



# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.:	<b>IECEx TUN 17.0026X</b>	Page 1 of 4	<a href="#">Certificate history:</a>
Status:	<b>Current</b>	Issue No: 1	<a href="#">Issue 0 (2018-01-26)</a>
Date of Issue:	2021-07-01		
Applicant:	<b>VEGA Grieshaber KG</b> Am Hohenstein 113 77761 Schiltach Germany		
Equipment:	<b>Differential pressure measuring device VEGADIF DF85(*) *E/*****Z/H/A/U/P/F*****</b>		
Optional accessory:			
Type of Protection:	<b>Flameproof enclosure "d", Intrinsic safety "i"</b>		
Marking:	Ex ia/db IIC T6...T1 Ga/Gb Ex db ia IIC T6...T1 Gb		

Approved for issue on behalf of the IECEx  
Certification Body:

**Andreas Meyer**

Position:

**Deputy Head of the IECEx Certification Body**

Signature:  
(for printed version)



Digital unterschrieben von Meyer  
Andreas  
Datum: 2021.07.02 18:21:37 +02'00'

Date:

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Certificate issued by:

**TÜV NORD CERT GmbH**  
Hanover Office  
Am TÜV 1, 30519 Hannover





# IECEx Certificate of Conformity

Certificate No.: **IECEx TUN 17.0026X**

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Date of issue: 2021-07-01

Issue No: 1

Manufacturer: **VEGA Grieshaber KG**  
Am Hohenstein 113  
77761 Schiltach  
Germany

Additional manufacturing locations: **VEGA Americas, Inc**  
4241 Allendorf Drive  
Cincinnati, Ohio 45209  
**United States of America**

**India VEGA India Level and Pressure Measurement Pvt. Ltd.**  
Plot No. 1, Gat No. 181  
Village - Phulgaon, Tal. Haveli  
Pune 412216  
**India**

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 equipment 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 60079-0:2017** Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

**IEC 60079-1:2014-06** Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"  
Edition:7.0

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

**IEC 60079-26:2014-10** Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga  
Edition:3.0

This Certificate **does not** indicate compliance with 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:

[DE/TUN/ExTR17.0030/01](#)

Quality Assessment Report:

[DE/TUN/QAR06.0002/10](#)



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Date of issue: 2021-07-01

Issue No: 1

## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

### **Description:**

The differential pressure measuring devices type VEGADIF DF85(\*).E/\*\*\*\*\*Z/H/A/U/P/F\*\*\*\*\* are used for differential pressure measurement of liquids and gases.

The differential pressure measuring devices type VEGADIF DF85(\*).E/\*\*\*\*\*Z/H/A/U/P/F\*\*\*\*\* consist of an electronics housing, a differential pressure measuring element and the process connections.

Optionally, also the indication and operation module may be installed.

### **Type code:**

VEGADIF DF85(\*).E/ \*\*\*\*\*Z\*\*\*\*\*: 2 wire 4 ... 20 mA transmitters

VEGADIF DF85(\*).E/ \*\*\*\*\*H\*\*\*\*\*: 2 wire 4 ... 20 mA transmitters with superposed HART signal

VEGADIF DF85(\*).E/ \*\*\*\*\*A\*\*\*\*\*: 2 wire 4 ... 20 mA transmitters with superposed HART signal and additional SIL qualification

VEGADIF DF85(\*).E/ \*\*\*\*\*U\*\*\*\*\*: With electronics for MODBUS

VEGADIF DF85(\*).E/ \*\*\*\*\*P\*\*\*\*\*: With electronics for Profibus PA

VEGADIF DF85(\*).E/ \*\*\*\*\*F\*\*\*\*\*: With electronics for Foundation Fieldbus

See attachment for further details.

## **SPECIFIC CONDITIONS OF USE: YES as shown below:**

1. For use as Ga/Gb-apparatus: For functional reasons, the partition wall (membrane) to the wetted area has a wall thickness <1 mm. In the application, it has to be ensured, that an impairment of the separation wall e.g. by aggressive media or mechanical hazards is excluded.

For variants with standard process connections: The installation of the meter bodies shall provide as a minimum degree of protection IP67 according to IEC 60529 for the process connections and vents.

For variants with capillary connections: The capillary connections are designed to be connected to a capillary with diaphragm seal. The filling holes are intended to bring in a fill fluid. To prevent a zone entrainment from Zone 0, the diaphragm seal resp. the diaphragm seal and capillary have to be suitably designed. The pressure transfer system has to be technically tight. The filling hole has to be tightly sealed.

