

- FLOOR or WALL ASSEMBLY - Lightweight or normal weight (100-150 pcf) concrete. Except as noted in table under item 4, min thickness of solid concrete floor or wall assembly is 4-1/2 in. Floor may also be constructed of any min. 6 in. thick UL Classified hollow core PRECAST CONCRETE UNIT. When floor is constructed of hollow core precast units, packing material (item 3) and caulk fill material (item 4) to be installed symmetrically on both sides of floor. Flush with floor surface. Wall assembly may also be constructed of any UL Classified CONCRETE BLOCKS. Max diam of opening in solid lightweight or normal weight concrete. Floor is 32 in. Max diam of opening in floor constructed of hollow-core precast concrete units is 1 in.
- See CONCRETE BLOCKS (CAZT) and PRECAST CONCRETE UNITS (CTV) categories in the Fire Resistance Directory for names of manufacturers.
- STEEL SLEEVE - (Optional, not shown) Max 15 in ID (or smaller) Schedule 10 (or heavier) steel sleeve cast or grouted into floor or wall assembly. Sleeve may extend a max. of 2 in. above top of floor or beyond either surface of wall. Max 6 in ID (or smaller) min. 0.020 wall thickness (or heavier) galvanized steel sleeve cast or grouted into floor or wall assembly. Sleeve may extend a max of 1/2 in. beyond either surface of floor or wall.
- THROUGH PENETRANTS - One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. Max annular space between pipe, conduit or tubing and edge of through opening or sleeve is dependent on the parameters shown in item 4. Min annular space between pipe or conduit and edges of through opening is zero in. (point contact). Pipe conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
 - STEEL PIPE - Nom 30 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.
 - IRON PIPE - Nom 30 in. diam (or smaller) cast or ductile iron pipe.
 - CONDUIT - Nom 6 in. diam (or smaller) rigid steel conduit.
 - CONDUIT - Nom 4 in. diam (or smaller) steel electrical metallic tubing.
 - COPPER TUBING - Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.
 - COPPER PIPE - Nom 6 in. diam (or smaller) Rector (or heavier) copper pipe.
- PACKING MATERIAL - Polyethylene backed rod or nom 1 in. thickness of tightly-packed mineral wool batt or glass fiber insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall as required to accommodate the required thickness of caulk fill material (item 4).
- FILL, VOID or CAVITY MATERIAL - CAULK - Applied to fill the annular space flush with top surface of floor. In wall assemblies, required caulk thickness to be installed symmetrically on both sides of wall, flush with wall surface. At point contact location between penetrant and sleeve or between penetrant and concrete, a min 1/4 in. diam bead of caulk shall be applied at the top surface of floor and at both surfaces of wall. The hourly F Ratings and the min required caulk thickness are dependent upon a number of parameters, as shown in the following table:

Min Floor or Wall Thrs, In.	Nom Pipe Tube Or Conduit, Dia, In.	Max Annular Space, In.	Min Caulk Thrs, In.	F Rating, hr.
2-1/2	1/2-1/2	1-3/8	1/2	2
2-1/2	1/2-1/2	3-1/4	1/4 (a)	2
4-1/2	1/2-1/2	1-3/8	1/4 (a)	2
4-1/2	1/2-1/2	1-1/4	1/2	3
4-1/2	1/2-20	2	1	3
4-1/2	1/2-20	2	1	3
4-1/2	1/2-1/2	3-1/4	1	3
4-1/2	22-20	2	1	3
5-1/2	1/2-6	1-3/8	1(b)	4

 - Min 2 in thickness of material wool batt insulation required in annular space.
 - Min 1 in. thickness of material wool batt insulation required in annular space on both sides of floor or wall assembly. Min 1 in. thickness of caulk to be installed flush with each surface of floor or wall assembly. Min 1 in. diam bead of caulk shall be applied at the top surface of floor and at both surfaces of wall. The hourly F Ratings and the min required caulk thickness are dependent upon a number of parameters, as shown in the following table.

