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**INDUSTRIAL COMMUNICATIONS
SUBSYSTEM BASED ON ISO 11898 (CAN)
FOR CONTROLLER-DEVICE INTERFACES
PART 3: SMART DISTRIBUTED SYSTEM
(SDS)**

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**Industrial communications subsystem based on ISO 11898 (CAN)
for controller-device interfaces
Part 3: Smart Distributed System (SDS)**

This European Standard was approved by CENELEC on 2000-04-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 65CX, Fieldbus.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50325-3 on 2000-04-01.

The following dates were fixed:

- latest date by which the EN has to be implemented
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with the EN have to be withdrawn (dow) 2003-04-01

EN 50325 is divided into three parts:

- Part 1 General requirements
- Part 2 DeviceNet
- Part 3 Smart Distributed System (SDS)

The specifications for DeviceNet and SDS are based on ISO 11898 *Controller area network (CAN) for high-speed communication*, a broadcast-oriented communications protocol. However, ISO 11898 specifies only part of a complete communication system, and additional specifications are needed for other layers to ensure precise data exchange functionality and support of inter-operating devices. The DeviceNet and SDS specifications build on ISO 11898 to describe a complete industrial communication system.

Contents

	Introduction	5
	General information on licensing	6
1	Scope.....	7
2	Normative references	7
3	Definitions, abbreviations and symbols	8
	3.1 Definitions	8
	3.1.1 Application Layer	8
	3.1.2 Application Layer Protocol (ALP)	8
	3.1.3 Application Layer Protocol Data Unit (APDU)	8
	3.1.4 Application Layer Service	8
	3.1.5 Autobaud.....	8
	3.1.6 Change Of State (COS)	8
	3.1.7 Change Of Value (COV)	8
	3.1.8 Confirm	8
	3.1.9 Data Link Layer Protocol Data Unit (DLPDU)	8
	3.1.10 Embedded Object	8
	3.1.11 Embedded Object Identifier	9
	3.1.12 Indication.....	9
	3.1.13 Logical Device.....	9
	3.1.14 Network	9
	3.1.15 Object Model.....	9
	3.1.16 Physical Component.....	9
	3.1.17 Physical Layer Interface PLI	9
	3.1.18 Primitive	9
3.2	Abbreviations	9
	3.3 Symbols	10
	3.3.1 (+).....	10
	3.3.2 (-)	10
	3.3.3 (=).....	10
4	Relationship with the OSI Reference Model	10
5	Characteristics	10
	5.1 SDS Network	10
	5.1.1 Network.....	10
	5.1.2 Modelling.....	11
	5.1.3 Hierarchy.....	12
	5.2 SDS Application Layer Services	13
	5.2.1 Service conventions.....	13
	5.2.2 Read service	16
	5.2.3 Write service	16
	5.2.4 Event service	17
	5.2.5 Action service.....	18
	5.2.6 Change Of State ON (COS ON) service	18
	5.2.7 Change Of State OFF (COS OFF) service.....	19
	5.2.8 Write State ON (WRITE ON) service.....	19
	5.2.9 Write State OFF (WRITE OFF) service	19
	5.3 SDS Application Layer Protocol	20
	5.3.1 Application Protocol Data Unit (APDU)	20
	5.3.2 APDU Forms	21
	5.3.3 Error Codes.....	28
	5.3.4 Data types	29
	5.4 SDS APDUs embedded in CAN frames	33
	5.5 Example Short Form APDUs	36
	5.6 Example Long Form APDUs.....	37
6	Product information	37
	6.1 Instructions for installation, operation and maintenance.....	37
	6.2 Marking	37

