

ATEX Zones 2 and 22 Large Digit Displays

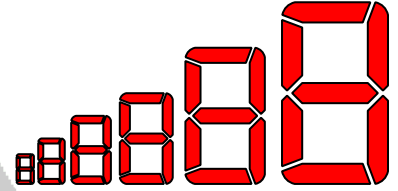
Enclosure

316L stainless steel
304 stainless steel
Painted mild steel



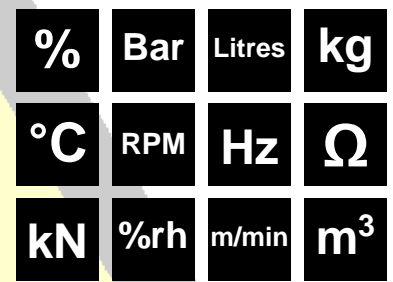
Digit Height

2 inch (57mm) for up to 75ft (25m) viewing
4 inch (102mm) for up to 150ft (50m) viewing
6 inch (150mm) for up to 225ft (75m) viewing
8 inch (200mm) for up to 300ft (100m) viewing
12 inch (300mm) for up to 450ft (150m) viewing
16 inch (400mm) for up to 600ft (200m) viewing



Function/Input

Counter/Rate (PNP, NPN, Namur, contact closure, etc)
Clock/Timer
Loadcell/Weight
Process (4-20mA, 0-10V, 1-5V, etc)
RS232 ASCII, RS485 ASCII
PROFIBUS, DeviceNet, Modbus TCP, etc
Thermocouple/PT100
Time/Temperature
Mantracourt T24 slave



Outputs

4-20mA, 0-10V, +/-10V
2 or 4 mechanical relays, 2 or 4 solid state relays
RS232 ASCII, RS485 ASCII, Modbus RTU



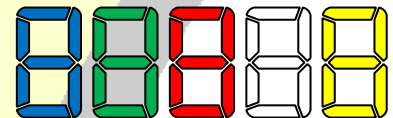
Digit Brightness

Indoor
Outdoor



Digit Colour

Blue
Green
Red
White
Yellow



We manufacture the largest range of ATEX large digit displays on the market, like this display with 4 inch (102mm) high digits



We can customise in many ways such as adding a units of measure label to give the numbers some meaning

All equipment used in hazardous areas must be marked legibly and indelibly with a specific set of letters and numbers. Together, these letters and numbers specify the exact criteria that a product meets and determines the type of environment it is safe to operate in.

