DIN-A-MITE® Power Controllers

heaters | sensors | controllers

Authorized STOCKING distributor

Industrial & Electric Supply
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Toll Free: 800-880-3743

WATLOW®
Better Thermal Solutions...*Faster*

An Innovative Alternative To Industry Standards

Total Engineered Package

The DIN-A-MITE® family of power controllers from Watlow® includes SCR control, heat sink, wiring and a touch-safe exterior all in one package. By designing the DIN-A-MITE as a total unit, we've eliminated the need to prep wires for terminals, find the heat sink for rated amperage and determine adequate terminations. Watlow's DIN-A-MITE is a complete package you can install and forget — everything is already done for you.

In this one package, you'll get:

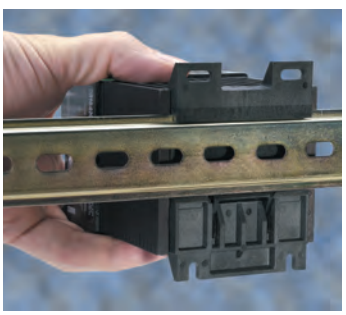
- Simplicity, easy, fast installation
- Minimal preparation time
- No component selection — you won't have to buy separate parts and worry if they will work
- Minimal engineering involved — you get a complete package, a finished product
- Safety with a touch-safe exterior
- A more compact product than other solid state alternatives for space and cost savings
- A good replacement for mercury displacement relay (MDR)

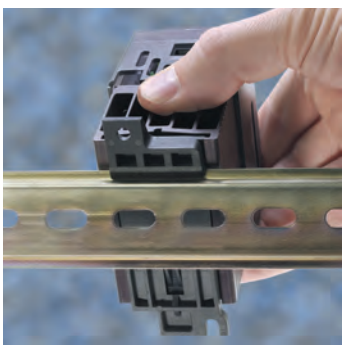
Easy, Fast Installation

Since all components are selected and assembled for you, installation is simple and easy, saving time and money. All you have to do is strip wires and connect. You've never installed a power controller easier, or faster.

- No drill and tap necessary
- Back panel or DIN-rail mounted
- Simple, safe wiring
- Similar footprint as MDRs for fast, efficient retrofits

Power In Your Hands





Safe to Handle

The DIN-A-MITE's touch-safe exterior protects hands from electric shock. It's completely safe to handle.

Agency Approved

- *UL® 508 listed*
- *C-UL® approved*
- *3-year warranty*
- *CE*

Extend The Life Of Your Heaters

Achieve Optimum Control With Zero Cross Switching

Zero cross switching extends life of the power controller and heater by switching fast, and providing more accurate control of both the heater element and the process. With this improved control, you'll also see an increase in parts produced and less scrap, for improved productivity and efficiency.

- Accurate control
- Improve productivity

Reduce Wear On Thermal System

With optional variable time base switching, the DIN-A-MITE output automatically adjusts cycle time to meet the demands of the system. You'll see benefits such as:

- Less power required by the thermal system
- Heater output equal to need

System Failure Prevention

A proven high current connection scheme ensures optimum electrical connection to prevent heat buildup, which could lead to system failure.

To ensure overall reliability and reduce fear of hot spots, we've eliminated wires and fasteners which could possibly break down and loosen, as with other power controllers.

- Prevent heat buildup
- Improve reliability

Protection For Your System

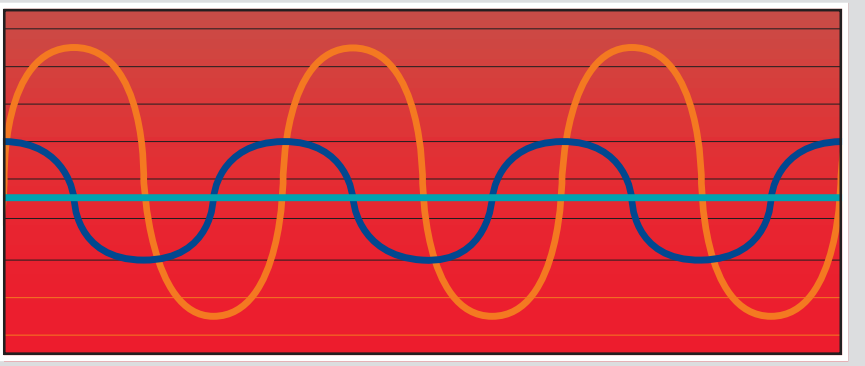
Zero cross switching produces minimal RFI (radio frequency interference) to help prevent electrical noise that could possibly interfere with other equipment in your system. This added protection for your entire thermal system provides you with less total system downtime and less maintenance for your system.

- Eliminate downtime
- Reduce system maintenance

Rugged, Back-To Back SCR Design Ensures Long Term Reliability

The DIN-A-MITE meets high current application requirements, tolerates spikes and dissipates less power. When used properly, the DIN-A-MITE outlasts any other type of switch. There's no limit on the number of cycles the DIN-A-MITE can handle.

Set Point Deviation Caused By Switch Type



Mechanical contactors suffer wide temperature deviations due to long cycle time.

MDRs can be switched faster than contactors, but still deviate considerably from set point.

DIN-A-MITEs eliminate deviation, providing optimum control and long heater life.

