

MicroM SERIES

Bulletins MC-5000, MAMP-1, MOPT-1, MP-5201, UM-2

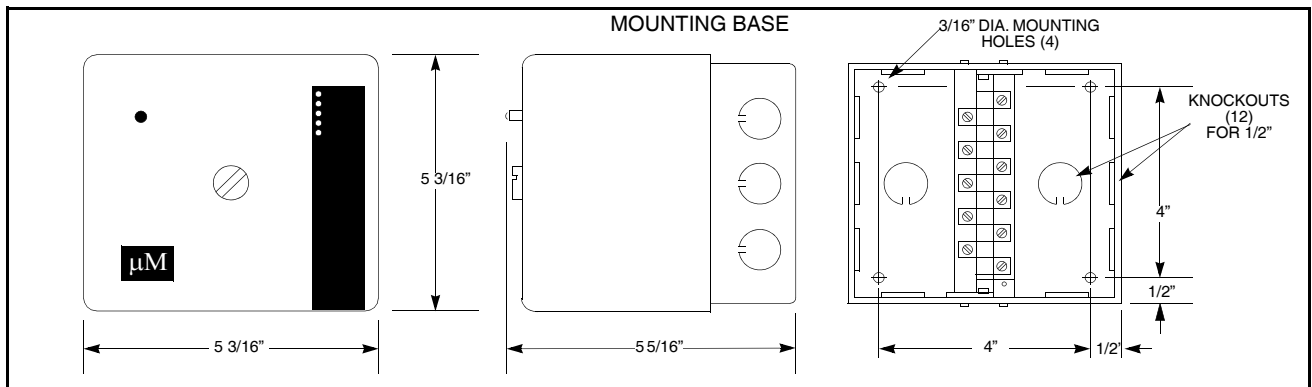
The Fireye MicroM Flame Safeguard controls are compact, modular burner management systems designed to provide automatic ignition and continuous flame monitoring for commercial sized heating and process burners firing any type of fuel. The MicroM is designed to be backward compatible with existing M-Series controls. The MicroM, through the use of micro-controller technology, incorporates “smart” diagnostic LED’s, optional alphanumeric display (ED510), remote reset capability, and serial communications via MODBUS or E500 Communication Interface. These options are available through plug-in option boards to the chassis. The optional ED510 display can be utilized to access burner hours and cycles, system hours, the last 6 lockouts with burner cycle time stamp and programmer configuration. The optional MODBUS communications capability allows the integration of the MicroM control into upper level energy management / data acquisition systems.



A complete MicroM system consists of the appropriate flame scanner/detector, plug-in amplifier and programmer modules connected into a standard chassis and wiring base. Interchangeable programmer and amplifier modules allow complete versatility when selecting control function, timing, and flame scanning method. Functions such as relight, two-stage capability, purge timing, and pilot cutoff are determined by the programmer module. Type of flame scanner (UV, UV self check, infrared, flame rod, photocell, and cadmium cell) and Flame Failure Response Time (FFRT) are determined by the amplifier module. All amplifiers are available with flame failure response times of 0.8 seconds or 3 seconds nominal (4 seconds max), and each provide a set of test jacks with a range of 0-10 VDC for the measurement of flame signal intensity.

Some programmer modules (MEP200 and MEP500 series) have dipswitches for selecting purge timing, pilot trial-for-ignition (PTFI) timing, recycle or non-recycle operation, prove air flow open at start, and post purge. Smart LED indicators on all of the programmer modules indicate the current operating status of the control and, during a safety lockout, display the fault as a coded sequence, simplifying the troubleshooting of a shutdown. A “run-check” switch is provided on the MEP500 series programmers to assist in testing the size, position, and stability of the pilot. The MicroM control incorporates a safety checking circuit that is operative on each start. If flame (real or simulated) is detected prior to a start or during purge, the fuel valves will not be energized and the control will lockout.

