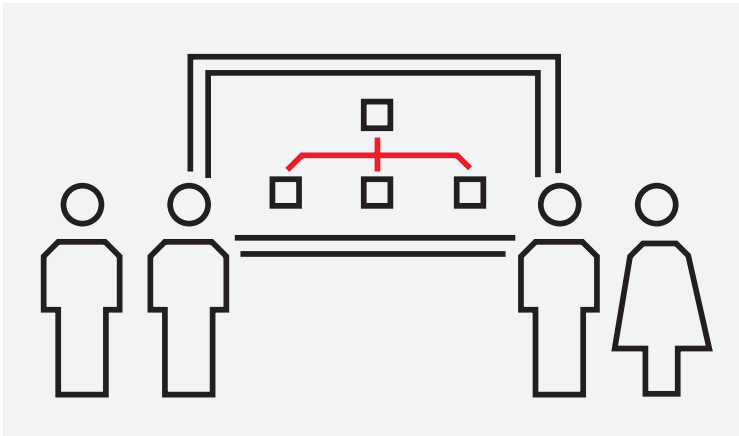# S314
MR Series fieldbus management

The goal of this course is to learn how to couple intelligent field devices to MR Series controllers using PROFIBUS and HART. Basics on the communication protocols as well as the implementation of the couplings with MR Series will be covered.

Learning objectives
Upon completion of this course, students will be able to:
- Explain fieldbus technology basics, particularly PROFIBUS and HART
- Plan a MR Series control configuration with PROFIBUS and HART devices
- Install and configure the required software components
- Configure and commission PROFIBUS and HART devices using device specific DTMs
- Configure and commission PROFIBUS devices via GSD file
- Configure cyclic HART communication
- Use Melody Analyzer to troubleshoot disturbances on the PROFIBUS network
- Exchange PROFIBUS and HART devices

Participant profile
MR Series users planning or employing the coupling of intelligent field devices using PROFIBUS or HART.

Prerequisites
Successful completion of courses S331 and S313, or alternatively S301M, is required. Basic knowledge of digital data transmission is an advantage.

Topics
- Basics on PROFIBUS and HART
- Bus access procedure, cyclic and non-cyclic communication
- Topology of a MR Series control based system with PROFIBUS and HART devices
- Coupling of HART devices via PROFIBUS-DP and S800-I/O / S900-I/O
- Coupling of HART devices via MR Series I/O
- Configuring PROFIBUS DP Master
- Configuring PROFIBUS DP Slaves
- Configuring PROFIBUS PA Slaves
- Configuring modular field devices based on DTMs and GSD-files
- I/O function blocks for PROFIBUS and cyclic HART communication
- Installing DTMs, updating DTM library
- PROFIBUS diagnostics using Melody Analyzer

Course type and methods
This is an instructor led course with interactive classroom discussions and associated lab exercises. Approximately 50% of the course is hands-on lab activities.

Duration
4 days

Agenda

Day 1	Day 2	Day 3	Day 4
Course overview	PROFIBUS DP Master	HART DTMs	PROFIBUS PA Slaves
Basics on PROFIBUS and HART	PROFIBUS communication parameters	HART communication configuration	PROFIBUS DP slaves configuration with GSD
Install S+ Engineering for Harmony	PROFIBUS DTMs		
PROFIBUS and HART topology based on MR Series control system	PROFIBUS DP slaves configuration with DTM		
	PROFIBUS diagnostics via Melody Analyzer		