Liquid Monitoring & Control

Universal Tank Alarm Type 14400

Installation, Operation & Maintenance

LEADING PROVIDER OF PRACTICAL POLLUTION CONTROL PRODUCTS AND SERVICES

Universal Tank Alarm
Type 14400

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Universal Tank Alarm
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Installation, Operation and Maintenance

Declaration of Conformity

The above product meets all the essential safety requirements of the European Directives and standards listed below, and is issued under the sole responsibility of the manufacturer

Name and Address of Manufacturer	Darcy Products Ltd. Unit B7 Chaucer Business Park Watery Lane Kemsing Kent TN15 6QY United Kingdom
Valid for European Directives	94/9/EC until 19th April 2016 2014/34/EU from 20th April 2016
Equipment Name and Type	14400 series Universal Tank Alarm
Certificate Number	Baseefa 13ATEX0172
Specific Marking of Explosion Protection	[Ex ia Ga] IIB (-20°C ≤ Ta ≤ +50°C)
ATEX Directive Marking	Ex II (1) G
Notified Body	Baseefa 1180 Buxton UK
CE Mark with Notified Body Number	CE_{1180}
Harmonised Standards Used	EN 60079-0:2012 EN 60079-11:2012
Serial Number and Year of Manufacture	Displayed underneath the control unit
On behalf of the above named company, I declare that, on the date the equipment accompanied by this declaration is placed on the market, the equipment conforms to all technical and regulatory requirements of the above listed directives. Peter Bowden – Quality Manager	

IMPORTANT

Note: In all cases good, standard electrical practice should be followed, and the installation must conform to the appropriate local code of practice – e.g. BS EN 60079-25 in the UK. In essence, the installation must be such that the intrinsic safety is not compromised by: - exposure to risk of mechanical damage, unauthorised modification or interference, exposure to moisture, dust and foreign bodies, excessive heat, invasion of intrinsically safe circuit by other electrical equipment or circuitry. Please contact Darcy for any advice on 01732 441016.

General Description

The unit is designed to monitor a tank for a build-up of oil and sound an alarm and flash a xenon beacon when oil is detected.

General Operation

The unit continuously checks for the presence of oil at the probe by measuring conductivity; however a float switch probe may be used. The probe is normally submersed in water and the LED on the unit will be green. When there is a sufficient build-up of oil at the surface that covers the conductivity probe, a sounder inside the unit sounds intermittently and the attached xenon beacon flashes. The LED on the unit turns red. To silence the sounder and stop the xenon beacon flashing, press the button on the unit. The LED will remain red until the probe detects water once again.

Installation

This product has been designed and certified as being intrinsically safe. It is of paramount importance that the unit should not be modified in any way and the installation be carried out by an approved installer, in accordance with the Environment Agency guidelines (PPG3). Any deviation from this could invalidate the certification warranty and render the unit unsafe for its intended use.

Technical Information

Specifications

Enclosure	180mm(W) 130mm(H) 60.5mm(D) IP66/67 ABS	
Supply Voltage	230VAC ±10%, 50/60Hz	
Current Consumption	TBA	
Fusing	FS1	T 250mA H 250V 1500A breaking capacity
	FS2	Littelfuse 0242.050UAT1 50mA 250V 4000A breaking capacity
Max probe cable length		200m (less if values in Table 3 would be exceeded)
Beacon Output (CN2)		11.2V DC, 100mA maximum

Table 1 - Specifications

Beacon Output

The beacon output, CN2, must only be connected to a beacon. See notes below for restrictions on its use.
This output is activated when the probe detects a build-up of oil and is deactivated again by pressing the button on the unit.

Notes on the beacon output:

1. Um = 0, i.e. no other source of power must ever be connected directly or indirectly to this output.
2. Cable used must have ≥ 1mm insulation and be ≤ 2m length.
3. Must only be connected to a beacon which is powered entirely from this unit, i.e. this output must not be used as a control signal to a beacon that has its own power supply.
4. The beacon must be isolated from earth.

Input/Output Parameters

U_o	15.8
I_o	175µA
P_o	< 1mW
C_i	0
L_i	0

Table 2 - Hazardous Area Terminals (CN3)

Group	Capacitance (µF)	Inductance OR (mH)	L/R Ratio (µH/Ω)
IIB	2.88	4463000	206000
IIA	11.6	9287000	412000

Table 3 – CN3 Load Parameters

Probe Cables

The total capacitance and inductance of the cable used between the tank alarm unit and the probe must not exceed that shown in Table 3.

Mechanical

Protection and/or screening of the cable should be taken into account when choosing a suitable cable. The maximum cable length between the probes and the tank alarm unit must not exceed 200 metres, or less if the values in Table 3 would be exceeded.