- Wall Assembly - The fire-rated gypsum wallboard shall be constructed of the materials and in the manner specified in the Individual U300 or U400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
 - Studs - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced max 16 in. OC. Steel studs to be 6 in. 2-1/2 in wide and spaced 24 in. OC.
 - Wallboard Gypsum - Two layers of nom 5/8 in. thick gypsum wallboard, as specified in the Individual Wall and Partition Design. Max diam of opening not to exceed 1 in.
 - Through Penetrants - One metallic pipe or conduit to be installed concentrically or eccentrically within the firestop system. The annular space shall be min 1/4 in. to max 2-1/2 in. pipe or conduit to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes or conduits may be used:
 - Steel Pipe - Nom 4 in. diam (or smaller) Schedule 5 (or heavier) steel pipe.
 - Conduit - Nom 4 in. diam (or smaller) electrical metallic tubing or steel conduit.
 - Copper Tubing - Nom 3 in. diam (or smaller) Type M (or heavier) copper tubing.
 - Packing Material - Min 3-1/2 in. thickness of min 0.5 pcf fiberglass insulation firmly packed into opening as a permanent form. The packing material shall be sized to be at least 1/2 in. larger than the opening dia. centered in the walls mid-depth and compressed so that it is recessed a min. of 1/4 in. from each surface of wall.
 - Fill, Void or Cavity Material - Dry mix material mixed with water at a rate of 100 grams of dry mix per 40 to 50 ml of water or a 40/100 to 50/100 ratio by weight of water to dry mix. In accordance with the accompanying installation instructions. Material applied to each surface of the packing material within the annulus between the penetrating item and periphery of opening to a min. depth of 1-1/4 in. Material shall be troweled flush with both surfaces of wall assembly.

Gold Bond Building Products, National Gypsum Div., - Type Sta-Smooth FS.

