Electrothermal

Controllers

For power, stirring and temperature control

Electrothermal have a comprehensive range of controllers to provide power and temperature control for all your laboratory equipment.

1-Way Controllers

Introduction

There is a choice of 3 models of 1-Way Controllers which operate up to 800W (MC5), 1800W (MC242) or 2300W (MC227); MC228X1 operates up to a maximum of 1100W. These controllers can control one piece of laboratory equipment at a time, or an equivalent load, ie. on a CMUV22/L which has 3 elements, you can have an MC5 on each element.

MC5 Controller

Operates at up to 800W

The MC5 Controller has been designed to provide a complete answer in controlling the heating of resistive loads for bench top operation. It delivers power up to a maximum of 800 Watts and is suitable for EM series Electromantles, CMU series Electromantles, Electric Bunsen and Heating Tapes/Cords.

The MC5 Controller has 2 neon indicators; "Power On" white neon light and "Mantle/Bunsen Heater On" amber neon light. It has a regulator control knob which can be turned clockwise to increase power. As the knob is turned, the controller's amber neon lamp will pulsate to show that power is being supplied to the equipment being controlled, e.g. mantle, heating tape or cord. The pulse frequency will decrease as the regulator control knob setting is increased, and at maximum setting, the amber neon will be continually illuminated.

A rod support clamp is provided at the rear of the controller to take a standard 12.5mm (½") diameter rod. The MC5 has a short mains output lead with an IEC socket to connect it to the resistive load. An accessory extension mains lead is available where remote operation is required (e.g. in a fume extraction unit).

Technical Specification

Electrical requirements	230V 50/60Hz, 800W or 115V, 50/60Hz, 460W
Controller power consumption	< 1 Watt
Dimensions (d x w x h), mm	130 x 95 x 105
Weight, kg	0.42

MC5
With Electric Bunsen

MC227 / MC228X1

MC242

Ordering Information

Model	Capacity	Electrical Requirements
MC5	MC5 Controller	230V, 50/60Hz, 800W
MC5X1	MC5 Controller	115V, 50/60Hz, 460W
MC5X6*	MC5 Controller	230V, 50/60Hz, 800W

**Model with X6 suffix comes supplied with EU plug*

MC242

Controller: Operates at up to 800W

The MC242 Controller has been designed to regulate the power input to laboratory heating equipment such as Electromantles, Heating Tapes and Cords. It operates up to a power load of 1800W for the 230V model and 1150W for the 115V model.

The MC242 Controller has 2 neon indicators:
"Power On" white neon light
"Mantle/Bunsen Heater On" amber neon light;

It has a regulator control knob which can be turned clockwise to increase power. As the knob is turned, the controller's amber neon lamp will pulsate to show that power is being supplied to the equipment being controlled, e.g. mantle, heating tape or cord. The pulse frequency will decrease as the regulator control knob setting is increased, and at maximum setting, the amber neon will be continually illuminated.

A rod support clamp is provided at the rear of the controller to take a standard 12.5mm (½") diameter rod.

The MC242 Controller has a short mains output lead with an IEC socket to connect it to the resistive load. An accessory extension mains lead is available where remote operation is required (e.g. in a fume extraction unit).

Technical Specification

For MC242 Controller

Electrical requirements	230V, 50/60Hz, 1800W
Controller power	< 1 Watt consumption

MC227 and MC228X1

Controller: Operates at up to 2300W

Both power controllers have been designed to regulate the power input to laboratory heating equipment up to 2300W. The MC227 Controller is a 230V controller, and MC228x1 is its 115V equivalent version and operates up to 1100W.

The MC227 and MC228X1 Controllers have 1 "Mantle/ Bunsen Heater On" amber neon indicator. They also have a regulator control knob which can be turned clockwise to increase power. As the knob is turned, the controller's amber neon lamp will pulsate to show that power is being supplied to the equipment being controlled, e.g. mantle, heating tape or cord. The pulse frequency will decrease as the regulator control knob setting is increased, and at maximum setting, the amber neon will be continually illuminated.

