The first name in flame monitoring and combustion control

MicroM
Conversion Guides

Contents

MicroM Conversions

GENERAL CONVERSION PROCEDURE

1. Bulletin BL-1001 (BurnerLogix), MC-5000 (MicroM) or E-1101 (Flame-Monitor) read and understood.
2. Installer must be a trained, experienced, flame safeguard control service technician.
3. Disconnect power supply before beginning installation to prevent electrical shock and equipment damage. More than one power supply disconnect may be involved.
4. All wiring must comply with applicable local electrical codes, ordinances, and regulations.
5. All line voltage terminal wiring shall be no. 14, 16 or 18 copper conductor TTW (60C) or THW (75C) or THHN (90C), 600 volt insulation wire. A maximum of two conductors can be wired to each 60-2814-1 wiring base terminal.
6. Voltage and frequency of the power supply and flame detector(s) connected to this control must agree with those marked on the device.
7. Loads connected to the control terminals must not exceed ratings listed in Bulletin BL-1001, MC-5000 or E-1101, or on the product label.
8. All external timers must be listed or component recognized by authorities having jurisdiction for the specific purpose for which they are used.
9. Perform all required checkout tests after installation is complete.

IMPORTANT:

1. For on-off gas-fired systems, some authorities having jurisdiction prohibit the wiring of any limit or operating contacts in series between the flame safeguard control and the main fuel valve(s).
2. ***CAUTION****: While programmers are mechanically interchangeable in that they mate with a common chassis/amplifier module, you should select the correct model for your application. Inappropriate application of a control could result in an unsafe condition hazardous to life and property. Selection of a control for a particular application should be made by a competent professional, such as a boiler/burner service technician licensed by a state or other government agency.*
3. *For applications that require two 45UV5-1009 or 55UV5-1009 self checking scanners, use shutter control module 60-3745-1.*
4. ***WARNING:*** *This equipment generates and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user, at his own expense, will be required to take whatever measures which may be required to correct the interference.*
5. *This digital apparatus does not exceed the Class B limits for radio noise for digital apparatus set out on the Radio Interference Regulations of the Canadian Department of Communications.*

GENERAL DIRECTIONS:

1. Disconnect all power to control being replaced. Note that more than one power supply disconnect may be involved.
2. Remove old control from wiring base.
3. Mark all wires on wiring base; i.e., wires connected to terminal 1 should be marked 1.
4. Disconnect wires from wiring base.
5. Remove old subbase.
6. Mount appropriate Fireye wiring base.
7. Connect wires to wiring base according to wiring conversion for control being replaced. Pay close attention to notes.
    a. Wiring must comply with all applicable codes, ordinances and regulations.
    b. Wiring must comply with NEC Class 1 (Line Voltage) wiring.
    c. Recommended wire routing of lead wires:
        i. Do not run high voltage ignition transformer wires in the same conduit with any other wires.
        ii. Do not route flame detector lead wires in conduit with line voltage circuits. Use separate conduit where necessary.
    d. Maximum wire lengths:
        i. The maximum lead wire length is 200 ft. (61 meters) to terminal inputs (Operating limits, interlocks, valves, etc.).
        ii. Flame Detector lead wires: see section on flame scanners.
        iii. Remote reset: The maximum length of wire is 500 feet (152 meters) to a normally open remote reset push-button, but should remain within sight and sound of the burner.
        iv. Modbus communications: The maximum cable length of wire is 3200 feet (1000 meters) for RS-485.
    e. **NOTE**: UL allows only two electrical wires to each wiring base terminal. Wiring information may show more than two wires to a particular terminal, which may require an external connection to accomplish the connection.
8. Proper grounding of the green wiring base terminal screw to an electrical earth ground is a MUST for proper operation of the BurnerLogix, Flame-Monitor or MicroM controls.
9. Select proper flame amplifier according to the amplifier cross reference information.
10. Install the BurnerLogix. Make all necessary selections provided in the PROGRAM SETUP sub-menu.
11. Refer to the control bulletin for proper checkout and startup.

