

CN431

Low Voltage System Drive ACS800 Application in Metals and Case Study

Course goal

The goal of this course is to teach students to start-up, adjust, operate, maintain and troubleshoot ACS800 multidrives.

Learning objectives

Upon completion of this course the participants will be able to:

- Understand low voltage system drive
- Commission and tune ACS800 multidrives
- Operate and maintain ACS800 multidrives
- Understand communication between ACS800 with control section AC800M
- The drives' parameters adjustment with technology process in metals

Topics

- Reading and interpreting circuit diagrams
- ACS800 system application program
- Control panel functions
- DSU, TSU, ISU and Inverter hardware
- Converter and Supply unit commissioning
- Fault diagnostics and case study
- DriveWindow commissioning and maintenance
- Tool operations
- Overview of process and manufacture characteristics in metals
- The drives' parameters adjustment with technology process in metals

Participant profile

System drive engineer, system maintenance engineer, maintenance supervisor, maintenance manager.

Prerequisites

The student should have Basic knowledge of electronics , basic knowledge of drives, and metals process. Experience in using PCs in the Windows environment

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

Course Duration

The duration is 5 days



Course Outline				
Day 1	Day 2	Day 3	Day 4	Day 5
Welcome	ACS800 Inverter Hardware	ACS800 System Application	Drive window	Fault diagnostics
Course overview	Circuit diagram	Control panel	Drive control with Fieldbus	Case study
low voltage system drive	ACS800 System Application	start-up and	exercise	ACS800 drives' parameters
Basic	Exercises	commissioning		adjustment in Metals
DSU		Exercises		
ISU		Q & A		
TSU				
Exercises				



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CN431S

Low Voltage System Drive ACS880 Application in Metals and Case Study

Course goal

The goal of this course is to teach students to start-up, adjust, operate, maintain and troubleshoot ACS880 multidrives.

Learning objectives

Upon completion of this course the participants will be able to:

- Understand low voltage system drive
- Commission and tune ACS880 multidrives
- Operate and maintain ACS880 multidrives
- Understand communication between ACS880 with control section AC800M
- The drives' parameters adjustment with technology process in metals

Topics

- Reading and interpreting circuit diagrams
- ACS880 system application program
- Control panel functions
- DSU, TSU, ISU and Inverter hardware
- Converter and Supply unit commissioning
- Fault diagnostics and case study
- DriveWindow commissioning and maintenance
- Tool operations
- Overview of process and manufacture characteristics in metals
- The drives' parameters adjustment with technology process in metals

Participant profile

System drive engineer, system maintenance engineer, maintenance supervisor, maintenance manager.

Prerequisites

The student should have Basic knowledge of electronics , basic knowledge of drives, and metals process. Experience in using PCs in the Windows environment

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

Course Duration

The duration is 5 days



Course Outline				
Day 1	Day 2	Day 3	Day 4	Day 5
Welcome	ACS880 Inverter Hardware	ACS880 System Application	Drive window	Fault diagnostics
Course overview	Circuit diagram	Control panel	Drive control with Fieldbus	Case study
low voltage system drive	ACS880 System Application	start-up and	exercise	ACS880 drives' parameters
Basic	Exercises	commissioning		adjustment in Metals
DSU		Exercises		
ISU		Q & A		
TSU				
Exercises				



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CN461

Programming AC800M and Drives in Metals

Course goal

The goal of this course is to teach the students Programming controller AC800M and Drives in metals.

Participant profile

System engineer, system maintenance engineer, System control engineer.

Learning objectives

Upon completion of this course the participants will be able to:

- System 800xA architecture
- AC 800M Hardware
- Develop project specific libraries
- Configure AC800M hardware and I/O
- IEC 61131-3 programming language
- Control Modules
- Communication

Prerequisites

Students shall know the fundamentals of working with Distributed Control Systems and have basic knowledge of IEC 61131-3 programming and of working with Microsoft Windows 7, Windows 10 or Windows Server 201x.

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

Topics

- Overview of control system 800xA
- AC 800M hardware and I/O
- programming with FBD and ST
- Control Modules
- Communication
- Task and memory
- Drive control with AC 800M

Course Duration

The duration is 5 days



Course Outline

Day 1	Day 2	Day 3	Day 4	Day 5
Course overview 800xA system architecture CBM Project and Application structures AC 800M Hardware	AC 800M Hardware Library for metals Variable and Data Type	Applications with Function Block Diagram (FBD) and Structured Text (ST) Memory and Task	Control Module Drive control with AC 800M	Communication

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CN461A

Programming AC 800PEC and Drives in Metals

Course goal

The goal of this course is to teach the students Programming controller AC 800PEC and Drives in metals.

Participant profile

System engineer, system maintenance engineer, System control engineer.

