

EU-Type Examination Certificate



1. **EU-TYPE EXAMINATION CERTIFICATE**
2. **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres
Directive 2014/34/EU**
3. **EU-Type Examination Certificate Number: ITS11ATEX27383X Issue 1**
4. **Product:** Angle Sensor type OPF
5. **Manufacturer:** TEMPRESS A/S
6. **Address:** Nordlandsvej 64-66, DK-8240 Risskov, Denmark
7. This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
8. Intertek Testing and Certification Limited, Notified Body number 0359 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council dated 26 February 2014, certifies that the product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificate referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. New issues of such EC-Type Examination Certificates, and Supplementary Certificates to such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.

The examination and test results are recorded in confidential Intertek Reports Ref 11051583 Issue 1 dated September 2011, G101295959 Issue 1 dated 17th September 2013 and G102010153 Issue 1 dated 10th March 2015.
9. Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0:2012 and EN 60079-11:2012 except in respect of those requirements referred to at item 16 of the Schedule.
10. If the sign "X" is placed after the certificate number, it indicates that the product is subject to Specific Conditions of 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 this certificate.
12. The marking of the product shall include the following:



II 1 G Ex ia IIC T6 Ga
-20°C ≤ Ta ≤ +40°C

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R J Smith
Certification Officer
10th April 2017



SCHEDULE

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13. Description of Equipment or Protective System

The Tempress A/S OPF (Optischer Potentiometrischer Ferngerber) is an angle sensor designed as a feedback potentiometer in servo systems.

The OPF consists of 2 printed circuit boards and light-head unit comprising rotating transformer and LED assembly and photosensitive resistance track.

Type designations:

OPF/EX4-2 R/L A P

OPF/EX4-2 R/L B P

OPF/EX4-2 R or LAF (X = Angle Value)

OPF/EX4-2 R/L_P

OPF/EX4-2 R or LAF (X = Angle Value)

The only difference between types is the mechanical design of the axle.

Intrinsic Safety Parameters:

$U_i = 28V$, $I_i = 100\text{ mA}$, $P_i = 0.66W$, $C_i = 38\text{ nF}$, $L_i = 840\mu H$

14. Report Number

Intertek Reports Ref 11051583 Issue 1 dated September 2011, G101295959 Issue 1 dated 17th September 2013 and G102010153 Issue 1 dated 10th March 2015.

15. Special Conditions of Certification

(a). Specific Conditions of Safe Use

- The OPF shall be installed so that ingress protection IP 20 (or greater) is maintained at the connection terminals.
- The sensor shall not be used where the axle is rotated continuously.
- The sensor shall be powered by a certified Intrinsically Safe interface located outside the hazardous area or protected by an appropriate hazardous area protection.
- The sensor does not meet the 500 Volt insulation requirement of IEC 60079-11 and shall therefore be powered by an interface providing Galvanic Isolation, or, where a Zener Barrier is used, appropriate precautions shall be taken.

(b). Conditions of Manufacture - Routine Tests

- None.



SCHEDULE

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18. Details of Certificate changes

Original ITS11ATEX27383X issued 7th September 2011.

Modifications to the product covered under ITS11ATEX27383X/1 issued 3rd October 2013.

- Change of Zener diodes D5, D6 and D10 values for increased compatibility.
- Change to resistors R5 and R6 to accommodate the diode change.
- Recalculation of Ci value based on the new values of R5 and R6 from 43nF to 38nF.
- Update to drawings to highlight above changes and to include the statement 'No unauthorised change without approval from notified body'.
- Update to latest versions of standards, EN 60079-0:2012 and EN 60079-11:2012 from EN 60079-0:2009 and EN 60079-11:2007 respectively.
- No changes to Ex coding.

Modifications to the product covered under ITS11ATEX27383X/2 issued 10th March 2015.

- Update to drawings to include 4-digit code of new quality auditor.

Modifications to the product covered under ITS11ATEX27383X Issue 1:

- Reissued to Directive 2014/34/EU.