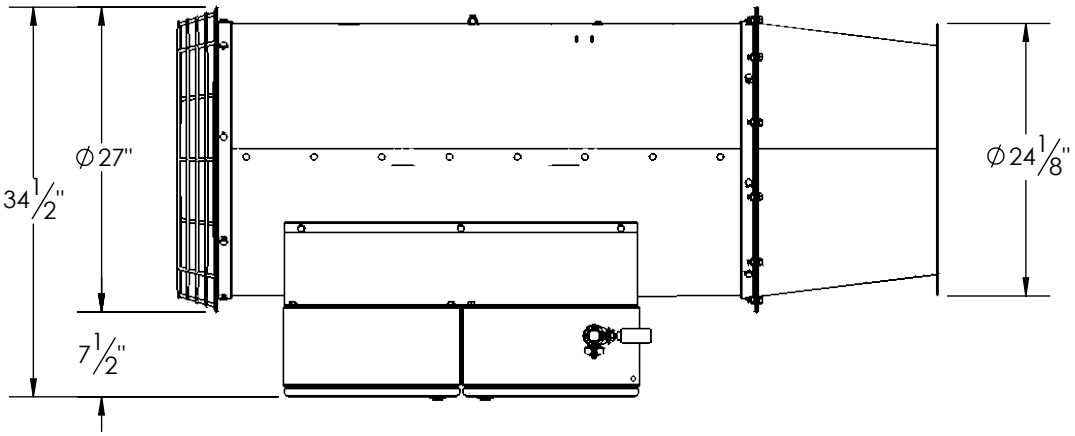
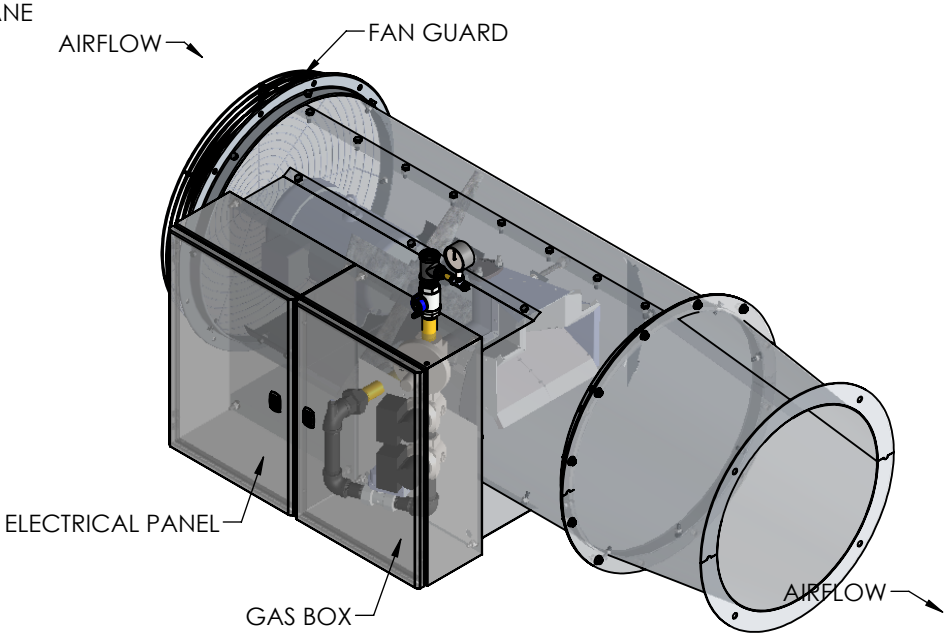
PROPRIETARY

DH-90 DOOR HEATER

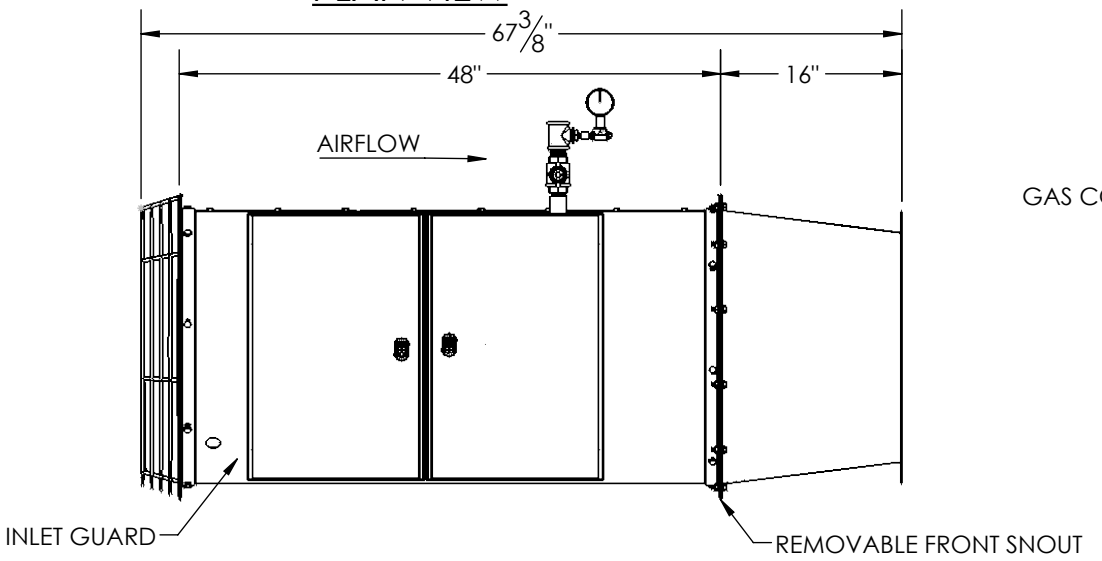
AIR FLOW CAPACITY: 6,000 CFM
HEATING CAPACITY: 900,000 BTU/HR (900 MBH) MAX
FUEL TYPE: NATURAL OR LP/PROPANE
GAS INLET PIPE: 1" IPS

