

Translation

EU-Type Examination Certificate Supplement 1

Change to Directive 2014/34/EU

Equipment intended for use in potentially explosive atmospheres
Directive 2014/34/EU

EU-Type Examination Certificate Number: **BVS 15 ATEX E 047 X**

Product: **Differential pressure transmitter type DP 7060 C...**

Manufacturer: **KROHNE Pressure Solutions GmbH**

Address: **Gewerbepark Meißen 14, 32423 Minden, Germany**
formerly: **Oberbeckseener Straße 76, 32547 Bad Oeynhausen**

This supplementary certificate extends EC-Type Examination Certificate No. BVS 15 ATEX E 047 X to apply to products designed and constructed in accordance with the specification set out in the appendix of the said certificate but having any acceptable variations specified in the appendix to this certificate and the documents referred to therein.

DEKRA EXAM GmbH, Notified Body number 0158, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this 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.
The examination and test results are recorded in the confidential Report No. PP 15.2101 EU.

Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2012 + A11:2013	General requirements
EN 60079-11:2012	Intrinsic Safety "i"
EN 60079-26:2015	Equipment with equipment protection level (EPL) Ga

If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix to this certificate.

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.

The marking of the product shall include the following:

	II 1G	Ex ia IIC T4/T6 Ga
	II 1/2G	Ex ia IIC T4/T6 Ga/Gb
	II 2G	Ex ia IIC T4/T6 Gb

DEKRA EXAM GmbH
Bochum, 2017-04-21

Signed: Jörg Koch

Certifier

Signed: Dr Michael Wittler

Approver

13 **Appendix**

14 **EU-Type Examination Certificate**

**BVS 15 ATEX E 047 X
Supplement 1**

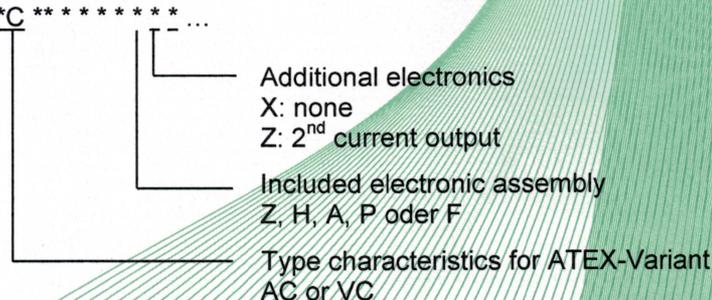
15 **Product description**

15.1 **Subject and type**

Differential pressure transmitter type DP 7060 C...

The complete type designation

OPTIBAR DP 7060 C VGK7 **C ***** ...



includes further letters and numerals to indicate different variations of the differential pressure transmitter.

The asterisks which are not explained here denote type characteristics which have no influence on explosion protection or are otherwise marked on the apparatus.

Instead of the dots, further characteristics without Ex-relevance are included in the complete type key.

Note:

Compared to the first edition of this Certificate – the type key was extended to be able to distinguish between variants with different parameters.

15.2 **Description**

With this supplement the certificate is changed to Directive 2014/34/EU.

(Annotation: In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates 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. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.)

Description of the apparatus

The differential pressure transmitter type OPTIBAR DP 7060 C... is designed to measure pressure differences in various pressure ranges.

It consists of a differential pressure meter body type OPTIBAR DP7000 resp. DP7000.1 resp. DP71.***__ (certified under BVS 13 ATEX E 100 U) and a converter-unit. Depending of the variant, the differential pressure meter body and the converter-unit are directly screwed together or connected via a connection cable with up to 180 m length.

All circuits are intrinsically safe, level of protection "ia".

Depending on the variant, the converter-unit has an enclosure with one or two chambers. The 1-chamber-enclosures contain an electronic insert, on which an operation and indication module can be plugged.

15.3.1.2 **For variants with electronics P/F:**

(Types OPTIBAR DP 7060 C VGK7 **C ***** P X ... resp.
Types OPTIBAR DP 7060 C VGK7 **C ***** F X ...)

