



1 **EC TYPE-EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 12ATEX1357** Issue: **1**

4 Equipment: **Digital No Flow Timer (DNFT)**

5 Applicant: **Terra Metrics INC, dba Whitlock Instruments**

6 Address: **1300 North Texas Avenue
Odessa, TX
US 79761**

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

8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 60079-0:2012

EN 60079-1:2007

EN 60079-18:2009

The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request.

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment 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. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:



II 2G

Ex d mb IIC T5 Gb

Ta = -40°C to +55°C

Project Number 70029780

C Ellaby
Deputy Certification Manager

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Sira Certification Service
Unit 6, Hawarden Industrial Park,
Hawarden, CH5 3US, United Kingdom



SCHEDULE

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13 DESCRIPTION OF EQUIPMENT

The DNFT (Digital No Flow Timer) is an electronic monitoring device used to monitor cycles within Progressive In-line Lubrication systems. It comprises an encapsulated PCB mounted within an aluminium (Type 6061) case which is either coated with epoxy paint or anodized.

The DNFT mounts directly to a divider valve and has a spring-loaded magnetic piston exposed to the flow of lubricant. At the peak of the lubrication cycle, the piston is forced back, against the spring, into the body of the unit. A reed switch mounted on a circuit board within the unit senses the proximity of the magnetic piston through the material of the unit's housing, and initiates a signal to a microprocessor. The microprocessor counts lubrication cycles and provides an LED and optional LCD display to the user. If the microprocessor does not detect a lubrication cycle within a pre-programmed time period, an output signal is generated by transistors located on the circuit board. The transistors are rated to provide an open or closed signal to an outside power source rated up to 240 V d.c. at 2.5 VA max. The reed switch is rated to provide an open or closed signal to an outside power source rated up to 200 V d.c. at 2.5 VA max.

The DNFT range comprises of the following models:

| Model | Supply | LED | LCD | PCB | Dimensions |
|--------------|--------------------|-----|-----|-----|---------------------------------|
| DNFT LED | 3.6 V battery | Yes | No | Yes | 102mm (L) x 51mm (W) x 32mm (D) |
| DNFT LED 24V | 24 V d.c. external | Yes | No | Yes | 102mm (L) x 51mm (W) x 32mm (D) |
| DNFT PRG | 3.6 V battery | Yes | Yes | Yes | 102mm (L) x 51mm (W) x 32mm (D) |
| DNFT PRG 24V | 24 V d.c. external | Yes | Yes | Yes | 102mm (L) x 51mm (W) x 32mm (D) |
| DNFT LCC | 3.6 V battery | Yes | Yes | Yes | 102mm (L) x 51mm (W) x 32mm (D) |
| DNFT LCC 24V | 24 V d.c. external | Yes | Yes | Yes | 102mm (L) x 51mm (W) x 32mm (D) |
| DNFT PRX | N/A | No | No | No | 86mm (L) x 29mm (W) x 29mm (D) |

Design options:

- Battery powered versions utilise a flameproof battery chamber. The battery may be replaced by the user. Only replacement batteries supplied by Terra Metrics, part number 000505 shall be fitted, in accordance with the user instructions.
- DNFT LCC has a fixed alarm time and the DNFT PRG has a programmable alarm time.
- An optional proximity switch PRX output.

Variation 1 - This variation introduced the following change:

- The introduction of a distributor, 'Ariel'; the corresponding, alternative model names are listed below:

| Original name | Alternative name |
|---------------|---|
| DNFT LED | A-10753 (3 minute alarm); A-10772 (45 Second alarm) |
| DNFT LED 24V | A-20514 |
| DNFT PRG | A-10754 |
| DNFT PRG 24V | A-20513 |
| DNFT PRX | A-18255 |

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SCHEDULE

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Issue 1

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

| Issue | Date | Report number | Comment |
|-------|------------------|---------------|---------------------------------------|
| 0 | 24 January 2014 | R29549A/00 | The release of the prime certificate. |
| 1 | 09 November 2015 | R70029780A | The introduction of Variation 1. |

15 SPECIAL CONDITIONS FOR SAFE USE (denoted by X after the certificate number)

None

16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17 CONDITIONS OF CERTIFICATION

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.

17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.

17.3 The encapsulated parts of the apparatus shall be subjected to a visual inspection as described in EN 60079-18:2009 clause 9.1. No damage of the compound shall be evident, such as cracks, exposure of the encapsulated parts, flaking, inadmissible shrinkage, discoloration, swelling, decomposition or softening.

17.4 The dielectric strength test according to EN 60079-18:2009 clause 8.2.4 shall be applied for at least 1 second, the test voltage shall be 2100 V d.c. Alternatively, 1.2 x test voltage may be applied and maintained for at least 100ms.

