



Certificate of Compliance

Certificate: 1043092 **Master Contract:** 155976 (090117_0_000)

Project: 70133600 **Date Issued:** 2017-05-19

Issued to: Galvanic Applied Sciences Inc
7000 Fisher Rd SE
Calgary, Alberta T2H 0W3
CANADA
Attention: David Haydt

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.



Issued by: Madhumathi Kulothungan
Madhumathi Kulothungan

PRODUCTS

CLASS - C225802 - PROCESS CONTROL EQUIPMENT-For Hazardous Locations-

CLASS - C225882 - PROCESS CONTROL EQUIPMENT-For Hazardous Locations - Certified to US Standards

Class I, Division 1, Groups B, C and D, Temp Code T3; T1 with Vaporizing Regulator.

Model 801XP, H₂S and Total Sulphur Analyser, rated 10-32 Vdc, 3 A max., or rated 110/220 Vac, 3 A max, 50/60 Hz for H₂S Analyser and 10 A max for Total Sulphur Analyser

Model 802 D1 H₂S and Total Sulphur Analyser, rated 10-32Vdc, 3A max or rated 110/220 Vac, 3A max 50/60Hz for H₂S Analyser and 10A max for Total Sulphur Analyser

Model 903 D1 H₂S Analyzer rated 110/220 Vac, 50/60Hz, 10A max.

Model 903 D1 Total Sulphur Analyzer rated 110/220 Vac, 50/60Hz, 10A max.

Model 903 D1 H₂S and Total Sulphur Analyzer rated 110/220 Vac, 50/60Hz, 10A max.

Model 903 D1 Arsine Analyzer rated 110/220 Vac, 50/60Hz, 10A max.

Model 903 D1 Phosgene Analyzer rated 110/220 Vac, 50/60Hz, 10A max.

Model 903 D1 Phosphine Analyzer rated 110/220 Vac, 50/60Hz, 10A max.

Model 903 D1 Chlorine Analyzer rated 110/220 Vac, 50/60Hz, 10A max.

Model 903 D1 H₂S Analyzer rated 10 – 32 Vdc, 10A max.

Model 903 D1 Arsine Analyzer rated 10 - 32 Vdc, 10A max.

Model 903 D1 Phosgene Analyzer rated 10 - 32 Vdc, 10A max.

Model 903 D1 Phosphine Analyzer rated 10 - 32 Vdc, 10A max.

Model 903 D1 Chlorine Analyzer rated 10 - 32 Vdc, 10A max.



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Class I, Division 2, Groups B, C and D; Temp Code T3; T1 with Vaporizing Regulator.

Model 801D2, and 902D2, H₂S and Total Sulphur Analyser, rated 10-32 Vdc, 3 A max., or 100/240 Vac, 3 A max., 50/60 Hz for H₂S Analyser and 10 A max for Total Sulphur Analyser.

Model 801W, H₂S Analyser rated 10-32 Vdc, 3 A max., or 100/240 Vac, 3 A max., 50/60 Hz.

Model 802 D2 H₂S and Total Sulphur Analyser, rated 10-32Vdc, 3A max; or 100/240 Vac, 3 A max., 50/60 Hz for H₂S Analyser and 10 A max for Total Sulphur Analyser.

Model 802W, H₂S Analyser rated 10-32 Vdc, 3 A max., or 100/240 Vac, 3 A max., 50/60 Hz.

Model 903 D2 H₂S Analyzer rated 110/220 Vac, 50/60Hz, 10A max.

Model 903 D2 Total Sulphur Analyzer rated 110/220 Vac, 50/60Hz, 10A max.

Model 903 D2 H₂S and Total Sulphur Analyzer rated 110/220 Vac, 50/60Hz, 10A max.

Model 903 D2 Arsine Analyzer rated 110/220 Vac, 50/60Hz, 10A max.

Model 903 D2 Phosgene Analyzer rated 110/220 Vac, 50/60Hz, 10A max.

