

# INTRODUCTION TO THE SELECTION, INSTALLATION, COMMISSIONING AND MAINTENANCE OF FLOW AND FISCAL METERING EQUIPMENT



## WHAT YOU WILL LEARN:

- Fundamentals and concepts of fiscal metering
- Custody transfer metering in practice and commercial implications
- Operating procedures
- Field instruments
- Properties of fluids
- Different types of flow meters
- How to select, install, maintain and operate fiscal meters correctly
- How to troubleshoot, repair fiscal metering devices
- Practical knowledge about fiscal metering in practice

## WHO SHOULD ATTEND:

- Automation engineers
- Chemical engineers
- Consulting engineers
- Control engineers
- Design engineers
- Electrical engineers
- Instrument fitters
- Maintenance engineers
- Mechanical engineers
- Operations and production engineers
- Process control technicians
- Project engineers and managers



*Technology Training that Works*

## The Workshop

The workshop on fiscal metering is for engineers and technicians who require a practical knowledge of selection, installation and commissioning of fiscal metering.

A clear understanding of fundamentals and concepts of fiscal metering and its commercial implications is an important factor in an efficient implementation of fiscal metering system. You can only achieve excellent and reliable fiscal metering when your field instrumentation provides the correct information.

It is for those primarily involved in achieving effective results for the industrial processes they are responsible for. This would involve the design, specification and implementation of control and measurement equipment. The workshop focuses on practical applications, with special attention to installation considerations and application limitations when selecting or installing different measurement or control instruments for fiscal metering.

### Training Methodology

The latest educational methods and strategies will be employed. The workshop is designed to maximise delegate benefit from the outset. Questions are encouraged throughout. This provides opportunities for participants to discuss with the presenter and others, specific problems and appropriate solutions. All delegates take away a detailed and comprehensive copy of the material presented, therefore minimal note taking is encouraged to ensure maximum delegate participation and attention. Practical hands-on training ensures knowledge retention.

### Pre-requisites

No specialist knowledge or skills are required – only a technical background so that there is an understanding for such factors as the difference between pressure and force. In fact this workshop is a good introduction to someone who has had no dealings with relief valves in the past as well as an important refresher course for control valve specialists who benefit from the back-to-basics approach.

## Practical Sessions

This is a practical, hands on workshop enabling you to work through practical exercises which reinforce the concepts discussed.

*To gain full value from this workshop, please bring your laptop/notebook computer.*

## The Program

### INTRODUCTION TO FISCAL METERING

- Introduction
- Concepts and practice of custody transfer metering
- Fundamentals of fiscal metering
- Commercial implications of fiscal metering

### FIELD INSTRUMENTS

- Theory of functionality of field instruments
- Processing of data received from field instruments
- Calculation methods used for fiscal quantities
- Metering algorithms
- Processing of fiscal data
- Calibration
- Application of standards and re-certification of systems and instruments

### OPERATING PROCEDURES

- Fiscal metering in practice
- Startup
- Shutdown
- Operating conditions
- Fault conditions and mismeasurements
- Limitations

### BASIC PROPERTIES OF FLUIDS

- Basic fluid properties
- Non-newtonian fluids
- Velocity profiles
- Reynolds number
- Flow measurement
- Mass flow rate
- Multi-phase flows

### FLOW METERS

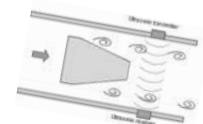
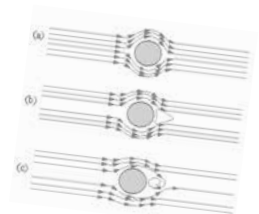
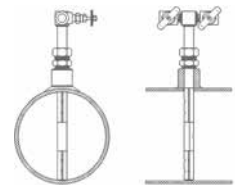
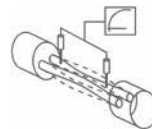
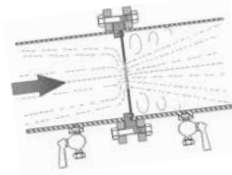
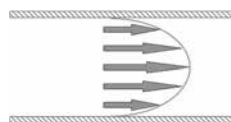
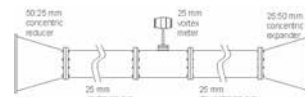
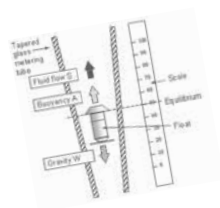
- Positive displacement meters
- Inferential meters
- Oscillatory flow meters
- Differential pressure meters
- Variable area meters
- Electromagnetic flowmeters
- Ultrasonic flowmeters
- Mass flow measurement
- Open channel flow measurement

### INSTALLATION MAINTENANCE AND REPAIRS

- Installation
- Commissioning
- Maintenance
- Fault diagnostics and troubleshooting

### DOCUMENTATION

- Documentation procedure
- Documentation control



## On-Site Training

- ✓ SAVE over 50% by having an IDC workshop presented at your premises.
- ✓ Customise the training to YOUR workplace.
- ✓ Have the training delivered when and where you need it.

Contact us for a FREE proposal.