### CORE TOTAL FLOOD PROTECTION ELECTRICAL DETAIL

**ELECTRICIAN:**
1. Wire main control panel per included schematic
2. Wire all fans per included schematic
3. Wire shunt trip breaker (optional)
4. Wire UDS appliance kill switch, if equipped (optional)
5. Wire gas valve

### ELECTRICAL CONTRACTOR REQUIREMENT

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CONNECTION IN PANEL</th>
<th>CONNECTION IN DEVICE</th>
<th>VOLTAGE</th>
<th>AMPERAGE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHUNT TRIP BREAKER (OPTIONAL)</td>
<td>ST &amp; N1</td>
<td>BREAKER COIL (A1 &amp; A2)</td>
<td>120 VAC</td>
<td>&lt; 4 AMPS</td>
<td>ST TO A1 on shunt breaker coil, and neutral to A2 on shunt trip breaker</td>
</tr>
<tr>
<td>CONTROL PANEL POWER</td>
<td>H1 &amp; N1 + GROUND</td>
<td>CIRCUIT BREAKER</td>
<td>120 VAC</td>
<td>15 AMPS</td>
<td>Control panel power must not be run through shunt trip breaker</td>
</tr>
<tr>
<td>UDS APPLIANCE KILL SWITCH (OPTIONAL)</td>
<td>KTS &amp; N1</td>
<td>KTS &amp; N1</td>
<td>120 VAC</td>
<td>&lt; 4 AMPS</td>
<td>Kill switch terminals must be in series with other kill switches</td>
</tr>
<tr>
<td>REMOTE ANSUL AUTOMAN (OPTIONAL)</td>
<td>AU1, AU2</td>
<td>SOLENOID</td>
<td>120 VAC</td>
<td>&lt; 6 AMPS</td>
<td>120V to AU1, AU2 to Ansul electric automan, Ansul solenoid to neutral</td>
</tr>
<tr>
<td>GAS VALVE</td>
<td>35 &amp; N1D (if 24 VDC)</td>
<td>GAS &amp; N1 (if 120 VAC)</td>
<td>24 VDC</td>
<td>&lt; 1.0 AMPS</td>
<td>If 24 VDC - 2 wires &amp; ground, N1D to red, 35 to red, and green to ground</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>OR 120 VAC</td>
<td></td>
<td>If 120 VAC - 2 wires &amp; ground gas to red, N1 to red, and green to ground</td>
</tr>
</tbody>
</table>

**NOTE:** See installation, operation, and maintenance manual for further instructions.
**CORE TOTAL FLOOD PROTECTION LOW-VOLTAGE DETAIL**

**ALARM CONTRACTOR:**
1. WIRE MANUAL ACTUATION DEVICE(S), REMOTE FIRESTAT(S), CORE INTERLOCK(S), FIRE SENSOR(S) AND FIRE ALARM CONTACTS
2. COMPLETE FINAL HOOKUP OF SYSTEM
3. PERFORM FINAL FIRE SYSTEM TEST
4. FILL SURFACTANT TANK

**ALARM CONTRACTOR REQUIREMENT**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CONNECTION IN PANEL</th>
<th>CONNECTION ON DEVICE</th>
<th>VOLTAGE</th>
<th>AMPERAGE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANUAL ACTUATION DEVICE(S)</td>
<td>101 AND 104 102 AND 103</td>
<td>1 &amp; 2</td>
<td>24 VDC</td>
<td>&lt; 1.0 AMPS</td>
<td>WIRE MANUAL ACTUATION DEVICE TERMINAL 1 BETWEEN CORE PANEL TERMINALS 102 AND 103 JUMPER 101 TO 104 AND 101 TO 103 IF NO MANUAL ACTUATION DEVICE IS INSTALLED</td>
</tr>
<tr>
<td>MANUAL ACTUATION DEVICE COVER</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>MANUAL ACTUATION DEVICE COVER MUST BE INSTALLED</td>
</tr>
<tr>
<td>REMOTE FIRESTAT SENSOR(S)</td>
<td>21 AND 24 22 AND 23</td>
<td>BLACK AND WHITE</td>
<td>24 VDC</td>
<td>&lt; 1.0 AMPS</td>
<td>WIRE FIRE SENSOR WHITE WIRES BETWEEN HOOD CORE PANEL TERMINALS 22 AND 23 WIRE FIRE SENSOR BLACK WIRES BETWEEN HOOD CORE PANEL TERMINALS 21 AND 24</td>
</tr>
<tr>
<td>FIRE ALARM CONTACT</td>
<td>AL1, AL2</td>
<td>VARIES</td>
<td>50V MAX (AC/DC)</td>
<td>UP TO 1 AMP</td>
<td>FIRE ALARM RELAY CONTACTS FOR BUILDING FIRE ALARM LOCATED IN THE CORE ELECTRICAL CONTROL PANEL</td>
</tr>
<tr>
<td>CORE INTERLOCK(S)</td>
<td>ILA, ILB, ILC</td>
<td>ILA, ILB, ILC</td>
<td>RS-485 COMMUNICATIONS SIGNAL</td>
<td>CORE SYSTEM (1) ALA TO CORE SYSTEM (2) ALB, CORE SYSTEM (1) ILA TO CORE SYSTEM (2) ILC, USE BELDEN#88760 OR SIMILAR WIRE</td>
<td></td>
</tr>
<tr>
<td>TROUBLE CONTACT</td>
<td>TBC, TBL, TOK</td>
<td>VARIES</td>
<td>MAX 120 VAC</td>
<td>UP TO 6 AMPS</td>
<td>WIRE TO TBL &amp; TBC normally open contact, closes in trouble condition</td>
</tr>
<tr>
<td>CORE COMMUNICATIONS CABLE</td>
<td>RJ-45 Jack</td>
<td>INTERNET CONNECTION</td>
<td>SIGNAL</td>
<td>&lt;1.0 AMPS</td>
<td>TYPICAL CONNECTION CAT5 CABLE TO LOCAL AREA NETWORK VIA ETHERNET SWITCH OR WIRELESS ROUTER WITH VALID INTERNET CONNECTION</td>
</tr>
</tbody>
</table>

**FIRE ALARM CONTACT**
- 2 WIRES WRIED TO NORMALLY OPEN CONTACTS (CLOSES IN FIRE CONDITION)
- CORE CONTROL PANEL AL1 AND AL2
- SEE FIGURE 2

**TROUBLE CONTACT**
- 2 WIRES WRIED TO NORMALLY OPEN CONTACTS (CLOSE IN TROUBLE CONDITION)
- CORE PANEL TERMINALS TBL AND TBC
- SEE FIGURE 4

**SUPERVISED LOOP**
- 4 WIRES, 24VDC CONNECT BLACK WIRES BETWEEN 21 AND 24 IN PANEL, CONNECT WHITE (OR RED) WIRES BETWEEN 22 AND 23 IN PANEL
- ADDITIONAL FIRESTATS, WIRED IN SUPERVISED LOOP
- USE HIGH TEMP (842°F) #CW04427 (WHT) & #CW04427B (BLK) WIRE ONLY IF RAN OVER TOP OF HOOD; OTHERWISE BELDEN #620UL OR SIMILAR PLENUM RATED WIRE
- SEE FIGURE 1

**ATTENTION:** LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES

**NOTE:** SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS
CORE TOTAL FLOOD PROTECTION LOW-VOLTAGE FIGURES

WIRING CONNECTIONS FOR FIRESTAT LOOP
FIGURE 1

WIRING CONNECTIONS FOR MANUAL ACTUATION LOOP
FIGURE 1A

WIRING CONNECTIONS FOR CORE INTERLOCK
FIGURE 3

WIRING CONNECTIONS FOR FIRE ALARM CONTACT
FIGURE 2

WIRING CONNECTIONS FOR TROUBLE CONTACT
FIGURE 4

NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES
COOKING APPLIANCE(S)

EXHAUST HOOD

HOOD DRAIN(S)
-1-1/2 INCH NPT CONNECTED TO BUILDING GREASE TRAP
-2 DRAINS ON 24 INCH TALL HOODS WITH 20 INCH TALL FILTERS AND HOODS 10 FEET AND LONGER
-STAINLESS STEEL, COPPER, OR STEEL PIPE ONLY

ELECTRIC

GAS

HOT WATER LINE
-PVC, COPPER, OR STAINLESS STEEL PIPE ONLY
-140-170°F OPERATING TEMPERATURE
-XXX TO 70 PSI OPERATING PRESSURE
-XXX GPM (0.7 GPM PER FOOT OF HOOD)
-INSULATE HOT WATER PIPE, MINIMUM PRESSURE DEPENDENT ON LENGTH AND CONFIGURATION OF HOOD SYSTEM

GAS VALVE
-THREADED NPT CONNECTION
-SEE TABLE BELOW FOR MAX PRESSURE
-STRAINER INSTALLED UPSTREAM OF VALVE

FLOOR DRAIN
-1-1/2 DRAIN INSTALLED IN FLOOR, NEAR APPLIANCES
-DO NOT INSTALL DRAIN HOOD
-GREASE INTERCEPTOR MAY BE REQUIRED

PRESSURE REGULATOR VALVE
REGULATORS ARE NOT INCLUDED TO MEET REQUIRED PRESSURE AND MUST BE ORDERED SEPARATELY
-PART NUMBERS: X65BU(3/4"), X65BU(1"), X65BU(1-1/2"

FLOOR DRAIN
-1-1/2 DRAIN INSTALLED IN FLOOR, NEAR APPLIANCES
-DO NOT INSTALL DRAIN HOOD
-GREASE INTERCEPTOR MAY BE REQUIRED

