

Week 3 Meeting



1/31/19

Team Leader: YJ

Other Team Members: Katayi, Nur, Chufu, Tam

Advisor: Dr. Ajjarapu

Safety Moment: Clearing Snow And Ice Safely

- If you've ever had a heart attack, if you have heart disease, high blood pressure or high cholesterol, you probably don't want to do the shoveling yourself.
- No smoking. Tobacco smoke constricts blood vessels.
- No caffeinating. The caffeine may increase your heart rate and cause your blood vessels to constrict.
- Dress in several layers so you can remove a layer as needed.
- Warm up your muscles before shoveling.
- While shoveling stand with your feet about hip width for balance and keep the shovel close to your body.
- Avoid twisting movements.
- Stop if you feel pain!

Topics

- Installation relay diagram
- Primary relay diagram
- Back-up protection diagram
- Bank 1 aux
- Bank 1 Annunciator

Installation Relay Diagram

<u>SEL 351S INPUT/OUTPUT ASSIGNMENTS</u>		
<u>INPUTS</u>		
<u>Terminal</u>	<u>INPUT</u>	FUNCTION
A17-A18	IN101	CB 4 52a
A19-A20	IN102	RECLOSE INITIATE FROM BANK 1 PRI RELAY
A21-A22	IN103	TRIP COIL MONITOR
A23-A24	IN104	CB 4 ALARMS
A25-A26	IN105	DRIVE TO LOCKOUT (BANK 1) OR BKR FAIL
A27-A28	IN106	SUPERVISE MANUAL TRIP (PB, SUPV OUT107)
<u>OUTPUTS</u>		
<u>Terminal</u>	<u>OUTPUT</u>	FUNCTION
A01-A02	OUT101	TRIP CB 4
A03-A04	OUT102	CLOSE CB 4 (SUPV, AUTO RECLOSE)
A05-A06	OUT103	SPARE
A07-A08	OUT104	SPARE
A09-A10	OUT105	SPARE
A11-A12	OUT106	SPARE
A13-A14	OUT107	SUPV TRIP CB 4
A15-A16	ALARM	To SEL-2440 Status I/O

How to make connection of ALARM (To SEL-2440 Status I/O)

OUTPUTS					
NUMBER	TERMINAL	FUNCTION			
OUT101	A01-A02	TRIP CB4	THIS DWG	CB4 RTS3	POLES A-B
OUT102	A03-A04	CLOSE CB4 (SUPV, AUTO RECLOSE)	THIS DWG		
OUT103	A05-A06	SPARE			
OUT104	A07-A08	SPARE			
OUT105	A09-A10	SPARE			
OUT106	A11-A12	SPARE			
OUT107	A13-A14	SUPV TRIP CB4	THIS DWG	CB4 RTS3	POLES C-D
ALARM	A15-A16	To SEL-2440 Status I/O			

Primary Relay Diagram

Note that the 86T and 86TN lockout contacts are being moved from the low side breaker SEL-351S to the SEL-487E and lockout monitor inputs are being added to the SEL-487E.

SEL-487E INPUT-OUTPUT ASSIGNMENTS					
INPUTS			OUTPUTS		
Terminal	INPUT	FUNCTION	Terminal	OUTPUT	FUNCTION
A20-A21	IN101	BANK 1 SUDDEN PRESSURE - 63FP (NO) (RESERVED)	A01-A02	OUT101	SPARE
A22-A23	IN102	BANK 1 SUDDEN PRESSURE - 63FP (NC) (RESERVED)	A03-A04	OUT102	SPARE
A24-A25	IN103	BANK 1 LOW OIL-71Q-1 (NO)	A05-A06	OUT103	SPARE
A26-A27	IN104	BANK 1 LOW OIL-71Q-1 (NC)	A07-A08	OUT104	SPARE
A28-A29	IN105	RESERVED	A09-A10	OUT105	SPARE
A30-A31	IN106	BANK 1 86T LOCKOUT A CONTACT	A11/13-A12	OUT106	SPARE
A32-A31	IN107	BANK 1 86TN LOCKOUT A CONTACT	A14/16-A15	OUT107	RELAY ALARM(NC) <i>(Hard-wired SEL-2440)</i>
B33-B34	IN201	BKR FAIL INITIATE WHEN CB 317 IS BYPASSED	B01/03-B02	OUT201 HS	TRIP BANK 1 86T
B35-B36	IN202	BANK 1 86T LOCKOUT COIL MONITOR	B04/06-B05	OUT202 HS	TRIP BANK 1 86TN
B37-B38	IN203	BANK 1 86TN LOCKOUT COIL MONITOR	B09/11-B10	OUT203 HS	TRIP CB 317 (BUS DIFF)
B39-B40	IN204	SPARE	B13/15-B14	OUT204 HS	TRIP BUS TIE CB (RESERVED)
B41-B42	IN205	SPARE	B17/19-B18	OUT205 HS	RECLOSE INITIATE CB 317 RELAY
B43-B44	IN206	SPARE	B21/23-B22	OUT206 HS	SPARE
B45-B46	IN207	SPARE	B25/27-B26	OUT207 HS	SPARE
B47-B48	IN208	SPARE	B29/31-B30	OUT208 HS	SPARE

