1 UNITED KINGDOM CONFORMITY ASSESSMENT

UK TYPE EXAMINATION CERTIFICATE

2 **Product or Protective System Intended for use in Potentially Explosive Atmospheres SI 2016:1107 (as amended) – Schedule 3A, Part 1**

3 Type Examination Certificate No.: **EMA22UKEX0032X**

4 Product: **Positioner, type TZIDC-xxx**

5 Manufacturer: **ABB AG (Division Measurement and Analytics)**

6 Address: **Schillerstraße 72, 32425 Minden, Germany**

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

8 Element Materials Technology, Approved Body number 0891, in accordance with Regulation 42 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, SI 2016:1107 (as amended), 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 Schedule 1 of the Regulations.

The examination and test results are recorded in the confidential report **21 203 290516**

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

EN IEC 60079-0:2018 **EN IEC 60079-7:2015 + A1:2018** **EN 60079-11:2012**

Except in respect of those requirements listed at section 18 of the schedule.

10 If the sign “X” is placed after the certificate number, it indicates that the product is subject to specific conditions of use specified in the schedule to this certificate.

11 This TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of this product shall include the following:

II 2 G Ex ia IIC T6, T4 ... T1 Gb resp.
II 2 G Ex ib IIC T6, T4 ... T1 Gb resp.
II 3 G Ex ic IIC T6, T4 ... T1 Gc resp. **Ta** see section 15.
II 2 D Ex ia IIIC T85 °C or T125 °C Db resp.
II 2 D Ex ib IIIC T85 °C or T125 °C Db resp.
II 3 G Ex ec IIC T6, T4 ... T1 Gc

This certificate and its schedules may only be reproduced in its entirety and without change. This certificate is issued in accordance with the Element Materials Technology Ex Certification Scheme.

S P Winsor, Certification Manager

Issue date: 2022-09-27

CSF341 4.0

Unit 1, Pendle Place, Skelmersdale, West Lancashire, WN8 9PN, United Kingdom
Element Materials Technology Warwick Ltd
Company Reg No. 02536659

13 SCHEDULE TO UK TYPE EXAMINATION CERTIFICATE

14 CERTIFICATE NUMBER EMA22UKEX0032X

15 Description of Product

The Positioner type TZIDC-xxx is used for the control resp. closed loop control of pneumatic driven valves. The Positioner type TZIDC resp. TZIDC-200 transfers the reference value by means of an impressed signal current of 4…20 mA. The Positioner type TZIDC-110, TZIDC-210, TZIDC-120 resp. TZIDC-220 transfers the reference value via a field bus signal. An integrated position sensor measures the current position of the valve drive. An integrated current/pressure transformer (I/P) is used for the pneumatic auxiliary power. In addition to the integrated version, the TZIDCxxx positioner is also optionally available with a remote sensor.

Electrical data:

For type TZIDC resp. TZIDC-200, type of protection "Intrinsic Safety" with marking Ex ia IIC resp. Ex ia IIIC resp. Ex ib IIIC	
Signal circuit (terminals 11(+), 12(-))	only for the connection to a certified intrinsically safe circuit with the following maximum values: U_i = 30 V I_i = 320 mA P_i = 1.1 W C_i = 6.6 nF L_i = The effective internal inductance is negligibly small.
Switch input (terminals 81(+), 82(-))	only for the connection to a certified intrinsically safe circuit with the following maximum values: U_i = 30 V I_i = 320 mA P_i = 1.1 W C_i = 14.5 nF L_i = The effective internal inductance is negligibly small.
Switch output (terminals 83(+), 84(-))	only for the connection to a certified intrinsically safe circuit with the following maximum values: U_i = 30 V I_i = 320 mA P_i = 500 mW C_i = 14.5 nF L_i = The effective internal inductance is negligibly small.
Local interface for communication (LCI)	Only for connection to a programmer outside of the explosive hazardous area (Look also to the "conditions of certification")

SCHEDULE TO UK TYPE EXAMINATION CERTIFICATE

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Optionally the following modules can be used:	
Plug-In module for digital feedback (terminals 51(+), 52(-) resp. 41(+), 42(-))	only for the connection to a certified intrinsically safe circuit with the following maximum values: U_i = 30 V I_i = 320 mA P_i = 250 mW C_i = 3.7 nF L_i = The effective internal inductance is negligibly small.
Mechanical digital feed back (terminals 51(+), 52(-) Limit1 resp. 41(+), 42(-) Limit2)	Maximum values see EC-Type Examination Certificate: PTB 00 ATEX 2049 X (Slot-type initiators of the company Pepperl & Fuchs)
Plug-In module for analogue position feedback (terminals 31(+), 32(-))	only for the connection to a certified intrinsically safe circuit with the following maximum values: U_i = 30 V I_i = 320 mA P_i = 1.1 W C_i = 6.6 nF L_i = The effective internal inductance is negligibly small.