Certificate Markings Explained

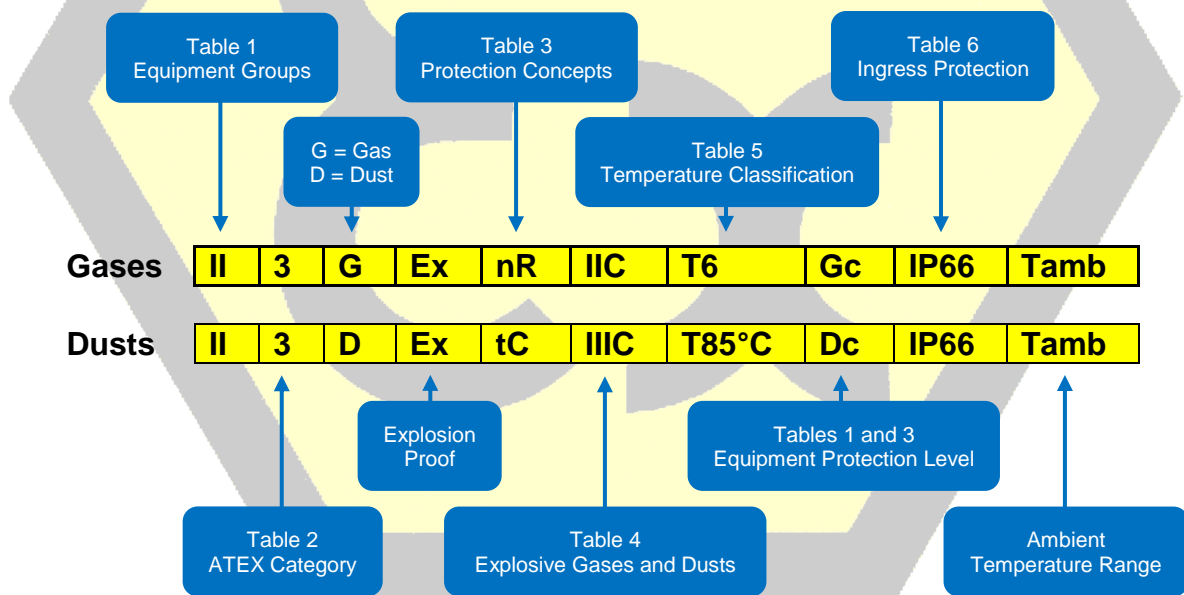


Table 1 – Equipment Groups

Equipment Group	ATEX Category	Equipment Protection Level		Atmosphere Type	Level of Ignition Protection	Required Protection Performance and Operation
		Gas	Dust			
I	M1	Ma	Ma	Methane and Dust	Very high	Two faults, remain energised and functioning
I	M2	Mb	Mb	Methane and Dust	High	Severe normal operation, de-energise in explosive atmosphere
II	1	Ga	Da	Gas, Vapour, Mist, Dust	Very high	Two faults
II	2	Gb	Db	Gas, Vapour, Mist, Dust	High	One fault
II	3	Gc	Dc	Gas, Vapour, Mist, Dust	Low	Normal operation

NOTE: Our certification is highlighted in yellow.

Table 2 – ATEX Category

ATEX Category	Definition	Zone	
		Gas	Dust
Category 1	An area where an explosive atmosphere is present continuously or for long periods (over 1000 hours per year or >10% of the time)	Zone 0	Zone 20
Category 2	An area where an explosive atmosphere is likely to occur in normal operation (10 to 1000 hours per year or 0.1 to 10% of the time)	Zone 1	Zone 21
Category 3	An area where an explosive atmosphere is not likely to occur in normal operation (under 10 hours per year or 0 to 0.1% of the time)	Zone 2	Zone 22

NOTE: Our certification is highlighted in yellow.

Table 3 – Protection Concepts for Gas (G)

Type of Protection	Symbol	Equipment Protection Level	Indicative Zones	Standard (EN/IEC)	Basic Concept of Protection
Optical radiation	Op pr	Gb	1, 2	60079-28	Protected by shutdown, enclosure or inherently safe
	Op sh	Ga	0, 1, 2	60079-28	
	Op is	Ga	0, 1, 2	60029-78	
Increased safety type 'n' (non-sparking)	e	Gb	1, 2	60079-7	No sparking parts or hot surfaces
	nA	Gc	2	60079-15	
Flameproof	d	Gb	1, 2	60079-1	Contains the pressure, quench the flame
Type 'n' (enclosed break)	nC	Gc	2	60079-15	Contains the pressure, quench the flame
Quartz/Sand filled	q	Gb	1, 2	60079-5	Quench ignition
Intrinsic safety	ia ib ic	Ga	0, 1, 2	60079-11	Limit the potential ignition energy and surface temperatures
		Gb	1, 2		
		Gc	2		
Pressurised	px py pz	Gb	1, 2	60079-2	Keeps the flammable gas out
		Gb	1, 2		
		Gc	2		
Type 'n' (sealing and hermetic sealing)	nC	Gc	2	60079-15	Keeps the flammable gas out
Type 'n' (restricted breathing)	nR	Gc	2	60079-15	Keeps the flammable gas out
Encapsulation	ma mb mc	Ga	0, 1, 2	60079-18	Keeps the flammable gas out
		Gb	1, 2		
		Gc	2		
Oil immersion	o	Gb	1, 2	60079-6	Keeps the flammable gas out

NOTE: Our certification is highlighted in yellow.

Table 3 – Protection Concepts for Dust (D)

Type of Protection	Symbol	Equipment Protection Level	Indicative Zones	Standard (EN/IEC)	Basic Concept of Protection
Enclosure	ta tb tc	Da	20	60079-31	Dust tight enclosure, limited surface temperature
		Db	21		
		Dc	22		
Intrinsic safety	la ib ic	Da	20	60079-11	Limit the potential ignition energy and surface temperatures. May add ingress requirements
		Db	21		
		Dc	22		
Encapsulation	Ma mb mc	Da	20	60079-18	Keeps the flammable dust out
		Db	21		
		Dc	22		
Pressurised	pD	Db	21	60079-4	Protection by pressurisation of enclosure
		Dc	22		

NOTE: Our certification is highlighted in yellow.

Table 4 – Explosive Gases and Dusts

Gas Group	Representative Gas	Dust Group	Dust type
Group 1	Methane	Group 1	Coal dust
Group IIA	Propane	Group IIIA	Flyings
Group IIB	Ethylene	Group IIIB	Non-conductive
Group IIC	Hydrogen/Acetylene	Group IIIC	Conductive

NOTE: Our certification is highlighted in yellow. Group IIC/Group IIIC certification is the highest possible.

Table 5 – Temperature Classification

Temperature Class	Maximum Surface Temperature of Equipment	Ignition Temperatures of Flammable Substance
T1	450°C	>450°C
T2	300°C	>300°C
T3	200°C	>200°C
T4	135°C	>135°C
T5	100°C	>100°C
T6	85°C	>85°C

NOTE: Our certification is typically T6 (85°C) which is the highest possible but is confirmed at time of quote/order.

