

Self-Contained Units Combine Superior Products And Innovative Mechanical Designs

Watlow combines superior products and innovative mechanical designs in its series of control consoles. Watlow designed these units using many of its temperature and process controls, making them an excellent choice for point-of-use applications.

The standard Watlow control consoles are available in one, two or four control loop configurations. Each unit is supplied with a heavy-duty fused line cord, fused output receptacle, a solid state relay and ON/OFF rocker switch. The powder-coated metal case has vent openings on the top and bottom for heat dissipation, keeping internal case temperatures lower. On some models, serial communication options are available through Watlow's ANAWIN® Windows® 95-based software or EIA/TIA-232 or EIA/TIA-422.

Custom-made systems are also available. Please consult a Watlow sales representative for details.

Watlow provides total system development from concept to design... through quality controlled manufacturing to on-site installation and start-up.

Your Authorized Watlow Distributor Is:

Window® is a registered trademark of Microsoft.



Applications

- Plastics
- Packaging
- Food processing
- Semiconductor
- Laboratory
- Process

Features and Benefits

Compact size

- Fits easily into confined areas

Control options including on-off, proportional or PID control

- Provides simple, reliable operation

Self-contained units

- Require no external components

Pre-wired

- Fast start-up and installation time

Thermocouple and RTD input

- Allows use of a low cost sensor of your choice

Serial communications

- Support for one-on-one, as well as remote networking of controllers



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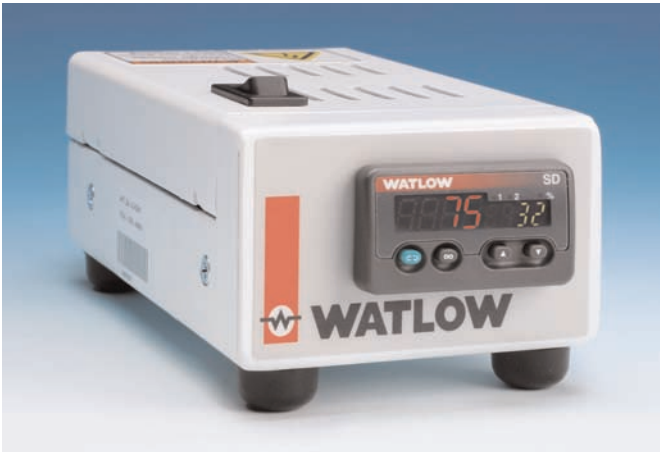
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Mini Control Console



The mini series is the smallest and most compact control console offered, but features are not limited. The mini utilizes a Watlow SERIES 935 or SD controller which can be set to a number of different control modes. The solid state relay provides longer heater life and a lower cost than other power switching devices. The heater output is pre-wired for your convenience. The Amp Mate-'n'-Lok® heater connector makes installation quick and easy.

Features

- Small foot print
- Pre-wired output
- AMP Mate-'n'-Lok® 2-pin output connection
- Miniature thermocouple connector
- Watlow SERIES 935 or SD controller
- ON/OFF rocker switch

Specifications

Controller

- Watlow SERIES 935
- Watlow SERIES SD (SD3C)

Dimensions

- 76 mm H x 90 mm W x 180 mm D
(3.0 in. H x 3.5 in W x 7.1 in. D)

Output Power Switching

- 8 amp maximum
- Output is powered through the line cord

Power Requirements

- 120V~(ac), +10 percent, -15 percent (NEMA 5-15 plug)
- 208/240V~(ac), ±10 percent, -15 percent (NEMA 6-15 plug)
- Fused 10 amp

Sensor Input

- Factory selectable thermocouple
- Miniature thermocouple jack and plug

Output Configuration

- AMP Mate-'n'-Lok® connector
- Mating connector provided

Operating Environment

- 0 to 45°C (32 to 113°F)
- 0 to 90 percent RH, non-condensing

Weight

- 0.9 kg (2 lbs)

