

Type 57AV7 Model 1000 UNIVERSAL TEST UNIT FOR M-SERIES CONTROLS

DESCRIPTION

Fireye test unit Type 57AV7 Model 1000 provides a simple and convenient means to field-test the Fireye M-Series and M-Series II controls.

MODEL ¹	PURGE ²	FFRT	RELIGHT	RECYCLE ³	NON-RECYCLE ³	FLAME DETECTOR	BULLETIN
UVM1D or MP100 w/MAUV1T		0.8	X			UV	C-400 or C-4000
UVM1F or MP100 w/MAUV1		2-4	X			UV	C-400 or C-4000
TFM1D or MP100 w/MART1T		0.8	X			Rod/P.C.	C-400 or C-4000
TFM1F or MP100 w/MART1		2-4	X			Rod/P.C.	C-400 or C-4000
UVM2-2A or MP230 w/ MAUV1	X	2-4		X		UV	C-400 or C-4000
TFM2-2A or MP230 w/MART1	X	2-4		X		Rod/P.C.	C-400 or C-4000
UVM3 or MP230 w/MAUV1	X	2-4			X	UV	C-400 or C-4000
TFM3 or MP230 w/MART1	X	2-4			X	Rod/P.C.	C-400 or C-4000
UVM3H	X	2-4			X	UV	C-400 or C-4000
TFM3H	X	2-4			X	Rod/P.C.	C-400 or C-4000
UVM5 or MP560 w/MAUV1	X	2-4			X	UV	C-400 or C-4000
MP560 w/MART1	X	2-4				Rod/P.C.	C-4000
UVM6 ⁴ or MP560, MP561, MP562 w/MAUVF1	X	2-4		X		UV	C-400 or C-4000

¹ All M-Series II controls use the MC120 chassis.

² Purge timing is determined via timing card on M-Series controls, via dipswitches on M-Series II controls.

