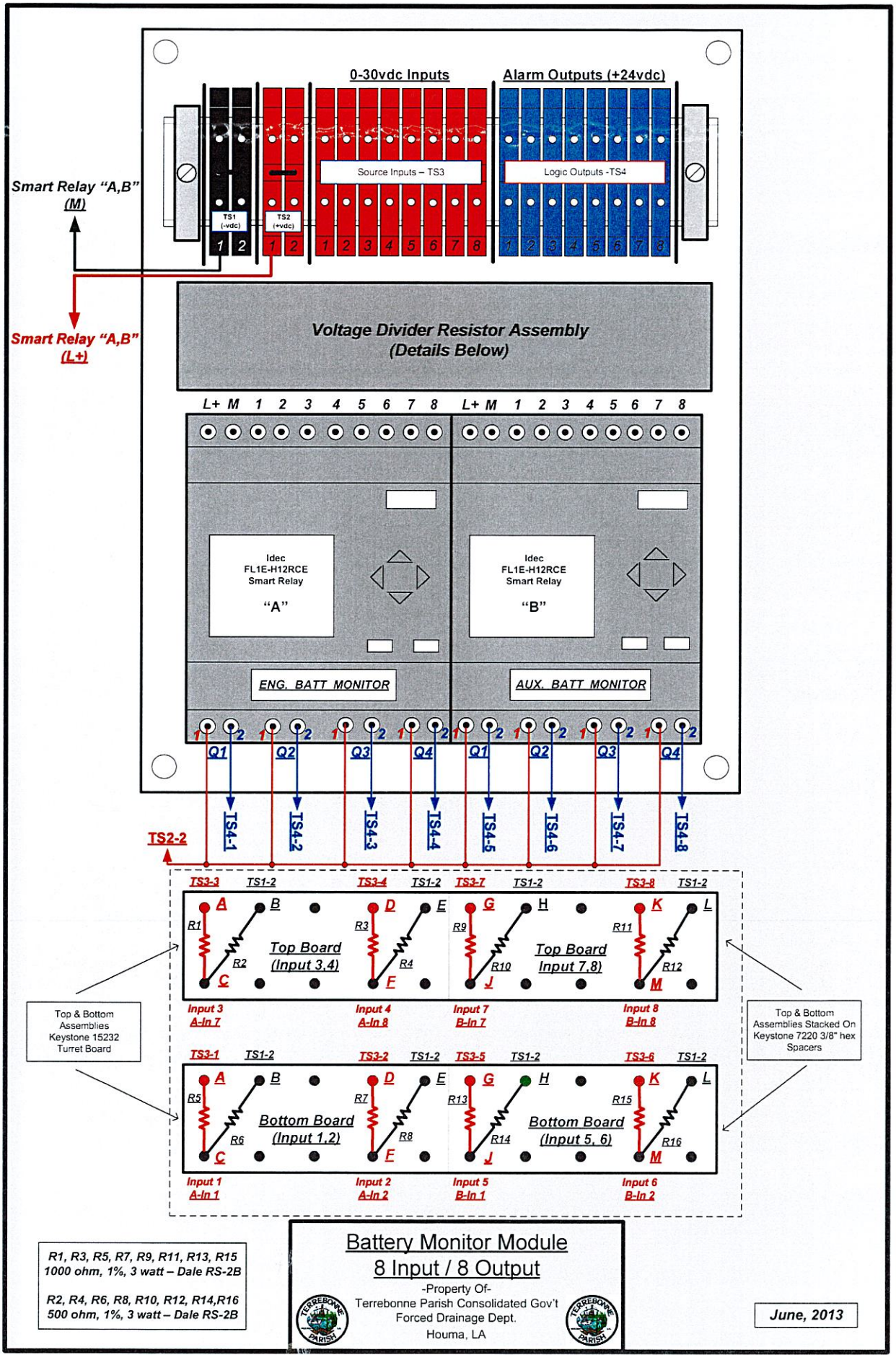
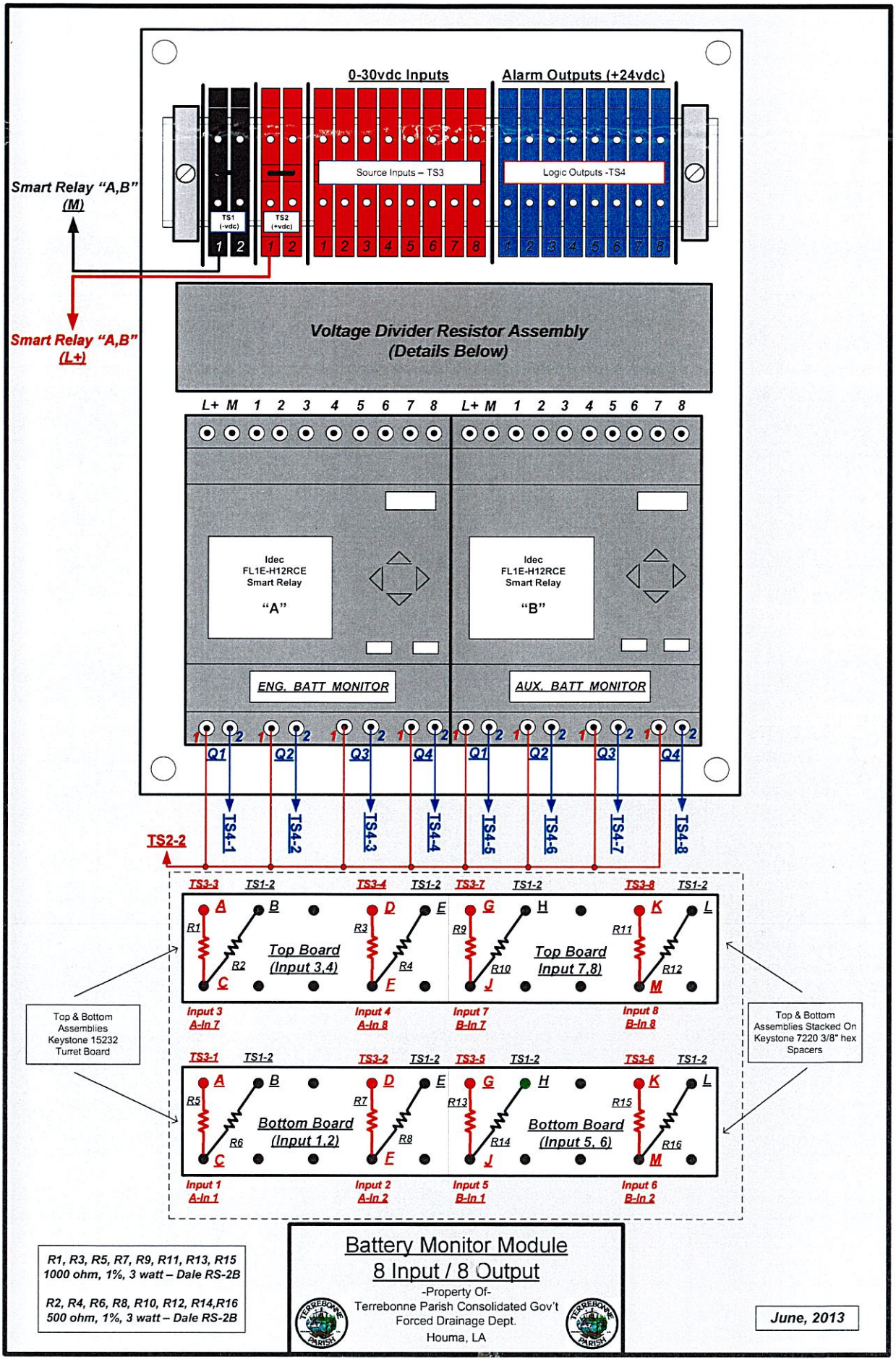

0-30vdc Inputs
Alarm Outputs (+24vdc)
Source Inputs – TS3
Logic Outputs -TS4
TS1 (-vdc)
TS2 (+vdc)
Smart Relay "A,B" (M)
Smart Relay "A,B" (L+)
Voltage Divider Resistor Assembly (Details Below)
L+ M 1 2 3 4 5 6 7 8
Idec FL1E-H12RCE Smart Relay "A"
Idec FL1E-H12RCE Smart Relay "B"
ENG. BATT MONITOR
AUX. BATT MONITOR
Q1 Q2 Q3 Q4
TS4-1 TS4-2 TS4-3 TS4-4 TS4-5 TS4-6 TS4-7 TS4-8
TS2-2
TS3-3 TS1-2 TS3-4 TS1-2 TS3-7 TS1-2 TS3-8 TS1-2
A B C D E F G H J K L M
R1 R2 R3 R4 R9 R10 R11 R12
Top Board (Input 3,4)
Top Board Input 7,8)
Input 3 A-In 7
Input 4 A-In 8
Input 7 B-In 7
Input 8 B-In 8
Top & Bottom Assemblies Keystone 15232 Turret Board
Top & Bottom Assemblies Stacked On Keystone 7220 3/8" hex Spacers
TS3-1 TS1-2 TS3-2 TS1-2 TS3-5 TS1-2 TS3-6 TS1-2
R5 R6 R7 R8 R13 R14 R15 R16
Bottom Board (Input 1,2)
Bottom Board (Input 5, 6)
Input 1 A-In 1
Input 2 A-In 2
Input 5 B-In 1
Input 6 B-In 2
R1, R3, R5, R7, R9, R11, R13, R15 1000 ohm, 1%, 3 watt – Dale RS-2B
R2, R4, R6, R8, R10, R12, R14,R16 500 ohm, 1%, 3 watt – Dale RS-2B
Battery Monitor Module
8 Input / 8 Output
-Property Of-
Terrebonne Parish Consolidated Gov't
Forced Drainage Dept.
Houma, LA
June, 2013

TPCG -- 8 INPUT BATTERY MONITOR WIRING CHART (July, 2014)

	A	B	C	D	E	F	G
1	FUNCTION	ITEM "A"	POINT "A"	ITEM "B"	POINT "B"	WIRE COLOR	WIRE SIZE
2	(-) vdc	TS1	1	Smart Relay "A"	M	Black	#18
3	(-) vdc	TS1	2	Smart Relay "B"	M	Black	#18
4	(+) vdc	TS2	1	Smart Relay "A"	L+	Red	#18
5	(+) vdc	TS2	2	Smart Relay "B"	L+	Red	#18
6	Voltage Divider (-) vdc Sink	TS1	2	Top Turret Board	B,E,H,L	Black	#18
7	Voltage Divider (-) vdc Sink	TS1	2	Bottom Turret Board	B,E,H,L	Black	#18
8	Alarm Output (+) vdc Source	TS2	2	Smart Relay "A"	Q1-1,Q2-1,Q3-1,Q4-1	Red	#18
9	Alarm Output (+) vdc Source	TS2	2	Smart Relay "B"	Q1-1,Q2-1,Q3-1,Q4-1	Red	#18
10	Source Input 1	TS3	1	Bottom Turret Board	A	Red	#18
11	Source Input 2	TS3	2	Bottom Turret Board	D	Red	#18
12	Source Input 3	TS3	3	Top Turret Board	A	Red	#18
13	Source Input 4	TS3	4	Top Turret Board	D	Red	#18
14	Source Input 5	TS3	5	Bottom Turret Board	G	Red	#18
15	Source Input 6	TS3	6	Bottom Turret Board	K	Red	#18
16	Source Input 7	TS3	7	Top Turret Board	G	Red	#18
17	Source Input 8	TS3	8	Top Turret Board	K	Red	#18
18	Alarm Output 1	TS4	1	Smart Relay "A"	Q1-2	Blue	#18
19	Alarm Output 2	TS4	2	Smart Relay "A"	Q2-2	Blue	#18
20	Alarm Output 3	TS4	3	Smart Relay "A"	Q3-2	Blue	#18
21	Alarm Output 4	TS4	4	Smart Relay "A"	Q4-2	Blue	#18
22	Alarm Output 5	TS4	5	Smart Relay "B"	Q1-2	Blue	#18
23	Alarm Output 6	TS4	6	Smart Relay "B"	Q2-2	Blue	#18
24	Alarm Output 7	TS4	7	Smart Relay "B"	Q3-2	Blue	#18
25	Alarm Output 8	TS4	8	Smart Relay "B"	Q4-2	Blue	#18
26	Resistor Divider Output 3	Top Turret Board	C	Smart Relay "A"	Input 7	Red	#18
27	Resistor Divider Output 4	Top Turret Board	F	Smart Relay "A"	Input 8	Red	#18
28	Resistor Divider Output 7	Top Turret Board	J	Smart Relay "B"	Input 7	Red	#18
29	Resistor Divider Output 8	Top Turret Board	M	Smart Relay "B"	Input 8	Red	#18
30	Resistor Divider Output 1	Bottom Turret Board	C	Smart Relay "A"	Input 1	Red	#18
31	Resistor Divider Output 2	Bottom Turret Board	F	Smart Relay "A"	Input 2	Red	#18
32	Resistor Divider Output 3	Bottom Turret Board	J	Smart Relay "B"	Input 1	Red	#18
33	Resistor Divider Output 4	Bottom Turret Board	M	Smart Relay "B"	Input 2	Red	#18

TPCG -- 8 I/O BATTERY MONITOR MODULE PARTS LIST - (March, 2016)

QTY	ITEM	ITEM DESIGNATION	SPECIFICATIONS	MANUFACTURER	MFR. PART NUMBER
2	"SMART RELAY"	BATT. MONITOR A,B	8 Input / 4 Output Controller	Idec	FL1F-H12RCE
2	Terminal Block	TS1	Black Color	Phoenix Contact	UK5N (0711344)
10	Terminal Block	TS2, TS3	Red Color	Phoenix Contact	UK5N (3026696)
8	Terminal Block	TS4	Blue Color	Phoenix Contact	UK5N (3004388)
2	Terminal Block Jumpers	"	Terminal Block Jumper (2 Block Length)	Phoenix Contact	(EB 10 6) 0203250
5	Terminal Block Separators	"	Terminal Block Separating Plate	Phoenix Contact	3003224
2	Din Rail End Clamps	"	"	Weidmuller	EW 35
1 Length	Turret Board	Voltage Divider Resistor Assy	Fiberglass Double Row Turret Board	Keystone	15232
6	Hex Spacers	"	8-32 x 1/2" Brass Hex Spacer	Keystone	1957
8	1000 ohm resistors	R1,R3,R5,R7,R9,R11,R13,R15	1000 ohm, 1%, 3 watt	Dale	RS-2B
8	500 ohm resistors	R2,R4,R6,R8,R10,R12,R14,R16	500 ohm, 1%, 3 watt	Dale	RS-2B
"	Hookup Wire	"	#18, 600v pvc	Consolidated (Or Equiv.)	Consolidated 9310
Approx. 1'	"	"	Din Rail (Alumium)	Idec	BNDN-1000
1	Backpanel	"	White Steel	Saginaw (or equivalent)	Saginaw SCE-10P8



