



## MEP696 and MEP697 PROGRAMMER MODULES

FOR USE WITH THE FIREEYE® MODULAR  
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.

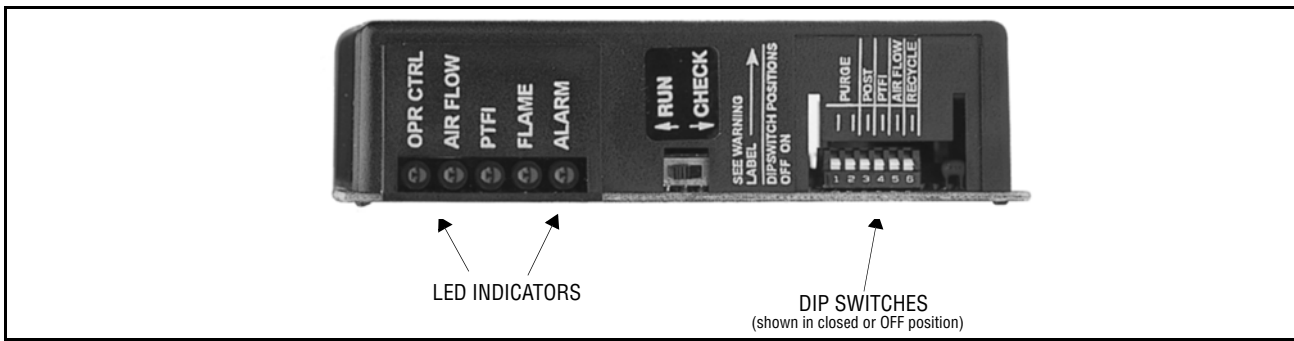
To maximize safety the MEP696 and MEP697 provide early spark termination followed by a pilot proving period. This prevents the unwanted detection of spark generated by a maladjusted pilot and spark assembly. The air flow switch connected between terminals 7 and 6 must be closed within 10 seconds after the start of a cycle.

#### Functions provided on the MEP696 programmer:

1. Fixed 30 second pre-purge period.
2. Ignition terminal 4 shuts off 10 seconds into the Pilot Trial for Ignition.
3. 5 second Pilot Proving period.
4. Pilot terminal 3 shuts off 5 seconds into the Main Trial for Ignition.
5. Post Purge has selectable 0 or 60 seconds duration.
6. Release to modulate contacts change state 1 second into AUTO (MEC320TS required).
7. Lockout occurs if air flow, terminal 6, is not proven 10 seconds into purge.
8. Dip switch selectable communication baud rate, 4800, 9600 or 19200 baud.
9. Dip switch selectable pilot trial for ignition timing, 5 or 10 seconds.

**Functions provided on the MEP697 programmer:**

1. Dip switch selectable purge.
2. Dip switch selectable pilot trial for ignition (PTFI).
3. 5 second Pilot Proving period.
4. 10 second main trial for ignition (MTFI).
5. Early spark termination.
6. Interrupted pilot.
7. Dip switch selectable post purge.
8. Forced 15 second post purge after flame fail.
9. Lockout on flame fail.
10. Dip switch selectable lockout or hold if air flow not closed 10 seconds into cycle.
11. Lockout on air flow open while main valve energized.
12. Release to modulate contacts change state into 5 seconds into AUTO (MEC320TS required).



**MEP696 Programmer Dip Switch Configuration**

SWITCH						FUNCTION	
6	5	4	3	2	1		
				C	C	4800	BAUD RATE SELECTION
				C	O	9600	
				O	C	19200	
				O	O	19200	
			C			DISABLED	POST PURGE
			O			60 SECONDS	
		C				5	PTFI TIME
		O				10	
		C				DISABLE	PROVE AIR FLOW OPEN AT START
		O				ENABLE	
C						RECYCLE	
O						NON-RECYCLE	

**MEP697 Programmer Dip Switch Configuration**

SWITCH						FUNCTION	
6	5	4	3	2	1		
				C	C	7	PURGE TIME SELECTION (seconds)
				C	O	30	
				O	C	60	
				O	O	90	
			C			DISABLED	POST PURGE
			O			15 SECONDS	
		C				5	PTFI TIME
		O				10	
		C				DISABLE	PROVE AIR FLOW OPEN AT START
		O				ENABLE	
C						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.*

