

Field Certification Certificate of Compliance

Certificate: 2782409

Date Issued: March 18, 2015

Project: 2782409

Issued to: Enerflex Ltd.
10121 Barlow Trail NE
Calgary, Alberta, T3J 3C6

Attention: Mr. Tom Perin

*The products listed below are eligible to bear CSA Field Certification Labels,
bearing the CSA Mark shown*



Field Certification



Field Certification

Issued by: Larry DeWald

Note: Products certified to Canadian and US requirements Class 3218-06 and 3218-86, the label numbers start with the letter FC. Products certified to US only requirements Class 3218-86, the label numbers start with the letter U.

PRODUCTS

Part A

CLASS – 3218-06: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations

CLASS – 3218-86: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations –
Certified to U.S. Standards

Class I, Division 2, Group C and D, Temperature Code T3, Enclosure Type 4 (INDOOR)

Control Panel, Model: AB COMPACT-LOGIX

Electrical rating: 24 Vdc, 15 A

CSA Field Certification Labels issued: from serial number FC 255417 to FC 255418.

Certificate: 2782409

Part B

CLASS – 3218-06: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations

CLASS – 3218-86: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations –
Certified to U.S. Standards

Class I, Division 2, Group C and D, Temperature Code T3, Enclosure Type 4 (INDOOR)

Control Panel, Model: AB COMPACT-LOGIX

Electrical rating: CAT: 24 Vdc, 15 A / CP: 24 Vdc, 15 A

CSA Field Certification Label issued: serial number FC 255419.

Part C

CLASS – 3218-06: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations

CLASS – 3218-86: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations –
Certified to U.S. Standards

Class I, Division 2, Group A, C and D, Temperature Code T3, Enclosure Type 4 (INDOOR)

Control Panel, Model: AB COMPACT-LOGIX

Electrical rating: 120 V, 60 Hz, 5 A, 1 Ph

CSA Field Certification Label issued: serial number FC 255420.

Part D

CLASS – 3218-06: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations

CLASS – 3218-86: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations –
Certified to U.S. Standards

Class I, Division 2, Group C and D, Temperature Code T3, Enclosure Type 4 (INDOOR)

Control Panel, Model: AB COMPACT-LOGIX

Electrical rating: CP: 24 Vdc, 10 A / ESM: 24 Vdc, 15 A

CSA Field Certification Labels issued: from serial number FC 255421 to FC 255422.

Part E

CLASS – 3218-06: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations

CLASS – 3218-86: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations –
Certified to U.S. Standards

Class I, Division 2, Group C and D, Temperature Code T3, Enclosure Type 4 (INDOOR)

Control Panel, Model: AB COMPACT-LOGIX

Electrical rating: CAT: 24 Vdc, 15 A / CP: 24 Vdc, 15 A

CSA Field Certification Labels issued: from serial number FC 255431 to FC 255432.

Certificate: 2782409

Part F

CLASS – 3218-06: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations

CLASS – 3218-86: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations –
Certified to U.S. Standards

Class I, Division 2, Group C and D, Temperature Code T3, Enclosure Type 4 (INDOOR)

Control Panel, Model: AB COMPACT-LOGIX

Electrical rating: CP: 24 Vdc, 10 A / ESM: 24 Vdc, 15 A

CSA Field Certification Label issued: serial number FC 255433.

Part G

CLASS – 3218-06: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations

CLASS – 3218-86: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations –
Certified to U.S. Standards

Class I, Division 2, Group C and D, Temperature Code T3, Enclosure Type 4 (INDOOR)

Control Panel, Model: AB COMPACT-LOGIX

Electrical rating: CAT: 24 Vdc, 15 A / CP: 24 Vdc, 15 A

CSA Field Certification Label issued: serial number FC 255449.

Part H

CLASS – 3218-06: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations

CLASS – 3218-86: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations –
Certified to U.S. Standards

Class I, Division 2, Group A, B, C and D / Zone 2, Group IIC, Temperature Code T3, Enclosure Type 4
(INDOOR)

Control Panel, Model: AB COMPACT-LOGIX

Electrical rating: 120 V, 60 Hz, 5 A, 1 Ph

CSA Field Certification Label issued: serial number FC 255470.

Part I

CLASS – 3218-86: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations –
Certified to U.S. Standards

Class I, Division 2, Group C and D, Temperature Code T3, Enclosure Type 4 (INDOOR)

Control Panel, Model: AB COMPACT-LOGIX

Electrical rating: 24 Vdc, 15 A / 24Vdc, 6 A

CSA Field Certification Label issued: serial number U 081474.

Certificate: 2782409

APPLICABLE REQUIREMENTS

The specific products described in this report were evaluated against:

CLASS – 3218-06: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations

- CSA Standard C22.1-12 - Canadian Electrical Code Part I.
- CSA Standard C22.2 No. 0-10 - General Requirements - Canadian Electrical Code Part II.
- CSA Standard C22.2 No. 14-13 - Industrial Control Equipment.
- CSA Standard C22.2 No. 157-92 - Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations.
- CSA Standard C22.2 No. 213-M1987 - Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations.

CLASS – 3218-86: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations – Certified to U.S. Standards

- NFPA 70 - 2014 - National Electrical Code
- UL 508A – 1st Ed. (2013) - Industrial Control Panels.
- ANSI/UL 508 – 17th Ed. (2013) - Industrial Control Equipment.
- UL 913 – 8th Ed. (2013) - Intrinsically Safe Apparatus and Associated Apparatus for use in Class I, II, III, Division 1 Hazardous (Classified) Locations.
- ANSI/ISA-12.12.01-2013 - Nonincendive Electrical Equipment for Use in Class I and II, Division 2, Class III, Division 1 and 2 Hazardous (Classified) Locations.

MARKINGS

- (1) Submitter's name
- (2) Model designation
- (3) Complete electrical rating
- (4) Serial number traceable to month and year of manufacture
- (5) Enclosure Type
- (6) Hazardous Location designations
- (7) Temperature code

The following additional markings on Parts A through H:

- (8) **WARNING: EXPLOSION HAZARD**
DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.
SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.
- (9) **AVERTISSEMENT: RISQUE D'EXPLOSION**
AVANT DE DÉCONNECTER L'ÉQUIPEMENT, COUPER LE COURANT OU S'ASSURER QUE L'EMPLACEMENT EST DÉSIGNÉ NON DANGEREUX LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE CE MATÉRIEL INACCEPTABLE POUR LES EMBLEMES DE CLASSE I, DIVISION 2.

Certificate: 2782409

The following additional markings on Parts B through H:

- (10) WARNING: SHOCK HAZARD
MORE THAN ONE POWER SOURCE MAY BE SUPPLIED TO PANEL, ENSURE PANEL IS ISOLATED BEFORE OPENING.
- (11) AVERTISSEMENT: RISQUE DE CHOC ÉLECTRIQUE
PLUS D'UNE SOURCE D'ALIMENTATION ÉLECTRIQUE PEUT ÊTRE ACHEMINÉE AU PANNEAU ÉLECTRIQUE ASSUREZ VOUS QUE LE PANNEAU ÉLECTRIQUE EST ISOLE AVANT DE L'OUVRIR.

The following additional markings on Part H:

- (12) ASSOCIATED EQUIPMENT [Exia] INTRINSIC SAFETY OUTPUT FOR CLASS I, ZONE 2 HAZARDOUS LOCATIONS PER DRAWING P+F #116-0173
- (13) WARNING: EXPLOSION HAZARD – SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY
- (14) INTRINSICALLY SAFE AND NON-INTRINSICALLY SAFE WIRING MUST NOT BE RUN IN THE SAME WIREWAY
- (15) EQUIPEMENT CONNEXE, SÉCURITÉ INTRINSÈQUE DE LA SORTIE POUR CLASS I ZONE 2 UN ENDROIT DANGEREUX SELON LE DESSIN P+F 116-0173
- (16) AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT PORTER ATTEINTE À LA SÉCURITÉ INTRINSÈQUE DE L'ÉQUIPEMENT
- (17) LES CÂBLES INTRINSÈQUEMENT SÉCURITAIRES NE DOIVENT PAS ÊTRE INSTALLÉS DANS LA MÊME GOULOTTE

The following additional markings on Part I:

- (18) WARNING: EXPLOSION HAZARD
DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.
SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.
- (19) WARNING: SHOCK HAZARD
MORE THAN ONE POWER SOURCE MAY BE SUPPLIED TO PANEL, ENSURE PANEL IS ISOLATED BEFORE OPENING.

Method of marking

An approved adhesive backed nameplate and Lamacoid warnings are secured to the enclosure as per their certified product.



