

# How to read an Ex-marking



A field reference for hazardous area equipment in chemical and pharmaceutical manufacturing

## ANATOMY OF A MARKING

**GAS** - Armadex OZC-3 digital camera, certificate IECEx OBAC 25.0008X

Ex

marking prefix

ic

type of protection

IIC

gas group

T4

temperature class

Gc

protection level defines the zone

**DUST** - same device, same certificate

Ex

marking prefix

ic

type of protection

IIIB

dust group

T135°C

max surface temp

Dc

protection level defines the zone

Gas uses a temperature class (T1–T6). Dust never does; the maximum surface temperature is written out in full. T4 and T135°C are the same limit, expressed two ways on the same nameplate.

### TYPE OF PROTECTION - GAS

| code     | principle            |
|----------|----------------------|
| d        | flameproof enclosure |
| e / eb   | increased safety     |
| ia ib ic | intrinsic safety     |
| ma mb mc | encapsulation        |
| p        | pressurisation       |
| q        | powder filling       |
| o        | liquid immersion     |
| n / ec   | non-sparking         |

### GAS GROUP

| code | representative gas  |
|------|---------------------|
| IIA  | propane             |
| IIB  | ethylene            |
| IIC  | hydrogen, acetylene |

### TYPE OF PROTECTION - DUST

| code     | principle               |
|----------|-------------------------|
| ta tb tc | protection by enclosure |
| ia ib ic | intrinsic safety        |
| ma mb mc | encapsulation           |
| p        | pressurisation          |

### DUST GROUP

| code | material            |
|------|---------------------|
| IIIA | combustible flyings |
| IIIB | non-conductive dust |
| IIIC | conductive dust     |

### TEMPERATURE CLASS

| class | max surface temperature |
|-------|-------------------------|
| T1    | 450 °C                  |
| T2    | 300 °C                  |
| T3    | 200 °C                  |
| T4    | 135 °C                  |
| T5    | 100 °C                  |
| T6    | 85 °C                   |

### PROTECTION LEVEL, ATEX CATEGORY AND ZONE

| EPL | ATEX cat. | zone    | explosive atmosphere is...                                  |
|-----|-----------|---------|-------------------------------------------------------------|
| Ga  | 1G        | Zone 0  | present continuously, for long periods or frequently        |
| Gb  | 2G        | Zone 1  | likely to occur in normal operation                         |
| Gc  | 3G        | Zone 2  | not likely in normal operation, and only for a short period |
| Da  | 1D        | Zone 20 | present continuously, for long periods or frequently        |
| Db  | 2D        | Zone 21 | likely to occur in normal operation                         |
| Dc  | 3D        | Zone 22 | not likely in normal operation, and only for a short period |