For type TZIDC-110, TZIDC-210, TZIDC-120 resp. TZIDC-220 with marking Ex ia IIC resp. Ex ib IIC resp. Ex ic IIC			
Input circuit (terminals 11(+), 12(- resp. +, -))	only for the connection to a certified Power supply and following maximum values:		
	Power Supply or Barrier		FISCO-Power Supply (only valid for TZIDC-120 resp. TZIDC-220)
Voltage	24 V	17.5 V	17.5 V
Current	250 mA	380 mA	360 mA
Power	1.2 W	5.32 W	2.52 W
Characteristic line	Linear	Rectangular	Trapezoid
Ci = The effective internal capacitance and inductance are negligibly small. Li = The effective internal inductance is negligibly small.			
Optionally the following modules are allowed to be used:			
Mechanical digital feed back (terminals 51(+), 52(-) Limit1 resp. 41(+), 42(-) Limit2)	Maximum values see EC-Type Examination Certificate: PTB 00 ATEX 2049 X (Slot-type initiators of the company Pepperl & Fuchs)		
Local interface for communication (LCI)	Only for connection to a programmer outside of the explosive hazardous area. (Look also to the “conditions of certification”)		

For type TZIDC, TZIDC-110 resp. TZIDC-120 with marking Ex ec IIC	
Type TZIDC	
Signal circuit (terminals 11(+), 12(-))	U = 9.7 V DC I = 4...20 mA, max. 21.5 mA
Switch input (terminals 81(+), 82(-))	U = 12…24 V DC; I = 4 mA
Switch output (terminals 83(+), 84(-))	U = 11 VDC
Optionally the following modules can be used with type TZIDC:	
Plug-In module for analogue feedback (terminals 31(+), 32(-))	U = 10…30 VD C I = 4…20 mA, max. 21.5 mA
Type TZIDC-110	
Input circuit (terminals 11(+), 12(-))	U = 9...32 V DC I = 10.5 mA
Type TZIDC-120	
Input circuit (terminals 11(+), 12(-))	U = 9...32 V DC I = 11.5 mA
Additionally the following modules are allowed to be used with all types:	
Mechanical digital feedback (terminals 51(+), 52(-) resp. 41(+), 42(-)	U = 5…11 V DC

The permissible ambient temperature range, temperature marking in dependence on the type, the type of protection and the Temperature Classes has to be taken from the following table:

Type	TZIDC resp. TZIDC-200 TZIDC-110/-210/-120/-220	TZIDC resp. TZIDC-110/-120	TZIDC resp. TZIDC-200	
Type of protection	Ex ia IIC resp. Ex ib IIC resp. Ex ic IIC	Ex ec IIC	Ex ia IIIC resp. Ex ib IIIC	
Temperature Class	Ambient temperature range		Temperature marking	Ambient temp. range
T4 to T1	-40 °C to +85 °C	-35 °C to +85 °C	T 125°C	-35 °C to +85 °C
T6*	-40 °C to +40 °C	-35 °C to +50 °C	T 85°C	-35 °C to +40 °C

* For use with “Plug-In module for digital feed back“ in the temperature class T6, the permissible ambient temperature range is -40 °C to +35 °C.

16 Test report No. (associated with this certificate issue): 21 203 290516

17 Specific Conditions of Use

1. The "Local communication interface (LCI)" of the TZIDC and TZIDC-200 may only be used outside of the explosion hazardous area with Um ≤ 30 V DC. The positioner type TZIDC may only be operated as a source of auxiliary energy with gases of the group IIA and the temperature class T1 in outdoor applications or inside of buildings with sufficient ventilation.
2. The fed gas must be free of air and oxygen insofar as no explosive atmosphere can occur. The exhaust gas must always let outwards.
3. For use as II 2D apparatus the TZIDC and TZIDC200 equipment may only be used in areas with low risk of mechanical danger.
4. Cable entries which meet the requirements of EN 60079-11 for category II 2D; TZIDC and TZIDC200, as well as the ambient temperature range have to be used.
5. TZIDC-200 variants, which also comply with the type of protection "Flameproof Enclosure" according to a separate certificate, may not be operated in the type of protection “Intrinsically Safe” after use as apparatus in the type of protection "Flameproof Enclosure".
6. The TZIDC and TZIDC-200 for use in combustible dust an electrostatic charge due to propagating brush discharges has to be avoided, when the equipment is used for Applications involving combustible dust.

