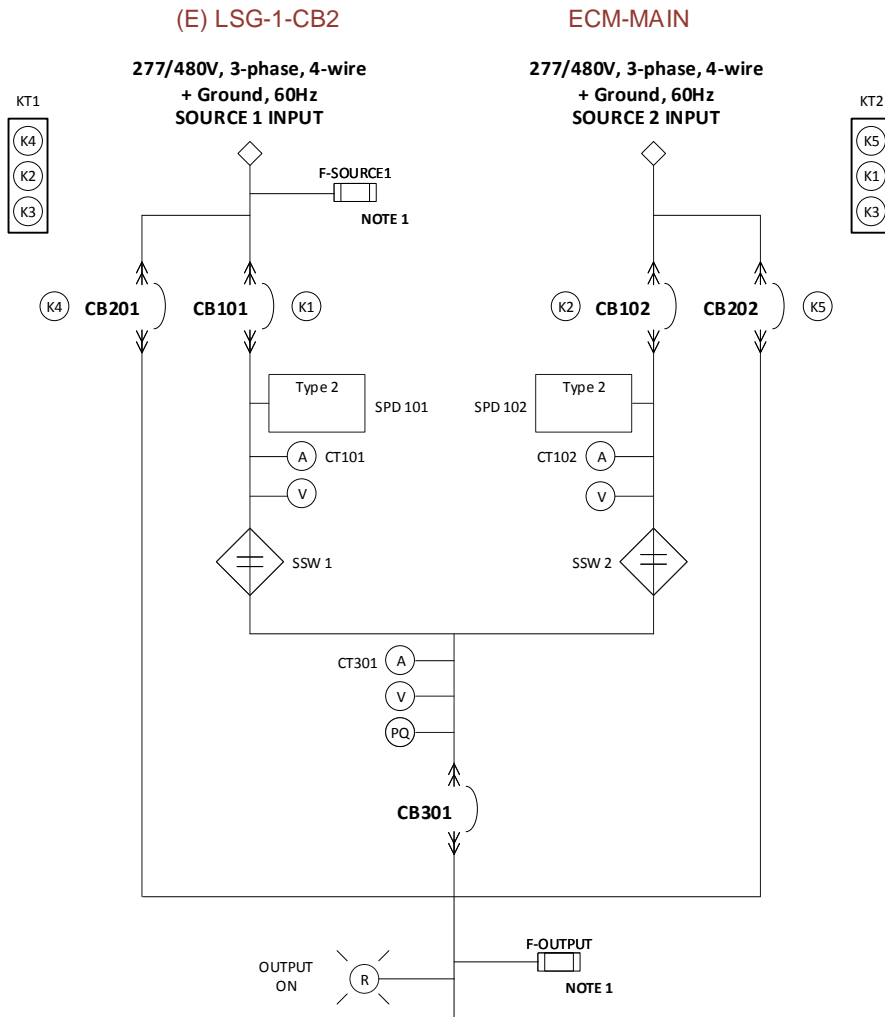


Series 70 eSTS

1600A, 2-source, 4-pole, 4-wire, SMR eSTS

CIRCUIT BREAKER DATA

REF NO	RATING	FAULT RATING	TYPE	MOUNTING	AUXILIARY CONTACTS	SHUNT TRIPS	MFG	BREAKER SERIES
CB101 CB201 CB102 CB202	1600AF / 1600AT, 100%	65kAIC @ 480VAC (per UL ratings)	Electronic Trip (LSI), 4- pole	Draw-out	Yes Internal Use Only	No	ABB	Emax 2
CB301	1600AF	65kA @ 480VAC (per UL ratings)	Switch Disconnecter UL 1066, 4-pole	Draw-out	Yes Internal Use Only	No	ABB	Emax 2



NOTE 1:

Fuse holders, Phases (A/B) and ground terminal blocks are provided by LayerZero Power Systems.

Fuses are NOT provided by LayerZero Power Systems.

Fuse holder Part Number: ABB, E 91/32

Ground Terminal Block Part Number: PHOENIX CONTACT, USLK10 N

All internal wiring to fuse holders and ground terminal blocks are provided by LayerZero Power System in accordance with Bloom energy Electrical One Line Document No. DOC-1010311.

Conductor size: 1-#10 AWG per Phase.
1-#10 AWG per Ground.

