 only (requires current source with 8.0VDC available, no more than two DIN-A-MITE inputs can be connected in series)

Alarm

Shorted SCR Alarm Option

- Alarm state when the input command signal off and a 10A or more load current is detected by the current transformer (two turns required for 5A and three turns for 2.5A)

Alarm Output

- Energizes on alarm, non-latching
- Triac 24 to 240VAC, external supply with a current rating of 300mA @ 77°F (25°C), 200mA @ 122°F (50°C), 100mA @ 176°F (80°C) and a holding current of 200 µA with a latching current of 5mA typical

Ordering Information

Part Number

①	②	③	④	⑤ ⑥	⑦ ⑧	⑨	⑩	⑪ ⑫
		Phase	Cooling & Current Rating	Line & Load Voltage	Control	Alarm	User Manual	Custom Options
D	B							

③	Phase
1 =	1-phase, 1 controlled leg
2 =	3-phase, 2 controlled legs
3 =	3-phase, 3 controlled legs
8 =	2 independent zones (control options C or K)
9 =	3 independent zones (control options C or K)

④	Cooling and Current Rating (see rating curve)
0 =	Natural convection

⑤ ⑥	Line and Load Voltage
02 =	24 to 48VAC
24 =	120 to 240VAC
60 =	277 to 600VAC

⑦ ⑧	Control
C0 =	4.5 to 32VDC input, contactor output
F0 =	4 to 20mA DC input, variable time-base output
K1 =	22 to 26VAC input, contactor output
K2 =	100 to 120VAC input, contactor output
K3 =	200 to 240VAC input, contactor output

Agency Approvals

- CE with proper filter:
 - 204/108/EC Electromagnetic Compatibility Directive
 - EN 61326-1: Industrial Immunity Class A Emissions
 - 2006/95/EC Low Voltage Directive
 - EN 50178 Safety Requirements
 - Installation category III, pollution degree 2
- UL[®] 508 listed and C-UL[®] File E73741
- 2011/65/EU RoHS 2

Control Input Terminals

- Compression: will accept 24 to 16 AWG (0.2. to 1.5 mm²) wire

Line and Load Terminals

- Compression: will accept 18 to 8 AWG (0.8 to 8.4 mm²) wire

Operating Environment

- See the output rating curve
- 0 to 90% RH (relative humidity), non-condensing
- Storage temperature: -40 to 185°F (-40 to 85°C)
- Operating temperature: -4 to 176°F (-20 to 80°C)
- Insulation tested to 3,000 meters

DIN-rail Mount

- DIN EN 50022, 35 mm by 7.5 mm

Back-Panel Mount

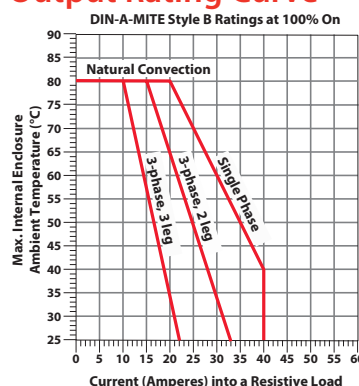
- Four mounting holes No. 6 to No. 8 (M3 to M4) fastener

Dimensions

- 3.7 in. (94 mm) high x 3.3 in. (83 mm) wide x 4.9 in. (124 mm) deep
- Weight: 1.5 lb (0.68kg)

Specifications are subject to change without notice.

Output Rating Curve



Current Rating Table

Phase	Cooling	Current at 122°F (50°C)
1	0	35A
2, 8	0	25A
3, 9	0	17A



⑨	Alarm
0 =	No alarm
S =	Shorted SCR alarm

⑩	User Manual
0 =	English
1 =	German
2 =	Spanish
3 =	French

⑪ ⑫	Custom Options
00 =	Standard part
XX =	Any letter or number, custom options

Recommended DIN-rail Mount Fuses and Fuse Holders

Semiconductor Fuses and Holders

Part Nbr.	Description
17-8020	20A fuse
17-8025	25A fuse
17-8030	32A fuse
17-8040	40A fuse
17-8050	50A fuse
17-5110	10-25A holder
17-5114	32-50A holder