Certificate Annexe



Certificate Number: Sira 12ATEX1357
 Equipment: Digital No Flow Timer (DNFT)
 Applicant: Terra Metrics INC, dba Whitlock Instruments

Issue 0

| Drawing | Sheets | Rev. | Date (Sira stamp) | Title |
|-------------------|--------|------|-------------------|---------------------------------------|
| LBL_506/507 | 1 of 1 | 1.6 | 17 Jan 14 | DNFT LED Label Universal 506/507 |
| LBL_PRG_518/519 | 1 of 1 | 1.6 | 17 Jan 14 | DNFT PRG Label Universal 518/519 |
| LBL_524/525 | 1 of 1 | 1.7 | 17 Jan 14 | DNFT LED Label_24V Universal 524/525 |
| LBL_526/527 | 1 of 1 | 1.7 | 17 Jan 14 | DNFT PRG 24V Label Universal 526/527 |
| LBL_209 | 1 of 1 | 1.6 | 17 Jan 14 | DNFT PRX LABEL |
| 000072 | 1 of 1 | 1.1 | 17 Jan 14 | 072-M DNFT CASE 506/507/518/519 |
| 000072_24V | 1 of 1 | 1.1 | 17 Jan 14 | 072-M 24V DNFT CASE 524/525/526/527 |
| 000071 | 1 of 1 | 1.1 | 17 Jan 14 | 071-M DNFT PRX CASE 169/170/171/172 |
| 60079-18_DNFT | 1 of 1 | 1.0 | 17 Jan 14 | Figure 1 Dimensions 60079-18 DNFT |
| 60079-18_DNFT_24V | 1 of 1 | 1.0 | 17 Jan 14 | Figure 1 Dimensions 60079-18 DNFT_24V |
| SCH_506/507 | 1 of 1 | 1.1 | 17 Jan 14 | DNFT LED Schematic_CAD |
| SCH_524/525 | 1 of 1 | 1.2 | 17 Jan 14 | DNFT LED_24V Schematic_CAD |
| SCH_518/519 | 1 of 1 | 1.1 | 17 Jan 14 | DNFT PRG Schematic_CAD |
| SCH_526/527 | 1 of 1 | 1.2 | 17 Jan 14 | DNFT PRG_24V Schematic_CAD |
| FP_071_PRX | 1 of 1 | 1.1 | 17 Jan 14 | Flamepath DWG PRX |
| FP_072_24V_DNFT | 1 of 1 | 1.1 | 17 Jan 14 | Flamepath DWG 24V_DNFT |
| FP_072_DNFT | 1 of 1 | 1.1 | 17 Jan 14 | Flamepath DWG DNFT |
| ES_DWG | 1 of 1 | 1.1 | 17 Jan 14 | Encapsulation Schematic |
| ES_TV_DWG | 1 of 1 | 1.0 | 17 Jan 14 | Encapsulation Schematic Top View |
| DNFT_SV_DWG | 1 of 1 | 1.1 | 17 Jan 14 | LED/LCD Side View DWG |
| GAD-DNFT-LED | 1 to 4 | 1.0 | 17 Jan 14 | General Assembly Drawing - LED |
| GAD-DNFT-LED 24V | 1 to 4 | 1.0 | 17 Jan 14 | General Assembly Drawing – LED 24V |
| GAD-DNFT-PRG | 1 to 4 | 1.0 | 17 Jan 14 | General Assembly Drawing - PRG |
| GAD-DNFT-PRG 24V | 1 to 4 | 1.0 | 17 Jan 14 | General Assembly Drawing – PRG 24V |
| GAD-DNFT-PRX | 1 to 4 | 1.0 | 17 Jan 14 | General Assembly Drawing – PRX |
| LBL_BATT_505 | 1 of 1 | 1.0 | 17 Jan 14 | DNFT Battery Label IEC 60079-0 ED.6 |

Issue 1

| Drawing | Sheets | Rev. | Date (Sira stamp) | Title |
|-------------|--------|------|-------------------|------------------------------------|
| LBL_A-10754 | 1 of 1 | 1.1 | 31 Oct 15 | Private Label – Ariel Corp A-10754 |
| LBL_A-10753 | 1 of 1 | 1.1 | 31 Oct 15 | Private Label – Ariel Corp A-10753 |
| LBL_A-20513 | 1 of 1 | 1.1 | 31 Oct 15 | Private Label – Ariel Corp A-20513 |
| LBL_A-20154 | 1 of 1 | 1.1 | 31 Oct 15 | Private Label – Ariel Corp A-20514 |
| LBL_A-10772 | 1 of 1 | 1.1 | 31 Oct 15 | Private Label – Ariel Corp A-10772 |
| LBL_A-18255 | 1 of 1 | 1.1 | 31 Oct 15 | Private Label – Ariel Corp A-18255 |

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