



1 SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE

2 Intrinsically safe System Intended for use in Potentially Explosive Atmospheres

3 Supplementary Type Examination Certificate Number: **Baseefa03Y0209/1**

4 Equipment: **PROXIMITY SENSOR SYSTEM**

5 Manufacturer: **METRIX INSTRUMENT CO.**

6 Address: **1711 Townhurst Drive, Houston, Texas 77043, USA**

7 This supplementary certificate extends Type Examination Certificate No. Baseefa03Y0209 to apply only to the design of the specified intrinsically safe system, and not to specific items of equipment therein, 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.

This supplementary certificate shall be held with the original certificate.

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

Baseefa (2001) Ltd. Customer Reference No. **0708**

Project File No. **04/0303**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

R S SINCLAIR

DIRECTOR

On behalf of

Baseefa (2001) Ltd.

Baseefa (2001) Ltd.
Health and Safety Laboratory Site, Harpur Hill,
Buxton, Derbyshire SK17 9JN
Telephone +44 (0) 1298 28255 Fax +44 (0) 1298 28216
e-mail info@baseefa2001.biz web site www.baseefa2001.biz
Registered in England No. 4305578 at 13 Dovedale Crescent, Buxton,
Derbyshire, SK17 9BJ

METRIX DOC No: 1163675
REV: B



13

Schedule

14

Certificate Number Baseefa03ATEX0209/1

15 Description of the variation to the Equipment

Variation 1.1

To permit the probe specified under item 2.2 of the original schedule to be replaced by a Bently Nevada Eddy Current Probe (BAS99ATEX1099). The alternative probe has no affect on the intrinsic safety assessment.

16 Report Number

None.

17 Special Conditions for Safe Use

None

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 |
|--------|--------|-------|----------|---|
| 8839 | 1 of 1 | C | 03-29-04 | Installation, (CENELEC) 5533 Probe Driver |

The following pages are the prior revisions of this certificate.



1 **TYPE EXAMINATION CERTIFICATE**

2 **Intrinsically Safe System Intended for use in Potentially Explosive Atmospheres**

3 Type Examination Certificate Number: **Baseefa03Y0209**

4 System: **PROXIMITY SENSOR SYSTEM**

5 Certificate Holder: **METRIX INSTRUMENT CO.**

6 Address: **1711 Townhurst Drive, Houston, Texas 77043, USA**

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

8 Baseefa (2001) Ltd. certifies that this system has been found to comply with the following standards
EN 50 039:1980

9 The examination and test results are recorded in confidential Report No. **02(C)0535**

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

11 This TYPE EXAMINATION CERTIFICATE relates only to the design of the specified intrinsically safe system and not to specific items of equipment therein. It is the responsibility of the system certificate holder to supply the relevant documentation to the installer of the intrinsically safe electrical system referred to in this certificate. The installer has the responsibility to ensure that the system conforms to the specification laid down in the Schedule to this certificate and has satisfied routine verifications and tests specified therein.

12 The marking of the system shall include the following :

SYST Baseefa03Y0209X

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

Baseefa (2001) Ltd. Customer Reference No. **0708**

Project File No. **03/0325**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the system may be used in particular industries or circumstances.

R S SINCLAIR

DIRECTOR

On behalf of

Baseefa (2001) Ltd.

Baseefa (2001) Ltd.

Health and Safety Laboratory Site, Harpur Hill,
Buxton, Derbyshire SK17 9JN

Telephone +44 (0) 1298 28255 Fax +44 (0) 1298 28216

e-mail info@baseefa2001.biz web site www.baseefa2001.biz

Registered in England No. 4305578 at 13 Dovedale Crescent, Buxton,
Derbyshire, SK17 9BJ

METRIX DOC No: 1163675
REV: A

Schedule

15 System Description

A Proximity Sensor System is designed to detect radial vibration or static position of rotating machinery.

The System comprises a Series 10,000 Probe, an optional Extension Cable Type 7402 (a total maximum, including the integral cable of the cable, of 9m) and a Proximity Probe Driver Model 5533, located in the Hazardous Area, and an Intrinsically Safe source located in the Non-Hazardous Area. The Probe Driver circuit is designed to provide a high frequency excitation to the probe.

The proximity of a metal target causes loading of the probe coil which is demodulated in the Probe Driver to provide a voltage signal proportional to the distance between the probe and target.

A Proximity Sensor System comprises:

1. Apparatus that may be installed in a Non Hazardous Area (Safe Area.)

1.1 Either

A 26V 300Ω and a 20V 390Ω Dual Channel Shunt Zener Diode Safety Barrier having the following or lower output parameters:

$$\begin{aligned}U_z &= 26V \\I_o &= 138mA \\P_o &= 0.81W\end{aligned}$$

OR

A 28V 300Ω and a 28V Diode Return Dual Channel Shunt Zener Diode Safety Barrier having the following or lower output parameters:

$$\begin{aligned}U_z &= 28V \\I_o &= 93mA \\P_o &= 0.66W\end{aligned}$$

OR

A 24V Powered Galvanic Isolator having the following or lower output parameters:

$$\begin{aligned}U_z &= 28V \\I_o &= 93mA \\P_o &= 0.66W\end{aligned}$$

The power sources must be certified by an EEC Approved Certification Body to [EEEx ia] IIC and the output current must be limited by a resistor 'R' such that $I_o = U_z / R$.

- 1.2. The above apparatus is to be supplied from apparatus situated in the safe area which is unspecified except that it must not be supplied from nor contain in normal or abnormal conditions a source of potential with respect to earth in excess of 250 volts r.m.s. or 250 volts d.c.



2. Apparatus that may be installed in a Hazardous Area

2.1 Proximity Probe Driver Model 5533 (Baseefa03ATEX0205X)

2.2 Series 10,000 Probe (Baseefa03ATEX0204)

3. Permissible Interconnecting Cables

3.1 The capacitance and either the inductance or the inductance to resistance ratio (L/R) of the hazardous area cables must not exceed the following values:-

| GROUP | C | L | OR | L/R Ratio |
|-------|---------------|------|----|----------------------|
| | μF | mH | | $\mu\text{H}/\Omega$ |
| IIC | 0.083 | 1.73 | | 38 |
| IIB | 0.65 | 8.29 | | 151 |
| IIA | 2.15 | 16.7 | | 314 |

3.2 Wiring to terminals of the safe area apparatus may be achieved by separate cables or by separate circuits within a Type A or Type B multicore cable (as defined in clause 5.3 of EN50 039) subject to the following:-

- The circuit to be individually screened when used within a Type A multicore cable.
- The peak voltage of any other circuit within a Type B multicore cable must not exceed 60V.

16 Report

02(C)0535

17 Special Conditions for Safe Use

None

18 Drawings and Documents

| Number | Issue | Date | Description |
|----------|-------|----------|--------------|
| 8839 | B | 05-22-03 | System |
| 8446-012 | A | 05-22-03 | System label |