** Bearing the UL Classification Marking.

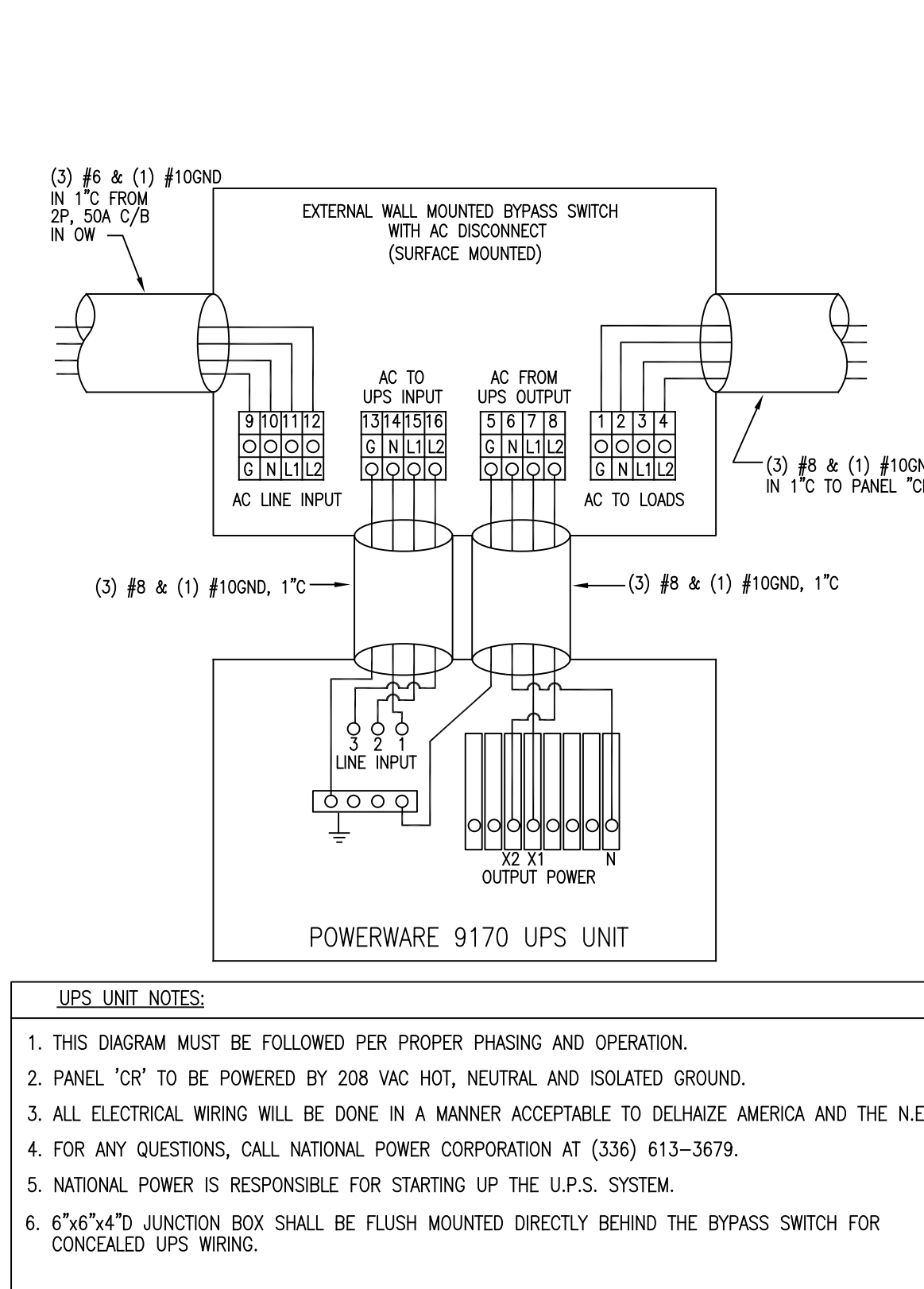
FLOOR or WALL ASSEMBLY

1-2 IN HR PENETRATION (STEEL CONDUIT)