R1, R3, R5, R7, R9, R11, R13, R15
1000 ohm, 1%, 3 watt – Dale RS-2B

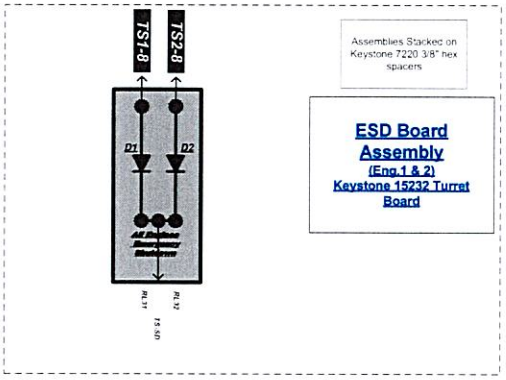
R2, R4, R6, R8, R10, R12, R14,R16
500 ohm, 1%, 3 watt – Dale RS-2B

Battery Monitor Module
8 Input / 8 Output

-Property Of-
Terrebonne Parish Consolidated Gov't
Forced Drainage Dept.
Houma, LA

June, 2013

Type II-2 Pump TCP Panel
ESD Diode Matrix
Assembly



Wire Color Coding

Gray Wiring

June, 2024

Type II-2 Pump TCP PANEL

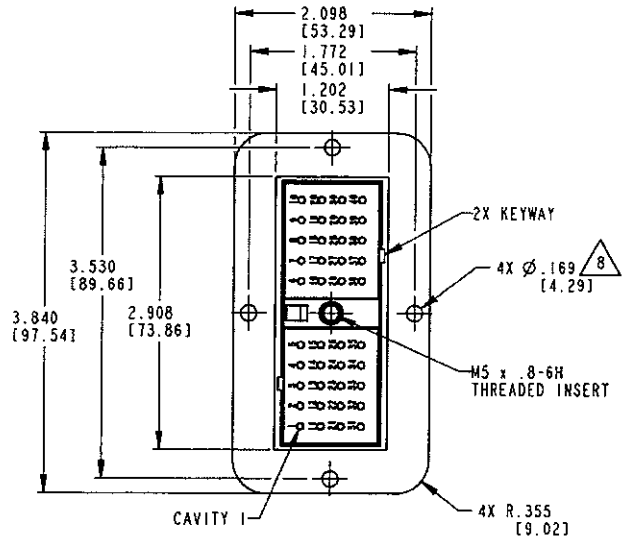
DIODE MATRIX CONSTRUCTION DETAILS

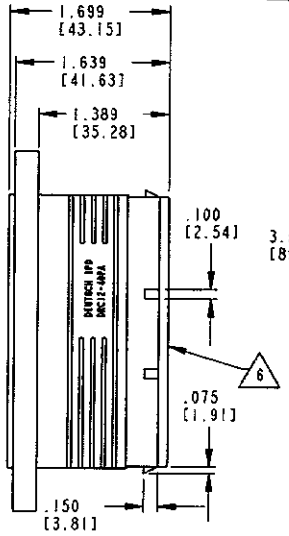
-Property Of-
Terrebonne Parish Cons. Gov't
Forced Drainage Dept.
Houma, LA

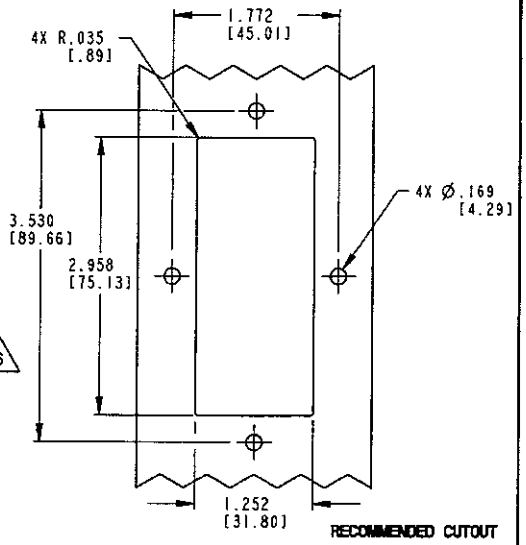
6 SEAL TYPE	CONTACT SIZE	MIN. INSUL. OD [mm]	MAX. INSUL. OD [mm]	WIRE RANGE [mm^2] REF ONLY
NORMAL	16	.100 [2.540]	.134 [3.404]	14-20 AWG [2.0-.50]
E	16	.053 [1.346]	.120 [3.048]	14-20 AWG [2.0-.50]

REV D | DRC12-40PA*

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
A	REVISED PER E.O. P17701	4-4-02	R.D.R.
B	REVISED PER E.O. P18662	8-26-04	R.D.R.
C	REVISED PER E.O. P19093	11-4-05	R.D.R.
D	REVISED PER E.O. P21119	10-28-11	RDR







5. THIS RECEPTACLE MATES WITH DRC16-40S-****; DRC18-40SA-**** PLUGS. (****= ALL MODIFICATIONS) CONSULT FACTORY FOR MODS.
4. FOR CONTACT AND WIRE PERFORMANCE AND APPLICATION CHARACTERISTICS, SEE DRAWING 0425-015-0000.
3. RECEPTACLE IS SUPPLIED WITH DUST CAP (NOT SHOWN).
2. DIMENSION TOLERANCE: ±.025 [.635]; PANEL CUTOUT: ±.010 [.25].
1. DIMENSIONS ARE IN INCHES [mm].

NOTES:

8 RECOMMENDED SCREW: 8-32 [M4]. TORQUE: 20-25 IN-LB [2.26-2.82 Nm].

7 MATERIAL: HOUSING: PLASTIC; GROMMET: RUBBER; INSERT: STEEL.

6. WHEN * = E: BLUE STRIP ON WELD CAP IDENTIFIES "E" WIRE SEAL.

	SIGNATURE & DATE
DR	D. MEYER 08/09/99
CHK	D. Hastburn 9/26/11
PE	D. Hastburn 9/26/11
APPD	D Meyer 10/27/11
SCALE	NONE WT

RECEPTACLE, FLANGED
40 SIZE 16
DRC SERIES
KEY ARRANGEMENT -A-

ENVELOPE

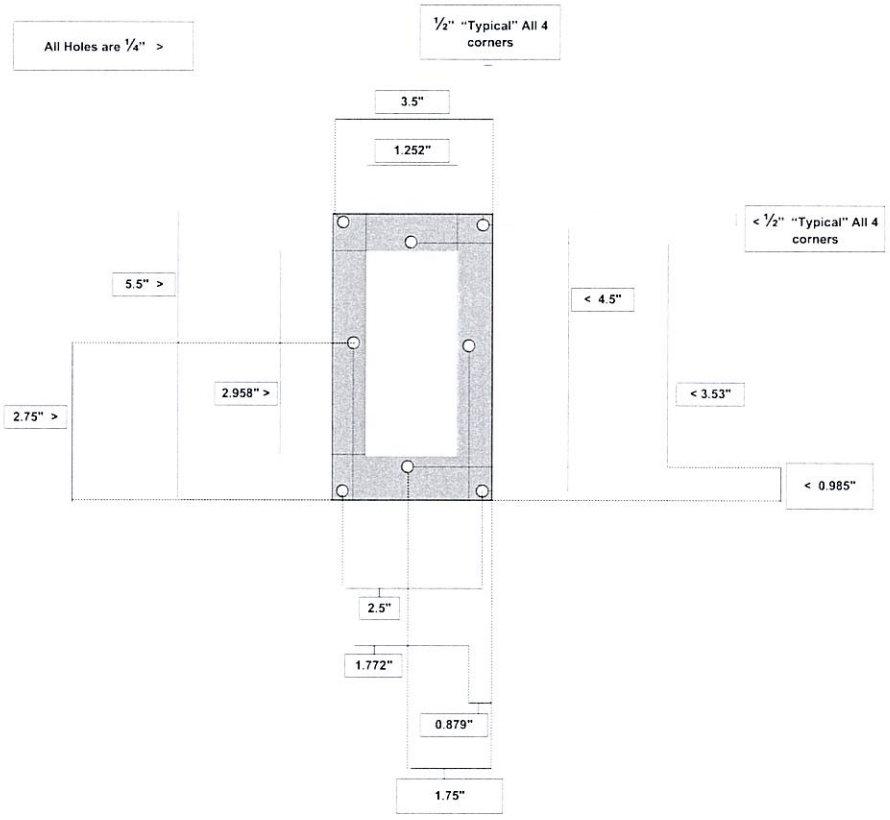
EP | MATL CODE

3850 INDUSTRIAL AVE.
HEMET, CA 92545

DEUTSCH INDUSTRIAL

B | DRC12-40PA*

DWG SIZE | CODE 71130 | SHEET 1 OF 1



Custom cutout 3.5" x 5.5" Alum. Plate

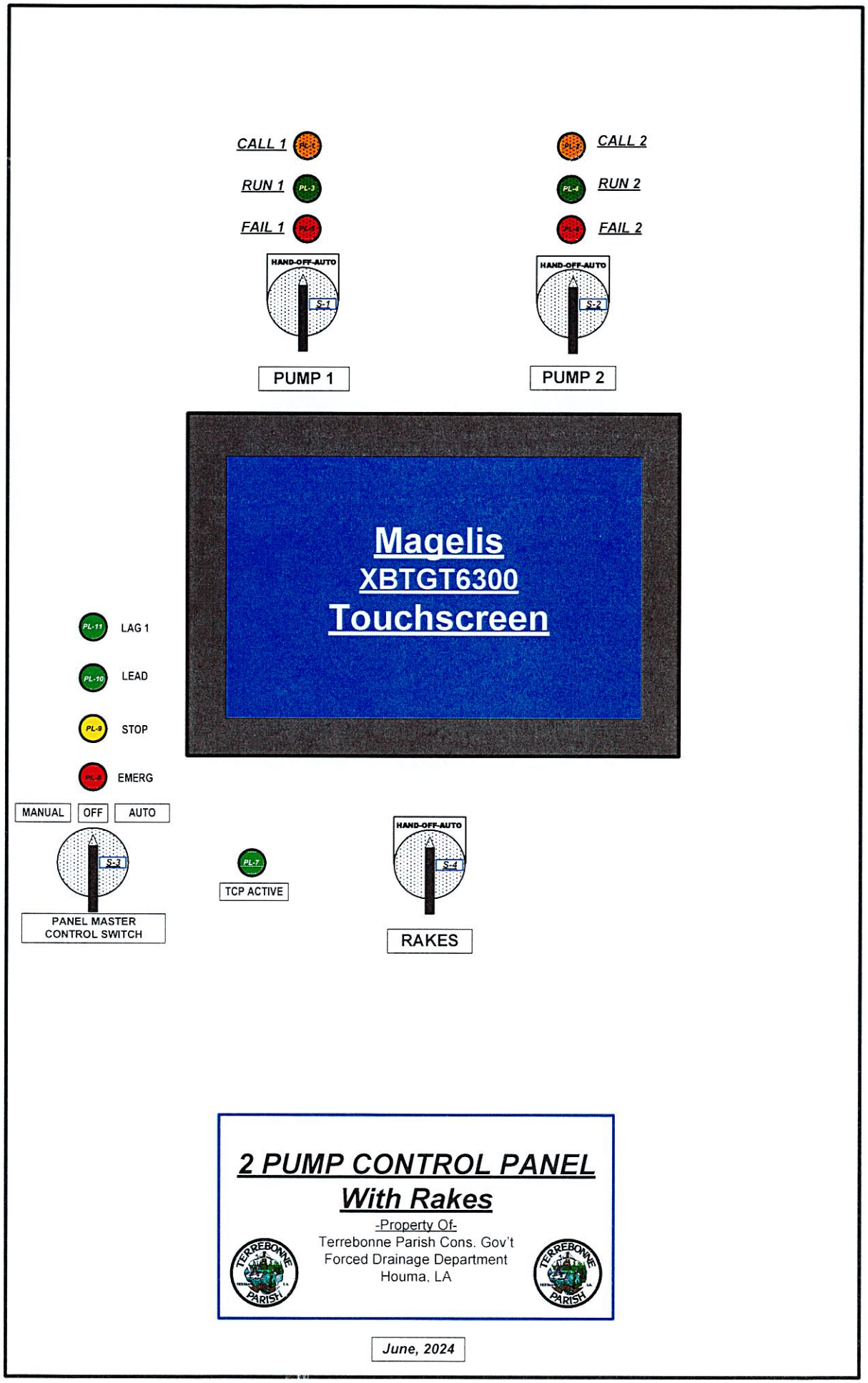
Deutsch DRC12-40PA Receptacle (Mounted on Elevated Aluminum Plate with Keystone 1964, 2 inch Standoffs)