Learning objectives

Upon completion of this course the participants will be able to:

- System 800xA architecture
- AC 800PEC Hardware
- Develop project specific libraries
- Configure AC 800PEC hardware and I/O
- IEC 61131-3 programming language
- Control Modules
- Communication

Prerequisites

Students shall know the fundamentals of working with Distributed Control Systems and have basic knowledge of IEC 61131-3 programming and of working with Microsoft Windows 7, Windows 10 or Windows Server 201x.

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

Topics

- Overview of control system 800xA
- AC 800PEC hardware and I/O
- programming with FBD and ST
- Control Modules
- Communication
- Task and memory
- Drive control with AC 800PEC

Course Duration

The duration is 5 days



Course Outline

Day 1	Day 2	Day 3	Day 4	Day 5
Course overview 800xA system architecture CBM Project and Application structures AC 800PEC Hardware	AC 800PEC Hardware Library for metals Variable and Data Type	Applications with Function Block Diagram (FBD) and Structured Text (ST) Memory and Task	Control Module Drive control with AC 800PEC	Communication

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CN470

MV Drive LCI AC800 PEC Application in Metals and Case Study

Course goal

The goal of this course is to teach students to know the construction of MV Drive LCI AC800 PEC and theory, the operation, maintenance, trouble shooting and case study in metals area.

Learning objectives

Upon completion of this course the participants will be able to:

- Understand MV Drive LCI AC800 PEC construction and theory
- MV Drive LCI AC800 PEC operation and maintenance
- MV Drive LCI AC800 PEC spare parts changing and setting
- MV Drive LCI AC800 PEC trouble shooting and case study in metals area

Participant profile

Drive engineer, system maintenance engineer, maintenance supervisor, maintenance manager.

Course type

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

Prerequisites

The student should have Basic knowledge of electronics, basic knowledge of drives. Experience in using PCs in the Windows environment

Topics

- MV Drive LCI AC800PEC overview
- MV Drive LCI AC800PEC theory
- MV Drive LCI AC800PEC hardware construction
- DCS800 field excitation
- MV Drive LCI AC800PEC operation
- MV Drive LCI AC800PEC control terminal
- MV Drive LCI AC800PEC maintenance
- MV Drive LCI AC800PEC thyristor changing
- MV Drive LCI AC800PEC trouble shooting and case study in metals area
- Technology process in metals area

Course Duration

The duration is 5 days

Course Outline

Day 1	Day 2	Day 3	Day 4	Day 5
Welcome and course overview	LCI AC800 PEC Hardware	LCI AC800 PEC operation	LCI AC800 PEC maintenance	LCI AC800 PEC trouble shooting and case study in metals area
LCI AC800 PEC overview	DCS800 field excitation	LCI AC800 PEC control terminal	LCI AC800 PEC thyristor changing	Technology process in metals area
LCI AC800 PEC theory	Circuit diagram	Exercises and QA	LCI AC800 PEC demo operating	Exercises and QA
Exercises and QA	Exercises and QA		Exercises and QA	Course closing



CN475

MV Drive ACS6000 Application in Metals and Case Study

Course goal

The goal of this course is to teach students to start-up, adjust, operate, maintain and troubleshoot MV Drive ACS6000.

Learning objectives

Upon completion of this course the participants will be able to:

- Understand Medium Voltage Drive system
- Know ACS6000 Phase Module in ARU/INU
- Know ACS6000 3- Level DTC theory
- Operate and Protection ACS6000
- Study ACS6000 software program
- The drives' parameters adjustment with technology process in metals
- Troubleshooting ACS6000 and Case study

Topics

- Reading and interpreting circuit diagrams
- ACS6000 INU/ARU hardware with control boards
- ACS6000 Common Bus Bar
- ACS6000 WCU and Startup
- ACS6000 Exciter Control Unit
- Control panel operation
- DriveWindow program Tool
- Overview of process and manufacture characteristics in metals
- ACS6000 Preventive Maintenance
- ACS6000 Troubleshooting and case study

Participant profile

System drive engineer, system maintenance engineer, maintenance supervisor, maintenance manager.

Prerequisites

The student should have Basic knowledge of electronics , basic knowledge of drives, and metals process. Experience in using PCs in the Windows environment

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

Course Duration

The duration is 5 days



Course Outline

Day 1	Day 2	Day 3	Day 4	Day 5
Welcome	ACS6000 CBU	ACS6000 WCU	Drive window	Fault diagnostics
Course overview	Circuit diagram	Control panel	Preventive Maintenance	Case study
MV drive introduce	ACS6000 System	WCU start-up	Circuit diagram	Q&A
ACS6000 ARU/INU	Application	Exercises	exercise	Final exam
Exercises	Exercises	Q & A		

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