

8.2 Hazardous Area Equipment and Ingress Protection

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Rev	Description	Date	By

A. General Marine Use (GMU) and Hazardous Area Equipment (ATEX Rating)

AtoN equipment is mostly described as suitable for general marine use (GMU) or for use in “safe areas” when the installation will not have hazardous areas due to the possible presence of explosive gasses.

In hazardous areas on offshore oil & gas structures or in onshore petroleum facilities, for example, where there is a potentially explosive atmosphere, AtoN’s, their power supplies and associated systems must either be placed in a “safe area” or certified for use in the relevant hazardous zone.

Zone 1 Area (ATEX CAT 2)

Defined as an area where an explosive atmosphere is likely to occur during normal operation. A high level of protection is required. Zone 1 areas can be found on production platforms in the North Sea and they require that equipment certified under the European ATEX Directive for use in Zone 1 be installed. Various methods of protection are allowed under the Directive. Examples applicable to Tideland products are:

- Ex e = Increased Safety
- Ex d = Flameproof
- Ex ia or ib = Intrinsic Safety
- Ex p = Pressurized
- Ex m = Encapsulated
- Ex s = Special

Using the ML-300 w/DuoFlash as example, it is certified II 2 G EEx emib.

Tideland equipment is colloquially referred to as “Ex” and carries the letters as a suffix.

Zone 2 Area (ATEX CAT 3)

Defined as an area where an explosive atmosphere is unlikely to occur in normal operation, infrequent and for a short time. A less stringent level of protection is required. Zone 2 areas can be found on loading buoys and they require that equipment certified under the European ATEX Directive for use in Zone 2 be installed. Various methods of protection are allowed under the Directive. Examples applicable to Tideland products are:

Ex nL = Energy Limitation

Gas Groups as defined under ATEX

- IIC = Acetylene & Hydrogen
- IIB = Ethylene
- IIA = Propane

B. Underwriters Laboratory (UL), NEC, Class 1, Division 2

Defined as an area where ignitable concentrations of flammable gases, vapors or liquids are not likely to exist under normal operating conditions. Its European equivalent is Zone 2.

This is found invariably in the Gulf of Mexico and Middle East. Equipment, so certified, carries the suffix UL.

There are other agencies that provide classification of this type such as Federal Mutual (FM) but UL is the most commonly recognized.

Gas Groups as defined under the NEC.

A = Acetylene
B = Hydrogen
C = Ethylene
D = Propane

Temperature Class

Under both ATEX and NEC there are maximum surface temperatures that the equipment can be allowed to reach and these are dictated by the gas group.

C. Ingress Protection

AtoN equipment is protected against ingress of moisture and dust and its Ingress Protection (IP) number classifies the degree of protection.

The first numeral (0 – 6) indicates level of protection against solid bodies

5 = dust protected;

6 = dust tight.

The second numeral (0 – 8); indicates level of protection against liquids

5 = water jets;

6 = heavy seas;

7 = effects of immersion;

8 = indefinite immersion.