PLUMBING CONTRACTOR REQUIREMENT

ITEM | CONNECTION | TEMPERATURE | PRESSURE | FLOW RATE | COMMENTS |
--- | --- | --- | --- | --- | --- |
HOT WATER LINE | 3/4 INCH NPT | 140 to 170°F | XXX TO 70 PSI | XXX GPM PER FOOT OF HOOD | INSULATE HOT WATER PIPE, MINIMUM PRESSURE DEPENDENT ON LENGTH AND CONFIGURATION OF HOOD SYSTEM |
HOOD DRAIN(S) | 1-1/2 INCH NPT | N/A | GRAVITY DRAIN | XXX GPM PER DRAIN | 2 DRAINS ON 24 INCH TALL HOODS WITH 20 INCH TALL FILTERS AND HOODS 10 FEET AND LONGER |
END-TO-END CORE CONNECTION | 3/4 INCH NPT | N/A | N/A | N/A | CONNECT WITH NPT PIPE, SEAL ALL THREADS, HOOD CONNECTION PROVIDED |
BACK-TO-BACK CORE CONNECTION | 3/4 INCH NPT | N/A | N/A | N/A | CONNECT WITH NPT PIPE, SEAL ALL THREADS, HOOD CONNECTION PROVIDED |
GAS VALVE | VARIATES | N/A | SEE CHART | N/A | UP TO 2 INCHES NPT WITH 24V CONTROLS, 2-1/2 AND 3 INCH USE 120V CONTROL |
FLOOR DRAIN(S) | 1-1/2 INCH | N/A | GRAVITY DRAIN | N/A | USED TO HELP CLEAN UP FIRE SYSTEM DISCHARGE, GREASE INTERCEPTOR MAY BE REQUIRED |
BACKFLOW PREVENTER DRAIN LINE (OPTIONAL) | INLET/OUTLET | N/A | VARIATES | N/A | INSTALLED WHEN PACKAGE HAS A BACKFLOW PREVENTER VALVE, SEE BACKFLOW PREVENTER VALVE MANUAL FOR DETAILS |

PRESSURE REGULATOR VALVE
REGULATORS ARE NOT INCLUDED TO MEET REQUIRED PRESSURE AND MUST BE ORDERED SEPARATELY
-PART NUMBERS: X65BU(3/4"), X65BU(1"), X65BU(1-1/2"

HOT WATER LINE
-PVC, COPPER, OR STAINLESS STEEL PIPE ONLY
-140-170°F OPERATING TEMPERATURE
-XXX TO 70 PSI OPERATING PRESSURE
-XXX GPM (0.7 GPM PER FOOT OF HOOD)

END-TO-END OR BACK-TO-BACK CONNECTION
-INSTALLED AND PROVIDED BY PLUMBER
-STAINLESS STEEL, COPPER, OR STEEL PIPE ONLY

HOOD DRAIN(S)
-1-1/2 INCH NPT CONNECTED TO BUILDING GREASE TRAP
-2 DRAINS ON 24 INCH TALL HOODS WITH 20 INCH TALL FILTERS AND HOODS 10 FEET AND LONGER
-STAINLESS STEEL, COPPER, OR STEEL PIPE ONLY

FLOOR DRAIN
-1-1/2 DRAIN INSTALLED IN FLOOR, NEAR APPLIANCES
-DO NOT INSTALL DRAIN HOOD
-GREASE INTERCEPTOR MAY BE REQUIRED

NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS
**CORE TOTAL FLOOD PROTECTION SPRINKLER DETAIL**

**BUILDING SPRINKLER CONTRACTOR:**
1. CONNECT CORE WATER LINE TO BUILDING WET SPRINKLER SYSTEM. STAINLESS STEEL, COPPER, OR STEEL PIPE ONLY

---

**SPRINKLER CONTRACTOR REQUIREMENT**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CONNECTION</th>
<th>OPERATING PRESSURE</th>
<th>K-FACTOR</th>
<th>FLOW RATE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CORE WATER SUPPLY LINE</td>
<td>3/4 INCH NPT</td>
<td>XXX PSI TO 70 PSI</td>
<td>XXX</td>
<td>XXX GPM</td>
<td>TOTAL (1.5 GPM PER FOOT OF HOOD) WATER LINE MUST BE SUPERVISED AND HAVE NO UNSUPERVISED MANUAL SHUT-OFF VALVES MINIMUM PRESSURE AND FLOW RATE DEPENDENT ON LENGTH OF HOOD SYSTEM</td>
</tr>
</tbody>
</table>

**PRESSURE REGULATOR VALVE (PRV)**
- PRV NOT INCLUDED AND MUST BE PROVIDED, INSTALLED, AND ADJUSTED BY THE SPRINKLER CONTRACTOR TO MEET INCOMING PRESSURE REQUIREMENTS
- A REGULATOR SUCH AS THE ELKHART BRASS MODEL NUMBER URFA-20S-2.5" OR THE UR-20 SERIES PARTS KITS SHOULD BE UTILIZED
- MUST BE CONFIRMED WITH THE FIRE MARSHAL OR LOCAL AUTHORITY HAVING JURISDICTION (AHJ)

**CORE WATER SUPPLY LINE**
- XXX PSI TO 70 PSI
- OPERATING PRESSURE
- 125 PSI MAX STATIC PRESSURE, 3/4 INCH NPT FITTING, XXX GPM (1.5 GPM PER FOOT OF HOOD)
- CONNECTED TO SUPERVISED, DEDICATED LINE WITH NO UNSUPERVISED MANUAL SHUT-OFF VALVES
- CONNECTED TO BUILDING FIRE SPRINKLER WATER LINE (REDUCE PRESSURE) WHEN REQUIRED
- STAINLESS STEEL, COPPER, OR STEEL PIPE ONLY

**MINIMUM OPERATING PRESSURE REQUIREMENTS**

<table>
<thead>
<tr>
<th>LENGTH OF HOOD (FT)</th>
<th>MINIMUM INLET WATER PRESSURE FOR HOT WATER (PSI)</th>
<th>MINIMUM INLET WATER PRESSURE FOR CORE PROTECTION (PSI)</th>
<th>DISCHARGE COEFFICIENTS (K-FACTOR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>30</td>
<td>30</td>
<td>1.3</td>
</tr>
<tr>
<td>8</td>
<td>30</td>
<td>30</td>
<td>2.6</td>
</tr>
<tr>
<td>12</td>
<td>30</td>
<td>30</td>
<td>4.0</td>
</tr>
<tr>
<td>16</td>
<td>30</td>
<td>30</td>
<td>5.3</td>
</tr>
<tr>
<td>20</td>
<td>31</td>
<td>33</td>
<td>6.4</td>
</tr>
<tr>
<td>24</td>
<td>32</td>
<td>36</td>
<td>7.4</td>
</tr>
<tr>
<td>28</td>
<td>34</td>
<td>39</td>
<td>8.3</td>
</tr>
<tr>
<td>32</td>
<td>37</td>
<td>44</td>
<td>9.0</td>
</tr>
<tr>
<td>36</td>
<td>39</td>
<td>49</td>
<td>9.7</td>
</tr>
<tr>
<td>40</td>
<td>42</td>
<td>56</td>
<td>10.2</td>
</tr>
<tr>
<td>44</td>
<td>46</td>
<td>63</td>
<td>10.6</td>
</tr>
<tr>
<td>48</td>
<td>50</td>
<td>70</td>
<td>11.1</td>
</tr>
</tbody>
</table>

**TOTAL FLOWRATE = K FACTOR x PRESSURE**

**CORE TOTAL FLOOD PROTECTION SPRINKLER DETAIL**

**NOTE:** SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

**COOKING APPLIANCE(S)**

**EXHAUST HOOD**

36 INCHES CLEARANCE REQUIRED IN FRONT OF ALL UTILITY CABINET DOORS
THE PANEL SHALL ALSO BE LOCATED IN AN ACCESSIBLE AREA WHERE THE AUDIBLE AND VISUAL ALARMS CAN BE HEARD AND SEEN

---

**NOZZLE HEIGHTS ABOVE HAZARD**

<table>
<thead>
<tr>
<th>NOZZLE PART NUMBER</th>
<th>NOZZLE ABOVE HAZARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>3070-3/8H-SS10</td>
<td>MIN 30&quot; MAX 55&quot;</td>
</tr>
</tbody>
</table>

**NOZZLES FOR CORE PROTECTION**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>PART NUMBER</th>
<th>MACOLA</th>
<th>FLOW RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>RISER NOZZLE</td>
<td>1/4TT+TP1530+CP1325</td>
<td>A0002784</td>
<td>2.6 GPM @ 30 PSI</td>
</tr>
<tr>
<td>SPRAY BAR NOZZLE</td>
<td>1/4TT+TG-4.3W</td>
<td>A0025166</td>
<td>0.7 GPM @ 30 PSI</td>
</tr>
</tbody>
</table>
**CORE DUCT & PLENUM PROTECTION ELECTRICAL DETAIL**

**ELECTRICIAN:**
1. WIRED MAIN CONTROL PANEL PER INCLUDED SCHEMATIC
2. WIRED ALL FANS PER INCLUDED SCHEMATIC
3. WIRED SHUNT TRIP BREAKER (OPTIONAL)
4. WIRED UDS APPLIANCE KILL SWITCH, IF EQUIPPED (OPTIONAL)
5. WIRED GAS VALVE

**ELECTRICAL CONTRACTOR REQUIREMENT**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CONNECTION IN PANEL</th>
<th>CONNECTION IN DEVICE</th>
<th>VOLTAGE</th>
<th>AMPERAGE</th>
<th>COMMENTS</th>
</tr>
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<tbody>
<tr>
<td>SHUNT TRIP BREAKER (OPTIONAL)</td>
<td>ST &amp; N1</td>
<td>BREAKER COIL (A1 &amp; A2)</td>
<td>120 VAC</td>
<td>&lt; 4 AMS</td>
<td>ST TO A1 ON SHUNT BREAKER COIL, AND NEUTRAL TO A2 ON SHUNT TRIP BREAKER COIL</td>
</tr>
<tr>
<td>CONTROL PANEL POWER</td>
<td>H1 &amp; N1 + GROUND</td>
<td>CIRCUIT BREAKER</td>
<td>120 VAC</td>
<td>15 AMPS</td>
<td>CONTROL PANEL POWER MUST NOT BE RUN THROUGH SHUNT TRIP BREAKER</td>
</tr>
<tr>
<td>UDS APPLIANCE KILL SWITCH (OPTIONAL)</td>
<td>KTS &amp; N1</td>
<td>KTS &amp; N1</td>
<td>120 VAC</td>
<td>&lt; 4 AMS</td>
<td>KILL SWITCH TERMINALS MUST BE IN SERIES WITH OTHER KILL SWITCHES</td>
</tr>
<tr>
<td>REMOTE ANSUL AUTOMAN (OPTIONAL)</td>
<td>AU1, AU2</td>
<td>SOLENOID</td>
<td>120 VAC</td>
<td>&lt; 6 AMS</td>
<td>120V TO AU1, AU2 TO ANSUL ELECTRIC AUTOMAN, ANSUL SOLENOID TO NEUTRAL</td>
</tr>
<tr>
<td>GAS VALVE</td>
<td>35 &amp; N1D (IF 24 VDC)</td>
<td>RED/RED/GREEN</td>
<td>24 VDC</td>
<td>&lt; 1.0 AMS</td>
<td>IF 24 VDC - 2 WIRES &amp; GROUND, N1D TO RED, 35 TO RED, AND GREEN TO GROUND</td>
</tr>
<tr>
<td></td>
<td>GAS &amp; N1 (IF 120 VAC)</td>
<td></td>
<td>OR 120 VAC</td>
<td></td>
<td>IF 120 VAC - 2 WIRES &amp; GROUND GAS TO RED, N1 TO RED, AND GREEN TO GROUND</td>
</tr>
</tbody>
</table>

