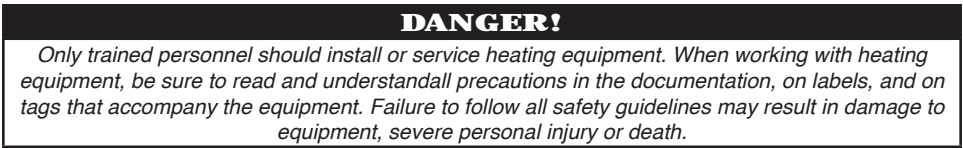




**Low cost,  
replacement  
ignition control**



For more information on our complete range of American-made products – plus wiring diagrams, troubleshooting tips and more visit us at **[www.icmcontrols.com](http://www.icmcontrols.com)**



*Failure to turn off gas and electric supplies can result in explosion, fire, personal injury or death.*

**Note:** The **ICM2918** flame sensor operates off of 24 VAC directly; flame currents of less than one micro ampere are typical.

For more details on the key features included in the **ICM2918** control, as well as a cross reference list of controls that the **ICM2918** will replace, please see Table 1 and Table 2 on the back of this guide, or visit our web site at [www.icmcontrols.com](http://www.icmcontrols.com).

The **ICM2918** control also features the following:

- High voltage spark, pilot burner ignition control
- Flame rectification circuit for monitoring flame presence
- Monitoring of 24 VAC, pilot, and main gas valve
- Two status LEDs to aid in operation and troubleshooting
- Vent damper connection

**Sense Jumper Wire**  
Connects to **REMOTE SENSE** connector for single rod installations (local flame sensing)

⚠️ **Note:** For remote flame sensing installations (separate spark and sensor rods), clip the jumper wire as close to the circuit board as possible and remove.

**Remote Sense**  
Flame Sensor connector

- For single rod installations: connect the **SENSE JUMPER WIRE** to this terminal connector.
- For dual rod installations: connect **FLAME SENSE WIRE** from the burner/igniter to this terminal connector

**P4 (Jumper)**  
Locks out DIP switch settings (See "Setting and Adjustments at the right".)

**P1 Connector**  
Connector for vent damper connection (used to control a connected damper in atmospheric appliances)

**TH-W Terminal**  
24 VAC / Hot connector for heat call signal from thermostat

**24V Terminal**  
Optional: 24 VAC power connection for vent damper

**24V GND Terminal**  
Return path to transformer

**GND Terminal**  
Burner ground

**PV Terminal**  
Pilot valve connection

**MV/PV Terminal**  
Common terminal for gas valves

**MV Terminal**  
Main valve connection

**Spark Ignitor**  
High voltage sparking electrode

- **Pilot flame**
  - Make sure it is blue, steady and envelopes 3/8 to 1/2 in. of the flame rod. If necessary adjust pilot flame by turning the pilot adjustment screw on the gas control
- **Damper**
  - If part of the system, plug the damper cable to P1 connector on the control module
  - If the plug is removed and the vent damper connector is plugged in instead, then an internal fuse will blow on power up. The control will not operate without a vent damper or with the plug.
  - Connect 24 VAC hot from the control transformer to 24V terminal on the control module when the Damper assembly is used

While NOT recommended, the five-minute lockout period can be bypassed by manually ending the call for heat or removing and restoring system power.

For single rod applications: connect to remote sense connector.  
For dual rod applications: remove (clip as close to board as possible) and discard; firmly attach sensor wire from the igniter/sensor assembly to remote sense connector.

Wiring diagram for a Dual Valve Combination Gas Control system. The diagram shows the connection between a gas control valve (top) and various components. The gas control valve has terminals for MV, PV, GND (BRN), 24V, TH-W, and P1. The Dual Valve Combination Gas Control has terminals for 1st Operator, 2nd Operator, and COM. The Pilot Burner/igniter is connected to the 1st Operator terminal. The Main Valve is connected to the PV terminal. The Thermostat is connected to the TH-W terminal. The Limit Controller is connected to the P1 terminal. The Remote Sensor is connected to the 2nd Operator terminal. The Spark is connected to the P1 terminal. The Vent Damper is connected to the 2nd Operator terminal. The Wiring Harness connects the Remote Sensor to the Vent Damper. The Pilot Gas Supply is connected to the Pilot Burner/igniter. The Ground is connected to the GND (BRN) terminal. The L1 (Hot) and L2 lines are connected to the Limit Controller. The diagram is numbered 1 through 6.