2. At the plastic parts there is a danger of ignition by electrostatic discharge.

Observe manual of the manufacturer and warning label.

3. At the metallic parts made of light metal there is a danger of ignition by impact or friction. Observe manual of the manufacturer.

4. For the execution with separate housing, potential equalization has to exist in the complete course of the erection of the connecting cable between the electronics housing and the measuring sensor housing.

5. The flameproof terminal box of this equipment must be provided with cable entries and filler plugs resp. conduits which are suitably certified according to IEC 60079-0 and IEC 60079-1



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

Proof of conformity of the differential pressure measuring devices type VEGADIF DF85(\*).\*E/\*\*\*\*\*\*Z/H/A/U/P/F\*\*\*\*\* to the current version of the standard IEC 60079-0:2017.

Note that the housing and electronics of the differential pressure measuring devices type VEGADIF DF85(\*).\*E/\*\*\*\*\*\*Z/H/A/U/P/F\*\*\*\*\* are identical with VEGABAR 80 series and are already evaluated by issuing IECEx TUN 13.0040X issue No: 4 with ExTR Ref. No.: DE/TUN/ExTR13.0046/04 and ExTR Free Ref. No.: 19 217 240044 issued on 2019-11-27.

The conformity of the differential pressure measuring devices type VEGADIF DF85(\*).\*E/\*\*\*\*\*\*Z/H/A/U/P/F\*\*\*\*\* to the standards IEC 60079-1:2014, IEC 60079-11:2011 and IEC 60079-26:2014 is already verified in the previous issue 0.

## Annex:

[Attachment to IECEx TUN 17.0026X issue 1.pdf](#)

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Attachment to IECEx TUN 17.0026 X issue No.: 1

General product information:

Description:

The differential pressure measuring devices type VEGADIF DF85(\*).\*E/\*\*\*\*\*Z/H/A/U/P/F\*\*\*\*\* are used for differential pressure measurement of liquids and gases.  
The differential pressure measuring devices type VEGADIF DF85(\*).\*E/\*\*\*\*\*Z/H/A/U/P/F\*\*\*\*\* consist of an electronics housing, a differential pressure measuring element and the process connections.  
Optionally, also the indication and operation module may be installed.

List of all used components:

Product and type	Certificate	Standards
Enclosures, Models GEH-1K, GEH-2K and GEH-DIS	IECEx KIWA 17.0015U issue No: 1	IEC 60079-0:2017 IEC 60079-1:2014
Differential pressure meter body and Pressure meter body	IECEx BVS 13.0103U issue No: 5	IEC 60079-0:2017 IEC 60079-11:2011 IEC 60079-26:2021
Electronic assemblies type AWE-**(*)P/F and type AWE-**(*)H/A (with 2nd current output)	IECEx TUN 14.0010U issue No: 2	IEC 60079-0:2017 IEC 60079-11:2011
Electronic barrier type P3 MODBUS	IECEx TUN 11.0037U issue No: 2	IEC 60079-0:2017 IEC 60079-11:2011
Display and adjustment module PLICSCOM and PLICSCOM(*)B/W*	IECEx TUN 16.0002U Issue No: 2	IEC 60079-0:2017 IEC 60079-11:2011

Type code:

VEGADIF DF85(\*).\*E/\*\*\*\*\*Z\*\*\*\*\*: 2 wire 4 ... 20 mA transmitters  
VEGADIF DF85(\*).\*E/\*\*\*\*\*H\*\*\*\*\*: 2 wire 4 ... 20 mA transmitters with superposed HART signal  
VEGADIF DF85(\*).\*E/\*\*\*\*\*A\*\*\*\*\*: 2 wire 4 ... 20 mA transmitters with superposed HART signal and additional SIL qualification  
VEGADIF DF85(\*).\*E/\*\*\*\*\*U\*\*\*\*\*: With electronics for MODBUS  
VEGADIF DF85(\*).\*E/\*\*\*\*\*P\*\*\*\*\*: With electronics for Profibus PA  
VEGADIF DF85(\*).\*E/\*\*\*\*\*F\*\*\*\*\*: With electronics for Foundation Fieldbus

Electrical data:

**VEGADIF DF85(\*)**.\*\*\*\*\*Z/H/A/U/P/F\*\*\*\*\*

Supply and signal circuit  
VEGADIF DF85(\*).\*\*\*\*\*Z/H/AXA/V\*\*\*\*  
(Terminals 1[+], 2[-] in the electronics compartment  
of the 1 chamber housing)

U = 9,6 ... 35 V d. c.  
U<sub>m</sub> = 253 V a. c.

