SSG

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Measuring sensors for process control

General

This issue differs from the preceding issue mainly by being adapted to new layout.

In connection with choice, sizing, installation and confirming measurements it is always important to make sure that the conditions are correct and that they can be achieved.

The present synthesis details the extent and substance of the commonest principles of measurement technology and is based **to a large extent on practice and experiences in the pulp and paper industry**. The synthesis does not claim to be absolutely complete or exhaustive but in this situation should provide good support and be an aid for personnel in the field.

Contents

1 Introduction

Within the area of technology of measurement there is a great deal of literature which has been issued over the years in various editions to be used for training purposes and the like. However, there have been no syntheses which **describe the principles of measurement from the practical point of view**. This synthesis aims to improve on that part of the field.

The synthesis therefore describes how measurement methods and sensor principles can be used for the commonest measurement sensors, e.g. for pressure, flow, analyses, level, temperature, etc.

The aim of the synthesis is also to motivate and inform involved parties (e.g. instrument engineers, designers, new collaborators, etc.) of the importance of choosing and installing well functioning measurement systems.

The supplier’s minimum requirements for sizing and installation shall always be observed however.

2 Concepts

The concepts that have been included in these directions have been taken mainly from standards and literature and additionally from the terminology that is the practice in measurement systems and the context of measurement technology.

Pressure
Pressure is force per unit area. Pressure measurement is, after temperature and flow measurement, the commonest quantity measured in industrial measurement and control applications. Pressure represents, like temperature, a value of quantity which is specified in relation to what is defined as a reference value based on physics. Pressure often refers to atmospheric pressure. Pressure measurement in industrial pressure monitoring generally refers to checking for overpressure in various types of pressure vessel.