1   EC - TYPE EXAMINATION CERTIFICATE

2   **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres
Directive 94/9/EC**

3   EC - Type Examination   **Baseefa07ATEX0192X**
Certificate Number:

4   Equipment or Protective System: **TX210x.01 Command Module and TX2102.01 Terminal Module**

5   Manufacturer: **Trolex Limited**

6   Address: **Hazel Grove, Stockport, Cheshire, SK7 5DY**

7   This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8   Baseefa (2001) Ltd., Notified Body number 1180, in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Report No. **06(C)0338**

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

EN 60079-0: 2006   **EN 60079-11: 2007**   **EN 50303: 2000**

except in respect of those requirements listed at item 18 of the Schedule.

10   If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11   This EC - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12   The marking of the equipment or protective system shall include the following :

⟨Ex⟩ **I M1 Ex ia I (-20°C ≤ Ta ≤ +50°C)**

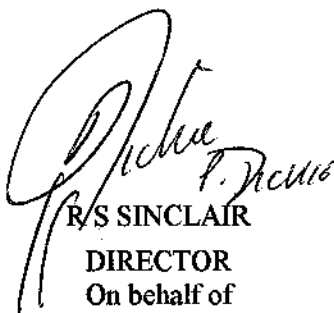This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **1159**   Project File No. **06/0338**

R/S SINCLAIR
DIRECTOR
On behalf of
Baseefa (2001) Ltd.

13   **Schedule**

14   **Certificate Number Baseefa07ATEX0192**

15   **Description of Equipment or Protective System**

The TX2100 Commander system is designed to power and monitor/control external sensors/transmitters, display the sensor/transmitter readings on the integral display and communicate the sensor/transmitter status to other equipment via the integrated serial interfaces.

The equipment comprises the following elements:

- TX2101.01; TX2104.01 COMMAND MODULE: This module contains the primary power supply connection; internal power supplies; user interface in the form of a Liquid Crystal Display (LCD) and four button keypad; main data processor and three serial interfaces (Command Bus, LAN1 & LAN2). The TX2101.01 Command Module is a plastic DIN rail mounted enclosure and the TX2104.01 is a plastic panel mounted enclosure measuring approximately 105mm x 85mm x 60mm. The display and keypad are on the front face with the power connections and serial interfaces on the screw terminals and side connectors. Power and serial interface connections to the Terminal Module are made via the Command Bus connector on the side.
- TX2102.01 TERMINAL MODULE: This module contains internal power supplies; distributed data processor and serial interface (Command Bus); slots to take up to eight single or dual Modules. The TX2102.01 Terminal Module is a plastic DIN rail mounted enclosure measuring approximately 140mm x 85mm x 60mm. The input power connections and Command Bus serial interface are made via the side connectors and the connections to the external sensors/transmitters are made via the screw terminals.
- TX2141.xxx I/O MODULES: These provide a variety of different interfaces to external sensors/transmitters. They plug into the Terminal Module through the front face.

A typical TX2100 Commander system would comprise a Command Module and up to 30 Terminal Modules complete with I/O Modules fitted in the Terminal Modules as required for the specific application (Software limit of 30 Terminal Modules, however a typical external power supply would power 4 Terminal Modules and their associated sensors, in which case multiple power supplies would be required). The Command Module and Terminal Modules are mounted in a separate outer enclosure offering a degree of ingress protection of at least IP54 and suitable for a mining environment.

