January 31, 2020

MIDDLETON ASSOCIATES INCORPORATED
1702 W. COLLEGE AVE., SUITE E
NORMAL, IL 61761-2793
309/452-1271 FAX 309/454-8049

ADDENDUM NUMBER 4
TO THE DRAWINGS AND SPECIFICATIONS

PROJECT: McLean County Unit District No. 5 Kingsley Junior High School HVAC Renovation and Geothermal

FOR: McLean Co. Unit District No. 5, 1809 W. Hovey Ave., Normal, IL 61761

A/E PROJECT NO: 23152318

ISSUE DATE: January 14, 2020

BID OPENING: Thursday, February 6, 2020, 1:30 p.m. prevailing time
Maintenance Office, 1999 Eagle Road, Normal, IL 61761

THIS ADDENDUM DOES NOT CHANGE THE BID DATE OR BID TIME.

Upon receipt of this ADDENDUM, insert same into the documents, which were issued to you. Hereafter, said ADDENDUM shall be as much a part of the said documents as though originally set forth therein. THIS ADDENDUM DOES NOT CHANGE THE BID DATE.

19. TO THE SPECIFICATIONS, Section 237223: Swegon model Gold RX may be bid on Section 00 4000 PROCUREMENT FORMS: Voluntary Alternate & Substitution Form.

20. TO THE DRAWINGS, Sheet M3.3: Add the attached Melink Intelli-hood submittal for additional information on the kitchen hood, makeup air, and exhaust controls.

21. TO THE DRAWINGS, Sheet M4.1: EF-1 is called out to be provided with a VFD. The VFD shall be provided by Melink as part of the Intelli-hood system.

22. TO THE DRAWINGS, Sheet M4.2: MUA-1 is called out to be provided with a VFD. The VFD shall be provided by Melink as part of the Intelli-hood system.

Attachments: Melink Sheet I.1 added 1/31/2020 Addendum #4
Melink Sheet I1.1 added 1/31/2020 Addendum #4
Melink Sheet I.2 added 1/31/20 Addendum #4
Melink Sheet I.3 added 1/31/20 Addendum #4

END ADDENDUM NO. 4

INSTALLATION REQUIREMENTS

1. THERE SHALL BE NO SUBSTITUTIONS OF ANY COMPONENTS ON MELINK INTELLI-HOOD CONTROLS UNLESS APPROVED BY MELINK.
2. MELINK CERTIFIED STARTUP CONTRACTOR IS NOT RESPONSIBLE FOR HIGH VOLTAGE ELECTRICAL WIRING.
3. MELINK CERTIFIED STARTUP CONTRACTOR IS NOT RESPONSIBLE FOR INSTALLING LOW VOLTAGE CONTROL CABLES LONGER THAN 50'. ONLY MELINK CABLES SHALL BE USED.
4. MELINK CERTIFIED STARTUP CONTRACTOR IS NOT RESPONSIBLE FOR INSTALLING LOW VOLTAGE CABLES IF ACCESS TO THE TOP OF THE HOOD IS LIMITED DUE TO OBSTRUCTIONS (LOW CEILING, DUCTWORK, PIPING, ETC.) CALL MELINK FOR MORE INSTRUCTIONS IF NECESSARY.
5. MELINK CERTIFIED CONTRACTOR IS NOT RESPONSIBLE FOR INSTALLING ANY MELINK CONTROL CABLE IN CONDUIT IF REQUIRED; OR MAKING ANY CEILING, FLOOR OR WALL PENETRATIONS.
6. MELINK INTELLI-HOOD LITERATURE WILL BE INCLUDED IN THE SHIPMENT OF EACH SYSTEM. CALL MELINK WITH ANY QUESTIONS @ 1-(513)-965-7300.
7. ALL MOTORS MUST BE 3 PHASE, INVERTER DUTY RATED AS SPECIFIED IN NEMA STANDARD MG 1 PART 31.
8. DV/DT FILTERS MUST BE USED WHEN THE DISTANCE FROM VFD TO FAN IS OVER 200' FOR 230V, 70' FOR 460V, OR 40' FOR 575V.
9. OPTION: MELINK RECOMMENDS A CERTIFIED AIR BALANCE ON THE KITCHEN VENTILATION SYSTEM FOR OPTIMAL ENERGY SAVINGS.

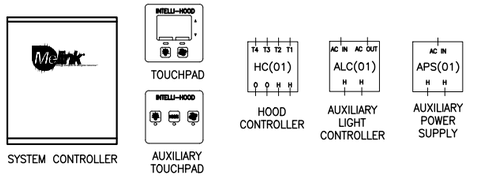
AGENCY APPROVALS

THE MELINK INTELLI-HOOD CONTROLS ARE UL & CUL LISTED, & CONFORM WITH ALL APPLICABLE CODES & STANDARDS INCLUDING:

1. UL710 – STANDARD FOR EXHAUST HOODS FOR COMMERCIAL COOKING EQUIPMENT
2. UL2017- STANDARD FOR GENERAL PURPOSE SIGNALING DEVICES AND SYSTEMS.
3. CE – MEETS REQUIREMENTS OF APPLICABLE EC DIRECTIVES
4. ROHS – MEETS THE RESTRICTION OF HAZARDOUS SUBSTANCES DIRECTIVE 2002/95/EC
5. NFPA 96 – STANDARD FOR VENTILATION CONTROL AND FIRE PROTECTION OF COMMERCIAL COOKING OPERATIONS
6. IMC – INTERNATIONAL MECHANICAL CODE
7. BOCA – BUILDING OFFICIALS CODE ADMINISTRATORS
8. SBCCI – SOUTHERN BUILDING CODE CONGRESS INTERNATIONAL
9. ICBO – INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS

