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| YORK BY JOHNSON CONTROLS | Supersedes: 160.67-PW5 (904) Form: 160.67-PW5 (914) |
| **WIRING DIAGRAMS** | **MODEL YST STEAM TURBINE DRIVE CENTRIFUGAL LIQUID CHILLERS TOP MOUNT STEAM CONDENSER DESIGN LEVEL F AND G** |

| | |
|---|---|
| CONTRACTOR _____ | PURCHASER _____ |
| ORDER NO. _____ | JOB NAME _____ |
| JCI CONTRACT NO. _____ | LOCATION _____ |
| JCI ORDER NO. _____ | ENGINEER _____ |

| | | |
|---|---|---|
| ☐ REFERENCE DATE _____ | ☐ APPROVAL DATE _____ | ☐ CONSTRUCTION DATE _____ |

**JOB DATA:**

CHILLER MODEL NO. YST _____

NO. OF UNITS _____

STEAM TURBINE MODEL _____

OIL PUMP MOTOR _____ VOLTS, 3-PHASE, _____ HZ, _____ FLA

Issue Date:
September 23, 2014

# IMPORTANT!

## READ BEFORE PROCEEDING!

### GENERAL SAFETY GUIDELINES

This equipment is a relatively complicated apparatus. During installation, operation maintenance or service, individuals may be exposed to certain components or conditions including, but not limited to: refrigerants, materials under pressure, rotating components, and both high and low voltage. Each of these items has the potential, if misused or handled improperly, to cause bodily injury or death. It is the obligation and responsibility of operating/service personnel to identify and recognize these inherent hazards, protect themselves, and proceed safely in completing their tasks. Failure to comply with any of these requirements could result in serious damage to the equipment and the property in which it is situated, as well as severe personal injury or death to themselves and people at the site.

This document is intended for use by owner-authorized operating/service personnel. It is expected that these individuals possess independent training that will enable them to perform their assigned tasks properly and safely. It is essential that, prior to performing any task on this equipment, this individual shall have read and understood this document and any referenced materials. This individual shall also be familiar with and comply with all applicable governmental standards and regulations pertaining to the task in question.

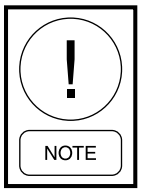
### SAFETY SYMBOLS

The following symbols are used in this document to alert the reader to specific situations:


***Indicates a possible hazardous situation which will result in death or serious injury if proper care is not taken.***


***Identifies a hazard which could lead to damage to the machine, damage to other equipment and/or environmental pollution if proper care is not taken or instructions and are not followed.***


***Indicates a potentially hazardous situation which will result in possible injuries or damage to equipment if proper care is not taken.***




***Highlights additional information useful to the technician in completing the work being performed properly.***


***External wiring, unless specified as an optional connection in the manufacturer's product line, is not to be connected inside the control cabinet. Devices such as relays, switches, transducers and controls and any external wiring must not be installed inside the micro panel. All wiring must be in accordance with Johnson Controls' published specifications and must be performed only by a qualified electrician. Johnson Controls will NOT be responsible for damage/problems resulting from improper connections to the controls or application of improper control signals. Failure to follow this warning will void the manufacturer's warranty and cause serious damage to property or personal injury.***