DFJ Combination Fuses and Holders

Part Nbr.	Description
0808-0325-0020	20A fuse
0808-0325-0030	30A fuse
0808-0325-0040	40A fuse
0808-0325-0050	50A fuse
0808-0326-1530	15-30A holder
0808-0326-3560	35-60A holder



SCR Power Controller Delivers Up to 80 Amperes in a Compact Package

The DIN-A-MITE® C silicon controlled rectifier (SCR) power controller provides a low cost, compact and versatile solid state option for controlling electric heat. This controller is designed and manufactured with the quality features expected from Watlow®. DIN-rail, panel mount and through-wall mount versions are available.

Features include single-phase, three-phase/two leg, and three-phase/three leg, 24-600VAC operation. Models are available that independently switch one, two or three single-phase heaters. Current switching capabilities range from 30 to 80A depending on the model ordered.

Variable time-base, linear voltage and current process control or VAC/VDC input contactor versions are available. Single-phase, phase angle firing and current limiting are also available. All options are model number dependent and factory configurable. This power controller includes 200KA short circuit current rating (SCCR) tested up to 480VAC to minimize damage in the event of a short circuit when used with required fusing.

Watlow's DIN-A-MITE C is available through Watlow **SELECT®**, a program that enables you to quickly identify, configure and receive your thermal products faster and easier than ever before. With **SELECT**, you use a variety of tools to guide your decision, configure products for an exact fit and quickly receive your order. Visit www.watlow.com/select to learn more.

Features and Benefits

200KA SCCR with proper fusing

- Minimizes damage in the event of a short circuit

DIN-rail, panel and through-wall mounting

- Provides versatility and quick, low-cost installation

Compact size

- Reduces panel space and cost
- A single unit can switch up to three heaters independently

Touch-safe terminals

- Increases safety for installer and user

One- and three-phase power

- Can be used in a variety of applications

Open heater/shorted output alarm

- Notifies the user in case of an open heater or shorted output

Over-temperature protection on fan cooled units

- Shuts off output when fan is blocked or failed

Faster switching with solid state

- Saves energy and extends heater life

UL® 508 listed, C-UL®, RoHS 2 and CE with filter

- Meets applications requiring agency approval
- Reduces end product documentation cost

System solution component

- Provides single source thermal loop

Back-to-back SCR design

- Ensures a rugged design

Enhanced model options

- Phase-angle firing for single-phase
- Current limit
- Soft-start
- Single-cycle variable time base
- Open heater detection

Specifications

Operator Interface

- Control input indication light
- Alarm output and indication light
- Current limit indication LED

Amperage Rating

- See output rating curves on the next page
- Max. surge current for 16.6ms, 1,350A peak
- Max. I²t for fusing is 9100A²s
- Latching current: 500mA max.
- Holding current: 200mA max.
- Fan current: 0.14A for 24VDC; 0.12A for 120VAC; 0.06A for 240VAC
- Off-state leakage 1mA at 77°F (25°C) max.
- Power dissipation: 1.2 watts per ampere per leg switched
- 200KA SCCR, Type 1 and 2 approved with the recommended fusing; see user manual

Alarm Output

- Energizes on alarm, non latching
- Triac 24 to 240VAC, external supply with a current rating of 300mA @ 77°F (25°C), 100mA @ 176°F (80°C) and a holding current of 200µA with a latching current of 5mA typical

Agency Approvals

- CE with proper filter:
204/108/EC electromagnetic compatibility directive EN 613261: industrial immunity Class A emissions not suitable for Class B environments.
- 2006/85/EC low voltage directive EN 50178 safety requirements installation category III, pollution degree 2
- UL® 50 Type 4X enclosure, Class 1, Div. 2 per ANSI/ISA 12.12.01. Through-wall heat sink models 14 File 184390
- UL® 508 listed and C-UL® File E73741
- 2011/65/EU RoHS 2
- Shock and vibration tested to IEC 60068-2-32
- Vibration tested to IEC 60068-2-6