ASHRAE 90.1.2013 CERTIFIED

LAYOUT SYMBOLS LEGEND

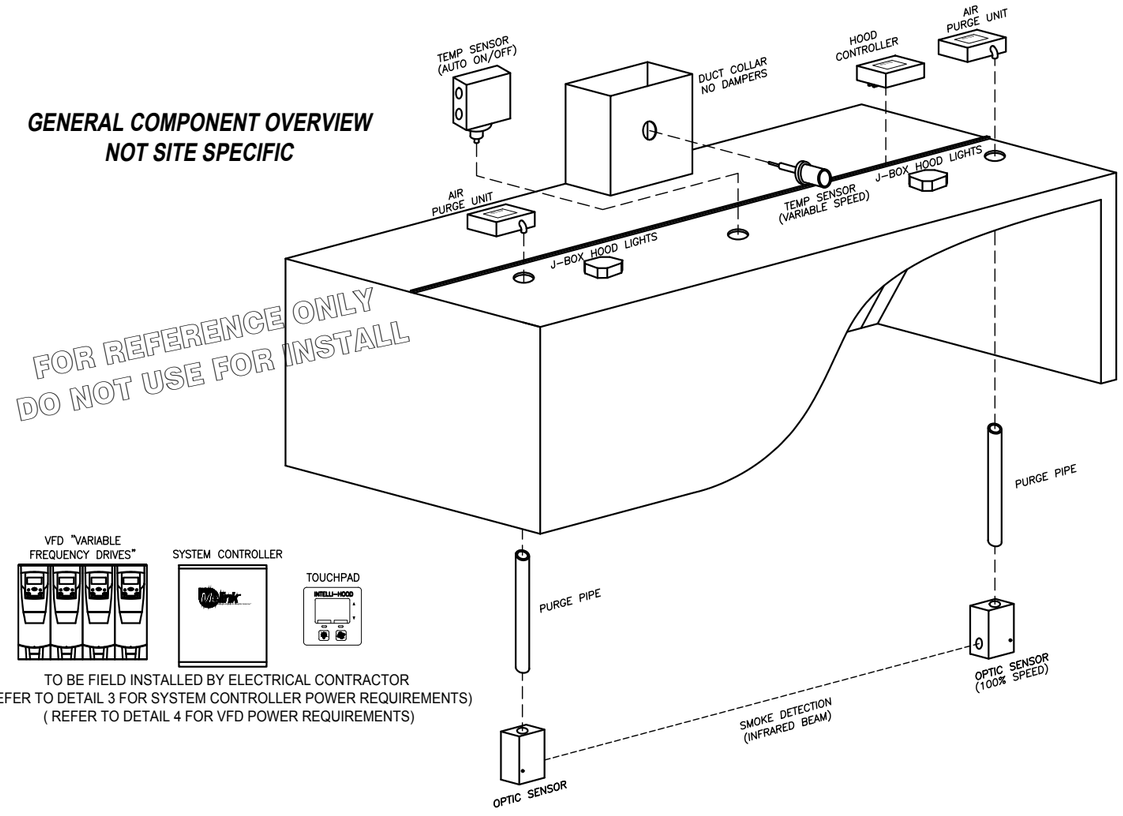


SHEET INDEX

INTELLI-HOOD®

RETRO-FIT SCOPE OF WORK

GENERAL COMPONENT OVERVIEW
NOT SITE SPECIFIC



FOR REFERENCE ONLY
DO NOT USE FOR INSTALL

TO BE FIELD INSTALLED BY ELECTRICAL CONTRACTOR
(REFER TO DETAIL 3 FOR SYSTEM CONTROLLER POWER REQUIREMENTS)
(REFER TO DETAIL 4 FOR VFD POWER REQUIREMENTS)