MicroM Conversions

Wiring Cross Reference

TO CONVERT HONEYWELL **R4795A1016**
TO **MEC120, MEP230,** and **61-3060**
Refer to Amplifier and Scanner Reference Guide
See Note 4 for dipswitch settings.

Honeywell	Function	Fireye	
See Note 1	Hot – 120 VAC	1	
2	Ground – Neutral	2	
F	Scanner	S1	
G	Scanner	S2	
1	Operating Control	1 – 7	
6 – 7	Air Flow Switch	7 – 6	See Note 2
4	Interrupted Ignition	4	
3	Intermittent Pilot	3	
5	Main Fuel Valve	5	
8	Blower Motor	8	
See Note 3	Alarm	A	

Note 1 The R4795 is powered when the operating control input (terminal 1) is powered.
Note 2 The air flow switch can also be wired between terminals 8 and 6.
Note 3 The R4795 offers (optional) isolated SPDT contacts.
Note 4 Set Dipswitches #1 & #2 to match purge timing of ST timing card.
Set Dipswitch #4 to 10 second PTFI.
Set Dipswitch #6 to recycle operation.

Refer to Bulletin MC-5000 for proper installation, grounding, operational and safety checkout procedures. Perform safety checks of the entire system prior to allowing fuel entry into boiler. Complete safety checks, flame signal levels, minimum pilot tests with fuel on.

Wiring Cross Reference

TO CONVERT HONEYWELL **R4795D**
TO **MEC120, MEP230,** and **61-3060**
Refer to Amplifier and Scanner Reference Guide
See Note 4 for dipswitch settings.

Honeywell	Function	Fireye	
See Note 1	Hot – 120 VAC	1	
2	Ground – Neutral	2	
F	Scanner	S1	
G	Scanner	S2	
1	Operating Control	1 – 7	
6 – 7	Air Flow Switch	7 – 6	See Note 2
4	Interrupted Ignition	4	
3	Intermittent Pilot	3	
5	Main Fuel Valve	5	
8	Blower Motor	8	
See Note 3	Alarm	A	

Note 1 The R4795 is powered when the operating control input (terminal 1) is powered.
Note 2 The air flow switch can also be wired between terminals 8 and 6.
Note 3 The R4795 offers (optional) isolated SPDT contacts.
Note 4 Set Dipswitches #1 & #2 to match purge timing of ST timing card.
Set Dipswitch #4 to 10 second PTFI.
Set Dipswitch #6 to non-recycle operation.

Refer to Bulletin MC-5000 for proper installation, grounding, operational and safety checkout procedures. Perform safety checks of the entire system prior to allowing fuel entry into boiler. Complete safety checks, flame signal levels, minimum pilot tests with fuel on.

Wiring Cross Reference

HONEYWELL **R7795A**
TO **MEC120, MEP230, MEUV4, 61-3060**
Refer to Amplifier and Scanner Reference Guide

Honeywell	Function	Fireye	
L1	Hot – 120 VAC	L1	
L2	Ground – Neutral	L2	
L1 - 16	Limit	L1 - 7	
8 – 3	Run Interlock (Air Flow Switch)	7-6	
8	Burner Motor	8	
18	Ignition	4	
5	Intermittent Pilot	3	
6	Main Fuel	5	
9	Alarm	A	
F	Scanner	S2	
G	Scanner	S1	See Note 1

Note 1 When using UV (Fireye type UV1A3 or UV1A6) scanner (for R7795A), disconnect ground connection from terminal G.

Note 2 Select purge time via dipswitches, select recycle / non-recycle as required, select PTFI timing as required.

Refer to bulletin MC-5000 for detailed operation.

Wiring Cross Reference

HONEYWELL **R7795B 1009**
TO **MEC120, MEP230, MERT4, 61-3060**
Refer to Amplifier and Scanner Reference Guide

Honeywell	Function	Fireye
L1	Hot – 120 VAC	L1
L2	Ground – Neutral	L2
L1 - 16	Limit	L1 - 7
8 - 3	Run Interlock (Air Flow Switch)	7-6
8	Burner Motor	8
18	Ignition	4
5	Intermittent Pilot	3
6	Main Fuel	5
9	Alarm	A
F	Flame Rod or Photocell	S2
G	Ground	S1

Note 1 Select purge time via dipswitches, select recycle / non-recycle as required, select PTFI timing as required.