Descriptive and Test Report

REPORT: 2782409

PROJECT: 2782409

Edition 1: March 18, 2015, Project - 2782409
Issued by Larry DeWald

Contents: Certificate of Compliance - Page 1 to 5
Description and Tests – Pages 1 to 38

PRODUCTS

Part A

CLASS – 3218-06: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations

CLASS – 3218-86: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations –
Certified to U.S. Standards

Class I, Division 2, Group C and D, Temperature Code T3, Enclosure Type 4 (INDOOR)

Control Panel, Model: AB COMPACT-LOGIX

Electrical rating: 24 Vdc, 15 A

Serial Number

E001215-01-601

E001215-01-602

CSA C/US Label Number

FC 255417

FC 255418

Part B

CLASS – 3218-06: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations

CLASS – 3218-86: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations –
Certified to U.S. Standards

Class I, Division 2, Group C and D, Temperature Code T3, Enclosure Type 4 (INDOOR)

Control Panel, Model: AB COMPACT-LOGIX

Electrical rating: CAT: 24 Vdc, 15 A / CP: 24 Vdc, 15 A

Serial Number

E001115-05-601

CSA C/US Label Number

FC 255419

Part C

CLASS – 3218-06: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations

CLASS – 3218-86: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations –
Certified to U.S. Standards

The test report shall not be reproduced, except in full, without the approval of CSA International.

1707-94 Street N.W., Edmonton, AB, Canada T6N 1E6

Telephone: 780.450.2111 1.800.463.6727 Fax: 780.461.5322 www.csa-international.org

Class I, Division 2, Group A, C and D, Temperature Code T3, Enclosure Type 4 (INDOOR)
Control Panel, Model: AB COMPACT-LOGIX
Electrical rating: 120 V, 60 Hz, 5 A, 1 Ph

<u>Serial Number</u>	<u>CSA C/US Label Number</u>
E001124-01-601	FC 255420

Part D

CLASS – 3218-06: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations
CLASS – 3218-86: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations –
Certified to U.S. Standards

Class I, Division 2, Group C and D, Temperature Code T3, Enclosure Type 4 (INDOOR)
Control Panel, Model: AB COMPACT-LOGIX
Electrical rating: CP: 24 Vdc, 10 A / ESM: 24 Vdc, 15 A

<u>Serial Number</u>	<u>CSA C/US Label Number</u>
E001456-01-601	FC 255421
E001456-02-601	FC 255422

Part E

CLASS – 3218-06: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations
CLASS – 3218-86: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations –
Certified to U.S. Standards

Class I, Division 2, Group C and D, Temperature Code T3, Enclosure Type 4 (INDOOR)
Control Panel, Model: AB COMPACT-LOGIX
Electrical rating: CAT: 24 Vdc, 15 A / CP: 24 Vdc, 15 A

<u>Serial Number</u>	<u>CSA C/US Label Number</u>
E001115-06-601	FC 255431
E001115-07-601	FC 255432

Part F

CLASS – 3218-06: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations
CLASS – 3218-86: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations –
Certified to U.S. Standards

Class I, Division 2, Group C and D, Temperature Code T3, Enclosure Type 4 (INDOOR)
Control Panel, Model: AB COMPACT-LOGIX
Electrical rating: CP: 24 Vdc, 10 A / ESM: 24 Vdc, 15 A

<u>Serial Number</u>	<u>CSA C/US Label Number</u>
E001210-01-601	FC 255433

Part G

CLASS – 3218-06: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations
CLASS – 3218-86: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations –
Certified to U.S. Standards

Class I, Division 2, Group C and D, Temperature Code T3, Enclosure Type 4 (INDOOR)
Control Panel, Model: AB COMPACT-LOGIX
Electrical rating: CAT: 24 Vdc, 15 A / CP: 24 Vdc, 15 A

Serial Number
E001115-08-601

CSA C/US Label Number
FC 255449

Part H

CLASS – 3218-06: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations
CLASS – 3218-86: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations –
Certified to U.S. Standards

Class I, Division 2, Group A, B, C and D / Zone 2, Group IIC, Temperature Code T3, Enclosure Type 4
(INDOOR)
Control Panel, Model: AB COMPACT-LOGIX
Electrical rating: 120 V, 60 Hz, 5 A, 1 Ph

Serial Number
E001123-01-601

CSA C/US Label Number
FC 255470

Part I

CLASS – 3218-86: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations –
Certified to U.S. Standards

Class I, Division 2, Group C and D, Temperature Code T3, Enclosure Type 4 (INDOOR)
Control Panel, Model: AB COMPACT-LOGIX
Electrical rating: 24 Vdc, 15 A / 24Vdc, 6 A

Serial Number
E001606-01-601

CSA US Label Number
U 081474

Location of Examination
Enerflex Ltd.
10121 Barlow Trail NE
Calgary, Alberta

Location of Installation
Unknown

APPLICABLE REQUIREMENTS

The specific products described in this report were evaluated against:

CLASS – 3218-06: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations

- CSA Standard C22.1-12 - Canadian Electrical Code Part I.
- CSA Standard C22.2 No. 0-10 - General Requirements - Canadian Electrical Code Part II.
- CSA Standard C22.2 No. 14-13 - Industrial Control Equipment.

- CSA Standard C22.2 No. 157-92 - Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations.
- CSA Standard C22.2 No. 213-M1987 - Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations.

CLASS – 3218-86: Industrial Control Equipment – Miscellaneous Apparatus – For Hazardous Locations – Certified to U.S. Standards

- NFPA 70 - 2014 - National Electrical Code
- UL 508A – 1st Ed. (2013) - Industrial Control Panels.
- ANSI/UL 508 – 17th Ed. (2013) - Industrial Control Equipment.
- UL 913 – 8th Ed. (2013) - Intrinsically Safe Apparatus and Associated Apparatus for use in Class I, II, III, Division 1 Hazardous (Classified) Locations.
- ANSI/ISA-12.12.01-2013 - Nonincendive Electrical Equipment for Use in Class I and II, Division 2, Class III, Division 1 and 2 Hazardous (Classified) Locations.

MARKINGS

- (1) Submitter's name
- (2) Model designation
- (3) Complete electrical rating
- (4) Serial number traceable to month and year of manufacture
- (5) Enclosure Type
- (6) Hazardous Location designations
- (7) Temperature code

The following additional markings on Parts A through H:

- (8) WARNING: EXPLOSION HAZARD
DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.
SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.
- (9) AVERTISSEMENT: RISQUE D'EXPLOSION
AVANT DE DÉCONNECTER L'ÉQUIPEMENT, COUPER LE COURANT OU S'ASSURER QUE L'EMPLACEMENT EST DÉSIGNÉ NON DANGEREUX LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE CE MATÉRIEL INACCEPTABLE POUR LES EMBLEMES DE CLASSE I, DIVISION 2.

The following additional markings on Parts B through H:

- (10) WARNING: SHOCK HAZARD
MORE THAN ONE POWER SOURCE MAY BE SUPPLIED TO PANEL, ENSURE PANEL IS ISOLATED BEFORE OPENING.
- (11) AVERTISSEMENT: RISQUE DE CHOC ÉLECTRIQUE
PLUS D'UNE SOURCE D'ALIMENTATION ÉLECTRIQUE PEUT ÊTRE ACHÉMINÉE AU PANNEAU ÉLECTRIQUE ASSUREZ VOUS QUE LE PANNEAU ÉLECTRIQUE EST ISOLÉ AVANT DE L'OUVRIR.

The following additional markings on Part H:

- (12) ASSOCIATED EQUIPMENT [Exia] INTRINSIC SAFETY OUTPUT FOR CLASS I, ZONE 2 HAZARDOUS LOCATIONS PER DRAWING P+F #116-0173

- (13) WARNING: EXPLOSION HAZARD – SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY
- (14) INTRINSICALLY SAFE AND NON-INTRINSICALLY SAFE WIRING MUST NOT BE RUN IN THE SAME WIREWAY
- (15) EQUIPMENT CONNEXE, SÉCURITÉ INTRINSÈQUE DE LE SORTIE POUR CLASS I ZONE 2 UN ENDROIT DANGEREUX SELON LE DESSIN P+F 116-0173
- (16) AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT PORTER ATTEINTE À LA SÉCURITÉ INTRINSÈQUE DE L'ÉQUIPEMENT
- (17) LES Câbles INTRINSÈQUEMENT SÉCURITAIRES NE DOIVENT PAS ÊTRE INSTALLES DANS LA MÊME GOULOTTE

The following additional markings on Part I:

- (18) WARNING: EXPLOSION HAZARD
DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.
SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.
- (19) WARNING: SHOCK HAZARD
MORE THAN ONE POWER SOURCE MAY BE SUPPLIED TO PANEL, ENSURE PANEL IS ISOLATED BEFORE OPENING.

Method of marking

An approved adhesive backed nameplate and Lamacoid warnings are secured to the enclosure as per their certified product.

ALTERATIONS

- 1. Markings as above.

FACTORY TESTS

n/a

DESCRIPTION

Part A

The Control Panel is a metal enclosure with a lockable hinged cover and internal metal mounting plate. The overall dimensions are approximately 48 inches high by 30 inches wide by 10 inches deep. The PLC, Ethernet switch, CDL Gateway, relays, terminal strips and fuse holders are mounted to internal plate. A touch screen and ESD button are mounted though the cover. General views are shown following.