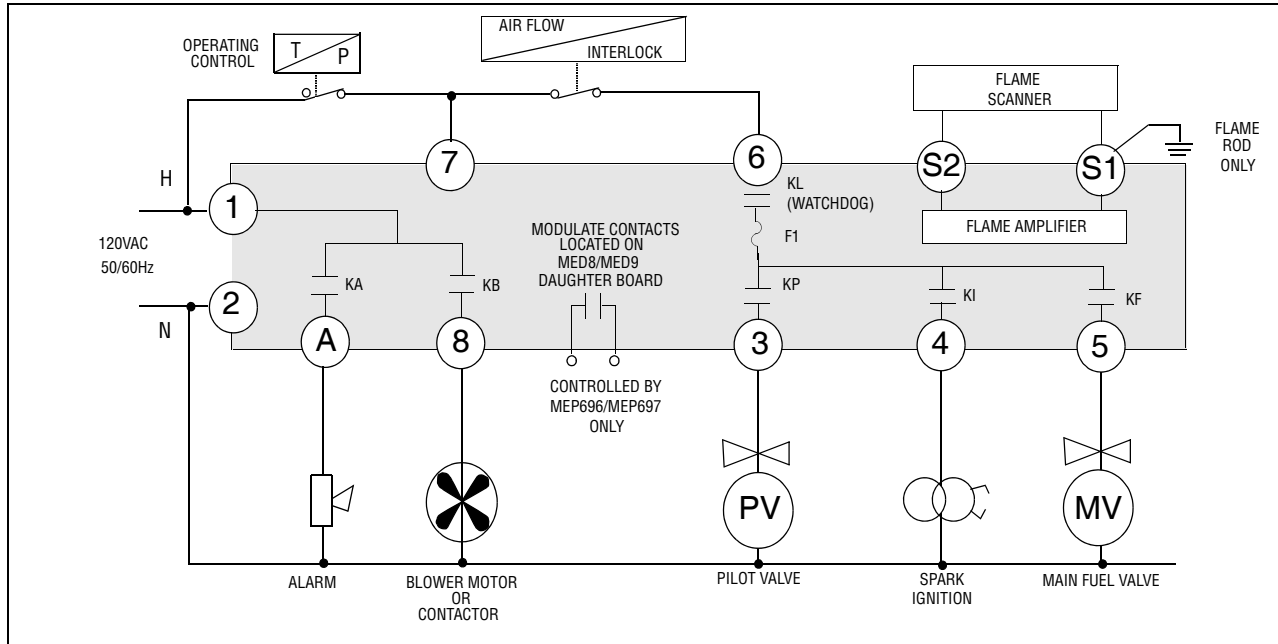
*Once the switches are set, they become permanently stored after 8 hours of continuous operation or they can be manually set through the use of the optional ED510 display.*

**NOTES (MEP696 Only):**

**Baud Rate:** On every application of power, the communication baud rate is determined by switches 1 & 2. The available selections are 4800, 9600 and 19200 baud. *Note the ED510 requires the baud rate to be set at 4800, switches 1 & 2 closed.*

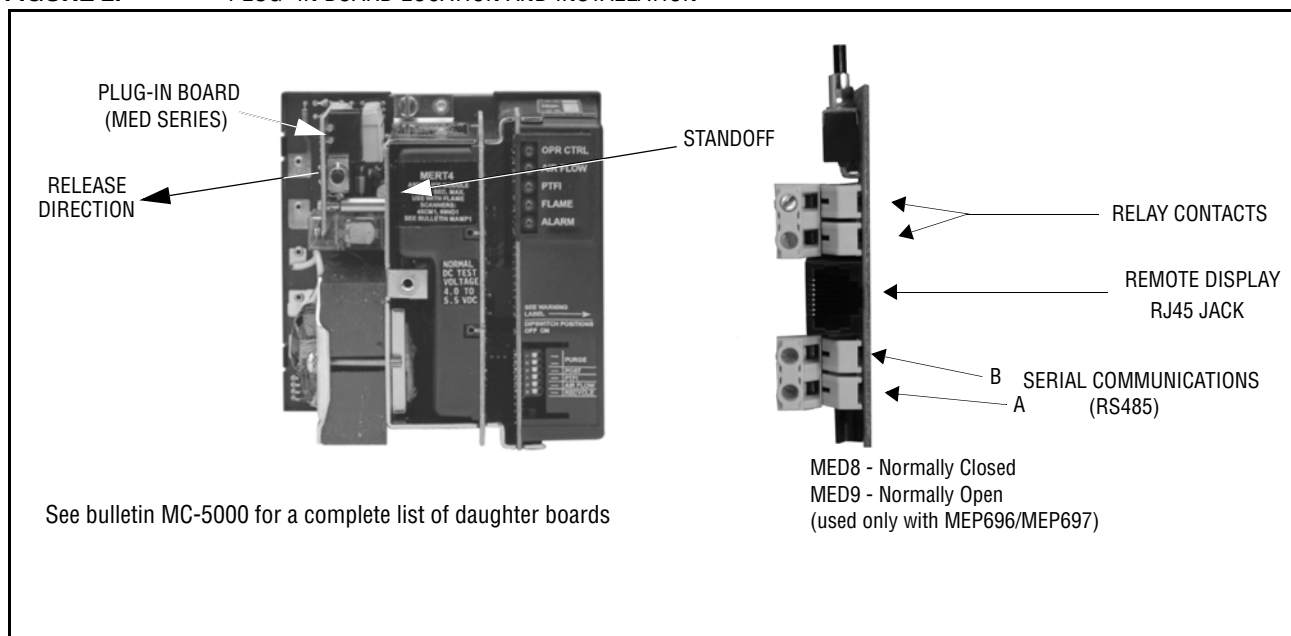
**Recycle:** Applies to air flow interlock opening during the Run condition. If the air flow interlock (Terminal #6) opens, the control will de-energize Terminals #3, #4 and #5, and if Recycle is selected a new prepurge period will begin. Lockout and alarm will occur immediately after air flow interlock opening if Non-Recycled is selected.

