

# EU-TYPE EXAMINATION CERTIFICATE



## Equipment or Protective System intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

- [3] EU-Type Examination Certificate Number: **UL 21 ATEX 2654X Rev. 1**
- [4] Product: **Optical Encoders, 2222, 2222R, 4469, 7272, 7272R, 7273 and 7273R**
- [5] Manufacturer: **Dynapar Corporation**
- [6] Address: **2100 West Broad Street, Elizabethtown NC 28337 USA**
- [7] This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.
- [8] UL International Demko A/S, notified body number 0539 in accordance with Article 17 of the Council Directive 2014/34/EU of 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.
- The examination and test results are recorded in confidential report no. **US/UL/ExTR21.0126/01**.
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
- EN IEC 60079-0:2018                      EN 60079-11:2012                      EN 60079-28: 2015**
- [10] If the sign "X" is placed after the certificate number, it indicates that the product is subject to special conditions for safe use specified in the schedule to this certificate.
- [11] This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by the certificate.
- [12] The marking of the product shall include the following:

 **II 1 G    Ex ia op is IIB T4 Ga**

**Certification Manager**  
Thomas Wilson

This is to certify that the sample(s) of the Product described herein ("Certified Product") has been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the ATEX Product Certification Program Requirements. This certificate and test results obtained apply only to the product sample(s) submitted by the Manufacturer. UL did not select the sample(s) or determine whether the sample(s) provided were representative of other manufactured product. UL has not established Follow-Up Service or other surveillance of the product. The Manufacturer is solely and fully responsible for conformity of all product to all applicable Standards, specifications, requirements or Directives. The test results may not be used, in whole or in part, in any other document without UL's prior written approval.

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**Notified Body**    UL International Demko A/S, Borupvang 5A, 2750 Ballerup, Denmark  
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[13]

[14]

# Schedule

## EU-TYPE EXAMINATION CERTIFICATE No.

### UL 21 ATEX 2654X Rev. 1

[15] Description of Product

The Encoder Types 2222, 2222R, 4469, 7272, 7272R, 7273 and 7273R are a range of optical encoders.

The optical encoders comprise of a printed circuit board (PCB) with blue reflective IC and an encoder disk mounted in an enclosure.

There are four different circuit options and eight different PCB options. The PCBs used for the main encoders contain a single circuit with a single connector fitted externally to the enclosure. The redundant encoders, designated by the 'R' at the end of the part number, contain two identical circuits on the PCB.

The intent is that external connections are made only to one of these circuits with the remaining circuit being a spare. The type 'R' encoders are fitted with either one or two external connectors. External connections are made via enclosure mounted connectors.

The relation between ambient temperature and the assigned temperature class is as follows:

<b>Ambient temperature range</b>	<b>Temperature class</b>
-40 °C to +80 °C	T4

Electrical data

Encoder Type		Parameters					
		Ui or Vmax (V)	Ii or Imax (mA)	Pi (W)	Ci (uF)	Li (mH)	
Single Encoder Type	2222 or 7272 or 7273	28	222	1	0.63	0	
	4469	15	222	1	2.01	0	
	2222R* 7272R* 7273R*	Pins A, B, C, D, J	28	222	1	0.63	0
		Pins E, F, G, H, I	28	222	1	0.63	0
Dual External Connector**	2222 or 2222R or 7272R or 7273 R	28	222	1	0.63	0	
	4469	15	222	1	2.01	0	

\*Connection shall be made to one of the two groups of connector pins at any given time.  
\*\*Connection shall be made to one of the two connectors at any given time.

Routine tests

N/A

[16]

Descriptive Documents

The scheduled drawings are listed in the report no. provided under item no. [ 8 ] on page 1 of this EU-Type Examination Certificate.

[17]

Specific conditions of use:

- The single-connector version of the type 2222R, 7272R and 7273R encoders shall only be connected using either connector pin group A, B, C, D, and J or connector pin group E, F, G, H, and I, using both of these connector pin groups at the same time is not permitted.
- The dual-connector version of the type 2222, 4469, 2222R, 7272R, and 7273R encoders connections shall only be connected using one of the two connectors, using both of these connectors at the same time is not permitted.
- The equipment is certified for use in an ambient temperature range of -40°C to +80°C and shall only be used within this range.
- Light metals may be used as the accessible surface of the equipment. In rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered when the equipment is installed in Zone 0 locations.

[18]

Essential Health and Safety Requirements

The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.

Additional information

The manufacturer shall inform the notified body concerning all modifications to the technical documentation as described in Annex III to Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014.

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