**SHUNT TRIP BREAKER (OPTIONAL):**
- 2 WIRES, 120VAC
- ST TO A1 ON SHUNT BREAKER
- NEUTRAL TO A2 ON SHUNT TRIP BREAKER

**CONTROL PANEL POWER:**
- 2 WIRES & GROUND
- 120 VAC, 15 AMP SERVICE
- WIRE TO H1 AND N1, GROUND
- POWER MUST NOT ORIGINATE FROM SHUNT TRIP BREAKER

**GAS VALVE POWER:**
- 2 WIRES & GROUND
- 24 VDC WIRE TO 35 & N1D
- 120 VAC WIRE TO GAS & N1

**GAS VALVE:**
- STRAINER MUST BE INSTALLED UPSTREAM OF VALVE

**36 INCHES CLEARANCE REQUIRED IN FRONT OF ALL UTILITY CABINET DOORS.
THE PANEL SHALL ALSO BE LOCATED IN AN ACCESSIBLE AREA WHERE THE AUDIBLE AND VISUAL ALARMS CAN BE HEARD AND SEEN.**

**NOTE:** SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS.
**CORE DUCT & PLENUM PROTECTION LOW-VOLTAGE DETAIL**

**ALARM CONTRACTOR:**
1. WIRE MANUAL ACTUATION DEVICE(S), REMOTE FIRESTAT(S), CORE INTERLOCK(S), FIRE SENSOR(S) AND FIRE ALARM CONTACTS
2. COMPLETE FINAL HOOKUP OF SYSTEM
3. PERFORM FINAL FIRE SYSTEM TEST
4. FILL SURFACTANT TANK

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### ALARM CONTRACTOR REQUIREMENT

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<td>101 AND 104</td>
<td>1 &amp; 2</td>
<td>24 VDC</td>
<td>&lt; 1.0 AMPS</td>
<td>WIRE MANUAL ACTUATION DEVICE TERMINAL 1 BETWEEN CORE PANEL TERMINALS 102 AND 103</td>
</tr>
<tr>
<td>MANUAL ACTUATION DEVICE COVER</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>MANUAL ACTUATION DEVICE COVER MUST BE INSTALLED IF SURFACE MOUNTED, USE COVER EXTENSION STI-6531B</td>
</tr>
<tr>
<td>REMOTE FIRESTAT SENSOR(S)</td>
<td>21 AND 24</td>
<td>BLACK AND WHITE</td>
<td>24 VDC</td>
<td>&lt; 1.0 AMPS</td>
<td>WIRE FIRE SENSOR WHITE WIRES BETWEEN HOOD CORE PANEL TERMINALS 22 AND 23</td>
</tr>
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<td>FIRE ALARM CONTACT</td>
<td>AL1, AL2</td>
<td>VARIIES</td>
<td>50V MAX</td>
<td>UP TO 1 AMP</td>
<td>WIRE FIRE SENSOR BLACK WIRE BETWEEN HOOD CORE PANEL TERMINALS 21 AND 24</td>
</tr>
<tr>
<td>CORE INTERLOCK(S)</td>
<td>ILA, ILB, ILC</td>
<td>ILA, ILB, ILC</td>
<td>RS-485 COMMUNICATIONS SIGNAL</td>
<td>CORE SYSTEM (1) ILA, TO CORE SYSTEM (2) ILA, CORE SYSTEM (1) ILB, TO CORE SYSTEM (2) ILB, CORE SYSTEM (1) ILC, TO CORE SYSTEM (2) ILC, USE BELDEN #88760 OR SIMILAR WIRE</td>
<td></td>
</tr>
<tr>
<td>TROUBLE CONTACT</td>
<td>IIA, IIB, IIC</td>
<td>VARIIES</td>
<td>MAX 120 VAC</td>
<td>UP TO 6 AMP</td>
<td>WIRE TO TBL &amp; TBC NORMALLY OPEN CONTACT, CLOSES IN TROUBLE CONDITION</td>
</tr>
<tr>
<td>CORE COMMUNICATIONS CABLE</td>
<td>TBC, TBL, TOK</td>
<td>VARIIES</td>
<td>MAX 120 VAC</td>
<td>UP TO 6 AMP</td>
<td>TYPICAL CONNECTION CATS CABLE TO LOCAL AREA NETWORK VIA ETHERNET SWITCH OR WIRELESS ROUTER WITH VALID INTERNET CONNECTION</td>
</tr>
</tbody>
</table>

---

**FIRE ALARM CONTACT**
- 2 WIRES WIRING TO NORMALLY OPEN CONTACTS (CLOSES IN FIRE CONDITION)
- CORE CONTROL PANEL AL1 AND AL2
- SEE FIGURE 2

**TROUBLE CONTACT**
- 2 WIRES TO NORMALLY OPEN CONTACTS (CLOSE IN TROUBLE CONDITION)
- CORE PANEL TERMINALS TBL AND TBC
- SEE FIGURE 4

**SUPERVISED LOOP**
- 4 WIRES, 24VDC CONNECT BLACK WIRES BETWEEN 21 AND 24 IN PANEL, CONNECT WHITE (OR RED) WIRES BETWEEN 22 AND 23 IN PANEL
- ADDITIONAL FIRESTATS, WIRED IN SUPERVISED LOOP
- USE HIGH TEMP (#CW04427 [WHT] & #CW04427B [BLK]) WIRES ONLY IF RAN OVER TOP OF HOOD; OTHERWISE BELDEN #6320UL OR SIMILAR PLENUM RATED WIRE
- SEE FIGURE 1

**CORE COMMUNICATIONS CABLE**
- CATS CABLE MUST BE INSTALLED TO A LOCAL AREA NETWORK WITH VALID INTERNET ACCESS VIA ETHERNET SWITCH OR WIRELESS ROUTER
- SEE FIGURE 3

**CORE INTERLOCK**
- 2 WIRE + SHIELD
- USE BELDEN #88760 OR SIMILAR WIRE
- SEE FIGURE 3

**MANUAL ACTUATION DEVICE WIRING**
- 4 WIRES, 24VDC WIRE (TERMINAL 1) BETWEEN 102 AND 103
- WIRE (TERMINAL 2) BETWEEN 101 AND 104
- ADDITIONAL PULL STATIONS WIRED IN SUPERVISED LOOP
- USE BELDEN #6320UL OR SIMILAR WIRE
- SEE FIGURE 2

**MANUAL ACTUATION DEVICE**
- PART #31-Q52431
- PROTECTIVE COVER MUST BE INSTALLED

---

**36 INCHES CLEARANCE REQUIRED IN FRONT OF ALL UTILITY CABINET DOORS THE PANEL SHALL ALSO BE LOCATED IN AN ACCESSIBLE AREA WHERE THE AUDIBLE AND VISUAL ALARMS CAN BE HEARD AND SEEN**

**42 TO 48 INCHES ABOVE FLOOR LEVEL TO CENTER OF HANDLE**

**ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES**

**NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS**

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**07/10/2015 Rev. 01**
USE BELDEN #6320UL OR SIMILAR WIRE

ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES

NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS
COOKING APPLIANCE(S)

EXHAUST HOOD

HOOD DRAIN(S) -1-1/2 INCH NPT CONNECTED TO BUILDING GREASE TRAP
-2 DRAINS ON 24 INCH TALL HOODS WITH 20 INCH TALL FILTERS AND HOODS 10 FEET AND LONGER

ELECTRIC

GAS

HOT WATER LINE - PVC, COPPER, OR STAINLESS STEEL PIPE ONLY
- 1-140 TO 170°F OPERATING TEMPERATURE
- XXX TO 70 PSI OPERATING PRESSURE
- XXX GPM (0.7 GPM PER FOOT OF HOOD)
- INSULATE HOT WATER PIPE, MINIMUM PRESSURE DEPENDENT ON LENGTH AND CONFIGURATION OF HOOD SYSTEM

GAS VALVE - THREADED NPT CONNECTION
- REGULATORS ARE NOT INCLUDED TO MEET REQUIRED PRESSURE AND MUST BE ORDERED SEPARATELY
- PART NUMBERS: X65BU(3/4”), X65BU(1”), OR X65BU(1-1/2”)
- CONSULT FACTORY FOR SIZING

FLOOR DRAIN - 1-1/2 INCH NPT CONNECTED TO BUILDING GREASE TRAP
- UP TO 2 INCHES NPT WITH 24V CONTROLS, 2-1/2 AND 3 INCH USE 120V CONTROL

NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS
CORE DUCT & PLENUM PROTECTION SPRINKLER DETAIL

BUILDING SPRINKLER CONTRACTOR:
1. CONNECT CORE WATER LINE TO BUILDING WET SPRINKLER SYSTEM. STAINLESS STEEL, COPPER, OR STEEL PIPE ONLY

COOKING APPLIANCE(S)
EXHAUST HOOD
ELECTRIC
GAS

PRESSURE REGULATOR VALVE (PRV)
-PRV NOT INCLUDED AND MUST BE PROVIDED, INSTALLED, AND ADJUSTED BY THE SPRINKLER CONTRACTOR TO MEET INCOMING PRESSURE REQUIREMENTS
-A REGULATOR SUCH AS THE ELKHART BRASS MODEL NUMBER URFA-205-2.5" OR THE UR-20 SERIES PARTS KITS SHOULD BE UTILIZED
-MUST BE CONFIRMED WITH THE FIRE MARSHAL OR LOCAL AUTHORITY HAVING JURISDICTION (AHJ)

NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

SPRINKLER CONTRACTOR REQUIREMENT

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CONNECTION</th>
<th>OPERATING PRESSURE</th>
<th>K-FACTOR</th>
<th>FLOW RATE</th>
<th>COMMENTS</th>
</tr>
</thead>
</table>
| CORE WATER SUPPLY LINE | 3/4 INCH NPT | XXX PSI TO 70 PSI | XXX | XXX GPM TOTAL (0.7 GPM PER FOOT OF HOOD) | WATER LINE MUST BE SUPERVISED AND HAVE NO UNSUPERVISED MANUAL SHUT-OFF VALVES
MINIMUM PRESSURE AND FLOW RATE DEPENDENT ON LENGTH OF HOOD SYSTEM |