NOTE 2:

1- Locks to be installed in a manner with BOTH keys withheld when LSG-1 CB1 is in ON state. Lock to be installed internally into breaker or through external bolt means.

2- Bolt locks may not work on pushbutton style circuit breakers.

ADDITIONAL INFORMATION:

1. Copper compression-type cable lugs recommended for all power connections.
2. Input terminals are NEMA 2-hole pattern with 0.5 inch diameter holes spaced 1.75 inches apart
3. Input terminals provided at the top and bottom
4. Neutral Rating: 100%

LEGEND

(A)	CURRENT METERING POINT	(K#)	KIRK KEY (INTERNAL TO CB)
(V)	VOLTAGE METERING POINT	(K#)	KIRK KEY TRANSFER BLOCK
(PQ)	POWER QUALITY METERING POINT	(K#)	



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STS AND BYPASS SWITCHBOARD SEQUENCE OF OPERATION COMPONENTS

STARTING POSITIONS:

NOTE: 7 (SEVEN) LOCKS AND 5 (FIVE) KEYS (PROVIDED BY LAYERZERO POWER SYSTEMS)

KL101 PAIRED WITH KEY 1. KEY 1 IN KL101

KL102 PAIRED WITH KEY 2. KEY 2 IN KL102

KL201 (EMPTY), PAIRED WITH KEY 4

KL202 (EMPTY), PAIRED WITH KEY 5

KT1 PAIRED WITH KEY 2, KEY 3 & KEY 4. KEY 3 & KEY 4 IN KT1. KEY 2 (EMPTY)

KT2 PAIRED WITH KEY 1, KEY 3 & KEY 5. KEY 5 IN KT2. KEY 3 (EMPTY) & KEY 1 (EMPTY)

KLLSG-1 PAIRED WITH KEY 1 & KEY 4. KEY 1 (EMPTY) & KEY 4 (EMPTY)

OPERATION:

NOTE: OPERATION IS A BREAK BEFORE MAKE, PROTECTING A CROSS CONNECTION.

- PLACE STS INTO SOURCE 1 UTILITY BYPASS POWER PATH
- OPEN STS SOURCE 2 CB (CB102)
- OPERATE KEY 2 IN KL102 TO ENGAGE LOCK ON CB102
KEY 2 WILL BE RELEASED
- REMOVE KEY 2 FROM KL102, PLACE IN TRANSFER BLOCK KT1 AND OPERATE TRANSFER BLOCK KT1
KEY 2 & KEY 3 WILL BE HELD IN TRANSFER BLOCK KT1
KEY 4 WILL BE FREE TO OPERATE
- OPERATE KEY 4 IN KL201 TO ENGAGE UNLOCK SOURCE 1 BYPASS (STS CB201)
KEY 4 WILL BE HELD IN STS BYPASS CB (CB201)
- CLOSE STS BYPASS CB (CB201)
- OPEN STS OUTPUT CB301
- OPEN STS UTILITY SOURCE CB 101
- OPERATE KEY 1 IN LOCK KL101
STS UTILITY SOURCE CB (CB101) WILL BE HELD IN OPEN POSITION
KEY 1 WILL BE RELEASED
- REMOVE KEY 1 FROM KL101 (CB101) PLACE IN LOCK KLLSG-1 CB1
- OPEN STS BYPASS (CB201)
- OPERATE KEY 4 in LOCK KL201
STS BYPASS (CB201) WILL BE HELD IN OPEN POSITION
KEY 4 WILL BE RELEASED
- REMOVE KEY 4 FROM KL201 (CB201) PLACE IN LOCK KLLSG-1 CB1
- OPERATE KEY 4 IN LOCK KLLSG-1 CB1
LSG-1 CB1 WILL BE ALLOWED TO BE CLOSED
KEY 4 & KEY 1 WILL BE HELD IN LOCK KLLSG-1 CB1
- CLOSE LSG-1 CB1
- OPERATION TO BE PERFORMED IN REVERSE TO REVERT BACK TO STARTING POSITION.

LZ-JOB	Location	Item Master Number	Lock Number	Key Removable Position	STAMP Key Interchange
10905-1	CB101	KCAM00010	22800	Extended	K1
10905-1	CB201	KCAM00010	22802	Extended	K4
10905-1	KT1	KTR0---31	22802	With held	K4
10905-1			22803	Extended	K2
10905-1			22815	Extended	K3
10905-1	KT2	KTR0---31	22815	Extended	K3
10905-1			22800	Extended	K1
10905-1			22809	With held	K5
10905-1	CB202	KCAM00010	22809	Extended	K5
10905-1	CB102	KCAM00010	22803	Extended	K2
10905-1	LSG-1 CB1		22800		K1
10905-1	LSG-1 CB1		22802		K4



LAYERZERO
POWER SYSTEMS, INC.