Refer to bulletin MC-5000 for detailed operation.

Wiring Cross Reference

HONEYWELL **R7795C1007**
TO **MEC120, MEP560, MEUV4, 61-3060**
Refer to Amplifier and Scanner Reference Guide

Honeywell	Function	Fireye	
L1	Hot – 120 VAC	1	
L2	Ground – Neutral	2	
L1 - 16	Limit	L1 - 7	
8 – 3	Run Interlock (Air Flow Switch)	7-6	
8	Burner Motor	8	
18	Ignition	4	
5	Interrupted Pilot	4	
6	Main Fuel	5	
9	Alarm	A	
F	Scanner	S2	
G	Scanner	S1	See Note 1

Note 1 When using UV (Fireye type UV1A3 or UV1A6) scanner (for R7795C), disconnect ground connection from terminal G.

Note 2 Select purge time via dipswitches, select recycle / non-recycle as required, select PTFI timing as required.

Refer to bulletin MC-5000 for detailed operation.

Wiring Cross Reference

HONEYWELL **RA890F**
TO **MEC120, MEP100, MERT1, 61-3060 or**
MC120, MP100, MART1T, 61-3060 or
Refer to Amplifier and Scanner Reference Guide

Honeywell	Function	Fireye	
6	Hot – 120 VAC	1	
2	Ground – Neutral	2	
6	Line Voltage Limits Controller	1-7	See Note 1
T - T	Low Voltage Limits Controller	N/A	See Note 1
N/A	Air Flow Switch	8-6	See Note 2
N/A	Burner Motor	8	See Note 2
4	Ignition	4	
3	Intermittent Pilot	3	
5	Main Fuel	5	
Optional	Alarm	A	See Note 3
F	Scanner	S2	
G	Scanner	S1	

Note 1 If the RA890 uses low voltage limits controller, wire a line voltage limits controller into terminals L1 – 7 of the MEC120 or MC120 control.

Note 2 The RA890 does not have a separate terminal for either the blower motor or air flow switch.

Note 3 The SPDT alarm terminals are optional on the RA890.

Refer to bulletin MC-5000 for detailed operation of MEC120.
Refer to bulletin C-4000 for detailed operation of MC120.

Wiring Cross Reference

HONEYWELL **RA890G**
TO **MEC120, MEP100, MEUV1 (UV1A-6)**
or MEUVS4 (45UV5-1009), and 61-3060
Refer to Amplifier and Scanner Reference Guide

Honeywell	Function	Fireye	
6	Hot – 120 VAC	1	
2	Ground – Neutral	2	
6	Line Voltage Limits Controller	1-7	See Note 1
T - T	Low Voltage Limits Controller	N/A	See Note 1
N/A	Air Flow Switch	8-6	See Note 2
N/A	Burner Motor	8	See Note 2
4	Ignition	4	
3	Intermittent Pilot	3	
5	Main Fuel	5	
Optional	Alarm	A	See Note 3
F	Scanner	S2	See note 4
G	Scanner	S1	See note 4

Note 1 If the RA890 uses low voltage limits controller, wire a line voltage limits controller into terminals L1 – 7 of the MEC120 or MC120 control.

Note 2 The RA890 does not have a separate terminal for either the blower motor or air flow switch.

Note 3 The SPDT alarm terminals are optional on the RA890.

Note 4 Use MEUV1 & UV1A6 for non self check application
Use MEUVS4 & 45UV5-1009 for self-check application

Refer to bulletin MC-5000 for detailed operation of MEC120.

Wiring Cross Reference

HONEYWELL **RM7890A 1015**
TO **MEC120, MEP100, MERT1, 61-3060 or**
MC120, MP100, MART1T, 61-3060 or
Refer to Amplifier and Scanner Reference Guide

Honeywell	Function	Fireye
3	Hot – 120 VAC	1
2	Ground – Neutral	2
6	Limits, Controller	1-7
	JUMPER	7-6
	Burner Motor	8
10	Ignition	4
8	Intermittent Pilot	3
9	Main Fuel	5
4	Alarm	A
F	Scanner	S2
G	Scanner	S1

Refer to bulletin MC-5000 for detailed operation.

