Integrated Condition Monitoring
COURSE DESCRIPTION

COURSE AGENDA

Day 1
- Characteristics of Vibration
- Relating Time Waveform and Vibration Frequency
- Review of Severity Charts
- Digital vs. Analog Overall Vibration Measurement

Day 2
- Vibration Transducer Overview and Selection Criteria
- Role of Spike Energy, HFD and Shock Pulse and Alarm Levels
- Vibration Signature Analysis to Diagnose Machine Problems

Day 3
- How to Track Rolling Element Bearing Health
- Proven Methods for Specifying Spectral Alarm Band Levels and Frequencies
- Common Pitfalls in Everyday Vibration Measurements

Vibration Analysis: Level I

COURSE NUMBER: EK-ICM201

Course Purpose

This course presents the fundamental information necessary to implement and operate a successful predictive maintenance program. Vibration basics and the relationship between vibration and machinery condition are reviewed. Proven techniques for specifying meaningful overall and spectrum band alarm limits for a wide variety of machinery are presented. Case histories are used extensively throughout the course to emphasize the practical application of the material.

Who Should Attend

Mechanics, technicians, engineers or analysts involved in the maintenance or operation of plant machinery should attend this course. This course also covers the prerequisite knowledge needed to attend and be successful in the Vibration Analysis: Level II course (Course No. EK-ICM261).

Prerequisites

To successfully complete this course, students should have 6 months or more of field experience along with previous attendance to the Vibration Analysis Fundamentals (EK-ICM101) or similar course.

Student Materials

To enhance and facilitate each student's learning experience, the following materials are provided as part of the course package:

- *Student Manual*, which contains the key concepts, definitions, and examples presented in the course, including:
  - *Spectral Alarm Settings,* with proven methods for specifying spectral band alarm levels and frequencies.
  - *Illustrated Vibration Diagnostic Chart*, which summarizes the diagnosis of over 40 mechanical and electrical problems, based on analysis of spectrum and phase data.
  - *Real-World Case Histories,* with methodology, before and after data, and conclusions. These cases discuss unbalance, looseness, belt drive, misalignment and rolling element bearing problems.

Certification Testing

Optional certification testing is available on the morning of day four. The test will provide the student with a means to benchmark their knowledge in vibration and predictive maintenance concepts. Many people who have taken this test to date have said the test was a learning experience in itself, and served to cement the course topics together.

Certification Testing (continued)

Although open book, the test is not easy by any standard and requires the student listen to the class lecture and study the test material provided.

Next Learning Level

Once students have mastered the fundamental skills covered in this course, they will have the knowledge and skills necessary to attend the next level of Integrated Condition Monitoring technology or product training. In particular, this course will benefit those students enrolling in the Vibration Analysis: Level II course (Course No. EK-ICM261).

Course Length

This is a three-day course with an optional half-day test on the fourth day.

Course Number

The course number is EK-ICM201

IACET CEUs

CEUs Awarded: 2.1

To Register

To register for this or any other Rockwell Automation training course, contact your local authorized Allen-Bradley Distributor or your local Sales/Support office for a complete listing of courses, descriptions, prices, and schedules.

You can also access course information via the Web at http://www.rockwellautomation.com/training

www.rockwellautomation.com

Power, Control and Information Solutions

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444
Europe/Middle East/Africa: Rockwell Automation SA/NV, Vorstlaan/Boulevard du Souverain 36, 1170 Brussels, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640
Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

GMST10-PP222A-EN-E