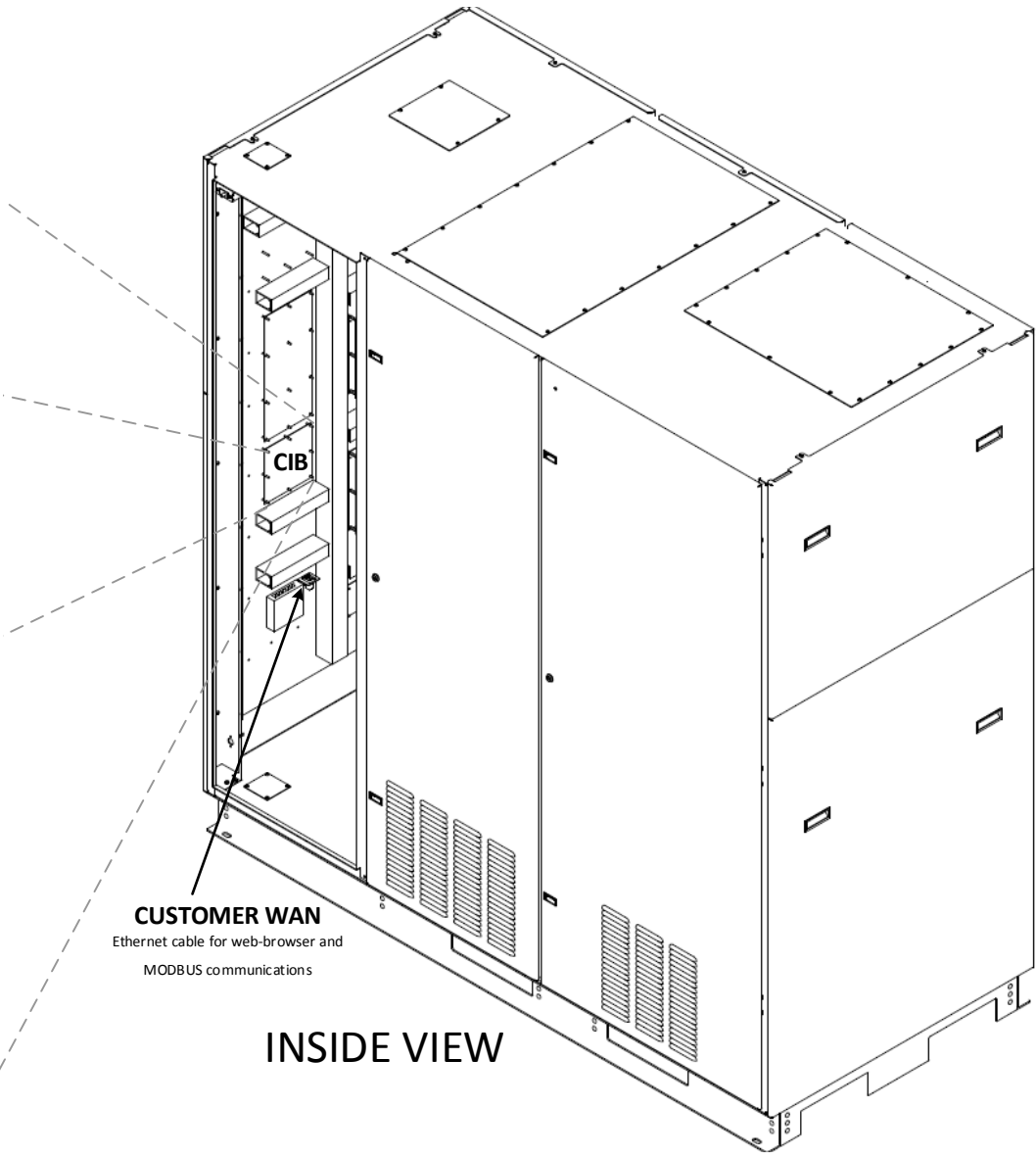
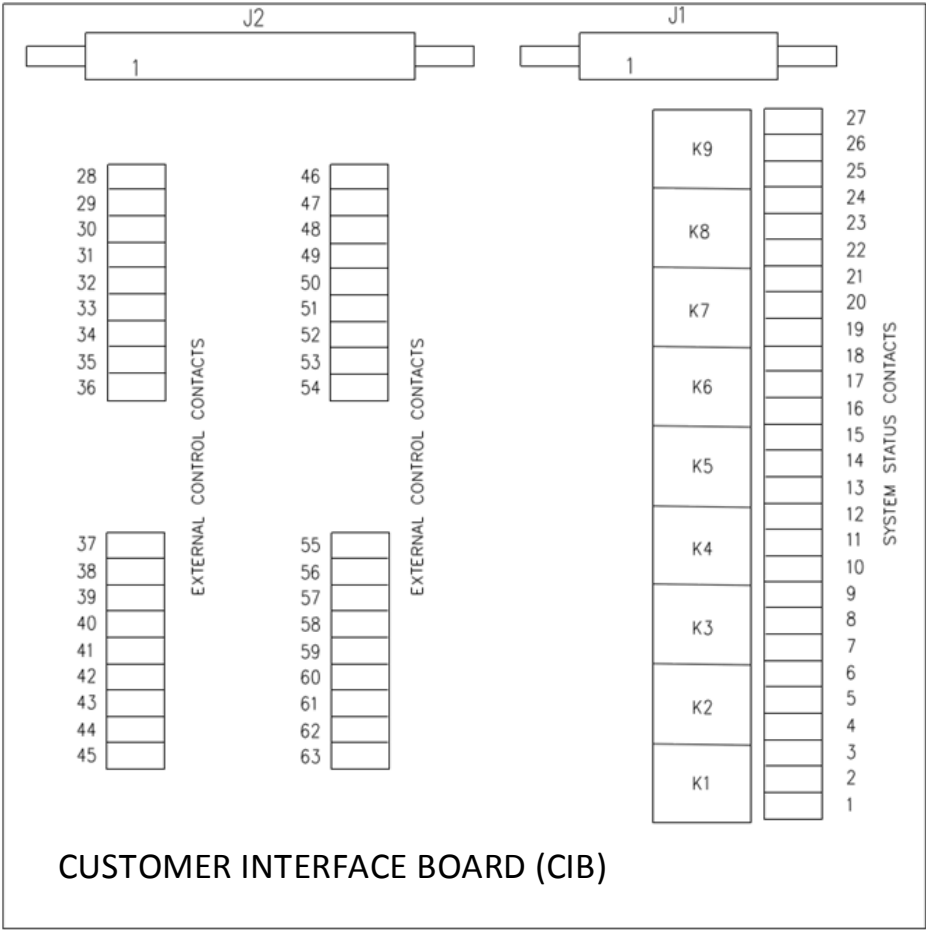