CORE WATER SUPPLY LINE
-XXX PSI TO 70 PSI
OPERATING PRESSURE
-125 PSI MAX STATIC
PRESSURE, 3/4 INCH NPT FITTING, XXX GPM (0.7 GPM PER FOOT OF HOOD)
-CONNECTED TO SUPERVISED, DEDICATED LINE WITH NO UNSUPERVISED MANUAL SHUT-OFF VALVES
-CONNECT TO BUILDING FIRE SPRINKLER WATER LINE (REDUCE PRESSURE) WHEN REQUIRED
-STAINLESS STEEL, COPPER, OR STEEL PIPE ONLY

EXHAUST HOOD

36 INCHES CLEARANCE REQUIRED IN FRONT OF ALL UTILITY CABINET DOORS
THE PANEL SHALL ALSO BE LOCATED IN AN ACCESSIBLE AREA WHERE THE AUDIBLE AND VISUAL ALARMS CAN BE HEARD AND SEEN

COOKING APPLIANCE(S)

SPRINKLER CONTRACTOR REQUIREMENT

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<th>K-FACTOR</th>
<th>FLOW RATE</th>
<th>COMMENTS</th>
</tr>
</thead>
</table>
| CORE WATER SUPPLY LINE | 3/4 INCH NPT | XXX PSI TO 70 PSI | XXX | XXX GPM TOTAL (0.7 GPM PER FOOT OF HOOD) | WATER LINE MUST BE SUPERVISED AND HAVE NO UNSUPERVISED MANUAL SHUT-OFF VALVES
MINIMUM PRESSURE AND FLOW RATE DEPENDENT ON LENGTH OF HOOD SYSTEM |

LENGHT OF HOOD (FT) | MINIMUM INLET WATER PRESSURE FOR CORE DUCT AND PLENUM PROTECTION (PSI)

| 4 | 30 |
| 8 | 30 |
| 12 | 30 |
| 16 | 30 |
| 20 | 31 |
| 24 | 32 |
| 28 | 34 |
| 32 | 37 |
| 36 | 39 |
| 40 | 42 |
| 44 | 46 |
| 48 | 50 |

TOTAL FLOWRATE = K FACTOR x PRESSURE

NOZZLES FOR CORE PROTECTION

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>PART NUMBER</th>
<th>MACOLA</th>
<th>FLOW RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>RISER NOZZLE</td>
<td>1/4TT+TP1530+CP1325</td>
<td>A0002784</td>
<td>2.6 GPM @ 30 PSI</td>
</tr>
<tr>
<td>SPRAY BAR NOZZLE</td>
<td>1/4TT+TG-4.3W</td>
<td>A0025166</td>
<td>0.7 GPM @ 30 PSI</td>
</tr>
</tbody>
</table>
**WALL MOUNTED CORE TOTAL FLOOD PROTECTION ELECTRICAL DETAIL**

**ELECTRICIAN:**
1. WIRE MAIN CONTROL PANELS PER INCLUDED SCHEMATICS
2. WIRE ALL FANS PER INCLUDED SCHEMATIC
3. WIRE SHUNT TRIP BREAKER
4. WIRE UDS APPLIANCE KILL SWITCH, IF EQUIPPED (OPTIONAL)
5. WIRE GAS VALVE

**ELECTRICAL CONTRACTOR REQUIREMENT**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CONNECTION IN PANEL</th>
<th>CONNECTION IN DEVICE</th>
<th>VOLTAGE</th>
<th>AMPERAGE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHUNT TRIP BREAKER</td>
<td>ST &amp; N1</td>
<td>BREAKER COIL (A1 &amp; A2)</td>
<td>120 VAC</td>
<td>&lt; 4 AMPS</td>
<td>ST TO A1 ON SHUNT BREAKER COIL, AND NEUTRAL TO A2 ON SHUNT TRIP BREAKER COIL</td>
</tr>
<tr>
<td>CONTROL PANEL POWER</td>
<td>H1 &amp; N1 + GROUND</td>
<td>CIRCUIT BREAKER</td>
<td>120 VAC</td>
<td>15 AMPS</td>
<td>CONTROL PANEL POWER MUST NOT BE RUN THROUGH SHUNT TRIP BREAKER</td>
</tr>
<tr>
<td>FIRE INTERLOCK</td>
<td>C1, AR1, TR1</td>
<td>C1, AR1, TR1</td>
<td>MAX 120 VAC</td>
<td>UP TO 6 AMPS</td>
<td>FIRE SYSTEM SIGNAL, WIRE TO LIKE TERMINALS IN ELECTRICAL CONTROL PACKAGE</td>
</tr>
<tr>
<td>UDS APPLIANCE KILL SWITCH (OPTIONAL)</td>
<td>KTS &amp; N1</td>
<td>KTS &amp; N1</td>
<td>120 VAC</td>
<td>&lt; 4 AMPS</td>
<td>KILL SWITCH TERMINALS MUST BE IN SERIES WITH OTHER KILL SWITCHES</td>
</tr>
<tr>
<td>REMOTE ANSUL AUTOMAN (OPTIONAL)</td>
<td>AU1, AU2</td>
<td>SOLENOID</td>
<td>120 VAC</td>
<td>&lt; 6 AMPS</td>
<td>120V TO AU1, AU2 TO ANSUL ELECTRIC AUTOMAN, ANSUL SOLENOID TO NEUTRAL</td>
</tr>
<tr>
<td>GAS VALVE</td>
<td>35 &amp; N1D (IF 24 VDC)</td>
<td>24 VDC OR 120 VAC</td>
<td>&lt; 1.0 AMPS</td>
<td>IF 24 VDC - 2 WIRES &amp; GROUND, N1D TO RED, 35 TO RED, AND GREEN TO GROUND</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GAS &amp; N1 (IF 120 VAC)</td>
<td>RED/RED/GREEN</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS
**ALARM CONTRACTOR REQUIREMENT**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CONNECTION IN PANEL</th>
<th>CONNECTION ON DEVICE</th>
<th>VOLTAGE</th>
<th>AMPERAGE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANUAL ACTUATION DEVICE(S)</td>
<td>101 AND 104</td>
<td>1 &amp; 2</td>
<td>24 VDC</td>
<td>&lt; 1.0 AMPS</td>
<td>WIRE MANUAL ACTUATION DEVICE TERMINAL 1 BETWEEN CORE PANEL TERMINALS 102 AND 103</td>
</tr>
<tr>
<td>MANUAL ACTUATION DEVICE COVER</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>WIRE MANUAL ACTUATION DEVICE COVER MUST BE INSTALLED IF SURFACE MOUNTED. USE COVER EXTENSION STI-6531B</td>
</tr>
<tr>
<td>REMOTE FIRESTAT SENSOR(S)</td>
<td>21 AND 24</td>
<td>BLACK AND WHITE</td>
<td>24 VDC</td>
<td>&lt; 1.0 AMPS</td>
<td>WIRE FIRE SENSOR WHITE WIRES BETWEEN HOOD CORE PANEL TERMINALS 21 AND 24</td>
</tr>
<tr>
<td>FIRE ALARM CONTACT</td>
<td>AL1, AL2</td>
<td>VARIES</td>
<td>50V MAX (AC/DC)</td>
<td>UP TO 1 AMP</td>
<td>FIRE ALARM RELAY CONTACTS FOR BUILDING FIRE ALARM LOCATED IN THE FIRE ELECTRICAL CONTROL PANEL</td>
</tr>
<tr>
<td>CORE INTERLOCK(S)</td>
<td>ILA, ILB, ILC</td>
<td>ILA, ILB, ILC</td>
<td>RS-485 COMMUNICATIONS SIGNAL</td>
<td>CORE SYSTEM (1) ILA TO CORE SYSTEM (2) ILA</td>
<td>CORE SYSTEM (1) ILB TO CORE SYSTEM (2) ILB</td>
</tr>
<tr>
<td>TROUBLE CONTACT</td>
<td>TBC, TBL, TOK</td>
<td>VARIES</td>
<td>MAX 120 VAC</td>
<td>UP TO 6 AMPS</td>
<td>WIRE TO TBL &amp; TBC NORMALLY OPEN CONTACT, CLOSES IN TROUBLE CONDITION</td>
</tr>
<tr>
<td>CORE COMMUNICATIONS CABLE</td>
<td>RJ-45 Jack</td>
<td>INTERNET CONNECTION</td>
<td>SIGNAL</td>
<td>&lt; 1.0 AMP</td>
<td>CONNECT CAT5 CABLE TO LOCAL AREA NETWORK WITH VALID INTERNET CONNECTION</td>
</tr>
<tr>
<td>CORE APPLIANCE PROTECTION SOLENOID</td>
<td>WS2 &amp; N1D</td>
<td>BLACK AND WHITE</td>
<td>24 VDC</td>
<td>&lt; 1.0 AMP</td>
<td>2 WIRES AND GROUND, BLACK TO WS2, WHITE TO N1D AND GREEN TO GROUND</td>
</tr>
<tr>
<td>FIRE INTERLOCK</td>
<td>C1, A1R1, TR1</td>
<td>VARIES</td>
<td>MAX 120 VAC</td>
<td>UP TO 6 AMPS</td>
<td>FIRE SYSTEM SIGNAL, WIRE TO LIKE TERMINALS IN ELECTRICAL CONTROL PACKAGE</td>
</tr>
<tr>
<td>EMSPLUS CONTROL PACKAGE</td>
<td>MBA, MB, MBC (EMSPLUS)</td>
<td>J5 ON CORE BOARD (ECPM03)</td>
<td>RS-485 COMMUNICATIONS SIGNAL</td>
<td>NETWORK CONNECTIONS BETWEEN WALL MOUNT CORE AND WALL MOUNT ECPM03 BOARD</td>
<td></td>
</tr>
</tbody>
</table>

**SUPERVISED LOOP**

- 4 WIRES, 24VDC CONNECT WHITE (OR RED) WIRES BETWEEN 21 AND 24 IN PANEL, CONNECT BLACK, HIGH TEMP [842°F] WIRE ONLY PART #CW04427 (WHT) #CW04427B (BLK) OR SIMILAR WIRE ONLY
- SEE FIGURE 1

