



MEP437 PROGRAMMER MODULE

FOR USE WITH THE FIREYE® MEC320
MicroM™ CONTROL



WARNING: Selection of this control for a particular application should be made by a competent professional, licensed by a state or other government. Inappropriate application of this product could result in an unsafe condition hazardous to life and property.

DESCRIPTION

The Fireeye MicroM Series Flame Safeguard Control is a compact, microprocessor based, modular burner management system designed to provide automatic ignition and continuous flame monitoring for commercial sizes of heating and process equipment firing any type of fuel. The advantages of the MicroM are zero dependence on discrete components previously used for timing functions.

Flame Failure Response Time (FFRT) is determined by the selection of the amplifier module. Test jacks are also provided on the flame amplifier module to permit flame signal measurement during operation. For proper and safe application of this product, you must refer to Fireeye bulletin MC-5000 for a detailed description of the various programmer modules, including installation instructions, amplifier selection, operating sequences for each programmer module, etc.

To maximize safety the MEP437 provides early spark termination followed by a pilot proving period. This prevents the unwanted detection of spark generated by a maladjusted pilot and spark assembly. Refer to Figure 3 on page 4, Sequence Timing.

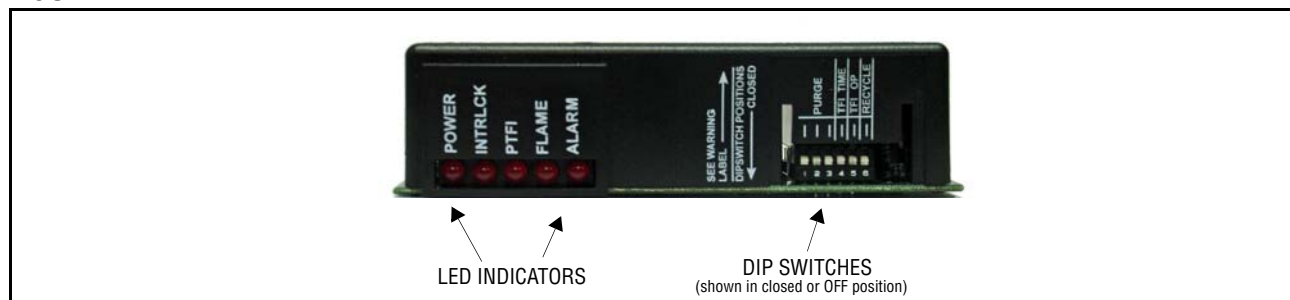
Unique to the MEP437 is the ability to check the main valve proof of closure switch also referred to the fuel valve end switch. This switch must be connected to terminals L1-7. The proper state of this switch checked after the running interlocks connected to terminal 6 are closed. Refer to Figure 2 on page 3.

Functions provided on the MEP437 programmer:

1. Operating temperature: -40F (-40C) to 140 F (60C)
2. MEC320 type chassis required
3. Purge time: User selectable 0, 5, 15, 30, 60, 90, 120, 240 seconds
4. Pilot trial for ignition period (PTFI): User selectable 5 (closed) or 10 seconds (open) fixed.
5. Pilot solenoid operation, terminal 3 user selectable Interrupted or Intermittent
6. Pilot proving period (ignition terminal 4 de-energized): 5 seconds
7. Main trail for ignition period (MTFI): 5 seconds
8. Action on pilot flame fail: Lockout
9. Action on pilot proving period flame fail: Lockout
10. Action on main trial for ignition period flame fail: Lockout

11. Action on main flame fail
 - *User selectable Recycle or Non-Recycle operation*
 - *Recycle once if main flame on greater than 30 seconds else lockout*
12. Main Valve proof of closure input: Terminal 7 - active only after Terminal 6 active
13. Operating limit input: Terminal 6
14. Post purge time after operating limit open with flame present: 15 seconds
15. Post purge time after flame fail during PTFI, STABILIZATION, and MTFI period: 10 seconds
16. Reset from lockout achievable from local reset push button or line power.
17. LED will be illuminated as long as power applied to Terminal 1.

FIGURE 1.



