



## TYPICAL EQUIPMENT MARKING

Name and address of manufacturer

CE marking and number of notified body responsible for production

Series or Type designation

Specific marking of explosive protection

Equipment Group and Category

**Ex Supplies Ltd**  
**Manchester M21 2BB**  
**United Kingdom**

**0518**  
**Floodlight P7**

**II 2 G**

**2000 Sn 1234**

**EEx de IIB T4**

**Ta=-20°C to +60°C**

**SIRA00ATEX1123**

**Gas Group and T Class**

**Protection Concept**

Ambient Temperature  
(-20°C to +40°C if not marked)

**Certificate number**

Other essential information

Type of explosive atmosphere  
G - gases, vapours or mists  
D - dust

Year of manufacture and serial number

## PROTECTION CONCEPTS

Title	Protection concept code used on Sira certificates	Symbol	Typical zone(s)	CENELEC Standard	Basic concept of protection
Increased safety Type 'n' (Non-sparking)	3 4	e nA	1 & 2 2	EN 50019 EN 50021	No arcs, sparks or hot surfaces
Flameproof Type 'n' (Enclosed break) Quartz/sand filled	1 4 7	d nC q	1 & 2 2 1 & 2	EN 50018 EN 50021 EN 50017	Contain the explosion, quench the flame
Intrinsic safety Intrinsically safe Type 'n' (Energy limitation)	2 2 4	ia ib nL	0, 1 & 2 1 & 2 2	EN 50020/39 EN 50020/39 EN 50021	Limit the energy of sparks and surface temperatures
Pressurised Type 'n' (Restricted breathing) Type 'n' (Simple pressurised) Encapsulation Oil immersion	1 4 4 5 7	p nR nP m o	1 & 2 2 2 1 & 2 1 & 2	EN 50016 EN 50021 EN 50021 EN 50028 EN 50015	Keep the flammable gas out



### SIRA CERTIFICATE NUMBER

**SIRA 00 ATEX 1 123**

Serial number  
Protection concept code  
Reference to ATEX 100a directive  
Year of certification  
Name of notified body performing EC-type examination

Suffixes:  
U – component certification  
X – special conditions for safe use apply

### Documentation Supporting Compliance

Annex	Description	Evidence of Compliance #
III	EC Type-Examination	EC Type-Examination Certificate
IV	Production QA	Quality Assurance Notification with relevant scope
V	Product Verification	Certificate of Conformity listing serial number of product
VI	Conformity to Type	Conformity to Type Notification with relevant scope
VII	Product QA	Quality Assurance Notification with relevant scope
VIII	Internal Control of Production	Manufacturer's Statement
IX	Unit Verification	Certificate of Conformity listing serial number of product

# Apart from Declaration of Conformity which is supplied with each piece of equipment

### Typical Directives for CE Marking and Declaration of Conformity (EN 45014)

Low Voltage (excluding equipment for use in potentially explosive atmospheres)	73/23/EEC	Reduction of dangerous risk to persons, animals and property during operation of electrical equipment
EMC	89/336/EEC	Prevention of and immunity to electromagnetic disturbance
Machinery	89/392/EEC	Reduction of dangerous risk to persons, animals and property during operation of machinery
ATEX	94/9/EC	Prevention of ignition of explosive atmospheres

## COMPLIANCE ROUTES AND EQUIPMENT SELECTION

Zone	Equipment Category		Relevant ATEX Annexes for Compliance	Group	Hazardous Area Characteristics	Area Classification	
	Gas	Dust				NEC 505	NEC500
0	20	1	III and IV or V	II	Present continuously or long periods or frequently (>1000 hours/year)	Zone 0	Division 1
1	21	2*	III and VII or VI		Likely to occur in normal operation occasionally (>10 <1000 hours/year)	Zone1	
		2**	VIII#				
2	22	3	VIII	I	Not likely to occur in normal operation or infrequently and for short periods (<10 hours/year)	Zone 2	Division 2
Mining	M1		III and IV or V		Explosive atmosphere present – equipment remains energised	* Electrical equipment and internal combustion engines only ** Non-electrical equipment only # and communicate the technical file to a notified body # Alternative Route for any product	
	M2*		III and VII or VI		Explosive atmosphere present – equipment de-energised		
	M2**		VIII#				
Any	Any	Any	IX#	Any	–		