Ordering Information

Mini Control Console

| | | | |
|--|------------------|--|------------------|
| | M I N I - | | - 0 0 0 0 |
| Single zone; self-contained unit | | | |
| Input | | | |
| J = Type J thermocouple | | | |
| K = Type K thermocouple | | | |
| T = Type T thermocouple | | | |
| R = RTD (100 ohm; 2-wire only) | | | |
| Control | | | |
| G = SERIES SD (½ DIN) w/EIA-485 comms | | | |
| 1 = SERIES 935 | | | |
| 5 = SERIES SD (½ DIN) | | | |
| Display Color | | | |
| R = Red/Green (only color option available on SERIES SD (1/32 DIN)) | | | |
| G = Green (only available on SERIES 935) | | | |
| Line Voltage | | | |
| 1 = 120V~(ac) | | | |
| 2 = 208/240V~(ac) | | | |

Single Control Console



The single series offers a variety of control, input and heater output options. The single series can be fitted with either a Watlow SERIES 935 93,SD or 96 controller. The heater output and control circuit are fused to protect the internal components from damage. The heater output connector can be ordered as either an Amp Mate-'n'-Lok or a twist and lock connector. The heater output is pre-wired making installation quick and easy.

Features

- Small foot print
- Pre-wired output
- AMP Mate-'n'-Lok® 2-pin or a twist and lock output connection
- Miniature thermocouple connector
- Watlow SERIES 935 93,SD or 96 controller
- ON/OFF rocker switch

Specifications

Controller

- Watlow SERIES 935 • Watlow SERIES 93
- Watlow SERIES SD • Watlow SERIES 96

Dimensions

- 119 mm H x 76 mm W x 191 mm D
(4.7 in. H x 3.0 in W x 7.5 in. D)

Output Power Switching

- Utilizes a solid state relay
- 10 amp maximum fused output; 8 amp maximum load
- Output is powered through the line cord

Power Requirements

- 120V~(ac), +10 percent, -15 percent (NEMA 5-15 plug)
- 208/240V~(ac), ±10 percent, -15 percent (NEMA 6-15 plug)
- Control is fused to 1.0 amp

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Sensor Input

- Factory selectable thermocouple
- Miniature thermocouple jack and plug

Output Configuration

- Factory selectable
AMP Mate-'n'-Lok® connector
A twist and lock connector
- Mating connector provided

Operating Environment

- 0 to 45°C (32 to 113°F)
- 0 to 90 percent RH, non-condensing

Weight

- 0.9 kg (2 lbs)

Ordering Information

Single Control Console

| | | S N G L - | | - | | 0 0 | |
|-------------------------|---|-----------|--|---|--|-----|--|
| Control | _____ | | | | | | |
| A | = SERIES 96 w/ramp and soak | | | | | | |
| C | = SERIES 96 w/ramp and soak, EIA-232 comms | | | | | | |
| G | = SERIES SD (1/32 DIN) w/EIA-485 comms | | | | | | |
| H | = SERIES SD (1/16 DIN) w/DeviceNet® on CAN | | | | | | |
| 1 | = SERIES 935 | | | | | | |
| 3 | = SERIES 93 | | | | | | |
| 4 | = SERIES 96 | | | | | | |
| 5 | = SERIES SD (1/32 DIN) | | | | | | |
| 6 | = SERIES 96 w/EIA-232 comms | | | | | | |
| 7 | = SERIES SD (1/16 DIN) | | | | | | |
| Input | _____ | | | | | | |
| J | = Type J thermocouple | | | | | | |
| K | = Type K thermocouple | | | | | | |
| T | = Type T thermocouple | | | | | | |
| R | = RTD (2-wire) | | | | | | |
| Display | _____ | | | | | | |
| 935 | | | | | | | |
| RX | = Red | | | | | | |
| GX | = Green | | | | | | |
| 93/96/SD | | | | | | | |
| RG | = Red/Green (only color option available on SD (1/32 DIN)) | | | | | | |
| RR | = Red/Red | | | | | | |
| GG | = Green/Green (only available on SERIES 93 and 96) | | | | | | |
| GR | = Green/Red (only available on SERIES 93 and 96) | | | | | | |
| Output Connector | _____ | | | | | | |
| 1 | = AMP Mate-'n'-Lok® | | | | | | |
| 2 | = Twist and lock | | | | | | |
| Line Voltage | _____ | | | | | | |
| 1 | = 120V~(ac) | | | | | | |
| 2 | = 208/240V~(ac) | | | | | | |

