



Certificate of Compliance

Certificate: 2438730

Master Contract: 247499 (247499)

Project: 70172947

Date Issued: 2018-03-12

Issued to: Kaiser Optical Systems Inc
371 Parkland Plaza
Ann Arbor, Michigan 48103
USA

Attention: Raymond Buddy"" Guy

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: Ronald (Ron) Bell
Ronald (Ron) Bell

PRODUCTS

CLASS - C225804 - PROCESS CONTROL EQUIPMENT-Intrinsically Safe, Entity - For Hazardous Locations-

CLASS - C225884 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity-- For Hazardous Locations - Certified to US Standards

Class I, Division 2; Groups B, C, D; T4

Model OptoGraf (Alternative Model Number: RXN5), rated 90-264 Vac, 47-63 Hz, 7A max, -20 to 50 °C, Type Z pressurization with intrinsically safe outputs for Class I, Division 1, Groups B, C, D for various probes when installed per drawing 4002396 and with intrinsically safe outputs for Class I, Division 1, Groups A, B, C, D for a temperature sensor and a pressure sensor when installed per drawing 2012682. OptoGraf contains up to four Nd:YAG lasers with Class 3B output beams.

Note 1: The commissioning set-up is to be followed in the User's Manual to verify that the regulator pressure does not drop below 1.5" H₂O with the purge valve in the ON position.

Note 2: For safe operation of the lasers, users should follow the recommendations described in the most current revision of ANSI Z136.1.



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APPLICABLE REQUIREMENTS

CAN/CSA Standard C22.2 No. 0-10 Tenth Edition (2010)	General Requirements – Canadian Electrical Code, Part II
CAN/CSA Standard C22.2 No.157-92 Third Edition (Reaffirmed 2006)	Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations
CSA LTR E-010-2005	Purged and Pressurized Enclosures for Use in Class I, Division 1 or 2 Hazardous Locations
CAN/CSA-C22.2 No. 61010-1-12 (Third Edition)	Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements
NFPA 496:2008	Standard for Purged and Pressurized Enclosures for Electrical Equipment
UL Standard 913 (Sixth Edition)	Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III, Division 1, Hazardous (Classified) Locations
UL 61010-1, May 11, 2012 (Third Edition)	Electrical Equipment For Measurement, Control, and Laboratory Use; Part 1: General Requirements
The following standards were used in whole or in part as a guideline.	
CSA Standard C22.2 No. 14 Eleventh Edition (2010)	Industrial Control Equipment
CSA Standard C22.2 No.142-M1987 Third Edition (Reaffirmed 2009)	Process Control Equipment Industrial Products
UL Standard 916 (Fourth Edition)	Energy Management Equipment

MARKINGS

The manufacturer is required to apply the following markings:

- Products shall be marked with the markings specified by the particular product standard.
- Products certified for Canada shall have all Caution and Warning markings in both English and French.

Additional bilingual markings not covered by the product standard(s) may be required by the Authorities Having Jurisdiction. It is the responsibility of the manufacturer to provide and apply these additional markings, where applicable, in accordance with the requirements of those authorities.

The products listed are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US (indicating that products have been manufactured to the requirements of both Canadian and U.S. Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only.

The following markings are provided on a Hallmark DP Polycarbonate CSA-accepted and UL recognized adhesive-type label that is suitable for painted and stainless steel.

1. Manufacturer's name, "Kaiser Optical Systems, Inc.", or CSA Master Contract Number "247499", adjacent to the CSA Mark in lieu of Manufacturer's name.
2. Model number: as specified in the PRODUCTS section, above.
3. Electrical ratings: as specified in the PRODUCTS section, above.
4. Ambient temperature rating: as specified in the PRODUCTS section, above (may be abbreviated).
5. Manufacturing date in MMY format, or serial number, traceable to month of manufacture.
6. The CSA Mark with or without 'C' and/or 'US' indicators, as shown on the Certificate of Compliance.



