Application Note: textile/01/0921

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USE OF FLOW METERS IN TEXTILE INDUSTRY

INTRODUCTION

India's textile industry is one of the world's largest, with a significant raw material base and production capabilities across the value chain. Some of the areas in textile industry that are of importance, include yarn, cloth, and garment development, production, and distribution. Natural or manufactured raw materials are used for the process of textile making. All the processes necessitate use of water, steam, gas, and chemical fluids, depending on the application and the need of the process. Flow meters are used to measure flow of water, steam, gases or chemical fluids accurately and precisely.

WATER FLOW MEASUREMENT

In the textile industry, water is employed extensively. Water baths are used to apply almost every dye, specialty chemical, and finishing chemical to textile substrates. Aqueous systems are also used in majority of fabric preparation processes, such as desizing, scouring, bleaching, and mercerizing. The amount of water utilised in the sector varies greatly, depending on the mill's individual processes, equipment, and management philosophy regarding water use. Therefore, accurate water flow measurement is required in textile industry.

Manas makes Electromagnetic Flow Meters which are widely used for accurate measurement of water flow in textile industry. These meters also find application in the measurement of other fluids like effluents, slurries, pulps, brines and other highly corrosive liquids, acids and bases.

SOME OF THE ADVANTAGES OF MANAS ELECTROMAGNETIC FLOW METER ARE AS FOLLOWS

- This meter is more suitable with those fluids which present difficulties in handling. Fluids such as effluents, slurries, pulps, brines and other highly corrosive liquids, acids and bases, fermenter wash, molasses, etc.
- Measurement is independent of the velocity profile across the diameter of the pipeline
- No additional pressure drops across the meter which relieves the process designer while sizing his pumping requirements

AIR FLOW MEASUREMENT

The Air-Dye process uses air instead of water to assist colours permeate fibres, resulting in a procedure that consumes less water and energy than standard dyeing methods. Air-Dye technology eliminates the use of water in the application of colour to fabrics. In this application air flow meter is required.

Compressed air is required at every stage of manufacturing in cotton textile industries having Air jet Looms and in the Polyester yarn industries with a very critical requirement in the PFY valued-added segment such as Texturing. Typically, power looms, process house and ginning mills require low volume of air. Denim spinning, medium PFY industries require medium volume of air. Large polyester yarn integrated plants, texturing units and integrated cotton textiles usually require high volume of air.

Compressed air and combustion control, both are critical areas. Use of thermal mass flow meters can result in improved plant efficiency due to better control in these areas.

Compressed air is utilized in textile industry process machines such as blow rooms, carding, spinning, etc., and other machinery for both regulating and operations. Manas Thermal Mass Flow Meter can help to monitor compressed air usage rates through various facility divisions. Compressed Air Flow Meter, which is a Thermal Mass Flow Meter, can provide both overall consumption and time tracking, which can aid in identifying high-consumption times.

Manas Thermal Mass Flow Meter, is applicable for measuring flow rates of Compressed air (Compressed Air Flow Meter), and other compressed gases in closed conduits. These flow meters can measure flow of other gases such as Bio-gas or LPG.

Manas Compressed Air Flow meter, being a direct mass flow meter, it does not require any pressure and temperature compensation.

SOME OF THE ADVANTAGES OF MANAS COMPRESSED AIR FLOW METER ARE AS FOLLOWS

- Direct measurement of mass flow
- No pressure or temperature compensation required
- 20:1 turndown
- Wireless data transfer is possible. Remote readings are available on wireless
- Pulse, milliamps, and RS485 output for networking

Due to continuous development specifications are subject to change without prior notice.

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