MTEx
Ontploffingvoorkomingstegnologie
Explosion Prevention Technologies

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INSPECTION AUTHORITY (IA) CERTIFICATE

WIKA INSTRUMENTS (PTY) LTD.
P.O. BOX 75225
GARDENVIEW
2047

Issued: 2023/05/18
Expire: 2026/05/18
Revision: 0
Job File Number: 2186

Applicant:

WIKA INSTRUMENTS (PTY) LTD.

For validity purposes, the following marking must be added to all equipment covered by this certificate:

IA Number:	MTEx-S/23.0184 X
Manufacturer:	WIKA Alexander Wiegand SE & Co. KG
Supplier:	WIKA Instruments (Pty) Ltd.
Equipment:	Miniature Resistance Thermometer
Model/Type:	Type TRU-a*-*
Ex Rating:	Ex ia IIC T6…T1 Ga Ex ia IIC T6…T1 Ga/Gb Ex ia IIC T6…T1 Gb Ex ia IIIC T* Da Ex ia IIIC T* Da/Db Ex ia IIIC T* Db
Serial No:	All units imported between the issue and expiry dates of this Certificate.

Standards used:

SANS 60079-0: 2019 Ed.6 **IEC 60079-0: 2017 Ed.7**	**Explosive atmospheres – Part 0: General requirements.**
SANS 60079-11: 2012 Ed.4 **IEC 60079-11: 2023 Ed.7**	**Explosive atmospheres – Part 11: Equipment protection by intrinsic safety "i".**
SANS 60079-26: 2022 Ed.4 **IEC 60079-26: 2021 Ed.4**	**Explosive atmospheres - Part 26: Equipment with Separation Elements or combined Levels of Protection**

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

This certification indicates compliance with R10.1 of the Mines Health and Safety Act and/or EMR 9(3) of the Occupational Health and Safety Act, provided that the apparatus is used as prescribed in accordance with:

1) Any conditions set out in this Certificate.
2) This certificate only covers equipment imported between the "Issued" and "Expiry" dates.
3) When the supporting Q.A.N. (Quality Assurance Notification) of the equipment manufacturer expires, it is the responsibility of the applicant (as mentioned above) to submit a valid Q.A.N to MTEx Laboratories.
4) The test results presented in this "Ex" Test Report relate only to the item or product testing.

Reviewed by + Signature (ExTL):	A. van Niekerk	
Approved by + Signature (ExCB): (MTEx Laboratories Technical Signatory)	D. Young	

5) Note: It is the responsibility of the supplier to ensure that the marking label complies with the requirements of the relevant regulator.
6) This Certificate validates all units imported between Issued and Expiry dates.

1. OVERVIEW

The miniature resistance thermometers type TRU-a*-* are used for transformation of a temperature signal into digitized reading. They are configurable via UART and an internal protocol.

The miniature resistance thermometer consists of a metallic case containing potted PCBs and a metallic sensor probe with a PT100. The electrical connection of the external intrinsically safe circuit is made by an M12-plug.

The miniature resistance thermometer is suitable for installation into the separation wall between areas requiring EPL Ga and areas requiring EPL Gb or into the separation wall between areas requiring EPL Da and EPL Db.
In case, the sensor tip is located inside areas requiring EPL Ga resp. Da (process): the case is located in areas requiring EPL Ga resp. Db.
The installation shall provide minimum degree of protection IP66 according to IEC/SANS 60529.

Optionally, a neck tube can be installed between case and probe. A thermowell may be installed around the probe. If used with a thermowell, the thermowell represent the partition wall between Ga/Gb resp. Da/Db.

2. REASON FOR REVIEW

Revision 0: ARP 0108 requirement (Initial IA Certificate).

3. DOCUMENTATION PROVIDED

- IECEx Certificate of Conformity (IECEx BVS 23.0005X Issue 0).
- EU-Type Examination Certificate (BVS 23 ATEX E 011 X Issue 01).
- IECEx Quality Assessment Report (DE/BVS/QAR07.0010/18).

4. ELECTRICAL / SAFETY PARAMETERS

Supply and signal circuit
Connection via M12-plug

Nominal voltage	U_n		4.4	V
Nominal current	I_n		1	mA
Nominal power	P_n		5	mW
Maximum input voltage	Ui	DC	7	V
Maximum input current	Ii			
for use in Group II			400	mA
for use in Group III			250	mA
Maximum input power	P_i		330	mW
Effective internal capacitance	C_i		150	nF
Effective internal inductance	L_i		2.7	µH

Template Ref: MTExDOC 101 Rev 8 (2023-04-14)
Approve date :(2023-04-14)

Maximum output current I_o 400 mA
(short-time; from capacitor discharge with time constant 5*τ < 10 ms)

Maximum output voltage U_o $= U_i$

Thermal parameters

Maximum surface temperature / temperature class of the device depending on ambient temperature range at the case T_a

Application	Temperature class / Maximum surface temperature	Ambient temperature range
Group II	T6	-40 °C…50 °C
	T5	-40 °C…75 °C
	T4…T1	-40 °C…105 °C
Group III	T135°C	-40 °C…100 °C

Maximum surface temperature / temperature class at the sensor tip depending on process temperature range.

Application	Temperature class / Maximum surface temperature	Process temperature Range
Group II	T6	-196 °C…72.5 °C
	T5	-196 °C…87.5 °C
	T4	-196 °C…122.5 °C
	T3	-196 °C…187.5 °C
	T2	-196°C…282.5 °C
	T1	-196°C…432.5 °C
Group III	T_{200} xxx°C	-196°C… xxx°C – 9 K

5. INSTALLATION INSTRUCTIONS

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

6. CONDITIONS OF CERTIFICATE (X)

- A heat input (e.g. heat return from the process or radiant heat from the environment) which exceeds the permissible ambient temperature of the housing is not permissible and must be prevented either by suitable thermal insulation or by an appropriately long neck tube or by suitable on-site measures.
  The heat input must be determined by calculation or by measurement by the user.
- In dust-explosive areas with conductive dust IIIC, the intrinsically safe circuit is not safely separated from earth/potentially earthed metal parts.
  Along the intrinsically safe circuit, potential equalization must exist.
- The wall thickness of the probe is greater than 0.2 mm, but less than 1 mm. The device may not be exposed to environmental conditions which may negatively affect the partition wall. A thermowell with a suitable minimum wall thickness can be used alternatively.

Template Ref: MTExDOC 101 Rev 8 (2023-04-14)
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End of Report