The diagram illustrates the wiring for a Dual Valve Combination Gas Control system. The main components and their connections are as follows:

- Gas Control Valve:** A horizontal unit with terminals labeled MV, MV/PV, PV, GND, 24V GND, 24V, TH+V, and P1.
- Remote Sensor:** Connected to the P1 terminal and a jumper wire leading to a SPARK.
- Pilot Burner/Igniter:** Connected to the MV/PV terminal and a ground.
- Limit Controller:** A rectangular unit with a limit switch symbol. It is connected to the 24V terminal and a gas supply line.
- Gas Supply:** A line entering from the bottom, connected to the limit controller and a hot line (L1).
- Wiring Details:**
  - The MV/PV terminal is connected to the 1st Operator of a Dual Valve Combination Gas Control.
  - The PV terminal is connected to the 2nd Operator of the same control.
  - The GND terminal is connected to a common ground.
  - The 24V GND terminal is connected to the limit controller.
  - The 24V terminal is connected to the limit controller.
  - The TH+V terminal is connected to the limit controller.
  - The P1 terminal is connected to the remote sensor and a jumper wire leading to a spark.



Yellow and Green LED Status Codes		
Yellow LED Flame Strength Codes		
Yellow LED Flash Code*	Indicates	Recommended Service Action
Steady (1/2 sec.)	Flame signal OK	N/A
2	• Flame signal is weak • May also show for few seconds on pilot flame light off	Routine maintenance is recommended to prolong system work without service-clean the flame rod, ensure steady pilot flame and enveloping the flame rod
1	• Flame signal is marginal • May also show for few seconds on pilot flame light off	Maintenance is recommended to avoid service in a near future-clean the flame rod, ensure steady pilot flame and enveloping the flame rod, ensure good burner ground connection and flame sense wiring
OFF	Flame signal is below threshold	Check for burner ground connection and flame sense wiring, clean the flame rod, ensure steady pilot flame and enveloping the flame rod

- \* **Flash Code Key:**
- Steady: Constant ½ second bright.
  - LED flashes “X” times, followed by two seconds off before sequence repeats.

Green LED Flame Codes		
Green LED flash Code (X+Y)	Indication	Recommended Service
OFF	No call for heat from the thermostat	N/A
Steady (1/2 sec.)	Heat call, normal operation	N/A
2	Flame wasn’t sensed during trial for ignition-unit in five minute retry period	Remove the heat call and check the following: burner gas supply, spark wiring, flame sense wiring, and burner ground to unit GND connection. Clean the flame rod. Initiate a call for heat and ensure a steady pilot flame enveloping the flame rod
3	Flame out during run mode	Ensure steady pilot flame enveloping the flame rod. Check burner ground to unit GND connection. Clean the flame rod.
4	Flame out of sequence	• Replace gas valve if pilot flame is present • Recycle call for heat. Replace the unit if pilot flame is not present and unit senses flame
5	Damper related error: - Required but not present - Failed to open within a minute - Failed to close within a minute	• Check 24 VAC connection to 24V on the unit and damper connection • Remove the heat call, pause for a minute, and apply the heat call. If problem persists replace the damper
7	Flame rod grounded or leakage to ground	Check flame sense lead wire for isolation from ground. Check flame rod ceramic body for damages or cracks
8	Low control voltage (below 19 VAC)	Check transformer voltage when fully loaded. Ensure 24 VAC between TH-W and GND when pilot and main valve are closed
6+2	Flame wasn’t sensed for three consecutive trials for ignition on the same call for heat- unit in five minute retry period	Same as for 2 above
6+3	Flame out during run mode six times on a same call for heat	Same as for 3 above
6+4	Flame out of sequence for longer than 10 seconds	Same as for 4 above
Constant ON	Error not listed above detected during self-test diagnostic check	Control can be RESET by initiating a “Heat Call”. If problem persists, control should be replaced.