NOT TO SCALE

UL PENETRATING PROCEDURE DETAILS

NOT TO SCALE

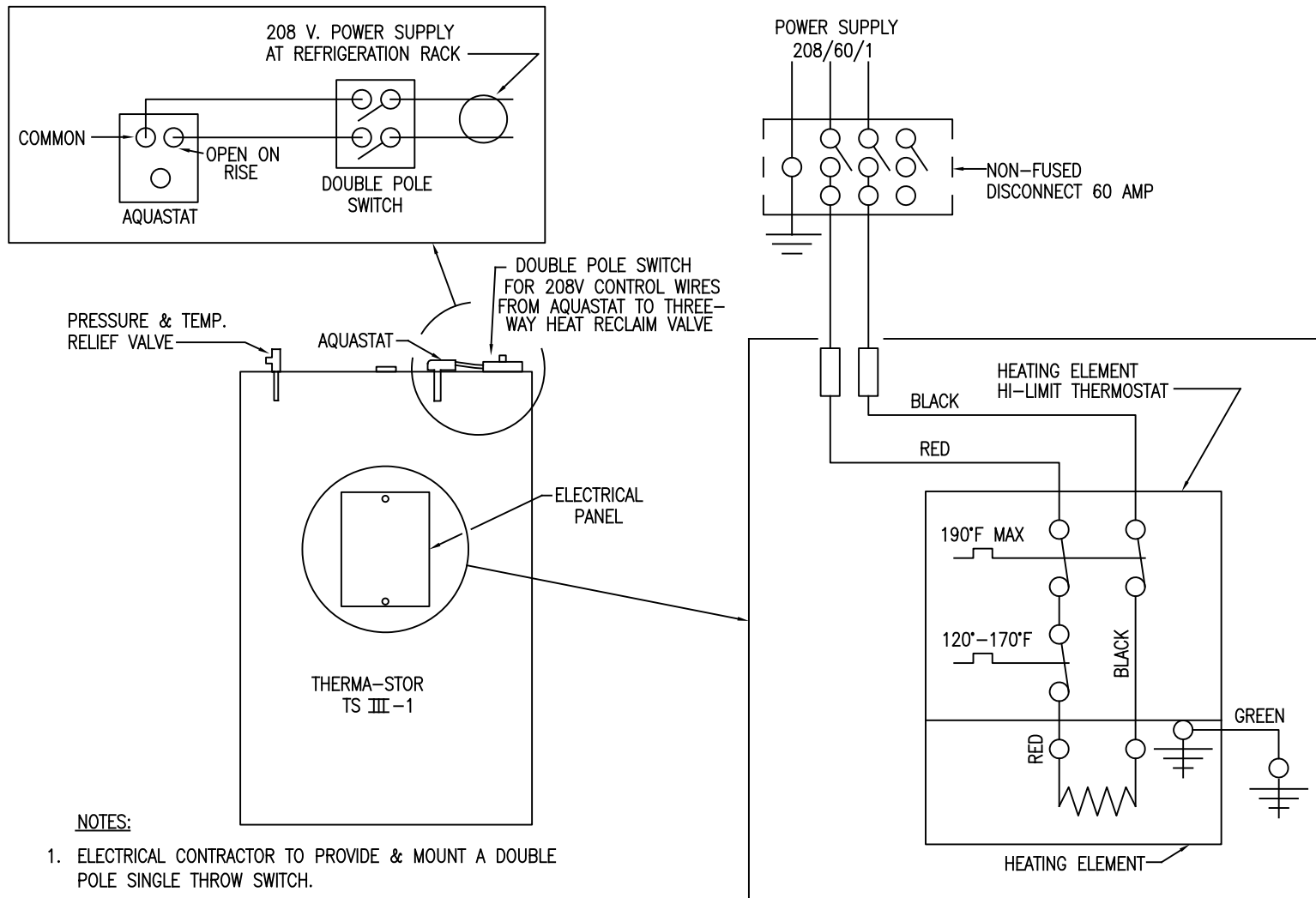


"UPS" UNIT WIRING DIAGRAM

NOT TO SCALE

UPS UNIT NOTES:

- THIS DIAGRAM MUST BE FOLLOWED PER PROPER PHASING AND OPERATION.
- PANEL "CR" TO BE POWERED BY 208 VAC HOT, NEUTRAL AND ISOLATED GROUND.
- ALL ELECTRICAL WIRING WILL BE DONE IN A MANNER ACCEPTABLE TO DELHAIZE AMERICA AND THE N.E.C.
- FOR ANY QUESTIONS, CALL NATIONAL POWER CORPORATION AT (336) 613-3679.
- NATIONAL POWER IS RESPONSIBLE FOR STARTING UP THE U.P.S. SYSTEM.
- 6"x6"x4" JUNCTION BOX SHALL BE FLUSH MOUNTED DIRECTLY BEHIND THE BYPASS SWITCH FOR CONCEALED UPS WIRING.

