



CSA INTERNATIONAL

# Certificate of Compliance

Certificate Number: LR 115205-2

Revision:

Date Issued: May 25, 1999

Issued to: RTK Engineering Ltd.  
St. Peters Square, Harrogate,  
North Yorkshire HG2 ONP  
ENGLAND  
Attention: Mr. Tim Mcleman

*The products listed below are eligible to bear the CSA Mark shown*



Issued by: R. Wildish

Signature: \_\_\_\_\_

## PRODUCTS

CLASS 2258 03 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non-Incendive Systems - For Hazardous Locations

Class I, Groups A, B, C and D:

- LED Clusters, Models DA\*171D, DA\*172D, DA\*173D and DA\*174D, intrinsically safe when connected through CSA Certified MTL barriers as per Drawing DA170/0030/CC; Temp. Code T4.

Note: The \* in the model number may be any letter denoting minor mechanical variations.

The clusters are to be installed in a suitable enclosure, subject to acceptance by the local authority having jurisdiction



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**APPLICABLE STANDARDS**

- |                             |                                                                                 |
|-----------------------------|---------------------------------------------------------------------------------|
| CSA Std C22.2 No. 142-M1987 | - Process Control Equipment                                                     |
| CAN/CSA-C22.2 No. 157-92    | - Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations |

**MARKINGS**

- GSA Monogram
- Company Name
- Model number
- Serial number
- Electrical rating
- Hazardous Location designation
- Temp. Code Rating
- The symbol "Exia"
- Reference to Installation Instructions



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## *Supplement to Certificate of Compliance*

Certificate Number: LR 115205-2

Issued to: RTK Engineering Ltd.  
St. Peters Square, Harrogate,  
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ENGLAND  
Attention: Mr. Tim Mcleman

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

Issued By: R. Wildish

Signature 

### **Product Certification History**

Revision	Date	Description
-2	May 25/99	Duplication of report LR 103204-1 - LED Clusters, Models DA*171D, DA*172D, DA*173D and DA*174D



CSA INTERNATIONAL

Standards  
Development

QMI  
Management Systems Registration

Certification  
and Testing

# Descriptive and Test Report

**REPORT NO:** LR 115205-2

**Edition 1:** May 25, 1999; Application No LR 115205-2 - Etobicoke  
Issued by R. Wildish

— Contents: Certificate of Compliance - Pages 1 to 2  
Supplement to Certificate of Compliance - Page 1  
Description and Test Pages - Pages 1 to 5  
Descriptive Document Package (CSA Eng. File)

## PRODUCTS

CLASS 2258 03 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non-Incendive Systems - For Hazardous Locations

Class I, Groups A, B, C and D:

- LED Clusters, Models DA\*171D, DA\*172D, DA\*173D and DA\*174D, intrinsically safe when connected through CSA Certified MTL barriers as per Drawing DA170/0030/CC; Temp. Code T4

Note: The \* in the model number may be any letter denoting minor mechanical variations.

The clusters are to be installed in a suitable enclosure, subject to acceptance by the local authority having jurisdiction

**We Answer With Solutions**

178 Rexdale Boulevard, Toronto, ON, Canada M9W 1R3  
Telephone: 416.747.4000 Fax: 416.747.4149 Website: [www.csa-international.org](http://www.csa-international.org)

**MARKINGS**

Markings are silk-screened onto the back of the units.

**ALTERATIONS**

Markings as above

**FACTORY TESTS**

N/A

**Descriptive Documents:**

<u>Subject</u>	<u>Drawing N°</u>	<u>Rev.</u>	<u>Date</u>
LED Cluster Label Silk Screen	DA170/0213/CP	2	-
DA*170 Series LED Cluster Installation Diagram	DA170/0030/CC	0	
LED Cluster General Arrangement	DA170/0001/EB	0	
Intrinsically Safe LED Cluster (Five LED)	DA170/0220/EB	0	
PCB for IS LED Cluster (Five LED) Silk Screen	DA170/0223/EC	0	
PCB for IS LED Cluster (Five LED) PCB Artwork	DA170/0221/EB	0	
IS KED Cluster PCB Assembly (5 LED) Parts List	DA170/0227/CC	0	
Intrinsically Safe LED Cluster (Ten LED)	DA170/0200/EB	0	
PCB for IS LED Cluster (Ten LED) Silk Screen	DA170/0203/EC	0	
PCB for IS LED Cluster (Ten LED) PCB Artwork	DA170/0201/EB	0	
IS KED Cluster PCB Assembly (10 LED) Parts List	DA170/0207/CC	0	

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## DESCRIPTION

General: The subject units are component type devices for installation in a suitable enclosure. They are suitable for mounting in a Class I, Div. 1 Hazardous Location when connected through CSA Certified MTL barrier devices, as shown in Installation Drawing DA170/0030/CC

The units consist of a moulded plastic or metal frame (approx 45mm by 30mm by 15mm). A cylindrical plastic lens assembly twists into integral slots on one side of the frame. On the opposite side of the frame, a plastic plate is screwed on. One side of the plate bares all of the nameplate markings along with a two wire terminal block. The other side of the plate mounts the 20mm diameter, 1.6mm thick glass epoxy pcb, upon which the led's and associated components are mounted.

The DA\*171D and DA\*172D have a cluster of five LEDs, and contain a regulator to limit the operational current. The DA\*171D has a plastic bezel and the DA\*172D has a metallic bezel.

The DA\*173D and DA\*174D have a cluster of ten LEDs. The DA\*173D has a plastic bezel and the DA\*174D has a metallic bezel.

The colour of the LED cluster is designated by a code letter in place of the \*, e.g. DART171-R for Red, etc.

## TESTS

Temperature Code Rating: Std C22.2 No 157-92, Cl 6.3

The following are worst case conditions considering possible faults.

The barrier was simulated using a suitable 25.5V dc supply and a 232 ohm current limiting resistance.

Temperatures were measured by thermocouples applied directly to the component surface; ambient by thermometer.

1. Barrier connected as intended (normal operation).
  - transistor P1 shorted "IN" to "OUT"; component fault.

Maximum temperature on resistor R1 (62 ohms, 0.5W) 66°C; ambient 24°C.

Note: The above temp. test result does not necessitate a Temp. Code rating; but the submitter requested that a Temp. Code Rating of T4 be applied to the product.