WHITE-ROGERS VALVE

ROBERTSHAW VALVE
(HD401 NAT GAS ONLY)

2-STAGE GAS VALVE
HONEYWELL VALVE

PUMP SENSOR

OPTIONAL CWR

HT REQ | HT REQ | COM | S1 | S2 | S3
INJECTOR PUMP TERMINAL STRIP

INJECTOR PUMP

TO TERMINAL BLOCK

LWCO OPTIONAL

TEST SWITCH (NC)

WATER PROBE

RESET SWITCH (NC)

OPTIONAL

HIGH GAS PRESSURE (NC)

LOW GAS PRESSURE (NO)

OPTIONAL AUTO RESET HI LIMIT (NC)

MANUAL HI LIMIT (NC)

BLOCKED VENT (NC)

GREEN LED

AMBER LED

BLUE LED

RED LED

SOLID STATE PUMP DELAY

120V TERMINAL BLOCK

MAIN POWER SWITCH

BK(14 AWG)

G (14 AWG)

W (14 AWG)

HEATER PUMP DATA
FACTORY
MODEL :
H.P. :
AMPS. :

PUMP IF PROVIDED

HEATER PUMP

2 STAGE CONTROLLER OPTIONAL

BOILER INLET SENSOR

BOILER OUT SENSOR

RAYPAK STAGING CONTROL

12	C	24 R	BL
11		23 Alarm	O/BK
W/BL	10 +V(in)		N/C
Y	9 Com/-		N/C
Y/BL	8 Boil In		N/C
O/W	7 Boil O		N/C
W/O	6 Sys/D	18 ST 2	R
BL/Y	5 Out	17 ST 2	R
Y/G	4 Com	16 ST 1	BR
BL/W	3 DEM 2	15 ST 1	BR
BL/BK	2 DEM 1	14 Pump	BK/W
Y	1 CD	13 Pump	BK/W

STAGE 2

STAGE 1

BL/BK	BL/W	W/O	Y/G	W/BL	Y	BK/W			
BL									
1	2	3	4	5	6	7	8	9	10
ENABLE/ DISABLE OR SEQUENCER		DHW	SYS	COM	AIR	+ EXTERNAL 0-10VDC INPUT (OPTIONAL)	-	SYS PUMP PILOT DUTY (OPTIONAL)	

JUMPERED WHEN NOT USED

SYSTEM SENSOR

OUTDOOR SENSOR (OPTIONAL)

24VR TERMINAL BLOCK

24V TERMINAL BLOCK

24V TRANS

SWITCH FLOW (NO)

2-SPEED BLOWER

24V COIL BLOWER RELAY

LOW AIR PRESSURE SWITCH (NO)

HI AIR PRESSURE SWITCH (NO)

5-SECOND TIME DELAY

HOT SURFACE IGNITER

REMOTE SENSOR

CFH

IGNITION CONTROL

ALARM BELL/SILENCER OPTIONAL

ALARM RELAY

RELAY

BELL

RESET SWITCH

SILENCING SWITCH

BL/Y	BL/R	R/BK	BL/BK	BL/Y	BL/Y	W/V	GY/Y	GY/Y	Y/R	Y	
1	2	3	4	5	6	7	8	9	10	11	12
STAGE 1		STAGE 2		ENABLE/ DISABLE OR SEQUENCER		INTERLOCK/ LOUVER SW		ALARM DRY CONTACTS		24V FAN/DAMPER (PILOT DUTY) (OPTIONAL)	24VR

JUMPERED WHEN NOT USED

(OPTIONAL) JUMPERED WHEN NOT USED

ON/OFF CONTROLLER OPTIONAL

TEKMAR 150
ON/OFF CONTROL

24 VAC POWER

SYSTEM SENSOR

POWER IN: HOT (1), COM (2), G (3)

SAFETY VALVE: HOT (4), COM (5)

PUMP: HOT (6)

TO INJECTOR PUMP

120V HOT (L1)

120V COM (L2)

GROUND

120 VAC PILOT DUTY RELAY (BY OTHERS)

RELAY CONTACT WILL CLOSE TO ENERGIZE FAN/DAMPER.

DO NOT POWER FAN MOTOR DIRECTLY!

CONNECT FAN/DAMPER PROVE SWITCHES AT INTERLOCK TIE-IN.

FAN AND DAMPER CONNECTIONS IF NECESSARY

NOTES:

6. ALL INTERLOCK SWITCHES MUST BE WIRED IN SERIES
5. IF ANY OF THE ORIGINAL WIRE AS SUPPLIED WITH THE HEATER MUST BE REPLACED, IT MUST BE REPLACED WITH ITS EQUIVALENT 105°C.
4. ☐ CHECK CONTROLS PROVIDED (WIRED AS SHOWN)
3. PUMP DELAY 10 MIN MAX
2. PUMP RELAY MUST BE RATED FOR APPROPRIATE PUMP SIZE.
1. USE GROUND CONNECTION PROVIDED. FAILURE TO PROVIDE PROPER GROUND MAY RESULT IN LOCK-OUT.

KEY

- LOW VOLTAGE
- FIELD INSTALL
- LINE VOLTAGE
- FIELD INSTALL
- GROUND
- MALE/ FEMALE TERMINAL CONN
- CONNECTION

BK – BLACK
BL – BLUE
BR – BROWN
GY – GRAY
G – GREEN
O – ORANGE
R – RED
V – VIOLET
W – WHITE
Y – YELLOW

CHECKED BY:	
APPROVED BY:	
ORIG E.O. 4353	03/12/09
CHG E.O. 4986	9/18/12

WIRING DIAGRAM–HSI

Raypak

INPUTS: 100,000 THRU 399,000 BTUH

SIZE: HD101–HD401 TYPE: WH & H (HD401 ONLY)

152979 | 4

For Reference Only