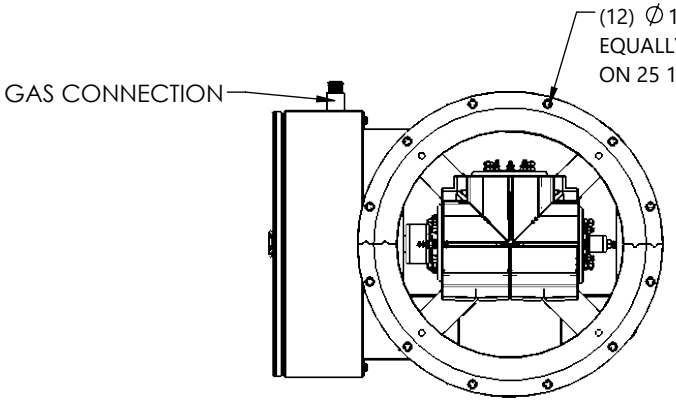


ELEVATION VIEW



PLAN VIEW





FRONT VIEW

SHEET 1 OF 1

NOTES:

DESC.	DH-90 SALES DRAWING		
DIM. SCALE: 1:17	DRAWN BY: KAC	DATE: 7/22/2022	FILE NAME: 20050320-90-SALES

FILE LOCATION: T:\APD-CH-DH\DH\

PROJECT NAME: STOCK DH90 PROJECT/JOB NO. STOCK DH90-460

EQUIPMENT DESCRIPTION

MODEL:	DH90	CONTROLS:	RIGHT
QTY:	1	TAG NUMBER:	

6,000 CFM @ 0.00" WC ESP (0.50" TSP)

FAN:	CW X-23 1/2"-11.5xHD		
HORSEPOWER:	3.00	VOLTAGE: 460 PHASE: 3 HERTZ: 60	
MOTOR TYPE:	PREM-EFF TEFC	FLA/MCA/MOP:	5.50 / 6.48 / 10 AMPS
GAS TYPE:	NATURAL	BURNER CAPACITY:	900 MBH
MIN. GAS PRESSURE:	8.5" WC	MAX GAS PRESSURE:	1 PSI
GAS LINE SIZE:	1"	INSURANCE TYPE:	STD
		ELECTRICAL CERTIFICATION:	UL STD 508A

OPTIONS INCLUDED

Cast Aluminum Burner

Direct Spark Ignition w/Flame Rod Burner Supervision

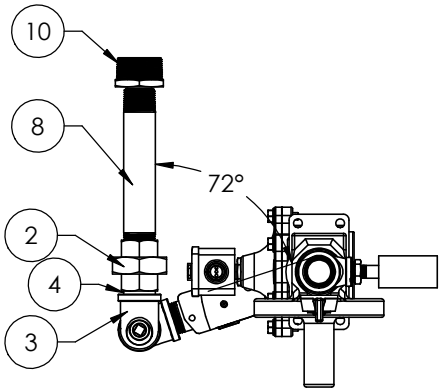
4" X 4" W/P Remote Panel (*OPTIONAL)

- Fan On Switch
- Heat On Switch

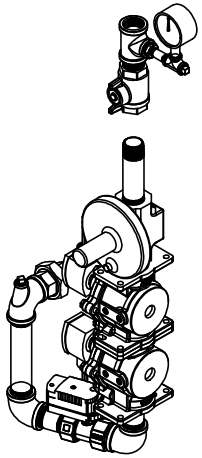
Door Switch (shipped loose & field wired) (*OPTIONAL)

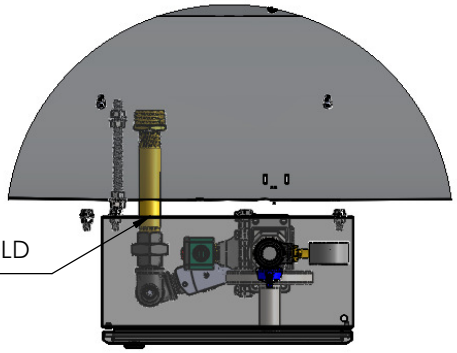
*OPTIONAL - Field Wiring Option Specified w/Sale