VEGADIF DF85(\*).\*\*\*\*\*Z/H/AXD/W\*\*\*\*  
(Terminals 1[+], 2[-] in the terminal compartment of  
the 2 chamber housing)

VEGADIF DF85(\*).\*\*\*\*\*Z/H/AZD/W\*\*\*\*  
Supply and signal circuit I  
(Terminals 1[+], 2[-] in the terminal compartment of  
the 2 chamber housing)

U = 9,6 ... 35 V d. c.  
U<sub>m</sub> = 253 V a. c.

Supply and signal circuit II  
(Terminals 17[+], 18[-] in the terminal compartment  
of the 2 chamber housing)

U = 9,6 ... 35 V d. c.  
U<sub>m</sub> = 253 V a. c.

VEGADIF DF85(\*).\*\*\*\*\*UXD/W\*\*\*\*

Supply and signal circuit I  
(Terminals 1[+], 2[-] in the terminal compartment of  
the 2 chamber housing)

U = 8 ... 32 V d. c.  
U<sub>m</sub> = 253 V a. c.

Supply and signal circuit II  
(Terminals MB[+], MB[-] in the terminal compartment  
of the 2 chamber housing)

U = 5 V  
MODBUS telegram  
U<sub>m</sub> = 253 V a. c.

Supply and signal circuit III  
(6-pole USB mini plug connector in the terminal  
compartment of the 2 chamber housing)

U = 5 V  
USB protocol  
U<sub>m</sub> = 253 V a. c.

Supply and signal circuit  
VEGADIF DF85(\*).\*\*\*\*\*P/FXA/V\*\*\*\*  
(Terminals 1[+], 2[-] in the electronics compartment of  
the 1 chamber housing)

U = 9 ... 32 V d. c.  
U<sub>m</sub> = 253 V a. c.

VEGADIF DF85(\*).\*\*\*\*\*P/FXD/W\*\*\*\*  
(Terminals 1[+], 2[-] in the terminal compartment of  
the 2 chamber housing)

Operation and indication circuit  
VEGADIF DF85(\*).\*\*\*\*\*Z/H/A/U/P/F\*A/V\*\*\*\*  
(Terminals 5, 6, 7, 8 in the electronics compartment  
of the 1 chamber housing)

Only for connection to the belonging external  
VEGA indication unit type VEGADIS61/81  
according to IECEx BVS 13.0069

VEGADIF DF85(\*).\*\*\*\*\*Z/H/A/P/F\*D/W\*\*\*\*  
(Terminals 5, 6, 7, 8 in the terminal compartment of  
the 2 chamber housing)

Operation and indication module circuit  
(Spring contacts in the electronics compartment /  
terminal compartment of the 1 / 2 chamber housing)

For connection to the VEGA operation and  
indication module PLICSCOM

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Attachment to IECEx TUN 17.0026 X issue No.: 1

VEGADIF DF85(\*)..\*\*\*\*\*A/S/K/L\*\*\*

Measuring sensor circuits  
(Terminals in the external housing  
1 l yellow, 2 l white, 3 l red, 4 l black)

In the execution with a cable between the electronics housing and the measuring sensor housing, a length of the provided cable of max. 180 m is permissible.

The intrinsically safe circuits to the measuring sensor are galvanically connected with earth potential.

Thermal data:  
VEGADIF DF85(\*)..\*\*\*\*\*D\*\*\* (compact version)

If the differential pressure measuring devices are used in explosion hazardous areas for EPL Ga/Gb or Gb applications, the permissible temperature range in the area of the electronics/at the measuring sensor dependent on the temperature class has to be taken from the following table:

Temperature class	Ambient temperature range Ta or medium temperature range Tp at the sensor housing and measuring probe
T6	-40 °C ... +55°C
T5	
T4	-40 °C ... +60°C
T3	
T2	
T1	

VEGADIF DF85(\*)..\*\*\*\*\*U\*\*A/S/K/L\*A/K/F/B/L/S\* (version with external housing, with MODBUS-barrier and / or with PLICSCOM)