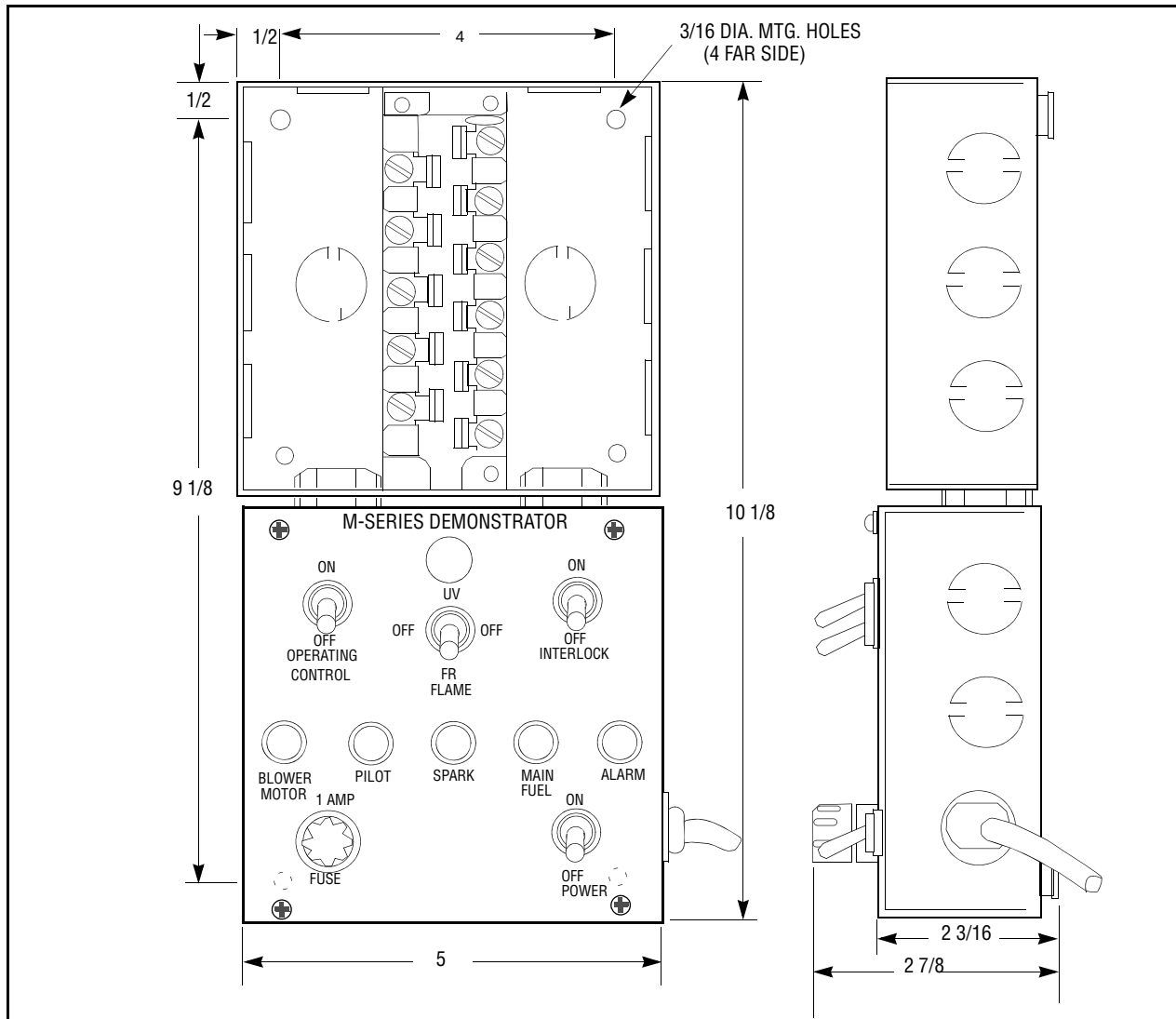
³ Recycle or Non-Recycle operation is determined via dipswitches on M-Series II controls. MP100 programmer is recycle operation only.

⁴ Clip red jumper on UVM6 to make non-recycle.

INSTALLATION

The Type 57AV7 tester is intended primarily for portable use. However, when a fixed installation is needed, the four rubber feet on the back may be removed and screws or both used to mount the unit. The tester is provided with a three-prong plug on the line cord. If an adapter is used for a two-wire outlet, the pigtail should be reliably grounded. When a Fireye chassis is plugged into the test unit, a complete burner firing operation can be simulated and checked through the use of switches.

MOUNTING DIMENSIONS



PANEL COMPONENT IDENTIFICATION

1. Power Switch: Simulates the main disconnect switch, connected between the hot line and terminal 1.
2. Operating Switch: Simulates the limit switches and operating controls, connected between terminals 1 and 7.
3. Interlock Switch: Simulates an air flow switch or other interlocking devices, connected between terminals 8 and 6.
4. Flame Switch: Simulates an operating flame detector — in FR position, a flame rod or photo-cell; in UV position, a U-V-eye scanner. The center position of the switch is OFF.



5. Blower Motor Lamp (white): Simulates the burner/blower motor — connected to terminals 8 and 2.
6. Pilot Lamp (amber): Simulates the pilot fuel valve, connected to terminals 3 and 2.
7. Spark Lamp (amber): Simulates the ignition transformer, connected to terminals 4 and 2.
8. Main Fuel Lamp (amber): Simulates the main fuel valve, connected to terminals 5 and 2.
9. Alarm Lamp (red): Simulates the lockout alarm, connected to terminals A and 2.

PROCEDURE

1. Refer to Bulletins C-400 or C-4000 for the detailed description of operation for the specific control being tested.
2. Turn all switches to OFF before installing the control chassis.
3. Install the control chassis and securely tighten the two retaining screws.
4. Reset the control lockout switch.