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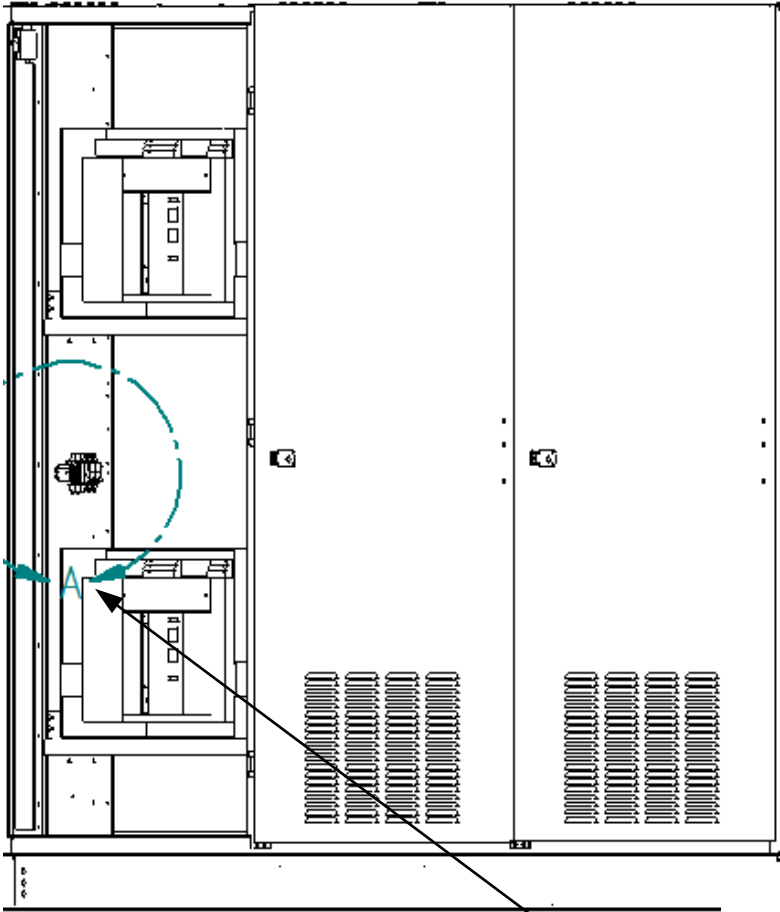
CUSTOMER CONNECTIONS