Front View



Interior View

List of components deemed safety critical:

1. Enclosure [Total of 1]
Manufacturer: Hammond
Model: SE1102047W10M20
Status: CSA certified, UL listed
Rating: Type 4, 12
2. ESD Button / Sealed Contact Block [Total of 1 / 1]
Manufacturer: Allen Bradley
Model: 800G-MPE / 800G-XLSN
Status: cULus listed, Class I, Division 2, Group A, B, C and D / Class I, Zone 1, AEx de IIC
Rating: A600, P600
3. Touch Screen [Total of 1]
Manufacturer: Allen Bradley
Model: 2711P-T10C4D8
Status: cULus listed, Class I, Division 2, Group A, B, C and D, Temperature Code T4
Rating: 24 Vdc, 70 W
Special: Includes 2711P-RP8D Logic Module and 2711P-RDT10C Touch Screen Display Module.

4. PLC [Total of 1]

Manufacturer: Allen-Bradley

Model: Compact Logix

Status: cULus listed, Class I, Division 2, Group A, B, C and D

Rating: 10.5 – 28.8 Vdc

Special: Complete with the following Allen-Bradley, cULus listed power supply and modules, rated for Class I, Division 2, Group A, B, C and D hazardous locations:

Qty	Description	Model No.	Temp. Code
1	Processor	1769-L33ER	T5
1	Power Supply	1769-PB4	T3C
2	Digital Input Module	1769-IQ16	T3C
1	Digital Output Module	1769-OB16	T3C
1	Analog Input Module	1769-IF16C	T5
1	Analog Output Module	1769-OF8C	T4A
1	End Cap	1769-ECR	

5. PLC Analog Universal Input Module [Total of 2]

Manufacturer: Spectrum Controls

Model: 1769sc-IF8u

Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T4A

Rating: 24 Vdc, Connected to A/B PLC modules.

6. Ethernet Switch [Total of 1]

Manufacturer: N-Tron

Model: 306TX

Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T4A

Rating: 10 - 30 Vdc, 0.5 A

7. Relay / Base [Total of 16]

Manufacturer: Phoenix Contact

Model: 2961105 / 2966016

Status: cULus, Class 1, Division 2, Group A, B, C and D / Zone 2, Ex nC II T6 / AEx nC II T6

Rating: Coil: 24 Vdc, Contacts: 240 V, 6 A

8. Relay / Base [Total of 2]

Manufacturer: Phoenix Contact

Model: RT940005 / 2980461

Status: cULus, Class 1, Division 2, Group A, B, C and D / Zone 2, Ex nC II T6 / AEx nC II T6

Rating: Coil: 24 Vdc, Contacts: 250 V, 6 A

9. Fuse Block [Total of 1]

Manufacturer: Weidmuller

Model: WSI 25/1

Status: CSA certified, UL recognized

Rating: 600 V, 30 A

Special: Fuses are installed in circuit not subject to overloading under normal operating conditions.

- 9.1. Fuse [Total of 1]
Manufacturer: Buss Low Peak
Model: LP-CC-15
Status: CSA certified, UL listed
Rating: 600 Vac, 150 Vdc, 15 A

- 10. Fused Terminal Block [Total of 29]
Manufacturer: Weidmuller
Model: WSI 6 LD
Status: CSA certified, UL recognized
Rating: 300 V, 10 A
Special: Fuses are installed in circuit not subject to overloading under normal operating conditions.

- 10.1. Fuse [Total of 1]
Manufacturer: Buss
Model: S501-5-R
Status: CSA certified, UL recognized
Rating: 250 V, 5 A

- 10.2. Fuse [Total of 4]
Manufacturer: Buss
Model: S501-4-R
Status: CSA certified, UL recognized
Rating: 250 V, 4 A

- 10.3. Fuse [Total of 1]
Manufacturer: Buss
Model: S501-3.15-R
Status: CSA certified, UL recognized
Rating: 250 V, 3.15 A

- 10.4. Fuse [Total of 10]
Manufacturer: Buss
Model: S501-2-R
Status: CSA certified, UL recognized
Rating: 250 V, 2 A

- 10.5. Fuse [Total of 13]
Manufacturer: Buss
Model: S501-1-R
Status: CSA certified, UL recognized
Rating: 250 V, 1 A

- 11. Terminal Block [Total of 1]
Manufacturer: Weidmuller
Model: WDU 16
Status: CSA certified, UL recognized
Rating: 600 V, 65 A

12. Terminal Block [Total of 2]
Manufacturer: Weidmuller
Model: WDU 6
Status: CSA certified, UL recognized
Rating: 600 V, 45 A

13. Terminal Block [Total of 22]
Manufacturer: Weidmuller
Model: WDU 4
Status: CSA certified, UL recognized
Rating: 600 V, 35 A

14. Terminal Block [Total of 6]
Manufacturer: Weidmuller
Model: WDU 2.5
Status: CSA certified, UL recognized
Rating: 600 V, 20 A

15. Terminal Block [Total of 47]
Manufacturer: Weidmuller
Model: WDK 2.5N
Status: CSA certified, UL recognized
Rating: 300 V, 20 A

16. Terminal Block with Diode [Total of 9]
Manufacturer: Weidmuller
Model: WDK 2.5 1D A.1
Status: CSA certified, UL recognized
Rating: 300 V, 1 A

17. Disconnect Terminal Block [Total of 3]
Manufacturer: Weidmuller
Model: WTR 4
Status: CSA certified, UL recognized
Rating: 300 V, 10 A

18. PE Terminal Block [Total of 4]
Manufacturer: Weidmuller
Model: WPE 4
Status: CSA certified, UL recognized

19. Ground Bar [Total of 2]
Manufacturer: IlSCO
Model: N8020
Status: CSA certified, UL recognized

20. Ground Lug [Total of 2]
Manufacturer: IlSCO
Model: TA21
Status: CSA certified

Parts B, E and G

The Control Panel is a metal enclosure with a lockable hinged cover and internal metal mounting plate. The overall dimensions are approximately 48 inches high by 30 inches wide by 10 inches deep. The PLC, Ethernet switch, CDL Gateway, frequency transmitter, relays, terminal strips and fuse holders are mounted to internal plate. A touch screen, selector switch and ESD button are mounted through the cover. General views are shown following.



Front View



Interior View

List of components deemed safety critical:

1. Enclosure [Total of 1]
Manufacturer: Hammond
Model: SE1102047W10M20
Status: CSA certified, UL listed
Rating: Type 4, 12
2. ESD Button / Sealed Contact Block [Total of 1 / 1]
Manufacturer: Allen Bradley
Model: 800G-MPE / 800G-XLSN
Status: cULus listed, Class I, Division 2, Group A, B, C and D / Class I, Zone 1, AEx de IIC
Rating: A600, P600

- 3. Selector Switch / Sealed Contact Block [Total of 1 / 2]
Manufacturer: Allen Bradley
Model: 800T-N2KF4/ 800T-XAP
Status: cULus listed, Class I, Division 2, Group A, B, C and D
Rating: 600 V

- 4. Touch Screen [Total of 1]
Manufacturer: Allen Bradley
Model: 2711P-T10C4D8
Status: cULus listed, Class I, Division 2, Group A, B, C and D, Temperature Code T4
Rating: 24 Vdc, 70 W
Special: Includes 2711P-RP8D Logic Module and 2711P-RDT10C Touch Screen Display Module.

- 5. PLC [Total of 1]
Manufacturer: Allen-Bradley
Model: Compact Logix
Status: cULus listed, Class I, Division 2, Group A, B, C and D
Rating: 10.5 – 28.8 Vdc
Special: Complete with the following Allen-Bradley, cULus listed power supply and modules, rated for Class I, Division 2, Group A, B, C and D hazardous locations:

Qty	Description	Model No.	Temp. Code
1	Processor	1769-L33ER	T5
1	Power Supply	1769-PB4	T3C
2	Digital Input Module	1769-IQ16	T3C
1	Digital Output Module	1769-OB16	T3C
1	Analog Input Module	1769-IF16C	T5
1	Analog Input Module	1769-IF8	T3C
2	Analog Output Module	1769-OF8C	T4A
1	End Cap	1769-ECR	

- 6. PLC Analog Universal Input Module [Total of 3]
Manufacturer: Spectrum Controls
Model: 1769sc-IF8u
Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T4A
Rating: 24 Vdc, Connected to A/B PLC modules.