OPERATING TEST

Complete Cycle

1. Turn POWER switch to ON position.
2. Turn OPERATING switch to ON position. Blower motor light turns on.
3. Turn INTERLOCK switch to ON position.
 - UVM1 and TFM1 controls and MP100 programmers will pause for a few seconds (safe start check) before energizing terminals 3 (Pilot) and 4 (Spark), initiating a 10-second trial for ignition period. Proceed to step 5.
 - All other M-Series controls and programmer modules will begin their purge period (determined via timing card on the M-Series controls, via dipswitches on the M-Series II controls).
4. At the end of the purge period, terminals 3 (Pilot) and 4 (Spark) are energized, initiating the trial for ignition period (determined via timing card on the M-Series controls, via dipswitches on the M-Series II controls).
5. Turn “flame” switch to the UV position (ultra-violet) for the UVM controls, MAUV1, or MAUV1T amplifiers. Turn “flame” switch to the FR position (flame rectification) for the TFM controls, MART1 or MART1T amplifiers.
 - On UVM1, TFM1, UVM2, TFM2 controls and MP100, MP230 programmers: When flame is detected, the “main fuel” light (term 5) is energized, the “spark” light (term 4) turns off.
 - On UVM3H, TFM3H controls and MP230H programmers: There is a 5 to 8 second delay after flame is detected before the “main fuel” light is energized and the “spark” light is de-energized.
 - On UVM5, UVM6 controls and MP560 and MP562 programmers: There is an 8 second delay after flame is detected before the “main fuel” light is energized. 10 seconds after the “main fuel” light is energized, the “spark” light is de-energized.
 - On the MP561 programmer: When flame is detected, the “main fuel” light is energized. 10 seconds after the “main fuel” light is energized, the “spark” light is de-energized.

Ignition Failure

For all controls: During a regular start, after the “pilot” (term 3) and “spark” (term 4) lights are energized, leave the flame selector switch in the “off” position. At the end of the trial for ignition period (determined via timing card on the M-Series controls, via dipswitches on the M-Series II controls), the “pilot” and “spark” lights are de-energized. The control will lockout. The “alarm” light turns on. Manual reset is required.



Flame Failure

Following a normal startup, when the running position is reached, turn the FLAME switch to OFF.

1. UVM-1F, UVM-1D, TFM-1F and TFM-1D; the “main fuel” light will turn off within
 - 0.8 seconds: UVM-1D, TFM-1D.
 - 2-4 seconds: UVM-1F, TFM-1F.

The “spark” light turns on. A 10 to 12 second relight interval is initiated, after which a safety shutdown occurs. Manual reset is required prior to a restart.

2. UVM2, 2A, TFM2, 2A: The “main fuel” and “pilot” lights turn off within 2 seconds. The purge period is re-initiated after which the “pilot” and “spark” lights turn on. A 10 to 12 second trail for ignition of pilot is initiated, after which a safety shutdown occurs. Manual reset is required to restart.
3. UVM3, TFM3: The “main fuel” and “pilot” lights turn off within 2 seconds, and safety shutdown occurs. Manual reset is required to restart.

Interlock Failure

During a startup, if the INTERLOCK switch is not turned to ON, the “pilot” and “spark” lights will not turn on. During normal operating period, if the INTERLOCK switch is turned off, the “pilot” and “main fuel” lights will turn off.

REMOVING THE CONTROL

1. Turn all switches to the OFF position.
2. Loosen the two retaining screws to remove the control chassis. **NOTE:** A test meter may be used to check line and load voltages on the chassis. The meter should be set on at least a 150 volt AC scale.

The meter, when set on a DC scale with the test probes plugged into the test jacks on the chassis will read the flame signal output. The signal simulators are intentionally designed to provide a minimum signal. Therefore the DC test voltage will approach the minimum listed for each control in its respective bulletin.

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 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 which may arise in connection with such product or part.



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