C O N T R O L C O N S O L E S

Dual Control Console



The dual series is the first package that offers multiple control zones in one package. Watlow's SERIES 935, 93, SD or 96 can be used as the control for the dual series. Each zone utilizes a solid state relay for longer heater life and a lower cost than other power switching devices. The heater output connector can be ordered as either an Amp Mate-'n'-Lok® or a twist and lock connector.

Features

- Small foot print
- Pre-wired outputs
- Amp Mate-'n'-Lok® 2-pin or a twist and lock output connection
- Miniature thermocouple connector
- Watlow SERIES 935, 93, SD or 96 controllers
- ON/OFF rocker switch

Specifications

Controller

- Watlow SERIES 935 • Watlow SERIES 93
- Watlow SERIES SD • Watlow SERIES 96

Dimensions

- 114 mm H x 152 mm W x 191 mm D
(4.5 in. H x 6.0 in W x 7.5 in. D)

Output Power Switching

- Utilizes solid state relays
- Output is powered through line cord
- Light duty dual
 - 8 amp maximum load (4 amps per zone)
- Heavy duty dual
 - 16 amp maximum load (8 amps per zone)
- Light duty control/limit
 - (8 amps maximum load)
- Heavy duty control/limit
 - (12 amps maximum load)

Power Requirements

- Light duty dual or controller/limit
 - 120V~(ac), +10 percent, -15 percent (NEMA 5-15 plug)
 - 208/240V~(ac), ±10 percent, -15 percent (NEMA 6-15 plug)

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- Heavy duty dual or controller/limit
 - 120V~(ac), +10 percent, -15 percent (NEMA 5-20 plug)

Operating Environment

- 0 to 45°C (32 to 113°F)
- 0 to 90 percent RH, non-condensing

Weight

- 2.3 kg (5 lbs)

Ordering Information

Dual Control Console

| | | D U A L - | - | 0 0 |
|-------------------------|---|--|---|-----|
| Control | | | | |
| A | = | SERIES 96 w/ramp and soak | | |
| B | = | SERIES 96/97 w/ramp and soak, EIA-232 comms | | |
| E | = | SERIES 96 w/EIA-485 comms | | |
| F | = | SERIES SD (1/16 DIN) w/EIA-485 comms | | |
| G | = | SERIES SD (1/32 DIN) w/EIA-485 comms | | |
| H | = | SERIES SD (1/16 DIN) w/DeviceNet™ on CAN | | |
| J | = | SERIES SD6C/SD6L Controller/Limit (1/16 DIN) w/DeviceNet™ on CAN ① | | |
| 1 | = | SERIES 935 | | |
| 3 | = | SERIES 93 | | |
| 4 | = | SERIES 96 | | |
| 5 | = | SERIES SD (1/32 DIN) | | |
| 7 | = | SERIES SD (1/16 DIN) | | |
| 8 | = | SERIES 96/97 Controller/Limit ① | | |
| 9 | = | SERIES SD6C/SD6L Controller/Limit ① | | |
| 0 | = | SERIES SD3C/SD3L Controller/Limit ① | | |
| Input | | | | |
| J | = | Type J thermocouple | | |
| K | = | Type K thermocouple | | |
| T | = | Type T thermocouple | | |
| R | = | RTD (2-wire) | | |
| Display | | | | |
| 935 | | | | |
| RX | = | Red | | |
| GX | = | Green | | |
| 93/96/SD | | | | |
| RG | = | Red/Green (only color option available on SD (1/32 DIN)) | | |
| RR | = | Red/Red | | |
| GG | = | Green/Green (only available on SERIES 93 and 96) | | |
| GR | = | Green/Red (only available on SERIES 93 and 96) | | |
| Output Connector | | | | |
| 1 | = | AMP Mate-'n'-Lok® | | |
| 2 | = | Twist and lock | | |
| Line Voltage | | | | |
| 1 | = | 120V~(ac) (light duty - 4A per zone; 8A total) | | |
| 2 | = | 208/240V~(ac) (light duty - 4A per zone; 8A total) | | |
| 3 | = | 120V~(ac) (heavy duty - 8A per zone; 16A total) | | |