Deutsch Receptacle Mounting Bracket

-Mechanical Layout-

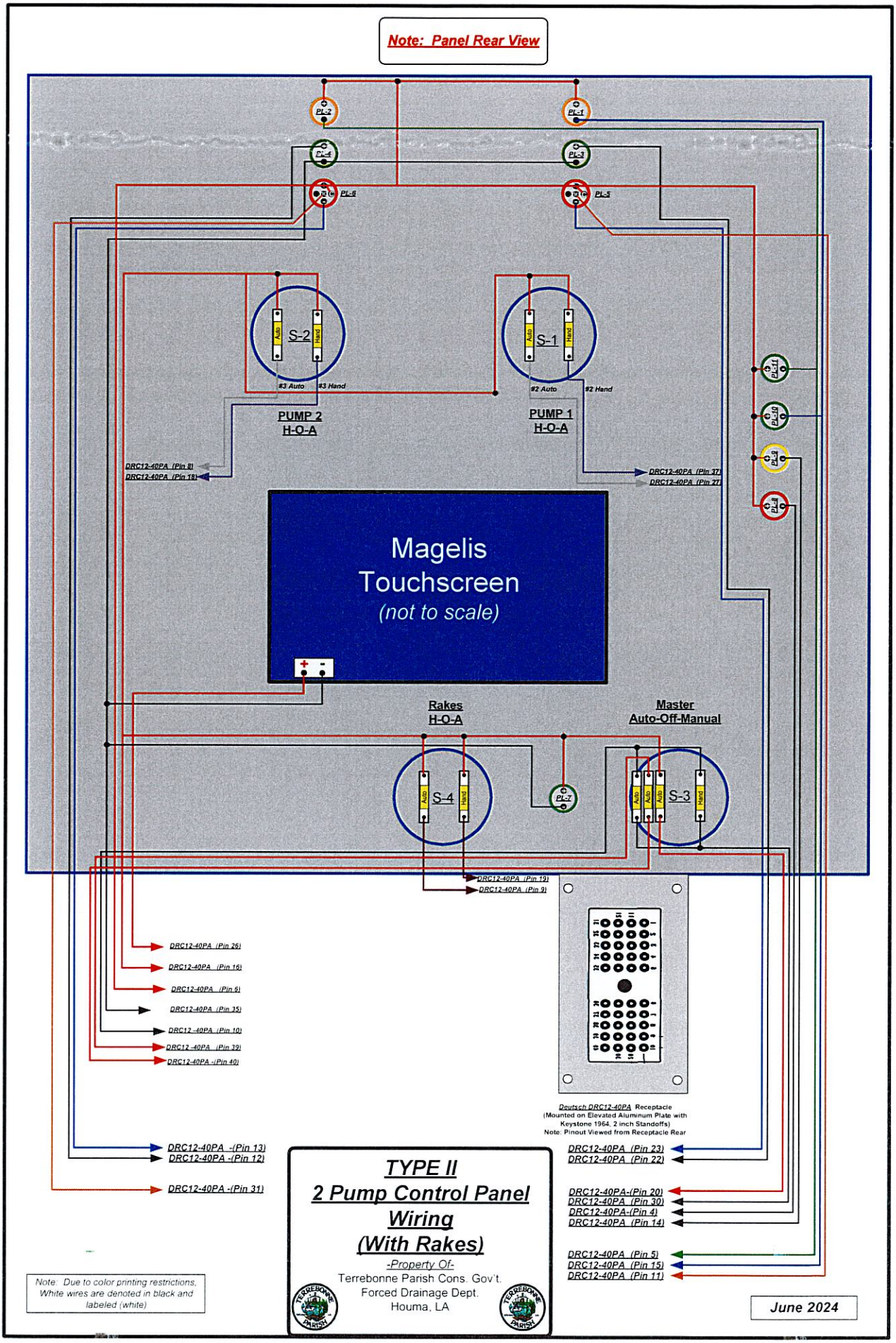
-Property Of-
Terrebonne Parish Cons. Gov't
Forced Drainage Dept.
Houma, LA

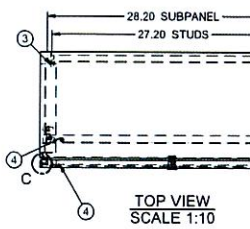
Feb. 2024


CALL 1
PL-1
RUN 1
PL-3
FAIL 1
PL-5
HAND-OFF-AUTO
S-1
PUMP 1
CALL 2
PL-2
RUN 2
PL-4
FAIL 2
PL-6
HAND-OFF-AUTO
S-2
PUMP 2
Magelis
XBTGT6300
Touchscreen
PL-11
LAG 1
PL-10
LEAD
PL-9
STOP
PL-8
EMERG
MANUAL
OFF
AUTO
S-3
PANEL MASTER CONTROL SWITCH
PL-7
TCP ACTIVE
HAND-OFF-AUTO
S-4
RAKES
2 PUMP CONTROL PANEL
With Rakes
-Property Of-
Terrebonne Parish Cons. Gov't
Forced Drainage Department
Houma, LA
June, 2024

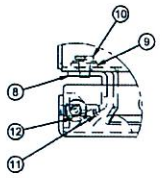
TPCG -- 2 Pump *Front Panel* Parts List (Rakes) - (June, 2024)

QTY	DESIGNATION	DESCRIPTION	ITEM	MANUFACTURER	PART NUMBER	
4	Selector Switch Assembly - 3 Position (30mm)	ON-OFF-ON	S1-S4	Idec	ASD340N	
2	16mm Pilot Lamp Assembly - 24vdc	Amber Color	B/U Call 1-2	Idec	AP6M122APN10	
2	16mm Pilot Lamp Assembly - 24vdc	Green Color	B/U Run 1-2	Idec	AP6M122GPN10	
2	16mm Pilot Lamp Assembly - 24vdc	Green Color	Lead Float P/L, Lag Float1 P/L	Idec	AP6M122GPN10	
1	16mm Pilot Lamp Assembly - 24vdc	Green Color	TCP Active	Idec	AP6M122GPN10	
2	16mm Pilot Lamp Assembly - 24vdc	Red Color	B/U Fail 1-2	Idec	AL6MM14R	
1	16mm Pilot Lamp Assembly - 24vdc	Red Color	B/U Emergency Float P/L	Idec	AP6M122RPN10	
1	16mm Pilot Lamp Assembly - 24vdc	Yellow	B/U Stop Float P/L	Idec	AP6M122YPN10	
1	Multipin Receptacle	40 pin flange mount receptacle	Deutsch	DRC12-40PA		
37	Male Pins for above	16 gauge Male Pins	Deutsch	0460-202-16141		
1	Alum. Mounting Bracket for Deutsch Receptacle	Custom cutout 3.5" x 5.5" Alum. Plate		custom made	(Note: Cutout dimensions sample provided)	
1	Magellis Touchscreen	12.1" Color Touchscreen	"	Schneider	HMIGTO6310 (with SD card)	
1	"	CF Memory Card For Touchscreen	"	Schneider	MPCYN00CF100N	
"	"	Wiring Specifications	"	Consolidated or Equiv.	9310 (#18awg, 600v)	
"	Wire Ferrules	"	"	Any	To Fit Wire	


Note: Panel Rear View
PL-2
PL-1
PL-4
PL-3
PL-6
PL-5
S-2
Auto
Hand
#3 Auto
#3 Hand
PUMP 2
H-O-A
S-1
#2 Auto
#2 Hand
PUMP 1
H-O-A
PL-11
PL-10
PL-9
PL-8
DRC12-40PA (Pin 8)
DRC12-40PA (Pin 18)
DRC12-40PA (Pin 37)
DRC12-40PA (Pin 27)
Magelis
Touchscreen
(not to scale)
Rakes
H-O-A
Master
Auto-Off-Manual
S-4
PL-7
S-3
DRC12-40PA (Pin 19)
DRC12-40PA (Pin 9)
DRC12-40PA (Pin 26)
DRC12-40PA (Pin 16)
DRC12-40PA (Pin 6)
DRC12-40PA (Pin 35)
DRC12-40PA (Pin 10)
DRC12-40PA (Pin 39)
DRC12-40PA -(Pin 40)
Deutsch DRC12-40PA Receptacle
(Mounted on Elevated Aluminum Plate with
Keystone 1964, 2 inch Standoffs)
Note: Pinout Viewed from Receptacle Rear
DRC12-40PA -(Pin 13)
DRC12-40PA -(Pin 12)
DRC12-40PA -(Pin 31)
DRC12-40PA (Pin 23)
DRC12-40PA (Pin 22)
DRC12-40PA-(Pin 20)
DRC12-40PA (Pin 30)
DRC12-40PA-(Pin 4)
DRC12-40PA (Pin 14)
DRC12-40PA (Pin 5)
DRC12-40PA (Pin 15)
DRC12-40PA (Pin 11)
TYPE II
2 Pump Control Panel
Wiring
(With Rakes)
-Property Of-
Terrebonne Parish Cons. Gov't.
Forced Drainage Dept.
Houma, LA
Note: Due to color printing restrictions, White wires are denoted in black and labeled (white)
June 2024

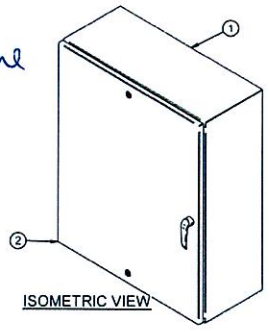


TOP VIEW
SCALE 1:10

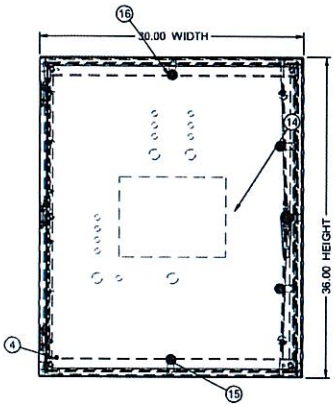


DETAIL C
SCALE 1:1.5

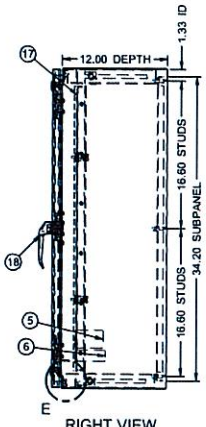
Approval
3/2/23
Dean Dupre



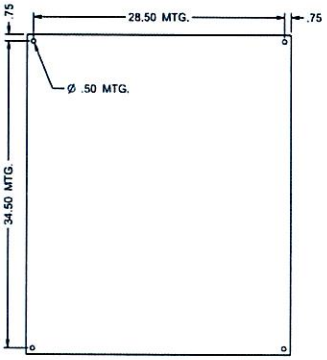
ISOMETRIC VIEW



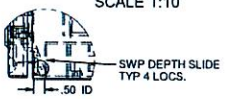
FRONT VIEW
SCALE 1:10



RIGHT VIEW
SCALE 1:10



BACK VIEW
SCALE 1:10



DETAIL E
SCALE 1:4

SUBPANEL(S) SHOWN FOR REFERENCE ONLY

BILL OF MATERIALS

#	PN	DESC	QTY
1	ESSS6-363012-913_H_ASM	TYPE 12, 4X 316SS SINGLE DOOR WALL MOUNT ENCLOSURE	1
2	ESSS6-363012-913_D1_ASM	DOOR, WELDMENT	1
3	200-0057	NUT, FLANGE, SS188, 3/8-16, SERRATED	6
4	200-0064	NUT, KEPS, SS188, 1/4-20	2
5	200-0113	LABEL, UL ICP TYPE 3R,12,13,4,4X	1
6	200-0500	LABEL, MANUFACTURE / ORDER# w/SCHAEFER'S LOGO & US FLAG	1
7*	200-0105	POCKET, SMALL DATA, GREY (7.125"W x 6.625"H x .920"D)w/DOUBLE SIDED TAPE	1
8	200-1646	Hinge Base for HI-MDSS-140130, 304SS	3
9	200-2066	Washer, Flat, Acetal, #10, 0.196 Id, 0.453 Od, 0.075 Thk	6
10	200-1668	SCREW, 10-32 X 1/4" SS FLANGED HEX HEAD W/ LOCTITE PATCH	6
11	200-1647	Hinge Pin for HI-MDSS-140130, 304SS	3
12	200-1642	Hinge Clip for HI-MDMS-140130, Red Plastic	3
13	200-2039	RAKU PUR 32-3250 A IN 200 KG BARRELS (441 LBS)	1
14*	200-0095	WASHER, SEALING, STEEL, ZN FINISH, 3/8, 0.43 ID, 0.75 OD, BONDED SEALING WASHER	4
15	200-0037	LATCH, QT, SS, SS SLOTTED INSERT	2
16	200-0010	CAM, 1 PT OFFSET DN, STOP, STEEL, ZN FINISH, 12 H, 45 L	2
17	ESSS6-363012-913 SWP		1
18	200-3583	Handle, QT, Padlocking, SS316, IP65 (L63)	1

DIMENSIONS APPLY BEFORE SURFACE TREATMENT	
TOLERANCES UNLESS OTHERWISE SPECIFIED	
0.xxx	± 0.010
0.xx	± 0.06
0.x	± 0.1
x	± 0.25
x.x°	1°

	NAME	DATE
DRAWN BY:	djames	2/17/2023

Schaefer's ELECTRICAL ENCLOSURES

THIRD ANGLE PROJECTION

CUSTOMER: KEY ELECTRONIC SOLUTIONS

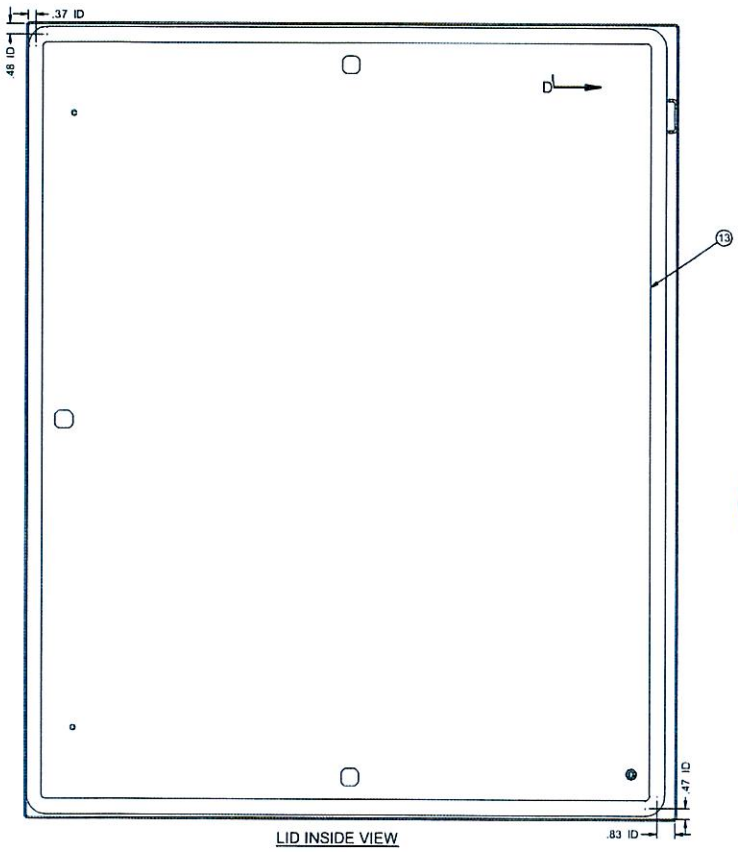
TITLE: N4X/12/13/3R SINGLE DOOR ELITE SERIES ENCLOSURE 36.000"H x 30.000"W x 12.000"D