- \* **Flash Code Key:**
- Steady: Constant ½ second bright.
  - Single Flash Code: LED flashes “X” times followed by two seconds off, before sequence repeats.
  - X + Y Flash Code: LED flashes “X” times followed by two seconds off, then flashes “Y” times followed by three seconds off, before the sequence repeats.

Table 1 – ICM2918 Universal Intermittent Pilot Gas Ignition Controls						
Igniter-Sensor Type	Valve Current Rating @ 24 VAC	Prepurge Timing	Trial for Pilot Ignition	Ignition Sequence Type	Ignition Sequence (after prepurge if prepurge is selected)	Integral Damper Connector
Combination (single rod; local flame sensing), or Separate (dual rod; remote flame sensing).	1.0 A Pilot, and, 2.0 A Main	None or 30 seconds (field selectable)	15 or 90 seconds (field selectable)	Retry	Spark / pilot gas ON until light off or trial for ignition (TFI) ends: • Pilot gas and spark OFF (100% shutoff) if pilot fails to light; unit enters five minute lockout before a new TFI is initiated. This sequence continues until light off, or heat call ends. • Trial for ignition restarts immediately if established flame is lost.	Included for use as needed: • If initially installed with damper attached, unit must always have a vent damper connected.

Table 2 – ICM2918 Replaces the follow controls:

Camsat		
Vendor / Model	SW1	SW2
IPI-24-00	OFF	OFF

Fenwall		
Vendor / Model	SW1	SW2
05-203025-005, 05-203026-005	OFF	OFF

Honeywell		
Vendor / Model	SW1	SW2
S86A1001, S86A1019, S86A1027, S86A1035, S86B1009, S86B1017, S86B1025, S86C1007, S86C1015	OFF	OFF
S86C1023	OFF	ON
S86C1031, S86C1049, S86C1056, S86D1005	OFF	OFF
S86D1013	OFF	ON
S86D1021, S86E1002, S86E1010, S86E1028, S86E1036, S86E1044, S86E1051, S86E1069, S86E1077, S86E1101, S86E1119, S86E1127, S86F1000, S86F1018, S86F1026, S86F1042, S86F1059, S86F1067, S86F1075, S86F1083, S86F1091, S86G1008, S86G1016	OFF	OFF
S86G1024	OFF	ON
S86G1032, S86G1057, S86G1073, S86H1006	OFF	OFF
S86H1014	OFF	ON
S86H1022, S86H1048, S86H1055	OFF	OFF
S86H1063	OFF	ON
S86H1089, S86H1097, S86H1105	OFF	OFF
S86H1113	OFF	ON
S86H1121	OFF	OFF
S86H1139	OFF	ON
S86H1147, S90A1005, S90B1003, S90B1011	OFF	OFF
S860C1000, S860D1009	ON	OFF
S860D1017	ON	ON
S8600A1001, S8600B1009	OFF	OFF
S8600B1025, S8600B3005	OFF	ON
S8600B3013, S8600C1015, S8600C3003, S8600F1000, S8600F1034, S8600F1042, S8600H1006	OFF	OFF
S8600H1014	OFF	ON
S8600H1022, S8600H1048, S8600H1055	OFF	OFF
S8600H1063	OFF	ON
S8600H1071, S8600H1089, S8600H1097, S8600H1105, S8600H3002	OFF	OFF
S8600H3010	OFF	ON
S8600M1005, S8600M1013, S8600M1021, S8600M2003, S8600M3001, S8600M4009, S8610A1009, S8610B1007, S8610B1015	OFF	OFF
S8610B1023, S8610B3003	OFF	ON
S8610C1005, S8610C1013, S8610C3001, S8610F1008, S8610F1016, S8610F1024, S8610F1032	OFF	OFF
S8610H1004	OFF	ON
S8610H1012	OFF	OFF
S8610H1020	OFF	ON
S8610H1038, S8610H1046, S8610H1053	OFF	OFF
S8610H1061	OFF	ON
S8610H1079, S8610H1095, S8610H3000	OFF	OFF
S8610H3018	OFF	ON
S8610H3026, S8610M1003	OFF	OFF
S8610M1011	OFF	ON
S8610M1029, S8610M3009	OFF	OFF
S8610M3017	OFF	ON
ICM2901003, ICM2901011	OFF	OFF
S8620C1003, S8620C1011	OFF	ON
S8620H1002	OFF	OFF
S8620H1010	OFF	ON
S8620H1028	OFF	OFF
S8660D1002	ON	OFF
S8660D1010	ON	ON
S8660J1008, S8660J1016, S8660J1024, S8660K1006, S8660K1014, S8660K1022, S8670D1000, S8670D1018	ON	OFF
S8670D1026, S8670D3006	ON	ON
S8670D3014, S8670E1007, S8670E3003	ON	OFF
S8670J3002	ON	ON
S8670J3010, S8670K3000	ON	OFF
S8680J1004	ON	ON