Heaters switched using mechanical contactors suffer wide deviations due to long cycle times—typically 30 seconds—needed to preserve life. Control is poor, heat is wasted, and excessive expansion and contraction of the heating elements shortens heater life. MDRs can be switched faster than contactors and will hold the heater closer to set point, but still suffer deviations.

Fastest of all are solid state devices such as the DIN-A-MITE configured with variable time base. Switching as fast as three ac wave cycles (less than 0.1 seconds), set point deviation is virtually eliminated, giving the finest control, lowest power consumption, and longest element life.

Easy As A, B, C or D, Watlow Has A DIN-A-MITE For Your Application

Ovens and Furnaces

In a coatings application, the customer needed to rebuild an oven to improve heater life and temperature control, plus reduce electrical noise. They needed a product that would fit in the existing cabinet to avoid the costs involved with increasing the size of the cabinet. The customer replaced all of the 100 amp mechanical contactors with Watlow's 100 amp DIN-A-MITE SCR power controllers. This customer was able to use the existing control panel and mount the DIN-A-MITE controllers in less space than the mechanical contactors. Additionally, the DIN-A-MITEs provided on-board current transformers as well as built-in semiconductor fusing. These controllers improved heater life and process temperature control while reducing electrical noise with zero cross firing.

Semiconductor

Watlow knows the importance of controlling temperature in the semiconductor manufacturing process. Even the slightest variation can cause damage to expensive ingots and chips.

Watlow's variable time base DIN-A-MITE controllers help to maintain process set point without any overshoot or droop variations in temperature, ensuring a quality process. The small size of the DIN-A-MITE means the size of clean room control panels will be minimal, thus saving money.

- Saves valuable space to increase flexibility in semiconductor processing
- Minimal RFI to ensure long life of the heaters and other system equipment

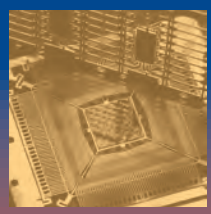
Plastics

In plastics processing, Watlow's DIN-A-MITE is an ideal replacement for MDRs in injection molding, extrusion, blown film extrusion and blow molding systems. You'll get better control of the heater and the process, more accurate temperatures, a more consistent product, less rejects and reduced downtime.

A plastics manufacturer used MDRs in their equipment, but wanted longer heater life that relays could not provide. They were also encountering some trouble with machines occasionally shutting down. Watlow recommended three-phase, two leg DIN-A-MITE controllers to replace the MDRs. The DIN-A-MITEs fit in the same footprint as the relays, so there was no need to reconfigure the machine to accept the new controllers. The DIN-A-MITEs also eliminated electrical noise and prevented machine stoppages, therefore reducing downtime.

DIN-A-MITE Family Applications:

- Food Equipment
- Life science/medical
- Ovens/Furnaces
- Packaging
- Petroleum/Chemical
- Plastics
- Semiconductor
- Wave Solder and Reflow



DIN-A-MITE® A

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.

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® and CE with filter
- Meets applications requiring agency approval

Back-to-back SCR design
- Ensures a rugged design

DIN-A-MITE A

Specifications

Operator Interface
- Control input
- Input indication LED

Amperage
- Single phase, see the output rating curve
- Max. I^2t for fusing: 4000A^2sec
- Latching current: 200mA min.
- Holding current: 100mA min.
- 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 @ 4.5 VDC is 8mA
- Loop powered linear current 4 to 20mA DC: loop-powered, control option F0 only (requires current source with 6.2VDC available, no more than three 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
- c UL us LISTED UL® 508 listed and C-UL® File E73741

Control Input Terminals
- Compression: will accept 24 to 16 AWG (0.2 to 1.5 mm^2) wire

Line and Load Terminals
- Compression: will accept 18 to 8 AWG (0.8 to 8.4 mm^2) wire

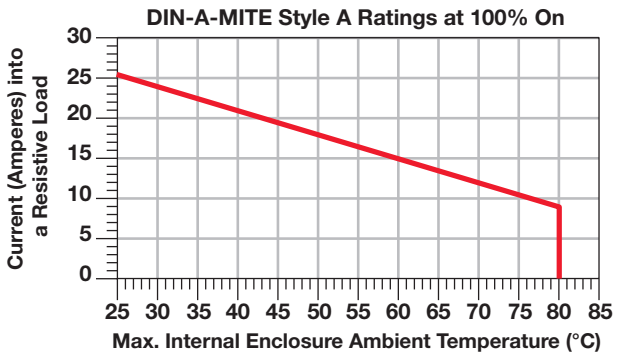
Operating Environment
- -4 to 176°F (-20 to 80°C); see the output rating curve chart for your application
- 0 to 90% RH (relative humidity), non-condensing
- Insulation tested to 3,000 meters
- Units are suitable for “Pollution degree 2”

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



DIN-A-MITE A

Ordering Information

Part Number

①	②	③ Phase	④ Cooling & Current Rating		⑤ ⑥ Line & Load Voltage	⑦ ⑧ Control		⑨	⑩ User Manual	⑪ ⑫ Custom Options
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, labeling, etc.

Recommended Fuses and Fuse Holders

Semiconductor Fuses and Holders

Part Number	Description
17-8025	25A fuse
17-5110	10-25A holder

DFJ Combination Fuses and Holders

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