### Temperature Class (Group II)

Maximum surface temperature	T. Codes	
	CENELEC IEC US (NEC 505)	US (NEC 500)
450°C	T1	T1
300°C	T2	T2
280°C	-	T2A
260°C	-	T2B
230°C	-	T2C
215°C	-	T2D
200°C	T3	T3
180°C	-	T3A
165°C	-	T3B
160°C	-	T3C
135°C	T4	T4
120°C	-	T4A
100°C	T5	T5
85°C	T6	T6

N.B. For Group I applications electrical apparatus has rigid 150°C and 450°C limits rather than 'T' classes.

### Employer's Obligations under directive 1999/92/EC

- Prevent the formation of explosive atmospheres in the workplace  
OR  
Avoid the ignition of explosive atmospheres and  
Control the effects of explosions
- Conduct a risk assessment covering:
  - The likelihood of explosive atmospheres occurring and their persistence
  - The likelihood of a source of ignition
  - The effect of an ignition on plant, personnel and the environment
- Classify the work place into Zones
- Mark areas with signs at points of entry
- Maintain an explosion protection document including:
  - risk assessment and identification of zones
  - area classification
  - maintenance schedules
  - documentation of requirements for training staff and instituting a system of permits to work
- Select ATEX 100a compliant equipment according to intended zone



Warning sign to be affixed to areas that may contain potentially explosive atmospheres

### Special Requirements for Work Equipment and Workplaces

Scope	Details	Shall comply with use directive
Work equipment	Already in use	Annex II, Part A
Work equipment	Made available for the first time on or before 30 June 2003	Annex II, Part A
Work equipment	Made available for the first time after 30 June 2003	Annex II, Parts A & B and directive 94/9/EC
Workplaces*	Already in use before 30 June 2003	Annex II, Part A by 30 June 2006
Workplaces*	Used for the first time after 30 June 2003	Annex II, Part A by 30 June 2006

\*Note: After 30 June 2003, any modifications, extensions or restructuring shall comply with the minimum requirements of directive 1999/92/EC

### APPARATUS GROUPS & TEMPERATURE CLASSES REQUIRED FOR SOME COMMON FLAMMABLE MATERIALS

Gas/Vapour	Apparatus group required	Temperature class required
Acetic Acid	IIA	T1
Acetone	IIA	T1
Acetylene	IIC	T2
Ammonia	IIA	T1
Butane	IIA	T2
Cyclohexane	IIA	T3
Ethanol (ethyl alcohol)	IIA	T2
Ethylene	IIB	T2
Hydrogen	IIC	T1
Kerosene	IIA	T3
Methane (natural gas)	IIA*	T1
Methanol (methyl alcohol)	IIA	T1
Methyl ethyl ketone (MEK)	IIA	T1
Propane	IIA	T1
Propan-1-ol (n-propyl alcohol)	IIB	T2
Propan-2-ol (iso-propyl alcohol)	IIA	T2
Tetrahydrofuran (THF)	IIB	T3
Toluene	IIA	T1
Xylene	IIA	T1
Dusts	Ignition Temperature (°C)	
	Cloud	Layer
Aluminium	590	>450
Coal dust (lignite)	380	225
Flour	490	340
Grain dust	510	300
Methyl cellulose	420	320
Phenolic resin	530	>450
Polythene	420	(melts)
PVC	700	>450
Soot	810	570
Starch	460	435
Sugar	490	460

\* Non-mining

# EQUIPMENT FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES

### SIRA CERTIFICATION SERVICE

HAZARDOUS AREA CENTRE  
RAKE LANE, ECCLESTON, CHESTER,  
CH4 9JN, ENGLAND  
Tel: +44 (0)1244 670 900 Fax: +44 (0)1244 681 330 e-mail exhazard@siratc.co.uk

### HAZARDOUS AREA SERVICES

- Product certification to international standards and EU directives
- Area Classification
- Inspection
- Training