15.1.   TX2101.01 & TX2104.01 Command Module Supply and Input/Output Parameters

Primary Power Connections: TB1; +V w.r.t. 0V

U_i = 14.4V
C_i = 0
L_i = 0

Earth Connections: TB2; E

LAN1 Data Connections: TB3; A & B

U_o = 5.88V
I_o = 132mA
P_o = 194mW
U_i = 6.88V   Set with reference to other equipment, i.e. TX9042
C_i = 0
L_i = 0
C_o = 500µF
L_o/R_o = 1800µH/Ω

LAN1 Power Connections: TB3; +V w.r.t. 0V

U_o = U_o of External power supply connected to TB1
I_o = I_o of External power supply connected to TB1
P_o = P_o of External power supply connected to TB1
C_i = C_i of External power supply connected to TB1
L_i = L_i of External power supply connected to TB1
C_o = C_o of External power supply connected to TB1
L_o/R_o = L_i/R_o of External power supply connected to TB1

LAN2 Data Connections: J1 Pins 5 & 6 w.r.t. Pin 2 (0V), Pin 4 = screen

U_o = 5.88V
I_o = 132mA
P_o = 194mW
U_i = 6.88V   Set with reference to other equipment, i.e. TX9042
C_i = 0
L_i = 0
C_o = 500μF
L_o/R_o = 1800μH/Ω

LAN2 Power Connections: J1 Pin 1 w.r.t. Pin 2 (0V), Pin 4 = screen

U_o = U_o of External power supply connected to TB1
I_o = I_o of External power supply connected to TB1
P_o = P_o of External power supply connected to TB1
C_i = C_i of External power supply connected to TB1
L_i = L_i of External power supply connected to TB1
C_o = C_o of External power supply connected to TB1
L_o/R_o = L_i/R_o of External power supply connected to TB1

Command Bus Data Connections – J2 Pins 5 & 6 w.r.t. Pin 2 (0V), Pin 4 = screen

U_o = 5.88V
I_o = 132mA
P_o = 194mW
U_i = 6.88V   Set with reference to other equipment, i.e. TX9042
C_i = 0
L_i = 0
C_o = 500μF
L_o/R_o = 1800μH/Ω

Command Bus Power Connections – J2 Pin 1 w.r.t. Pin 2, Pin 4 = screen

U_o = U_o of External power supply connected to TB1
I_o = I_o of External power supply connected to TB1
P_o = P_o of External power supply connected to TB1
C_i = C_i of External power supply connected to TB1
L_i = L_i of External power supply connected to TB1
C_o = C_o of External power supply connected to TB1
L_o/R_o = L_i/R_o of External power supply connected to TB1

15.2. TX2102.01 Terminal Module Apparatus supply and Input/Output parameters

Command Bus Data Connections: CMB_L and CMB_R Pins 5 & 6 w.r.t. Pin 2 (0V), Pin 4 = screen

U_o = 5.88V
I_o = 132mA
P_o = 194mW
U_i = 6.88V   Set with reference to other equipment, i.e. TX9042
C_i = 0
L_i = 0
C_o = 500μF
L_o/R_o = 1800μH/Ω

Command Bus Power Connections: CMB_L and CMB_R Pin 1 w.r.t. Pin 2 (0V), Pin 4 = screen

U_o = U_i = U_o of External power supply connected to TB1 on Command Module or this connector
I_o = I_i = I_o of External power supply connected to TB1 on Command Module or this connector
P_o = P_i = P_o of External power supply connected to TB1 on Command Module or this connector
C_i = C_i of External power supply connected to TB1 on Command Module or this connector
L_i = L_i of External power supply connected to TB1 on Command Module or this connector
C_o = C_o of External power supply connected to TB1
L_o/R_o = L_i/R_o of External power supply connected to TB1

15.3. TX2141.301 Module Single 4-20mA Input - Input/Output parameters

Sensor/Transmitter Supply Connections: TERM1 w.r.t. TERM3 (0V)

U_o = U_o of External power supply connected to Command Module or Terminal Module
I_o = I_o of External power supply connected to Command Module or Terminal Module
P_o = P_o of External power supply connected to Command Module or Terminal Module
C_i = 120nF + Ci of External power supply connected to Command Module or Terminal Module
L_i = L_i of External power supply connected to Command Module or Terminal Module

Sensor/Transmitter Signal Connections: TERM2 & TERM4 w.r.t. TERM 3 (0V)

U_o = U_o of External power supply connected to Command Module or Terminal Module
I_o = 67mA
P_o = 17mW
U_i = 16.5V
C_i = 0
L_i = 0

The sensor connected to these terminals may be powered by a separate power supply. In this case no connection is made to TERM1 and the 0V connections of the two power supplies must be connected together.

