

# Protection modes

There is several protection modes recognised by the IEC.

A modification has been done on Zone 2 which is subdivided in nA and nR for the most widely used equipment.

Protection modes	Identification letters
Flameproof	d
Intrinsically safe (zone 0)	ia
Intrinsically safe (zone 1)	ib
Internal over-pressure	p
Increased safety	e
Immersed in oil	o
Filled with powder	q
Encapsulated	m
Zone 2 :	n
- Non sparking equipment	n A
- Equipment glittering sparks but contacts protected by enclosure other than nR, nL or nZ	n C
- Equipment with limited energy	n L
- Enclosure with restricted breathing	n R
- Enclosure with simple internal over-pressure	n Z
Special protection	s

## STANDARDS AND PROTECTION MODES CENELEC AND IEC

CENELEC Standards European Cat. Nos	IEC Standards	Protection modes
EN 50014	IEC 60079-0	General rules
EN 50015	IEC 60079-6	Immersion in oil
EN 50016	IEC 60079-2	Internal over-pressure
EN 50017	IEC 60079-5	Powder filling
EN 50018	IEC 60079-1	Flameproof enclosure
EN 50019	IEC 60079-7	Increased safety
EN 50020	IEC 60079-11	Intrinsic safety
EN 50021	IEC 60079-15	Zone 2
EN 50028	IEC 60079-18	Encapsulation