PROPRIETARY



TOP VIEW

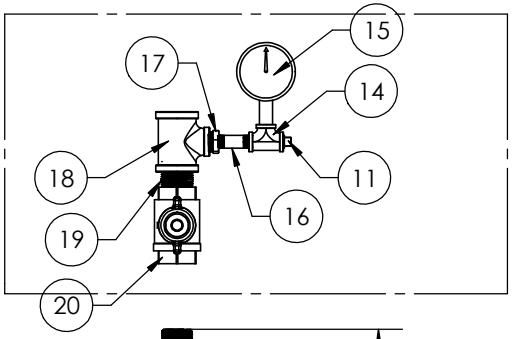


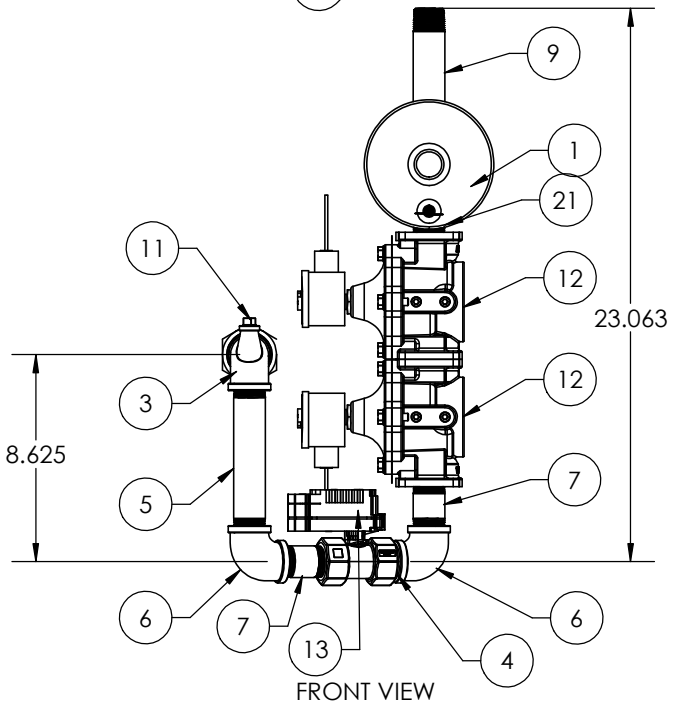


ADD GROMMETS WHERE MANIFOLD EXITS ELECTRICAL ENCLOSRE (2X)

TOP VIEW (INSTALLED)

SHIPPED LOOSE ASSEMBLY





FRONT VIEW

ITEM	PART NUMBER	DESCRIPTION	QTY.
21	NIPPLE1x2	PIPE NIPPLE, 1" x 2" L	1
20	RTC_T-Handle_1in		1
19	BNIPPLE1x2	PIPE NIPPLE BRASS BRASS, 1" x 2" L	1
18	TEE1RED0.5	TEE, REDUCING, 1" x 1/2" x 1"	1
17	BUSHING0.5M0.25F	1/2" M x 1/4" F REDUCING BUSHING BRASS	1
16	BNIPPLE0.25x2	PIPE NIPPLE BRASS BRASS, 1/4" x 2" L	1
15	760B2502LT660	30" WC - 2 1/2" DIAL	1
14	4429K251	Low-Pressure Brass Threaded Pipe Fitting	1
13	SV-1.0NN	1" MODULATING VALVE w/ ACTUATOR	1
12	8214g251_1IN	1IN SAFETY VALVE	2
11	PLUG0.25	PLUG, 1/4"	2
10	BUSHING1.5M1F	1 1/2" M x 1" F REDUCING BUSHING BRASS	1
9	BNIPPLE1x5	PIPE NIPPLE BRASS BRASS, 1" x 5" L	1
8	BNIPPLE1x7	PIPE NIPPLE BRASS BRASS, 1" x 7" L	1
7	NIPPLE1x3	PIPE NIPPLE, 1" x 3" L	2
6	ELBOW1	ELBOW F-F, 1"	2
5	NIPPLE1x7	PIPE NIPPLE, 1" x 7" L	1
4	NIPPLE1x1.5	PIPE NIPPLE, 1" x 1 1/2" L (CLOSE)	2
3	TEE90DEG1RED0.25	TEE, RIGHT ANGLE REDUCING, 1" x 1" x 1/4"	1
2	UNION1	UNION, 1"	1
1	RV-1IN	HIGH FIRE REGULATOR, 1"	1