Control Input Terminals

- Compression: will accept 24 to 16 AWG (0.2 to 1.5mm²) wire
- Torque to 4.4 in. lb (0.5 Nm) max. with 1/8 in. (3.5 mm) blade

Line and Load Terminals

- Compression: will accept 14 to 3 AWG (2.5 to 25mm²) wire blade screwdriver
- Torque to 24 in. lb (2.7 Nm) max. with a 1/4 in. (6.4 mm) blade screwdriver, or a type 1A, #2 Pozi driver

Operating Environment

- See output rating curve chart on the next page
- 0 to 90% RH (relative humidity), non-condensing
- Storage temperature: -40 to 185°F (-40 to 85°C)
- Operating temperature: -29 to 176°F (-34 to 80°C)
- Insulation tested to 3,000 meters

DIN-Rail Mount

- DIN EN 50022, 35 mm by 7.5 mm

Back-Panel Mount

- Four mounting holes No. 6 to No. 8 (M3 to M4) fastener

Through-Wall Mount

- See page 4 for through-wall panel cutout (Note: Mount cooling fins vertically.)

Additional Specifications Basic Models

Line Voltage

- 24 to 48VAC units: 20.4VAC min. to 53VAC max.
- 100 to 240VAC units: 48VAC min. to 265VAC max.
- 277 to 600 VAC units: 85VAC min. to 660VAC max.

Phase and Zone Options

- Single-phase, two-leg three-phase and three-leg three-phase
- Two-zone and three-zone models switch heaters independently

Control Mode, Zero-Cross

- Control option C: VDC input, contractor output
- Control option K: VAC input, contractor output
- Control option F: 4 to 20mA DC input, variable time-base control output.

Control Input

- AC: 24VAC ±10%, 120VAC +10/-25%, 240VAC +10/-25% @ 25mA max. per controlled leg
- DC: 4.5 to 3VDC: max. current @ 4.5VDC is 6mA per leg, add 2mA per LED used to the total current
- 4 to 20mA DC: loop-powered, (requires current source with 8.3VDC available, no more than two DIN-A-MITE inputs can be connected in series)

Shorted SCR Alarm Option (single zone models)

- Alarm state when the input command signal is off and 10A is detected by the current transformer

Additional Specifications Enhanced Models

Line Voltage Enhanced Models

- 100 to 120VAC, +10/-15%
- 200 to 208VAC, +10/-15%
- 230 to 240VAC, +10/-15%
- 277VAC, +10/-15%
- 400VAC, +10/-15%
- 480VAC, +10/-15%
- 600VAC, +10/-15%

Line Power

- 50 to 60Hz $\pm 5\%$

Output Options

- Single cycle, variable time-base
- Phase angle control, single-phase only

Control Input

- 0 to 20mA, 4 to 20mA, 0 to 5VDC and 0 to 10VDC
- Input impedance 250 Ω for milliamp inputs, 5k Ω for linear

Linearity Single-Cycle Variable Timebase

- $\pm 5\%$ input to output power over 0 to 100% of span between calibration points.

Linearity Phase Angle

- Output on-time directly proportional to the command signal
- Output on-time as accurate to within 5% of the command signal input at 25 degrees C ambient.