HSC		
Vendor / Model	SW1	SW2
1003-3, 1003-300	OFF	OFF

Johnson Controls		
Vendor / Model	SW1	SW2
CSA35A-617R, CSA35A-618R, CSA42A-600R, CSA42A-601R, CSA42A-602R, CSA42A-603R, CSA42A-604R, CSA43A-600R, CSA44A-600R, CSA44A-601R, CSA44A-602R, CSA46A-600R, CSA48A-600R, CSA49A-600R, CSA49A-605R, CSA51A-601R, CSA52A-600R	OFF	OFF
G60AAA-1, G60AAG-1, G60AAG-2, G60AAG-3, G60AAG-4, G60AAG-5, G60AAG-6, G60AAG-7, G60CAA-1, G60CAA-3, G60CAG-1, G60CAG-2, G60CAG-3, G60CAG-4, G60CAG-5, G60CAG-6, G60CAG-7, G60CAG-8, G60CAG-9, G60CBA-1, G60CBA-2, G60CBA-3, G60CBG-1, G60CBG-2, G60CBG-3, G60CBG-4, G60CBG-5, G60CBG-6, G60CBG-7, G60CBG-8, G60CBG-9, G60CBG-10, G60CBG-11, G60CBG-12, G60CBG-13, G60CBG-14, G60CBG-15, G60CBG-16, G60CBG-17, G60CCA-1, G60CCG-1, G60CPG-1, G60DBG-1, G60DCG-1, G60DCG-2, G60DCG-3, G60DCG-4, G60PAG-1, G60PAG-2, G60PAG-3, G60PAG-4, G60PAG-5, G60PAG-6, G60PAJ-1, G60PAK-1, G60PAK-2, G60PFH-1, G60PFH-2, G60PFL-1, G60PFQ-1, G60PVL-1, G60QAG-1, G60QAG-2, G60QAG-3,	OFF	OFF
G60QAG-4, G60QAK-1, G60QBG-1, G60QBG-2, G60QBG-3, G60QBG-4, G60QBG-5, G60QBG-6, G60QBG-7, G60QBG-8, G60QBG-9, G60QBH-1, G60QBK-1, G60QBK-2, G60QBK-3, G60QBL-1, G60QBL-2, G60QCG-1, G60QCJ-1, G60QCL-1, G60QDQ-1, G60QFL-1, G60QGH-1, G60QHL-1, G60QHL-2, G60QJL-1, G60QLG-1, G60QLK-1, G60QPL-1, G60QRH-1, G60QRH-2, G60QRH-3, G60QRL-1, G60QRL-2, G60QRL-3, G60QSL-1, G60QTH-1, G60QTL-1, G60RAG-1, G60RAK-1, G60RBG-1, G60RBG-2, G60RBG-3, G60RBK-1, G60RBK-2, G60RCG-1, G60RCG-2, G60RCJ-1, G60RDG-1, G60RDK-1, G60RGL-1, G60RHL-1, G60RHP-1, G60RPL-1, G60RSL-1, G60TTL-1, G60ZAG-1, G60ZAG-2	OFF	OFF
G65BBG-1, G65BBG-2, G65BBG-3, G65BBG-4, G65BBG-5, G65BBG-6, G65BBG-7, G65BBG-8, G65BBM-1, G65BBM-2, G65BBM-3, G65BBM-4, G65BCG-1, G65BCM-1, G65BFG-1, G65BFM, G65BKG-1, G65BKG-2, G65B-KG-3, G65BKM-1, G65BKM-2, G65BKM-3, G65BLG-1, G65BLG-2, G65DBG, G65DBM-1, G65DBM-2, G65DBM-3, G65DCM-1, G65DFG, G65DFM-1, G65DKG, G65DKM, G65DKM-1, G65DLM-1, G65FBG, G65FFG, G65FKG	OFF	OFF
G66AG-1, G66AG-2, G66BG-1, G66MG-1, G66MG-2, G66NG-1	OFF	OFF
G67AG-3, G67AG-4, G67AG-7, G67AG-8, G67AG-9, G67AG-10, G67AG-11, G67BG-2, G67BG-3, G67BG-4, G67BG-5, G67MG-1, G67MG-2, G67MG-3, G67MG-4, G67NG-2, G67NG-4	OFF	OFF
G600AX-1, G600AX-2, G600AX-3, G600AY-1, G600LX-1, G600LX-2, G600LY-1, G600MX-1, G600NX-1, G600RX-1	OFF	OFF
G670AW-1, G670AW-2, G670GA-1	OFF	OFF
G770LGA-1, G770LGA-2, G770LGC-1, G770LGC-2, G770LGC-3, G770LGC-4, G770LHA-1, G770LHA-2, G770L-HC-1, G770MGA-1, G770MGA-2, G770MGA-3, G770MGC-1, G770MGC-2, G770MGC-3, G770MGC-4, G770MGC-5, G770MGC-6, G770MHA-1, G770MHA-2, G770MHC-1, G770MHC-2, G770NGA-1, G770NGC-4, G770NGC-5, G770NGC-6, G770NGC-7, G770NHA-1, G770NHC-1, G770RGA-1, G770RHA-1, G770RHA-2	OFF	OFF
G775RGA-1, G775RHA-1, G775RHA-2	OFF	OFF
G779	OFF	OFF
Y79ABC-1, Y79ABC-2, Y79ABC-3, Y79ABC-4, Y79ABC-5, Y79ABC-6, Y79ABC-7, Y79ABD-1, Y79ABCD-2, Y79B-BA-1, Y79BBA-2	OFF	OFF

