1 # TYPE EXAMINATION CERTIFICATE

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

3	Type Examination Certificate Number:	**Baseefa03Y0365X**
4	System:	**A Transmet I.S. Dewpoint Transmitter System No. 1**
5	Certificate Holder:	**MICHELL INSTRUMENTS LIMITED.**
6	Address:	**Nuffield Close, Cambridge, CB4 1SS**

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 50039: 1980

9 The examination and test results are recorded in confidential Report No. **02(C)0473**

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 :

EEx ia IIC T4

Baseefa (2001) Ltd. Customer Reference No. **4014**

Project File No. **02/0473**

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

13 **Schedule**

14 **Certificate Number Baseefa03Y0365X**

15 System Description

A Transmet I.S. Dewpoint Transmitter System No. 1 comprises:

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

1.1 A Dual Channel MTL796+ Shunt Zener Diode Safety Barrier to Certificate No.BAS01ATEX7202 and coded ⟨Ex⟩ II (1) GD [EEx ia] IIC (-20°C < Ta < +60°C). This may be replaced by either a Dual Channel or two Single Channel, Polarised, Shunt Zener Diode Safety Barrier, certified by Baseefa (2001) Ltd., or any EU Approved Body to the ATEX Directive and coded ⟨Ex⟩ II (1) G [EEx ia] IIC, whose outputs do not exceed the following parameters.

Channel 1.

$U_o = 26V$

$I_o = 87mA$

$P_o = 0.56W$

Channel 2.

$U_o = 20V$

$I_o = 51mA$

$P_o = 0.26W$

In any safety barrier used the output current of each channel must be limited by a resistor "R" such that Io = Uo/R and each channel / barrier must be of positive polarity.

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 253 volts r.m.s. or 253 volts d.c.

2. Apparatus that may be installed in an area suitable for Category 1 equipment.

2.1 A Michell Instruments Ltd., Transmet I.S. Dewpoint Transmitter to Certificate No.BAS01ATEX1240X and coded ⟨Ex⟩ II 1 G EEx ia IIC T4 (-20°C ≤ Ta ≤ 160°C).

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 µF	L mH	OR	L/R Ratio µH/Ω
IIC	0.047	1.9		34.5
IIB	0.72	5.7		103.5
IIA	2.55	15.2		276

These values take into consideration the Ci = 0.052 μF for Transmet I.S. Dewpoint Transmitter.

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 039:1980) subject to the following.-

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

16 Report

02(C)0473

17 Special Conditions for Safe Use

1. The Transmitter is not capable of meeting the 500V electric strength test, and the screen may be connected at both ends of the interconnecting cable therefore the Transmitter and the Shunt Zener Diode Safety Barrier earth points must be bonded such that for all practical purposes they are at equipotential.

2. The Transmitter enclosure may contain light metals and therefore must be installed in such a manner as to prevent the possibility of it being subjected to mechanical impacts.

18 Drawings and Documents

Number	Sheet	Issue	Date	Description
Ex90196	1	2	12/06/2003	Transmet I.S. Dewpoint Transmitter System No. 1 Diagram