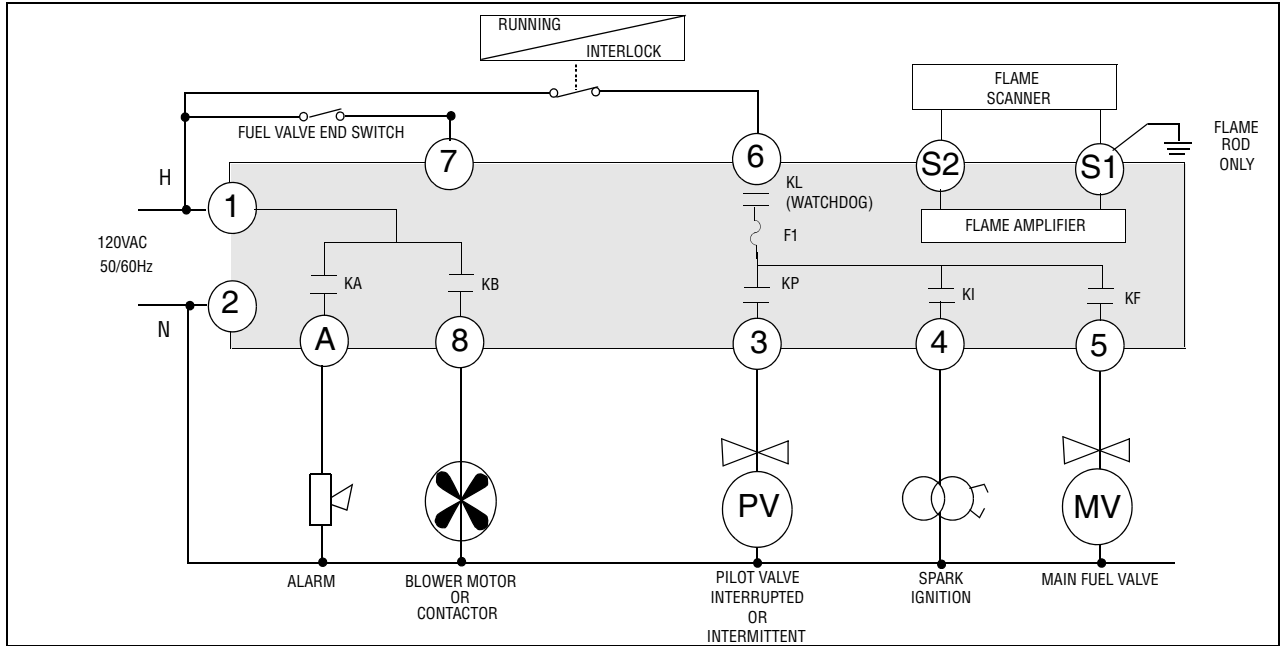
MEP437 Programmer Dip Switch Configuration

SWITCH						FUNCTION	RESULT
6	5	4	3	2	1		
			C	C	C	PURGE TIME SELECTION (seconds)	0
			C	C	O		5
			C	O	C		15
			C	O	O		30
			O	C	C		60
			O	C	O		90
			O	O	C		120
			O	O	O		240
		C				PTFI TIME (seconds)	5
		O					10
	C					PILOT OPERATION	INTRPT
	O						INTMT
C						FLAME FAIL	RECYCLE
O							NON-RECYCLE

Note: C refers to switch closed position, closed position is when the switch is toward the printed circuit board. O refers to switch open position or when the switch is moved away from the printed circuit board. Indicating arrow on top of programmer cover points toward closed position.

Once the switches are set, they become permanently stored after 8 hours of continuous operation or they can be manually set through the use of the optional ED510 display.

FIGURE 2. WIRING ARRANGEMENT FOR PILOT IGNITED BURNERS USING MEP437 PROGRAMMER



Lockout occurs on all occurrences of flame failure.

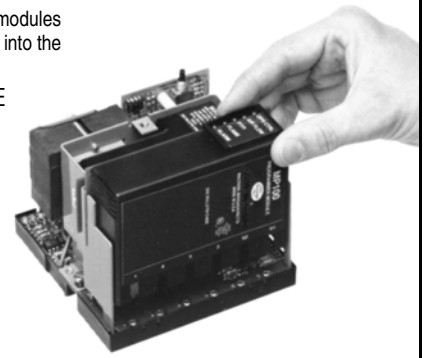


WARNING: Remove power from the control before proceeding.

INSTALLATION

The Programmer Modules are used with the Fireye modular MicroM Chassis (P/N MEC320, MEC320RC, MEC320R, MEC320D and MEC320C for 120VAC and MEC480 for 230 VAC). They are installed in the chassis by grabbing hold of the programmer module by the ridged finger grips on the side on the module, aligning the module with the guide slots on the opening farthest from the transformer, and inserting the module into the pin connectors.

The programmer modules are designed to fit into the proper slot only. **DO NOT FORCE THEM**





SEQUENCE TIMING - MEP437

FIGURE 3.

Sequence Timing - MEP437			Cycle Start				Pilot Off Interrupted	Pilot On Intermittent	Interlock Open		
Terminal	Function										
Outputs	1	Control Power	[Timing diagram showing pulse]								
	8	Blower	[Timing diagram showing pulse]								
	3	Pilot Valve	[Timing diagram showing pulse]								
	4	Ignition	[Timing diagram showing pulse]								
	5	Main Valve	[Timing diagram showing pulse]								
Inputs	6	Interlocks	[Timing diagram showing pulse]								
	7	POVC	don't care	[Timing diagram showing hatched area]							
Standby			Selectable Purge 0 - 240 seconds	Pilot Trial 5s or 10s Selectable	Flame Check Period 5 Sec.	Main Trial 5 Sec.	30 seconds Firing Cycle	Recycle permitted	Post Purge 15 Sec.	Cycle End	

NOTICE

When Fireye products are combined with equipment manufactured by others and/or integrated into systems designed or manufactured by others, the Fireye warranty, as stated in its General Terms and Conditions of Sale, pertains only to the Fireye products and not to any other equipment or to the combined system or its overall performance.

WARRANTIES

FIREYE guarantees for *one year from the date of installation or 18 months from date of manufacture* of its products to replace, or, at its option, to repair any product or part thereof (except lamps, electronic tubes and photocells) which is found defective in material or workmanship or which otherwise fails to conform to the description of the product on the face of its sales order. **THE FOREGOING IS IN LIEU OF ALL OTHER WARRANTIES AND FIREYE MAKES NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED.** Except as specifically stated in these general terms and conditions of sale, remedies with respect to any product or part number manufactured or sold by Fireye shall be limited exclusively to the right to replacement or repair as above provided. In no event shall Fireye be liable for consequential or special damages of any nature that may arise in connection with such product or part.



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