**APPLIANCE PROTECTION SOLENOID**

- 2 WIRES AND GROUND, BLACK TO WC2, WHITE TO N1D
- WIRE SECURED TO WATER LINE TO AVOID CONTACT WITH HOOD
- SEE FIGURE A

**EXHAUST HOOD**

- PROVIDED CABLE SHIPS LOOSE
- FIELD SUPPLIED JUNCTION BOX NOT ON TOP OF HOOD
- USE PROVIDED CABLE ONLY
- SECURE CABLE TO WATER LINE
- WIRE CABLE TO FIELD SUPPLIED JUNCTION BOX
- WIRE FROM BOX TO REMOTE PANEL
- APPLIANCE PROTECTION SOLENOID FIGURE A

- 36 INCHES CLEARANCE REQUIRED IN FRONT OF ALL UTILITY CABINET DOORS
- THE PANEL SHALL ALSO BE LOCATED IN AN ACCESSIBLE AREA WHERE THE AUDIBLE AND VISUAL ALARMS CAN BE HEARD AND SEEN

- NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

**ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES**
ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES
PLUMBER:
1. CONNECT HOT WATER LINE; PVC, COPPER OR STAINLESS STEEL PIPE ONLY
2. CONNECT HOOD DRAIN(S); STAINLESS STEEL, COPPER, OR STEEL PIPE ONLY
3. CONNECT ALL END-TO-END AND BACK-TO-BACK HOOD WATER LINE CONNECTIONS; (PLUMBING IS FIELD SUPPLIED FOR THIS) FIELD PLUMBING MUST NOT EXCEED HEIGHT OF FIELD INSTALLED VACUUM BREAKER
4. PLUMB GAS VALVE; STRAINER MUST BE INSTALLED UPSTREAM OF VALVE
5. INSTALL FLOOR DRAIN
6. INSTALL BACKFLOW PREVENTER IF CODE REQUIRES

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CONNECTION</th>
<th>TEMPERATURE</th>
<th>PRESSURE</th>
<th>FLOW RATE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOT WATER LINE</td>
<td>XXX INCH NPT</td>
<td>140 to 170°F</td>
<td>XXX TO 70 PSI</td>
<td>XXX GPM TO 20 GPM PER FOOT OF HOOD</td>
<td>INSULATE HOT WATER PIPE, MINIMUM PRESSURE DEPENDENT ON LENGTH AND CONFIGURATION OF HOOD SYSTEM</td>
</tr>
<tr>
<td>HOOD DRAIN(S)</td>
<td>1-1/2 INCH NPT</td>
<td>N/A</td>
<td>GRAVITY DRAIN</td>
<td>XXX GPM PER DRAIN</td>
<td>2 DRAINS ON 24 INCH TALL HOODS WITH 20 INCH TALL FILTERS AND HOODS 10 FEET AND LONGER</td>
</tr>
<tr>
<td>END-TO-END CORE CONNECTION</td>
<td>3/4 INCH NPT</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>CONNECT WITH NPT PIPE, SEAL ALL THREADS, HOOD CONNECTION PROVIDED, FIELD PIPING MUST REMAIN BELOW HEIGHT OF VACUUM BREAKER</td>
</tr>
<tr>
<td>BACK-TO-BACK CORE CONNECTION</td>
<td>3/4 INCH NPT</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>CONNECT WITH NPT PIPE, SEAL ALL THREADS, HOOD CONNECTION PROVIDED</td>
</tr>
<tr>
<td>GAS VALVE</td>
<td>VARIES</td>
<td>N/A</td>
<td>SEE CHART</td>
<td>N/A</td>
<td>UP TO 2 INCHES NPT WITH 24V CONTROLS, 2-1/2 AND 3 INCH USE 120V CONTROL</td>
</tr>
<tr>
<td>FLOOR DRAIN</td>
<td>1-1/2 INCH</td>
<td>N/A</td>
<td>GRAVITY DRAIN</td>
<td>N/A</td>
<td>USED TO HELP CLEAN UP FIRE SYSTEM DISCHARGE</td>
</tr>
<tr>
<td>SURFACTANT LINE</td>
<td>1/4 INCH OD TUBING</td>
<td>N/A</td>
<td>70 PSI</td>
<td>N/A</td>
<td>SURFACTANT LINE MUST NOT BE IN CONTACT WITH THE HOOD SURFACE</td>
</tr>
<tr>
<td>BACKFLOW PREVENTER DRAIN LINE [OPTIONAL]</td>
<td>INLET + DRAIN</td>
<td>N/A</td>
<td>VARIES</td>
<td>N/A</td>
<td>INSTALLED WHEN PANEL HAS A BACKFLOW PREVENTER VALVE, SEE BACKFLOW PREVENTER VALVE MANUAL FOR DETAILS</td>
</tr>
</tbody>
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36 INCHES CLEARANCE REQUIRED IN FRONT OF ALL UTILITY CABINET DOORS
THE PANEL SHALL ALSO BE LOCATED IN AN ACCESSIBLE AREA WHERE THE AUDIBLE AND VISUAL ALARMS CAN BE HEARD AND SEEN
NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS
### WALL MOUNTED CORE TOTAL FLOOD PROTECTION SPRINKLER DETAIL

**BUILDING SPRINKLER CONTRACTOR:**
1. CONNECT CORE WATER LINE TO BUILDING WET SPRINKLER SYSTEM. STAINLESS STEEL, COPPER, OR STEEL PIPE ONLY

**COOKING APPLIANCE(S)**
- **EXHAUST HOOD**
  - **ELECTRIC**
  - **GAS**

**CORE WATER SUPPLY LINE**
- 3/4, 1, OR 1-1/2 INCH NPT
- XXX PSI TO 70 PSI
- XXX GPM TOTAL (1.5 GPM PER FOOT OF HOOD)
- WATER LINE MUST BE SUPERVISED AND HAVE NO UNSUPERVISED MANUAL SHUT-OFF VALVES
- MINIMUM PRESSURE AND FLOW RATE DEPENDENT ON LENGTH AND CONFIGURATION OF HOOD SYSTEM

#### SPARKLING CONTRACTOR REQUIREMENT

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<th>K-FACTOR</th>
<th>FLOW RATE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CORE WATER SUPPLY LINE</td>
<td>3/4, 1, OR 1-1/2 INCH NPT</td>
<td>XXX PSI TO 70 PSI</td>
<td>XXX</td>
<td>XXX GPM TOTAL (1.5 GPM PER FOOT OF HOOD)</td>
<td>WATER LINE MUST BE SUPERVISED AND HAVE NO UNSUPERVISED MANUAL SHUT-OFF VALVES MINIMUM PRESSURE AND FLOW RATE DEPENDENT ON LENGTH AND CONFIGURATION OF HOOD SYSTEM</td>
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</table>

**PRESSURE REGULATOR VALVE (PRV)**
- PRV NOT INCLUDED AND MUST BE PROVIDED, INSTALLED, AND ADJUSTED BY THE SPRINKLER CONTRACTOR TO MEET INCOMING PRESSURE REQUIREMENTS
- A REGULATOR SUCH AS THE ELKHART BRASS MODEL NUMBER URFA-20S-2.5" OR THE UR-20 SERIES PARTS KITS SHOULD BE UTILIZED
- MUST BE CONFIRMED WITH THE FIRE MARSHAL OR LOCAL AUTHORITY HAVING JURISDICTION (AHJ)

**CORE WATER SUPPLY LINE**
- XXX PSI TO 70 PSI
  - OPERATING PRESSURE
  - 125 PSI MAX STATIC PRESSURE
  - 3/4, 1, 1-1/2 INCH NPT FITTING, XXX GPM (1.5 GPM PER FOOT OF HOOD)
- CONNECTED TO SUPERVISED, DEDICATED LINE WITH NO UNSUPERVISED MANUAL SHUT-OFF VALVES
- CONNECT TO BUILDING FIRE SPRINKLER WATER LINE (REDUCE PRESSURE) WHEN REQUIRED
- STAINLESS STEEL, COPPER, OR STEEL PIPE ONLY

**EXHAUST HOOD**
- 36 INCHES CLEARANCE REQUIRED IN FRONT OF ALL UTILITY CABINET DOORS
- THE PANEL SHALL ALSO BE LOCATED IN AN ACCESSIBLE AREA WHERE THE AUDIBLE AND VISUAL ALARMS CAN BE HEARD AND SEEN

**NOTICE:** SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS
## ELECTRICAL CONTRACTOR REQUIREMENT

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<thead>
<tr>
<th>ITEM</th>
<th>CONNECTION IN PANEL</th>
<th>CONNECTION IN DEVICE</th>
<th>VOLTAGE</th>
<th>AMPERAGE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHUNT TRIP BREAKER</td>
<td>ST &amp; N1</td>
<td>BREAKER COIL (A1 &amp; A2)</td>
<td>120 VAC</td>
<td>&lt; 4 AMPS</td>
<td>ST TO A1 ON SHUNT BREAKER COIL, AND NEUTRAL TO A2 ON SHUNT TRIP BREAKER COIL</td>
</tr>
<tr>
<td>CONTROL PANEL POWER</td>
<td>H1 &amp; N1 + GROUND</td>
<td>CIRCUIT BREAKER</td>
<td>120 VAC</td>
<td>15 AMPS</td>
<td>CONTROL PANEL POWER MUST NOT BE RUN THROUGH SHUNT TRIP BREAKER</td>
</tr>
<tr>
<td>FIRE INTERLOCK</td>
<td>C1, AR1, TR1</td>
<td>C1, AR1, TR1</td>
<td>MAX 120 VAC</td>
<td>UP TO 6 AMPS</td>
<td>FIRE SYSTEM SIGNAL, WIRE TO LIKE TERMINALS IN ELECTRICAL CONTROL PACKAGE</td>
</tr>
<tr>
<td>UDS APPLIANCE KILL SWITCH (OPTIONAL)</td>
<td>KTS &amp; N1</td>
<td>KTS &amp; N1</td>
<td>120 VAC</td>
<td>&lt; 4 AMPS</td>
<td>KILL SWITCH TERMINALS MUST BE IN SERIES WITH OTHER KILL SWITCHES</td>
</tr>
<tr>
<td>REMOTE ANSUL AUTOMAN (OPTIONAL)</td>
<td>AU1, AU2</td>
<td>SOLENOID</td>
<td>120 VAC</td>
<td>&lt; 6 AMPS</td>
<td>120V TO AU1, AU2 TO ANSUL ELECTRIC AUTOMAN, ANSUL SOLENOID TO NEUTRAL</td>
</tr>
<tr>
<td>GAS VALVE</td>
<td>35 &amp; N1D (IF 24 VDC)</td>
<td>GND</td>
<td>24 VDC</td>
<td>&lt; 1.0 AMPS</td>
<td>IF 24 VDC - 2 WIRES &amp; GROUND, N1D TO RED, 35 TO RED, AND GND TO GROUND</td>
</tr>
<tr>
<td></td>
<td>GAS &amp; N1 (IF 120 VAC)</td>
<td></td>
<td>OR 120 VAC</td>
<td></td>
<td>IF 120 VAC - 2 WIRES &amp; GROUND GAS TO RED, N1 TO RED, AND GND TO GROUND</td>
</tr>
</tbody>
</table>