**FIGURE 1.** WIRING ARRANGEMENT FOR PILOT IGNITED BURNERS USING MEP600 PROGRAMMER



Lockout occurs on all occurrences of flame failure.

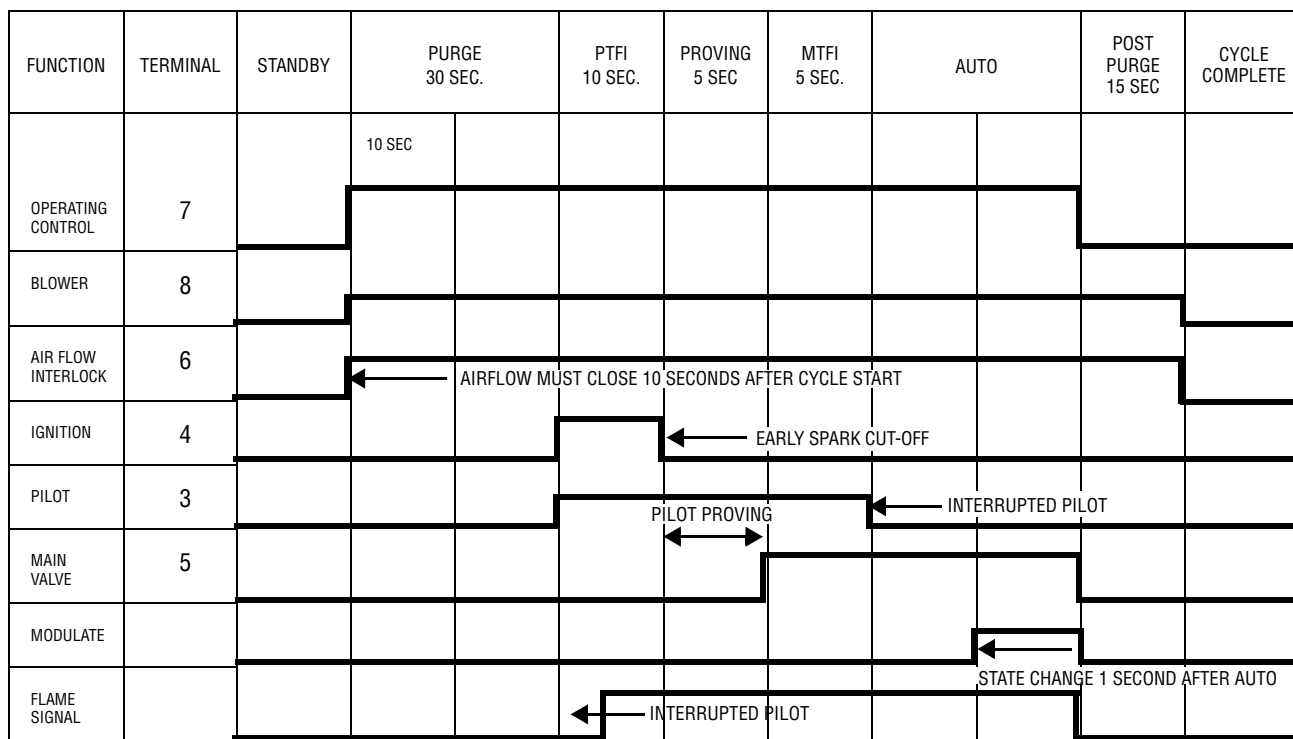
**FIGURE 2.** PLUG-IN BOARD LOCATION AND INSTALLATION