- 7. Ethernet Switch [Total of 1]
Manufacturer: N-Tron
Model: 105TX
Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T4A
Rating: 10 - 30 Vdc, 215 mA

- 8. CDL Gateway [Total of 1]
Manufacturer: Monico
Model: CDL-MCLE-AB-CL-IU
Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T4A
Rating: 24 Vdc, 400 mA, Class 2 / 3.5 A Maximum (16 modules)

9. Frequency Transmitter [Total of 1]
Manufacturer: Phoenix Contact
Model: MCR-f-UI-DC / PN: 2814605
Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T4
Rating: 20 – 30 Vdc, 60 mA

10. Relay / Base [Total of 17]
Manufacturer: Phoenix Contact
Model: 2961105 / 2966016
Status: cULus, Class 1, Division 2, Group A, B, C and D / Zone 2, Ex nC II T6 / AEx nC II T6
Rating: Coil: 24 Vdc, Contacts: 240 V, 6 A

11. Relay / Base [Total of 5]
Manufacturer: Phoenix Contact
Model: RT940005 / 2980461
Status: cULus, Class 1, Division 2, Group A, B, C and D / Zone 2, Ex nC II T6 / AEx nC II T6
Rating: Coil: 24 Vdc, Contacts: 250 V, 6 A

12. Fuse Block [Total of 2]
Manufacturer: Weidmuller
Model: WSI 25/1
Status: CSA certified, UL recognized
Rating: 600 V, 30 A
Special: Fuses are installed in circuit not subject to overloading under normal operating conditions.
 - 12.1. Fuse [Total of 2]
Manufacturer: Buss Low Peak
Model: LP-CC-15
Status: CSA certified, UL listed
Rating: 600 Vac, 150 Vdc, 15 A

13. Fused Terminal Block [Total of 30]
Manufacturer: Weidmuller
Model: WSI 6 LD
Status: CSA certified, UL recognized
Rating: 300 V, 10 A
Special: Fuses are installed in circuit not subject to overloading under normal operating conditions.
 - 13.1. Fuse [Total of 1]
Manufacturer: Buss
Model: S501-5-R
Status: CSA certified, UL recognized
Rating: 250 V, 5 A

 - 13.2. Fuse [Total of 1]
Manufacturer: Buss
Model: S501-4-R
Status: CSA certified, UL recognized
Rating: 250 V, 4 A

- 13.3. Fuse [Total of 13]
Manufacturer: Buss
Model: S501-2-R
Status: CSA certified, UL recognized
Rating: 250 V, 2 A

- 13.4. Fuse [Total of 14]
Manufacturer: Buss
Model: S501-1-R
Status: CSA certified, UL recognized
Rating: 250 V, 1 A

- 14. Fused Terminal Block [Total of 72]
Manufacturer: Weidmuller
Model: WMF 2.5 FU
Status: CSA certified, UL recognized
Rating: 36 V, 17 A
Special: Fuses are installed in circuit not subject to overloading under normal operating conditions.

- 14.1. Fuse [Total of 72]
Manufacturer: Buss
Model: S501-250-R
Status: CSA certified, UL recognized
Rating: 250 V, 250 mA

- 15. Terminal Block [Total of 2]
Manufacturer: Weidmuller
Model: WDU 16
Status: CSA certified, UL recognized
Rating: 600 V, 65 A

- 16. Terminal Block [Total of 5]
Manufacturer: Weidmuller
Model: WDU 6
Status: CSA certified, UL recognized
Rating: 600 V, 45 A

- 17. Terminal Block [Total of 21]
Manufacturer: Weidmuller
Model: WDU 4
Status: CSA certified, UL recognized
Rating: 600 V, 35 A

- 18. Terminal Block [Total of 6]
Manufacturer: Weidmuller
Model: WDU 2.5
Status: CSA certified, UL recognized
Rating: 600 V, 20 A

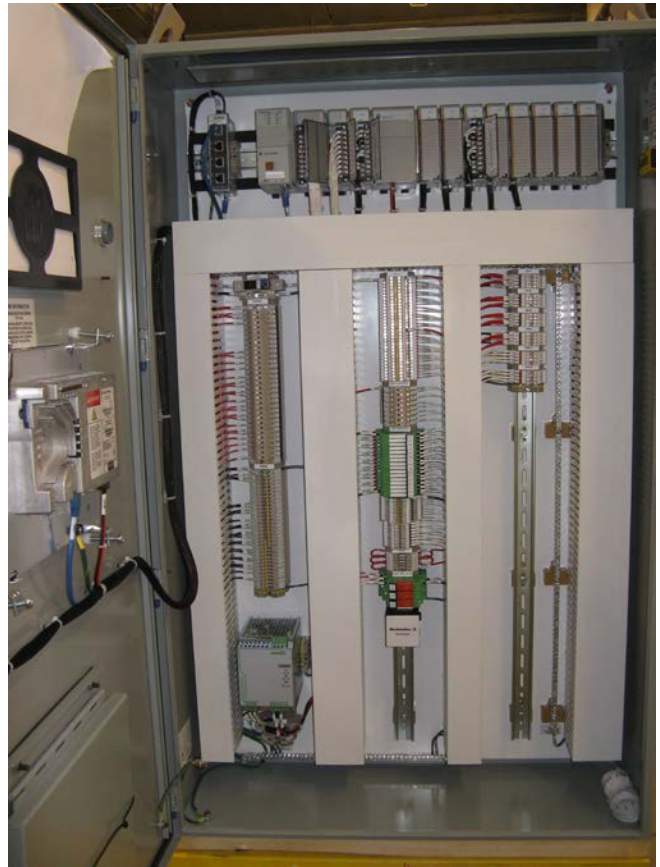
19. Terminal Block [Total of 72]
Manufacturer: Weidmuller
Model: WMF 2.5
Status: CSA certified, UL recognized
Rating: 600 V, 20 A
20. Terminal Block [Total of 4]
Manufacturer: Weidmuller
Model: WDK 2.5N
Status: CSA certified, UL recognized
Rating: 300 V, 20 A
21. Terminal Block [Total of 25]
Manufacturer: Weidmuller
Model: WDK 2.5V
Status: CSA certified, UL recognized
Rating: 300 V, 10 A
22. Terminal Block with Diode [Total of 9]
Manufacturer: Weidmuller
Model: WDK 2.5 1D A.1
Status: CSA certified, UL recognized
Rating: 300 V, 1 A
23. Disconnect Terminal Block [Total of 2]
Manufacturer: Weidmuller
Model: WTR 4
Status: CSA certified, UL recognized
Rating: 300 V, 10 A
24. PE Terminal Block [Total of 4 on Part B / 5 on Parts E and G]
Manufacturer: Weidmuller
Model: WPE 4
Status: CSA certified, UL recognized
25. Ground Bar [Total of 2]
Manufacturer: IlSCO
Model: N8020
Status: CSA certified, UL recognized
26. Ground Lug [Total of 2]
Manufacturer: IlSCO
Model: TA21
Status: CSA certified

Part C

The Control Panel is a metal enclosure with a lockable hinged cover and internal metal mounting plate. The overall dimensions are approximately 48 inches high by 30 inches wide by 10 inches deep. The power supply, PLC, Ethernet switch, relays, terminal strips and fuse holders are mounted to internal plate. A touch screen and ESD button are mounted through the cover. General views are shown following.



Front View



Interior View

List of components deemed safety critical:

1. Enclosure [Total of 1]
Manufacturer: Hammond
Model: SE1102047W10M20
Status: CSA certified, UL listed
Rating: Type 4, 12
2. ESD Button / Sealed Contact Block [Total of 1 / 1]
Manufacturer: Allen Bradley
Model: 800G-MPE / 800G-XLSN
Status: cULus listed, Class I, Division 2, Group A, B, C and D / Class I, Zone 1, AEx de IIC
Rating: A600, P600
3. Touch Screen [Total of 1]
Manufacturer: Allen Bradley
Model: 2711P-T10C4D8
Status: cULus listed, Class I, Division 2, Group A, B, C and D, Temperature Code T4
Rating: 24 Vdc, 70 W
Special: Includes 2711P-RP8D Logic Module and 2711P-RDT10C Touch Screen Display Module.

4. PLC [Total of 1]
Manufacturer: Allen-Bradley
Model: Compact Logix
Status: cULus listed, Class I, Division 2, Group A, B, C and D
Rating: 10.5 – 28.8 Vdc
Special: Complete with the following Allen-Bradley, cULus listed power supply and modules, rated for Class I, Division 2, Group A, B, C and D hazardous locations:

Qty	Description	Model No.	Temp. Code
1	Processor	1769-L33ER	T5
1	Power Supply	1769-PB4	T3C
1	Digital Input Module	1769-IQ32	T3C
1	Digital Output Module	1769-OB16	T3C
1	End Cap	1769-ECR	

5. PLC Analog Universal Input Module [Total of 3]
Manufacturer: Spectrum Controls
Model: 1769sc-IF8u
Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T4A
Rating: 24 Vdc, Connected to A/B PLC modules.
6. PLC Analog Input HART Module [Total of 4]
Manufacturer: Spectrum Controls
Model: 1769sc-IF4IH
Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T4A
Rating: 24 Vdc, Connected to A/B PLC modules.
7. PLC Analog Output HART Module [Total of 2]
Manufacturer: Spectrum Controls
Model: 1769sc-OF4IH
Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T4A
Rating: 24 Vdc, Connected to A/B PLC modules.
8. Ethernet Switch [Total of 1]
Manufacturer: Phoenix Contact
Model: SFN 5TX
Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T6 / Ex nC IIC T5
Rating: 24 Vdc, 157 mA
9. Power Supply [Total of 1]
Manufacturer: Phoenix Contact
Model: QUINT-PS/1AC/24DC/20; PN: 2866776
Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T3C
Rating: Input: 100 – 240 Vac, 6.0 – 2.6 A / Output: 24 Vdc, 20 A
10. Relay / Base [Total of 16]
Manufacturer: Phoenix Contact
Model: 2961105 / 2966016
Status: cULus, Class 1, Division 2, Group A, B, C and D / Zone 2, Ex nC II T6 / AEx nC II T6
Rating: Coil: 24 Vdc, Contacts: 240 V, 6 A