If the differential pressure measuring devices are used in explosion hazardous areas for EPL Ga/Gb or Gb applications, the permissible temperature range in the area of the electronics/at the measuring sensor dependent on the temperature class has to be taken from the following table:

Temperature class	Ambient temperature range Ta at the sensor housing	Ambient temperature range Ta or medium temperature range Tp at the measuring probe
T6	-40 °C ... +60 °C	-40°C ... +55 °C
T5		
T4		
T3		-40 °C ... +85 °C
T2		
T1		

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Attachment to IECEx TUN 17.0026 X issue No.: 1

**VEGADIF DF85(\*)..\*\*\*\*\*Z/H/A/P/F\*\*A/S/K/L\*X\* (version with external housing, without MODBUS-barrier and / or without PLICSCOM)**

If the differential pressure measuring devices are used in explosion hazardous areas for EPL Ga/Gb or Gb applications, the permissible temperature range in the area of the electronics/at the measuring sensor dependent on the temperature class has to be taken from the following table:

Temperature class	Ambient temperature Ta at the sensor housing	Ambient temperature Ta or medium temperature Tp at the measuring probe
T6	-50 °C ... +60 °C	-40°C ... +55 °C
T5		
T4		
T3		-40 °C ... +85 °C
T2		
T1		

The measuring sensors and the electronics are allowed to be operated in an explosion hazardous area, only if atmospheric conditions exist (temperature: -20 °C to +60 °C, pressure: 0.8 bar to 1.1 bar, air with normal oxygen content: typically 21 % v/v).

If no explosion hazardous atmospheres exist, the permissible operating temperatures and pressures have to be taken from the manufacturer's data (manual).

**Details of change:**

Proof of conformity of the differential pressure measuring devices type VEGADIF DF85(\*)..\*E/\*\*\*\*\*Z/H/A/U/P/F\*\*\*\*\* to the current version of the standard IEC 60079-0:2017.  
Note that the housing and electronics of the differential pressure measuring devices type VEGADIF DF85(\*)..\*E/\*\*\*\*\*Z/H/A/U/P/F\*\*\*\*\* are identical with VEGABAR 80 series and are already evaluated by issuing IECEx TUN 13.0040X issue No: 4 with ExTR Ref. No.: DE/TUN/ExTR13.0046/04 and ExTR Free Ref. No.: 19 217 240044 issued on 2019-11-27.  
The conformity of the differential pressure measuring devices type VEGADIF DF85(\*)..\*E/\*\*\*\*\*Z/H/A/U/P/F\*\*\*\*\* to the standards IEC 60079-1:2014, IEC 60079-11:2011 and IEC 60079-26:2014 is already verified in the previous issue 0.

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**Attachment to IECEx TUN 17.0026 X issue No.: 1**

**Specific Conditions of Use:**

1. For use as Ga/Gb-apparatus:  
For functional reasons, the partition wall (membrane) to the wetted area has a wall thickness < 1 mm. In the application, it has to be ensured, that an impairment of the separation wall e.g. by aggressive media or mechanical hazards is excluded.  
For variants with standard process connections:  
The installation of the meter bodies shall provide as a minimum degree of protection IP67 according to IEC 60529 for the process connections and vents.  
For variants with capillary connections:  
The capillary connections are designed to be connected to a capillary with diaphragm seal.  
The filling holes are intended to bring in a fill fluid.  
To prevent a zone entrainment from Zone 0, the diaphragm seal resp. the diaphragm seal and capillary have to be suitably designed. The pressure transfer system has to be technically tight. The filling hole has to be tightly sealed.
2. At the plastic parts there is a danger of ignition by electrostatic discharge.  
Observe manual of the manufacturer and warning label.
3. At the metallic parts made of light metal there is a danger of ignition by impact or friction.  
Observe manual of the manufacturer.
4. For the execution with separate housing, potential equalization has to exist in the complete course of the erection of the connecting cable between the electronics housing and the measuring sensor housing.
5. The flameproof terminal box of this equipment must be provided with cable entries and filler plugs resp. conduits which are suitably certified according to IEC 60079-0 and IEC 60079-1.