Resolution

- Better than 0.1% of input span with respect to output change

Soft Start Phase Angle

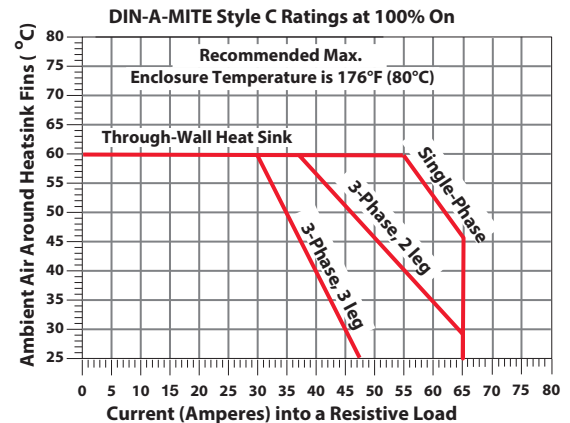
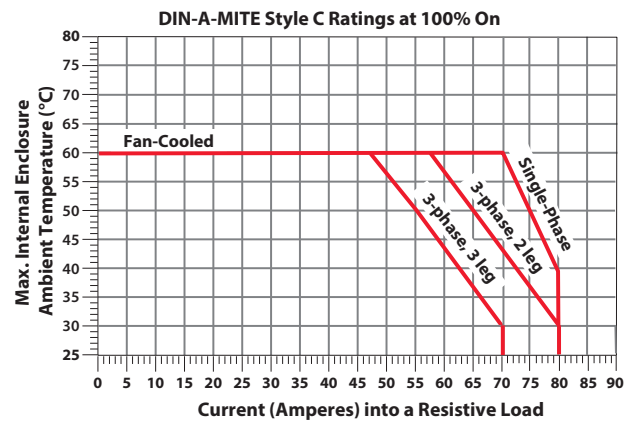
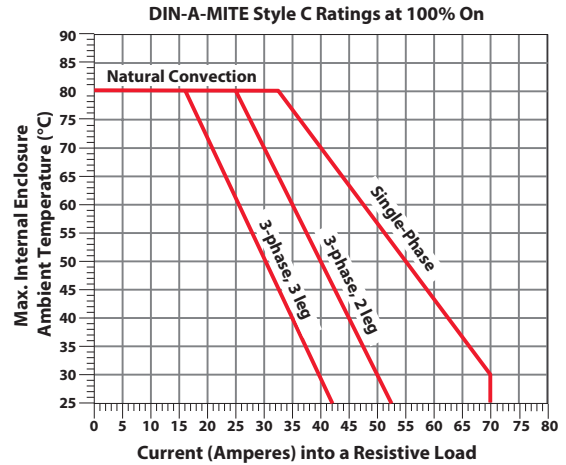
Typically:

- 5 second soft start on power up (option for 1 second)
- Soft start on recovery from over temperature
- Soft start on $\frac{1}{2}$ cycle drop out detection
- 1 second soft start on set point change

Shorted SCR & Open Heater Alarm Option (zero cross models)

- Alarm state when input command and signal is off and 10A is detected by the current transformer
- Alarm state when input command signal is on and the load current detected by the current transfer is 20% less than customer adjusted set point
- Single pass through the CT (two passes for 5A limit and four passes for 2.5A)

Output Rating Curves



Extended Heater and Power Controller Life with Variable Time-Base

With variable time-base control, the power controller automatically adjusts the time-base and output power with respect to the command signal. Accelerated life testing shows that variable time-base control significantly reduces expansion and contraction of the heater element. This extends heater and power controller life while improving process temperature control. This saves money on heaters, downtime and maintenance.

Loop-Powered or Transformer Powered

Loop-Powered (Basic Model Option)

By using a temperature controller's 4-20mA process output signal as the power supply for the DIN-A-MITE input, the cost of the power controller can be reduced. With control option F0 the 4-20mA control signal simultaneously powers the DIN-A-MITE's internal electronics and provides the input command signal.

Transformer-Powered (Enhanced Model Option)

DIN-A-MITE controllers with single-cycle, variable time-base or phase angle outputs (control options L, P and S) detect the power line zero cross with a transformer that also powers their internal electronics. These units can be controlled manually with a potentiometer or automatically with a temperature controller using any of the control options: 4-20mA, linear voltage (0-5,1-5 and 0-10VDC).