11. Relay / Base [Total of 3]
Manufacturer: Phoenix Contact
Model: RT940005 / 2980461
Status: cULus, Class 1, Division 2, Group A, B, C and D / Zone 2, Ex nC II T6 / AEx nC II T6
Rating: Coil: 24 Vdc, Contacts: 250 V, 6 A

12. Fuse Block [Total of 2]
Manufacturer: Weidmuller
Model: WSI 25/1
Status: CSA certified, UL recognized
Rating: 600 V, 30 A
Special: Fuses are installed in circuit not subject to overloading under normal operating conditions.
 - 12.1. Fuse [Total of 1]
Manufacturer: Buss Low Peak
Model: LP-CC-20
Status: CSA certified, UL listed
Rating: 600 Vac, 300 Vdc, 20 A

 - 12.2. Fuse [Total of 1]
Manufacturer: Buss Low Peak
Model: LP-CC-5
Status: CSA certified, UL listed
Rating: 600 Vac, 150 Vdc, 5 A

13. Fused Terminal Block [Total of 38]
Manufacturer: Weidmuller
Model: WSI 6 LD
Status: CSA certified, UL recognized
Rating: 300 V, 10 A
Special: Fuses are installed in circuit not subject to overloading under normal operating conditions.
 - 13.1. Fuse [Total of 1]
Manufacturer: Buss
Model: S501-5-R
Status: CSA certified, UL recognized
Rating: 250 V, 5 A

 - 13.2. Fuse [Total of 3]
Manufacturer: Buss
Model: S501-4-R
Status: CSA certified, UL recognized
Rating: 250 V, 4 A

 - 13.3. Fuse [Total of 10]
Manufacturer: Buss
Model: S501-2-R
Status: CSA certified, UL recognized
Rating: 250 V, 2 A

- 13.4. Fuse [Total of 24]
Manufacturer: Buss
Model: S501-1-R
Status: CSA certified, UL recognized
Rating: 250 V, 1 A

- 14. Terminal Block [Total of 2]
Manufacturer: Weidmuller
Model: WDU 16
Status: CSA certified, UL recognized
Rating: 600 V, 65 A

- 15. Terminal Block [Total of 2]
Manufacturer: Weidmuller
Model: WDU 6
Status: CSA certified, UL recognized
Rating: 600 V, 45 A

- 16. Terminal Block [Total of 32]
Manufacturer: Weidmuller
Model: WDU 4
Status: CSA certified, UL recognized
Rating: 600 V, 35 A

- 17. Terminal Block [Total of 6]
Manufacturer: Weidmuller
Model: WDU 2.5
Status: CSA certified, UL recognized
Rating: 600 V, 20 A

- 18. Terminal Block [Total of 64]
Manufacturer: Weidmuller
Model: WDK 2.5N
Status: CSA certified, UL recognized
Rating: 300 V, 20 A

- 19. Terminal Block with Diode [Total of 8]
Manufacturer: Weidmuller
Model: WDK 2.5 1D A.1
Status: CSA certified, UL recognized
Rating: 300 V, 1 A

- 20. Disconnect Terminal Block [Total of 2]
Manufacturer: Weidmuller
Model: WTR 2.5
Status: CSA certified, UL recognized
Rating: 300 V, 10 A

- 21. PE Terminal Block [Total of 5]
Manufacturer: Weidmuller
Model: WPE 4
Status: CSA certified, UL recognized

- 22. Ground Bar [Total of 2]
Manufacturer: IlSCO
Model: N8020
Status: CSA certified, UL recognized

- 23. Ground Lug [Total of 2]
Manufacturer: IlSCO
Model: TA21
Status: CSA certified

Part D

The Control Panel is a metal enclosure with a lockable, hinged cover and internal metal mounting plate. The overall dimensions are approximately 48 inches high by 30 inches wide by 10 inches deep. The PLC, Ethernet switch, Modbus gateway, frequency transmitter, relays, terminal strips and fuse holders are mounted to internal plate. A touch screen and ESD button are mounted through the cover. General views are shown following.



Front View



Interior View

List of components deemed safety critical:

1. Enclosure [Total of 1]
Manufacturer: Hammond
Model: SE1102047W10M20
Status: CSA certified, UL listed
Rating: Type 4, 12

2. ESD Button / Sealed Contact Block [Total of 1 / 1]
Manufacturer: Allen Bradley
Model: 800G-MPE / 800G-XLSN
Status: cULus listed, Class I, Division 2, Group A, B, C and D / Class I, Zone 1, AEx de IIC
Rating: A600, P600

3. Touch Screen [Total of 1]
Manufacturer: Allen Bradley
Model: 2711P-T10C4D8
Status: cULus listed, Class I, Division 2, Group A, B, C and D, Temperature Code T4
Rating: 24 Vdc, 70 W
Special: Includes 2711P-RP8D Logic Module and 2711P-RDT10C Touch Screen Display Module.

4. PLC [Total of 1]
Manufacturer: Allen-Bradley
Model: Compact Logix
Status: cULus listed, Class I, Division 2, Group A, B, C and D
Rating: 10.5 – 28.8 Vdc.
Special: Complete with the following Allen-Bradley, cULus listed power supply and modules, rated for Class I, Division 2, Group A, B, C and D hazardous locations:

Qty	Description	Model No.	Temp. Code
1	Processor	1769-L33ER	T5
1	Power Supply	1769-PB4	T3C
1	Digital Input Module	1769-IQ16	T3C
1	Digital Input / Output Module	1769-IQ6XOW4	T3C
1	Digital Output Module	1769-OB16	T3C
1	Analog Input Module	1769-IF16C	T5
1	Analog Output Module	1769-OF4	T4A
1	End Cap	1769-ECR	

5. PLC Analog Universal Input Module [Total of 4]
Manufacturer: Spectrum Controls
Model: 1769sc-IF8u
Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T5
Rating: 24 Vdc, Connected to above A/B PLC modules.

6. Ethernet Switch [Total of 1]
Manufacturer: Phoenix Contact
Model: SFN 5TX
Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T6 / Ex nC IIC T5
Rating: 24 Vdc, 157 mA

7. Modbus Gateway [Total of 1]
Manufacturer: Moxa
Model: MGate MB3170
Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T4
Rating: 12-48 Vdc, 435 mA, Class 2
8. Frequency Transmitter [Total of 1]
Manufacturer: Phoenix Contact
Model: MCR-f-UI-DC / PN: 2814605
Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T4
Rating: 20 – 30 Vdc, 60 mA
9. Relay / Base [Total of 21]
Manufacturer: Phoenix Contact
Model: 2961105 / 2966016
Status: cULus, Class 1, Division 2, Group A, B, C and D / Zone 2, Ex nC II T6 / AEx nC II T6
Rating: Coil: 24 Vdc, Contacts: 240 V, 6 A
10. Relay / Base [Total of 3]
Manufacturer: Phoenix Contact
Model: RT940005 / 2980461
Status: cULus, Class 1, Division 2, Group A, B, C and D / Zone 2, Ex nC II T6 / AEx nC II T6
Rating: Coil: 24 Vdc, Contacts: 250 V, 6 A
11. Fuse Block [Total of 2]
Manufacturer: Weidmuller
Model: WSI 25/1
Status: CSA certified, UL recognized
Rating: 600 V, 30 A
Special: Fuses are installed in circuit not subject to overloading under normal operating conditions.
 - 11.1. Fuse [Total of 1]
Manufacturer: Buss Low Peak
Model: LP-CC-15
Status: CSA certified, UL listed
Rating: 600 Vac, 150 Vdc, 15 A
 - 11.2. Fuse [Total of 1]
Manufacturer: Buss Low Peak
Model: LP-CC-10
Status: CSA certified, UL listed
Rating: 600 Vac, 150 Vdc, 10 A
12. Fused Terminal Block [Total of 32]
Manufacturer: Weidmuller
Model: WSI 6 LD
Status: CSA certified, UL recognized
Rating: 300 V, 10 A
Special: Fuses are installed in circuit not subject to overloading under normal operating conditions.