## NOTES

1. All field wiring shall be in accordance with the current edition of the National Electric Code (N.E.C.) as well as all other applicable codes and specifications.
2. Ground the control center with ground screw furnished, using copper conductor only.
3. Wiring, electrical conduit, junction boxes, fused disconnect switches (FDS), or circuit breakers, starters (M), push-button stations (PB), manual-off-automatic switch (S), pressure differential switch (PDS) furnished by others unless otherwise specified.
4. Items marked * furnished by York International Corporation.
5. Items marked ** available from York International Corporation at additional cost.
6. If optional chilled and condenser liquid low pressure differential switches are installed, panel must be configured for "digital" flow sensors. See form 160.67-O1.
7. Each 115 VAC field-connected inductive load, i.e., relay coil, motor starter coil, etc. shall have a transient suppressor wired (by others) in parallel with its coil, physically located at the coil. Spare transient suppressors are factory supplied in a bag attached to the green ground screw in the lower left corner of the Control Center.
8. Automatic control of the chilled liquid pump by the Control Center is shown. Chilled liquid pump motor starter (M7) holding coil to be furnished for 115V-50/60 Hz. The power requirements for the liquid pump starter (M7) must be a max. of 2 amps holding and 10 amps inrush. If power requirements exceed this value, furnish coil for line voltage, and control relay with 115V coil. See Note 7.
9. Wiring diagrams for York Optiview Control Center 160.67-PW6. Field Control modifications per form 160.67-PW2.
10. Automatic control of the condenser liquid pump by the control center is shown. Condenser liquid pump motor starter (M8) holding coil to be furnished for 115V-50/60 Hz. The power requirements for the condenser liquid pump starter (M8) must be a max of 2 amps holding and 10 amps inrush. If the power requirements exceed this value, furnish coil for the line voltage and control relay with 115V coil. See note 7.
11. Final connecting of harness to the steam condenser junction box must be finished after the installation of the steam condenser on chiller. These harnesses are furnished by York International Corporation for field assembly and consist of proper lengths of flexible conduit with all wiring properly terminated and marked.
12. Wire #14 AWG copper for one way distance of less than 175 feet. Wire #12 AWG copper for one way distance of more than 175 feet but less than 300 feet.
13. The fused disconnect switch (FDSI) and max. dual element fuse, for the single point power supply to the power panel must be as follows:

| SINGLE POINT POWER SUPPLY | | |
|---|---|---|
| VOLTS-PH-HZ | FULL LOAD AMPS | MAXIMUM DUAL ELEMENT FUSE |
| 208-3-60 | 68.8 | 90 |
| 460-3-60 | 31.5 | 40 |

14. The single point power wiring minimum circuit ampacity shall be as follows:

| 3-PHASE VOLTAGE | MINIMUM CIRCUIT AMPACITY |
|---|---|
| 208 | 75 |
| 460 | 35 |

15. Three phase power supply must be properly phased L1, L2, & L3 corresponding to phase sequence A, B, & C.

16. Final connection of cables 28, 30 and 42 to the transmitter LT-180, transducer LY-180 and transmitter TT-104 must be finished after the installation of the steam condenser on the chiller. Final connection of cable 29 to the governor valve positioner must be made after the valve is installed. These cables are not installed in conduit. Cables are factory terminated on analog I/O board and coiled on chiller for shipment. The instrument end of each cable is supplied with a factory installed DIN connector.

17. Final connection of cables 21 and 25 to the sensor TE-170 and transmitter PT-170 must be finished after the installation of the instruments in the customers inlet steam piping upstream of the governor valve. These cables are not installed in conduit. Cables are factory terminated in turbine box and control center and coiled on chiller for shipment. The instrument end of each cable is supplied with a factory installed connector.