Table 6 – Ingress Protection for Solid Particles

First Digit of IP Rating	Protected Against	Solid Particle Ingress Protection
0	Not protected	No protection against contact and ingress of objects
1	>50mm	Any large surface of the body such as the back of a hand but no protection against deliberate contact with a body part
2	>12.5mm	Fingers or similar objects
3	>2.5mm	Tools, thick wires, etc
4	>1mm	Most wires, screws, etc
5	Dust protected	Ingress of dust is not entirely prevented but it must not enter in sufficient quantity to interfere with the safe operation of the equipment. Complete protection against contact
6	Dust tight	No ingress of dust. Complete protection against contact

NOTE: Our certification is highlighted in yellow. 6 certification is the highest possible.

Table 6 – Ingress Protection for Liquids

Second Digit of IP Rating	Protected Against	Liquid Ingress Protection
0	Not protected	Not necessary
1	Dripping water	Dripping water (vertically falling drops) shall have no harmful effect
2	Dripping water when tilted up to 15°	Vertically dripping water shall have no harmful effect when the enclosure is tilted at an angle up to 15° from its normal position
3	Spraying water	Water falling as a vertical spray at any angle up to 60° from the vertical shall have no harmful effect
4	Splashing water	Water splashing against the enclosure from any direction shall have no harmful effect
5	Water jets	Water projected by a nozzle (6.3mm) against the enclosure from any direction shall have no harmful effect
6	Powerful water jets	Water projected in powerful jets (12.5mm nozzle) against the enclosure from any direction shall have no harmful effect
7	Immersion down to 1m	Ingress of water in harmful quantity shall not be possible when the enclosure is immersed in water under defined conditions of pressure and time (up to 1m of submersion)
8	Immersion beyond 1m	The equipment is suitable for continuous immersion in water under conditions which shall be specified by the manufacturer

NOTE: Our certification is highlighted in yellow.

Ordering Guide

EXNR - F2 - 4N - C - 0 - 0 - 0 - R - AC - 2 - 0

Enclosure
EXNR = Zones 2 and 22

Digit Height
F2 = 2 inch (57mm)
F4 = 4 inch (102mm)
F6 = 6 inch (150mm)
F8 = 8 inch (200mm)
F12 = 12 inch (300mm)
F16 = 16 inch (400mm)

Digit Format
4N = 4 digits in 8.8.8.8. format
4C = 4 digits in 88:88 format
6N = 6 digits in 8.8.8.8.8.8. format
6C = 6 digits in 88:88:88 format
8N = 8 digits in 8.8.8.8.8.8.8.8. format

Function/Input Type
C = Counter/Rate
H = Clock/Timer
L = Loadcell/Weight
P = Process input (4-20mA, 0-10V, etc)
S2 = RS232 ASCII input
S4 = RS485 ASCII input
T = Thermocouple/PT100 input
TT = Time and Temperature alternating
T24 = Mantracourt T24 slave

Analogue Output
0 = Not required
ANI = 4-20mA
ANV = 0-10V
ANB = +/-10V

Alarm Outputs
0 = Not required
AL2 = 2 x SPST relays
AL4 = 4 x SPST relays
SPCO = 2 x SPCO relays
DSS = 2 x solid state relays
QSS = 4 x solid state relays

Serial Output
0 = Not required
232 = RS232 ASCII
485 = RS485 ASCII
RTU = Modbus RTU

Digit Colour
B = Blue, indoor brightness
G = Green, indoor brightness
R = Red, indoor brightness
W = White, indoor brightness
Y = Yellow, indoor brightness

BDLV = Blue, outdoor brightness
GDLV = Green, outdoor brightness
RDLV = Red, outdoor brightness
WDLV = White, outdoor brightness
YDLV = Yellow, outdoor brightness

Power
AC = 95-265V AC
DC = 11-30V DC
48AC = 48V AC

Mounting
2 = Wall
3 = Suspension

Options
There are a number of options available ranging from white vinyl lettering to built-in heaters for cold environments, please ask for details

Other Products

Our hugely popular TITAN family of message displays are also available certified for Zones 2 and 22 hazardous areas.



Our ATEX certified products are supplied certified for use in the condition in which they are supplied. No liability will be assumed for any loss or damages of any nature, direct or indirect. Including any loss of profits or consequential damages, injury or death suffered or incurred by the buyer as a consequence of failure to install, use and/or apply the product within the scope of the installation document and certification supplied.



London Electronics Limited
Thorncote Road, Nr Sandy, Bedfordshire SG19 1PU England
Tel: +44 (0) 1767 626444
Email: sales@london-electronics.com
Website: www.london-electronics.com



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