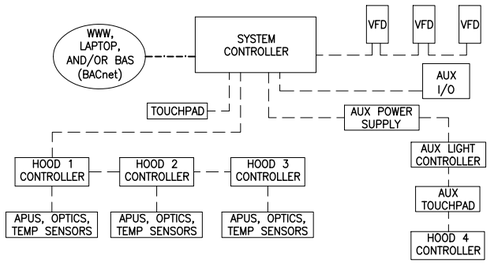
SEQUENCE OF OPERATION

1. PRESS THE FAN SWITCH ON THE TOUCHPAD TO TURN THE FANS ON IN THE AUTO MODE.
   A. SYSTEM CONTROLLER STARTS THE FANS AT MINIMUM SPEED AND AUTOMATICALLY ADJUSTS EXHAUST AIR FLOW BASED ON THE ACTUAL COOKING LOADS AS SENSED BY THE TEMPERATURE AND OPTIC SENSORS MOUNTED IN THE HOODS. (SYSTEM CONTROLLER WILL SEND A RUN COMMAND AND SPEED REFERENCE SIGNAL TO THE VARIABLE FREQUENCY DRIVES (VFD'S).)
   B. SYSTEM CONTROLLER WILL CONTROL MAKE UP AIR FAN VFD(S). SYSTEM CONTROLLER WILL SEND A 24VDC SIGNAL TO THE MUA UNIT TO ENERGIZE THE CONTROL CIRCUIT. IN THE EVENT THE MUA UNIT GOES INTO HEATING MODE, THE MUA UNIT WILL PROVIDE A DRY CLOSURE SIGNAL TO THE SYSTEM CONTROLLER TO INCREASE THE MINIMUM AIR FLOW ACROSS THE BURNER OR HEAT EXCHANGER.
   B. SYSTEM CONTROLLER WILL PROVIDE A START/STOP AND 0-10VDC OR 4-20MA SIGNAL TO THE BAS TO CONTROL MUA.
2. PRESS THE FAN SWITCH AGAIN TO TURN THE FANS OFF.
3. PRESS THE LIGHT SWITCH ON THE TOUCHPAD TO TURN THE HOOD LIGHTS ON. THE TERMINALS OF THE SYSTEM CONTROLLER OR AUXILIARY LIGHTS CONTROLLERS. (LIGHTS MAY BE OPERATED BY OTHER CONTROLS OR BAS.)
4. IF THE AUTO ON/OFF TEMP SENSOR DETECTS HEAT LEVELS ABOVE 90°F/32°C WHEN THE FANS ARE NOT ON, THE FANS WILL TURN ON AUTOMATICALLY.
5. IN THE EVENT OF FIRE MODE, POWER IS TURNED OFF TO THE SYSTEM CONTROLLER, THE EXHAUST FAN VFD WILL RUN AT FULL SPEED, AND MUA VFD WILL STOP. SEE DETAIL 4.

US PATENTS – 6,170,480 ; 7,048,199 ; 9,810,437 CANADA PATENT –297682

PLUG-N-PLAY CABLE CONNECTIONS

GENERAL WIRING OVERVIEW, NOT SITE SPECIFIC



NOTE: CAN SPECIFY 1-30 HOOD CONTROLLERS PER SYSTEM CONTROLLER

ELECTRICAL SCOPE OF WORK

1. INSTALL SYSTEM CONTROLLER(S) IN LOCATION DICTATED ON PRINTS OR COORDINATED WITH CUSTOMER. REFER TO SYSTEM LAYOUT(S),
2. INSTALL TOUCHPAD(S) ON WALLS OR HOODS AT LOCATIONS DESIGNATED ON PRINT OR COORDINATE WITH CUSTOMER. REFER TO SYSTEM LAYOUT(S).
3. INSTALL TOUCHPAD CABLE IN CONDUIT WHERE EXPOSED.
4. INSTALL THE VFDS (X) IN LOCATIONS DESIGNATED ON PRINTS OR LOCATION COORDINATED WITH CUSTOMER. REFER TO SYSTEM LAYOUT.
5. INSTALL LINE REACTORS, OUTPUT REACTORS, OR OUTPUT FILTERS IN LOCATIONS DESIGNATED ON THE PRINTS OR LOCATION COORDINATED WITH THE CUSTOMER. LINE REACTORS, OUTPUT REACTORS OR OUTPUT FILTERS SHOULD BE LOCATED AS CLOSE TO THE VFD AS POSSIBLE,
6. INSTALL AUXILIARY POWER SUPPLIES AND AUXILIARY LIGHT CONTROLLERS ABOVE HOODS. REFER TO SYSTEM LAYOUTS.
7. INSTALL ETHERNET CABLE FROM BUILDING NETWORK TO THE SYSTEM CONTROLLERS. REFER TO DETAIL 1. CONFIGURE THE BUILDING NETWORK TO ALLOW SYSTEM CONTROLLER TO COMMUNICATE WITH MELINK HEADQUARTERS SECURE INTELLI-HOOD 3 SERVER. IF APPLICABLE, CONFIGURE THE BUILDING'S BACnet AUTOMATION SYSTEM TO COMMUNICATE WITH THE INTELLI-HOOD 3 SYSTEM CONTROLLER. A CELLULAR MODEM HAS BEEN SUPPLIED AS WELL, IN THE EVENT THE BUILDING NETWORK WILL NOT ALLOW THE SYSTEM CONTROLLER ACCESS TO THE MELINK HEADQUARTERS SERVER. SEE DETAIL 7
8. PULL AND CONNECT MELINK CONTROL WIRE FROM SYSTEM CONTROLLER(S) TO VFDS AND FROM VFD-TO-VFD. REFER TO SYSTEM LAYOUT(S).
9. PULL SENSOR AND/OR VFD CABLES OVER 50 FEET AND ANY CABLES THAT REQUIRE FLOOR, CEILING, OR WALL PENETRATIONS.
10. WIRE THE SYSTEM CONTROLLER INSIDE THE INTELLI-HOOD CONTROL CABINET, OR OTHER SPECIFIED LOCATION, WITH AN INPUT OF 90/250VAC FROM A DEDICATED CIRCUIT. THIS CIRCUIT MUST LOSE POWER WHEN THE FIRE SUPPRESSION SYSTEM IS ACTIVATED. PURPOSE IS TO SHUT OFF HOOD LIGHTS AND SEND EXHAUST FANS TO FULL SPEED. THE OUTPUT WIRING TO BE CONNECTED TO THE HOOD LIGHTS (15 AMPS MAX). SEE DETAIL 3.
11. WIRE THE VARIABLE FREQUENCY DRIVES (VFD) INSIDE THE CONTROL CABINET, OR IN SPECIFIED LOCATION, BY CONNECTING 3-PHASE INPUT POWER FROM THE CIRCUIT BREAKERS. THE OUTPUT WIRING IS TO BE CONNECTED TO THE RESPECTIVE FAN MOTOR. THE OUTPUT WIRING FROM EACH VFD MUST BE RUN IN SEPARATE CONDUIT. SEE DETAIL 4.
12. WIRE THE LINE REACTORS BY CONNECTING 3-PHASE INPUT POWER FROM THE CIRCUIT BREAKERS. THE OUTPUT WIRING TO BE CONNECTED TO THE RESPECTIVE VFD. REFER TO DETAIL X.
13. WIRE OUTPUT REACTORS OR OUTPUT FILTERS BY CONNECTING THE 3-PHASE OUTPUT POWER FROM THE RESPECTIVE VFD TO THE INPUT POWER OF THE OUTPUT REACTOR OR OUTPUT FILTER. THE OUTPUT WIRING TO BE CONNECTED TO THE RESPECTIVE FAN MOTOR. REFER TO DETAIL X
14. WIRE A DEDICATED SINGLE PHASE CIRCUIT TO THE MUA UNIT TO ENERGIZE THE MUA CONTROLS. DO NOT USE VFD OUTPUT TO ENERGIZE THIS CIRCUIT. SEE DETAIL 6.
15. INSTALL LOW VOLTAGE WIRING FROM SYSTEM CONTROLLER TO MUA AND OR BMS. SEE DETAIL X.

