

## TIA University- TIA the Expressway Video Tutorial ProDiag – Process Diagnostics

### General Information

Event Code: TBD  
Length: 1 hour each

### Audience

These video tutorials are for Engineers and PLC Programmers requiring an introduction to the fundamental aspects of TIA Portal advanced features and optional software tools.

### Profile

Participants for these video tutorials must have a licensed copy of TIA Portal V17 or newer.

Each video tutorial comprises of two primary elements, a video tutorial and a TIA Portal project file mixtank.zap1x

Participants will watch the video and follow the instructor to complete each training exercise. This event is virtual (no live hardware) PLC Sim integrated into the Totally Integrated Automation framework is used for completing the lab exercises.

### Learning Objectives

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

- Obtain a working knowledge and understanding of ProDiag, a TIA Portal optional software utility
- Learn how to auto-generate process alarms in the PLC using TIA Portal ProDiag.
- Learn how to monitor & display process diagnostics on an operator interface.
- Understand ProDiag system and licensing requirements.

### Exercise Topics

1. **Workflow for traditional process alarm programming**
  - a. PLC logic generating
  - b. HMI alarm tag creating
  - c. HMI alarm messages
2. **ProDiag Supervisions overview**
  - a. Global data blocks
  - b. Function blocks
  - c. PLC data types
3. **Supervision type descriptions**
4. **Project Supervision settings**
  - a. Supervisory alarm categories
  - b. Alarm texts
5. **PLC Supervision & alarms**
  - a. Global Supervision
  - b. Supervision definitions
  - c. Supervision instances
6. **Creating an Operand supervision**
  - a. Interpret existing control logic
  - b. Configure supervision
    - i) Trigger Value
    - ii) Delay Time
    - iii) Optional condition parameters
    - iv) Alarm category
    - v) Specific text field with dynamic parameter tag
7. **Creating an Interlock Supervision**
  - a. Interpret existing control logic
  - b. Configure supervision
    - i) Trigger Value
    - ii) Delay Time
    - iii) Actuator
    - iv) Alarm category
    - v) Specific text field
8. **Configuring HMI Code View Control**
9. **Simulation using PLCSIM**