List of Figures

Figure 1-1 Star topology used in the architecture of Process Control 4
Figure 1-2 The hierarchical architecture 5
Figure 1-3 The distributed architecture in Process Control Systems 5
Figure 1-4 The fully distributed architecture, based on a Fieldbus, found in modern industrial automation systems 6
Figure 1-5 The Computer Integrated Manufacturing (CIM) architecture 7
Figure 1-6 The OSI 7-layers reference model (a), and the reduced Fieldbus 3-layer structure (b) 9
Figure 1-7 Fieldbus topologies: a) mesh b) star c) tree d) bus e) ring 11
Figure 2-1 AS-i in the automation pyramid 13
Figure 2-2 The AS- i certification symbol (shadow logo) 14
Figure 2-3 Conventional Cabling Scheme 15
Figure 2-4 AS-i Cabling Scheme 16
Figure 2-5 New A/B Technology in V 2.1 17
Figure 2-6 AS-i Topology up to 100 m 18
Figure 2-7 AS-i network Extension up to 300 m 18
Figure 2-8 AS-i network Extension up to 600 m 19
Figure 3-1 AS-i PLC Master 21
Figure 3-2 AS-i Gateway Master 22
Figure 3-3 AS-i Power Supply 23
Figure 3-4 AS-i Cables 23
Figure 3-5 AS-i Smart Line Modules 24
Figure 3-6 Field Application Module SIEMENS Type 25
Figure 3-7 How to install an AS-i module 25
Figure 3-8 Different Types of AS-i Sensors 26
Figure 3-9 Connection of the AS-i actuator to an AS-i network 26
Figure 3-10 AS-i Addressing Unit 27
Figure 3-11 FC Insulation Displacement Connector 28
Figure 3-12 Different Types of Flat Cable Sealing 28
Figure 3-13 Repeater in AS-i network 28
Figure 3-14 Extender in an AS-i network 29
Figure 4-1 Interaction Between PLC, Master and Slaves 33
Figure 4-2 Master Operating Phases 34
Figure 4-3 Slaves Mapping into the PLC 36
Figure 4-4 Signal Coding in AS-i 37
Figure 4-5 Structure of an AS-Interface Master Message 38
Figure 4-6 Structure of an AS-Interface Slave Message 38
Figure 4-7 AS-i Bus Startup Phase 39
Figure 4-8 AS-i Bus Activation Phase 40
Figure 5-1 PLC UNIT 43
Figure 5-2 AS-i unit 44
Figure 5-3 AS-i Power Supply (AC 1236 IFM) 45
Figure 5-4 DP/AS−i Link Advanced 46
Figure 5-5 AS-i slave module (AC2264 IFM) 46

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Figure 5-6 Schematic Diagram of IFM AS-i slave module AC2264 47
Figure 5-7 PHOENIX Power Supply 48
Figure 5-8 AS-i Cable 49
Figure 5-9 Source of 220 VAC 50
Figure 5-10 Source of 24 VDC 50
Figure 5-11 AS-i power supply wiring 51
Figure 5-12 DP/AS−i Link wiring 51
Figure 5-13 AS−i Slave Module wiring 52
Figure 5-14 The Conveyor Unit 52
Figure 5-15 Starting SIMATIC Manager 53
Figure 5-16 Creating S7 project 54
Figure 5-17 Inserting S7 program 54
Figure 5-18 Inserting a Station 55
Figure 5-19 Hardware Configuration tool 56
Figure 5-20 CPU Selection in H.W Configuration Tool 57
Figure 5-21 Establish a PROFIBUS network 57
Figure 5-22 CPU as a DP master in the network 58
Figure 5-23 AS-i master in the PROFIBUS network 58
Figure 5-24 Assignment an address for the AS-i master in the PROFIBUS network 59
Figure 5-25 Assign the I/O area of the AS-i master 60
Figure 5-26 AS-i slave module selection 60
Figure 5-27 AS-i slave Properties Window 61
Figure 5-28 Final Hardware Configurations 62
Figure 5-29 Saving Final H.W Configuration 62
Figure 5-30 Downloading Final H.W Configuration to the PLC 63
Figure 5-31 Symbol Table in S7 Program 63
Figure 5-32 Code in LAD 64

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List of Tables

Table 2-1 AS-i (V3.0) Features 19
Table 4-1 Different AS-i Master Profiles 31
Table 4-2 I/O Configuration Code 31
Table 4-3 Allocated Profile of AS-i slaves 32
Table 5-1 Pin Assignment in AS-i slave module AC2264 47
Table 5-2 Accessories in AS-i unit 49
Table 5-3 I/O symbols used in the S7 program 64

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Abstract

For about 20 years now, the word "Fieldbus" has been very widely used. Its common meaning is a network for connecting field devices such as sensors, actuators, field controllers such as PLCs, regulators, drives, controllers, etc., and Human Machine Interfaces (HMI). One of the most important Fieldbus systems is the actuator-sensor interface (AS-i) which is the standard solution for simple, cost-effective networking of sensors and actuators in the field. AS-Interface has established a strong position throughout the automation technology industry.

The actuator-sensor interface (AS-i) replaces conventional wiring technology on the sensor actuator level. AS-i has firmly established itself as a worldwide standard for the cost-effective transfer of power and signals along a single cable. It is an open system and is compatible with all common Fieldbus systems.

The AS-i has many advantages as it minimizes installation costs with high noise immunity during data transfer. AS-i is flexible as signals and power are transferred along a reverse polarity protected yellow flat cable.

The AS-i gateway controls the AS-i system and transmits process data to all types of higher-level control in a standardized I/O map. The AS-i adopts the role of a conventional I/O card in the controller, which allows a simple changeover.

In this study, we will explain the AS-i Fieldbus, its advantages, network structure, system components and message frame structure. A practical setup illustrates how to implement the AS-i Fieldbus as a solution in the field applications.

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