MECHANICAL / MELINK SCOPE OF WORK

1. INSTALL ALL TEMPERATURE, OPTIC SENSORS, AND HOOD CONTROLLERS ON OR IN THE HOODS IN ACCORDANCE WITH THE MELINK INSTALLATION PROCEDURE. REFER TO SYSTEM LAYOUT(S).
2. CONNECT CABLES TO THE SENSORS AND PULL CABLES FROM SENSORS TO THE SYSTEM CONTROLLERS.
3. MAKE CABLE CONNECTIONS AT THE SYSTEM CONTROLLER, VERIFY CONTROL WIRING AND SYSTEM PROGRAMMING, AND VERIFY SYSTEM FUNCTIONALITY PER SEQUENCE OF OPERATION.
4. TRAIN OPERATORS AND/OR FACILITIES PERSONNEL FOR EACH SYSTEM.
5. SUBMIT INTELLI-HOOD START-UP REPORT TO CUSTOMERS. PLEASE CALL MELINK WITH ANY QUESTIONS @ 1-(513)-965-7300.

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INTELLI-HOOD
MANUFACTURED BY:
MELINK CORPORATION
5161 RIVER VALLEY ROAD
MILFORD OH 45150, USA
(513) 965-7300
WWW.MELINKCORP.COM

Melink® Energy solutions for a brighter tomorrow™

PROJECT:
KINGSLEY JHS
NORMAL, IL

SUBMITTAL DRAWING DATE:01-150 DRAWN BY: WSF
DRAWING RELEASE DATE:XX-XX-XX RELEASED BY: XXX
DRAWING APPROVAL DATE:XX-XX-XX APPROVED BY:XXX

REVISIONS:

REV-#	DATE	REV. BY

SCALE: NOT TO SCALE

MELINK PROJECT SQL#: 3541816

SERIAL NUMBER: SUBMITTAL

SHEET: I-1

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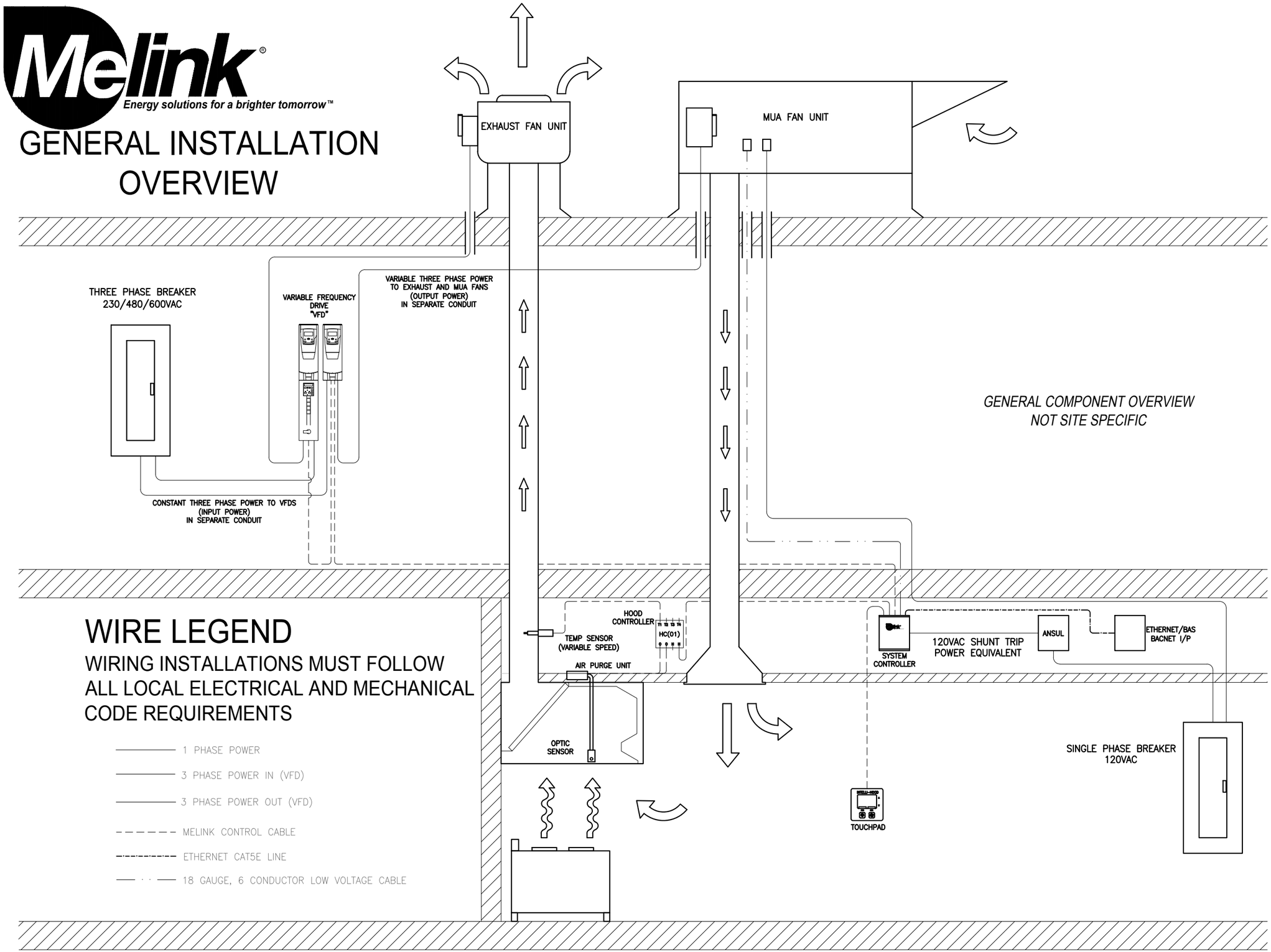
GENERAL INSTALLATION OVERVIEW