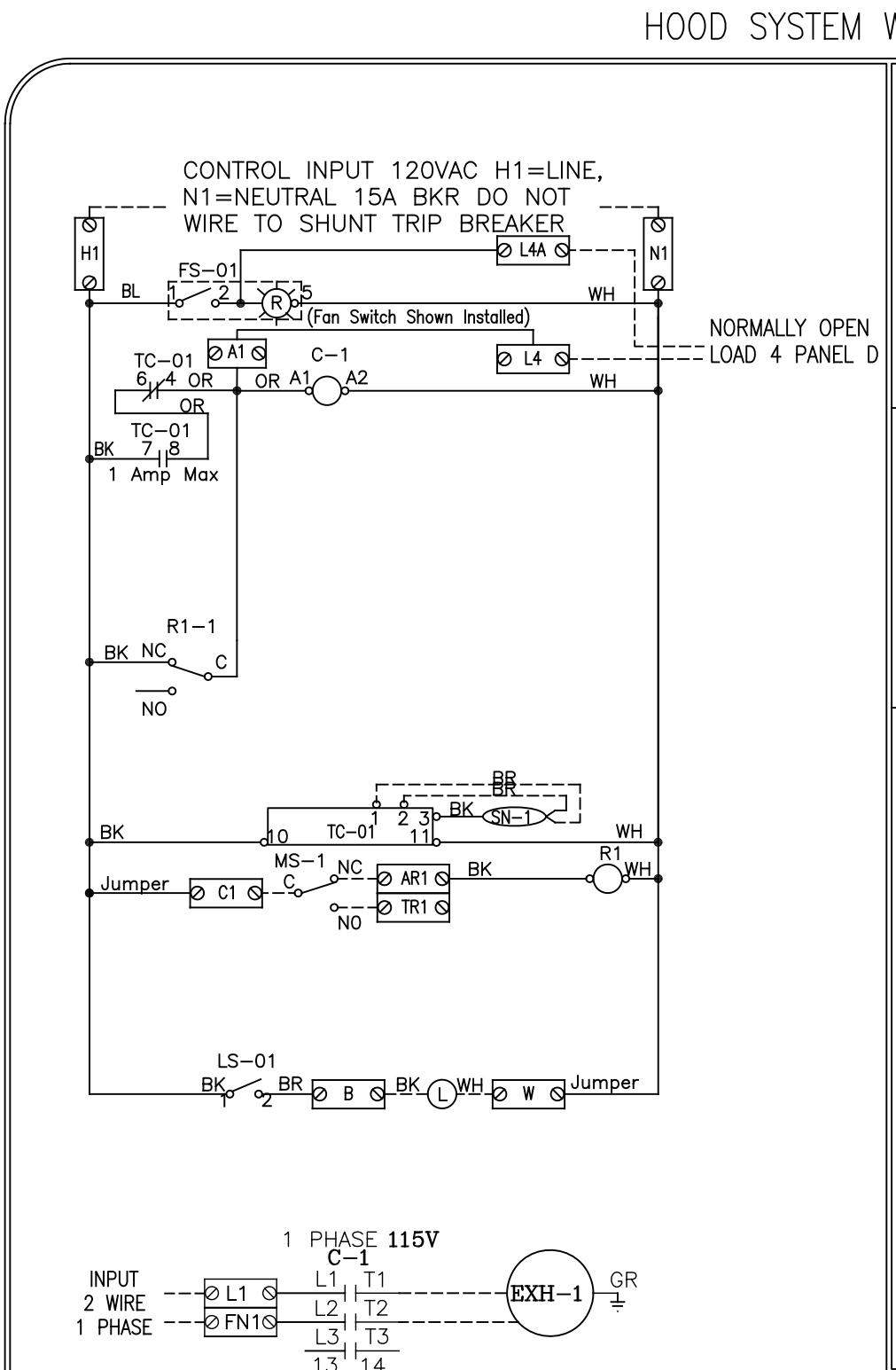


WIRING DETAIL FOR THERMA-STOR III-1 RECLAIM WATER HEATER

NOT TO SCALE

SYMBOL LEGEND

- | | | | |
|------|--|---|--|
| S | SINGLE POLE SWITCH | ◇ | NEW FLOOR STUB-UP |
| S3 | THREE WAY SWITCH | ○ | ELECTRICAL CONNECTION UNDER CASE |
| Sp | SINGLE POLE SWITCH w/ PILOT LIGHT INDICATOR | — | FLUORESCENT FIXTURE |
| DP | DUPLEX RECEPTACLE | ⊙ | LIGHT FIXTURE (SEE LIGHT FIXTURE SCHEDULE ON THIS SHEET) |
| W.P. | WEATHERPROOF RECEPTACLE | ⊙ | EXIT LIGHT |
| Q | QUADREX RECEPTACLE | ⊙ | EMERGENCY LIGHT FIXTURE |
| ● | SPECIAL RECEPTACLE (TYPE AS NOTED) | ⊙ | JUNCTION BOX |
| ⊙ | MICROPHONE | ⊙ | PUSHBUTTON |
| ▶ | TELEPHONE JACK, 2"x4" UNLESS NOTED OTHERWISE | ⊙ | SIGNAL BELL |
| ⊙ | DISCONNECT SWITCH (TYPE AS NOTED) | ⊙ | SENSOR...TEMP/HUMIDITY (HANDY BOX MTD.) |
| ⊙ | MAGNETIC SWITCH | ⊙ | SCALE COMMUNICATION OUTLET |
| ⊙ | DROP FROM CEILING | ⊙ | ENERGY MANAGEMENT SYSTEM LOAD NUMBER |
| | | ⊙ | SPEAKER VOLUME CONTROL |



HOOD SYSTEM WIRING DETAIL

NOT TO SCALE

Motor Type PH Volt HP FLA BREAKER

Exh-1 Exh 1 115 0.333 6 15 Amp

NOTES

----- DENOTES FIELD WIRING

----- DENOTES INTERNAL WIRING

WIRE COLOR

BK - BLACK YW - YELLOW

BL - BLUE GY - GRAY

BR - BROWN PR - PURPLE

OR - ORANGE GR/BL - ORANGE/BLUE (STRIPE)

RD - RED BL/RD - BLUE/RED (STRIPE)

WH - WHITE RD/GN - RED/GREEN (STRIPE)

DRAWING SHOWN DE-ENERGIZED