SHEET 16 OF 16

MASS: 278

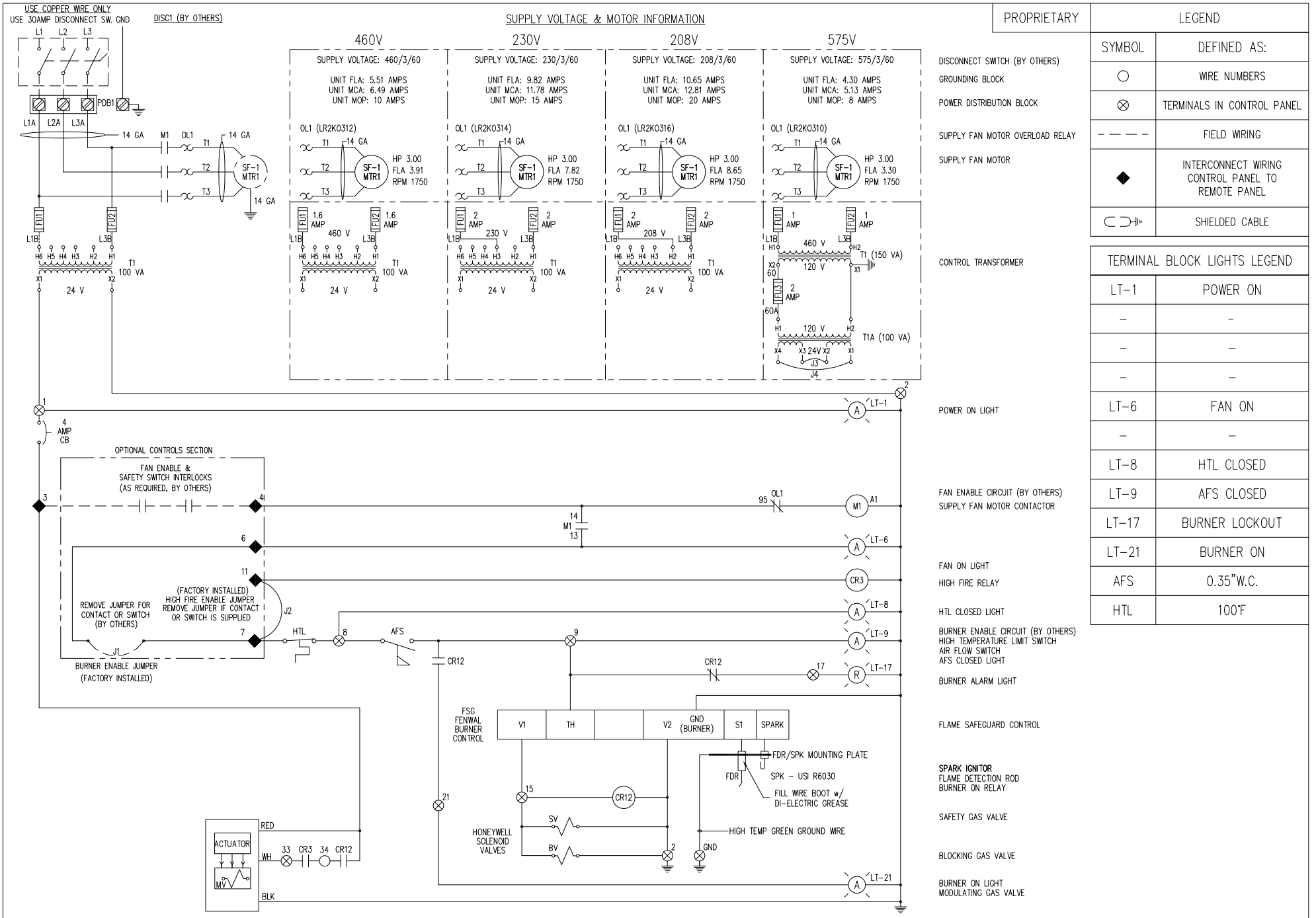
NOTES:

DESC. DH-60 - ASSEMBLY

DIM. SCALE: 1:8 | DRAWN BY: DAB | DATE: 10/18/2022

FILE NAME: DH-GAS TRAIN

FILE LOCATION: T:\APD-CH-DH\DH\



LAST REVISION:	REV.	ECO#	DATE	CK BY
ADDED WIRE #34 CONTACT CR-12 TO FORCE LOW FIRE IGNITION	L	–	10-18-22	KRW
	K	–	04-15-22	DMM
	J	–	12-23-21	DMM
	I	–	11-02-21	DMM

NOTES:

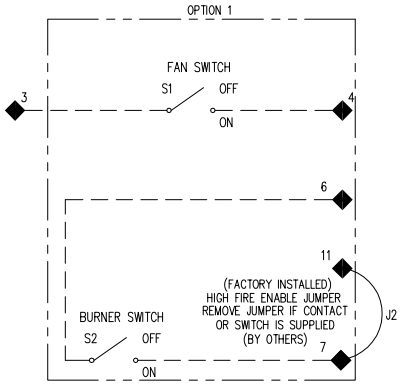
DRAWING FILE LOCATION: T:\APD-CH-DH\DH\ENGINEERING

PROJECT NAME: DH-ELEC – w/DIRECT SPARK IGNITION

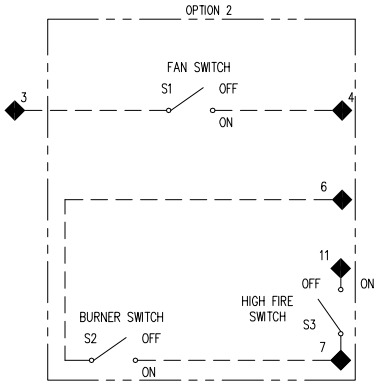
SCALE: NONE	DRAWN BY: BMA	DATE: 12-15-17	REV.	FILE NO.:
PLOT RATIO: 1=1	CK BY: –	WO#	L	DH-ELEC