Probe Terminals

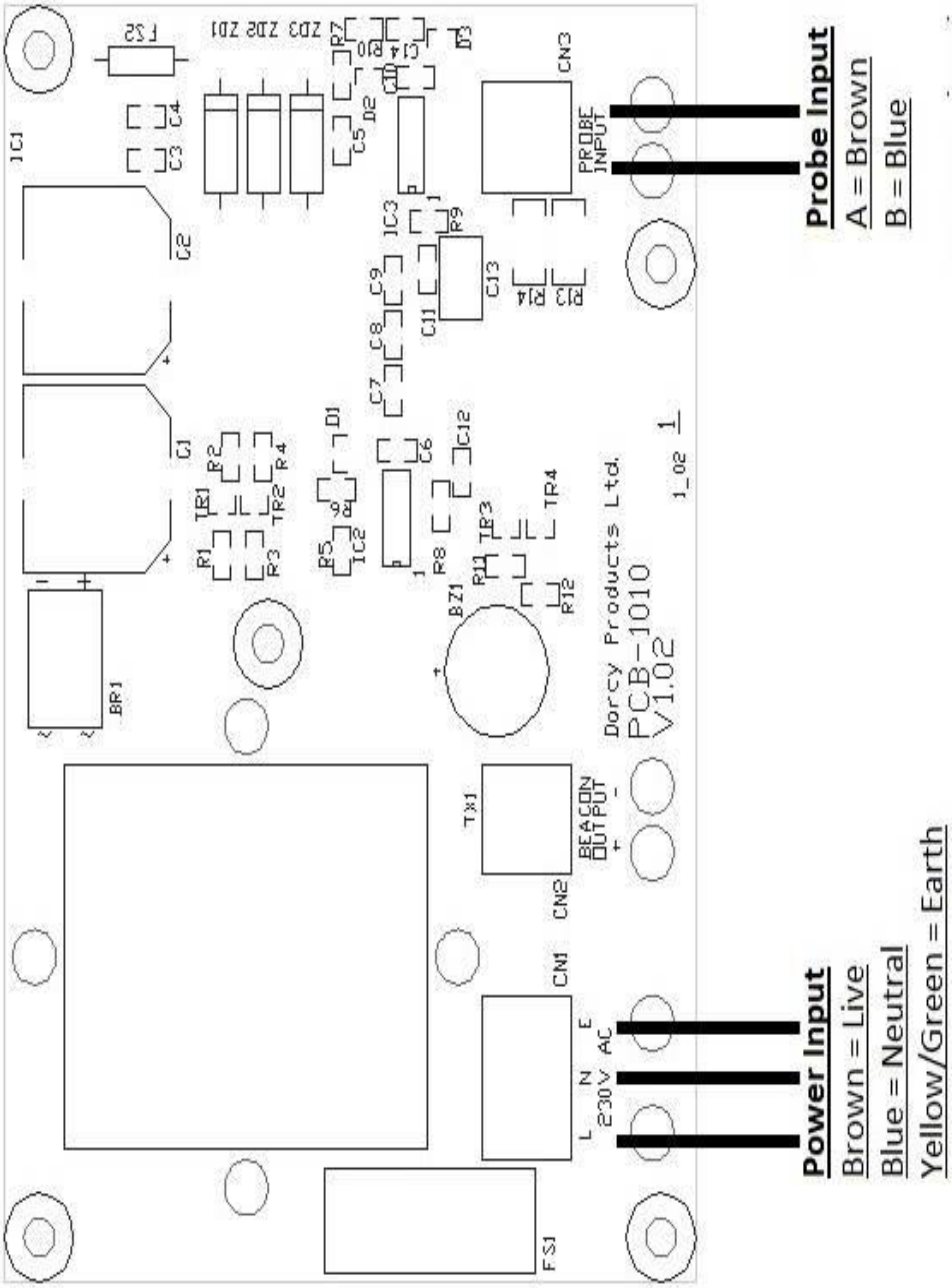
Probe Type	A	B
High Oil	RED	BLUE

Table 4 - Probe Cable Connection Details (CN3)

Beacon Terminals

CN8 Terminal	Connect To
+	Beacon positive terminal
-	Beacon negative terminal

Table 5 - Beacon Cable Connection Details (CN2)


Probe Input
A = Brown
B = Blue
Power Input
Brown = Live
Blue = Neutral
Yellow/Green = Earth
Dorcy Products Ltd.
PCB-1010
V1.02
PROBE INPUT
BEACON OUTPUT
230V AC
L N E
CN1
CN2
CN3
FS1
TX1
BR1
BZ1
IC1
IC2
IC3
C1
C2
C13
D1
D2
D3
R1
R2
R3
R4
R5
R8
R9
R11
R12
R13
R14
TR1
TR2
TR3
TR4
ZD1
ZD2
ZD3
F2

Accessories

Probe Cable

Whilst many different cables can be suitable for use with the probe, some customers feel more comfortable with some guidance. A typical example of a suitable cable is shown in Table 6. It can be ordered from Darcy or from Farnell (http://www.farnell.com) as order code 1503980.

Manufacturer	Lapp Kabel
Manufacturer Part No.	0012640
Inductance	0.65mH/km
Capacitance	Core-core: approx. 135nF/km
	Core-screen: approx. 185nF/km

Table 6 - Typical Probe Cable

Beacon

A suitable 12V xenon beacon is detailed in Table 7. It can be ordered from Darcy or RS Components (http://www.rs-components.com) as order code 309-5944.

Manufacturer	Klaxon
Manufacturer Part No.	45-713121
Voltage	12V
Current	60mA (average)
Colour	Amber
IP Rating	IP65

Table 7 – Beacon Specifications

Maintenance and Repair

For all repairs, contact Darcy Spillcare Manufacture on 01732 441016.

CONTACT

Head Office:

Darcy Spillcare
Unit B7 Chaucer Business Park
Watery Lane
Kemsing
Sevenoaks
Kent
TN15 6QY

01732 441015

0800 0370 899

www.darcymonitoring.co.uk

Manufacturing & Servicing:

Darcy Spillcare
1 Hickmans Road
West Float
Wallasey
CH41 1JH

darcy Spillcare Manufacture

darcy Liquid Monitoring & Control

darcy Industrial Marine

darcy Environmental Services

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