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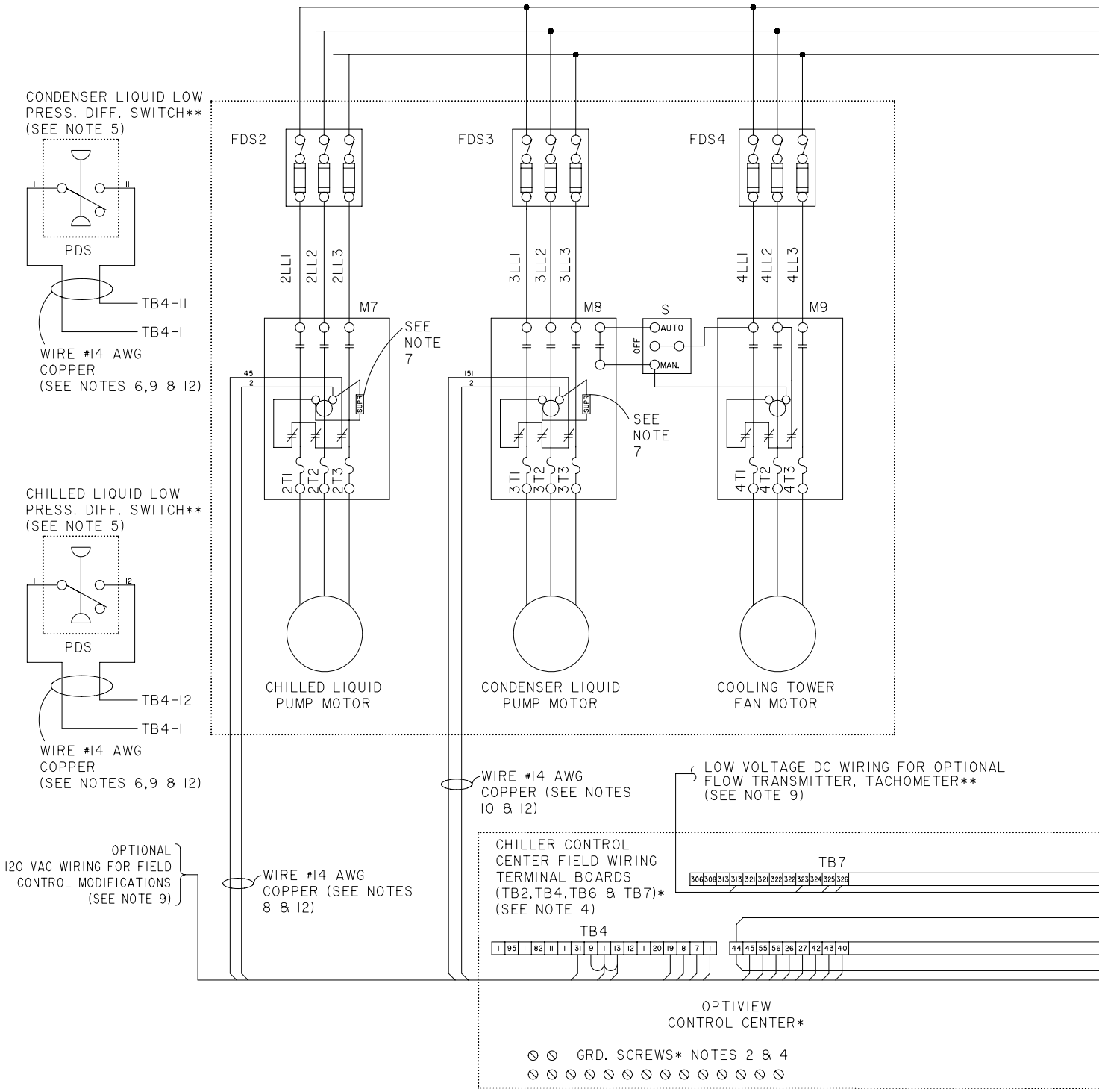
CONDENSER LIQUID LOW PRESS. DIFF. SWITCH** (SEE NOTE 5)
PDS
TB4-11
TB4-1
WIRE #14 AWG COPPER (SEE NOTES 6,9 & 12)
CHILLED LIQUID LOW PRESS. DIFF. SWITCH** (SEE NOTE 5)
PDS
TB4-12
TB4-1
WIRE #14 AWG COPPER (SEE NOTES 6,9 & 12)
FDS2
FDS3
FDS4
2LL1
2LL2
2LL3
3LL1
3LL2
3LL3
4LL1
4LL2
4LL3
M7
M8
M9
S
AUTO
OFF
MAN.
SEE NOTE 7
SEE NOTE 7
SUPR
2T1
2T2
2T3
3T1
3T2
3T3
4T1
4T2
4T3
CHILLED LIQUID PUMP MOTOR
CONDENSER LIQUID PUMP MOTOR
COOLING TOWER FAN MOTOR
WIRE #14 AWG COPPER (SEE NOTES 10 & 12)
LOW VOLTAGE DC WIRING FOR OPTIONAL FLOW TRANSMITTER, TACHOMETER** (SEE NOTE 9)
OPTIONAL 120 VAC WIRING FOR FIELD CONTROL MODIFICATIONS (SEE NOTE 9)
WIRE #14 AWG COPPER (SEE NOTES 8 & 12)
CHILLER CONTROL CENTER FIELD WIRING TERMINAL BOARDS (TB2,TB4,TB6 & TB7)* (SEE NOTE 4)
TB7
TB4
OPTIVIEW CONTROL CENTER*
GRD. SCREWS* NOTES 2 & 4