A rod support clamp is provided at the rear of the controller to take a standard 12.5mm (½") diameter rod, so that it may be mounted on a standard ½" (12mm) diameter scaffold or retort stand, stand directly on the bench, or be wall mounted using a mounting bracket.

The MC227 and MC228X1 Controllers have a short mains output lead with an IEC socket to connect it to the resistive load. An accessory extension mains lead is available where remote operation is required (e.g. in a fume extraction unit).

Technical Specification

For MC227 Controller

Electrical requirements	230V,50/60Hz, 2300W
Controller power	< 1 Watt consumption

Ordering Information

Model	Description	Electrical Requirements	Dimensions (d x w x h)	Weight
MC227	Single place percentage On/ Off, die-cast	230V, 50/60Hz, 2300W	11.5 x 12 x 8cm	0.82kg
MC228X1	Single place percentage On/ Off, die-cast	115V, 50/60Hz, 1100W	11.5 x 12 x 8cm	0.82kg
MC227X6*	Single place percentage On/ Off, die-cast	230V, 50/60Hz, 2300W	11.5 x 12 x 8cm	0.82kg
MC242	Single place percentage On/ Off	230V, 50/60Hz, 1800W	13 x 9.5 x 10.5cm	0.42kg
MC242X1	Single place percentage On/ Off	115V, 50/60Hz, 1150W	13 x 9.5 x 10.5cm	0.42kg
MC242X6*	Single place percentage On/ Off	230V, 50/60Hz, 1800W	13 x 9.5 x 10.5cm	0.42kg

**Comes with EU Plug fitting*

MC240

2-Way Controller

The MC240 is a 2 channel device which provides the user with the option to control two pieces of laboratory equipment running simultaneously, but independently of each other. It operates up to a maximum of 800W per circuit, at either 115 or 230 Volts.

The MC240 2-Way Controller has been designed to work with:

- EM series Electromantles
- CMU series Electromantles
- Electric Bunsen
- Heating Tapes and Cords

The MC240 Controller has 3 neon indicators:

- "Power On" green neon light
- "Mantle/Bunsen Heater On" amber neon light for channel 1
- "Mantle/Bunsen Heater On" amber neon light for channel 2

In addition, for both channels there is a mains output, control knob and protection fuses. Both regulator control knobs can be turned clockwise to increase power. As each knob is turned, the controller's amber neon lamp will pulsate to show that power is being supplied to the equipment being controlled for that channel, e.g. mantle, heating tape or cord. The pulse frequency will decrease as the regulator control knob setting is increased, and at maximum setting, the amber neon will be continually illuminated. The MC240 Controller has a short mains output lead with an IEC socket to connect it to the resistive load. An accessory extension mains lead is available where remote operation is required (e.g. in a fume extraction unit).

Technical Specification

Controller power consumption	< 1 Watt per channel
Dimensions (d x w x h), mm	100 x 200 x 98
Weight, kg	1.1

Key Features

- Able to control two pieces of laboratory equipment simultaneously
- Three neon indicators
- Operates up to a maximum of 800W per circuit, at either 115 or 230 Volts.

MC240

2-Way Controller

Ordering Information

Model	Capacity	Electrical Requirements
MC240	Double place percentage On/Off	230V, 50/60Hz, 800W
MC240X1	Double place percentage On/Off	115V, 50/60Hz, 800W
MC240X6*	Double place percentage On/Off	230V, 50/60Hz, 800W

**Comes with EU Plug fitting*

MC810B

Digital Controller

Key Features

- PTFE-covered platinum resistance thermometer is included for measurements to 270°C
- Zinc die-cast outer case is suitable for the bench or can be mounted on a 12.7cm support rod
- Programming is done by up/down controls
- Three-digit LED display allows you to set a 1°C resolution over a range of -10°C to 800°C

MC810B
With stand

The MC810B Digital Controller provides a convenient means of temperature control, using microprocessor techniques to give ease of operation and good accuracy.