① Control/Limit: Light Duty - 8A total; Heavy Duty - 12A total

CONTROL CONSOLES

Quad Control Box



The quad series offers four zones of control in one compact package. Watlow SERIES 935, 93, SD or 96 controls can be utilized for each zone. Each zone utilizes a solid state relay for longer heater life and a lower cost than other power switching devices. The heater output connector can be ordered as either an Amp Mate-'n'-Lok® or a twist and lock connector.

Features

- Small foot print
- Pre-wired outputs
- Amp Mate-'n'-Lok® 2-pin or a twist and lock output connection
- Miniature thermocouple connector
- Watlow SERIES 935, 93, SD or 96 controllers
- ON/OFF rocker switch

Specifications

Controllers

- Watlow SERIES 935 • Watlow SERIES 93
- Watlow SERIES SD • Watlow SERIES 96

Dimensions

- 114 mm H x 305 mm W x 191 mm D
(4.5 in. H x 12.0 in. W x 7.5 in. D)

Output Power Switching

- Utilizes solid state relays
- Output is powered through line cord
- 16 amp maximum load (4 amps per zone)

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Power Requirements

- 120V~(ac), +10 percent, -15 percent (NEMA 5-20 plug)

Sensor Input

- Factory selectable thermocouple
- Miniature thermocouple jack and plug

Output Configuration

- Factory selectable
 - Amp Mate-'n'-Lok® connector
 - A twist and lock connector
- Mating connector provided

Operating Environment

- 0 to 45°C (32 to 113°F)
- 0 to 90 percent RH, non-condensing

Weight

- 2.7 kg (6 lbs)

Ordering Information

Quad Control Console

| Control | Q | U | A | D | - | 0 | 0 |
|--|---|---|---|---|---|---|---|
| A = SERIES 96 w/ramp and soak | | | | | | | |
| E = SERIES 96 w/EIA-485 comms | | | | | | | |
| F = SERIES SD (1/16 DIN) w/EIA-485 comms | | | | | | | |
| G = SERIES SD (1/32 DIN) w/EIA-485 comms | | | | | | | |
| H = SERIES SD (1/16 DIN) w/DeviceNet™ on CAN | | | | | | | |
| 1 = SERIES 935 | | | | | | | |
| 3 = SERIES 93 | | | | | | | |
| 4 = SERIES 96 | | | | | | | |
| 5 = SERIES SD (1/32 DIN) | | | | | | | |
| 7 = SERIES SD (1/16 DIN) | | | | | | | |
| Input | | | | | | | |
| J = Type J thermocouple | | | | | | | |
| K = Type K thermocouple | | | | | | | |
| T = Type T thermocouple | | | | | | | |
| R = RTD (2-wire) | | | | | | | |
| Display | | | | | | | |
| 935 | | | | | | | |
| RX = Red | | | | | | | |
| GX = Green | | | | | | | |
| 93/96/SD | | | | | | | |
| RG = Red/Green (only color option available on SD (1/32 DIN)) | | | | | | | |
| RR = Red/Red | | | | | | | |
| GG = Green/Green (only available on SERIES 93 and 96) | | | | | | | |
| GR = Green/Red (only available on SERIES 93 and 96) | | | | | | | |
| Output Connector | | | | | | | |
| 1 = AMP Mate-'n'-Lok® | | | | | | | |
| 2 = Twist and lock | | | | | | | |
| Line Voltage | | | | | | | |
| 1 = 120V~(ac) | | | | | | | |