B | FINISH: POLISHED | WEIGHT: 120.578 lbm

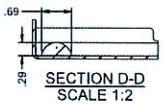
FILE: ESSS6-363012-913Approval | REV: -

CUST. DWG. TYPE II AUTOMATION DOOR PANEL2 PUMP C | REV: -

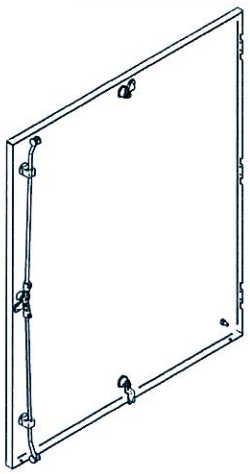
MAT. 14GA. 316SS | SHEET 1 OF 4



LID INSIDE VIEW



SECTION D-D
SCALE 1:2



LATCH ASSEMBLY VIEW

Approval
3/2/23
Dean Dupre

DIMENSIONS APPLY BEFORE SURFACE TREATMENT	
TOLERANCES UNLESS OTHERWISE SPECIFIED	
0.xxx	± 0.010
0.xx	± 0.06
0.x	± 0.1
x	± 0.25
∠.x°	1°

THIRD ANGLE PROJECTION

	NAME	DATE
DRAWN BY:	djames	2/17/2023

Schaefer's ELECTRICAL ENCLOSURES

CUSTOMER: KEY ELECTRONIC SOLUTIONS

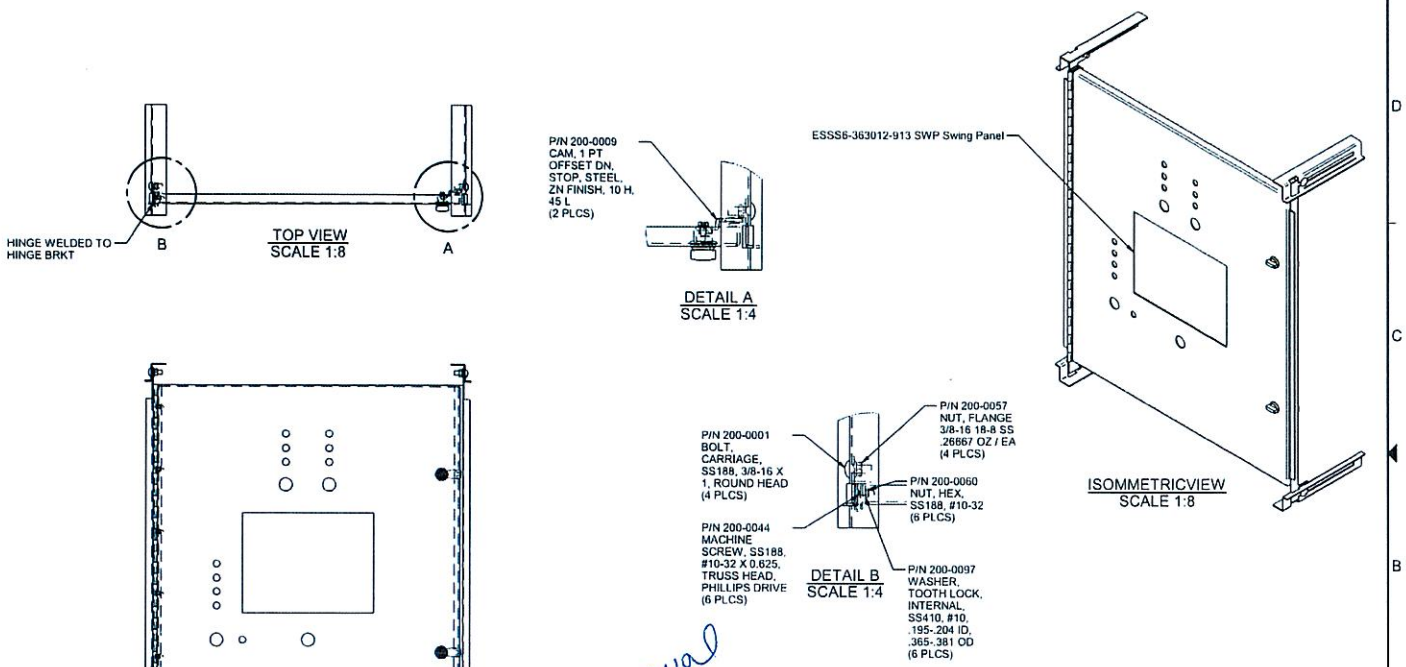
TITLE: N4X/12/13/3R SINGLE DOOR ELITE SERIES ENCLOSURE 36.000"H x 30.000"W x 12.000"D

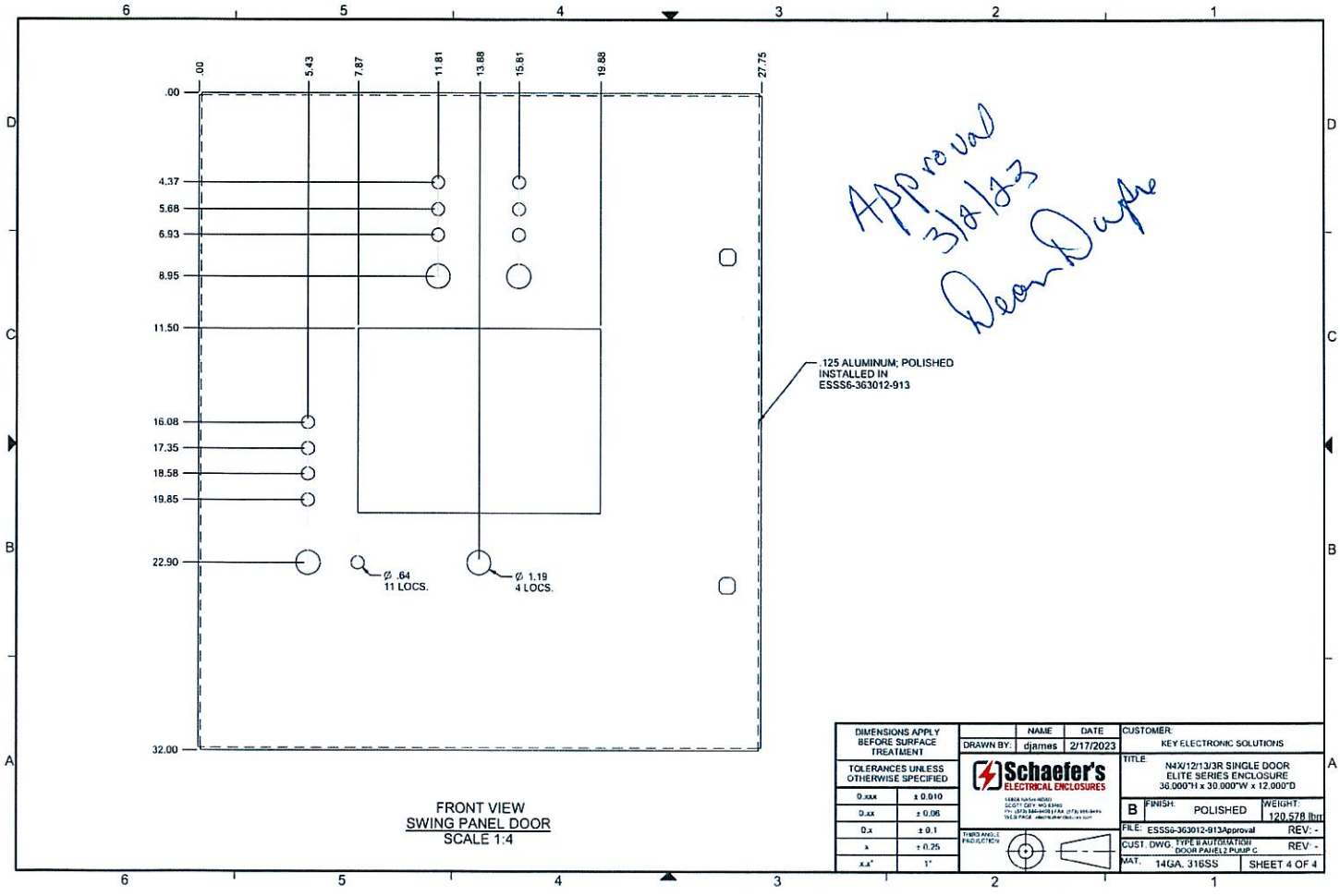
B | FINISH: POLISHED | WEIGHT: 120.578 lbs

FILE: ESSS6-363012-913Approval | REV: -

CUST. DWG. TYPE II AUTOQUATION DOOR PANEL2 PUMP C | REV: -

MAT. 14GA. 316SS | SHEET 2 OF 4


HINGE WELDED TO HINGE BRKT
B
TOP VIEW
SCALE 1:8
A
P/N 200-0009 CAM, 1 PT OFFSET DN, STOP, STEEL, ZN FINISH, 10 H, 45 L (2 PLCS)
DETAIL A
SCALE 1:4
ESSS6-363012-913 SWP Swing Panel
ISOMMETRICVIEW
SCALE 1:8
P/N 200-0001 BOLT, CARRIAGE, SS188, 3/8-16 X 1, ROUND HEAD (4 PLCS)
P/N 200-0044 MACHINE SCREW, SS188, #10-32 X 0.625, TRUSS HEAD, PHILLIPS DRIVE (6 PLCS)
DETAIL B
SCALE 1:4
P/N 200-0057 NUT, FLANGE 3/8-16 18-8 SS .26667 OZ / EA (4 PLCS)
P/N 200-0060 NUT, HEX, SS188, #10-32 (6 PLCS)
P/N 200-0097 WASHER, TOOTH LOCK, INTERNAL, SS410, #10, .195-.204 ID, .365-.381 OD (6 PLCS)
FRONT VIEW
SCALE 1:8
Approval
3/2/23
Dean Dupre
DIMENSIONS APPLY BEFORE SURFACE TREATMENT
TOLERANCES UNLESS OTHERWISE SPECIFIED
0.xxx ± 0.010
0.xx ± 0.05
0.x ± 0.1
x ± 0.25
x.x° 1°
THIRD ANGLE PROJECTION
Schaefer's ELECTRICAL ENCLOSURES
DRAWN BY: djames 2/17/2023
CUSTOMER: KEY ELECTRONIC SOLUTIONS
TITLE: N4X/12/13/3R SINGLE DOOR ELITE SERIES ENCLOSURE 36.000"H x 30.000"W x 12.000"D
B FINISH: POLISHED WEIGHT: 120.578 lbm
FILE: ESSS6-363012-913Approval REV: -
CUST. DWG. TYPE # AUTOMATION DOOR PANEL2 PUMP C REV: -
MAT.: 14GA. 316SS SHEET 3 OF 4



Approval
3/8/23
Dean Dupre

FRONT VIEW
SWING PANEL DOOR
SCALE 1:4

DIMENSIONS APPLY BEFORE SURFACE TREATMENT	
TOLERANCES UNLESS OTHERWISE SPECIFIED	
0.xxx	± 0.010
0.xx	± 0.06
0.x	± 0.1
x	± 0.25
x.x°	1°

	NAME	DATE
DRAWN BY:	djames	2/17/2023

Schaefer's ELECTRICAL ENCLOSURES

THIRD ANGLE PROJECTION

CUSTOMER: KEY ELECTRONIC SOLUTIONS

TITLE: N4X/12/13/3R SINGLE DOOR ELITE SERIES ENCLOSURE 36.000"H x 30.000"W x 12.000"D

B | FINISH: POLISHED | WEIGHT: 120.578 lbm

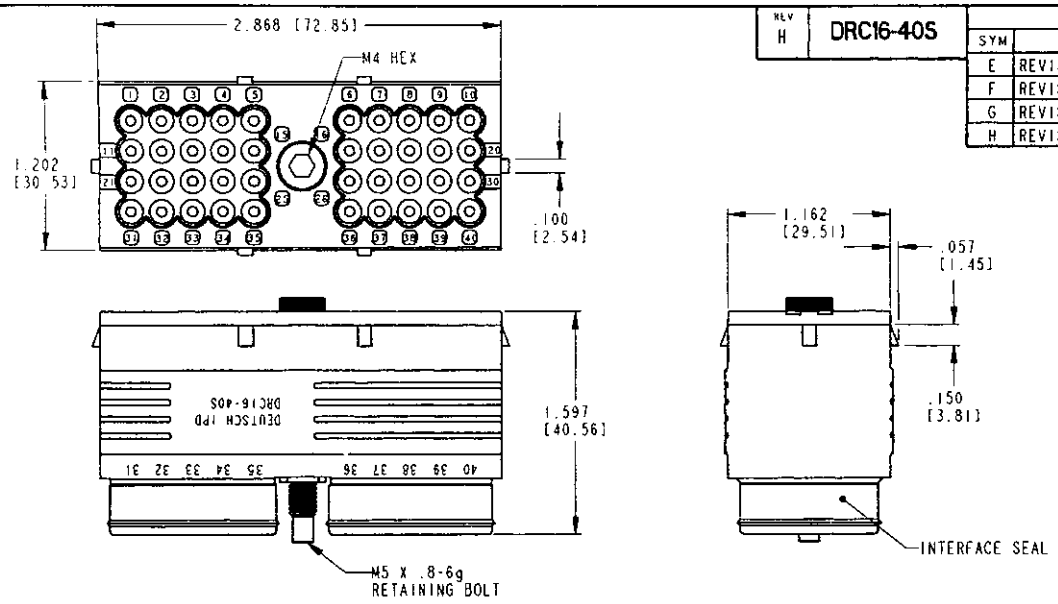
FILE: ESSS6-363012-913Approval | REV: -

CUST. DWG. TYPE II AUTOMATION DOOR PANEL2 PUMP C | REV: -

MAT: 14GA. 316SS | SHEET 4 OF 4

REV	DRC16-40S
H	

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
E	REVISED PER E.O. A13805	05-12-92	J. ALBERS
F	REVISED PER E.O. P16760	7-24-00	R.D.R.
G	REVISED PER E.O. P17727	4-15-02	R.D.R.
H	REVISED PER E.O. P19166	2.21-06	RDR