15.4. TX2141.302 Module Dual 4-20mA Input - Input/Output parameters

Sensor/Transmitter Supply Connections: TERM1 & TERM3 w.r.t. 0V of External Power Supply

U_o = U_o of External power supply connected to Command Module or Terminal Module
I_o = I_o of External power supply connected to Command Module or Terminal Module
P_o = P_o of External power supply connected to Command Module or Terminal Module
C_i = 120nF + Ci of External power supply connected to Command Module or Terminal Module
L_i = L_i of External power supply connected to Command Module or Terminal Module

Sensor/Transmitter Signal Connections: TERM2 & TERM4 w.r.t. 0V of External Power Supply

U_o = U_o of External power supply connected to Command Module or Terminal Module
I_o = 68mA (34mA each)
P_o = 16.8mW (8.4mW each)
U_i = 16.5V
C_i = 0
L_i = 0

The sensors connected to these terminals may be powered by a separate power supply. In this case no connection is made to TERM1 or TERM3 and the 0V connections of the two power supplies must be connected together. Each input circuit is considered to be a separate intrinsically safe circuit with a common 0V.

15.5.   TX2141.303 Module Single 0.4-2V Input - Input/Output parameters

Sensor/Transmitter Supply Connections: TERM1 w.r.t. TERM3 (0V)

U_o = U_o of External power supply connected to Command Module or Terminal Module
I_o = I_o of External power supply connected to Command Module or Terminal Module
P_o = P_o of External power supply connected to Command Module or Terminal Module
C_i = 120nF + Ci of External power supply connected to Command Module or Terminal Module
L_i = L_i of External power supply connected to Command Module or Terminal Module

Sensor/Transmitter Signal Connections: TERM2 & TERM4 w.r.t. TERM3 (0V)

U_o = U_o of External power supply connected to Command Module or Terminal Module
I_o = 67mA
P_o = 17mW
U_i = 16.5V
C_i = 0
L_i = 0

The sensor connected to these terminals may be powered by a separate power supply. In this case no connection is made to TERM1 and the 0V connections of the two power supplies must be connected together.

15.6.   TX2141.304 Module Dual 0.4-2V Input - Input/Output parameters

Sensor/Transmitter Supply Connections: TERM1 w.r.t. TERM3

U_o = U_o of External power supply connected to Command Module or Terminal Module
I_o = I_o of External power supply connected to Command Module or Terminal Module
P_o = P_o of External power supply connected to Command Module or Terminal Module
C_i = 120nF + Ci of External power supply connected to Command Module or Terminal Module
L_i = L_i of External power supply connected to Command Module or Terminal Module

Sensor/Transmitter Signal Connections: TERM2 or TERM4 w.r.t. TERM3 (0V)

U_o = U_o of External power supply connected to Command Module or Terminal Module
I_o = 68mA (34mA each)
P_o = 16.8mW (8.4mW each)
U_i = 16.5V
C_i = 0
L_i = 0

The sensors connected to these terminals may be powered by a separate power supply. In this case no connection is made to TERM1 and the 0V connections of the two power supplies must be connected together. Each input circuit is considered to be a separate intrinsically safe circuit with a common 0V.