GENERAL COMPONENT OVERVIEW
NOT SITE SPECIFIC

WIRE LEGEND

WIRING INSTALLATIONS MUST FOLLOW ALL LOCAL ELECTRICAL AND MECHANICAL CODE REQUIREMENTS

- ——— 1 PHASE POWER
- ——— 3 PHASE POWER IN (VFD)
- ——— 3 PHASE POWER OUT (VFD)
- – – – – – MELINK CONTROL CABLE
- —·—·— ETHERNET CAT5E LINE
- —— · · —— 18 GAUGE, 6 CONDUCTOR LOW VOLTAGE CABLE

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REVISIONS:

REV-#	DATE	REV. BY

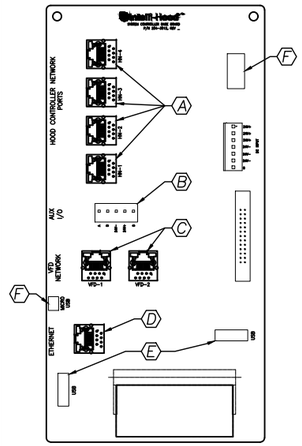
SCALE: NOT TO SCALE

MELINK PROJECT SQL#: 3541816

SERIAL NUMBER: SUBMITTAL

SHEET: I-1.1

DETAIL 1:
SYSTEM CONTROLLER BASE BOARD



A) 4 HOOD NETWORK PORTS ARE INTERCHANGEABLE. ANY OF THEM CAN BE USED TO CONNECT HOOD CONTROLLERS OR TOUCHPADS IN A SERIES CHAIN. CABLE LENGTH LIMITATIONS DO APPLY. REFER TO THE INSTALLATION MANUAL. PORTS ARE POWER-LIMITED.

B) AUXILIARY I/O PORT FOR FUTURE EXPANSION. CURRENTLY NOT USED.

C) 2 VFD PORTS ARE USED TO CONNECT AND COMMUNICATE WITH VFDS VIA SERIAL MODBUS PROTOCOL. THE VFD PORTS ARE INTERCHANGEABLE, HOWEVER, ONLY ONE VFD TYPE CAN BE CONNECTED TO EACH PORT. IF AN INSTALLATION IS TO USE 2 DIFFERENT BRANDS OF VFDS, THEN ONE PORT SHOULD BE DEDICATED TO EACH BRAND.

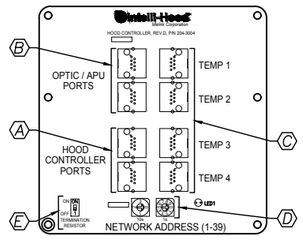
D) ETHERNET PORT IS USED TO CONNECT THE SYSTEM CONTROLLER TO THE GLOBAL INTERNET SUCH THAT THE INTELLI-HOOD SYSTEM CAN COMMUNICATE WITH MELINK HEADQUARTERS. ALSO, THIS PORT CAN BE USED BY THE BUILDING AUTOMATION SYSTEM TO COMMUNICATE VIA BACnet PROTOCOL.

E) USB PORTS. ONE USED FOR DATALOG THUMB DRIVE; OTHER FOR FUTURE EXPANSION.

F) NOT FOR USER CONNECTION

IMPORTANT:
USE THE CORRECT PORTS ON THE SYSTEM CONTROLLER BASE BOARD

DETAIL 2:
HOOD CONTROLLER BOARD



A) 2 HOOD NETWORK PORTS ARE USED TO WIRE THE HOOD CONTROLLERS, AND OTHER HOOD NETWORK DEVICES IN SERIES FROM THE SYSTEM CONTROLLER.

B) CABLES FROM THE OPTIC APUS ARE CONNECTED TO THE OPTIC APU PORTS. THESE PORTS ARE INTERCHANGEABLE. EMITTER OR RECEIVER CAN BE PLUGGED INTO EITHER ONE.