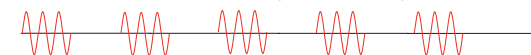
Loop-Powered, Variable Time-Base Output

Models: DC__ - __F0 - ____ (Basic Model Option)

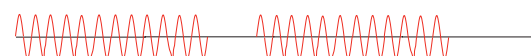
20% Power Output: 3 AC cycles on, 12 cycles off



50% Power Output: 3 AC cycles on, 3 cycles off



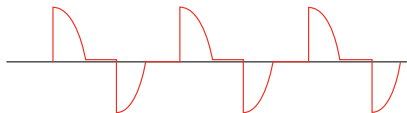
80% Power Output: 12 AC cycles on, 3 cycles off



With loop-powered, variable time-base control, the minimum on or off time is three cycles.

Phase Angle Output

Models: DC1_ - __[L, P] - 0____ (Enhanced Model Option)

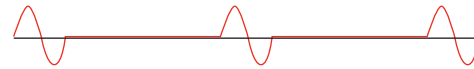


Phase angle control (control options L and P) is infinitely variable over the period of the AC sine wave. It provides a variable voltage and/or current output. The phase angle circuitry is transformer powered and accepts a linear voltage, current or potentiometer input.

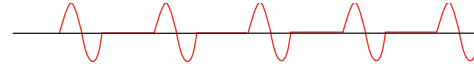
Single-Cycle, Variable Time-Base Output

Models: DC__ - __S_ - ____ (Enhanced Model Option)

25% Power Output: 1 AC cycle on, 3 cycles off



50% Power Output: 1 AC cycle on, 1 cycle off



With single-cycle, variable time-base control, at 50 percent power, the output is on for one cycle and off for one cycle. At 25 percent, it is on for one cycle and off for three cycles. Under 50 percent, the output is not on for more than one consecutive cycle; over 50 percent the output is not off for more than one consecutive cycle.

Semiconductor Fuses for Applications through 600VAC

Fuse Part Number		
Fuse Rating	Watlow	Cooper Bussman®
40A	17-8040	FWP-40A14F
50A	17-8050	FWP-50A14F
63A	17-8063	FWP-63A22F
80A	17-8080	FWP-80A22F
100A	17-8100	FWP-100A22F

Fuse Holder Part Number		
Fuse Rating	Watlow	Ferraz Shawmut
40A	17-5114	US141I
50A	17-5114	US141I
63A	17-5122	US221I
80A	17-5122	US221I
100A	17-5122	US221I

Combined Branch Protection and Semiconductor Fuses for Applications through 480VAC

Fuse Part Number		
Fuse Rating 125% of Load	Watlow	Cooper Bussman®
20A	0808-0325-0020	DFJ-20
30A	0808-0325-0030	DFJ-30
40A	0808-0325-0040	DFJ-40
50A	0808-0325-0050	DFJ-50
63A	0808-0325-0060	DFJ-60
80A	0808-0325-0080	DFJ-80
100A	0808-0325-0100	DFJ-100

Fuse Holder Part Number		
Fuse Rating	Watlow	Cooper Bussman®
20 and 30A	0808-0326-1530	CH30J1i
40 to 63A	0808-0326-3560	CH60J1i
80 and 100A	0808-0326-7010	J601001CR

DIN-A-MITE Style C Basic Models

DIN-A-MITE Package Style C. Solid state power controller in natural convection and forced air cooled versions.

①	②	③	④	⑤ ⑥	⑦ ⑧	⑨	⑩	⑪ ⑫
		Phase	Cooling & Current Rating/Leg	Line & Load Voltage	Control	Alarm	User Manual	Custom Options
D	C			—		—		

③	Phase
1 =	1-phase, 1 controlled leg
2 =	3-phase, 2 controlled legs
3 =	3-phase, 3 controlled legs (use with four wire wye)
8 =	2 independent zones (control options C, K)
9 =	3 independent zones (control options C, K)

④	Cooling and Current Rating per Leg (see chart below)
0 =	Natural convection standard DIN-rail or panel heat sink
1 =	Fan cooled 120VAC standard DIN-rail or panel heat sink
2 =	Fan cooled 240VAC standard DIN-rail or panel heat sink
3 =	Fan cooled 24VDC standard DIN-rail or panel heat sink
T =	Natural convection through-wall or cabinet heat sink (NEMA 4X)