- 12.1. Fuse [Total of 1]
Manufacturer: Buss
Model: S501-5-R
Status: CSA certified, UL recognized
Rating: 250 V, 5 A

- 12.2. Fuse [Total of 4]
Manufacturer: Buss
Model: S501-4-R
Status: CSA certified, UL recognized
Rating: 250 V, 4 A

- 12.3. Fuse [Total of 15]
Manufacturer: Buss
Model: S501-2-R
Status: CSA certified, UL recognized
Rating: 250 V, 2 A

- 12.4. Fuse [Total of 8]
Manufacturer: Buss
Model: S501-1-R
Status: CSA certified, UL recognized
Rating: 250 V, 1 A

- 12.5. Fuse [Total of 4]
Manufacturer: Buss
Model: S501-500-R
Status: CSA certified, UL recognized
Rating: 250 V, 500 mA

- 13. Terminal Block [Total of 2]
Manufacturer: Weidmuller
Model: WDU 16
Status: CSA certified, UL recognized
Rating: 600 V, 85 A

- 14. Terminal Block [Total of 4]
Manufacturer: Weidmuller
Model: WDU 6
Status: CSA certified, UL recognized
Rating: 600 V, 45 A

- 15. Terminal Block [Total of 22]
Manufacturer: Weidmuller
Model: WDU 4
Status: CSA certified, UL recognized
Rating: 600 V, 35 A

16. Terminal Block [Total of 28]
Manufacturer: Weidmuller
Model: WDU 2.5
Status: CSA certified, UL recognized
Rating: 600 V, 20 A
17. Terminal Block [Total of 48]
Manufacturer: Weidmuller
Model: WDK 2.5N
Status: CSA certified, UL recognized
Rating: 300 V, 20 A
18. Terminal Block [Total of 1]
Manufacturer: Weidmuller
Model: WDK 2.5V
Status: CSA certified, UL recognized
Rating: 300 V, 10 A
19. Terminal Block with Diode [Total of 12]
Manufacturer: Weidmuller
Model: WDK 2.5 1D A.1
Status: CSA certified, UL recognized
Rating: 300 V, 1 A
20. Disconnect Terminal Block [Total of 2]
Manufacturer: Weidmuller
Model: WTR 4
Status: CSA certified, UL recognized
Rating: 300 V, 10 A
21. PE Terminal Block [Total of 4]
Manufacturer: Weidmuller
Model: WPE 4
Status: CSA certified, UL recognized
22. Ground Bar [Total of 2]
Manufacturer: IlSCO
Model: N8020
Status: CSA certified, UL recognized
23. Ground Lug [Total of 2]
Manufacturer: IlSCO
Model: TA21
Status: CSA certified, UL recognized

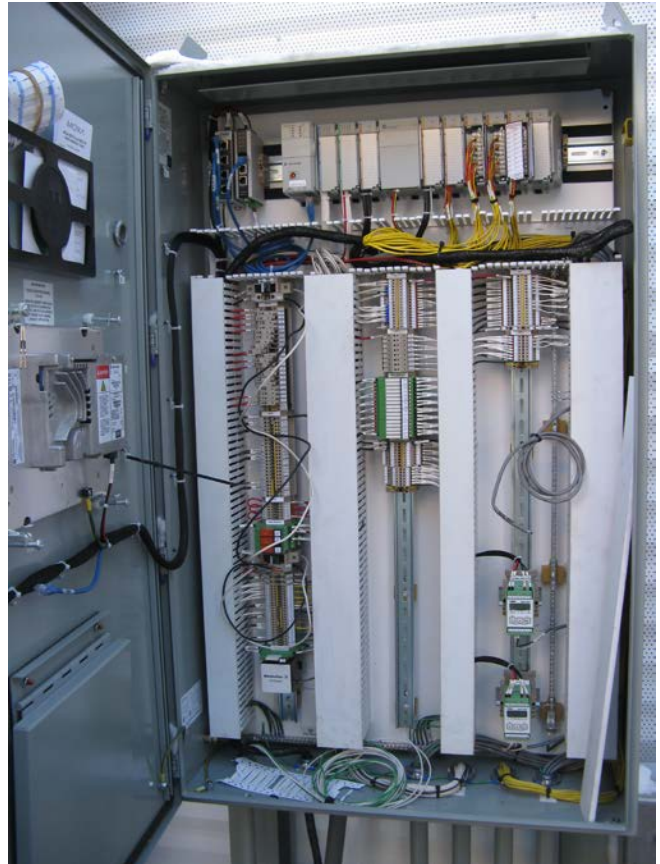
Part F

The Control Panel is a metal enclosure with a lockable, hinged cover and internal metal mounting plate. The overall dimensions are approximately 48 inches high by 30 inches wide by 10 inches deep. The PLC, Ethernet switch, Modbus gateway, frequency transmitters, relays, terminal strips and fuse holders are mounted to internal plate. A touch screen and ESD button are mounted through the cover.

The control panel was originally certified under CSA Field Certification Report 2743341 with Field Certification Label FC 246947. The panel was modified by adding a second frequency transmitter. The control panel was re-inspected, label FC 246947 was removed and new label applied. The control panel is now configured as follows:



Front View



Interior View

List of components deemed safety critical:

1. Enclosure [Total of 1]
Manufacturer: Hammond
Model: SE1102047W10M20
Status: CSA certified, UL listed
Rating: Type 4, 12
2. ESD Button / Sealed Contact Block [Total of 1 / 1]
Manufacturer: Allen Bradley
Model: 800G-MPE / 800G-XLSN
Status: cULus listed, Class I, Division 2, Group A, B, C and D / Class I, Zone 1, AEx de IIC
Rating: A600, P600

- 3. Touch Screen [Total of 1]
Manufacturer: Allen Bradley
Model: 2711P-T10C4D8
Status: cULus listed, Class I, Division 2, Group A, B, C and D, Temperature Code T4
Rating: 24 Vdc, 70 W
Special: Includes 2711P-RP8D Logic Module and 2711P-RDT10C Touch Screen Display Module.

- 4. PLC [Total of 1]
Manufacturer: Allen-Bradley
Model: Compact Logix
Status: cULus listed, Class I, Division 2, Group A, B, C and D
Rating: 10.5 – 28.8 Vdc.
Special: Complete with the following Allen-Bradley, cULus listed power supply and modules, rated for Class I, Division 2, Group A, B, C and D hazardous locations:

Qty	Description	Model No.	Temp. Code
1	Processor	1769-L33ER	T5
1	Power Supply	1769-PB4	T3C
1	Digital Input Module	1769-IQ16	T3C
1	Digital Output Module	1769-OB16	T3C
1	Analog Input Module	1769-IF16C	T5
1	Analog Output Module	1769-OF8C	T4A
1	End Cap	1769-ECR	

- 5. PLC Analog Universal Input Module [Total of 5]
Manufacturer: Spectrum Controls
Model: 1769sc-IF8u
Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T5
Rating: 24 Vdc, Connected to above A/B PLC modules.

- 6. Ethernet Switch [Total of 1]
Manufacturer: Phoenix Contact
Model: SFN 5TX
Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T6 / Ex nC IIC T5
Rating: 24 Vdc, 157 mA

- 7. Modbus Gateway [Total of 1]
Manufacturer: Moxa
Model: MGate MB3170
Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T4
Rating: 12-48 Vdc, 435 mA, Class 2

- 8. Frequency Transmitter [Total of 2]
Manufacturer: Phoenix Contact
Model: MCR-f-UI-DC / PN: 2814605
Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T4
Rating: 20 – 30 Vdc, 60 mA

9. Relay / Base [Total of 17]
Manufacturer: Phoenix Contact
Model: 2961105 / 2966016
Status: cULus, Class 1, Division 2, Group A, B, C and D / Zone 2, Ex nC II T6 / AEx nC II T6
Rating: Coil: 24 Vdc, Contacts: 240 V, 6 A

10. Relay / Base [Total of 3]
Manufacturer: Phoenix Contact
Model: RT940005 / 2980461
Status: cULus, Class 1, Division 2, Group A, B, C and D / Zone 2, Ex nC II T6 / AEx nC II T6
Rating: Coil: 24 Vdc, Contacts: 250 V, 6 A

11. Fuse Block [Total of 2]
Manufacturer: Weidmuller
Model: WSI 25/1
Status: CSA certified, UL recognized
Rating: 600 V, 30 A
Special: Fuses are installed in circuit not subject to overloading under normal operating conditions.
 - 11.1. Fuse [Total of 1]
Manufacturer: Buss Low Peak
Model: LP-CC-15
Status: CSA certified, UL listed
Rating: 600 Vac, 150 Vdc, 15 A

 - 11.2. Fuse [Total of 1]
Manufacturer: Buss Low Peak
Model: LP-CC-10
Status: CSA certified, UL listed
Rating: 600 Vac, 150 Vdc, 10 A

12. Fused Terminal Block [Total of 28]
Manufacturer: Weidmuller
Model: WSI 6 LD
Status: CSA certified, UL recognized
Rating: 300 V, 10 A
Special: Fuses are installed in circuit not subject to overloading under normal operating conditions.
 - 12.1. Fuse [Total of 1]
Manufacturer: Buss
Model: S501-5-R
Status: CSA certified, UL recognized
Rating: 250 V, 5 A

 - 12.2. Fuse [Total of 3]
Manufacturer: Buss
Model: S501-4-R
Status: CSA certified, UL recognized
Rating: 250 V, 4 A

- 12.3. Fuse [Total of 10]
Manufacturer: Buss
Model: S501-2-R
Status: CSA certified, UL recognized
Rating: 250 V, 2 A

- 12.4. Fuse [Total of 10]
Manufacturer: Buss
Model: S501-1-R
Status: CSA certified, UL recognized
Rating: 250 V, 1 A