Model 903 D2 Phosphine Analyzer rated 110/220 Vac, 50/60Hz, 10A max.

Model 903 D2 Chlorine Analyzer rated 110/220 Vac, 50/60Hz, 10A max.

Model 903 D2 H₂S Analyser, rated 10-32 Vdc, 10A max.

Model 903 D2 Arsine Analyzer rated 10 - 32 Vdc, 10A max.

Model 903 D2 Phosgene Analyzer rated 10 - 32 Vdc, 10A max.

Model 903 D2 Phosphine Analyzer rated 10 - 32 Vdc, 10A max.

Model 903 D2 Chlorine Analyzer rated 10 - 32 Vdc, 10A max.

Model 903W H₂S Analyser, rated 110/240V, 50/60Hz, 1 Ph/24Vdc and 10A max.

Model 903 W Arsine Analyzer rated 110/220V, 50/60Hz, 1 Ph/24Vdc and 10A max.

Model 903 W Phosgene Analyzer rated 110/220V, 50/60Hz, 1 Ph/24Vdc and 10A max.

Model 903 W Phosphine Analyzer rated 110/220V, 50/60Hz, 1 Ph/24Vdc and 10A max.

Model 903 W Chlorine Analyzer rated 110/220V, 50/60Hz, 1 Ph/24Vdc and 10A max.

Class I, Division 1, Groups C and D; Temp Code T3; T1 with Vaporizing Regulator.

Model 902MX, H₂S Analyser, rated 24 Vdc, 3 A max., or 100/240 Vac, 3 A max., 50/60 Hz

Model 902TS, H₂S and Total Sulphur Analyser, rated 120 Vac, 10 A max., 50/60 Hz.

Class I, Division 1, Groups B, C and D, Temp Code T3; T1 with Vaporizing Regulator.

Model 902BX, H₂S Analyser, rated 24 Vdc, 3 A max., or 100/240 Vac, 3 A max., 50/60 Hz

Model 902BX, Total Sulphur Analyser 120/240 Vac, 10A max, 50/60Hz

Notes

1. The suffixes "AC", following the model number indicates the analyser is the AC version of the product.

2. Models 801XP, 802D1, 801D2, 802D2, 902MX, 902TS, 902D2 & 902BX, 903D1 H₂S Analyzer, 903D1 Total Sulphur Analyzer, 903D1 H₂S and Total Sulphur Analyzer, 903D2 H₂S Analyzer, 903D2 Total Sulphur Analyzer, 903D2 H₂S and Total Sulphur Analyzer may include finned convection heaters Type CFA T3 rated 100 to 270 Vmax., 150 Watts; Class I, Division 1, Groups A, B, C and D; Temperature Code T3 or Type CDA T3 rated 100 to 270 Vmax., 180 Watts; Class I, Division 1, Groups A, B, C and D; Temperature Code T3



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APPLICABLE REQUIREMENTS

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| CSA Standard C22.2 No. 0-10 | - General Requirements - Canadian Electrical Code Part II |
| CSA Standard C22.2 No.0.4-M2004 | - Bonding of Electrical Equipment |
| CSA Standard C22.2 No. 0.5-M1982 | - Threaded Conduit Entries |
| CSA Standard C22.2 No. 30-M1986 | - Explosion-Proof Enclosures for Use in Class I Hazardous Locations |
| CSA Standard C22.2 No.142-M1987 | - Process Control Equipment |
| CSA Standard C22.2 No. 157-M1992 | - 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 |
| UL Standard 508, Seventeenth Edition | - Industrial Control Equipment |
| UL Standard 913, Seventh Edition | - Intrinsically Safe Apparatus and Associated Apparatus for use in Class I, II, III, Division 1, Hazardous (Classified) Locations |
| UL Standard 1203, Fourth Edition | - Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations |
| ANSI/ISA 12.12.01-2011 | -Non-Incendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Location |

MARKINGS

Refer to CSA Report 1043092 for marking details.