**NOTE:** SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS.

**CONTROL PANEL POWER**
- 2 WIRES & GROUND
- 120 VAC, 15 AMP SERVICE
- WIRE TO H1 AND N1, GROUND
- POWER MUST NOT ORIGINATE FROM SHUNT TRIP BREAKER

**GAS VALVE**
- STRAINER MUST BE INSTALLED UPSTREAM OF VALVE

**36 INCHES CLEARANCE REQUIRED IN FRONT OF ALL UTILITY CABINET DOORS. THE PANEL SHALL ALSO BE LOCATED IN AN ACCESSIBLE AREA WHERE THE AUDIBLE AND VISUAL ALARMS CAN BE HEARD AND SEEN.**
WALL MOUNTED CORE DUCT & PLENUM PROTECTION LOW-VOLTAGE DETAIL

ALARM CONTRACTOR REQUIREMENT

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CONNECTION IN PANEL</th>
<th>CONNECTION ON DEVICE</th>
<th>VOLTAGE</th>
<th>AMPERAGE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANUAl ACTUATION DEVICE(S)</td>
<td>101 AND 104</td>
<td>1 &amp; 2</td>
<td>24 VDC</td>
<td>&lt; 1.0 AMPS</td>
<td>WIRE MANUAL ACTUATION DEVICE TERMINAL 1 BETWEEN CORE PANEL TERMINALS 102 AND 103</td>
</tr>
<tr>
<td>MANUAl ACTUATION DEVICE(S)</td>
<td>102 AND 103</td>
<td></td>
<td>24 VDC</td>
<td>&lt; 1.0 AMPS</td>
<td>WIRE MANUAL ACTUATION DEVICE TERMINAL 2 BETWEEN CORE PANEL TERMINALS 101 AND 104</td>
</tr>
<tr>
<td>MANUAl ACTUATION DEVICE COVER</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>MANUAL ACTUATION DEVICE COVER MUST BE INSTALLED IF SURFACE MOUNTED. USE COVER EXTENSION STI-6531B</td>
</tr>
<tr>
<td>REMOTe FIReSTAT SENSOR(S)</td>
<td>21 AND 24 22 AND 23</td>
<td>BLACK AND WHITE</td>
<td>24 VDC</td>
<td>&lt; 1.0 AMPS</td>
<td>WIRE FIRe STAT WHITE WIRES BETWEEN HOOD CORE PANEL TERMINALS 21 AND 24</td>
</tr>
<tr>
<td>FIRe ALARM CONTACT</td>
<td>AL1, AL2</td>
<td>VARIeS</td>
<td>50V MAX</td>
<td>UP TO 1 AMP</td>
<td>FIRe ALARM RELAY CONTACTS FOR BUILDING FIRe ALARM LOCATED IN THE</td>
</tr>
<tr>
<td>CORE INTErLOCK(S)</td>
<td>ILA, ILB, ILC</td>
<td></td>
<td>RS-485</td>
<td>&lt; 1.0 AMPS</td>
<td>CORE SYSTEM (1) ILA TO CORE SYSTEM (2) ILA, CORE SYSTEM (1) ILB TO CORE SYSTEM (2) ILB,</td>
</tr>
<tr>
<td>TROUBLE CONTACT</td>
<td>TBC, TBL, TOK</td>
<td>VARIeS</td>
<td>MAX 120</td>
<td>UP TO 6 AMPS</td>
<td>CORE SYSTEM (1) ILC TO CORE SYSTEM (2) ILC. USE BELDEN #88760 OR SIMILAR</td>
</tr>
<tr>
<td>CORE COMMUNICATIONS CABLE</td>
<td>RJ-45 Jack</td>
<td>INTERNET CONNECTION</td>
<td>SIGNAL</td>
<td>&lt; 1.0 AMPS</td>
<td>WIRE TO TBL &amp; TBC NORMALLY OPEN CONTACT, CLOSES IN TROUBLE CONDITION</td>
</tr>
<tr>
<td>FIRe INTERLOCK</td>
<td>C1, AR1, TR1</td>
<td>C1, AR1, TR1</td>
<td>MAX 120</td>
<td>UP TO 6 AMPS</td>
<td>CONNECT CATS CABLE TO LOCAL AREA NETWORK WITH VALID INTERNET CONNECTION</td>
</tr>
<tr>
<td>EMSPLUS OR ECPM03 CONTROL PACKAGE</td>
<td>MBA, MBB, MBC (EMSPLUS) J5 ON CORE BOARD (ECPM03)</td>
<td>MBA, MBB, MBC (EMSPLUS) J3 ON ECPM03 (ECPM03)</td>
<td>RS-485</td>
<td>&lt; 1.0 AMPS</td>
<td>NETWORK CONNECTIONS BETWEEN WALL MOUNT CORE AND WALL MOUNT EMSPLUS OR</td>
</tr>
<tr>
<td>SUPervised LOOP</td>
<td>- 4 WIRES, 24VDC CONNECT WHITE (OR RED) WIRES BETWEEN 21 AND 24 IN PANEL. CONNECT BLACK WIRES BETWEEN 22 AND 23 IN PANEL.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CONNECTION BETWEEN WALL MOUNT CORE AND WALL MOUNT EMSPLUS OR</td>
</tr>
</tbody>
</table>

36 INCHES CLEARANCE REQUIRED IN FRONT OF ALL UTILITY CABINET DOORS THE PANEL SHALL ALSO BE LOCATED IN AN ACCESSIBLE AREA WHERE THE AUDIBLE AND VISUAL ALARMS CAN BE HEARD AND SEEN

ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES
WALL MOUNTED CORE DUCT & PLENUM PROTECTION LOW-VOLTAGE FIGURES

NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES
PLUMBER:
1. CONNECT HOT WATER LINE; PVC, COPPER OR STAINLESS STEEL PIPE ONLY
2. CONNECT HOOD DRAIN(S) STAINLESS STEEL, COPPER, OR STEEL PIPE ONLY
3. CONNECT ALL END-TO-END AND BACK-TO-BACK HOOD WATER LINE CONNECTIONS (PLUMBING IS FIELD SUPPLIED FOR THIS) FIELD PLUMBING MUST NOT EXCEED HEIGHT OF FIELD INSTALLED VACUUM BREAKER
4. PLUMB GAS VALVE, STRAINER MUST BE INSTALLED UPSTREAM OF VALVE
5. INSTALL FLOOR DRAIN
6. INSTALL BACKFLOW PREVENTER IF CODE REQUIRES

NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS
**WALL MOUNTED CORE DUCT & PLENUM PROTECTION SPRINKLER DETAIL**

**BUILDING SPRINKLER CONTRACTOR:**
1. CONNECT CORE WATER LINE TO BUILDING WET SPRINKLER SYSTEM. STAINLESS STEEL, COPPER, OR STEEL PIPE ONLY

---

### SPRINKLER CONTRACTOR REQUIREMENT

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CONNECTION</th>
<th>OPERATING PRESSURE</th>
<th>K-FACTOR</th>
<th>FLOW RATE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CORE WATER SUPPLY LINE</td>
<td>3/4, 1, OR 1-1/2 INCH NPT</td>
<td>XXX PSI TO 70 PSI</td>
<td>XXX</td>
<td>XXX GPM TOTAL</td>
<td>WATER LINE MUST BE SUPERVISED AND HAVE NO UNSUPERVISED MANUAL SHUT-OFF VALVES MINIMUM PRESSURE AND FLOWRATE DEPENDENT ON LENGTH AND CONFIGURATION OF HOOD SYSTEM</td>
</tr>
</tbody>
</table>

**PRESSURE REGULATOR VALVE (PRV)**
- PRV NOT INCLUDED AND MUST BE PROVIDED, INSTALLED, AND ADJUSTED BY THE SPRINKLER CONTRACTOR TO MEET INCOMING PRESSURE REQUIREMENTS
- A REGULATOR SUCH AS THE ELKHART BRASS MODEL NUMBER URFA-20S-2.5" OR THE UR-20 SERIES PARTS KITS SHOULD BE UTILIZED
- MUST BE CONFIRMED WITH THE FIRE MARSHAL OR LOCAL AUTHORITY HAVING JURISDICTION (AHJ)

---

### CORE WATER SUPPLY LINE
- XXX PSI TO 70 PSI
- OPERATING PRESSURE
- 125 PSI MAX STATIC PRESSURE
- PRESSURE, 3/4, 1, 1-1/2 INCH NPT FITTING, XXX GPM, (0.7 GPM PER FOOT OF HOOD)
- CONNECTED TO SUPERVISED, DEDICATED LINE WITH NO UNSUPERVISED MANUAL SHUT-OFF VALVES
- CONNECT TO BUILDING FIRE SPRINKLER WATER LINE (REDUCE PRESSURE) WHEN REQUIRED
- STAINLESS STEEL, COPPER, OR STEEL PIPE ONLY

---

### NOZZLES FOR CORE PROTECTION

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>MACOLA</th>
<th>FLOW RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4T+TP1530+CP1325</td>
<td>A0002784</td>
<td>2.6 GPM @ 30 PSI</td>
</tr>
<tr>
<td>1/4T+TG-4.3W</td>
<td>A0025166</td>
<td>0.7 GPM @ 30 PSI</td>
</tr>
</tbody>
</table>

---

**EXHAUST HOOD**

- 36 INCHES CLEARANCE REQUIRED IN FRONT OF ALL UTILITY CABINET DOORS
- THE PANEL SHALL ALSO BE LOCATED IN AN ACCESSIBLE AREA WHERE THE AUDIBLE AND VISUAL ALARMS CAN BE HEARD AND SEEN

---

**NOTE:** SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS
### PCU CORE FIRE PROTECTION ELECTRICAL DETAIL

**ELECTRICIAN:**
1) Wire main control panel per included schematic

#### ELECTRICAL CONTRACTOR REQUIREMENT

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CONNECTION IN PANEL</th>
<th>CONNECTION ON DEVICE</th>
<th>VOLTAGE</th>
<th>AMPERAGE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCU CORE CONTROL PANEL POWER</td>
<td>H1, N1, GROUND</td>
<td>CIRCUIT BREAKER</td>
<td>120 VAC</td>
<td>15 AMPS</td>
<td>CONTROL PANEL POWER MUST NOT BE RUN THROUGH SHUNT TRIP BREAKER</td>
</tr>
<tr>
<td>REMOTE ANSUL AUTOMAN (OPTIONAL)</td>
<td>AU1, AU2</td>
<td>ANSUL AUTOMAN MICROSWITCH</td>
<td>120 VAC</td>
<td>&lt; 6 AMPS</td>
<td>120V TO AU1, AU2 TO ANSUL ELECTRIC AUTOMAN, ANSUL SOLENOID TO NEUTRAL</td>
</tr>
</tbody>
</table>

#### NOTES:
- If PCU has integrated exhaust, refer to exhaust fan wiring schematic for motor wiring details.
- If PCU has filter pressure monitoring hardware, refer to the as-built schematic for wiring details.