PROPRIETARY

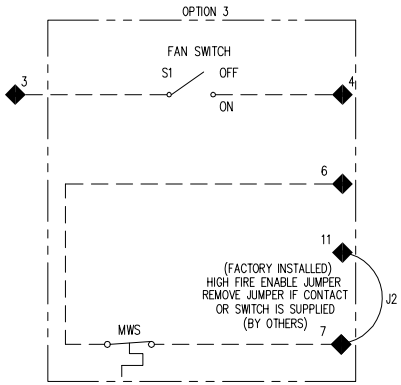
FAN & BURNER SWITCHES
(FOR FACTORY SUPPLIED REMOTE SEE DWG: DH-R)



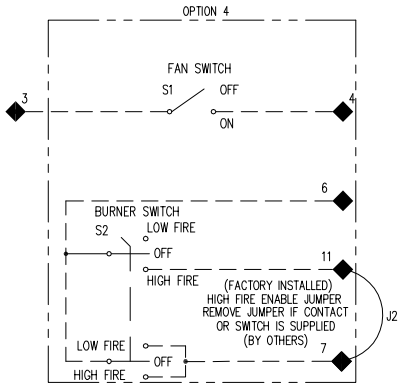
FAN, BURNER & HIGH FIRE SWITCHES
(FOR FACTORY SUPPLIED REMOTE SEE DWG: DH-R)



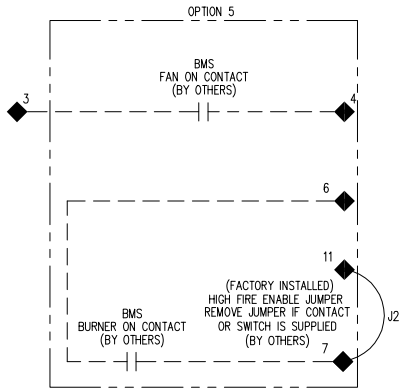
FAN SWITCH & MWS
(FOR FACTORY SUPPLIED REMOTE SEE DWG: DH-R)



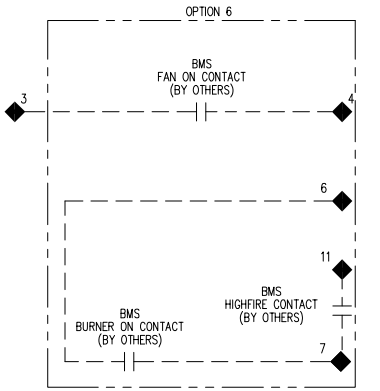
FAN SWITCH & HIGH/LOW FIRE BURNER SWITCH
(FOR FACTORY SUPPLIED REMOTE SEE DWG: DH-R)



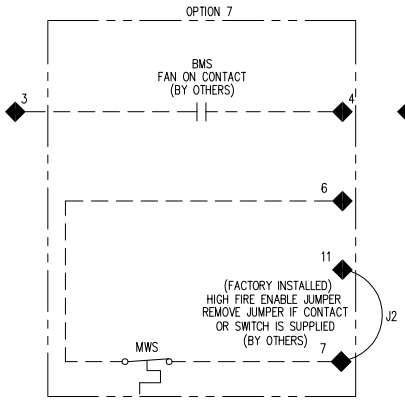
BMS CONTACTS FOR FAN & BURNER
(SUPPLIED BY OTHERS)



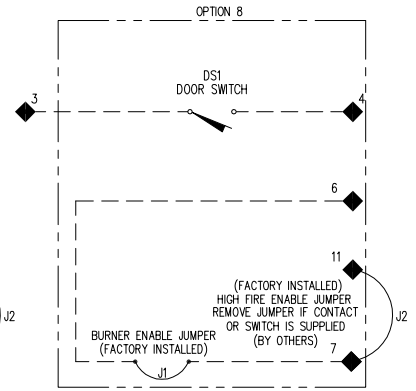
BMS CONTACTS FOR FAN, BURNER & FORCED HIGHFIRE
(SUPPLIED BY OTHERS)



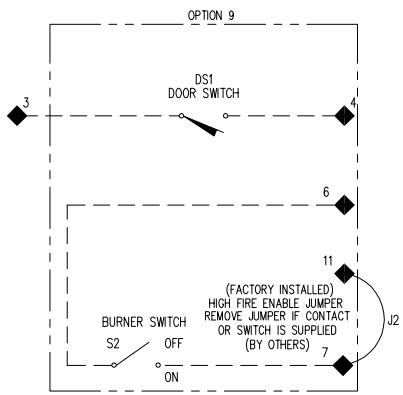
BMS CONTACTS FOR FAN & MWS FOR BURNER
(SUPPLIED BY OTHERS)



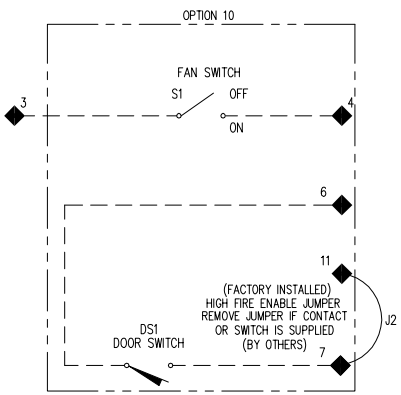
DOOR SWITCH FOR FAN & BURNER



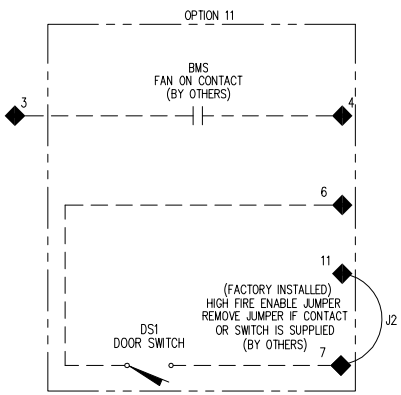
DOOR SWITCH FOR FAN & BURNER SWITCH
(FOR FACTORY SUPPLIED REMOTE SEE DWG: DH-R)