7. MATERIAL- PLUG: PLASTIC (BLACK); SEAL/GROMMET: RUBBER; BOLT/CLIP: STEEL.

6. MATING TORQUE REQUIREMENT: 25-28 in-lb (2.82-3.16 Nm).

5. THIS PLUG MATES WITH DRC10-40P-####; DRC12 40P#E-####; DRC13-40P#-####; DRC14-40P#E-####. CONSULT FACTORY FOR MODIFICATIONS.
   # = A, B, C, D KEYS
   #### = MODIFICATIONS

4. FOR CONTACTS AND WIRE PERFORMANCE AND APPLICATION CHARACTERISTICS, SEE ENVELOPE DRAWING 0425-015-0000.

3. PLUG SUPPLIED WITH DUST CAP. (NOT SHOWN).

2. DIMENSION TOLERANCE: ±.025 [.635].

1. DIMENSIONS ARE IN INCHES [mm].

NOTES:

CONTACT SIZE	MIN. INSUL. OD [mm]	MAX. INSUL OD [mm]	WIRE RANGE 4 [mm²] REF ONLY
16	.100 [2.54]	.134 [3.40]	[4-18 AWG [2.0-.75]

	SIGNATURE & DATE
DR	J. APOSTOL 11 JUL 2000
CHK	2/14/06
PE	2/14/06
APPD	2-21-06
SCALE NONE	WT

DRC CONNECTOR
PLUG 40 CONTACTS

ENVELOPE

CP | MATL. CODE

The Deutsch Company
DEUTSCH I.P.D.
3850 INDUSTRIAL AVE.
HEMET, CALIF. 92545

B | DRC16-40S

DWG SIZE | CODE 11138 | SHEET 1 OF 1

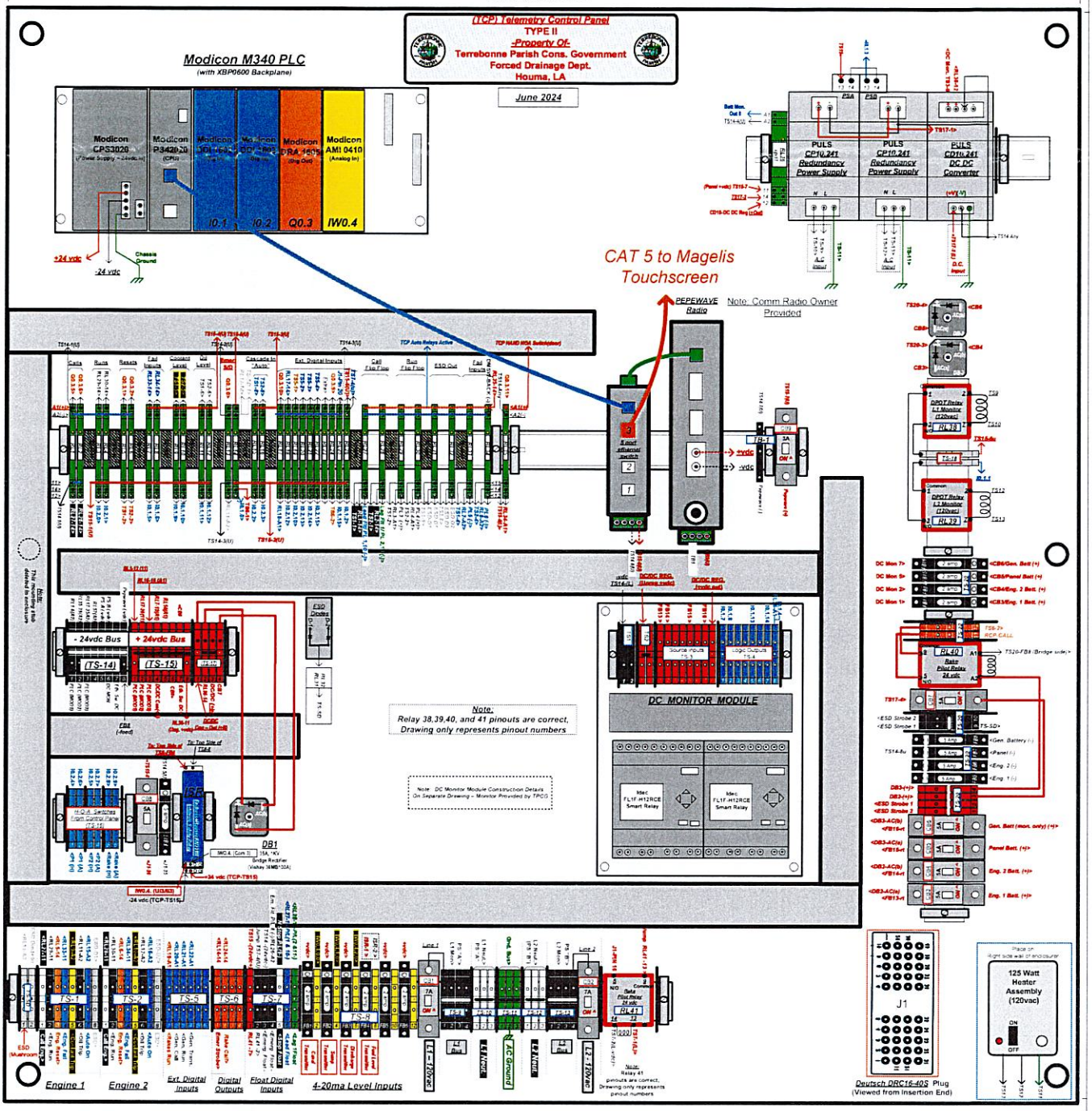
Type-II-2 Pump TCP Label Placement Template June 2024

	A	B	C	D	E	F
1	QUANTITY	COLOR	LABEL SIZE	BRADY P/N	LABEL DESCRIPTION	MOUNTING LOCATION
2	1	Black	1x2	PTLEP-173-593-BK	PUMP 1	Bottom Horizontal Wire Raceway
3					(TS1 1-8)	
4						
5	1	Black	1x2	PTLEP-173-593-BK	PUMP 2	Bottom Horizontal Wire Raceway
6					(TS2 1-8)	
7						
8	1	Black	1x3	PTLEP-176-593-BK	EXT. DIGITAL INPUTS	Bottom Horizontal Wire Raceway
9					(TS5 1-6)	
10						
11	1	Black	1x3	PTLEP-176-593-BK	EXT. DIGITAL OUTPUTS	Bottom Horizontal Wire Raceway
12					(TS6 1-4)	
13						
14	1	Black	1x3	PTLEP-176-593-BK	Float Digital Inputs	Bottom Horizontal Wire Raceway
15					TS7 1-7	
16						
17	1	Black	1x3	PTLEP-176-593-BK	4-20 MA INPUTS	Bottom Horizontal Wire Raceway
18					(TS-8)	
19					CANAL SUMP DISC. FUEL N/A N/A	
20						
21	1	WHITE	1x3	PTLEP-176-593	A.C. INPUT	Bottom Horizontal Wire Raceway
22					(L1 N) G (N L2)	
23					(TS9) (TS10) (TS11) (TS12) (TS13)	
24						
25	1	BLACK	1x3	PTLEP-176-593-BK	H.O.A. INPUTS	Bottom Middle Partial Wire Raceway
26					PUMP & RAKE	
27					1 2 RA	
28						
29	1	BLACK	1x3	PTLEP-176-593-BK	24vdc- REGULATED	Middle Horizontal Wire Raceway
30					(TS-14)	
31						
32	1	RED	1x3	PTLEP-176-593-RD	24vdc+ REGULATED	Middle Horizontal Wire Raceway
33					(TS-15)	
34						
35	1	BLACK	1x2	PTLEP-173-593-BK	A.C. LINE MONITOR	Right Verticle Wire Raceway
36					(RL38 - RL39)	
37						
38	1	BLACK	1x2	PTLEP-173-593-BK	PUMP CALL	Top Horizontal Wire Raceway
39					(RL01 - RL02)	
40						
41						
42						

Type-II-2 Pump TCP Label Placement Template June 2024

	A	B	C	D	E	F
1	QUANTITY	COLOR	LABEL SIZE	BRADY P/N	LABEL DESCRIPTION	MOUNTING LOCATION
43						
44	1	BLACK	1x2	PTLEP-173-593-BK	PUMP RUN	Top Horizontal Wire Raceway
45					(RL03 - RL4)	
46						
47	1	BLACK	1x2	PTLEP-173-593-BK	PUMP RESETS	Top Horizontal Wire Raceway
48					(RL5 - RL6)	
49						
50	1	BLACK	1x2	PTLEP-173-593-BK	FAIL OUTPUTS	Top Horizontal Wire Raceway
51					(RL7-RL12)	
52						
53	1	BLACK	1x2	PTLEP-173-593-BK	ESD - PUMP AUTO	Top Horizontal Wire Raceway
54					(RL13-RL14) (RL15-RL16)	
55						
56						
57	1	BLACK	1x3	PTLEP-176-593-BK	EXT. DIGITAL IN/OUT	Top Horizontal Wire Raceway
58					(RL17-RL26)	
59						
60	1	BLACK	.5 x 1	PTLEP-171-593-BK	DIG INPUT 1	M340 PLC - DDI1602 (1)
61					(I0.1)	
62						
63	1	BLACK	.5x1	PTLEP-171-593-BK	DIG INPUT 2	M340 PLC - DDI1602 (2)
64					(I0.2)	
65						
66						
67	1	BLACK	.5x1	PTLEP-171-593-BK	DIG OUTPUT 3	M340 PLC - DRA1605 (3)
68					(Q0.3)	
69						
70						
71	1	BLACK	.5x1	PTLEP-171-593-BK	Analog INPUT 4	M340 PLC - AMI0410 (4)
72					(IWO.4)	
73						
74	1	BLACK	.5x1	PTLEP-171-593-BK	DB-1	Chassis Mount Under Bridge Rect. DB-1

20"
(Note: Drawing not to scale)



Digital Input 1 (I0.1)

- I0.1.0 > Emerg. ALL STOP
- I0.1.1 > Station Power Input
- I0.1.2 > BU Float Fail Input
- I0.1.3 > DC P.S. Fail
- I0.1.4 > CD10 Reg Fail
- I0.1.5 > Pump 1 Fail
- I0.1.6 > Pump 2 Fail
- I0.1.7 > Eng 1 Battery
- I0.1.8 > Eng. 2 Battery
- I0.1.9 > Eng. 1 Coolant Level
- I0.1.10> Eng. 2 Coolant Level
- I0.1.11> Eng. 1 Oil Level
- I0.1.12> Eng. 2 Oil Level
- I0.1.13> Panel Battery
- I0.1.14> Controller Battery
- I0.1.15> TCP Auto Relays Active

Digital Input 2 (I0.2)

- I0.2.0 > Pump 1 Run
- I0.2.1 > Pump 2 Run
- I0.2.2 > Cascade 1 Auto
- I0.2.3 > Cascade 2 Auto
- I0.2.4 > Pump 1 HOA-Hand
- I0.2.5 > Pump 2 HOA-Hand
- I0.2.6 > Pump 1 HOA-Auto
- I0.2.7 > Pump 2 HOA- Auto
- I0.2.8 > Rakin HOA - Hand
- I0.2.9 > Rakes HOA - Auto
- I0.2.10> Rakes Run
- I0.2.11> Spare
- I0.2.12> System Status OK
- I0.2.13> Generator Call
- I0.2.14> Generator Run
- I0.2.15> Generator Transfer

Digital Output (Q0.3)

- Q0.3.0 > Emerg. Stop
- Q0.3.1 > Pump 1 Reset
- Q0.3.2 > Pump 2 Reset
- Q0.3.3 > Spare
- Q0.3.4 > Spare
- Q0.3.5 > Pump 1 Call
- Q0.3.6 > Pump 2 Call
- Q0.3.7 > Spare
- Q0.3.8 > Spare
- Q0.3.9 > Rakes Call
- Q0.3.10> Insert Seal
- Q0.3.11> TCP Auto Relays Call
- Q0.3.12>
- Q0.3.13>
- Q0.3.14>
- Q0.3.15>

Analog Input (IW0.4)

- IW0.4.0.0> Canal Level 4-20ma
- IW0.4.1.0> Sump Level 4-20ma
- IW0.4.2.0> Disc. Level 4-20ma
- IW0.4.3.0> Fuel Level 4-20ma

PLC I/O Point List

TPCG – Type II - 2 PUMP TELEMETRY CONTROL PANEL (TCP) POINT-T0-POINT WIRING CHART (Aug, 2024)