15.7. TX2141.306 Module Single PT100 Input - Input/Output parameters

Sensor/Transmitter Supply Connections: TERM1 to TERM4 w.r.t. 0V of External Power Supply

U_o = U_o of External power supply connected to Command Module or Terminal Module
I_o = 42mA
P_o = 151mW
C_i = 3μF
L_i = 0

15.8. TX2141.307 Module Dual PT100 Input - Input/Output parameters

Sensor/Transmitter Supply Connections: TERM1 to TERM4 w.r.t. 0V of External Power Supply

U_o = U_o of External power supply connected to Command Module or Terminal Module
I_o = 35mA
P_o = 126mW
C_i = 220nF
L_i = 0
All 4 user terminals and therefore both PT100 inputs are considered to be part of the same single intrinsically safe circuit.

15.9. TX2141.308 Module Dual Semiconductor Temperature Input - Input/Output parameters

Sensor/Transmitter Supply Connections: TERM1 to TERM4 w.r.t. 0V of External Power Supply

U_o = U_o of External power supply connected to Command Module or Terminal Module
I_o = 35mA
P_o = 126mW
C_i = 220nF
L_i = 0

All 4 user terminals and therefore both semiconductor temperature inputs are considered to be part of the same single intrinsically safe circuit.

15.10. TX2141.309 Module AC rms & Vibration Input - Input/Output parameters

Sensor/Transmitter Supply Connections: TERM1 w.r.t. TERM3 (0V)

U_o = U_o of External power supply connected to Command Module or Terminal Module
I_o = I_o of External power supply connected to Command Module or Terminal Module
P_o = P_o of External power supply connected to Command Module or Terminal Module
C_i = 120nF + Ci of External power supply connected to Command Module or Terminal Module
L_i = L_i of External power supply connected to Command Module or Terminal Module

Sensor/Transmitter Signal Connections: TERM2 & TERM4 w.r.t. TERM3 (0V)

U_o = U_o of External power supply connected to Command Module or Terminal Module
I_o = 75mA
P_o = 268mW
C_i = 0
L_i = 0

15.11. TX2141.310 Module Strain Gauge, mA & Thermocouple Input - Input/Output parameters

Sensor/Transmitter Supply Connections: TERM1 w.r.t. TERM3

U_o = 5.88V
I_o = 108mA
P_o = 387mW
C_i = 7.22µF + Ci of External power supply connected to Command Module or Terminal Module via 28.5Ω
L_i = 0

Sensor/Transmitter Signal Connections: TERM2 & TERM4 w.r.t. TERM3 (0V)

U_o = 5.88V
I_o = 5mA
P_o = 7mW
U_i = 5.88V
C_i = 0
L_i = 0

The sensor connected to these terminals may be powered by a separate power supply. In this case no connection is made to TERM1 and the 0V connections of the two power supplies must be connected together.

15.12. TX2141.401 Module Pulse Frequency Input - Input/Output parameters

Sensor/Transmitter Supply Connections: TERM1 & TERM3 w.r.t. 0V or TERM2 & TERM4

U_o = U_o of External power supply connected to Command Module or Terminal Module
I_o = 458mA each
P_o = 1.66W each
C_i = 7.1µF + Ci of External power supply connected to Command Module or Terminal Module via 31.35Ω
L_i = 0

Sensor/Transmitter Signal Connections: TERM2 & TERM4 w.r.t. (0V)

U_o = 5.88V
I_o = 10mA (5mA each)
P_o = 14mW (7mW each)
U_i = 14.4V
C_i = 0
L_i = 0

The sensors connected to these terminals may be powered by a separate power supply. In this case no connection is made to TERM1 or TERM3 and the 0V connections of the two power supplies must be connected together.

