

The unknown ATEX world

Agrate Brianza (MB), Data. ATEX environments, with their potentially explosive atmospheres, are far more widespread than many may realise. In addition to the obvious environments of oil and mines, many other situations warrant an ATEX approach due to the presence of gas and dust which can combine to create a volatile atmosphere capable of reacting to ignition sources such as hot surfaces, electrical material, electrostatic charges and mechanical sparks.

An estimated 70% of industrial settings have to deal with these problems. Think of the agrifood, textile, metalworking, woodworking industries and any setting where gas under pressure is used, and this list is far from exhaustive.

For several years now, ATAM has been undertaking a journey to deal with the ATEX world safely, starting from its production plant in Agrate Brianza, where various potentially critical areas have been identified and placed under safe conditions. Moreover, the **company's Research and Development** team has started working on coils for solenoid valves to meet the requirements of ever-evolving reference standards, convinced that the full potential of **ATEX products is yet to be realised. But the efforts didn't just involve the company and its products. ATAM has studied in depth its clients' operating fields with potentially explosive atmospheres** to understand where its coils and valves would be used. This has allowed the company to acquire the expertise to provide an all-round consulting service to ensure coil-solenoid valve units with unparalleled performance and safety.

An in-depth knowledge of the ATEX world has enabled ATAM to provide various families of products – certified by internationally recognised external bodies – for the most widespread pneumatic and hydraulic applications, covering a variety of risk categories.

Coils for pneumatics

The 257 encapsulated coil is for heavy-duty pneumatic applications. It's **certified ATEX 2014/34/EU** and IECEx for gas (Zone 1) and dust (Zone 21) and has been approved even for mine applications (Group I, Category M2).

This encapsulated coil features a UL-approved housing developed to further protect internal components and includes a precision thermal fuse placed in direct contact with the external surface of the encapsulation. All encapsulation materials have undergone extensive flame tests to meet the requirements of all three Glow Wire Tests. Domestic applications are covered by ISO EN 60335-1 requirements. The 204, 394, and 209 coils are for Zone 2 and Zone 22 applications (normal protection level). These coils were created as standard products and their safety was later enhanced to meet ATEX requirements as non-sparking coils. They are equipped with a wireless DIN





connection and are ideal for applications up to Category 3 GD according to Directive ATEX 2014/34/EU.

Coils for hydraulics

The 455 coil is for heavy-duty hydraulic applications. These coils feature an Ex-d explosion-proof casing certified ATEX and IECEx for gas (Zone 1), dust (Zone 21) and mines (Category M2). The technical features of the 455 solenoid valve make it completely safe in these potentially explosive atmospheres. The 455 coil stands out for its micro-cast coated low carbon steel body and flanges, which undergo a zinc and nickel treatment to improve their resistance to oxidation. This coil is supplied without wire and cable gland. Based on the client's requirements, it can be powered with a voltage ranging from 6 to 240 V, both AC and DC. Moreover, it can work with an operating pressure equal to 350 dynamic bar and a room temperature ranging from -60 °C to +80°C with T4, T5 and T6 temperature classes.



The 481 encapsulated coil is for the most common hydraulic applications. This is the first Ex-m encapsulated coil with an external armour (and not with the explosion-proof casing) for ATEX environments with T3 temperature class for gas (Zone 1), dust (Zone 21), and mines (Category M2) that doesn't need to be strongly depowered as coils with explosion-proof casings do to ensure temperature classes T5 and T6 (low surface temperature).



This feature allows solenoid valve manufacturers to comply with all applicable standards, while continuing to use standard products in potentially explosive environments without having to create new valve bodies. Resulting in considerably lower costs, the coil is encapsulated in an external magnetic armour, its body and flanges featuring a zinc and nickel anti-corrosion coating that can withstand up to 240 hours of salt spray to white rust and up to 720 hours to red rust. The coil has an IP65/IP69K protection rating according to the IEC-EN 60529 standard and can be powered with a voltage ranging from 6 to 240 V, both AC and DC. It measures 22 mm in internal diameter, 45 mm in external diameter, and 54.5 mm in height, which are the most common dimensions in hydraulics.

In addition to ATEX coils, ATAM provides a wide range of off-the-shelf products for various applications. But what really sets ATAM apart is its custom-made products, which represent 70% of its entire production, whether made from scratch or by adapting standard products to meet specific client requirements.



IMAGES

	<p>ATAM_257 coil Coil with ATEX and IECEx certifications for Zone 1 gas and dust and for applications up to M2.</p>
	<p>ATAM_455 coil The 455 solenoid features an explosion-proof case and ATEX and IECEx certifications for gas and dust for 1 and 2 zone, so addressing high demanding hydraulic applications</p>
	<p>ATAM_481 coil Encapsulated coil with an external armour for potentially explosive atmospheres in hydraulic applications</p>
	<p>ATAM_logo</p>

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