- 12.5. Fuse [Total of 4]
Manufacturer: Buss
Model: S501-500-R
Status: CSA certified, UL recognized
Rating: 250 V, 500 mA

- 13. Terminal Block [Total of 2]
Manufacturer: Weidmuller
Model: WDU 16
Status: CSA certified, UL recognized
Rating: 600 V, 65 A

- 14. Terminal Block [Total of 4]
Manufacturer: Weidmuller
Model: WDU 6
Status: CSA certified, UL recognized
Rating: 600 V, 45 A

- 15. Terminal Block [Total of 22]
Manufacturer: Weidmuller
Model: WDU 4
Status: CSA certified, UL recognized
Rating: 600 V, 35 A

- 16. Terminal Block [Total of 28]
Manufacturer: Weidmuller
Model: WDU 2.5
Status: CSA certified, UL recognized
Rating: 600 V, 20 A

- 17. Terminal Block [Total of 46]
Manufacturer: Weidmuller
Model: WDK 2.5N
Status: CSA certified, UL recognized
Rating: 300 V, 20 A

18. Terminal Block [Total of 1]
Manufacturer: Weidmuller
Model: WDK 2.5V
Status: CSA certified, UL recognized
Rating: 300 V, 10 A

19. Terminal Block with Diode [Total of 8]
Manufacturer: Weidmuller
Model: WDK 2.5 1D A.1
Status: CSA certified, UL recognized
Rating: 300 V, 1 A

20. Disconnect Terminal Block [Total of 2]
Manufacturer: Weidmuller
Model: WTR 4
Status: CSA certified, UL recognized
Rating: 300 V, 10 A

21. PE Terminal Block [Total of 4]
Manufacturer: Weidmuller
Model: WPE 4
Status: CSA certified, UL recognized

22. Ground Bar [Total of 2]
Manufacturer: IlSCO
Model: N8020
Status: CSA certified, UL recognized

23. Ground Lug [Total of 2]
Manufacturer: IlSCO
Model: TA21
Status: CSA certified, UL recognized

Part H

The Control Panel is a metal enclosure with a lockable, hinged cover and internal metal mounting plate. The overall dimensions are approximately 48 inches high by 30 inches wide by 10 inches deep. The power supply, PLC, Ethernet switch, intrinsically safe barriers, relays, loop isolators, terminal strips and fuse holders are mounted to internal plate. A touch screen and ESD button are mounted through the cover. A non-metallic partition and 50 mm separation is used to separate intrinsically safe wiring from other panel wiring. General views are shown following.



Front View



Interior View

List of components deemed safety critical:

1. Enclosure [Total of 1]
Manufacturer: Hammond
Model: SE1102047W10M20
Status: CSA certified, UL listed
Rating: Type 4, 12
2. ESD Button / Sealed Contact Block [Total of 1 / 1]
Manufacturer: Allen Bradley
Model: 800G-MPE / 800G-XLSN
Status: cULus listed, Class I, Division 2, Group A, B, C and D / Class I, Zone 1, AEx de IIC
Rating: A600, P600
3. Touch Screen [Total of 1]
Manufacturer: Allen Bradley
Model: 2711P-T10C4D8
Status: cULus listed, Class I, Division 2, Group A, B, C and D, Temperature Code T4
Rating: 24 Vdc, 70 W
Special: Includes 2711P-RP8D Logic Module and 2711P-RDT10C Touch Screen Display Module.

4. Power Supply [Total of 1]
Manufacturer: Phoenix Contact
Model: QUINT-PS/1AC/24DC/20; PN: 2866776
Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T3C
Rating: Input: 100 – 240 Vac, 6.0 – 2.6 A / Output: 24 Vdc, 20 A
5. PLC [Total of 1]
Manufacturer: Allen-Bradley
Model: Compact Logix
Status: cULus listed, Class I, Division 2, Group A, B, C and D, Temperature Code T3C
Rating: 10.5 – 28.8 Vdc.
Special: Complete with the following Allen-Bradley, cULus listed power supply and modules, rated for Class I, Division 2, Group A, B, C and D hazardous locations:

Qty	Description	Model No.	Temp. Code
1	Processor	1769-L33ER	T5
1	Power Supply	1769-PB4	T3C
2	Digital Input Module	1769-IQ16	T3C
1	Digital Output Module	1769-OB16	T3C
1	End Cap	1769-ECR	

6. PLC Analog Universal Input Module [Total of 1]
Manufacturer: Spectrum Controls
Model: 1769sc-IF8u
Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T4A
Rating: 24 Vdc, Connected to A/B PLC modules.
7. PLC Analog Input HART Module [Total of 4]
Manufacturer: Spectrum Controls
Model: 1769sc-IF4IH
Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T4A
Rating: 24 Vdc, Connected to A/B PLC modules.
8. PLC Analog Output HART Module [Total of 1]
Manufacturer: Spectrum Controls
Model: 1769sc-OF4IH
Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T4A
Rating: 24 Vdc, Connected to A/B PLC modules.
9. Ethernet Switch [Total of 1]
Manufacturer: Phoenix Contact
Model: SFN 5TX
Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T6 / Ex nC IIC T5
Rating: 24 Vdc, 157 mA
10. Relay / Base [Total of 12]
Manufacturer: Phoenix Contact
Model: 2961105 / 2966016
Status: cULus, Class 1, Division 2, Group A, B, C and D / Zone 2, Ex nC II T6 / AEx nC II T6
Rating: Coil: 24 Vdc, Contacts: 250 V, 6 A

11. Relay / Base [Total of 4]
Manufacturer: Phoenix Contact
Model: 2966595 / 2966016
Status: cULus listed, Class 1, Division 2, Group A, B, C and D / Zone 2, Ex nC II T6 / AEx nC II T6
Rating: Coil: 24 Vdc, Contacts: 24Vdc, 2 A

12. Relay / Base [Total of 3]
Manufacturer: Phoenix Contact
Model: RT940005 / 2980461
Status: cULus, Class 1, Division 2, Group A, B, C and D / Zone 2, Ex nC II T6 / AEx nC II T6
Rating: Coil: 24 Vdc, Contacts: 250 V, 6 A

13. Intrinsic Safety Barrier [Total of 2]
Manufacturer: Pepperl + Fuchs
Model: KFD2-STC4-Ex1.Y2
Status: cULus listed, Class I, Division 2, Group A, B, C and D
Rating: Um – 250 V, Uo – 25.2 V, Io – 93 mA, Ca – 0.688 μ F, La – 17 mH
Special: Intrinsically safe outputs for Class I, Hazardous Locations when connected per Pepperl + Fuchs
Drawing 116-0173.

14. Fuse Block [Total of 2]
Manufacturer: Weidmuller
Model: WSI 25/1
Status: CSA certified, UL recognized
Rating: 600 V, 30 A
Special: Fuses are installed in circuit not subject to overloading under normal operating conditions.
 - 14.1. Fuse [Total of 1]
Manufacturer: Buss Low Peak
Model: LP-CC-20
Status: CSA certified, UL listed
Rating: 600 Vac, 300 Vdc, 20 A

 - 14.2. Fuse [Total of 1]
Manufacturer: Buss Low Peak
Model: LP-CC-10
Status: CSA certified, UL listed
Rating: 600 Vac, 150 Vdc, 10 A

15. Fused Terminal Block [Total of 39]
Manufacturer: Weidmuller
Model: WSI 6 LD
Status: CSA certified, UL recognized
Rating: 300 V, 10 A
Special: Fuses are installed in circuit not subject to overloading under normal operating conditions.
 - 15.1. Fuse [Total of 1]
Manufacturer: Buss
Model: S501-5-R
Status: CSA certified, UL recognized
Rating: 250 V, 5 A

- 15.2. Fuse [Total of 3]
Manufacturer: Buss
Model: S501-4-R
Status: CSA certified, UL recognized
Rating: 250 V, 4 A

- 15.3. Fuse [Total of 11]
Manufacturer: Buss
Model: S501-2-R
Status: CSA certified, UL recognized
Rating: 250 V, 2 A

- 15.4. Fuse [Total of 24]
Manufacturer: Buss
Model: S501-1-R
Status: CSA certified, UL recognized
Rating: 250 V, 1 A

- 16. Terminal Block [Total of 2]
Manufacturer: Weidmuller
Model: WDU 16
Status: CSA certified, UL recognized
Rating: 600 V, 85 A

- 17. Terminal Block [Total of 2]
Manufacturer: Weidmuller
Model: WDU 6
Status: CSA certified, UL recognized
Rating: 600 V, 45 A

- 18. Terminal Block [Total of 32]
Manufacturer: Weidmuller
Model: WDU 4
Status: CSA certified, UL recognized
Rating: 600 V, 35 A

- 19. Terminal Block [Total of 8]
Manufacturer: Weidmuller
Model: WDU 2.5
Status: CSA certified, UL recognized
Rating: 600 V, 20 A

- 20. Terminal Block [Total of 59]
Manufacturer: Weidmuller
Model: WDK 2.5N
Status: CSA certified, UL recognized
Rating: 300 V, 20 A

21. Terminal Block [Total of 2]
Manufacturer: Weidmuller
Model: WDK 2.5V
Status: CSA certified, UL recognized
Rating: 300 V, 10 A

22. Terminal Block with Diode [Total of 9]
Manufacturer: Weidmuller
Model: WDK 2.5 1D A.1
Status: CSA certified, UL recognized
Rating: 300 V, 1 A

23. PE Terminal Block [Total of 6]
Manufacturer: Weidmuller
Model: WPE 4
Status: CSA certified, UL recognized

24. Ground Bar [Total of 2]
Manufacturer: IlSCO
Model: N8020
Status: CSA certified, UL recognized

25. Ground Lug [Total of 2]
Manufacturer: IlSCO
Model: TA21
Status: CSA certified, UL recognized

Part I

The Control Panel is a metal enclosure with a lockable, hinged cover and internal metal mounting plate. The overall dimensions are approximately 60 inches high by 30 inches wide by 20 inches deep. The PLC, Ethernet switch, relays, non-incendive barriers, terminal strips and fuse holders are mounted to internal plate. A touch screen and ESD button are mounted through the cover. The pressure switches are threaded into Myers hubs on the side of the enclosure. General views are shown following.