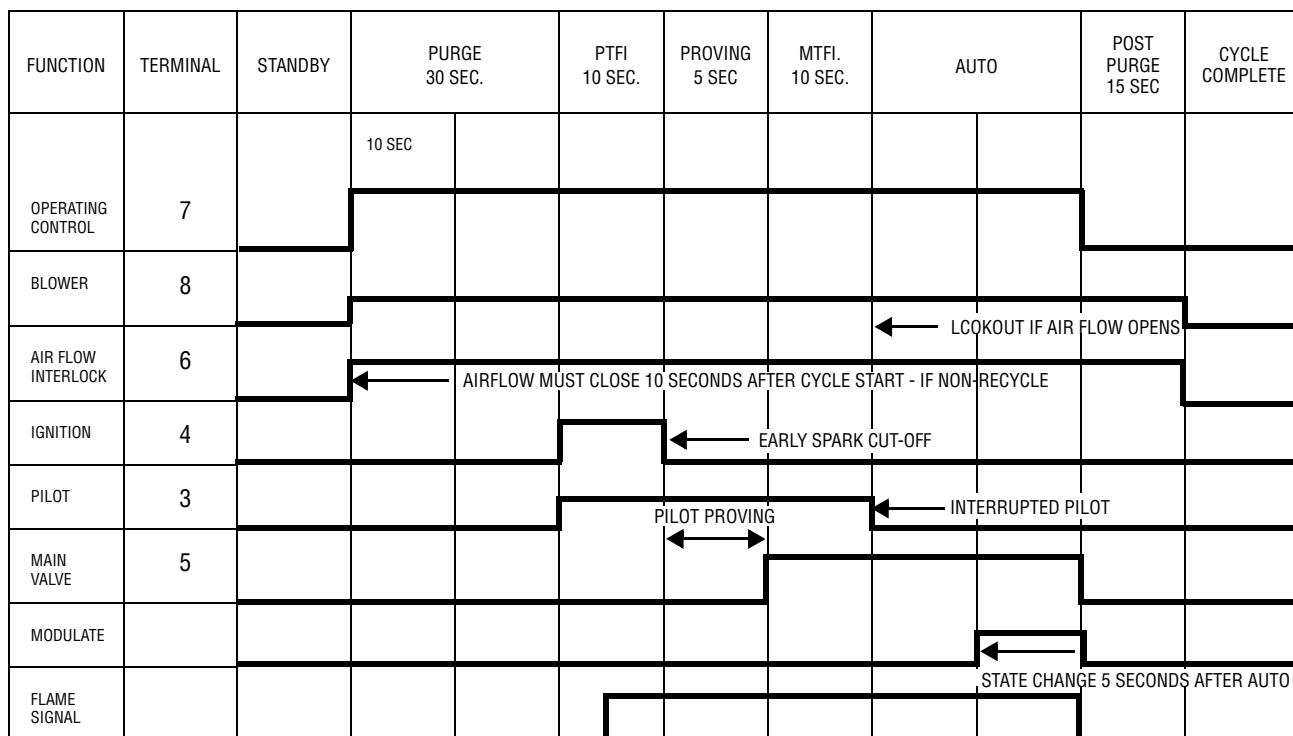


## SEQUENCE TIMING

**Table 1: MEP696**



**Table 2: MEP697**





Off state, the LEDs are made to flash sequentially to show the operational status of the control every minute. The LEDs can be tested by pressing and releasing the Reset push button, while in the Idle or Off state.

## LOCKOUT CODES

MSGN		DESCRIPTION	OP CTRL	AIRFLOW INTLCK	TFI	FLAME	ALARM
DEC	HEX						
6	6	Lockout Line Frequency Noise Detected	●	○	○	●	*
7	7	Lockout Flame Fail - TFI	○	●	●	●	*
15	0F	Lockout Fault Unknown	●	●	●	●	*
16	10	Lockout Amplifier High Count Fail	○	○	○	○	*
19	13	Lockout Flame Fail - MTFI	○	○	●	●	*
20	14	Lockout False Flame - STANDBY	○	●	○	○	*
21	15	Lockout Intrlck Open	●	●	●	○	*
22	16	Lockout Intrlck Closed	○	●	●	○	*
24	18	Lockout Chassis Opto	●	●	○	●	*
37	25	Lockout Flame Fail - AUTO	○	●	○	●	*
39	27	Lockout Fuel Valve State Change	○	○	○	●	*
54	36	Lockout Check Chassis	○	○	○	●	*
55	37	Lockout Check Programmer	○	○	●	○	*
56	38	Lockout Check Amplifier	●	○	○	○	*
58	3A	Lockout Amplifier Auto Check Fail	●	○	●	○	*
59	3B	Lockout Check BLOWN FUSE	●	○	●	●	*
76	4C	Lockout Check Scanner	●	●	○	○	*
N/A	N/A	System Error	*	*	*	*	●

○ = NOT LIGHTED

● = LIGHTED

\* = FLASHING

All LED's Flashing indicates defective programmer.

All MicroM chassis are shipped with a convenient peel off label that can be applied to any surface (inside cover) for future reference.



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## NOTICE

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

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## 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 Fireeye shall be limited exclusively to the right to replacement or repair as above provided. In no event shall Fireeye be liable for consequential or special damages of any nature that may arise in connection with such product or part.



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MP-5601  
APRIL 29, 2010  
Supersedes June. 20, 2008