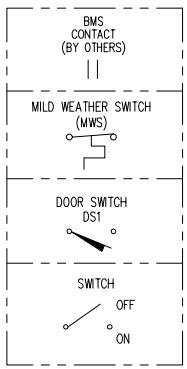
FAN SWITCH & DOOR SWITCH FOR BURNER
(FOR FACTORY SUPPLIED REMOTE SEE DWG: DH-R)



BMS CONTACT FOR FAN & DOOR SWITCH FOR BURNER



OPTIONS 1 THRU 11 ARE SOME OF THE WIRING ARRANGEMENTS FOR DOOR HEATER OPERATION. IF THE OPTIONS SUPPLIED DO NOT MEET YOUR REQUIREMENTS, THEN YOUR OWN ARRANGEMENT CAN BE USED BY INSERTING THE SWITCHES & CONTACTS ON THE RIGHT.



LEGEND

SYMBOL	DEFINED AS:
– – – –	FIELD WIRING
◆	INTERCONNECT WIRING IN CONTROL PANEL TO REMOTE PANEL OR CONTACTS

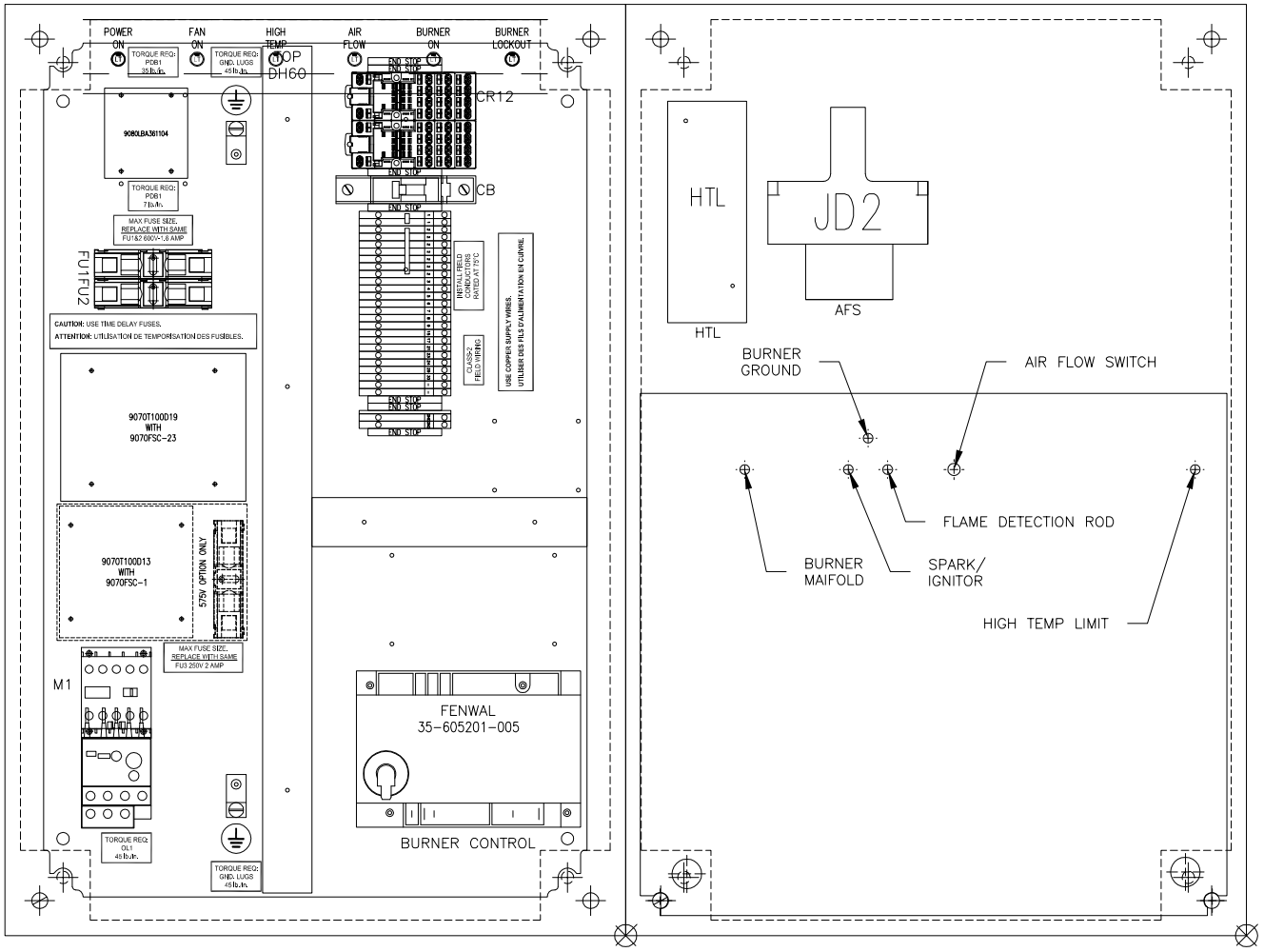
TERMINAL BLOCK LIGHTS LEGEND

–	–
–	–
–	–
–	–
–	–
–	–
–	–
–	–
–	–
–	–
–	–
–	–

LAST REVISION:	REV.	ECO#	DATE	CK BY
NOTES:	–	–	–	–
	–	–	–	–
	–	–	–	–
DRAWING FILE LOCATION: T:\APD-CH-DH\DH\ENGINEERING	–	–	–	–

PROJECT NAME:	FIELD WIRING OPTIONS			
SCALE: NONE	DRAWN BY: TMW	DATE: 05-25-22	REV.	FILE NO.:
PLOT RATIO: 1=1	CK BY: –	WO#	–	DH-ELEC_FWO

PROPRIETARY



NOTE: MOUNT AND ORIENTATE DEVICES AS INDICATED!

LAST REVISION:	UPDATED FOR CURRENT CURRENT TEMPERATURE CONTROL STANDARDS	REV.	ECO#	DATE	CK BY			
NOTES:		E	-	12-23-21	MMD			
		D	-	11-02-21	MMD	DESC.	DH BOX LAYOUT - 460	
ALL O-LINES (OR 0,0) WILL ALWAYS BE IN THE LOWER LEFT-HAND CORNER OF THE PART		C	-	12-13-19	MMD	SCALE NONE	DRAWN BY: MMD	DATE: 09-05-18
DRAWING FILE LOCATION:	T:\APD-CH-DH\DH\ENGINEERING	PART #:	-			PLOT RATIO: 1=3	CK BY: -	WO# -

FILE NO.: DH-BOX LAYOUT

TAG: -

JOB #: STOCK DH

LEGEND

AFS	AIR FLOW SWITCH
BV	BLOCKING GAS VALVE
CB	CIRCUIT BREAKER
CR3	HIGH FIRE ENABLE RELAY
CR12	BURNER ON RELAY
DISC1	DISCONNECT SWITCH (BY OTHERS)
DS1	DOOR SWITCH (OPTIONAL)
FU1-FU2	FUSES
FU3	FUSE (575V ONLY)
FDR	FLAME DETECTION ROD
FLA	FULL LOAD AMPS
FSG	FLAME SAFEGUARD CONTROL
HP	HORSEPOWER
HTL	HIGH TEMPERATURE LIMIT SWITCH
LT	INDICATOR PILOT LIGHT
M1	SUPPLY FAN MOTOR CONTACTOR
MTR1	SUPPLY FAN MOTOR
MV	MODULATING GAS VALVE
MWS	MILD WEATHER STAT (OPTIONAL)
OL1	SUPPLY FAN MOTOR OVERLOAD RELAY
PDB1	POWER DISTRIBUTION BLOCK
S1	FAN SWITCH (OPTIONAL)