15.13. TX2141.501 & TX2141.502 Module Namur & Volt Free Contact Input - Input/Output parameters

Sensor/Transmitter Supply Connections: TERM1 & TERM3 w.r.t. 0V or TERM2 & TERM4

U_o = U_o of External power supply connected to Command Module or Terminal Module
I_o = 47mA each
P_o = 166mW each
C_i = 0
L_i = 0

Sensor/Transmitter Signal Connections: TERM2 & TERM4 w.r.t. (0V)

U_o = 5.88V
I_o = 6mA (3mA each)
P_o = 8mW (4mW each)
U_i = 14.4V
C_i = 0
L_i = 0

15.14.   TX2141.504 Module Quad On/Off Input - Input/Output parameters

Sensor/Transmitter Signal Connections: TERM1, TERM2, TERM3 & TERM4 w.r.t. (0V)

U_o = U_o of External power supply connected to Command Module or Terminal Module
I_o = 60mA (15mA each)
P_o = 208mW (52mW each)
C_i = 0
L_i = 0

All 4 user terminals and therefore all 4 inputs are considered to be separate intrinsically safe circuits.

15.15.   TX2141.603 Module Quad Open Drain Output - Input/Output parameters

Sensor/Transmitter Signal Connections: TERM1, TERM2, TERM3 & TERM4 w.r.t. (0V)

U_o = 5.88V
I_o = 10mA
P_o = 18mW
U_i = 14.4V
I_i = 100mA
C_i = 0
L_i = 0

The sensors connected to these terminals may be powered by a separate power supply. In this case the 0V connections of the power supplies must be connected together. All 4 user terminals and therefore all 4 outputs are considered to be part of the same single intrinsically safe circuit.

15.16.   TX2141.604 Module Dual Relay Output - Input/Output parameters

Sensor/Transmitter Supply Connections: TERM1, TERM2, TERM3 & TERM4 w.r.t. 0V

U_o = 0
I_o = 0
P_o = 0
U_i = 14.4V, See Note
C_i = 0
L_i = 0

The loads connected to these terminals may be powered by a separate power supply. In this case the 0V connections of the two power supplies must be connected together.

15.17.   TX2141.701 Module Dual 4-20mA Output - Input/Output parameters

Sensor/Transmitter Signal Connections: TERM1 w.r.t. TERM3 (0V) and TERM2 w.r.t. TERM4 (0V)

U_o = U_o of External power supply connected to Command Module or Terminal Module
I_o = 3.04A (1.52A each)
P_o = 3.07W
C_i = 5.7µF + Ci of External power supply connected to Command Module or Terminal Module
L_i = 0

16   Report Number

06(C)0338

17   Special Conditions for Safe Use

-       The apparatus must be mounted inside an enclosure that offers a degree of ingress protection of at least IP54 according to IEC 60529 and be suitable for a mining environment.

-       The external circuit connected to the relay contacts associated with the "604 Module - Dual Relay Output", must be limited to overvoltage category III as defined by IEC 60664-1 (i.e. permanent connections to circuits in fixed industrial installations).

18   Essential Health and Safety Requirements

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

19   Drawings and Documents

Number	Sheet	Issue	Date	Description
P5466-02-01	1 of 1	A	23/07/07	TX2101 Command Module, General Arrangement
P5466-02-02	1 of 1	A	23/07/07	TX2102 Terminal Module, General Arrangement
P5466-02-03	1 of 1	A	04/12/07	TX2100 Commander System, General Arrangement - System
P5466.500	3 of 3	A	06/04/06	TX2100 Series Commander, Block Diagram Command & Terminal Modules Commander Mk 2
P5466.597	1 of 1	A	03/03/08	TX2100 Commander, Certification Marking Details
P5466.501	1 to 2	A4	03/05/07	TX2100 Commander, Certified Circuit Diagram Base PCB Command Module
P5466.502	1 of 1	A	11/01/07	TX2100 Commander, PCB, CM Base
P5466.504	1 to 2	A3	06/12/06	TX2100 Commander, Certified Circuit Diagram Processor PCB Command Module
P5466.505	1 of 1	A	11/01/07	TX2100 Commander, PCB, CM Processor
P5466.507	1 to 2	A4	03/05/07	TX2100 Commander, Certified Circuit Diagram MMI PCB Assembly Command Module
P5466.508	1 of 1	A	11/01/07	TX2100 Commander, PCB, CM MMI
P5466.510	1 of 1	A	19/09/06	TX2100 Commander, PCB, CM Riser
P5466.512	1 of 1	A1	14/07/06	TX2100 Commander, Certified Circuit Diagram Riser PCB Command Module
P9000.127.01	1 to 2	A1	17/10/06	Certified Circuit Diagram XKM12232D LCD Display
P5466.515	1 to 2	A4	03/05/07	TX2100 Commander, Certified Circuit Diagram Main PCB Terminal Module
P5466.516	1 of 1	A	11/01/07	TX2100 Commander, PCB, TM Main