DIMENSIONS



| PART NUMBER | MicroM Chassis Types for use with MEP100, 200 and 500 series programmers |
|-------------|---|
| MEC120 | 120 VAC input with standard plug-in board |
| MEC120R | 120 VAC input with remote reset capability |
| MEC120D | 120 VAC input with alpha-numeric display interface to ED510 |
| MEC120C | 120 VAC input with interface to E500 Communication Interface and Modbus capability. |
| MEC120RC | 120 VAC input with remote reset capability, alpha-numeric display interface to ED510, interface to E500 Communication Interface and Modbus capability |
| MEC120RD | 120 VAC, 50/60 Hz Chassis with remote reset capability and interface to ED510. |
| MEC230RC | 230 VAC, 50/60 Hz Chassis with remote reset capability, interface to ED510, interface to E500 Comm. Interface, and Modbus capability. |
| MEC230 | 230 VAC input with standard plug-in board. |

| PART NUMBER | MicroM Programmer Models, for use with MEC120/MEC230 chassis |
|--------------------|---|
| MEP100 | Relight operation, 10 sec. PTFI |
| MEP101 | Relight operation, allow flame signal during "off cycle" |
| MEP102 | Non-recycle on flame fail, 5 second PTFI |
| MEP103 | Fixed 10 second PTFI, 10 second MTFI, re-try once on pilot failure, post purge |
| MEP104 | Non-recycle on flame fail, 10 second PTFI |
| MEP105 | Non-recycle on flame fail, lockout on air flow open with flame present, 10 FTFI. |
| MEP106 | Relight operation, 12 sec purge, 10 sec PTFI, reset lockout on line power interruption. |
| MEP107 | 5 sec purge, 10 second PTFI, 5 minute delay following flame failure. For natural draft atmospheric gas burners |
| MEP108 | Non-recycle operation, 0 sec purge, 15 second PTFI, 10 sec-ond post purge, no FM Approval. |
| MEP109 | Immediate ignition and pilot after limits are closed, 10 sec PTFI (fixed), 10 sec MTFI, intermittent pilot, non-recycle on flame fail. |
| MEP100P | Relight operation, 10 sec PTFI, 15 second post purge. |
| MEP130 | Relight operation, 30 sec PTFI, no agency approvals |
| MEP141 | 30 sec purge, 5 sec PTFI, 15 sec post purge, Prove air at start, 8 sec pilot stabilization, non-recycle on flame fail. |
| MEP149 | 30 sec purge, 5 sec PTFI, 90 sec post purge, prove air at start, 8 sec pilot stabilization, non-recycle on flame fail. |
| MEP230 | Selectable purge timing, PTFI timing, recycle/non-recycle, post purge, prove air open at start |
| MEP230H | Same as MEP230 with 8 second pilot stabilization |
| MEP235 | Same as MEP230 with lockout on air flow open 10 seconds after the start of a cycle, selectable recycle/nonrecycle lockout on air flow open after flame is proven and dedicated lockout after loss of flame. |
| MEP236 | Same as MEP230 with additional 6 second igniter on time with main fuel. To be used with intermittent pilot only. |
| MEP238 | Selectable recycle/non-recycle function, TFI timing, purge timing, post purge, prove open at start. Ignition de-energized 3 seconds after pilot detected. Provides 8 second pilot stabilization period. |
| MEP290 | Same as MEP230 except selectable post purge is 0 or 90 seconds. |
| MEP437 | Valve proof of closure, selectable purge, PTFI timing, intermittent or interrupted, recycle / non-recycle operation, reset by power interruption of manual reset. |
| MEP536 | Same as MEP236, 10 second trial for ignition, run-check switch, will not lockout on air flow open during purge. |
| MEP537 | Selectable purge, PTFI, post purge, prove open at start, recycle/non-recycle (with one recycle on flame fail), 10 sec MTFI. |
| MEP560 | Same as MEP230H, 10 second main trial for ignition, run-check switch |
| MEP561 | Same as MEP560 without pilot stabilization |
| MEP562 | Same as MEP560, lockout on loss of air flow, non-recycle operation only |
| MEP564 | Same as MEP560 except purge timings are 7 30, 60, and 240 (4 minutes) seconds. |