Supply and signal circuit

Depending on the variant:

Connection via terminals 1 [+], 2 [-] resp.

Connection via plug resp.

Connection via permanently connected cable (red (+), black (-))

For connection to a Fieldbus system in accordance with the FISCO-Model

Maximum input voltage	U_i	DC	17.5	V
Maximum input current	I_i		500	mA
Maximum input power	P_i		5.5	W

Or

Maximum input voltage	U_i	DC	24	V
Maximum input current	I_i		250	mA
Maximum input power	P_i		1.2	mW
Effective internal capacitance	C_i			negligible
Effective internal inductance	L_i			negligible
				For variants with 1-chamber-enclosure
				For variants with 2-chamber-enclosure

For variants with permanently connected cable, the following values have to be additionally regarded:

Cable inductance			0.62	$\mu\text{H}/\text{m}$
Cable capacitance				
wire-wire			150	pF/m
wire-shield			270	pF/m

15.3.1.3 **For variants with electronics H/A with 2nd current output:**

(Types OPTIBAR DP 7060 C VGK7 **C ***** H Z ... resp.
Types OPTIBAR DP 7060 C VGK7 **C ***** A Z ...)

15.3.1.3.1 Supply and signal circuit I

Connection via terminals 1 [+], 2 [-]
resp. connection plug

Maximum input voltage	U_i	DC	30	V
Maximum input current	I_i		131	mA
Maximum input power	P_i		983	mW
Effective internal capacitance	C_i			negligible
Effective internal inductance	L_i		5	μH

15.3.1.3.2 Supply and signal circuit II

Connection via terminals 7 [+], 8 [-]
resp. connection plug

Maximum input voltage	U_i	DC	30	V
Maximum input current	I_i		131	mA
Maximum input power	P_i		983	mW
Effective internal capacitance	C_i			negligible
Effective internal inductance	L_i		5	μH

15.3.2 Ambient and medium temperature range

15.3.2.1 For the compact variant
(meter body screwed to converter-unit)

For T4-classification:

Ambient temperature range	T_a	-40 °C ... 80 °C *)
Medium temperature range		-40 °C ... 85 °C *)

For T6-classification:

Ambient temperature range	T_a	-40 °C ... 46 °C *)
Medium temperature range = Ambient temperature range		

15.3.2.2 For the remote variant
(connection cable between meter body and converter-unit)

For T4-classification:

Ambient temperature range	T_a	-40 °C ... 80 °C *)
Medium temperature range		-40 °C ... 85 °C *)

For T6-classification:

Ambient temperature range	T_a	-40 °C ... 46 °C *)
Medium temperature range		-40 °C ... 55 °C *)

For medium temperatures above 46 °C, a sufficient thermal decoupling between medium and converter-unit has to be ensured.

*) The limits of the permissible temperature ranges may be restricted by the used O-ring material. The used O-ring material is included in the marking. The permissible temperature ranges in dependence of the material are included in the manufacturer's instructions.

For plug-variants, restrictions of the permissible temperature ranges have to be considered as well. The limits of the permissible temperature ranges are included in the manufacturer's instructions.

For use with explosive atmospheres, the medium pressure has to be between 0.8 bar and 1.1 bar. The operation conditions for use outside explosive atmospheres have to be taken from the manufacturer's instructions.

16 **Report Number**

BVS PP 15.2101 EU, as of 2017-04-21

17 **Special Conditions for Use**

17.1 The permissible ambient resp. medium temperature range depends on the variant of the apparatus and on the temperature class, in which the apparatus shall be used.

The limits of the permissible temperature ranges may be restricted by the used O-ring material. The used O-ring material is included in the marking. The permissible temperature ranges in dependence of the material are included in the manufacturer's instructions.

For plug-variants, a restriction of the temperature ranges has to be considered, as well. The limits of the permissible temperature ranges are included in the manufacturer's instructions.

17.2 For remote variants (connection cable between meter body and converter-unit):

The intrinsically safe circuit between converter-unit and meter body is earthed. Along this circuit, potential equalization has to be ensured.

17.3 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.