Number	Sheet	Issue	Date	Description
P5466.518	1 of 1	A3	12/07/07	TX2100 Commander, Certified Circuit Diagram Fuse PCB Terminal Module
P5466.519	1 of 1	A	19/09/06	TX2100 Commander, PCB, TM Fuse
P5466.521	1 of 1	A3	21/12/06	TX2100 Commander, Certified Circuit Diagram Address Switch PCB Terminal Module
P5466.522	1 of 1	A	11/01/07	TX2100 Commander, PCB, TM Address Switch
P5466.525	1 to 2	A4	03/05/07	TX2100 Commander, Certified Circuit Diagram 301 Module – Single 4-20mA Input 303 Module – Single 0.4-2V Input
P5466.526	1 of 1	A	21/02/08	TX2100 Commander, PCB, Single 4-20mA Input
P5466.530	1 to 2	A3	03/05/07	TX2100 Commander, Certified Circuit Diagram 302 Module – Dual 4-20mA Input 304 Module – Dual 0.4-2V Input
P5466.531	1 of 1	A	21/02/08	TX2100 Commander, PCB, Dual 4-20mA Input
P5466.535	1 to 2	A4	09/08/07	TX2100 Commander, Certified Circuit Diagram 306 Module – PT100 Temp. Sensor Input
P5466.536	1 of 1	A	21/02/08	TX2100 Commander, PCB, Single PT100 Input
P5466.540	1 to 2	A3	09/05/07	TX2100 Commander, Certified Circuit Diagram 307 Module – Dual PT100 Sensor Input 308 Module – Dual S/C Temp. Sensor Input
P5466.541	1 of 1	A	21/02/08	TX2100 Commander, PCB, Dual PT100 Input
P5466.545	1 to 2	A2	02/01/07	TX2100 Commander, Certified Circuit Diagram 309 Module – A.C. RMS & Vibration Input
P5466.546	1 of 1	A	21/02/08	TX2100 Commander, PCB, ac RMS IP
P5466.550	1 to 2	A3	10/07/07	TX2100 Commander, Certified Circuit Diagram 310 Module – Strain Gauge, mV and Thermocouple Inputs
P5466.551	1 of 1	A	22/02/08	TX2100 Commander, PCB, mV Straingauge IP
P5466.555	1 to 2	A3	09/05/07	TX2100 Commander, Certified Circuit Diagram 701 Module – Dual 4-20mA Output
P5466.556	1 of 1	A	22/02/08	TX2100 Commander, PCB, Dual 4-20mA Output
P5466.560	1 to 2	A4	21/08/07	TX2100 Commander, Certified Circuit Diagram 501/502 – Namur / Volt Free Contact Input
P5466.561	1 of 1	A	22/02/08	TX2100 Commander, PCB, Dual Namur Input
P5466.565	1 to 2	A2	02/01/07	TX2100 Commander, Certified Circuit Diagram 604 Module – Dual Relay Output
P5466.566	1 of 1	A	22/02/08	TX2100 Commander, PCB, Dual Relay Output
P5466.570	1 to 2	A5	01/10/07	TX2100 Commander, Certified Circuit Diagram 603 Module – Quad Open Drain Output
P5466.571	1 of 1	A	22/02/08	TX2100 Commander, PCB, Quad Open Collector
P5466.575	1 to 2	A4	17/08/07	TX2100 Commander, Certified Circuit Diagram 401 Module – Pulse Frequency Input
P5466.576	1 of 1	A	22/02/08	TX2100 Commander, PCB, Pulse Frequency
P5466.580	1 to 2	A2	02/01/07	TX2100 Commander, Certified Circuit Diagram 504 Module – Quad On/Off Input
P5466.581	1 of 1	A	22/02/08	TX2100 Commander, PCB, Quad On/Off Input

