

ABB measurement products

ABB factory | Ossuccio (CO) | Lake Como | Italy



The shore of Lake Como where ABB instruments are born

Measurement made easy

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Introduction

The ABB factory in Ossuccio (CO) is the global center of excellence for pressure instruments, where the sensors for all of the ABB Group's assembly units throughout the world are made, as well as instruments for measuring pressures for the European market.

But it is much more than that, as Matteo Suma, Head of the Local Business Unit, Measurement Products in Italy, explains (overleaf).

For more information

Further details of ABB Measurement & Analytics products are available for free download from: www.abb.com/measurement

or by scanning this code:



Ossuccio, western shore of Lake Como

Ossuccio is a small town with fewer than 2000 inhabitants and its location about an hour's drive from the major Milanese industrial areas evokes tranquility, nature and simplicity in anyone who has the good fortune to stumble upon it.

So it may come as a surprise that Ossuccio is in fact home to one of the most successful international manufacturing companies in the field of instrumentation. The company in question is ABB Measurement Products and its manufacturing plant; a global center of excellence where technology reigns supreme and where sensors and instruments for measuring pressures are manufactured.

"I have been fortunate enough to be employed by this wonderful company (ABB, editor's note) and to fully experience the dynamism of the Group, which is constantly focused on what the market actually needs. The factory at Ossuccio, with its history, know-how and excellence, is a perfect example of this."

So begins Matteo Suma, who has been Head of ABB Measurement Products LBU for a couple of years, but who has well-established Group experience, which he acquired gradually through positions of increasing importance. The most recent of these saw him assume responsibility for supply chain management in the oil and gas sector. This is a key, indeed strategic, segment for the company's Process Automation division, of which the Measurement Products BU is part.



Matteo Suma, Head of the Local Business Unit, ABB Measurement Products, Italy

A century of history

"The Measurement Products business unit is the result of a series of mergers and integrations, in terms of brands as well as types of business", emphasizes Suma.

In practice, the BU now incorporates all the product families that ABB used to market through the sales programs of the various divisional units, integrating all measurement products aimed at the process market in a single point of reference.

"This has allowed us to align our BU with the strategy of the division to which we belong, not only pooling operational experience, but also combining all product lines that were geared towards different market outlets: oil and gas, power, water etc."

ABB Measurement Products is able to rely on 100 years of experience gained, as previously pointed out by Suma, through combining and integrating expertise, technology and extremely well-known brands such as Hartmann & Braun, Fisher & Porter, Kent, Bomem, Taylor and more recently K-Tek, a world leader in manufacturing level measurement instruments.

A century of history whose essence ABB has never betrayed, which is to follow the evolution of the market and the needs of its customers. In this way, from the original measurement and control instrumentation for 'steam' applications, the company has progressed little by little to meet the new needs that the market, which was gradually becoming more and more global, was imposing. We now offer complete solutions for the world of production processes and related analysis requirements.

"It is also worth remembering the significant investments in terms of patents that ABB Measurement Products has developed during its history (every year, the company files about 80 patents, editor's note). For example, in the 1970s there was the patent for an exclusive sensor for measuring and therefore controlling, force, which turned the company into a world leader in the steel, pulp and paper, printing and converting industries."

Another milestone in the history of the current Measurement Products BU was in 1983, the year in which ABB developed an ad hoc sensor for pressures in inductive technology. This innovation still represents the essence of measurement within ABB instruments and, as we shall see, is an all-Italian, 'made in Ossuccio' source of pride.

From its origins to the latest innovations

The origins of the manufacturing plant at Ossuccio date back to 1936, or rather, to the establishment of M. Tieghi & C. S.A.S. of Milan, a company dedicated to the production of instruments for controlling the boilers of military ships. As Matteo Suma explains, “that factory was the emblematic forerunner of what today is one of the areas in which ABB Measurement Products enjoys recognized leadership. In fact, production at the original Tieghi company focused on products that were not only reliable and accurate, but that were also capable of reducing emissions from funnels. At the time, these caused significant difficulties in visibility to military ships at sea.”

For this reason, in 1939 Tieghi became the official supplier to the Royal Italian Navy and, to ensure production continuity while avoiding the bombings that were soon to shake the city of Milan, the factory was transferred strategically to Ossuccio on the shore of Lake Como.

Although this decision was imposed upon the company, we believe that over the years it has proven to be one that has been much more than strategic. During this time, the factory has continued to invest in local skills, setting up training schools and equipping people with specialized electro-mechanical skills from generation to generation.

“This policy, which focuses on developing skills in the area, has always allowed us to have access to a workforce that is not only highly qualified (that is to say equipped with appropriate and specific skills) but one that has passionate enthusiasm for their work, a priceless added bonus that is inherent in the Lake Como DNA,” says Matteo Suma, as he casts his thoughts to past and present employees of the manufacturing plant at Ossuccio.