	A	B	C	D	E	F	G	H	I	J	K	L
1	**FUNCTION**	**ITEM "A"**	**POINT "A"**	***LABEL "A"***	**X**	**ITEM "B"**	**POINT "B"**	***LABEL "B"***	**X**	**COLOR**	**SIZE**	**NOTES**
2												
3												
4	**#16 AWG Connections**											
5												
6	Chassis Ground	TS-11	any	Chassis Ground		Chassis	any	TS-11		Green	**#16**	
7	L1 - 120 vac Input	CB1	**	*LINE L1*		TS9	1,2,3,4			Black	**#16**	**TS9 is jumped**
8	L2 - 120vac Input	CB2	**	*LINE L2*		TS13	Any			Black	**#16**	**TS13 is jumped**
9	DC-DC CONVERTER	TS14	12 (Lower)	*DC-DC Converter*		DC-DC Conv	DC-DC Conv	*TS14-(Lower)*		Black	**#16**	**(-vdc input) *jumped to* (-vdc output)**
10	Diode Matrix Input "A"	TS17	1	*REDUND (+)*		Redund. Module	(+V)	*TS17-1*		Red	**#16**	**See TCP Layout Drawing**
11	DC-DC Converter	TS17	3	*DCDC Con(+out)*		DCDC Converter	(+ vdc Output)	*TS17-3(L)*		Red	**#16**	
12	Diode Matrix Input "A"	TS17	4	*CB7*		Unreg. DC Input	CB7	*TS17-4*		Red	**#16**	**See TCP Layout Drawing**
13	Diode "A" (Part of Bridge Rectifier D1)	Diode "A"	AC	*TS17-1*		TS17	1	*D1-AC(a)*		Red	**#16**	
14	Diode "B" (Part of Bridge Rectifier D1)	Diode "B"	AC	*TS17-4*		Ext. DC Out		*D1-AC(b)*		Red	**#16**	
15	Matrixed DC Output	D1 - Output	(+)	*TS17-2,3*		TS17	2,3	*D1 (+)*		Red	**#16**	
16	On Board 120vac / -24vdc Output	Redund. Module	(-V)	*TS14-11*		TS14	Any	*REDUND (-)*		Black	**#16**	
17	Power Regulator Bypass Relay	RL36	12	*Converter (+OUT)*		DCDC Converter	(+) Output	*RL36-12*		Red	**#16**	
18	Power Regulator Bypass Relay	RL36	14	*TS17-2*		TS17	2	*DCDC Con +IN*		Red	**#16**	
19	Power Regulator Bypass Relay	RL36	11	*DC OUT*		TS15	Any	*TS15-7*		Red	**#16**	
20												
21												
22	**#18 AWG Connections**											
23												
24	M340 PLC +vdc Input	M340 PS	(+)	*TS15-1(L)*		TS15	Any	*M340 PS*		Red	#18	***Direct to TS - No Buss Allowed***
25	M340 PLC -vdc Input	M340 PS	(-)	*TS14-1(L)*		TS14	Any	*M340 PS*		Black	#18	***Direct to TS - No Buss Allowed***
26	M340 PLC (system ground)	M340 PS	(gnd)			Chassis Ground	**			Green	#18	
27												
28	Ethernet Switch	(+)vdc	**	*TS15-7(L)*		TS15	Any	*ETH. SWITCH*		Red	#18	***Direct to TS - No Buss Allowed***
29	Ethernet Switch	(-)vdc	**	*TS14-7(L)*		TS14	Any	*ETH. SWITCH*		Black	#18	***Direct to TS - No Buss Allowed***
30												
31	Pepwave Radio	(+)vdc	**	*TS15-8(L)*		TS15	Any	*CB9(L)*		Red	#18	***Direct to TS - No Buss Allowed***
32	Pepwave Radio	(+)vdc	**	*CB9(U)*		TS15	Any	*Pepwave Radio*		Red	#18	
33	Pepwave Radio	(-)vdc	**	*TS14-8(L)*		TS14	Any	*Pepwave Radio*		Black	#18	***Direct to TS - No Buss Allowed***
34												
35	L1 Monitor Relay (hot) Coil +	TS9	*	*L1 MONITOR*		RL38	13	*TS9*		Black	#18	**TS9 is Jumped**
36	PS-A (L1)	TS9	*	*PS-A*		PS-A	L	*TS9*		Black	#18	
37												
38	L1 Monitor Relay (neutral) Coil -	TS10	*	*L1 MON. NEUT.*		RL38	14	*TS10*		White	#18	**TS10 is Jumped**
39	PS-A (neutral)	TS10	*	*PS-A*		PS-A	N	*TS10*		White	#18	
40												
41	PS-A (ground)	TS11	*			PS-A	Ground			Green	#18	**TS11 is Jumped**
42	PS-B (ground)	TS11	*			PS-B	Ground			Green	#18	
43	Heating Unit (ground)	TS11	*			Heater	Ground			Green	#18	
44												
45												
46	L2 Monitor Relay (neutral) Coil -	TS12	*	*L2 MON. NEUT.*		RL39	14	*TS12*		White	#18	**TS12 is Jumped**
47	PS-B (neutral)	TS12	*			PS-B	N			White	#18	

TPCG – Type II - 2 PUMP TELEMETRY CONTROL PANEL (TCP) POINT-T0-POINT WIRING CHART (Aug, 2024)

	A	B	C	D	E	F	G	H	I	J	K	L
1	FUNCTION	ITEM "A"	POINT "A"	LABEL "A"	X	ITEM "B"	POINT "B"	LABEL "B"	X	COLOR	SIZE	NOTES
48	Heating Unit (neutral)	TS12	*			Heater	N			White	#18	
49												
50	L2 Monitor Relay (hot) Coil +	TS13	*	L2 MONITOR		RL39	13	TS13		Black	#18	
51	PS-B (L2)	TS13	*	PS-B		PS-B	L	TS13		Black	#18	TS13 is Jumped
52	Heating Unit (hot)	TS13	*			Heater	Hot			Black	#18	
53												
54	PS-A (+24vdc Output)	PS-A	(+V)			DCDC Converter	Vin 1 +			Red	#18	(Buss Wiring Allowed)
55	PS-A (-24vdc Output)	PS-A	(-V)	TS14-8(L)		TS14	Any	PS-A (-)		Black	#18	(Buss Wiring Allowed)
56	PS-B (+24vdc Output)	PS-B	(+V)			DCDC Converter	Vin 2+			Red	#18	(Buss Wiring Allowed)
57	PS-B (-24vdc Output)	PS-B	(-V)	TS14-8(L)		TS14	Any	PS-B (-)		Black	#18	(Buss Wiring Allowed)
58	DCDC Converter Alarm	DCDC Converter	14			DCDC Converter	14			Blue	#18	
59	DCDC Converter Alarm	DCDC Converter	13	I0.1.3		M340 - Module 1	I0.1.3	DC PS FAIL		Blue	#18	
60	DCDC Converter Alarm	DCDC Converter	13	TS15-8(L)		TS15	Any	DCDC Con (+)B		Red	#18	
61	DCDC Converter Output	DCDC Converter	(-V)output	TS14-any		TS14	any	DCDC (-V)output		Black	#18	
62												
63	DC Monitor Module (-vdc) Input	DC Monitor	TS1	(-VDC)		TS14	Any	MON. -VDC		Black	#18	(Buss Wiring Allowed)
64	DC Monitor Module (+vdc) Input	DC Monitor	TS2	UNREG +VDC		DCDC Converter	(+ vdc Input)	MON.+VDC		Red	#18	(Buss Wiring Allowed)
65												
66												
67												
68	L1,L2 Monitor Relay (to plc)	RL38	1			RL39	3			Gray	#18	
69	L1,L2 Monitor Relay (to plc)	RL38	3			TS18	1			Gray	#18	
70	L1,L2 Monitor Relay (to plc)	RL39	2			TS18	2			Gray	#18	
71												
72	L1,L2 Monitor Relay (to plc)	TS18	1	(+24vdc)		TS15	Any	AC Alarm		Red	#18	(Buss Wiring Allowed)
73	L1,L2 Monitor Relay (to plc)	TS18	2	I0.1.1		M340 - Module 1	I0.1.1	TS18-2		Blue	#18	
74												
75	ESD Out Relay	RL31	12&14	ESD Diode1		ESD Diode1	RL31-12&14	RL31-12&14		Grey	#18	Wire jumped from 12 to 14
76	ESD Out Relay	RL32	12&14	ESD Diode2		ESD Diode2	RL32-12&14	RL32-12&14		Grey	#18	Wire jumped from 12 to 14
77												
78	Eng. 1 - Call Lead Float	TS7	6	FLOAT CALL		RL27	12	TS7-6		Blue	#18	
79	Eng. 1 - Call	RL27	14	CALL		RL1	14	RL27-14		White	#18	
80	Eng. 1 - Call	TS1	1	CALL		RL27	11	TS1-1		White	#18	
81	Eng. 1 - Lead Float Call	TS7	6	Lead Float Call		J1	Pin 15	TS7-6 (3)		Blue	#18	Connects to Pilot Lights #1/#10(-) via Deutsch Plug
82	Eng. 1 - Run Lead Float	RL29	12	J1-Pin 22		J1	Pin 22	RL29-12 (2)		Black	#18	Connects to Pilot light #3(+) Via Deutsch Plug
83	Eng. 1 - Run	RL29	14	RUN		RL3	A1	RL29-14		Black	#18	
84	Eng. 1 - Run	TS1	2	RUN		RL29	11	TS1-2		Black	#18	
85	Eng. 1 - Reset	TS1	3	RESET		RL5	14	TS1-3		Orange	#18	
86	Eng. 1 - Reset	TS1	3	RESET		J1	pin 11	TS1-3		Orange	#18	Connects to Pilot Light #5-(N0) - Pin 11
87	Eng.. I - Fail on Floats	RL33	12	J1 - Pin 33 *		J1	Pin 33	RL33-12 (2)		Blue	#18	Connects to Pilot light #5(+) via Deutsch Plug
88	Eng. 1 - Fail	RL33	14	FAIL		RL7	A2	RL33-14		Blue	#18	
89	Eng. 1 - Fail	TS1	4	FAIL		RL33	11	TS1-4		Blue	#18	
90	Eng. 1 - Coolant	TS1	5	COOLANT		RL9	A2	TS1-5		Yellow	#18	
91	Eng. 1 - Oil	TS1	6	OIL		RL10	A2	TS1-6		Black	#18	
92	Eng. 1 - Automatic	TS1	7	AUTO		RL15	A2	TS1-7		Blue	#18	
93	Eng. 1 - ESD	TS1	8	ESD		RL31	11	TS1-8		Grey	#18	
94												

TPCG – Type II - 2 PUMP TELEMETRY CONTROL PANEL (TCP) POINT-T0-POINT WIRING CHART (Aug, 2024)

	A	B	C	D	E	F	G	H	I	J	K	L
1	**FUNCTION**	**ITEM "A"**	**POINT "A"**	***LABEL "A"***	**X**	**ITEM "B"**	**POINT "B"**	***LABEL "B"***	**X**	**COLOR**	**SIZE**	**NOTES**
95	Eng. 2 - Call Lag1 Float	TS7	7	*FLOAT CALL*		RL28	12	*TS7-7*		Green	#18	Connects to Pilot Lights #2/#11(-) via Deutsch Plug
96	Eng. 2 - Call	RL28	14	*CALL*		RL2	14	*RL28-14*		White	#18	
97	Eng. 2 - Call	TS2	1	*CALL*		RL28	11	*TS2-1*		White	#18	
98	Eng. 2 - Lag 1 Float Call	TS7	7	*Lag 1 Float Call (2)*		J1	Pin 5	*TS7-7 (3)*		Green	#18	TS7-7 May be pin Doubled
99	Eng. 2 - Run Lag1 Float	RL30	12	*J1 - Pin 12*		J1	pin 12	*RL30-12 (2)*		Black	#18	Connects to Pilot Light #4(+) via Deutsch Plug
100	Eng. 2 - Run	RL30	14	*RUN*		RL4	A1	*RL30-14*		Black	#18	
101	Eng. 2 - Run	TS2	2	*RUN*		RL30	11	*TS2-2*		Black	#18	
102	Eng. 2 - Reset	TS2	3	*RESET*		RL6	14	*TS2-3*		Orange	#18	
103	Eng. 2 - Reset	TS2	3	*RESET*		J1	pin 31	*TS2-3*		Orange	#18	Connects to Pilot Light #6-(ND) - Pin 31
104	Eng. 2 - Fail on Floats	RL34	12	*J1-Pin 13* *		J1	Pin 13	*RL34-12 (2)*		Blue	#18	Connects to Pilot Light #6(-) via Deutsch Plug
105	Eng. 2 - Fail	RL34	14	*FAIL*		RL8	A2	*RL34-14*		Blue	#18	
106	Eng. 2 - Fail	TS2	4	*FAIL*		RL34	11	*TS2-4*		Blue	#18	
107	Eng. 2 - Coolant	TS2	5	*COOLANT*		RL10	A2	*TS2-5*		Yellow	#18	
108	Eng. 2 - Oil	TS2	6	*OIL*		RL12	A2	*TS2-6*		Black	#18	
109	Eng. 2 - Automatic	TS2	7	*AUTO*		RL16	A2	*TS2-7*		Blue	#18	
110	Eng. 2 - ESD	TS2	8	*ESD*		RL32	11	*TS2-8*		Grey	#18	
111												
112	System Status Loop	RL17	14	*SYSTEM STATUS*		RL18	A1	*RL17-14*		Violet	#18	
113	System Status Good	RL18	14	*SYSTEM STATUS*		M340 - Module2	I0.2.12	*RL18-14*		Violet	#18	
114	Rake Run Input	TS5	1	*RAKE RUN*		RL19	A1	*TS5-1*		Orange	#18	
115	Generator Call	TS5	2	*GEN. CALL*		RL20	A1	*TS5-2*		Blue	#18	
116	Generator Run	TS5	3	*GEN. RUN*		RL21	A1	*TS5-3*		Blue	#18	
117	Generator Transfer	TS5	4	*GEN. TRANS*		RL22	A1	*TS5-4*		Blue	#18	
118												
119	PLC Heartbeat Initiate	RL17	A1	*HEARTBEAT OUT*		M340- Module 3	Q0.3.10	*RL17-A1*		Orange	#18	
120	Emergency Strobe	TS6	1	*EMER. STROBE*		RL14	14	*TS6-1*		Red	#18	
121	Rake Call Output	TS6	2	*RAKE CALL*		RL24	14	*TS6-2*		Orange	#18	
122												
123												
124	TCP Activate By Float Relay	RL41	3	*J1-Pin-16 male*		J1	Pin -16	*RL41-5* *		Red	#18	
125	TCP Activate By PLC	RL 25	A1	*J1 - Pin 20*		J1	Pin - 20	*RL25-A1*		Blue	#18	
126	TCP Acitvate By PLC	RL25	14	*I0.1.15*		M340 - Module 1	I0.1.15	*RL25 -14*		Blue	#18	
127	TCP Activate Float Relay 24 VDC(+)	J1	Pin 40	TS7-1 (U)		TS7	1(U)	J1-Pin 40		Red	#18	Connects to Door Switch# 3 via Deutsch Plug
128	TCP Activate Float Relay 24 VDC(+)	J1	Pin 39	TS15-any		TS15	Any	J1-Pin 39		Red	#18	Connects to Door Switch# 3 via Deutsch Plug
129	TCP Active	RL35	A1	Q0.3.11		Module 3	Q0.3.11	RL35-A1		Orange	#18	
130	TCP Active	RL35	A2	TS-14-any		TS-14	Any	RL35-A2		Black	#18	
131	TCP Active	RL35	14	RL34-A1		RL34	A1	RL35-14		Red	#18	
132	TCP Active	RL35	11	TS15-4(L)		TS15	4(L)	RL35-11		Red	#18	
133												
134	Emergency Float Relay 25VDC(+)	TS15	6(U)	RL26-A1		RL40	6(U)	TS15-6(U)		Red #18	#18	
135	Emergency Float 24 VDC(-)	TS14	Any	TS7-3 (U)		TS7	3(U)	TS14-Any		Black	#18	
136	Emergency Float (-) Fail	TS7	4(U)	RL26-A2		RL26	A2	TS7-4(U)		Black	#18	
137	Emergency Float (-) Fail	RL26	14	I0.1.2		M340 - Module 1	I0.1.2	RL26-14		Blue	#18	
138	Emerg. Float P/L (8) 24 VDC(-)	TS7	4(U)	J1-Pin 4		J1	4(-)	TS7-4(U)		Black	#18	Connects to Pilot Light #8 (-) via Deutsch Plug
139	Stop Float Pilot Light (PL9)	TS7	5(U)	J1-Pin14		J1	14(-)	TS7-5-(U)		White	#18	Connects to Pilot Light #9 (-) via Deutsch Plug
140												
141	Canal Level Measurement	TS8	FB1	*TS15-2*		TS15	1	*(+vdc)*		Red	#18	**Jumper to FB2,FB3, FB5,FB6**