⑤ ⑥	Line & Load Voltage
02 =	24 to 48VAC
24 =	100 to 240VAC
60 =	277 to 60VAC

⑦ ⑧	Control
C0 =	4.5 to 32VDC input, contactor output
F0 =	4 to 20mA DC input, variable time-base output
K1 =	22 to 26VAC input, contactor output
K2 =	100 to 120VAC input, contactor output
K3 =	200 to 240VAC input, contactor output

⑨	Alarm
0 =	No alarm
S =	Shorted SCR alarm (not available with control options 8 or 9)

⑩	User Manual
0 =	Wiring Safety Guide

⑪ ⑫	Custom Options
00 =	Standard part
XX =	Any letter or number, custom options, labeling, etc.

DIN-A-MITE Style C Enhanced Models

DIN-A-MITE Package Style C. Solid state power controller in natural convection and forced air cooled versions.

①	②	③	④	⑤ ⑥	⑦ ⑧	⑨	⑩	⑪ ⑫
DC	Phase	Cooling & Current Rating/Leg		Line & Load Voltage	Control	Alarm	User Manual	Custom Options
							0	

③	Phase
1 =	1-phase, 1 controlled leg
2 =	3-phase, 2 controlled legs
3 =	3-phase, 3 controlled legs (use with four wire wye)

④	Cooling and Current Rating per Leg (see chart to right)
0 =	Natural convection standard DIN-rail or panel heat sink
1 =	Fan cooled 120VAC standard DIN-rail or panel heat sink
2 =	Fan cooled 240VAC standard DIN-rail or panel heat sink
3 =	Fan cooled 24VDC standard DIN-rail or panel heat sink
T =	Natural convection through-wall or cabinet heat sink (NEMA 4X)

⑤ ⑥	Line & Load Voltage
12 =	100 to 120VAC
20 =	200 to 208VAC
24 =	230 to 240VAC
27 =	277VAC
40 =	400VAC
48 =	480VAC
60 =	600VAC

⑦ ⑧	Control
L (0 to 5) =	Phase angle with current limiting (DC1 only Alarm 0 only. Includes one current transformer - Single phase only)
P (0 to 5) =	Phase angle (DC1 only Alarm 0 only. Single phase only)
S (0 to 5) =	Single-cycle variable time base
Select one of the following input options for L, P, S (0 to 5)	
0 =	4 to 20mA
1 =	12 to 20mA (control option S only)
2 =	0 to 20mA
3 =	0 to 5VDC proportional (also for potentiometer input)
4 =	1 to 5VDC proportional
5 =	0 to 10VDC proportional

⑨	Alarm
0 =	No alarm
S =	Shorted SCR alarm (not available with control options L or P)
H =	Open-heater and shorted SCR alarm (for control option S only)

⑩	User Manual
0 =	Wiring Safety Guide

⑪ ⑫	Custom Options
00 =	Standard part
10 =	1-Second soft start (Control option P, L)
XX =	Any letter or number, custom options, labeling, etc.

Accessories

Replacement CT 300VAC, 18 inch leads: 16-0246
 Replacement CT 300VAC, 96 inch leads: 2117-0573
 Replacement CT 600VAC, 18 inch leads: 2435-4899
 Replacement CT 600VAC, 96 inch leads: 2435-4905

DIN-A-MITE C Current Rating Table

Switching Legs	Cooling	Current at 122°F (50°C)
1	0	55A
1	T	60A
1	1, 2, 3	75A
2,8	0	40A
2,8	T	46A
2,8	1, 2, 3	65A
3,9	0	30A
3,9	T	35A
3,9	1, 2, 3	55A

Powered by Possibility

To be automatically connected to the nearest North American Technical Sales Office:

1-800-WATLOW2 • www.watlow.com

International Technical Sales Offices:

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 China +86 21 3532 8532
 France +33 1 41 32 79 70
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 India +91 40 6661 2700

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 Japan +81 3 3518 6630
 Korea +82 2 2169 2600
 Mexico +52 442 256 2200
 Singapore +65 6773 9488

Spain +34 91 675 1292
 Taiwan +886 7 288 5168
 UK +44 115 964 0777



SCR Power Controller Delivers Up to 100 Amperes in a Smart Package

The DIN-A-MITE® D silicon controlled rectifier (SCR) power controller provides an inexpensive, versatile product for controlling heat in an efficient package. This controller is designed and manufactured with the quality features expected from Watlow®. The mounting footprint matches that of the industry standard mercury displacement relay, but there is no need to worry about mercury, the DIN-A-MITE controller is mercury free.