#### 36 INCHES CLEARANCE REQUIRED IN FRONT OF ALL UTILITY CABINET DOORS.

**THE PANEL SHALL ALSO BE LOCATED IN AN ACCESSIBLE AREA WHERE THE AUDIBLE AND VISUAL ALARMS CAN BE HEARD AND SEEN.**

---

**POURATION CONTROL UNIT (PCU)**

---

**MASTER PCU CORE PANEL**

120VAC UNINTERRUPTIBLE

**MICROSWITCH P/N: 15549**

**NEUTRAL**

**Solenoid**

**Electric Automan**

**PCU CORE CONTROL PANEL POWER**
- 120V AC
- 15 AMP SERVICE
- Wire to terminals H1, N1, and GROUND
- Power must not originate from shunt trip breaker

**PCU CORE TO MECHANICAL AUTOMAN SOLENOID**
- 120V AC
- 15 AMP SERVICE
- Power supply must be uninterruptible
- See reverse interlock detail on this sheet

---

**NOTE:** See installation, operation, and maintenance manual for further instructions.
**PCU CORE FIRE PROTECTION LOW-VOLTAGE WIRING DETAIL**

**ALARM CONTRACTOR:**
1. WIRE REMOTE FIRESTAT SENSOR(S), HOOD/PCU CORE INTERLOCK AND FIRE ALARM CONTACTS
2. COMPLETE FINAL HOOKUP OF SYSTEM
3. INSPECT ALL WIRING TO POLLUTION CONTROL UNIT
4. PERFORM FINAL FIRE SYSTEM TEST
5. FILL SURFACTANT TANK

**ATTENTION:** LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES

---

**PCU CORE PANEL**

**FIRE ALARM PANEL**

**CORE INTERLOCK**

**MANUAL ACTUATION DEVICE WIRE**

**TROUBLE CONTACT**

**CORE TO HOOD COMMUNICATIONS CABLE**

---

**NOTE:** SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS
NOTE: USE BELDEN #6320UL OR SIMILAR WIRE

ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES
PCU CORE FIRE PROTECTION PLUMBING DETAIL

PLUMBER:
1) CONNECT PCU CORE PANEL DRAIN
2) CONNECT PCU DRAIN

PLUMBING CONTRACTOR REQUIREMENT

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CONNECTION</th>
<th>MATERIAL</th>
<th>PRESSURE</th>
<th>FLOW RATE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCU CORE PANEL DRAIN</td>
<td>1 1/2 NPT</td>
<td>STAINLESS STEEL, COPPER, STEEL PIPE ONLY</td>
<td>SPRINKLER SYSTEM PRESSURE</td>
<td>CAPACITY OF THE SPRINKLER SYSTEM</td>
<td>CONNECT TO BUILDING DRAIN CAPABLE OF HANDLING WATER VOLUME. LINE MUST BE SLOPED AWAY FROM PANEL 1/4&quot; PER FOOT.</td>
</tr>
<tr>
<td>PCU DRAIN</td>
<td>2 1/2 NPT</td>
<td>STAINLESS STEEL, COPPER, STEEL PIPE ONLY</td>
<td>N/A</td>
<td>CAPACITY OF THE SPRINKLER SYSTEM</td>
<td>CONNECT TO BUILDING GREASE INTERCEPTOR. LINE MUST BE SLOPED AWAY FROM POLLUTION CONTROL UNIT 1/4&quot; PER FOOT.</td>
</tr>
</tbody>
</table>

NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS
**PCU CORE FIRE PROTECTION SPRINKLER DETAIL**

**BUILDING SPRINKLER CONTRACTOR:**
1) CONNECT PCU CORE WATER LINE TO BUILDING WET SPRINKLER SYSTEM. STAINLESS STEEL, COPPER, STEEL PIPE ONLY
2) CONNECT PCU CORE PANEL TO PCU SPRAY BARS. STAINLESS STEEL, COPPER, STEEL PIPE ONLY

**SPRINKLER CONTRACTOR REQUIREMENT**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CONNECTION</th>
<th>OPERATING PRESSURE</th>
<th>K-FACTOR</th>
<th>FLOW RATE BASED OFF MINIMUM PSI ALLOWED</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCU CORE PANEL WATER SUPPLY LINE</td>
<td>1 1/2&quot; NPT</td>
<td>30 to 70 PSI</td>
<td>XXX</td>
<td>XXX GPM</td>
<td>WATER LINE MUST BE SUPERVISED AND HAVE NO MANUAL UNSUPERVISED SHUT-OFF VALVES, STRAINER REQUIRED UPSTREAM OF PANEL</td>
</tr>
<tr>
<td>CORE WATER SUPPLY LINE TO PCU</td>
<td>1 1/2&quot; NPT</td>
<td>20 PSI MINIMUM AT PCU INLET</td>
<td>XXX</td>
<td>XXX GPM</td>
<td>WATER LINE MUST BE SLOPED BACK 1/4&quot; PER FOOT TO PCU CORE PANEL TO PREVENT STANDING WATER FROM FREEZING. LINE MUST BE ADAPTED TO 3/8&quot; AT INLET OF EACH MODULE.</td>
</tr>
</tbody>
</table>

**PCU CORE CONNECTIONS**
- LINE FROM PCU CORE PANEL MUST BE BRANCHED AND ADAPTED TO EACH MODULE INDIVIDUALLY
- STAINLESS STEEL, COPPER, OR STEEL PIPE ONLY (TYPICAL)

**PCU CORE PANEL WATER SUPPLY LINE**
- 30 TO 70 PSI OPERATING PRESSURE AT PANEL GAUGE. MINIMUM PRESSURE DEPENDENT ON SIZE OF PCU SYSTEM AND PIPING BETWEEN PCU CORE PANEL AND PCU
- STRAINER IS REQUIRED UPSTREAM OF PANEL AND SOLENOID VALVES
- 125 PSI MAX STATIC PRESSURE, 1 1/2" INCH NPT FITTING, 1.5 GPM PER NOZZLE
- CONNECT TO SUPERVISED, DEDICATED LINE WITH NO UNSUPERVISED MANUAL SHUT-OFF VALVES
- CONNECT TO BUILDING FIRE SPRINKLER WATER LINE [REDUCE PRESSURE WHEN REQUIRED]
- STAINLESS STEEL, COPPER, OR STEEL PIPE ONLY

**PRESSURE REGULATOR VALVE (PRV)**
- PRV NOT INCLUDED AND MUST BE PROVIDED, INSTALLED, AND ADJUSTED BY THE SPRINKLER CONTRACTOR TO MEET INCOMING PRESSURE REQUIREMENTS
- A REGULATOR SUCH AS THE ELKHART BRASS MODEL NUMBER URFA-205-2.5" OR THE UR-20 SERIES PARTS KITS SHOULD BE UTILIZED
- MUST BE CONFIRMED WITH FIRE MARSHAL OR LOCAL AUTHORITY HAVING JURISDICTION (AHJ)

**NOTE:** SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

**FIRE SYSTEM DISCHARGE COEFFICIENT (K-FACTOR)**

<table>
<thead>
<tr>
<th>PCU SIZE</th>
<th># OF MODULES</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCU 1</td>
<td>2.0</td>
<td>3.6</td>
<td>5.2</td>
<td>6.8</td>
<td>8.4</td>
<td></td>
</tr>
<tr>
<td>PCU 2</td>
<td>2.8</td>
<td>4.8</td>
<td>6.8</td>
<td>8.8</td>
<td>10.8</td>
<td></td>
</tr>
<tr>
<td>PCU 3</td>
<td>3.1</td>
<td>5.2</td>
<td>7.2</td>
<td>9.2</td>
<td>11.2</td>
<td></td>
</tr>
<tr>
<td>PCU 4</td>
<td>4.0</td>
<td>6.4</td>
<td>8.8</td>
<td>11.2</td>
<td>13.6</td>
<td></td>
</tr>
<tr>
<td>PCU 5</td>
<td>4.4</td>
<td>7.2</td>
<td>10.0</td>
<td>12.8</td>
<td>15.7</td>
<td></td>
</tr>
<tr>
<td>PCU 6</td>
<td>4.4</td>
<td>7.2</td>
<td>10.0</td>
<td>12.8</td>
<td>15.7</td>
<td></td>
</tr>
</tbody>
</table>

**FIRE SYSTEM WATER CONSUMPTION BASED ON PCU SIZE IN GPM (F)**

<table>
<thead>
<tr>
<th>PCU SIZE</th>
<th># OF MODULES</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCU 1</td>
<td>7.5</td>
<td>14</td>
<td>20</td>
<td>26</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>PCU 2</td>
<td>11.0</td>
<td>18</td>
<td>26</td>
<td>33</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td>PCU 3</td>
<td>11.0</td>
<td>18</td>
<td>26</td>
<td>33</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td>PCU 4</td>
<td>15.0</td>
<td>24</td>
<td>33</td>
<td>42</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>PCU 5</td>
<td>17.0</td>
<td>27</td>
<td>38</td>
<td>48</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td>PCU 6</td>
<td>17.0</td>
<td>27</td>
<td>38</td>
<td>48</td>
<td>59</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL FLOWRATE = K FACTOR x PRESSURE**

**10/02/2015 Rev. 14**

**BUILDING SPRINKLER CONTRACTOR:**
1) CONNECT CORE WATER LINE TO BUILDING WET SPRINKLER SYSTEM. STAINLESS STEEL, COPPER, STEEL PIPE ONLY
2) CONNECT PCU CORE PANEL TO PCU SPRAY BARS. STAINLESS STEEL, COPPER, STEEL PIPE ONLY

**NOTE:** SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS
CORE PROTECTION FIRE SYSTEM

CORE PROTECTION FIRE SYSTEMS CAN BE INSTALLED FOR HOOD FIRE PROTECTION, AS WELL AS POLLUTION CONTROL UNIT FIRE PROTECTION. IN THE EVENT OF A FIRE, OR ON MANUAL ACTUATION CORE PROTECTION IS ACTIVATED.

