



# CERTIFICATE

## 1 Type Examination Certificate

2 Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
**Directive 2014/34/EU**

3 Type Examination Certificate Number: **KIWA 18ATEX0009 X** Issue: **2**

4 Product: **Variable Area Flowmeters**  
**types DK3. /ESK/ .. / .. / .. – Ex and DK3. / K. / .. / .. / .. – Ex**

5 Manufacturer: **KROHNE Messtechnik GmbH**

6 Address: **Ludwig-Krohne-Straße 5, 47058 Duisburg**  
**Germany**

7 This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Kiwa Nederland B.V. 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 Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014.  
The examination and test results are recorded in confidential ATEX Assessment Report No. 170500848.

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
**EN IEC 60079-0 : 2018** **EN 60079-7 : 2015** **EN 60079-15 : 2010**

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

11 This Type Examination Certificate relates only to the design of the specified product and not to specific items of equipment subsequently manufactured.

12 The marking of the product shall include the following:



II 3 G Ex ec IIC T6...T1 Gc  
II 3 G Ex nA IIC T6...T1 Gc

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Ron Scheepers  
Management Director

Issue date:

2 April 2020

First issue:

10 April 2019

This certificate shall, as far as applicable, be revised before the date of cessation of presumption of conformity of (one of) the included standards above as communicated in the Official Journal of the European Union.

© Integral publication of this certificate in its entirety and without any change is allowed.

## SCHEDULE

Type Examination Certificate KIWA 18ATEX0009 X

Issue No. 2

### 15.1 Description of Product

The Variable Area Flowmeters types DK3. /ESK/ .. / .. / .. – Ex and DK3. / K. / .. / .. / .. – Ex, for fixed installations, are devices that are intended to measure the volume flow of flammable and non-flammable gasses and liquids. The flowmeters are equipped with a mechanical display and a 4...20 mA current output interface, with up to two MIN/MAX limit switches (NAMUR) or a reed contact.

#### Nomenclature

DK3. / .. / .. / .. / .. - Ex

1 / 2 / 3 / 4 / 5 / 6 – Ex

1 = Series	DK32 = Measuring unit with valve and horizontal connections DK34 = Measuring unit without valve and vertical connections
2 = Optional pressure regulator	RE = Inlet pressure regulator RA = Outlet pressure regulator
3 = Type of signal indicator	ESK = Current output K1 = One limit switch K2 = Two limit switches (min. and max.)
4 = Type of connection	L = Cable assembly S = Connection plug
5 = designation not relevant for this type	-
6 = designation not relevant for Ex	-
Note: Non indicated designations can be skipped	

## SCHEDULE

### Type Examination Certificate KIWA 18ATEX0009 X

Issue No. 2

#### 15.2 Thermal data

The temperature class or surface temperature in relation to the maximum ambient temperature and the maximum process temperature is listed in the following tables:

Type DK3. /ESK/ .. / .. / .. – Ex

	Maximum process temperature [°C]													
	T6			T5			T4				T3...T1			
Ambient temperature [°C]	40	50	55	50	65	70	40	60	65	70	40	60	65	70
DK3./ESK/.	85	85	85	100	100*	90*	135*	105*	100*	90*	140*	105*	100*	90*

\* Heat-resistance cable and cable entry  $\geq 90$  °C

Type DK3. / K. / .. / .. / .. – Ex

Limit switch input power	Maximum process temperature [°C] with Connection plug (S) or Cable assembly (L)															
	T6			T5			T4					T3...T1				
Ambient temperature [°C]	40	50	55	40	50	55	40	60	65	70	90	40	60	65	70	90
SC2-NO 64 mW	80	70	65	100	100	95	135	125	120*	120*	100*	140*	125*	120*	120*	100*
SC2-NO 169 mW	-	-	-	55	-	-	90	75	70	-	-	90	75	70	-	-
SJ2-SN 64 mW	80	70	70	100	100	95	135	125	120*	120*	100*	140*	125*	120*	120*	100*
SJ2-SN 169 mW	-	-	-	60	55	-	95	80	75*	70*	-	95	80	75*	70*	-
I7S2002-N 64 mW	85	80	75	100	100	100	135	125	120*	120*	100*	140*	125*	120*	120*	100*
I7S2002-N 169 mW	55	-	-	80	70	70	135	120	115*	110*	95*	135*	120*	115*	110*	95*

\* Heat-resistance cable and cable entry  $\geq 90$  °C

The minimum ambient temperature is -40 °C; the minimum process temperature is -40 °C.

#### 15.3 Electrical Data

Type DK3. /ESK/ .. / .. / .. – Ex

$U_N = 12 \dots 32$  V;  $I_N = 4 \dots 20$  mA.

Type DK3. / K. / .. / .. / .. – Ex

$U_N = 8$  VDC (in accordance with IEC 60947-5-6 (NAMUR))

#### 15.4 Instructions

The instructions provided with the product shall be followed in detail to assure safe operation.

#### 16 ATEX Assessment Report Number

170500848.

## SCHEDULE

**Type Examination Certificate KIWA 18ATEX0009 X**

**Issue No. 2**

**17 Specific Conditions of Use**

- 1) The Variable Area Flowmeters with coated parts shall be installed and maintained such that the risk of electrostatic discharge is minimized.
- 2) For thermal data and electrical data, refer to 15.2 and 15.3.
- 3) The Variable Area Flowmeters type DK3. /ESK/ .. / . / .. / .. – Ex;
  - shall only be used in an area of not more than pollution degree 2, as defined in IEC 60664-1.
  - shall be provided with a transient protection that is set at a level not exceeding 140 % of the peak rated voltage value at the supply terminals to the equipment.
- 4) The Variable Area Flowmeters type DK3. / K. / .. / . / .. / .. – Ex;
  - shall be prevented from solid foreign bodies falling vertically through openings into the enclosure.
  - shall be installed and connected in a cabinet in such a way that the cable assembly or connection plug are protected from mechanical force.

**18 Essential Health and Safety Requirements**

All relevant Essential Health and Safety Requirements are covered by the standards listed at section 9.

**19 Drawings and Documents**

As listed in ATEX Assessment Report No. 170500848

**20 Description of Certificate Changes (for Issue 2 and above)**

Issue 2, Kiwa reference no. 200101027:

- Upgrade from EN 60079-0 : 2012 + A11 : 2013 to EN IEC 60079-0 : 2018.
- Correction of process temperature tables for Type DK3. / K. / .. / . / .. / .. – Ex.