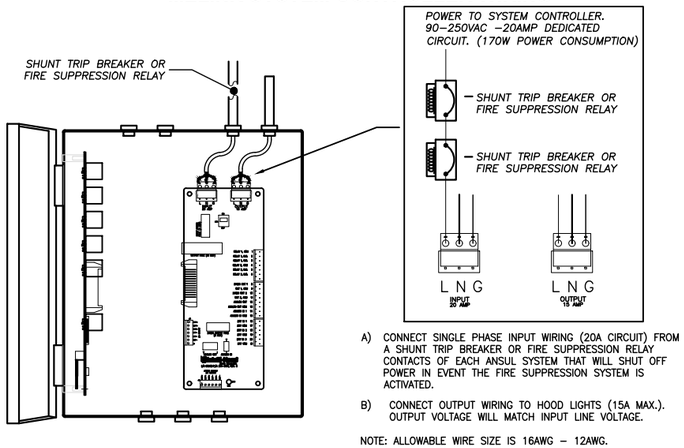
C) 4 TEMPERATURE PORTS ARE USED TO CONNECT THE TEMPERATURE SENSORS. PORTS MAY BE USES FOR VARIOUS PURPOSES SUCH AS EXHAUST DUCT, EXHAUST CANOPY, OR SUPPLY AIR. FOR CORRECT OPERATION, THE CORRECT PROBE MUST BE CONNECTED TO THE CORRECT PORT AS DEFINED BY THE SYSTEM CONTROLLER PROGRAMMING CONFIGURATION.

D) ROTARY DIALS ARE USED TO DEFINE THE HOOD CONTROLLER'S ADDRESS (1 TO 39).

E) THE TERMINATION RESISTOR SHOULD BE SWITCHED ON FOR THE LAST HOOD NETWORK DEVICES IN A SERIES CHAIN.

IMPORTANT:
USE THE CORRECT PORTS ON THE HOOD CONTROLLER BOARDS

DETAIL 3:
MELINK SYSTEM CONTROLLER WIRING

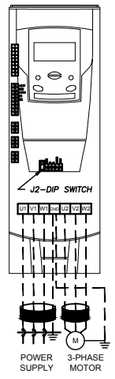


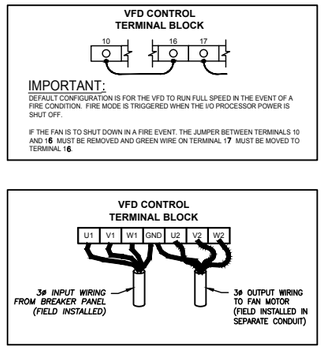
A) CONNECT SINGLE PHASE INPUT WIRING (20A CIRCUIT) FROM A SHUNT TRIP BREAKER OR FIRE SUPPRESSION RELAY CONTACTS OF EACH ANSUL SYSTEM THAT WILL SHUT OFF POWER IN EVENT THE FIRE SUPPRESSION SYSTEM IS ACTIVATED.

B) CONNECT OUTPUT WIRING TO HOOD LIGHTS (15A MAX.). OUTPUT VOLTAGE WILL MATCH INPUT LINE VOLTAGE.

NOTE: ALLOWABLE WIRE SIZE IS 16AWG – 12AWG.

DETAIL 4:
ABB STANDARD DRIVE





IMPORTANT:
DEFAULT CONFIGURATION IS FOR THE VFD TO RUN FULL SPEED IN THE EVENT OF A FIRE CONDITION. FIRE MODE IS TRIGGERED WHEN THE I/O PROCESSOR POWER IS SHUT OFF.

IF THE FAN IS TO SHUT DOWN IN A FIRE EVENT. THE JUMPER BETWEEN TERMINALS 10 AND 16 MUST BE REMOVED AND GREEN WIRE ON TERMINAL 17 MUST BE MOVED TO TERMINAL 16.

A) VERIFY THAT VOLTAGE OF VARIABLE FREQUENCY DRIVE (VFD) IS SAME AS THE FAN MOTORS. ALSO VERIFY THAT THE HP RATING IS THE SAME OR GREATER THAT THE FAN MOTORS.

B) INSTALL SEPARATE CONDUIT FOR OUTPUT WIRING FROM EACH VARIABLE FREQUENCY DRIVE (VFD) TO PREVENT ELECTRICAL INTERFERENCE.

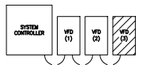
C) CONNECT INPUT WIRING FROM BREAKER TO U1, V1, W1, AND GROUND.

D) CONNECT OUTPUT WIRING FROM U2, V2, W2 AND GROUND TO RESPECTIVE FAN MOTORS.

E) IF THE FAN IS TO SHUT DOWN WHEN THE FIRE SUPPRESSION TRIPS, MODIFY WIRING AS SHOWN IN CONTROL TERMINAL BLOCK BUBBLE. WHEN THE POWER TO THE SYSTEM CONTROLLER IS SHUT OFF, IT WILL DISABLE THE FAN.

IMPORTANT:
USE SEPARATE CONDUIT FOR OUTPUT WIRING OF EACH VFD

IMPORTANT:
J2-DIP SWITCH FOR RS485 TERMINATION MUST BE ENABLED ON THE LAST VFD IN IN THE LOW VOLTAGE CAT 5 COMMUNICATION CABLE CHAIN



VFD INSTALLATION INSTRUCTIONS

FOR REFERENCE ONLY
DO NOT USE FOR INSTALL

INPUT AC POWER

A. CIRCUIT BREAKERS FEEDING THE VFD'S ARE RECOMMENDED TO BE FAST ACTING AND THERMAL-MAGNETIC.

B. EACH VFD SHALL BE FED BY ITS OWN BREAKER. IF MULTIPLE VFD'S ARE COMBINED ON THE SAME CIRCUIT BREAKER, EACH VFD SHALL HAVE ITS OWN PROTECTION DEVICE (FUSES OR CIRCUIT BREAKER)

C. INPUT AC LINE CONDUCTORS SHALL BE RUN IN CONDUIT FROM THE CIRCUIT BREAKER PANEL TO THE VFD. AC INPUT POWER TO MULTIPLE VFD'S MAY BE RUN IN A SINGLE CONDUIT.