1   # SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2   **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres**
Directive 94/9/EC

3   Supplementary EC - Type   **Baseefa07ATEX0192X/1**
Examination Certificate Number:

4   Equipment or Protective System: **TX210x.01 Command Module and TX2102.01 Terminal Module**

5   Manufacturer: **Trolex Limited**

6   Address: **Hazel Grove, Stockport, Cheshire, SK7 5DY**

7   This supplementary certificate extends EC – Type Examination Certificate No. Baseefa07ATEX0192X to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

8   Item 9 of the original Certificate is replaced by "Compliance with the Essential Health and Safety Requirements has been assured by compliance with: IEC 60079-0: 2011 and EN 60079-11: 2012

except in respect of those requirements listed at item 18 of the Schedule."

9   The marking of the equipment has changed from the original Certificate and shall include the following:

     Ⓔx **I M1 Ex ia I Ma (-20°C ≤ Ta ≤ +50°C)**

This certificate shall be held with the original certificate and may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **1159**   Project File No. **12/0492**

R S SINCLAIR
DIRECTOR
On behalf of
Baseefa

13 # Schedule

14 ## Certificate Number Baseefa07ATEX0192X/1

15   **Description of the variation to the Equipment or Protective System**

Variation 1.1

Minor electrical changes that do not affect the original assessment.

Variation 1.2

Alternative connection arrangements for a Namur Sensor to the TX2141.401 and TX2141.501 Modules.

Variation 1.3

To confirm that the equipment covered by this certificate has been reviewed against the requirements of IEC 60079-0: 2011 and EN 60079-11: 2012 in respect of the differences from EN 60079-0: 2006 and EN 60079-11: 2007, and that none of those differences affects this equipment.

Variation 1.4

Addition of the TX2131 Command Bus Converter Module.

16   **Report Number**

12(C)0492

17   **Specific Conditions of Use**

1.   The apparatus must be mounted inside an enclosure that offers a degree of ingress protection of at least IP54 according to IEC 60529 and be suitable for a mining environment.

2.   The external circuit connected to the relay contacts associated with the "604 Module - Dual Relay Output", must be limited to overvoltage category III as defined by IEC 60664-1 (i.e. permanent connections to circuits in fixed industrial installations).

3.   For the purpose of this certificate, a P+F inductive sensor to PTB00ATEX2048X to Category II 1G EEx ia IIC T6 connected to terminals TERM1 w.r.t. TERM2 or TERM3 w.r.t. TERM4 of a TX2141.401 or TX2141.501 Input Module may be considered equivalent to Category I M1.

18   **Essential Health and Safety Requirements**

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19   **Drawings and Documents**

Number	Sheet	Issue	Date	Description
P5466.101	1 of 1	A	11/06/12	General Arrangement (TX2131Cb)
P5466.231	1 of 1	A	28/01/09	PCB (TX2131)
P5466.507	1 to 2	B	16.05.12	Certified Circuit Diagram MMI PCB Assembly Command Module
P5466.508	1 of 1	B	16.05.12	PCB, CM MMI
P5466.585	1 of 1	A	12/06/12	Certified Circuit Diagram TX2131 Command Bus Converter Module
P5466.597	1 of 1	B	21/06/12	Certification Marking Details
P9000.126	1 of 1	C	30.05.02	Trolex LCD Module (Sensor Version)