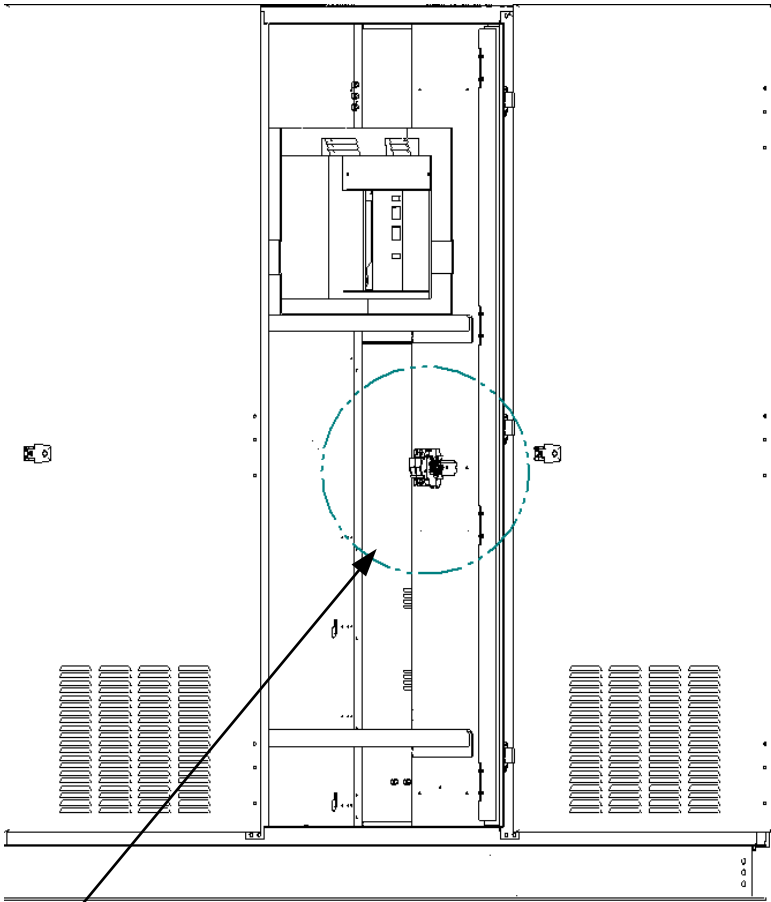
INSIDE VIEW

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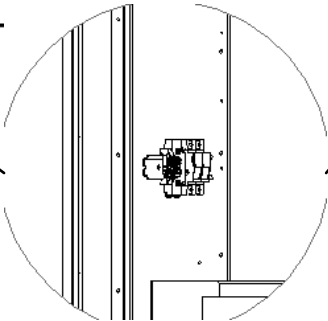
CUSTOMER CONNECTIONS




INSIDE LEFT VIEW
(SOURCE 1 FUSES)



INSIDE RIGHT VIEW
(OUTPUT FUSES)