NOTE: DO NOT CONNECT AC LINE CONDUCTORS TO OUTPUT TERMINALS OF VFD. SEVERE DAMAGE WILL OCCUR.

OUTPUT POWER

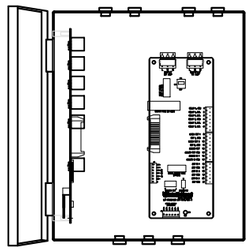
A. MOTOR CONDUCTORS FROM EACH VFD TO ITS RESPECTIVE MOTOR MUST BE RUN IN A SEPERATE METALLIC CONDUIT SEPERATE FROM CONTROL WIRING AND INCOMING AC POWER TO AVOID NOISE BETWEEN VFD'S.

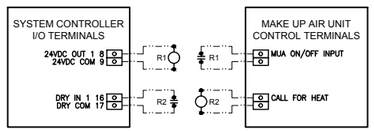
B. DV/DT FILTERS SHALL BE REQUIRED IF THE DISTANCE BETWEEN THE VFD AND THE MOTOR EXCEEDS (200 FEET @ 208/230V, 70 FEET @ 460/480V, OR 40 FEET @ 575V)

C. A CONTACTOR SHALL NOT BE INSTALLED BETWEEN THE VFD AND THE MOTOR. OPERATION OF SUCH A DEVICE WHILE THE VFD IS RUNNING CAN CAUSE POTENTIAL DAMAGE TO THE OUTPUT COMPONENTS OF THE VFD.

D. WHEN A DISCONNECT SWITCH IS INSTALLED BETWEEN THE VFD AND THE MOTOR, IT SHALL ONLY BE OPERATED WHEN THE VFD HAS BEEN STOPPED.

DETAIL 5:
WIRING TO MUA UNIT





A) WHEN THE FANS ARE TURNED ON, THE SYSTEM CONTROLLER (TERMINALS 8 AND 9) WILL SEND 24VDC TO A RELAY. THE N.O. RELAY CONTACTS SHOULD BE WIRED TO THE MUA UNIT TO START THE UNIT.

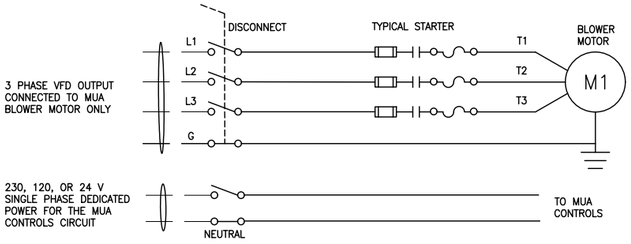
B) WHEN IN HEAT MODE, THE MUA UNIT WILL ENERGIZE A RELAY TO PROVIDE A DRY CONTACT CLOSURE TO THE SYSTEM CONTROLLER (TERMINALS 16 AND 17). THIS INPUT WILL SIGNAL THE SYSTEM CONTROLLER TO INCREASE THE MINIMUM FAN SPEED AND MAINTAIN THE PROPER AIRFLOW ACROSS THE BURNER OR HEAT EXCHANGER.

C) MUA CONTROL RELAYS ARE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR IF NOT PROVIDED BY MUA OEM.

D) 18AWG SHIELDED, PLENUM-RATED CABLE IS TYPICALLY RECOMMENDED. TERMINALS WILL ACCEPT 12-20AWG WIRING.

E) NOTE: RELAY TERMINALS HAVE A MAXIMUM CAPACITY OF 5A AT EITHER 120 OR 230VAC.

DETAIL 6:
SEPARATION OF MUA UNIT MOTOR AND CONTROLS



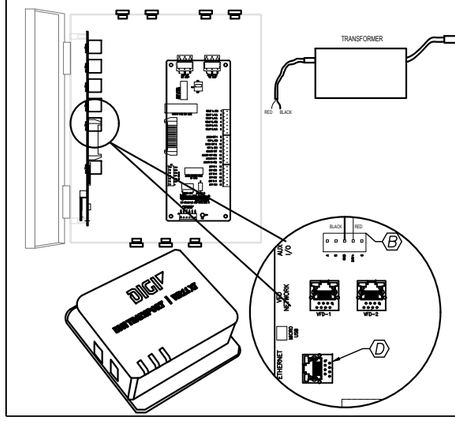
A) WIRE THREE-PHASE OUTPUT POWER FROM THE MUA VFD TO THE MUA UNIT TO POWER THE BLOWER MOTOR.

B) WIRE A DEDICATED SINGLE PHASE CIRCUIT TO THE MUA UNIT TO ENERGIZE THE MUA CONTROLS. DO NOT USE THE VFD OUTPUT TO ENERGIZE THIS CIRCUIT.

C) ENSURE 115V CIRCUIT IS IN A SEPARATE CONDUIT FROM THE OUTPUT VOLTAGE OF THE VFD.

D) IF A MOTOR STARTER IS PRESENT IN THE MUA UNIT, IT MAY BE REMOVED COMPLETELY IN SOME CASES DEPENDING ON THE CONTROLS SEQUENCE OF OPERATIONS. IF IT IS DESIRABLE TO LEAVE THE CONTACTOR IN PLACE, THEN THE OVERLOADS SHOULD BE REMOVED. MOST OVERLOADS ARE NOT COMPATIBLE WITH VFDS.