IF THE INSTALLED FIRESTAT IN THE AIRSTREAM SENSES A TEMPERATURE HOTTER THEN ITS INTERNAL SET POINT OR IF THE MANUAL ACTUATION DEVICE IS PUSHED THE FIRE SYSTEM IS ACTIVATED. IN KITCHEN HOODS AN ELECTRIC WATER SOLENOID IS ENERGIZED ALLOWING THE FLOW OF WATER TO THE HOOD DUCT AND PLENUM THROUGH THE SELF CLEANING HOOD SPRAY BAR. AT THE SAME TIME A SECOND WATER SOLENOID IS ENERGIZED AND ALLOWS THE FLOW OF WATER TO THE APPLIANCES. SURFACTANT IS CONTINUALLY INJECTED INTO THE WATER STREAM TO HELP SUPPRESS THE FIRE. IN A POLLUTION CONTROL UNIT, THIS ELECTRONIC SIGNAL ENERGISSES A SOLENOID ALLOWING THE FLOW OF WATER INTO THE INDIVIDUALLY PIPED MODULES.

ONCE THE FIRE SYSTEM IS ACTIVATED, A “FIRE SYSTEM ACTIVATED” LIGHT IS ILLUMINATED ON THE CORE CONTROL PANEL AND AN AUDIBLE ALARM SOUNDS. FOR KITCHEN HOOD PROTECTION ALL GAS AND ELECTRIC APPLIANCES UNDER THE HOOD MUST BE ELECTRICALLY INTERLOCKED TO SHUT OFF. THIS IS ACHIEVED VIA A GAS VALVE RELAY AND/OR A SHUNT TRIP BREAKER. A TIMER IS ALSO ENERGIZED UPON FIRE SYSTEM ACTIVATION. THE TIMER IS SET FOR 30 MINUTES AND KEEPS THE WATER SPRAY SYSTEM RUNNING FOR A MINIMUM OF 30 MINUTES. THIS IS NECESSARY TO HELP EXTINGUISH ALL REMAINING DUCT FIRE POTENTIAL.

THE FIRE SYSTEM IS ELECTRICALLY OPERATED AND THUS REQUIRES A BATTERY BACKUP SYSTEM. IN THE EVENT OF A LOSS OF ELECTRICAL POWER, ALL GAS AND ELECTRIC APPLIANCES UNDER THE HOOD MUST BE ELECTRICALLY INTERLOCKED TO SHUT OFF. THIS IS ACHIEVED VIA A GAS VALVE RELAY AND/OR A SHUNT TRIP BREAKER. THE BATTERY BACKUP WILL AUTOMATICALLY ENERGIZE UPON A LOSS OF POWER. THE BATTERY BACKUP WILL MONITOR THE FIRE SYSTEM CIRCUIT FOR ONE DAY AND BE ABLE TO OPERATE THE FIRE SYSTEM CIRCUIT FOR A MINIMUM OF 30 MINUTES. ONCE POWER IS RESTORED, THE BATTERY WILL AUTOMATICALLY RECHARGE.

CORE PROTECTION RESET OVERVIEW


THE FIRE SYSTEM MUST BE FILLED WITH SURFACTANT AND NOZZLE CAPS MUST BE REINSTALLED.

AFTER A FIRE, FULL INSPECTION BY A CERTIFIED PROFESSIONAL MUST BE CONDUCTED PRIOR TO RESTARTING THE FIRE SYSTEM.

CORE APPLICATION SPECIFIC DETAILS

SELF CLEANING HOODS
SELF CLEANING HOOD OPTION IS REQUIRED TO APPLY CORE PROTECTION. HIGH EFFICIENCY, HIGH VELOCITY CARTRIDGE, SOLO, OR COMBO FILTERS ARE REQUIRED. IF SUBSTITUTE FILTERS ARE UTILIZED, PRODUCT WARRANTY IS VOID AND THERE IS NO GUARANTEE IN PERFORMANCE.

SOLID FUEL APPLIANCES
SOLID FUEL APPLIANCES PRODUCE SPARKS THAT CAN TRAVEL INTO DUCTWORK. THESE APPLIANCES REQUIRE SOLO FILTERS AND AN ADDITIONAL FIRESTAT AT THE DUCT DISCHARGE NEAR THE FAN IF THE DUCTWORK EXCEEDS 10 FEET IN LENGTH OR CONTAINS HORIZONTAL DUCT RUNS. INDICATE ON DUCTWORK DRAWING WHERE FIRESTAT IS TO BE INSTALLED WITH QUICK SEAL. ALL ADDITIONAL FIRESTATS ARE WIRED INTO THE SUPERVISED LOOP WITH THE FIRST FIRESTAT. DUCT SHOULD BE INSULATED PER CODE REQUIREMENTS. IF SUBSTITUTE FILTERS ARE UTILIZED, PRODUCT WARRANTY IS VOID AND THERE IS NO GUARANTEE IN PERFORMANCE. SELF CLEANING HOODS AND ETL LISTED DUCTWORK ARE ALSO REQUIRED.

DUCT FIRESTATS
A FIRESTAT MUST BE INSTALLED AT 50 FT INTERVALS WHEN THE DUCT LENGTH EXCEEDS 50 FT.

IMPORTANT:
ANY DEVIATION FROM ANY OF THE MANUFACTURER’S RECOMMENDATIONS IN THIS DOCUMENT OR THE OPERATION AND INSTALLATION MANUAL MUST BE APPROVED BY THE OWNER OF THIS EQUIPMENT AND VOIDS THE WARRANTY AND PERFORMANCE GUARANTEE OF THIS PRODUCT.
24V SUPERVISED LOOP INSTRUCTIONS

ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES

SUPERVISED LOOP(S) INSTALLATION

- LOOPS MUST BE CONTINUOUS BETWEEN THE DEVICES, QUANTITY OF EACH COMPONENTS MAY VARY
- POLLUTION CONTROL UNIT MAY NOT HAVE A MANUAL ACTUATION DEVICE INSTALLED; IN THIS CASE, INSTALL A JUMPER BETWEEN TERMINALS 101 AND 104, AS WELL AS TERMINALS 102 AND 103
- MULTIPLE PULL STATIONS, MICROSWITCHES, AND FIRE SENSORS CAN BE USED ON EACH PANEL. WHEN INSTALLED, THEY ARE WIRED IN A DAISY-CHAIN STYLE AS SHOWN

CONNECTION BETWEEN MULTIPLE CORE SYSTEMS

- THERE IS AN RS-485 CONNECTION IN EACH CORE PANEL; TO CONNECT MULTIPLE CORE PANELS, SIMPLY CONNECT MATCHING TERMINALS FROM ONE PANEL TO THE NEXT IN SERIES
- USE BELDEN #88760 OR SIMILAR WIRE, SHIELDED, SINGLE TWISTED PAIR

ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES
PRESSURE REDUCING VALVE WITH SUPERVISION SWITCH, BALL VALVE SUPERVISION SWITCH AND PRESSURE MONITORING SWITCH (OPTIONAL)

**PRESSURE REDUCING VALVE**
- Valve is available in 1-1/2" NPT connections
- Pressure reducing valve (if required) must be installed before the core protection panel to reduce sprinkler line incoming pressure and volume
- Pressure reduction is based upon the incoming pressure and volume
- See table for outlet pressure

**PRV SUPERVISION SWITCH**
- The pressure reducing valve must be installed with an approved supervision switch
- Switch part numbers and support brackets are listed in the table
- Switch comes with two single pole, double throw switches
- Switch must be attached per pressure reduction valve bracket instructions

**WATER PRESSURE SUPERVISION SWITCH**
- Switch is available with a 1/2" NPT connection
- Pressure monitoring valve comes with two single pole, double throw switches, each with an adjustable setpoint
- Setpoint can be between 10 and 60 PSI
- Part number PL-PS402

<table>
<thead>
<tr>
<th>COMPLETE PARTS KIT</th>
<th>UR-20 VALVE</th>
<th>INLET PRESSURE (PSI)</th>
<th>OUTLET PRESSURE (PSI)</th>
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<td></td>
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<td>UR-20-W KIT</td>
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<td>UR-20-X KIT</td>
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<td>UR-20-Z KIT</td>
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<td>URFA-20-S KIT</td>
<td>URFA-20</td>
<td>28.7</td>
<td>31.57</td>
</tr>
</tbody>
</table>

**COMPLETE PARTS KIT**
- Core panel contains two isolated inputs for auxiliary supervision of pressure reducing valves and pressure switches. Each supervision device above has two single pole, double throw switches. These switches may be wired in parallel to the core panel terminals H1D and 39. When a fault is detected, the core board will shut down the gas valve and shunt trip, trigger a local trouble signal, and alert all attached core packages. Alternatively, the switches from each device could be connected to the trouble input of the building fire alarm panel to indicate a trouble condition. Both methods are shown below.

**BALL VALVE SUPERVISION SWITCH**
- Switch is available for 3/4" to 2" pipe
- Monitors core water shut-off
- See table for part numbers

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>PIPE SIZE</th>
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<tbody>
<tr>
<td>PL-RBVS-3/4</td>
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<td>PL-RBVS-1</td>
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<tr>
<td>PL-RBVS-1-1/2</td>
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<tr>
<td>PL-RBVS-2</td>
<td>2&quot;</td>
</tr>
</tbody>
</table>

**CORE CONTROL CONNECTIONS**
- Prv supervision switch
- Water pressure supervision switch
- Core water shut-off supervision switch

**WIRING CONNECTIONS FOR TROUBLE CONTACT**
- Building fire alarm
- Core control panel trouble contact
- Prv supervision switch
- Waterline supervision switch
- Core water shut-off switch