Front View



Interior View

List of components deemed safety critical:

1. Enclosure [Total of 1]
Manufacturer: Hammond
Model: SE1104364X10M20
Status: CSA certified, UL listed
Rating: Type 4, 12
2. ESD Button / Sealed Contact Block [Total of 1 / 1]
Manufacturer: Allen Bradley
Model: 800G-MPE / 800G-XLSN
Status: cULus listed, Class I, Division 2, Group A, B, C and D / Class I, Zone 1, AEx de IIC
Rating: A600, P600
3. Touch Screen [Total of 1]
Manufacturer: Allen Bradley
Model: 2711P-T10C4D8
Status: cULus listed, Class I, Division 2, Group A, B, C and D, Temperature Code T4
Rating: 24 Vdc, 70 W
Special: Includes 2711P-RP8D Logic Module and 2711P-RDT10C Touch Screen Display Module.

4. PLC [Total of 1]

Manufacturer: Allen-Bradley

Model: Compact Logix

Status: cULus listed, Class I, Division 2, Group A, B, C and D

Rating: 24 Vdc, 2.1 A

Special: Complete with the following Allen-Bradley, cULus listed controller and modules, rated for Class I, Division 2, Group A, B, C and D hazardous locations:

Qty	Description	Model No.	Temp. Code
1	Processor	1769-L33ER	T5
1	Power Supply	1769-PB4	T3C
2	Digital Input Module	1769-IQ16	T3C
1	Digital Output Module	1769-OB16	T3C
1	Analog Input Module	1769-IF16C	T5
1	Analog Output Module	1769-OF4	T4A
1	End Cap	1769-ECR	

5. PLC Analog Universal Input Module [Total of 3]

Manufacturer: Spectrum Controls

Model: 1769sc-IF8u

Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T4A

Rating: 24 Vdc, Connected to A/B PLC modules.

6. Ethernet Switch [Total of 1]

Manufacturer: Phoenix Contact

Model: SFN 5TX

Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T6 / Ex nC IIC T5

Rating: 24 Vdc, 157 mA

7. Relay / Base [Total of 16]

Manufacturer: Phoenix Contact

Model: 2961105 / 2966016

Status: cULus, Class 1, Division 2, Group A, B, C and D / Zone 2, Ex nC II T6 / AEx nC II T6

Rating: Coil: 24 Vdc, Contacts: 240 V, 6 A

8. Relay / Base [Total of 3]

Manufacturer: Phoenix Contact

Model: RT940005 / 2980461

Status: cULus, Class 1, Division 2, Group A, B, C and D / Zone 2, Ex nC II T6 / AEx nC II T6

Rating: Coil: 24 Vdc, Contacts: 250 V, 6 A

9. Non-incendive Barrier [Total of 8]

Manufacturer: Phoenix Contact

Model: PI/NI-2D/24 / PN: 5607118

Status: cULus listed, Class 1, Division 2, Group A, B, C and D, Temperature Code T4

Rating: 19.2 – 35 Vdc, 75 mA max.

10. Fuse Block [Total of 2]
Manufacturer: Weidmuller
Model: WSI 25/1
Status: CSA certified, UL recognized
Rating: 600 V, 30 A
Special: Fuses are installed in circuit not subject to overloading under normal operating conditions.
 - 10.1. Fuse [Total of 1]
Manufacturer: Buss
Model: LP-CC-15
Status: CSA certified, UL listed
Rating: 600 Vac, 150 Vdc, 15 A
 - 10.2. Fuse [Total of 1]
Manufacturer: Buss
Model: LP-CC-6
Status: CSA certified, UL listed
Rating: 600 Vac, 150 Vdc, 6 A
11. Fused Terminal Block [Total of 28]
Manufacturer: Weidmuller
Model: WSI 6 LD
Status: CSA certified, UL recognized
Rating: 300 V, 10 A
Special: Fuses are installed in circuit not subject to overloading under normal operating conditions.
 - 11.1. Fuse [Total of 1]
Manufacturer: Buss
Model: S501-5-R
Status: CSA certified, UL recognized
Rating: 250 V, 5 A
 - 11.2. Fuse [Total of 2]
Manufacturer: Buss
Model: S501-4-R
Status: CSA certified, UL recognized
Rating: 250 V, 4 A
 - 11.3. Fuse [Total of 10]
Manufacturer: Buss
Model: S501-2-R
Status: CSA certified, UL recognized
Rating: 250 V, 2 A
 - 11.4. Fuse [Total of 15]
Manufacturer: Buss
Model: S501-1-R
Status: CSA certified, UL recognized
Rating: 250 V, 1 A

12. Terminal Block [Total of 2]
Manufacturer: Weidmuller
Model: WDU 16
Status: CSA certified, UL recognized
Rating: 600 V, 85 A
13. Terminal Block [Total of 2]
Manufacturer: Weidmuller
Model: WDU 6
Status: CSA certified, UL recognized
Rating: 600 V, 45 A
14. Terminal Block [Total of 22]
Manufacturer: Weidmuller
Model: WDU 4
Status: CSA certified, UL recognized
Rating: 600 V, 35 A
15. Terminal Block [Total of 6]
Manufacturer: Weidmuller
Model: WDU 2.5
Status: CSA certified, UL recognized
Rating: 600 V, 20 A
16. Terminal Block [Total of 34]
Manufacturer: Weidmuller
Model: WDK 2.5N
Status: CSA certified, UL recognized
Rating: 300 V, 20 A
17. Terminal Block [Total of 1]
Manufacturer: Weidmuller
Model: WDK 2.5V
Status: CSA certified, UL recognized
Rating: 300 V, 10 A
18. Terminal Block with Diode [Total of 8]
Manufacturer: Weidmuller
Model: WDK 2.5 1D A.1
Status: CSA certified, UL recognized
Rating: 300 V, 1 A
19. Disconnect Terminal Block [Total of 2]
Manufacturer: Weidmuller
Model: WTR 4
Status: CSA certified, UL recognized
Rating: 300 V, 10 A

20. PE Terminal Block [Total of 4]
Manufacturer: Weidmuller
Model: WPE 4
Status: CSA certified, UL recognized

21. Ground Bar [Total of 2]
Manufacturer: IlSCO
Model: N8020
Status: CSA certified, UL recognized

22. Ground Lug [Total of 2]
Manufacturer: IlSCO
Model: TA21
Status: CSA certified

23. Pressure Switch [Total of 4]
Manufacturer: Wika
Model: E-10
Status: CSA certified, FM approved, Class 1, Division 1, Group A, B, C and D, Temperature Code T6,
Factory sealed, Single seal
Rating: 10 – 30 Vdc, 4 – 20 mA

TEST REPORT

Parts A B, C, D, E, G and H

Dielectric withstand tests as required in CSA C22.2 No. 14 Clause 6.8 and UL 508 Clause 49 were performed by the submitter as per their certified product covered under CSA file LR 231688. The submitter's Confirmation of Dielectric-Strength Testing reports are retained in CSA file 2782409 at CSA Edmonton facility.

Temperature tests as required in CSA C22.2 No. 213 Clause 6.2 and ANSI/ISA-12.12.01 Clause 10– Temperature tests were waived as unit is an assembly of certified components. The temperature code is based on the marked rating on the hottest component.

Part F

Changes have no effect on previous testing. Test report is in CSA file 2743341 at CSA Edmonton facility.

Part I

Dielectric withstand tests as required in UL 508 Clause 49 were performed by the submitter as per their certified product covered under CSA file LR 231688. The submitter's Confirmation of Dielectric-Strength Testing reports are retained in CSA file 2782409 at CSA Edmonton facility.

Temperature tests as required in ANSI/ISA-12.12.01 Clause 10 – Temperature tests were waived as unit is an assembly of certified components. The temperature code is based on the marked rating on the hottest component.

No further tests considered necessary.

End of Report