RobertShaw		
Vendor / Model	SW1	SW2
780-001, 780-002	OFF	OFF
780-003	ON	OFF
780-845, 780-715, 780-735, 780-736, 780-737	OFF	OFF
SP715, SP715A, SP735, SP735D, SP735L	OFF	OFF
USI715U	OFF	OFF

White-Rodgers		
Vendor / Model	SW1	SW2
50D49-350, 50D49-360	OFF	OFF
50D49-361	ON	OFF
50D49-401	OFF	OFF

## ONE-YEAR LIMITED WARRANTY

The Seller warrants its products against defects in material or workmanship for a period of one (1) year from the date of manufacture. The liability of the Seller is limited, at its option, to repair, replace or issue a non-case credit for the purchase price of the goods which are provided to be defective. The warranty and remedies set forth herein do not apply to any goods or parts thereof which have been subjected to misuse including any use or application in violation of the Seller’s instructions, neglect, tampering, improper storage, incorrect installation or servicing not performed by the Seller. In order to permit the Seller to properly administer the warranty, the Buyer shall: 1) Notify the Seller promptly of any claim, submitting date code information or any other pertinent data as requested by the Seller. 2) Permit the Seller to inspect and test the product claimed to be defective. Items claimed to be defective and are determined by Seller to be non-defective are subject to a \$30.00 per hour inspection fee. This warranty constitutes the Seller’s sole liability hereunder and is in lieu of any other warranty expressed, implied or statutory. Unless otherwise stated in writing, Seller makes no warranty that the goods depicted or described herein are fit for any particular purpose.

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