Supplement to Certificate of Compliance

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The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

| Project | Date | Description |
|----------|------------|---|
| 70133600 | 2017-05-19 | Update to Report 1043092 to include the following modifications: 1.) Addition of sampling pump NMP850KNDCB to model 903W 2.) Addition of optional CSA/UL certified relay ST1 to models 903 and correction of certification number for the existing relay ST1E as indicated in the FIR report 3.) Addition of alternate sensor block and tape encoder assembly for all models of 903 |
| 2506460 | 2012-03-21 | Update of report 1043092 to add 903W H2S Analyzer based on Field Certification Report 2461856. |
| 2090481 | 2009-01-22 | Update of report 1043092 to include new Analyzers 903 D1/D1 TS H2S for Class I, Division 1, Groups B, C and D and 903 D2/D2 TS H2S for Class I, Division 2, Groups B, C and D. |
| 2024254 | 2008-05-01 | Update to report 1043092 to include alternate Enclosure. |
| 1930852 | 2007-11-12 | Update report 1043092 to revise schematics. |
| 1856928 | 2007-04-14 | Update report 1043092 to include model 802; based on evaluation performed as part of project 1849326 |
| 1860819 | 2007-03-13 | Update report 1043092; include revised explosion proof housing, Class I, Div. 1, Grp. B,C,D, P/N AF0246CE, Accept partial tests from ITS/ETL Semko (verify explosion pressure/over pressure). |
| 1775620 | 2006-09-14 | Update report 1043092 for Model 801W: Include alternative Power supply, KAGA Components Co Ltd, Model SPN30-24S, similar to previous. |
| 1764342 | 2006-03-21 | Update report 1043092 to include Certified, Adolet Flame Arrestor fitting model XFAX2 for use with pressure switch model P117G in Model series 801XP, 902MX and 902BX. |
| 1742236 | 2005-12-19 | Update report 1043092 to utilize ADALET XJDHX enclosure for 801 and 902 series recorder drive motors. |
| 1652754 | 2005-04-28 | Update to report 1043092 to include revised sensor alarm (I.S. circuitry) |
| 1568931 | 2004-12-30 | Update, include alternate Certified heater, Intertec, Model CBAT4, CBAT3 for use in Analyser Model 801W for AC operation |



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History:

| Projects | Date | Description |
|-----------------|-------------|---|
| LR 90117-5 | 1997-10-06 | Original Evaluation: Certification of the 801XP and 801D2 Hydrogen Sulphide gas analyzers for Hazardous Locations |
| LR 90117-6 | 1997-11-05 | Corrections to the -5 Report |
| LR 90117-7 | 1997-12-11 | Update to evaluate Model 801XP and 801D2 for use in Group B Hazardous Locations. |
| LR 90117-8 | 1998-10-01 | Addition of the 902MX, and alternate power supply for the 801 series |
| 1043092 | 2000-03-21 | (Report Re-Issued as Report 1043092) Update to include evaluation to U.S. requirements, optional finned convection heater for Models 801XP, 801D2, 902MX, 902-TS, 902D2 & 902BX and optional pressure switch for Models 801D2 & 902D2 analyzers. (Report previously issued as 2500006184, corrected to 1043092) |
| 1069852 | 2000-04-14 | Update to include Model 801W Hydrogen Sulphide gas analyzer. Updated by Project 2500010919 (corrected to 1069852) |
| 1345191 | 2002-10-01 | Update to include Alternative power supply for use with Model 801W and include minor corrections for clarity |
| 1339729 | 2003-02-10 | Update to include Vaporizing regulator module. |
| 1425874 | 2003-04-30 | Update to 1043092 to allow alternate construction, addition of new 12 V Power supply. |
| 1500212 | 2003-12-12 | Update to 1043092 to allow alternate construction – New sensor block assembly |