It can be used in 3 ways:

- In On/Off mode with the hysteresis loop controlling power switching
- As a PID (Proportional, Integrated, Derivative) controller
- As a temperature measuring device up to 270°C or more, depending upon the probe accessory used

The MC810B Digital Controller may be used in conjunction with a suitable heating or cooling device e.g. Electromantle or Electric Bunsen. For clear operation, the MC810B Digital Controller has an On/Off Power switch, "Power On" amber neon indicator and an Exit/Standby button.

Programming is done via the Up/Down controls on the front panel and the 3 digit LED display allows you to set a 1°C resolution over a range of -10°C to 800°C. Temperature sensing is performed by a plug-in PTFE covered platinum resistance thermometer probe which is suitable for measurements up to 270°C. There is a 5 pin DIN socket for the temperature probe. The sample temperature is displayed on the 3-digit LED display.

The MC810B Digital Controller has a zinc die-cast outer case, and is suitable for bench and retort stand mounting or wall mounting using the wall bracket and retort rod clamps provided. It has a short mains output lead with an IEC socket to connect it to the resistive load. An accessory extension mains lead is available where remote operation is required (e.g. in a fume extraction unit).

Technical Specification

Electrical requirements	230V, 50/60Hz, 1500W 115V, 50/60Hz, 750W
Controller power consumption	<2W
Dimensions (d x w x h), mm	100 x 120 x 80
Weight, kg	1.1

Ordering Information

Model	Description	Electrical Requirements
MC810B	Digital Controller	230V, 50/60Hz, 1500W
MC810BX1	Digital Controller	115V, 50/60Hz, 750W
MC801BX6*	Digital Controller	230V, 50/60Hz, 1500W

**Comes with EU Plug fitting*

FM110

Flow Monitor

Flow monitors can be used in conjunction with the Multi (Extraction) Mantles EME and EMEA series. The new Electrothermal FM110 Flow Monitor has been carefully designed to provide increased safety in the laboratory by the monitoring of aqueous liquid used in heating-cooling applications and process control. The turbine assembly is comprised of components made from chemically resistant materials such as PVDF, sapphire, ceramic and viton. A rod support clamp is provided at the rear of the controller to take a standard 12.5mm (1/2") diameter rod.

Two versions of the Flow Monitor are available, covering different flow rates as follows.

FM110 0.5 to 15 litres/min with a fixed alarm point of 4 to 5 litres/min

FM1102B 0.1 to 5 litres/min with a fixed alarm point of 0.4 to 0.7 litres/min

Once the alarm is triggered, the output from the flow monitor will switch off the extraction mantle.

Technical Specification

Mains supply voltage	110 - 120V, 50/60Hz
	220 - 240V, 50/60Hz
Maximum load current	115V = 15A
	230V = 10A
Mains output	Non-detachable 3 core mains cable with moulded IEC socket (230V) or USA socket (115V)
Remote alarm output	2-pin DIN socket
	5-pin DIN socket
Rod clamp size	12.7mm diameter
Manual reset control	2-position slide switch (front panel)
Reset mode control	2-position slide switch (side panel)
Operating ambient temperature	5°C to 40°C
Fluid temperature parameters	-30°C to +80°C

Ordering Information

Model	Description
FM110*	Flow monitor; 0.5 - 15 litres/min flow rate
FM1102B*	Flow monitor; 0.1 - 5 litres/min flow rate

**Note: Add X1 suffix for 115V and X6 suffix for 230V with EU plug*

Accessories - Ordering Information

Controllers

Part Code	Description
AZ6745	Mains cord and moulded IEC plug and lead set (UK).
AZ6747	Mains cord and moulded IEC plug and lead set (Schuko).
AZ6705	Temperature Probe 250°C Max.
AZ6706	Temperature Probe 400°C Max.
AZ6741	Temperature Probe 800°C Max.
M6332	Extension Lead (Europe)
M6902	Extension Lead (UK)

Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.

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