Over the decades, the factory has continued to flourish due to the policy of integration and expansion in the various markets that the ABB Group has pursued over the years. This is mainly thanks to the contribution of skills from Kent and Taylor, so much so that at the height of its expansion its staff numbered no fewer than 600 people.



ABB 266 series pressure transmitter with wireless FIELDKEY
(manufactured in Ossuccio)

At the Ossuccio factory, key products were created that are part of the history of ABB and of the entire process world. For example, there is the Deltapi N, an electro-mechanical “jewel” based on pneumatic technology that continues to this day to be one of the most well-known and popular brands. Or there is the inductive sensor, which formed the basis of the modern era of the Measurement Products BU. Not only did it propel ABB towards the current generation of instruments, it also made a significant contribution in improving the accuracy, repeatability and quality of the instrument.

However, at Ossuccio, innovation does not stop. For example, there is the nanotechnology applied to anti-abrasion coatings of some modern separators, or the introduction of the latest version of the 266 pressure transmitter, which has adopted wireless communication. Powered by battery, it will be able to communicate with the outside world through the HART7 industrial protocol, which was specifically developed by ABB for wireless application on the 2.4 GHz frequency. The battery will last for 10 years and the device will be able to operate safely even in areas that are potentially hazardous due to the presence of explosive gases or dusts.

An all-Italian leader

Within ABB Measurement Products, the factory at Ossuccio is known as a Product Responsible Unit, that is to say a unit that is fully responsible for defining strategy in terms of production, innovation, supply chain etc.

“Ossuccio is the global center of excellence for pressure, where sensors are made as well as the instruments for measuring pressures for the European market,” explains Matteo Suma. “In the plant, we manufacture the transducer, that is to say the sensor. This is then sent to the various assembly units ABB around the world for manufacturing the final instrument; countries such as China, India, the United States etc. It’s only logical that, being the PRU, it has the advantage of having (and we are proud of this) a specific R&D center with thirty engineers focused on a series of activities related to innovation and development.”

Part of this center is dedicated to pure research and development; its core mission is to focus on product innovation. There is also a second role, which makes Ossuccio a true leader. “There’s a resources team that focuses on analyzing and proposing technical solutions to our customers for special applications. For example, the oil and gas industry has complex applications, where you need to meet the requirements arising from the difficult positioning of instruments, from the presence of abrasive solutions, or from the need to use special materials such as in off-shore applications,” stresses Suma. This team is complemented by another team of technicians and engineers that focuses on the production process.

“Since there are several assembly units around the world, Ossuccio, as a PRU, has a process engineering structure to standardize the production setup in the various factories. This is to ensure a standard product throughout the world in terms of quality and performance, while of course allowing the customization that different markets require during the assembly of the instrument.”

Consultants first and foremost

The Measurement Products LBU now has an almost complete range of products and solutions that are divided into four distinct ‘product groups’ and a unit dedicated to the following services:

- field instruments and devices (temperature, levels, pressures)
- flow measurement
- analytical measurement (analysis of liquids and gases);
- force measurement (measurement of force, flatness, etc.)
- service (start-up, maintenance, retrofitting etc.)

“Our market position has not come about through battles fought over the accuracy or functionality of our instruments. Basic instruments, even with their particular characteristics, have in fact become a sort of commodity, if it is permissible to use this term, an area in which ABB does not intend and does not want to compete, because it is strategically geared towards a consultative, global approach – the customer has a problem and this problem must be resolved,” says Matteo Suma.

So the fact that there is a team dedicated to consultancy, so to engineering issues, as well as to the entire production cycle, with dedicated processes and skills, makes the difference that very few companies are capable of offering.

“We have often been awarded contracts because we had proposed the technological solution that as a whole was able to meet the customer’s requirements in a comprehensive, complete manner”, confirms Suma, who adds: “In fact, our ability to solve specific needs in a comprehensive way is often the driver that allows us to provide complete solutions, not only in terms of instrumentation, but also as far as temperature, level, service and related matters are concerned. This allows ABB Measurement Products Italy to deal with customers as a global partner, where the product does of course matter, but where the key elements are competence, engineering and global service.” “We don’t want to devalue the product at all. On the contrary, we want to enhance the service, which makes Italy a leader, distinguishing it as a global center of excellence. This is why, for example, we were awarded an important project in China for the construction of a large cement plant. The positive experience, in terms of both implementation and support, from working with ABB on various previous plants for the same customer meant that the EPC contractor expressly chose ABB Italy because of the global experience we were able to bring.”

Another example of the successful market approach is the measurement and continuous analysis of combustion gases (CEMS, Continuous Emission Monitoring) activities in which ABB is a leader.