DETAIL 7:
WIRING FOR DIGI WIRELESS MODEM STANDARD SYSTEM CONTROLLER



A) THE DIGI MODEM TRANSFORMERS RED AND BLACK WIRES WILL CONNECT TO THE BASE BOARD AUXILIARY I/O EXPANSION PORT (B) TERMINALS 24V+ AND GND. THE TRANSFORMERS POWER PLUG WILL CONNECT TO THE POWER PORT ON THE MODEM. THIS WILL POWER THE MODEM.

B) CONNECT THE SUPPLIED ETHERNET CABLE FROM THE DIGI MODEMS NETWORK CONNECTOR PORT TO THE BASE BOARD ETHERNET PORT (D)

C) CONNECT THE SUPPLIED ANTENNAS TO THE WAN PRI AND WAN SEC CONNECTORS ON THE MODEM

D) IN SYSTEM CONTROLLER PROGRAMMING, SET "USE DHCP' TO YES.

E) ONCE A CONNECTION IS ESTABLISHED THE ABOUT SCREEN ON THE INTELLI-HOOD TOUCHPAD WILL ISSUE AN IP ADDRESS.

DETAIL 8:
NOT USED

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MELINK CORPORATION
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PROJECT:
KINGSLEY JHS
NORMAL, IL

SUBMITTAL DRAWING DATE:01-150 DRAWN BY:WSF
DRAWING RELEASE DATE:XX-XX-XX RELEASED BY:XXX
DRAWING APPROVAL DATE:XX-XX-XX APPROVED BY:XXX

REVISIONS:

REV-#	DATE	REV. BY

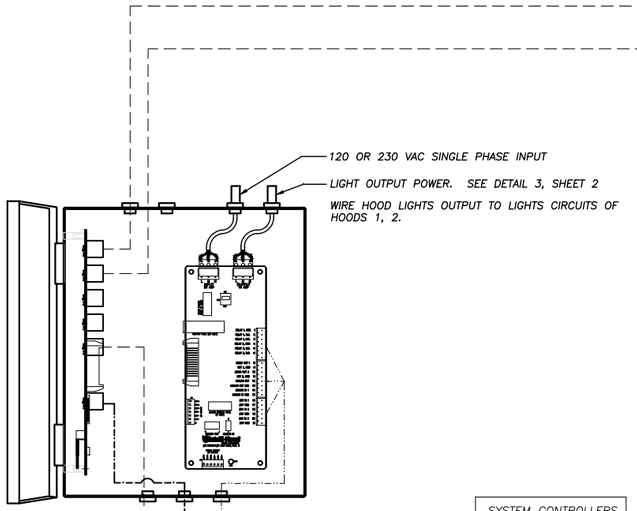
SCALE: NOT TO SCALE

MELINK PROJECT SQL#: 3541816

SERIAL NUMBER: SUBMITTAL

SHEET: I-2

SHEET 3
CONTROL WIRING SCHEMATIC
FOR SYSTEM CONTROLLER #1



120 OR 230 VAC SINGLE PHASE INPUT

LIGHT OUTPUT POWER. SEE DETAIL 3, SHEET 2

WIRE HOOD LIGHTS OUTPUT TO LIGHTS CIRCUITS OF HOODS 1, 2.

SYSTEM CONTROLLERS DIGITAL AND/OR ANALOG I/O SEE DETAIL 5

ETHERNET AND/OR BACNET INTERFACE SEE DETAIL 1

FOR REFERENCE ONLY
DO NOT USE FOR INSTALL

REQUEST FOR INFORMATION

HOOD-3

T1 T2 T3 T4
HC(03)
O O H H

IMPORTANT

REMINDER: SWITCH TERMINATION RESISTOR "ON" FOR THE LAST HOOD CONTROLLER IN THE CHAIN

REQUEST FOR INFORMATION:
DID NOT HAVE THE KITCHEN HOOD SUBMITTALS AT THE TIME OF THIS SUBMITTAL.

IMPORTANT

REMINDER: SWITCH TERMINATION RESISTOR "ON" FOR THE LAST HOOD CONTROLLER IN THE CHAIN

HOOD-2

H H O O
HC(02)
T1 T2 T3 T4

EF-1

T1 T2 T3 T4
HC(01)
O O H H

HOOD-1

VARIABLE FREQUENCY DRIVES
LOCATED: TBD.

VFD-01	VFD-41
3 HP	5 HP
208V/3	208V/3
EF-1	MUA-1
HOOD-1,2,3	HOOD-1,2,3

BREAKER PANEL

VFD OUTPUT POWER
TO EACH FAN INDICATED.
OUTPUT FILTERS MUST BE USED WHEN THE DISTANCE FROM VFD TO FAN IS OVER 200' FOR 230V, 70' FOR 460V, OR 40' FOR 575V.

VFD POWER WIRING
REFER TO DETAIL 4

REQUEST FOR INFORMATION

120V POWER FOR MUA CONTROLS
REFER TO DETAIL 6 ON SHEET 2

TO BREAKER PANEL

TO SYSTEM CONTROLLER

MUA TO BE CONNECTED TO MELINK SYSTEM CONTROLLER. FOR TERMINAL CONNECTIONS. REFER TO DETAIL 5 ON SHEET 2

REQUEST FOR INFORMATION:
INTERFACE WIRING TO THE SUPPLY AIR SYSTEM MUST BE DESIGNED.
AT TIME OF DRAWING REQUEST, SUPPLY AIR METHOD AND EQUIPMENT INFORMATION WAS NOT PROVIDED.

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