7	Normal service, transport and mounting conditions	37
7.1	Normal service conditions.....	37
7.1.1	General	37
7.1.2	Ambient air temperature	38
7.1.3	Altitude	38
7.1.4	Humidity	38
7.1.5	Pollution degree	38
7.1.6	Sealed connectors	38
7.2	Conditions during transport and storage.....	38
7.3	Mounting	38
8	Constructional and performance requirements	38
8.1	SDS Physical Layer Interface (PLI).....	38
8.1.1	SDS power PLI.....	38
8.1.2	Transceivers	39
8.1.3	Transceiver specifications.....	39
8.1.4	Indicating means.....	41
8.2	SDS Network	41
8.2.1	Topology	41
8.2.2	SDS power distribution.....	42
8.2.3	Auxiliary power ground connection	43
8.3	Electromagnetic Compatibility (EMC)	43
8.3.1	General requirements for electromagnetic compatibility tests	43
8.3.2	General test conditions for electromagnetic compatibility tests	43
8.3.3	Immunity requirements	44
8.3.4	Emission requirements	46
9	SDS Communication channel type tests.....	46
9.1	General	46
9.2	Product Model.....	46
9.3	Object Model test.....	47
9.3.1	General	47
9.3.2	Attributes.....	47
9.3.3	Actions	48
9.3.4	Events	48
9.3.5	Short form services COS ON and COS OFF	48
9.3.6	Short form services WRITE ON and WRITE OFF	49
9.4	Physical Layer Test.....	49
9.4.1	Transceiver functional test	49
9.4.2	Transceiver Input Resistance	49
9.4.3	Transceiver input levels	49
9.4.4	Transceiver output levels	50
9.4.5	SDS power	51
9.5	Application Layer Test.....	53
9.5.1	ALP Services	53
9.5.2	Logical Device functions	57
9.5.3	Network functions	58
9.6	System test	59
9.6.1	System test set-up	59
9.6.2	Non-participative system testing	59
9.6.3	Participative system testing	59
9.6.4	Other basic system testing.....	60
9.7	Electromagnetic Compatibility Test.....	60
9.7.1	General	60
9.7.2	Fast transient/burst immunity.....	60

Introduction

The Smart Distributed System (SDS) is intended for use in, but is not limited to, industrial automation applications. These applications may include devices such as limit switches, proximity sensors, electro-pneumatic valves, relays, motor starters, operator interface panels, analogue inputs, analogue outputs, and controllers.

SDS provides for the connection of intelligent devices such as sensors, actuators and other components to one or more controllers. SDS functionality may be integrated directly into the devices or be in modules allowing the connection of conventional components to the network.

The SDS network consists of one or more controllers connected to up to 126 Logical Devices. In addition to the process data, SDS allows for the transmission of parameters and diagnostic data. The data exchange may be either event driven, cyclical, multicast or polled. A maximum of 6 bytes of data may be transmitted without fragmentation.

Topology is typically a single trunk with short branches using a cable comprising two shielded, twisted pairs with a common earth wire all within a single jacket.

Data is transmitted at rates of 125 kbit/s, 250 kbit/s, 500 kbit/s and 1Mbit/s with maximum system trunk lengths of 457 m, 182 m, 91 m and 22 m respectively.

Detailed information on the performance is contained in clause 5.

Figure 1 shows an example of an SDS Network.

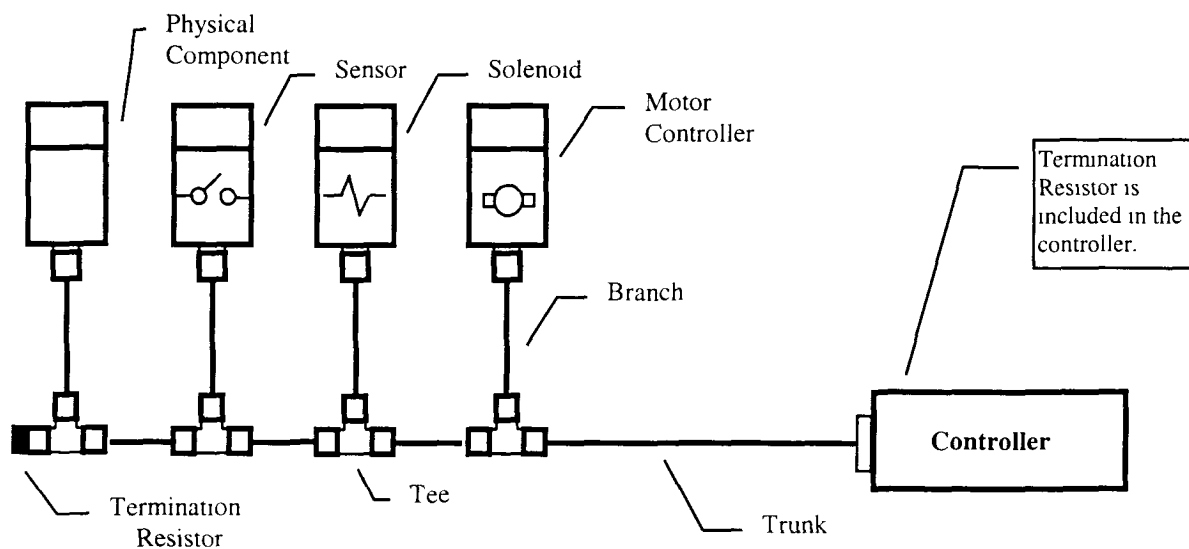


Figure 1 - Example of an SDS Network

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