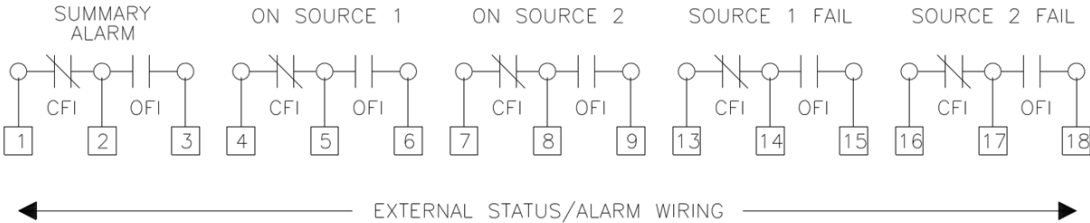
CUSTOMER FUSE
HOLDERS

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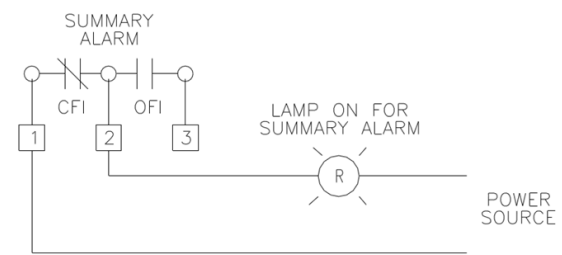
CUSTOMER INTERFACE BOARD (CIB)

SYSTEM STATUS CONTACT FIELD WIRING

CFI – CONTACT CLOSSES FOR STATUS INDICATION
OFI – CONTACT OPENS FOR STATUS INDICATION

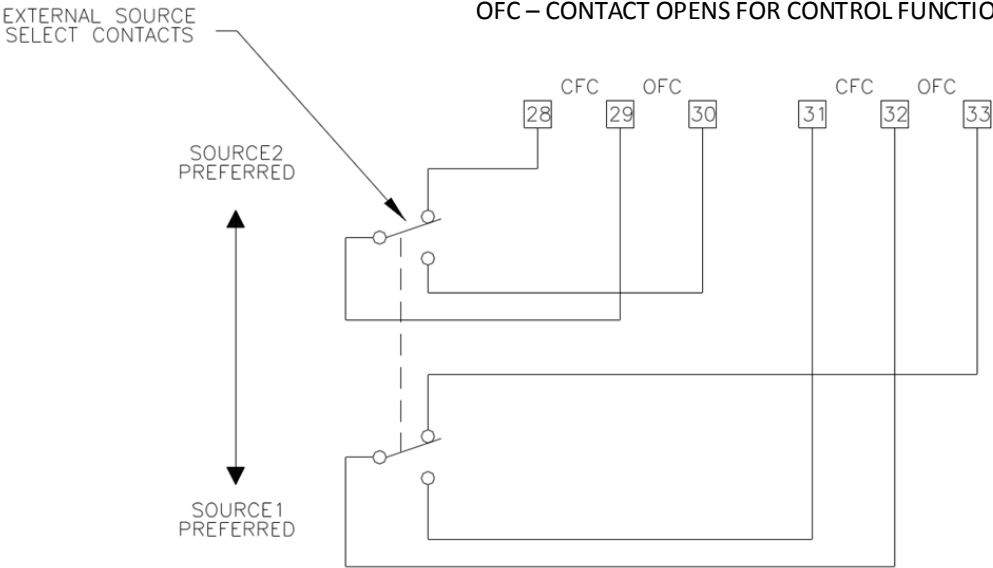


SYSTEM CONTACT WIRING EXAMPLE



SYSTEM CONTROL FIELD WIRING

CFC – CONTACT CLOSSES FOR CONTROL FUNCTION
OFC – CONTACT OPENS FOR CONTROL FUNCTION



NOTES:

1. TERMINAL NUMBERS REFER TO TERMINALS ON CUSTOMER INTERFACE BOARD (CIB).
2. TERMINALS SUITABLE FOR AWG 20-16 STRANDED COPPER WIRE. MAXIMUM ONE WAY LENGTH FOR #16: 500 ft (152 m).
3. ALL WIRING TO BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND ALL LOCAL CODES. CONTROL AND STATUS WIRING MUST BE RUN AND IN SEPARATE CONDUIT FROM POWER WIRING.
4. SYSTEM STATUS OUTPUTS ARE DRY, POTENTIAL-FREE CONTACTS. CUSTOMER REQUIREMENTS ARE AS FOLLOWS:
 - a. Circuit voltage $V < 250$ V AC with current $I < 12$ A RMS, power factor = 1.0.
 - b. Circuit voltage $V < 200$ V DC with current $I < 0.4$ A.
5. SYSTEM CONTROL INPUTS READ COMMANDS FROM EXTERNAL CONTACTS. CUSTOMER REQUIREMENTS ARE AS FOLLOWS:
 - a. Dry, potential-free contacts.
 - b. Form C
 - c. Contacts are to be capable of switching 24 V DC at $5\text{ mA} < I < 10\text{ mA}$.

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