Wiring Cross Reference

HONEYWELL **RM7895A**
TO **MEC120, MEC230, MERT4, 61-3060**
Refer to Amplifier and Scanner Reference Guide

Honeywell	Function	Fireye	
5	Hot – 120 VAC	L1	
L2	Ground – Neutral	L2	
6	Limit	7	
6-7	Run Interlock (Air Flow Switch)	7-6	
4	Burner Motor	8	See note 2
10	Ignition	4	
8	Intermittent Pilot	3	
9	Main Fuel	5	
3	Alarm	A	
F	Scanner	S2	
G	Scanner	S1	See Note 1

Note 1 When using UV (Fireye type UV1A3 or UV1A6) scanner, disconnect ground connection from terminal G.

Note 2 Select purge time via dipswitches, select recycle / non-recycle as required.

Refer to bulletin MC-5000 for detailed operation.

Wiring Cross Reference

HONEYWELL **RM7896C-1010**
TO **MEC120, MEP560, MERT4, 61-3060**

Honeywell	Function	Fireye	
5	Hot – 120 VAC	L1	
L2	Neutral	L2	
6	Limit	7	
6-7	Run Interlock (Air Flow Switch)	7-6	
4	Burner Motor	8	See note 1
10	Ignition	4	
8	Interupted Pilot	4	
9	Main Fuel	5	
3	Alarm	A	
F	Flame Rod	S2	
G	Ground	S1	
Earth G	Earth Ground	Earth G	

Note 1 Select purge time via dipswitches, select recycle / non-recycle as required.

Refer to bulletin MC-5000 & MP-5501or detailed operation.

MEP Dipswitches selection
(Closed toward printed circuit board, Open when switch is away from Printed circuit board)

1- Open (30sec purge)
2- Closed (30sec purge)
3- Open (postpurge 15 seconds
4- Open (PTFI time 10 sec)
5- Open (Prove of Aiflow at start enable)
6- Open (Non-recycle on lost of flame)

Wiring Cross Reference

Amplifier and Scanner Reference Guide

Honeywell			Fireye	
Amplifier	**Scanner**	**Type**	**Amplifier**	**Scanner**
			Flame-Monitor Amplifiers	
R7247A R7247B	C7004 (Flame Rod) or C7010, C7013, C7014 (Photocell)	**Flame Rectification**	**YB110FR**	69ND1 (Flame Rod) or 45MC1 (Photocell)
R7847A R7847B	C7012A,C	**Self Check Ultra-violet**	**YB110UVSC**	45UV5-1009
R7248A R7248B R7848A R7848B	C7015	**InfraRed**	YB110IR	48PT2
R7249A R7849A R7849B	C7027, C7035, C7044	**UltraViolet**	YB110UV	UV1A3, UV2, 45UV3
R7476A	C7076	**Self Check UV**	**YB110UVSC**	45UV5-1009
R7247C R7847C	C7012E	**Self Check UV**	**YB110UVSC**	45UV5-1009
			MicroM Amplifiers	
R7289A1004 — R7289A1012	C7004, C7007 (Flame Rod), C7010 (Photocell)	**Flame Rectification**	MERT4 — MERT1	69ND1 (Flame Rod) or 45MC1 (Photocell)
R7290A1001 — R7290A1019	C7027, C7035, C7044	**UltraViolet**	MEUV4 — MEUV1	UV1A3, UV2, 45UV3

Refer to appropriate Bulletin (BL-1001) for proper installation, grounding, operational and safety checkout procedures. Perform safety checks of the entire system prior to allowing fuel entry into boiler. Complete safety checks, flame signal levels, minimum pilot tests with fuel on.

Fireye is a leading manufacturer of flame safeguard controls and burner management systems for commercial and industrial applications throughout the world. Our products can be found in a variety of public buildings, commercial properties, power plants, pulp and paper mills, petrochemical facilities and food processing plants.

For more information, please visit fireye.com.

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