

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx ITS 11.0045X Issue No: 2 Certificate history:
Issue No. 2 (2015-04-16)
Status: **Current** Page 1 of 4 Issue No. 1 (2013-09-30)
Issue No. 0 (2011-09-12)
Date of Issue: **2015-04-16**
Applicant: **Tempress A/S**
Nordlandsvej 64-66
DK-8240 Risskov
Denmark
Denmark
Electrical Apparatus: **Angle Sensor type OPF**
Optional accessory:
Type of Protection: **Intrinsic Safety ia**
Marking: Tempress A/S
IECEx ITS 11.0045X
Ex ia IIC T6 Ga

Approved for issue on behalf of the IECEx
Certification Body:

A M Smart

Position:

Certification Officer

Signature:
(for printed version)

Date:

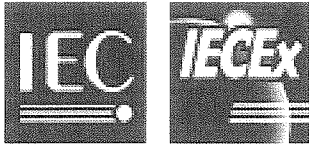
2015 - 04 - 16

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

Intertek Testing & Certification Limited
ITS House, Cleeve Road,
Leatherhead,
Surrey, KT22 7SB
United Kingdom





IECEX Certificate of Conformity

Certificate No: IECEX ITS 11.0045X

Issue No: 2

Date of Issue: 2015-04-16

Page 2 of 4

Manufacturer: **Tempress A/S**
Nordlandsvej 64-66
DK-8240 Risskov
Denmark
Denmark

Additional Manufacturing
location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEX Quality system requirements. This certificate is granted subject to the conditions as set out in IECEX Scheme Rules, IECEX 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Explosive atmospheres - Part 0: General requirements
Edition:6.0

IEC 60079-11 : 2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

IEC 60079-26 : 2006 Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga
Edition:2

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

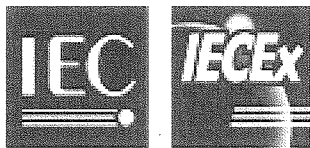
GB/ITS/ExTR11.0047/00

GB/ITS/ExTR11.0047/01

GB/ITS/ExTR11.0047/02

Quality Assessment Report:

DE/TUN/QAR14.0008/00



IECEx Certificate of Conformity

Certificate No: IECEx ITS 11.0045X

Issue No: 2

Date of Issue: 2015-04-16

Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

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:

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

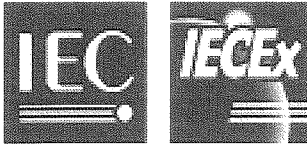
CONDITIONS OF CERTIFICATION: YES as shown below:

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.



IECEx Certificate of Conformity

Certificate No: IECEx ITS 11.0045X

Issue No: 2

Date of Issue: 2015-04-16

Page 4 of 4

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Certificate Issue 1:

Change of Zener diodes D5, D6 and D10.

Change of resistors R5 and R6 to accommodate Zener diode change.

Recalculation of C_{in} value based on the new values of R5 and R6 from 43nF to 38nF.

Update to drawings to highlight above changes.

Certificate Issue 2:

Update to drawings following change in QAR.