NOTE: IF WALL MOUNT PREWIRE, OR FIELD INSTALLED FIRE SYSTEM MICROSWITCH, THE TERMINALS SHOWING FACTORY WIRING MUST BE FIELD WIRED.

NOTE 1: CT SENSOR FIELD WIRED WHEN RISERS SHIPPED LOOSE. WHEN MULTIPLE CT SENSORS USED ON ONE FAN SWITCH, EACH SENSOR IS WIRED TO ITS OWN CONTROLLER AND THE CONTROLLER TERMINALS 4, 7, 10 AND 11 ARE WIRED IN PARALLEL. TERMINALS 6 AND 8 ARE JUMPED ON EACH CONTROLLER.

HOOD SYSTEM WIRING DETAIL

NOT TO SCALE

1 Phase Controls for 1 Exhaust fan. Includes 1 Light switch, 1 Fan switch, Exhaust in Fire, NC contact from EMS Panel for override of fan control, Double Dual Microswitch (extra) used for shutdowns. Fans ON/OFF thermostatically controlled.

COMPONENT PARTS LIST

LABEL DESCRIPTION LOCATION

ST-x Starter

OL-x Overload

FS-x Fan Switch (Lighted)

LS-xx Light Switch

L Hood Light(s)

MS-x MicroSwitch (Amsul/PyroChem)

Rx Relay DPDT - 34.110.0146.0

TC-XX TEMPERATURE CONTROLLER PKR4-WAS1-GVA07

ISN-X RTD TEMPERATURE SENSOR (See Note 1)

TERMINAL FOR FIELD WIRING TO BUILDING FIRE PANEL DRY CONTACTS FOR SIGNAL ONLY

TERMINAL FOR FIELD WIRING TO (spare) SHUTDOWN, DRY CONTACTS FOR SIGNAL ONLY

TERMINAL FOR FIELD WIRING TO (spare) SHUTDOWN, DRY CONTACTS FOR SIGNAL ONLY

Rx RELAY SOCKET STYLE

C-RD NO 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 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