The DIN-A-MITE Style D is capable of zero cross switching up to 100 amperes single-phase, at 600VAC at 86°F (30°C), depending on the model selected. Combining the input of two or three controllers allows control of three-phase loads. The controller is completely touch-safe and includes on-board, front-accessible, semiconductor fuses. Options include a current transformer for load current monitoring and a shorted output alarm. The controller is UL® 508, C-UL® and CE approved making it ideal for panels and cabinets that require agency approvals.

Variable time-base, 4-20mA process control and VAC/VDC input contactor options are available. All options are model number dependent and factory configurable. This power controller also includes 200KA short circuit current rating (SCCR) tested up to 480VAC to minimize damage in the event of a short circuit when used with required fusing.

Watlow's DIN-A-MITE D is available through Watlow **SELECT**®, a program that enables you to quickly identify, configure and receive your thermal products faster and easier than ever before. With **SELECT**, you use a variety of tools to guide your decision, configure products for an exact fit and quickly receive your order. Visit www.watlow.com/select to learn more.

Features and Benefits

200KA SCCR with proper fusing

- Minimizes damage in the event of a short circuit

Standard panel mount

- Provides same mount as industry standard 100A MDR

Compact size

- Reduces panel space and cost

Touch-safe terminals

- Increases safety for installer and user

Mercury free

- Assures environmental safety

Faster switching with solid state

- Saves energy and extends heater life

UL® 508 listed, C-UL®, RoHS 2 and CE with filter

- Meets applications requiring agency approval

Back-to-back SCR design

- Ensures a rugged design

On-board semiconductor fusing

- Provides quick access with no extra mounting necessary

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UL® and C-UL® are registered trademarks of the Underwriter's Laboratories, Inc.

Cooper Bussman® is a registered trademark of Cooper Bussman, Inc.

ISO 9001



Winona, Minnesota USA



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To be automatically connected to the nearest
North American Technical Sales Office:

**1-800-WATLOW2 • www.watlow.com
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Korea +82 2 2169 2600

Mexico +52 442 256 2200
Singapore +65 6773 9488
Spain +34 91 675 1292
Taiwan +886 7 288 5168
UK +44 115 964 0777

WIN-DMD-0720

Specifications

Amperage

- See the Output Rating Curve chart below
- Max. surge current for 16.6ms, 1,800A peak
- Latching current: 500mA max.
- Holding current: 200mA max.
- Power dissipation is 1.4 watts per ampere switched including on-board fusing
- 200KA SCCR, Type 1 and 2 approved with the recommended fusing; see user manual

Line Voltage

- 24 to 48VAC units: 20VAC min. to 53VAC max.
- 100 to 240VAC units: 48VAC min. to 265VAC max.
- 277 to 480VAC units: 85VAC min. to 528VAC max.
- 277 to 600VAC units: 85VAC min. to 660VAC max.
- 50/60Hz independent $\pm 5\%$

Control Mode, Zero Cross

- Control option C: VDC input, contactor output
- Control option K: VAC input, contactor output
- To increase service life, the cycle time should be less than three seconds
- Control option F: 4 to 20mA DC input, variable time-base control output

Control Input

- AC contactor: 24VAC $\pm 10\%$, 120VAC $+10/-25\%$, 240VAC $+10/-25\%$ @ 25 mA max. per controlled leg
- DC contactor: 4.5 to 32VDC: max. current @ 4.5VDC is 8mA per leg
- Loop powered linear current 4 to 20mA DC: loop-powered, control option F0 only (requires current source with 8.0VDC available, no more than two DIN-A-MITE inputs can be connected in series)