“Our leading position stems from the fact that we submit proposals as consultants and not as product vendors. Our technicians are experts on technical as well as regulatory matters. This is how, faced with customers who experience the IPCC (Integrated Pollution Prevention and Control) regulations as a burden, we are able to help them understand what the real need for intervention is, how to improve their investment, how to find the solution that best solves their problem from a regulatory, technical and economic point of view.”



The Blue Building, Headquarters of ABB in Italy, based in Sesto San Giovanni (Milan)

Measurement made easy

Within the ABB Group, the Measurement Products BU employs approximately 4000 personnel in 34 countries and 16 production plants (including the plant in Ossuccio) and has revenues of over a billion dollars. These are truly record numbers in the sector, which on the one hand make the BU a leader, but on the other hand make it a very complex unit to manage.

It is partly this complexity and partly in thinking about the market approach philosophy (“listen to the customer and resolve his problem in the simplest possible way”), which recently led the BU to launch the **Measurement made easy** campaign.



ABB engineer undertaking commissioning and startup activities at customer's site

The aim is to increasingly focus on simplification, internally as well as externally, in order to meet customers' needs ever more closely. It is often thought that everything that is technologically advanced is also very complicated. Nothing could be further from the truth.

Measurement made easy is the key concept that has underpinned the efforts of the ABB BU for some time as it works on the radical simplification of the instrument; from its use to its interface, from its ability to communicate to its interchangeability.

Today we are accustomed to using intuitive and simple technology: think of the smartphone or tablet. The industrial environment must therefore also move towards similar standards of simplicity and interactivity, as here too the end user expects technology to make life easier. In a nutshell, simplicity is invaluable.

This is the path that ABB innovation has been following for some years now: **Measurement made easy** as a key element to meet the needs of the market even more closely.

'Made in Ossuccio' technology

The 266 series multivariable transmitter is ideal for mass flow applications, proving to be a reliable solution for direct mass flow measurement with high pressures in the oil and gas, energy and chemical sectors. Combining different sensors in a single device allows differential pressure, absolute pressure and process temperature to be measured simultaneously using an external sensor.

Differential measurement is used to calculate the mass flow rate of gas, vapor or liquid, with dynamic compensation and improved precision. The sensor for low ranges allows the transmitter to be used with Pitot tubes, providing an easy-to-install, cost-effective solution. In level applications, the multivariable transmitter calculates the fluid density as a function of pressure and temperature, optimizing the measurement accuracy even with the use of separators. In the case of process changes, the 'Easy Setup' function, which can be activated via the indicator integrated in the configuration terminal, or via the DTM (Device Type Manager), allows the instrument to be adapted in the fastest possible time.

In general, the range of ABB flowmeters with differential pressure technology offers optimal performance combined with simplicity and robustness. The instrument's primary element and pressure transmitter are assembled in a 'single body' that minimizes the potential leakage points compared to traditional solutions. Data communication over wireless networks, configuration options using the 'Through-the-glass' (TTG) keyboard without removing the transmitter's cover and the new PILD (Plugged Impulse Line Diagnostics) advanced diagnostics function integrated into the instrument optimize performance and security.

Universal handheld terminal

DHH805 is ABB's new HART handheld terminal, which enables the configuration of HART devices and almost any other field device by using DD files.

The DHH805 has features that make it particularly versatile and easy to use. It enables instrument configurations to be created and/or modified in offline mode, saving them on its internal memory and then sending them to the device in just a few steps. In the field, its simple and intuitive interface allows all operations to be performed even in low-visibility conditions thanks to the backlight and adjustable contrast.

The terminal is certified for use in hazardous areas and has a 2 GB internal memory on which over 1000 DD files and configurations can be saved. The long battery life (over 80 hours in communication mode) and its weight and strength make it suitable for everyday working conditions in plants throughout the world. Finally, once activated, the DHH805 does not require any license renewal, thus saving time and reducing costs.

DHH805 was born by listening to customer requests to simplify operations in plants and to make them more efficient in accordance with the Measurement made easy philosophy.



Quick configuration of 266 series multivariable transmitter using the 'Easy Setup' function at the instrument



ABB's new DHH805 HART handheld terminal

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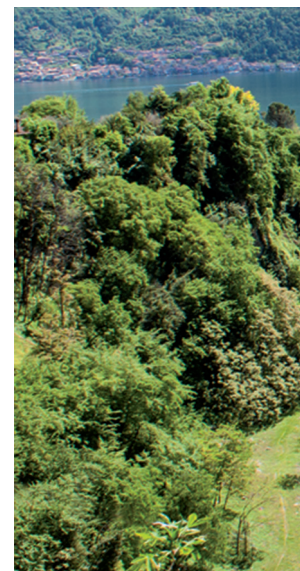
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