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7. Hazardous Location designation: as specified in the PRODUCTS section, above.
8. Alternate hazardous location markings: Class I, Zone 2, IIB + H2, T4
9. Temperature Code: as specified in the PRODUCTS section, above (May appear on control drawing).
10. The words: Type Z Pressurizing.
11. The statement: Intrinsically safe output for probe and sensors used in Class I, Division 1, Groups A, B, C, D.
12. The statement: Refer to Control Drawing 4002396 for Probe I.S. Circuit Installation.
13. The statement: Refer to Control Drawing 2012682 for temperature and pressure sensor I.S. Circuit Installation.
14. **WARNING – PRESSURIZED ENCLOSURE** – This enclosure must not be opened unless the area atmosphere is known to be below the ignitable concentration of combustible materials or unless all devices within have been de-energized.
15. **WARNING** – Power must not be restored after enclosure has been opened until enclosure has been purged for 9.5 minutes with regulator pressure a minimum of 1.5 psi.
16. **WARNING: THE SAFETY OF THIS EQUIPMENT RELIES ON THE PROVISION OF PROPER PURGING AND PRESSURISING WHEN USED IN HAZARDOUS LOCATIONS. IT MUST NOT BE PUT INTO USE WITHOUT “SPECIAL PERMISSION” WHEN USED IN HAZARDOUS LOCATIONS FROM THE INSPECTION AUTHORITY HAVING JURISDICTION.**
17. **“WARNING - To reduce the risk of electric shock, this equipment must be used with a grounding type plug that has a third (grounding) pin. Do not operate OptoGraf without ground connection.”** May be on panel internal to OptoGraf.
18. **“WARNING: Install only Intrinsically safe field wiring behind this panel.”** Located on panel internal to OptoGraf.

Note - Jurisdictions in Canada may require these markings to also be provided in French language. It is the responsibility of the manufacturer to provide bilingual marking, where applicable, in accordance with the requirements of the Provincial Regulatory Authorities. It is the responsibility of the manufacturer to determine this requirement and have bilingual wording added to the "Markings".

Instruction Manual shall provide guidance on using the internal barriers to segregate the following wiring:

- AC Supply cord wiring,
- Intrinsically Safe wiring to probe, temperature sensor and pressure sensor,
- Extra-low-voltage I/O wiring, (e.g. communication signals, purge alarm, 24 Vdc sample valves).



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
70172947	2018-03-12	Update report 2438730 to replace drawing number 2011881, Rev. X1 with drawing number 2011811, Rev. X2 and add drawing number 2017541 .
70073043	2016-06-21	Evaluation to update Report 2438730 to Standards: C22.2 No. 142-M1987: to C22.2 No. 61010-1-12. Additional funds to be requested for any testing determined required. Quote also includes updating the Circuit Breaker from Eaton model WMZT1C10 to FAZ-C10-1-NA-SP. Assumes circuit breakers have same certification ratings.
70012302	2014-11-20	Evaluation for update of report 2438730 to include correction to revision level on some drawings and include updated label drawing with bi-lingual warnings.
70007326	2014-07-03	Evaluation to update Report 2438730 to include changing touch screen window to Zytronic Display Limited; per only a paperwork review. Additional funds to be requested for any testing determined required.
2693837	2014-02-20	Update to Report 2438730 to include an alternative / replacement power supply, thermal cutout, and revised descriptive documents.
2611042	2013-04-23	Update to Report for OptoGraf to include replacement and alternate Intrinsic Safety Barriers (4-20 mA temperature/pressure sensor loop) and revised drawings.
2539202	2012-07-03	Update to Report for OptoGraf to include revised and new drawings.
2438730	2011-12-22	Original certification of OptoGraf as suitable for Cl I, Div 2, Grps B,C ,D using Z Pressurizing with I.S. Outputs to probes and sensors in Cl I, Div 1.