

CONTROL SCHEMATIC SYMBOL AND DEVICE ABBREVIATION KEY

PUSH BUTTON
N.O.
PB

PUSH BUTTON
P.B.

MUSHROOM HEAD
PUSH BUTTON N.O.
PB

MUSHROOM HEAD
PUSH BUTTON N.C.
PB

MAINTAINED
SELECTOR SWITCH N.O.
SS

MAINTAINED
SELECTOR SWITCH N.C.
SS

RETURN-FROM-LEFT
SELECTOR SWITCH
SS

RETURN-FROM-RIGHT
SELECTOR SWITCH
SS

PILOT LIGHT
RED

PUSH-TO-TEST
PILOT LIGHT RED

MASTER TEST
PILOT LIGHT RED

FUSE
FUSE

CIRCUIT BREAKER
CB

DISCONNECT SWITCH
DS?

FUSED
DISCONNECT SWITCH
DS?

SELECTOR SWITCHES:
THE "OX" OR "XD" NOTATION IN THE LOWER RIGHT CORNER DENOTES THE STATE AND NUMBER OF POSITIONS OF THE SWITCH. EACH CHARACTER DENOTES A POSITION OF THE SWITCH. AN "O" DENOTES OPEN STATE AND AN "X" DENOTES CLOSED STATE IN THE RESPECTIVE POSITION. THE SAME NOTATION WILL APPEAR ON ALL ADDITIONAL CONTACTS OF THE SWITCH.

INDICATING LIGHT
COLOR
DESIGNATIONS
A = AMBER
B = BLUE
C = CLEAR
G = GREEN
R = RED
W = WHITE
Y = YELLOW

AMPERAGE RATINGS OF FUSES AND CIRCUIT BREAKERS DENOTED AS NUMERICAL VALUE SUFFIXED BY "A", E.G. "10A"

TRANSFORMER
H1 H2
X1 X2
XF
??KVA

ENCLOSURE LIGHT
LT

SOLENOID
SOL

ALARM HORN
AH

LIMIT SWITCH
LS

PRESSURE SWITCH
PS

TEMPERATURE SWITCH
TAS

FLOAT SWITCH
FLT

FLOW SWITCH
FS

PROXIMITY SWITCH
PRS

TOGGLE SWITCH
TG

3-PHASE
MOTOR
??HP
??FLA
??RPM

MOTOR OVERLOAD
OL
??A

1-PHASE
MOTOR
MOT

RELAY COIL
CR

LATCHING
RELAY COIL
LR

UNLATCHING
RELAY COIL
LR

ON-DELAY TIMER
TD

OFF-DELAY TIMER
TD

MOTOR
STARTER COIL
M

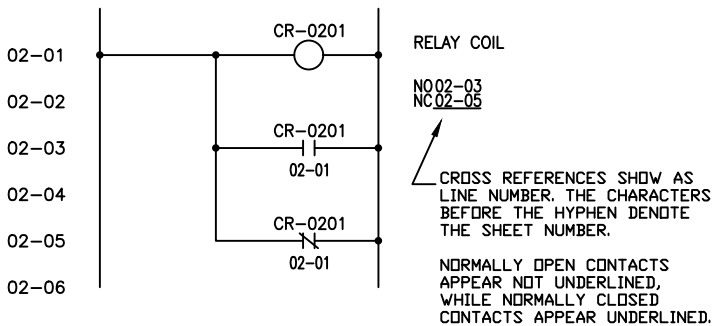
RELAY CONTACT
N.O.
CR

RELAY CONTACT
N.C.
CR

RELAY COILS:
REFERENCES TO CORRESPONDING RELAY CONTACTS APPEAR NEXT TO THE COIL SYMBOL (NORMALLY OPEN CONTACTS AFTER "NO" AND NORMALLY CLOSED CONTACTS AFTER "NC").

"??-??" REPRESENTS CROSS-REFERENCE TO LOCATION OF PARENT COIL, E.G. "03-00" FOR SHEET THREE, LINE ZERO

CROSS REFERENCING EXAMPLE



DESIGN NOTES AND CONSIDERATIONS

-ALL WIRING SHALL BE SIZED IN ACCORDANCE WITH NEC REGULATIONS.

WIRE LEGEND	
DESC	STYLE
PANEL WIRING	_____
FIELD/CONDUIT WIRING	-----

1/26/24	A	RELEASED FOR PRODUCTION	23-05-037	NE
DATE	REV	DESCRIPTION	ECN	ENGINEER

REVISION HISTORY	
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Bradley	
TOLERANCES UNLESS OTHERWISE SPECIFIED	DRAWN BY: NE
FRACTIONS ± 1/32 3 PLACE ± .020 2 PLACE ± .03 1 PLACE ± .1 ANGLES < ± 3°	DATE: 1/26/24
ALL THREADS TO BE CLASS 2 ALL FINISH NUMBERS ARE RMS DO NOT SCALE DRAWING	SCALE: .
	REF.: .
	FIRST ON: .

