TYPE EXAMINATION
CERTIFICATE

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

1. **Type Examination Certificate Number:** ETL23ATEX0311X **Issue 00**
2. **Product:** K-BAR 2000B-HT, K-BAR 2000B-HHT, K-BAR 2000B-WGF
3. **Manufacturer:** Kurz Instruments INC.
4. **Address:** 2411 Garden Road
   Monterey, CA 93940
   USA
5. This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
6. Intertek Testing Services NA Ltd., certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of the products intended for use in potentially explosive atmospheres given in Annex II of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014.
7. Compliance with the Essential Health and Safety Requirements has been assured by compliance with IEC EN 60079-0:2018 and EN IEC 60079-7:2015+A1 except in respect of those requirements referred to within item 14 of the Schedule
8. If the sign "X" is placed after the certificate number, it indicates that the product is subject to the special conditions of use specified in the Schedule to this certificate.
9. This Type Examination Certificate relates only to the design of the specified product and not to specific items subsequently manufactured.
10. The marking of the product shall include the following:

   II 3 G Ex ec IIC T4…T1 Gc

   -40°C ≤ Ta ≤ 65°C

Certification Officer: _____ **Date:** 30 November 2023

Todd L. Relyea

SCHEDULE:

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11. Description of Equipment or Protective System

The K-BAR 2000B is an insertion flow meter that measures velocity and temperature of a process gas using one to four sensors installed along a mast-type probe. Its primary application is for flow measurements in large ducts/stack having a wide range of spatial and time varying velocity and temperature profiles. Each sensor has a transmitter that are housed in an enclosure that is mounted at the end of the probe, referred to as transmitter attached. Optionally, a junction box is mounted at the end of the probe and then cabled to the remote transmitter(s) housed in a separate enclosure, referred to as

The K-BAR 2000B is an insertion Mass Flow Meter that measures velocity and temperature of a process gas using one (1) to four (4) sensor elements installed along a probe. Its primary application is for flow measurements in large ducts/stacks having a wide range of spatial and time varying velocity and temperature profiles. The K-BAR is part of the Kurz Instruments MFT B-Series Mass Flow Meter product line and uses the same transmitter electronics and sensor types certified under 103942484DAL. The K-BAR Model Numbers are listed in Table 1 along with the standard process flow and temperature ratings for each model. The differences between the K-BAR models are the sensor(s) used in each model. The abbreviations appended to the model numbers denote the sensor type used in the K-BAR model and relative temperature range – HT denotes “high temperature”, HHT denotes “high, high temperature”, WGF denotes “wet gas flow”.

For a detailed construction drawing of each sensor type, see sheets 8 and 9 in Dwg 280220.

Equipment electronics enclosure has been assessed for an ambient range of -40°C to 65°C. The Temperature Classification in which the equipment may be used is dependent upon the process temperature to which the probe is exposed. The table below provides a summary of the maximum process temperature limitations for each respective temperature classification.

T4 process temp -40°C to 50°C

T3 process temp -40°C to 115°C

T2 process temp -40°C to 215°C

T1 process temp -40°C to 367°C

Due to the variability in installations the end user ensure the ambient temperature of the transmitter housing, a maximum of 65°C, is maintained. Where the equipment is exposed to elevated processes the transmitter housing shall be mounted in a remote configuration.

Additionally the manufacturer has specified that the probe may be used in ambient temperatures of up to 500°C when exposed to a non-hazardous process. This assessment has not considered this application, and the equipment may not be used within a hazardous area following exposure to process temperatures above 367°C.

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12. Report Number

Intertek Report: 104722347DAL-002 Issue: 0 Dated: 06/06/2023.

13. Conditions of Certification

(a). Special Conditions of Use

- End user to provide the transient protection device to be set at a level not exceeding 140 % of the peak rated voltage value of the peak rated voltage.
- Equipment is intended for installation in an area providing at least pollution degree 2.
- Cable entry devices and sealing devices shall be rated for use in 100°C.
- End user to properly connect conduit to provided Ex e conduit hub on enclosure to ensure the enclosure protection.

(b). Conditions of Manufacture - Routine Tests

- A dielectric strength test shall be carried out in accordance with 6.1 of EN IEC 60079-7:2015+A1.

  A dielectric strength test shall be carried out at 500 V r.m.s maintained for at least 1 min without dielectric breakdown occurring.

  Alternatively, a test shall be carried out at 1,2 times the test voltage, but maintained for at least 100 ms. Per the requirements of EN IEC 60079-7:2015+A1.

14. Essential Health and Safety Requirements (EHSRs)

The relevant Essential Health and Safety Requirements (EHSRs) affected by this variation have been identified and assessed in Intertek Report: 104722347DAL-002 Issue: 0 Dated: 06/06/2023.

15. Drawings and Documents

Technical Documents			
Title:	Drawing No.:	Rev. Level:	Date:
SERIES K-BAR 2000B-HT, -HHT, -WGF DESCRIPTION FOR SAFETY APPROVAL	367542	O	08/08/22
SAFETY APPROVAL DRAWING SERIES K-BAR 2000B-HT, -HHT, -WGF	367540	F	08/08/22
K-BAR 2000B TECHNICAL SPECIFICATION	368041	P	06/29/23
K-BAR 2000B-WGF TECHNICAL SPECIFICATION	342040	B	11/9/22
B-SERIES HARDWARE GUIDE	342041	B	11/9/22
K-BAR 2000B FIELD WIRING TRANSMITTER ATTACHED	300167	U	8/24/22
K-BAR 2000B FIELD WIRING TRANSMITTER SEPARATE	420348	W	9/6/22
SCHEMATIC SC BOARD STANDARD	300182	P	8/24/22
SC BOARD ASSEMBLY -STD	420380	N	9/6/22
SCHEMATIC SC BOARD HART	300175	A	5/26/06
SC BOARD ASSEMBLY -HART	420366	A	9/8/06
I/O & DC POWER DISTRIBUTION	300169	D	3/12/07
I/O & POWER DISTR ASSEMBLY	420352	E	3/12/07
TRANSMITTER SEPARATE (TS) SENSOR JUNCTION BOARD	170417	A	11/15/22
TS JUNCTION BOARD ASSEMBLY	170418	A	11/15/22
SAFETY LABEL K-BAR 2000B HAZARDOUS LOCATION	170373	D	06/30/23
SAFETY LABEL K-BAR 2000B ORDINARY INDUSTRIAL	110534	A	2/28/07
CAUTION LABEL-HAZARD	110696	A	11/9/22
K-BAR 2000B ENCLOSURE (ORDINARY LOCATIONS) DETAIL	110697	A	11/9/22
K-BAR 2000B UNIVERSAL MOUNTING BASEPLATE	110699	A	11/9/22

Technical Documents			
Title:	Drawing No.:	Rev. Level:	Date:
K-BAR 2000B ADAPTER MOUNTING PLATE	110701	A	11/9/22
K-BAR 2000B STAINLESS STEEL ENCLOSURE FOR HAZARDOUS LOCATIONS	367542	O	08/08/22
K-BAR 2000B POLYESTER ENCLOSURE FOR HAZARDOUS LOCATIONS	367540	F	08/08/22