Shorted SCR Alarm Option

- Alarm state when the input command signal off and a 15A or more load current is detected by the current transformer

Alarm Output

- Energizes on alarm, non-latching
- Triac 24 to 240VAC external supply with a current rating of 300mA @ 77°F (25°C)

Current Sensing

- On-board current transformer (CT), typically 0.2VAC output signal per ampere sensed into 1,000 Ω load

Agency Approvals

- CE with proper filter:
 - 204/108/EC Electromagnetic Compatibility Directive
 - EN 61326-1: Industrial Immunity Class A Emissions
 - Not suitable for Class B emissions environment
- 2006/95/EC Low Voltage Directive
- EN 50178 Safety Requirements
-  UL® 508-listed and C-UL® File E73741

Control Input Terminals

- Compression: will accept 26 to 12 AWG (0.13 to 3.3 mm²) wire

Line and Load Terminals

- Compression: will accept 6 to 2 AWG (13.3 to 33.6 mm²) wire

Operating Environment

- Operating temperature range: -4 to 176°F (-20 to 80°C)
- 0 to 90% RH (relative humidity), non-condensing
- Vibration: 2 g, 10Hz to 150Hz, applied in any one of three axes
- Storage temperature: -40 to 185°F (-40 to 85°C)
- Insulation tested to 3,000 meters
- Installation Category III, pollution degree 2

Mounting

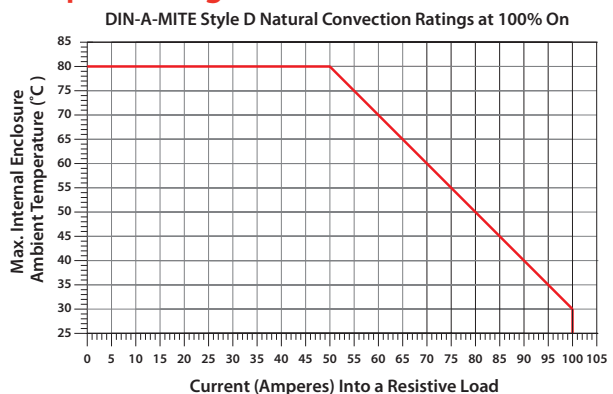
- Back-panel mounting; fits the same mounting pattern as a 100A, single-phase mercury displacement relay
- On-board semiconductor fusing

Dimensions

- 7.3 in. (185 mm) high x 2.6 in. (66 mm) wide x 9.4 in. (239 mm) deep
- Weight: 6.5 lb (2.95kg)

Specifications are subject to change without notice.

Output Rating Curve



Ordering Information

Part Number

①	②	③	④	⑤ ⑥	⑦ ⑧	⑨	⑩	⑪ ⑫
D	D	Phase	Cooling & Current Rating	Line & Load Voltage	Control	Current Sensing or Alarm	User Manual	Custom Options
D	D							

③	Phase
1 =	1-phase, 1 controlled leg

④	Cooling and Current Rating (see rating curve)
0 =	Natural convection

⑤ ⑥	Line and Load Voltage
02 =	24 to 48VAC
24 =	120 to 240VAC
48 =	277 to 480VAC
60 =	277 to 600VAC

⑦ ⑧	Control
C0 =	4.5 to 32VDC input, contactor output
F0 =	4 to 20mA DC input, variable time-base output
K1 =	22 to 26VAC input, contactor output
K2 =	100 to 120VAC input, contactor output
K3 =	200 to 240VAC input, contactor output

⑨	Current Sensing or Alarm
0 =	No alarm
1 =	Load current transformer
S =	Shorted SCR alarm

⑩	User Manual
0 =	English
1 =	German
2 =	Spanish
3 =	French

⑪ ⑫	Custom Options
00 =	Standard part

Recommended Semiconductor Fuse

Watlow Part Nbr.	Cooper Bussman® Part Nbr.
0808-0096-0000	170N3437