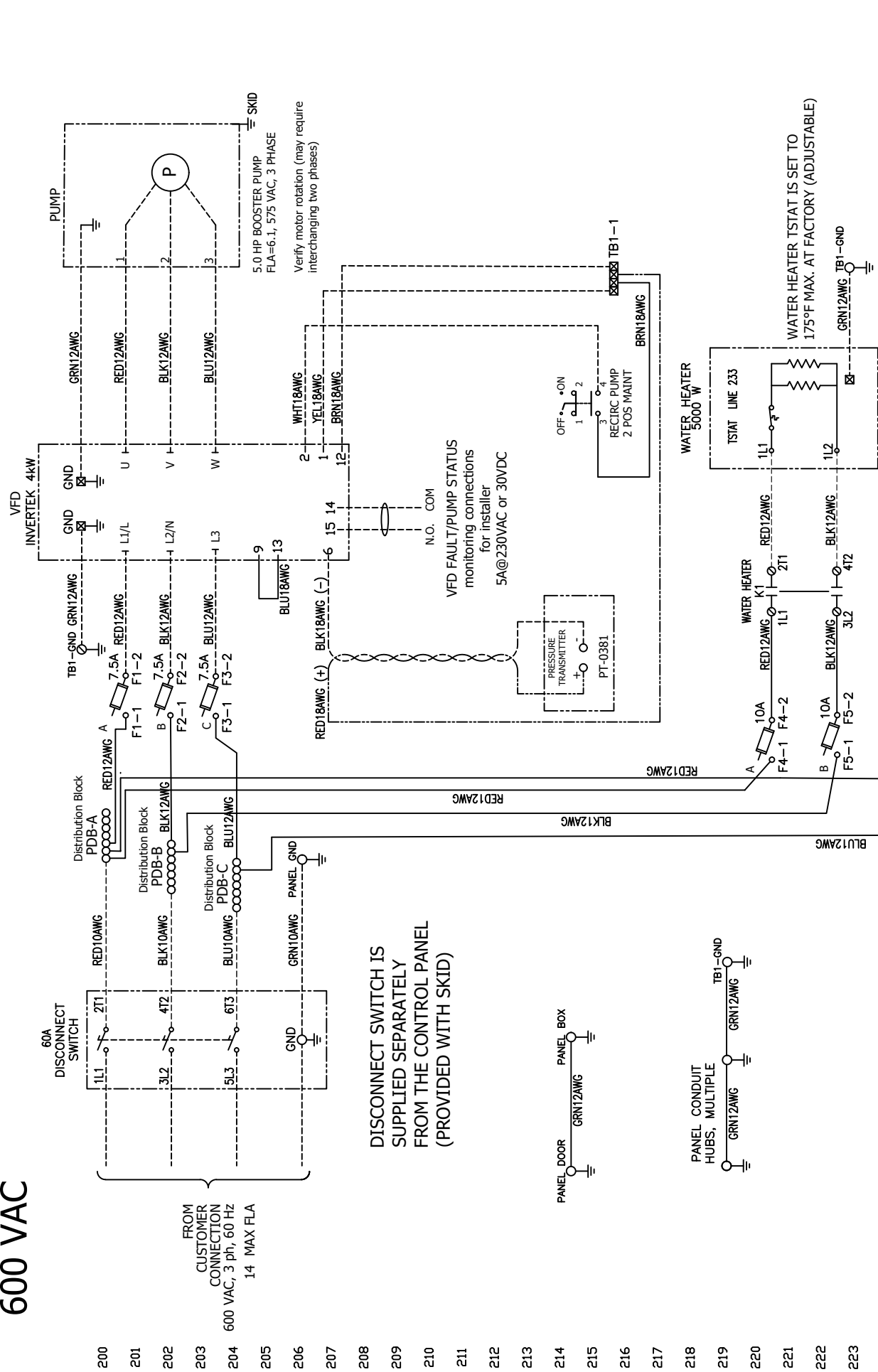
MATERIAL:

NAME: DWG. - ELECT, NTS1 600V, 5 KW HEATER
VFD + 5HP PUMP + 119 GAL TANK

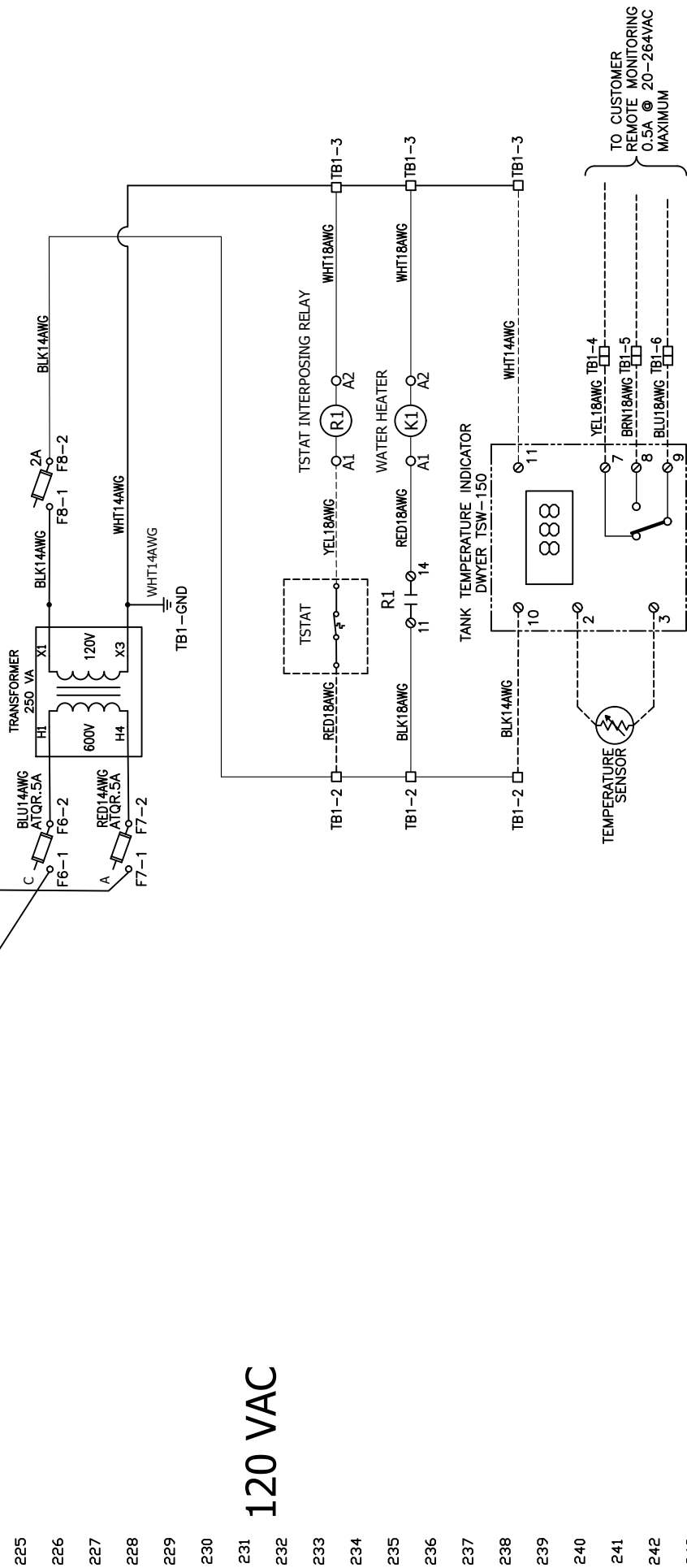
DWG. NUMBER: **S83-476**

SHEET
1 OF 3

600 VAC



120 VAC

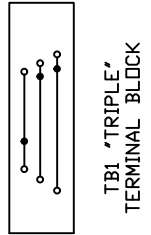
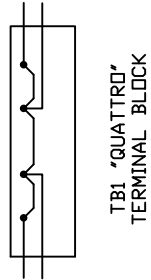
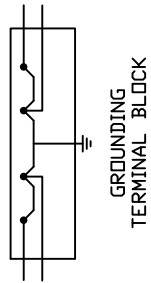



NOTES:

1. Tepid Water Skid System: General area classification, used only in non-hazardous locations.
2. Installer to provide a minimum circuit protection of 20 amps for the incoming power.
3. The control panel enclosure has an environmental rating of UL Type 4. All conduit hubs and fittings that are installed in this panel are to be rated for Type 4 or better to maintain the enclosure's environmental rating.
4. OPERATING PRINCIPLE:
IF A PRESSURE OF AT LEAST 30 PSI IS MAINTAINED AT THE SKID, THEN ALL SHOWERS IN THE LOOP WILL BE AT LEAST 30 PSI AND CAN DELIVER THE DESIRED WATER FLOW RATE AND PATTERN.

When all showers are closed:
WHEN THE SYSTEM PRESSURE IS ABOVE PRESSURE TRANSMITTER SET POINT (30 PSI), VFD WILL DECREASE THE PUMP SPEED TO MAINTAIN A CONSTANT RECIRCULATION RATE OF APPROXIMATELY 10 GPM.

When any shower is open:
AN ACTIVATED SHOWER WILL CAUSE THE WATER PRESSURE TO DROP BELOW THE PRESSURE TRANSMITTER'S SET POINT (30 PSI) AND THE VFD WILL INCREASE THE SPEED OF THE PUMP TO ACHIEVE THE SET POINT.
5. If additional pressure is needed because of elevation changes or other causes, the pressure transmitter set point can be adjusted at the installation site if necessary. Refer to manufacturer's instructions.



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REVISION: A	DATE: 1/26/24	SCALE:	NTS
DWG NUMBER:	S83-476		SHEET 2 OF 3