S2	BURNER SWITCH (OPTIONAL)
S3	HIGH FIRE SWITCH (OPTIONAL)
SPK	SPARK IGNITOR
SV	SAFETY GAS VALVE
T1	CONTROL TRANSFORMER
T1A	120/24V TRANSFORMER (575V ONLY)

TAG: -

JOB #: STOCK DH

SEQUENCE OF OPERATION

The safety disconnect switch (DISC1), by others, must be closed to energize the equipment. All the controls are 24V.

See FIELD WIRING OPTION diagram for selected FAN & BURNER control.

With the fan enable contact between wires 3 & 4 closed, the supply fan motor contactor (M1) will energize, starting the supply fan motor (MTR1).

With the fan running and the burner enable contact between wires 6 & 7 closed, the supply fan motor contactor (M1) will energize, starting the supply fan motor (MTR1) and will allow power tO travel through the high temperature limit switch (HTL) and the air flow switch (AFS) to the flame safeguard control (FSG) starting the ignition process as follows:

The ignition process starts by energizing flame safeguard control (FSG). When the flame detection rod (FDR), through the flame safeguard control (FSG), senses a sufficient flame current, the safety gas valve (SV) and the blocking gas valve (BV) will energize and the ignition will de-energize. Should the flame detection rod (FDR) not sense a flame after a short period of time, the flame safeguard control (FSG) will assume a locked out condition and will require a manual reset. To reset a locked out condition, cycle the burner enable contact between wires 6 & 7.

The unit will operate in low fire until the high fire enable contact between wires 7 & 11 is closed. The burner will remain in high fire until the high fire enable contact is opened. The burner operates in either low fire or high fire. If no high fire contact is being used then the unit will be forced into highfire due to the factory installed jumper between wires 7 and 11.

If the supply fan motor (MTR1) should overload, the supply motor (MTR1) and the heat will de-energize by way of the supply fan motor overload relay (OL1).