Back-Up Protection Diagram

Bank 1 AUX

Bank 1 Annunciator

IN401	D	D09-10	ABS 10 "A" Contact
IN402	D	D11-12	ABS 10 "B" Contact
IN403	D	D13-14	ABS 13 "A" Contact
IN404	D	D15-16	ABS 13 "B" Contact

N401	D09-D10	NITROGEN SYSTEM ALARMS {MAIN TANK}
N402	D11-D12	NITROGEN SYSTEM ALARMS {CYLINDER}
N403	D13-D14	SPARE
N404	D15-D16	SPARE

Bank 1 Annunciator

1. There is the note that “manual control is not being on the SEL-2411, so will we change the table content of the drawing to “ABS ...” and add connection, or just leave them as original content?

At Canal Substation, the motor mechs on ABS 10 and ABS 13 need to be tied into a TLS scheme. Note that manual control is not being located on the SEL-2411. Manual control and supervisory cutout of the ABSs will be provided by external switches. The ABS status going back to EMS will be done through an SEL-2440.

Bank 1 Annunciator

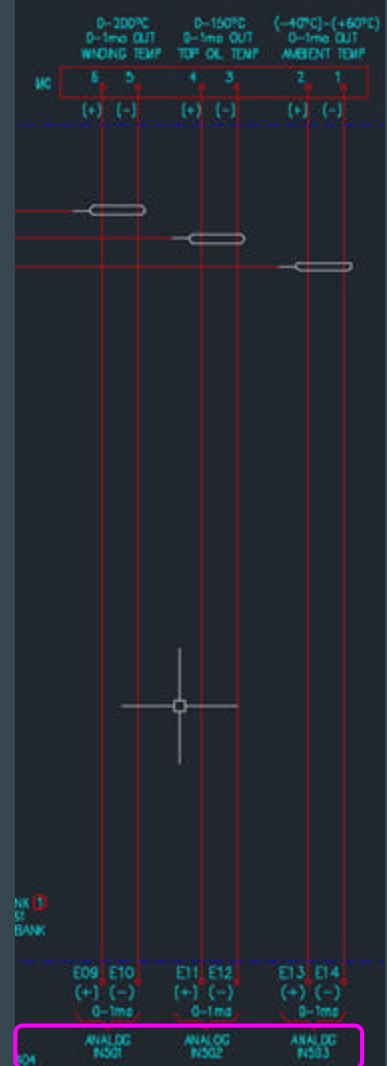
ANALOG	SLOT	TERMINAL	FUNCTION
IN501	E	E01-04	19.9 kV Bus #1 potential - Phase A from Volt Reg 1
IN502	E	E02-04	19.9 kV Bus #1 potential - Phase B from Volt Reg 1
IN503	E	E03-04	19.9 kV Bus #1 potential - Phase C from Volt Reg 1

CARD E: 4 ANALOG OUTPUTS — 4 ANALOG INPUTS

NUMBER	TERMINAL	FUNCTION
OUT501	E01—E02	SPARE
OUT502	E03—E04	SPARE
OUT503	E05—E06	SPARE
OUT504	E07—E08	SPARE
IN501	E09—E10	WINDING TEMP
IN502	E11—E12	OIL TEMP
IN503	E13—E14	AMBIENT TEMP
IN504	E15—E16	SPARE

Bank 1 Annunciator

1. The terminals for inputs and outputs are different between the project scope and the drawing, do we fix them to match the project scope?
2. How can we change the connections for this part?
(The pink rectangular at the bottom includes IN501, 502, and 503).



Questions

1. What's the difference between it cb and bus tie cb?
2. For the Ethernet Port, do we need to add a title block?