# 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](http://www.iecex.com)

Certificate No.: IECEx TUN 17.0026X issue No.: 0 Certificate history:

Status: Current

Date of Issue: 2018-01-26 Page 1 of 3

Applicant: VEGA Grieshaber KG  
Am Hohenstein 113  
77761 Schiltach  
Germany

Equipment: Differential pressure measuring device VEGADIF DF85(\*) \*E/\*\*\*\*\*Z/H/A/U/P/F\*\*\*\*\*  
Optional accessory:

Type of Protection: Flameproof enclosure "d", Intrinsic safety "i"

Marking: Ex ia/db IIC T6...T1 Ga/Gb  
Ex db ia IIC T6...T1 Gb

Approved for issue on behalf of the IECEx Certification Body: Christian Roder

Position: Head of IECEx Certification Body

Signature:  
(for printed version)

Date:

  
2018-01-26

1. This certificate and schedule may only be reproduced in full.
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Certificate issued by:

TÜV NORD CERT GmbH  
Hanover Office  
Am TÜV 1, 30519 Hannover  
Germany





# IECEx Certificate of Conformity

Certificate No.: IECEx TUN 17.0026X

Date of Issue: 2018-01-26

Issue No.: 0

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Manufacturer: **VEGA Grieshaber KG**  
Am Hohenstein 113  
77761 Schiltach  
Germany

Additional Manufacturing location(s):

**VEGA Americas, Inc**  
4241 Allendorf Drive  
Cincinnati, Ohio 45209  
United States of America

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:

<b>IEC 60079-0 : 2011</b> Edition: 6.0	Explosive atmospheres - Part 0: General requirements
<b>IEC 60079-1 : 2014-06</b> Edition: 7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
<b>IEC 60079-11 : 2011</b> Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "I"
<b>IEC 60079-26 : 2014-10</b> Edition: 3.0	Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga

*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:  
[DE/TUN/ExTR17.0030/00](#)

Quality Assessment Report:  
[DE/TUN/QAR06.0002/08](#)



# IECEx Certificate of Conformity

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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

The differential pressure measuring devices type VEGADIF DF85(\*).\*E/\*\*\*\*\*Z/H/A/U/P/F\*\*\*\*\* are used for differential pressure measurement of liquids and gases.

The Differential pressure measuring devices type VEGADIF DF85(\*).\*E/\*\*\*\*\*Z/H/A/U/P/F\*\*\*\*\* consist of an electronics housing, a differential pressure measuring element and the process connections. Optionally, also the indication and operation module may be installed.

The following electronic versions are available:

VEGADIF DF85(\*).\*E/\*\*\*\*\*Z\*\*\*\*\*: 2 wire 4 ... 20 mA transmitters

VEGADIF DF85(\*).\*E/\*\*\*\*\*H\*\*\*\*\*: 2 wire 4 ... 20 mA transmitters with superposed HART signal

VEGADIF DF85(\*).\*E/\*\*\*\*\*A\*\*\*\*\*: 2 wire 4 ... 20 mA transmitters with superposed HART signal and additional SIL qualification

VEGADIF DF85(\*).\*E/\*\*\*\*\*U\*\*\*\*\*: With electronics for MODBUS

VEGADIF DF85(\*).\*E/\*\*\*\*\*P\*\*\*\*\*: With electronics for Profibus PA

VEGADIF DF85(\*).\*E/\*\*\*\*\*F\*\*\*\*\*: With electronics for Foundation Fieldbus

See attachment for further details.

### SPECIFIC CONDITIONS OF USE: YES as shown below:

1. For use as Ga/Gb-apparatus: For functional reasons, the partition wall (membrane) to the wetted area has a wall thickness <1 mm. In the application, it has to be ensured, that an impairment of the separation wall e.g. by aggressive media or mechanical hazards is excluded.

For variants with standard process connections: The installation of the meter bodies shall provide as a minimum degree of protection IP67 according to IEC 60529 for the process connections and vents.

For variants with capillary connections: The capillary connections are designed to be connected to a capillary with diaphragm seal. The filling holes are intended to bring in a fill fluid. To prevent a zone entrainment from Zone 0, the diaphragm seal resp. the diaphragm seal and capillary have to be suitably designed. The pressure transfer system has to be technically tight. The filling hole has to be tightly sealed.

2. At the plastic parts there is a danger of ignition by electrostatic discharge. Observe manual of the manufacturer and warning label.

3. At the metallic parts made of light metal there is a danger of ignition by impact or friction. Observe manual of the manufacturer.

Annex: [\\_Attachment\\_VEGADIF 85\\_TUN 17.0026X.docx.pdf](#)