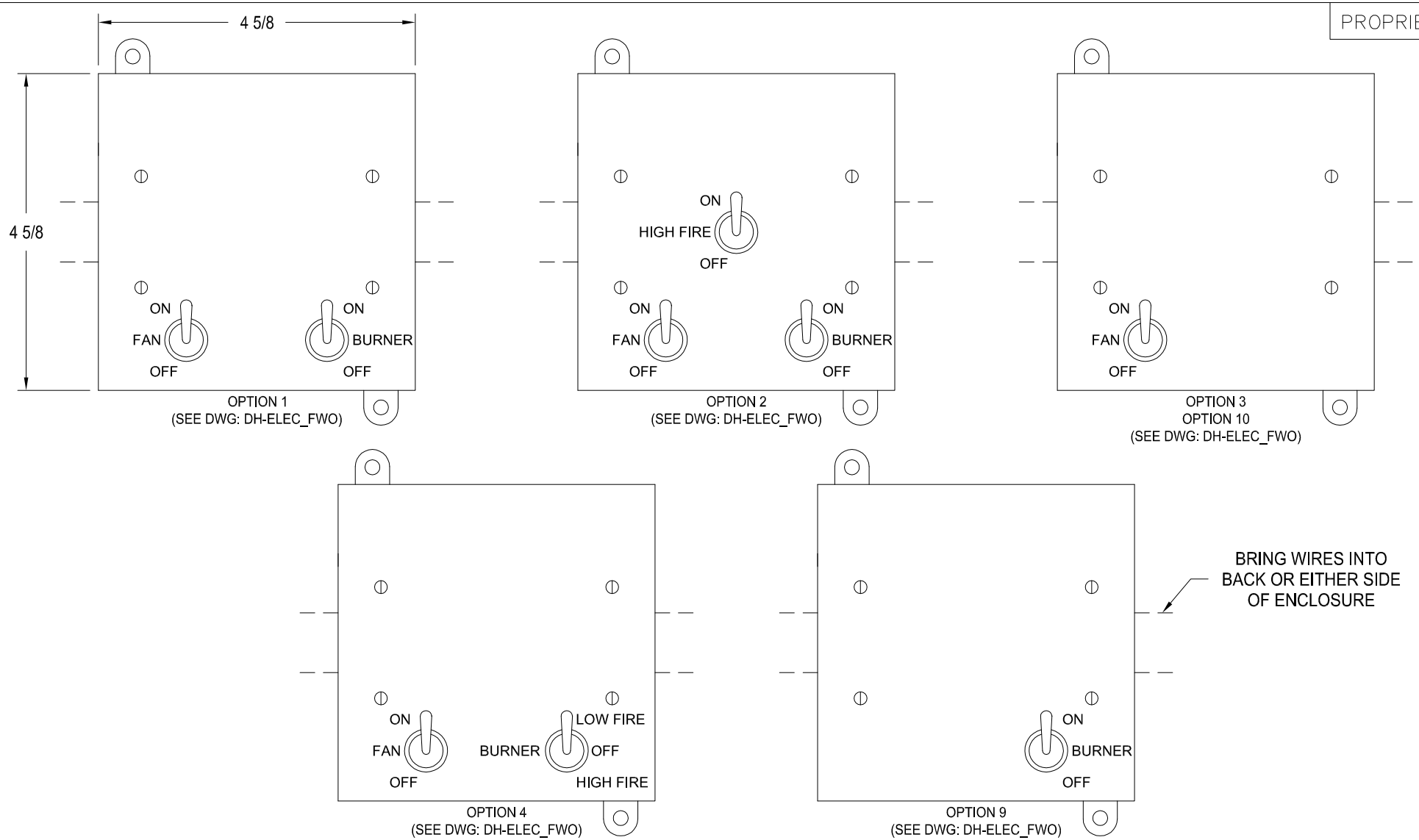
The circuit analyzer lights operate as follows:

LT-1 (POWER ON) energizes when the power is on.
LT-6 (FAN ON) energizes when the supply fan motor contactor is on.
LT-8 (HTL) energizes when the high temp. limit sw. is closed (manual reset).
LT-9 (AFS) energizes when the air flow switch is closed (proving air flow).
LT-21 (BURNER ON) energizes when the safety and blocking gas valves open.
LT-17 (BURNER ALARM) energizes when the burner fails to ignite.

These lights are used for trouble shooting the system. Control power stops at the last light that is on. These lights will come on in order from LT-1 thru LT-21.

LT-17, burner alarm light, is on only during a burner alarm.

PROPRIETARY



LAST REVISION:	REMOVED TEMP DIAL
NOTES:	
ALL O-LINES (OR 0,0) WILL ALWAYS BE IN THE LOWER LEFT-HAND CORNER OF THE PART	
DRAWING FILE LOCATION:	T:\APD-CH-DH\DH\ENGINEERING

REV.	ECO#	DATE	CK BY
C	-	12-23-21	MMD
B	-	12-19-17	MMD
A	-	03-18-14	OEB

PART #: -

-	-	-
NET QTY	MATERIAL	MATERIAL SIZE

DESC. DH - REMOTE CONTROL PANEL ENCLOSURE

SCALE NONE	DRAWN BY: BMA	DATE: 05-16-06	REV.	FILE NO.:
PLOT RATIO: 1=1	CK BY: -	WO# -	C	DH-R