| PART NUMBER | MicroM Series MEC320 Chassis for use with MEP300 and 600 Series Programmers |
|--------------------|---|
| MEC320 | MicroM chassis with local reset; 120 VAC, 50/60 Hz, provides independent relay outputs on terminals 3 and 4. For use with MEP300 and MEP600 series programmers. |
| MEC320R | MicroM MEC320 chassis with remote reset. For use with MEP300 and 600 series programmers. |
| MEC320D | MicroM MEC320 chassis with alpha-numeric display interface to ED510. For use with MEP300 and 600 series programmers. |
| MEC320C | MicroM MEC320 chassis with interface to E500 Communication Interface and Modbus capability. For use with MEP300 and 600 series programmers. |
| MEC320RC | MicroM MEC320 chassis with remote reset capability, interface to ED510, interface to E500 Comm. Interface, and Modbus capability. For use with MEP300 and 600 series programmers. |
| MEC320RD | MicroM MEC320 chassis with remote reset capability and interface to ED510. For use with MEP300 and 600 series programmers. |
| MEC320TS | MicroM MEC320 chassis with remote communications and independent relay output. For use with MEP696 programmer only. |
| MEC480 | MicroM chassis with local reset; 230 VAC, 50/60 Hz, provides independent relay outputs on terminals 3 and 4. For use with MEP300 and 600 series programmers. |

| PART NUMBER | Programmers for use with MEC320 / MEC480 Chassis |
|--------------------|--|
| MEP300 | Relight operation on main flame fail, lockout on PTFI and MTFI flame fail, 10 sec PTFI (fixed), 5 sec pilot proving, 5 sec MTFI. |
| MEP304 | 5 sec purge, 10 sec PTFI (fixed), 5 sec pilot proving, 10 sec MTFI, interrupted pilot, interrupted ignition, non-recycle on flame fail. |
| MEP397 | 15 sec purge, provides interrupted ignition, interrupted pilot, non re-cycle on flame fail. |
| MEP696 | Provides selectable PTFI, selectable baud rate, and selectable recycle / non-recycle operation. For use with MEC320TS chassis only. |
| MEP697 | Selectable TFI timing, purge timing, post purge, prove open at start, and recycle / non-recycle on flame fail. Includes 5 sec pilot proving, early spark termination, 5 sec MTFI, and interrupted pilot. |

| PART NUMBER | MicroM Amplifier Models (common for all controls) |
|--------------------|--|
| MEUV1 | UV amplifier, 0.8 second FFRT, uses UV1A, UV2, UV8A and 45UV3-1050 scanners |
| MEUV4 | UV amplifier, 3 second FFRT, uses UV1A, UV2, UV8A and 45UV3-1050 scanners |
| MEUVS1 | UV Self-Check amplifier, 0.8 second FFRT, uses 45UV5-1007, -1008, -1009 scanners |
| MEUVS4 | UV Self-Check amplifier, 3 second FFRT, uses 45UV5-1007, -1008, -1009 scanners |
| MERT1 | Flame Rod / Photocell amplifier, 0.8 second FFRT, uses 69ND1 or 45CM1 |
| MERT4 | Flame Rod / Photocell amplifier, 3 second FFRT, uses 69ND1 or 45CM1 |
| MEIR1 | Infrared amplifier, 0.8 second FFRT, uses 48PT2 scanner |
| MEIR4 | Infrared amplifier, 3 second FFRT, uses 48PT2 scanner |
| MECD1 | Cadmium sulfide amplifier, 0.8 second FFRT, uses CS1A5 scanner |
| MECD4 | Cadmium sulfide amplifier, 3 second FFRT, uses CS1A5 scanner |

| PART NUMBER | Optional Plug-In Board Module (common for all controls) |
|--------------------|---|
| MED1 | Standard local reset switch |
| MED2 | Same as MED1 with display output |
| MED3 | Same as MED1 with remote reset |
| MED4 | Same as MED1 with display output and remote reset |
| MED5 | Same as MED1 with display output and communications |
| MED6 | Same as MED1 with display output, remote reset and communications |
| MED7 | Same as MED1 with communications |

| PART NUMBER | Wiring Base (Common for All Controls) |
|--------------------|--|
| 61-3060 | Closed wiring base, surface mounting |
| 61-5042 | Open wiring base, cabinet mounting |

| PART NUMBER | Programmers and Flame Amplifiers for use with Integrated Flame Scanners |
|--------------------|---|
| MEP237 | Programmer, Selectable recycle/non-recycle function, TFI timing, purge timing, post purge, prove open at start. Provides 0.30 second flame failure response time, for use with Phoenix and InSight flame scanner and MEDC2 amplifier. |
| MEDC2 | Amplifier for use with dry contact input from Phoenix and InSight flame scanner. 0.30 sec FFRT. Use with MEP237 and 85UVF4-1QDWR, 85IRF4-1QDWR, or InSight scanner (with 59- 497-020WR cable). |