Conditions of TZIDC, TZIDC-110 and TZIDC-120 for safe use of Ex ec IIC:

1. Only devices which are suitable for the operation in potentially explosion hazardous areas, declared as zone 2 and the conditions available at the place of operation are allowed to be connected to circuits in the zone 2 (manufacturer's declaration or certificate from the test centre).
2. For the circuit “Mechanical digital feedback” measures have to be taken outside the device that the rated voltage is exceeded not more than 40% by transient disturbances.
3. The connecting and disconnecting as well as the switching of circuits under voltage are only permitted during installation, for maintenance or repair purposes.
4. Note: The temporal coincidence of explosion hazardous atmosphere and installation, maintenance resp. repair purposes in zone 2 is assessed as improbably.
5. Only non combustible gases are allowed to be used as pneumatic auxiliary energy.
6. Only suitable cable entries which meet the requirements of EN 60079-15 resp. EN 60079-7 are allowed to be used.

Attention is drawn to the operating and installation instructions which may contain useful information in relation to conditions of use.

18 Essential Health and Safety Requirements (Regulations Schedule 1)

In addition to the Essential Health and Safety Requirements covered by the standards listed at item 9, all other requirements are demonstrated in the relevant test reports.

The test reports were considered to satisfy the requirements of Schedule 1 with the exception of Essential Health and Safety Requirements 5 and 6, which were separately satisfied by the content of the label drawings and the instructions.

19 Drawings and Documents

The list of controlled technical documentation is given in Appendix A to this schedule.

20 Routine Tests

None

21 Specific Conditions for Manufacture

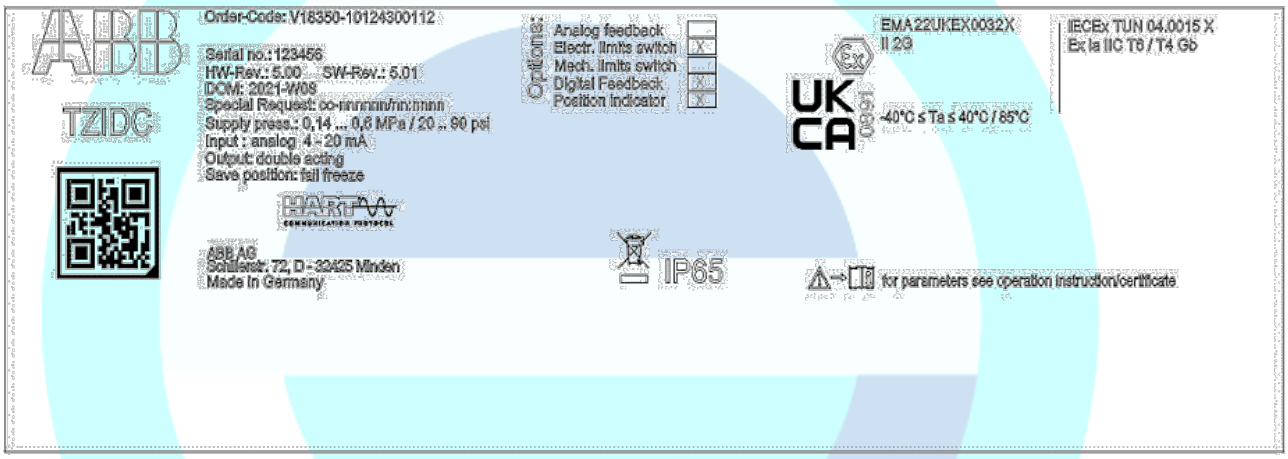
None.

22 Photographs

Figure 1: TZIDC, TZIDC-1xx

Figure 2: TZIDC-2xx

23 Details of Markings



24 Certificate History

Original certificate	2022-09-27	First issue based upon ATEX certificate TÜV 04 ATEX 2702 X

This certificate is a consolidated certificate and reflects the latest status of the certification, including all variations and amendments.

25 Notes to UKCA marking

In respect of UKCA Marking, Element Materials Technology accepts no responsibility for the compliance of the product against all applicable Regulations in all applications.

26 Notes to this certificate

Element Materials Technology certification reference: TRA-057418-00 i4 (GU-ABBQ-0004)

Throughout this certificate, the date format yyyy-mm-dd (year-month-day) is used.

Approved Body 0891 is the designation for Element Materials Technology Warwick Ltd.

27 Conditions for the validity of this certificate

This certificate remains valid for so long as:

(i) The equipment listed in section 4 is manufactured in accordance with the documents listed in Appendix A of this certificate.

(ii) The standards listed in section 9 of this certificate continue to satisfy the Essential Health and Safety Requirements of Schedule 1 of the Regulations SI 2016:1107 (as amended by SI 2019:696) and the generally acknowledged state of the art (e.g. as determined by the publishers of those standards).

APPENDIX A - TECHNICAL DOCUMENTS

Title:	Drawing No.:	Rev. Level:	Date:
Element list of scheduled drawings for this certificate.	Scheduled drawings list for EMA22UKEX0032X	1	2022-09-08