TPCG – Type II - 2 PUMP TELEMETRY CONTROL PANEL (TCP) POINT-T0-POINT WIRING CHART (Aug, 2024)

	A	B	C	D	E	F	G	H	I	J	K	L
1	FUNCTION	ITEM "A"	POINT "A"	LABEL "A"	X	ITEM "B"	POINT "B"	LABEL "B"	X	COLOR	SIZE	NOTES
142	Canal Level Measurement +vdc	TS8	2	*CANAL LEVEL*		M340 - Module 4	Ui0/Ii0	*TS8-2*		Yellow	#18	**Wire jumped from Ui0 to Ii0**
143	Sump Level Measurement	TS8	FB2			TS8	FB1	*TS8-FB1*		Red	#18	
144	Sump Level Measurement +vdc	TS8	4	*SUMP LEVEL*		M340 - Module 4	Ui1/Ii1	*TS8-4*		Yellow	#18	**Wire jumped from Ui1 to Ii1**
145	Discharge Level Measurement	TS8	FB3			TS8	FB2	*TS8-FB2*		Red	#18	
146	Discharge Level Measurement +vdc	TS8	6	*DISC. LEVEL*		M340 - Module 4	Ui2/Ii2	*TS8-6*		Yellow	#18	**Wire jumped from Ui2 to Ii2**
147	Fuel Level Safety Relay Power (+vdc)	ISR	11	*TS15*		TS15		*ISR-11*		Red	#18	
148	Fuel Level Safety Relay Power (-vdc)	ISR	12	*TS14*		TS14		*ISR-12*		Black	#18	
149	Fuel Level Safety Relay (+ Trans. Input)	ISR	1	*TS8-FB4*		TS8	FB4	*ISR-1*		Red	#18	**From Outside Fuel Tank**
150	Fuel Level Safety Relay (- Trans. Input)	ISR	2	*TS8-8*		TS8	8	*ISR-2*		Black	#18	**From Outside Fuel Tank**
151	Fuel Level Safety Relay (+ Output)	ISR	7	*IWO.4 Ui3*		M340 - Module 4	Ui3/Ii3	*ISR-7*		Yellow	#18	**Wire jumped from Ui3 to Ii3**
152												
153	Fuel Level Safety Relay (- Output)	ISR	10	*IWO.4 Com3*		M340 - Module 4	Com3	*ISR-10*		Black	#18	
154												
155	Eng. 1 Battery Monitor Input	FB13		TS3 (DC Mon)-1		TS3 (DC Mon)	1	*FB13*		Red	#18	
156	Eng. 2 Battery Monitor Input	FB14		TS3 (DC Mon)-2		TS3 (DC Mon)	2	*FB14*		Red	#18	
157	Panel Battery Monitor Input	FB15		TS3 (DC Mon)-5		TS3 (DC Mon)	5	*FB15*		Red	#18	
158	Generator Battery Monitor Input	FB16		TS3 (DC Mon)-7		TS3 (DC Mon)	7	*FB16*		Red	#18	
159	DC-DC Converter	(+)VDC Out	*	*TS3-8 DC Mon*		TS3 (DC Mon)	8	*DC-DC Conv. +*		Red	#18	
160	DC-DC Converter	(+)VDC Out	*	*RL36-12*		RL36	12	*DC-DC Conv. +*		Red	#18	
161												
162												
163	Regulated -24vdc Bus	TS14	1 (Upper)	*RL01-RL6 (A2)*		RL01-RL6	A2	*TS14-1(U)*		Black	#18	**Blue Jumper - Phoenix Contact 2966692**
164	Regulated -24vdc Bus	TS14	2 (Upper)	*R171-RL25(A2)*		RL17-RL25	A2	*TS14-2(u)*		Black	#18	**Blue Jumper - Phoenix Contact 2966692**
165	Regulated -24vdc Bus	TS14	2 (Lower)	*PLC (MODULE 1)*		M340 - Module 1	(0 VDC)	*TS14-2(L)*		Black	#18	
166	Regulated -24vdc Bus	TS14	4(Upper	*J1-Pin30*		J1	Pin 30	*TS14-any*		Black	#18	**Connects to Door Switch# 3 via Deutsch Plug**
167	Regulated -24vdc Bus	J1	Pin10	*RL27-RL34 (A2)*		RL27-RL34	A2	*J1-Pin 10*		Black	#18	**Connects to Door Switch# 3 via Deutsch Plug**
168	Regulated -24vdc Bus	TS14	3 (Lower)	*PLC (MODULE 2)*		M340 - Module 2	(0 VDC)	*TS14-3(L)*		Black	#18	
169	Regulated -24vdc Bus	TS14	4 (Upper)	*RL36 (A2)*		RL36	A2			Black	#18	
170	Regulated -24vdc Bus	TS14	5(lower)	*RL1-RL2-11*		RL1-RL2	11	*TS14*		Black	#18	
171	Regulated -24vdc Bus	TS14	5 (Upper)	*RL13-11*		RL13	11	*TS14*		Black	#18	
172	Regulated -24vdc Bus	TS14	6 (Lower)	*PLC (MODULE 4)*		M340 - Module 4	Com 0,1,2,3	*TS14-6(L)*		Black	#18	**(Bus Wiring Allowed)**
173	Regulated -24vdc Bus	TS14	11 (Lower)	*DC MON. (TS1)*		DC MONITOR	TS1	*TS14-11(L)*		Black	#18	Duplicate?
174	Regulated -24vdc Bus	TS14	Any	*FB-17*		Fuse Block	17	*TS14-any*		Black	#18	
175	Regulated -24vdc Bus	FB-17		*J1-Pin35*		J1-Pin35		*FB-17*		Black	#18	for PL-3-4-7 and Magelis
176	Regulated -24vdc Bus	TS14	any	*J1-Pin30*		J1-Pin-30		*TS14-any*		Black	#18	Connects to Door Switch#3 via Deutsch Plug
177												
178	Regulated +24vdc Bus	TS15	2 (Lower)	*PLC (MODULE 1)*		M340 - Module 1	(+24VDC)	*TS15-2(L)*		Red	#18	
179	Regulated +24vdc Bus	TS15	3 (Upper)	*RL3-12-11*		RL3-RL12	11	*TS15-3(U)*		Red	#18	**Red Jumper - Phoenix Contact 2966786**
180	Regulated +24vdc Bus	TS15	3 (Lower)	*PLC (MODULE 2)*		M340 - Module 2	(+24VDC)	*TS15-3(L)*		Red	#18	
181	Regulated +24vdc Bus	TS15	4 (Upper)	*RL7-RL12 (A1)*		RL7-RL12	A1	*TS15-4(U)*		Red	#18	**Red Jumper - Phoenix Contact 2966786**
182	Regulated +24vdc Bus	TS15	5 (Upper)	*RL15-RL16(A1)*		RL15-RL16	A1	*TS15-5(U)*		Red	#18	**Red Jumper - Phoenix Contact 2966786**
183	Regulated +24vdc Bus	TS15	6 (Upper)	RL14-RL26		RL14-RL26	11	*TS15-6(U)*		Red	#18	**Red Jumper - Phoenix Contact 2966786**
184	Regulated +24vdc Bus	TS15	9 (Upper)	*RL35-(11)*		RL35	11	*TS15-8(U)*		Red	#18	**Red Jumper - Phoenix Contact 2966786**
185	Regulated +24vdc Bus	TS15	9 (Upper)	*RL14-(A1)*		RL14	A1	*TS15-8(U)*		Red	#18	**Red Jumper - Phoenix Contact 2966786**
186	Regulated +24vdc Bus	TS15	any	*CB-8*		CB-8	upper	*TS-15 any*		Red	#18	(+)24vdc for Magelis Circuit Breaker
187	Regulated +24vdc Bus	CB-8	lower	*J1-Pin 26*		J1	Pin 26	*CB-8*		Red	#18	(+)24vdc for Magelis
188	Regulated +24vdc Bus	TS15	any	*J1-Pin 6*		J1	Pin 6	*TS15 any*		Red	#18	(+)24vdc Panel Lights-PL-1-2-5-6-8-9-10-11

TPCG – Type II - 2 PUMP TELEMETRY CONTROL PANEL (TCP) POINT-T0-POINT WIRING CHART (Aug, 2024)

	A	B	C	D	E	F	G	H	I	J	K	L
1	**FUNCTION**	**ITEM "A"**	**POINT "A"**	***LABEL "A"***	**X**	**ITEM "B"**	**POINT "B"**	***LABEL "B"***	**X**	**COLOR**	**SIZE**	**NOTES**
189	Regulated +24vdc Bus	TS15	any	*C0-7-C8-15*		Module 3	C0-7-C8-15	*TS15 any*		Red	#18	(+)24vdc for Module 3 power(jumper C0-7 to C8-15)
190												
191	Pump 1 H-O-A (Hand)	TS16	1(U)	*ENG. 1 (H)*		M340 - Module 2	I0.2.4	*ENG. 1 HAND*		Violet	#18	
192	Pump 1 H-O-A (Hand)	TS16	1(L)	*Deut. Con.-Pin 37*		Deut. Con.	Pin-37	*ENG. 1 HAND*		Violet	#18	Connects to Door Switch#1 via Deutsch Plug
193	Pump 1 H-O-A (Auto)	TS16	2(U)	*ENG. 1 (A)*		M340 - Module 2	I0.2.6	*ENG. 1 AUTO*		Gray	#18	
194	Pump 1 H-O-A (Auto)	TS16	2(L)	*Deut. Con.-Pin 27*		Deut. Con.	Pin-27	*ENG. 1 AUTO*		Gray	#18	Connects to Door Switch#1 via Deutsch Plug
195	Pump 2 H-O-A (Hand)	TS16	3(U)	*ENG.2 (H)*		M340 - Module 2	I0.2.5	*ENG. 2 HAND*		Violet	#18	
196	Pump 2 H-O-A (Hand)	TS16	3(L)	*Deut. Con. Pin 18*		Deut. Con.	Pin-18	*ENG. 2 HAND*		Violet	#18	Connects to Door Switch#2 via Deutsch Plug
197	Pump 2 H-O-A (Auto)	TS16	4(U)	*ENG. 2 (A)*		M340 - Module 2	I0.2.7	*ENG. 2 AUTO*		Gray	#18	
198	Pump 2 H-O-A (Auto)	TS16	4(L)	*Deut. Con. Pin 8*		Deut. Con.	Pin-8	*ENG. 2 AUTO*		Gray	#18	Connects to Door Switch#2 via Deutsch Plug
199	Rake H-O-A (Hand)	TS16	5(U)	*RAKE (H)*		M340 - Module 2	I0.2.8	*RAKE HAND*		Brown	#18	
200	Rake H-O-A (Hand)	TS16	5(L)	*Deut. Con. Pin 19*		Deut. Con.	Pin-19	*RAKE HAND*		Brown	#18	Connects to Door Switch#4 via Deutsch Plug
201	Rake H-O-A (Auto)	TS16	6(U)	*RAKE (A)*		M340 - Module 2	I0.2.9	*RAKE AUTO*		Brown	#18	
202	Rake H-O-A (Auto)	TS16	6(L)	*Deut. Con. Pin 9*		Deut. Con.	PIN-9	*RAKE AUTO*		Brown	#18	Connects to Door Switch#4 via Deutsch Plug
203												
204	Eng. 1 Battery Monitor Output	TS4 (DC Mon)	1	*I0.1.7*		M340 - Module 1	I0.1.7	*ENG. 1 BATT*		Blue	#18	
205	Eng. 2 Battery Monitor Output	TS4 (DC Mon)	2	*I0.1.8*		M340 - Module 1	I0.1.8	*ENG. 2 BATT*		Blue	#18	
206	Panel Battery Monitor Output	TS4 (DC Mon)	5	*I0.1.13*		M340 - Module 1	I0.1.13	*PANEL BATT*		Blue	#18	
207	Generator Battery Monitor Output	TS4 (DC Mon)	7	*I0.1.14*		M340 - Module 1	I0.1.14	*GEN. BATT*		Blue	#18	
208	Regulator Fail Input	TS4 (DC Mon)	8	*I0.1.4*		M340 - Modul 1	I0.1.4	*Reg. Fail (In)*		Blue	#18	
209	Power Regulator Bypass Relay	RL36	A1	*DC MON. (OUT 8)*		DC Monitor	TS4-8	*RL36-A1*		Blue	#18	
210												
211	Engine 1 Call Relay (activate)	RL1	A1	*Q0.3.5*		M340 - Module 3	Q0.3.5	*CALL 1*		Orange	#18	
212	Engine 1 Call Relay	RL1	11	*TS14-8(U)*		TS14	Any	*RL1-11*		Black	#18	**Blue Jumper - Phoenix Contact 2966692**
213	Engine 2 Call Relay (activate)	RL2	A1	*Q0.3.6*		M340 - Module 3	Q0.3.6	*CALL 2*		Orange	#18	
214	Engine 2 Call Relay (activate)	RL2	11			TS14	Any			Black	#18	**Blue Jumper - Phoenix Contact 2966692**
215												
216	Engine 1 Run Relay	RL3	14	*I0.2.0*		M340 - Module 2	I0.2.0	*RUN 1*		Blue	#18	
217	Engine 2 Run Relay	RL4	14	*I0.2.1*		M340 - Module 2	I0.2.1	*RUN 2*		Blue	#18	
218												
219	Engine 1 Reset Relay (activate)	RL5	A1	*Q0.3.1*		M340 - Module 3	Q0.3.1	*RESET 1*		Orange	#18	
220	Engine 2 Reset Relay (activate)	RL6	A1	*Q0.3.2*		M340 - Module 3	Q0.3.2	*RESET 2*		Orange	#18	
221												
222	Engine 1 Fail Output Relay (to plc)	RL7	14	*I0.1.5*		M340 - Module 1	I0.1.5	*FAIL 1*		Blue	#18	
223	Engine 2 Fail Output Relay (to plc)	RL8	14	*I0.1.6*		M340 - Module 1	I.0.1.6	*FAIL 2*		Blue	#18	
224												
225												
226	Engine 1 Coolant Level Relay (to plc)	RL9	14	*I0.1.9*		M340 - Module 1	I0.1.9	*COOLANT 1*		Blue	#18	
227	Engine 2 Coolant Level Relay (to plc)	RL10	14	*I0.1.10*		M340 - Module 1	I0.1.10	*COOLANT 2*		Blue	#18	
228												
229	Engine 1 Oil Level Relay (to plc)	RL11	14	*I0.1.11*		M340 - Module 1	I0.1.11	*OIL 1*		Blue	#18	
230	Engine 2 Oil Level Relay (to plc)	RL12	14	*I0.1.12*		M340 - Module 1	I0.1.12	*OIL 2*		Blue	#18	
231												
232	Emergency S/D Relay	RL14	A1	*TS15-ANY*		TS15	ANY	*RL14-A1*		Red	#18	
233	Emergency S/D Relay	RL13	A2	*TS14-ANY*		TS14	ANY	*RL13-A2*		Black	#18	
234	Emergency S/D Relay (via plc)	RL13	A1	*Q0.3.0*		M340 - Module 3	Q0.3.0	*E.S.D.*		Orange	#18	
235	Emergency S/D Relay (via plc)	RL13	14	*RL14-A2*		RL14	A2	*RL13-14*		Gray	#18	