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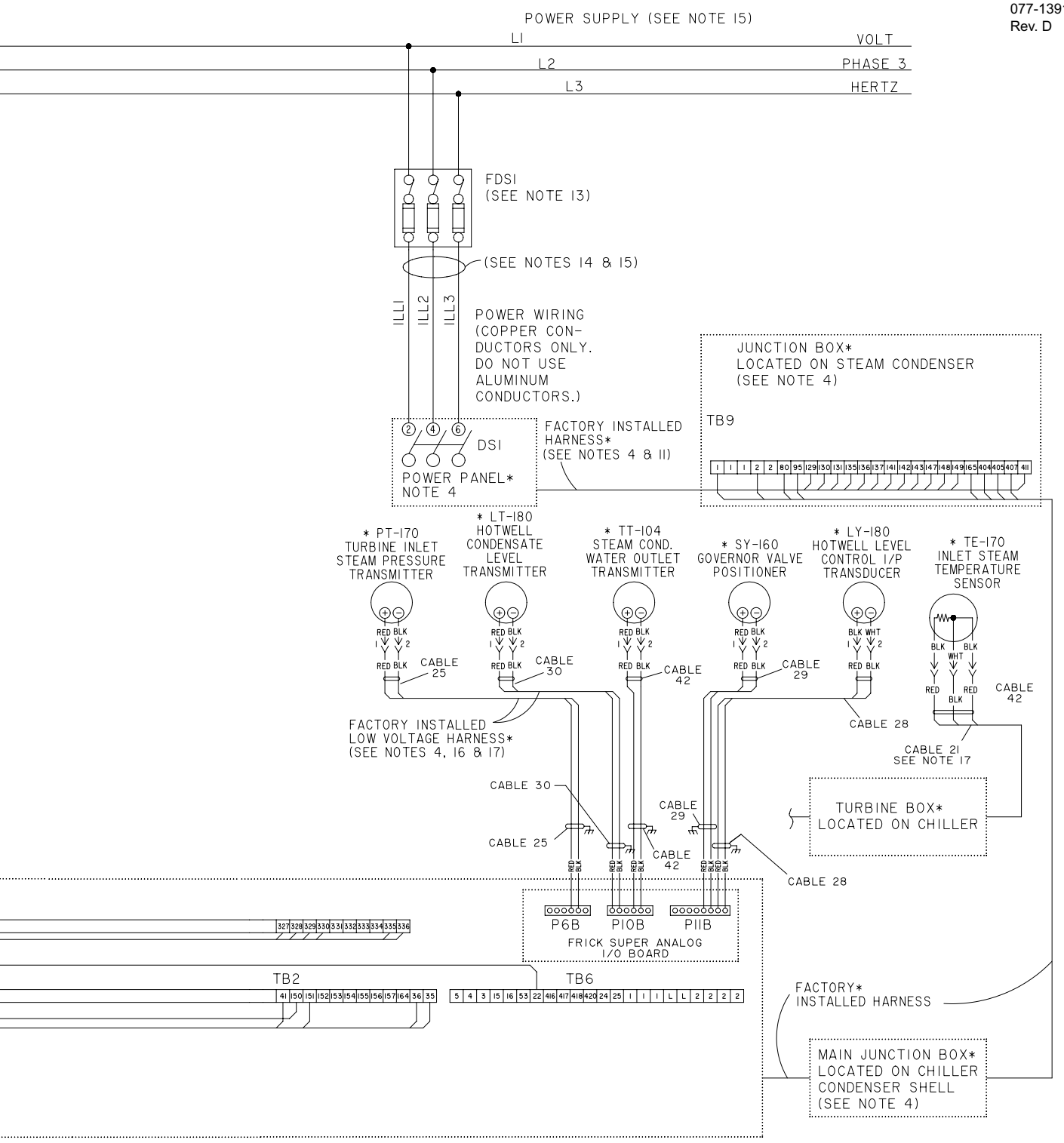


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