

## About CRISP

CRISP is established under Indo-German Cooperation agreement as an autonomous organisation of the Dept. of Technical Education and Skill Development, Govt. of M.P.

CRISP provides technical training and consultancy services for Industry Personnel, Government Officers, Faculties of academic and teaching institutions, Students and Jobseekers. CRISP is equipped with the state-of-the-art equipment and technology, latest software, qualified, trained and experienced trainers in the relevant fields.

CRISP has its head office in Bhopal and training centres at several national and international locations.

### Other training programmes in Electrical and Electronics offered at CRISP are :

- Embedded System Design
- Electronics Maintenance
- WinCC SCADA
- Industrial Automation
- PLC Programming & Application
- PLC Networking
- Electrical Control and Relay Logic Application
- AC/DC Drive
- MMI
- MATLAB
- Fiber Optic Networking



## Patron Clients of CRISP



### Contact :

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## Centre for Research and Industrial Staff Performance

(Established under Indo-German Technical Co-operation)  
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# FIELD INSTRUMENTATION & CONTROL



...unleashing the full potential of men & machines

## FIELD INSTRUMENTATION & CONTROL



### Introduction of Course

Instrumentation is the art of measuring the value of some plant parameter i.e. pressure, flow, level or temperature to name a few and supplying a signal that is proportional to the measured parameter. The output signals are standard signal (4-20 mA) and can then be processed by other equipment (PLC or DCS) to provide indication, alarms or automatic control.

This course deals with the instrumentation equipment used to measure, regulate and/or control the process parameter.

CRISP has setup state-of-art facilities to impart training in this area. This lab is equipped with most modern analog and digital instruments including calibrators.

After completing this course the participants will be able to install, wire, configure, test, maintain and calibrate instruments.

### Course Contents

- Introduction to field Instrumentation and control, basic terms, Standard Instrumentation/Output signals and Instrument characteristics.
- Limit Switch, Reed Switch, Inductive, Capacitive, Optical Proximity Sensors, counters and ZSS controller, sinking-sourcing concept, applications
- Temperature Switches and Sensors (RTD and Thermocouple), temperature transmitter and controller
- Pressure switches, sensors and Differential Pressure Transmitter.
- Basic 4-20 mA Loop Setup and Loop testing
- Calibration Introduction, Understanding Instrument's Specifications
- Calibration of field devices – Pressure and temperature
- Hydrostatic and other Level detection techniques, zero elevation & suppression

- Configuration of Ultrasonic Level Transmitter and Loop power Indicator
- Various flow measurement techniques, mag. flow meter in detail, Control Valves and E/p convertor
- Flow control feedback loop (Integrated Instrumentation Plant -forbes marshall )
- Identify Instrument Symbols, draw Read and Interpret basic P & ID
- Instruments Interfacing
- Industrial applications and basic trouble-shooting

### Methodology

The programme consists of a mix of :

- Lectures & presentations
- Demonstrations
- Interactive discussions
- Hands-on practice

### Pre-requisite

- Industry personnel with relevant experience.
- Passouts or students pursuing Degree/ Diploma in Electronics/ Electrical/ Instrumentation Engineering or equivalent.

### Duration

**Full time:** 5 working days (7 hours/day)

**Part time:** Three weeks (15 working days, 2 hours/day)

### Course Fee

Kindly refer to our training calendar at [www.crispindia.com](http://www.crispindia.com) or can be obtained from CRISP counselling desk

### Mode of Payment

Cash / Online / Debit / Credit Card