

## Modbus Troubleshooting and Maintenance course (1 day)

Learn the skills to quickly find, analyze, and isolate Modbus network problems. This course will provide you with the knowledge and skills you need to wire the connectors, test the cables, and setup basic equipment. You will also get hands-on experience with the latest Modbus troubleshooting tools.

Upon completion of this course, the student shall be able to:

- Configure a Modbus RTU, Modbus ASCII, or Modbus TCP device
- Understand how the network functions
- Troubleshoot common and uncommon problems

### Course outline

- Modbus serial physical layers
- Modbus commands
- Modbus monitors
- Modbus TCP
- Network design and setup
- Wiring
- Troubleshooting

### Hands-on Exercises:

- Modbus RTU communications via RS-485
- Modbus RTU monitoring
- Modbus TCP communications
- Modbus TCP monitoring via Wireshark

### Training Equipment:

- USB to RS-485 serial cable
- Modbus RTU slave (temperature transmitter)
- Turck TBEN IO brick (Modbus TCP slave)
- Mdbus (Modbus RTU/ASCII and TCP master)
- Codesys PLC (Modbus TCP master)

### Class Day Information

- Attendees must bring a laptop or tablet which can read a USB drive.
- Attendees will receive a support USB drive with an electronic version of the materials plus key PI documents.
- Students will receive a certificate of attendance and 7.5 verifiable professional development hours
- Class size is limited to a maximum of 8 students (2 students per training rack).

### Course duration

This course requires 7.5 hours of instruction which includes two 15 minute breaks and one 30 minute lunch break

### Scheduled Classes

- Please check our website for scheduled classes or contact us to arrange a training date
- On-site classes are available upon request (minimum class size is 3)



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**Course code and Prerequisites**

- Course code: T-MODBUS-02
- There are no prerequisites for this course.

**Instructor**

James Powell, P.Eng., is the principal engineer and owner of JCOM Automation Inc. He has written many articles and two books: *HART Communication Protocol – a practical guide*, and *Catching the process fieldbus – An introduction to PROFIBUS and PROFINET*. James is a certified PROFIBUS DP, PA, and PROFINET network engineer, PROFIBUS System Design Engineer and has over 20 years of experience with PROFIBUS, PROFINET, EtherNet/IP, Modbus, and HART installations.

**JCOM Automation** is a member of PROFIBUS PROFINET North America and is a certified PROFIBUS and PROFINET training center and Competence Center.

**To book this course for yourself or your team, please contact JCOM Automation at [admin@jcomautomation.ca](mailto:admin@jcomautomation.ca) or +1-705-868-8745.**