TPCG – Type II - 2 PUMP TELEMETRY CONTROL PANEL (TCP) POINT-T0-POINT WIRING CHART (Aug, 2024)

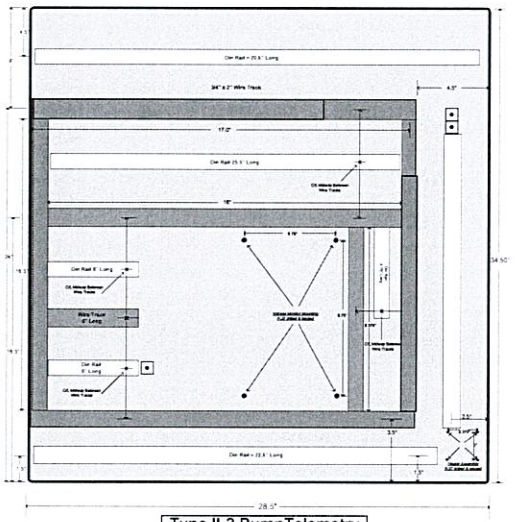
	A	B	C	D	E	F	G	H	I	J	K	L
1	FUNCTION	ITEM "A"	POINT "A"	LABEL "A"	X	ITEM "B"	POINT "B"	LABEL "B"	X	COLOR	SIZE	NOTES
236	Emergency S/D Relay (Local)	RL14	A2	TS-SD-1		TS-SD	1	EMERG. S/D		Gray	#18	
237	Emergency S/D Relay	RL13	14	TS-20 (Bridge)		TS-20	Bridge	RL13-14		Black	#18	
238	Emergency S/D Relay (Local)	RL14	14	I0.1.0		M340 - Module 1	I0.1.0	EMERG. S/D		Blue	#18	
239												
240	Emergency S/D	TS-SD	2 (U)	TS20-9		TS-20	9	TS-SD 2(U)		Black	#18	
241												
242	Engine 1 - Auto Relay (to plc)	RL15	14	I0.2.2		M340 - Module 2	I0.2.2	AUTO 1		Blue	#18	
243	Engine 2 - Auto Relay (to plc)	RL16	14	I0.2.3		M340 - Module 2	I0.2.3	AUTO 2		Blue	#18	
244												
245	Rake Run Relay (to plc)	RL19	14	I0.2.10		M340 - Module 2	I0.2.10	RAKE RUN		Blue	#18	
246	Generator Call Relay (to plc)	RL20	14	I0.2.13		M340 - Module 2	I0.2.13	GEN CALL		Blue	#18	
247	Generator Run Relay (to plc)	RL21	14	I0.2.14		M340 - Module 2	I0.2.14	GEN RUN		Blue	#18	
248	Generator Transfer Relay (to plc)	RL22	14	I0.2.15		M340 - Module 2	I0.2.15	GEN TRANS.		Blue	#18	
249	Rake Call Relay	RL24	A1	Q0.3.9		M340 - Module 3	Q0.3.9	RAKE CALL		Orange	#18	
250												
251	Not Used/Expansion Connections											
252												
253												
254	Unused	TS7	FB5			TS7	FB4	TS7-FB4		Red	#18	For Future Usage
255	Unused	TS7	FB6				FB5	TS7-FB5		Red	#18	For Future Usage

TPCG – 2 Pump Type II Telemetry
Control Panel Parts List - (Aug 2024)

	A	B	C	D	E	F
1	QTY	ITEM	ITEM DESIGNATION	SPECIFICATIONS	MANUFACTURER	MFR. PART NUMBER
2	1	PLC CPU (M340)	PLC		Schneider Modicon	BMXP342020
3	1	PLC Power Supply	PLC		Schneider Modicon	BMXCPS3020
4	1	Memory Card	PLC		Schneider Modicon	BMXRMS008MPF
5	2	Digital Input Module	PLC		Schneider Modicon	BMXDDI1602
6	1	Digital Output Module	PLC		Schneider Modicon	BMXDRA1605
7	1	Analog Input Module	PLC		Schneider Modicon	BMXAMI0410
8	4	Screw Terminal Strip	PLC		Schneider Modicon	BMXFTB2000
9	1	6 Slot Backplane	PLC		Schneider Modicon	BMXXBP0600
10	1	Ethernet Switch	Ethernet		Phoenix Contact	SFN 5TX (2891152)
11	2	Redundancy 24VDC Power Supply	Redundancy Power Supply		PULS	CP10.241
12	1	DC DC Power Converter	DC DC Converter		PULS	CD10.241
13	*	Wiring Specifications (SCADA & Control Panel)	*		Consolidated or Equiv.	Cons. 9310 (#18awg, 600v)
14	*	Wiring Specifications (Panel to Panel & External)	THWN		*	#14, #12 THWN
15	*	Wire Ferrules	Any		*	To Fit Wire Specified
16	6	Terminal Blocks - Gray	TB		Phoenix Contact	3004362 (UK5-N Series)
17	27	Terminal Blocks - Black	TB		Phoenix Contact	0711344 (UK5-N Series)
18	25	Terminal Blocks- Blue	TB		Phoenix Contact	3004388 (UK5-N Series)
19	4	Terminal Blocks - Green	TB		Phoenix Contact	3003965 (UK5-N Series)
20	8	Terminal Blocks - Orange	TB		Phoenix Contact	3002908 (UK5-N Series)
21	27	Terminal Blocks - Red	TB		Phoenix Contact	3026696 (UK5-N Series)
22	11	Terminal Blocks - White	TB		Phoenix Contact	3007327 (UK5-N Series)
23	8	Terminal Blocks - Yellow	TB		Phoenix Contact	3003952 (UK5-N Series)
24	8	Terminal Block Bridge Jumpers (Small - various lengths)	TB		Phoenix Contact	0203250 (EB 10-6)
25	1	Terminal Block Bridge Jumpers (Large)	TB		Phoenix Contact	0203263 (EB 10-8) *(Note: Used only on FB1.1-4.)*
26	18	Din Rail End Lock Clamps	End Lock Clamps		Entrelec	20635116
27	29	Terminal Block Separating Plate	TB		Phoenix Contact	3003224
28	13	Strip Relay Separating Plate	TB		Phoenix Contact	2966841
29	35	Input/Output Isolation Relays (SPDT - 6amp - 24vdc)	TB		Phoenix Contact	2966171 (PLC-BSC-24DC/21)
30	1	Input/Output Isolation Relay (SPDT - 10amp - 24vdc)	TB		Phoenix Contact	2967620 (PLC-BSC-24DC/21HC)
31	1 length	Relay Jumpers (Blue)	TB		Phoenix Contact	2966692 (FBST 500 - PLC BU)
32	1 length	Relay Jumpers (Red)	TB		Phoenix Contact	2966786 (FBST 500 - PLC RD)
33	1 length	Relay Jumpers (Gray)	TB		Phoenix Contact	2966838 (FBST 500 - PLC GY)
34	2	DPDT Octal Relays - 120vac coil	Line Monitor Relay		Schneider Electric	750XBXM4L-120A
35	2	Octal Relay Sockets	Socket for Line Monitor Relays		Schneider Electric	70-464-1
36	2	Relay	Rake Pilot Relay	DPDT - 24vdc	Schneider Electric	782XBXM4L-24D
37	2	Relay Socket	Socket for Rake Pilot Relays	8 pin/10 amp/300v	Schneider Electric	70-459-1
38	2	Circuit Breaker (7 amp)	Brecker		ABB	ST201M-K7
39	6	Circuit Breaker (5 amp)	Breaker		ABB	ST201M-K5
40	1	Circuit Breaker (3 amp)	Breaker		ABB	ST201M-K3
41	8	Fuse Holders (DC)	Phoenix Contact		Phoenix Contact	3118203 (UK6FSVC)
42	4	DC Fuse (2 amp)	Any			ATC-2
43	4	DC Fuse (5 amp)	Any			ATC-5
44	3	Bridge Rectifier Assembly	Vishay			36MB100A
45	Approx 12'	1" Wide x 2" High Wiring Track	Panduit			G1X2LG6
46	Approx 12'	1" Wide Wiring Track Cover	Panduit			C1LG6
47	Aprox 8'	Din Rail (Aluminum)	Idec			BNDN-1000
48	2	2" hex spacer (8-32 thread)	Battery Monitor		Keystone	1964 (to mount battery monitor module)
49	2	1" hex spacer (8-32 thread)	Battery Monitor		Keystone	1960 (to mount battery monitor module)
50	2	Hinged spacer (8-32 thread)	Battery Monitor		Keystone	356 (to mount battery monitor module)
51	1	Enclosure Heater Assembly (120 vac/125 watt)			Saginaw	SCE-HF1251A
52	1	Enclosure Backplate for 30x24 Enclosure	Panel Back Plate		Schaefers	Schaefers ES 36x30 Back Panel
53	1	36x30x12 Nema 4X Stainless Enclosure (3 Point Latch)	SS Panel Enclosure	Referenced through Key Electronics	Schaefers	Schaefers ESSS6-363012-913 w/dead front swing door
54	1	Multi Socket Plug			Deutsch	DRC16-40S
55	36	16 Gage Sockets for above Plug			Deutsch	0462-201-16141
56						

TPCG -- 2 Pump Type II Telemetry
Control Panel Parts List - (Aug 2024)

	A	B	C	D	E	F
57	1	Length of Gray Busbar Material (user cut to length)	Relay Jumper		Phoenix Contact	2966838
58	1	Length of Red Busbar Material (user cut to length)	Relay Jumper		Phoenix Contact	2966786
59	1	Length of Blue Busbar Material (user cut to length)	Relay Jumper		Phoenix Contact	2966692
60	1	Intrinsic Barrier Safety Relay	Fuel		Endress+Hauser	RN1221N
61						
62	2	Terminal Block Bridge	"	"	Phoenix Contact	203250
63	1	Turret Board	Diode Matrix	Fiberglass Turret Board	Keystone	15232
64	2	Brass Standoff	"	8-32 x 3/8"	Keystone	7220
65	2	Brass Standoff	"	8-32 x 3/4"	Keystone	1959
66	4	Diode	D-01 thru D-04	6amp/1000v axial lead	Any	"
67	Approx 3'	Din Rail	"	Aluminum Din Rail	Idec	BNDN-1000
68		Note: Diodes D-01 thru D-04				
69		Mounted on Turret Board Assembly				
70		(construction details separate)				



Type II-2 PumpTelemetry Control Panel

Mechanical Layout

Property Of:
Terrebonne Parish Cons. Gov't
Forced Drainage Dept.

Notes:
A)Drawing *not to scale*.
B)All panel through-holes drilled and tapped. No nuts allowed behind panel

Sept., 2022