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IEC 62026-3

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INTERNATIONAL STANDARD

**Low-voltage switchgear and controlgear – Controller-device interfaces (CDIs) –
Part 3: DeviceNet**

INTERNATIONAL
ELECTROTECHNICAL
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CONTENTS

FOREWORD.....	7
INTRODUCTION.....	9
1 Scope.....	10
2 Normative references	10
3 Terms, definitions, symbols and abbreviated terms.....	11
4 Classification.....	16
4.1 General.....	16
4.2 DeviceNet communication model.....	18
4.3 DeviceNet, CAN and CIP.....	18
5 Characteristics	19
5.1 DeviceNet connections.....	19
5.2 DeviceNet messaging protocol	20
5.3 DeviceNet communication object classes	50
5.4 Link access state machine.....	52
5.5 Predefined master/slave connection set	55
5.6 DeviceNet Safety™	73
5.7 Physical layer.....	73
6 Product information	79
7 Normal service, mounting and transport conditions.....	79
7.1 Normal service conditions	79
7.2 Conditions during transport and storage	80
7.3 Mounting	80
8 Constructional and performance requirements.....	80
8.1 Indicators and configuration switches	80
8.2 DeviceNet cable	81
8.3 Terminating resistors.....	92
8.4 Connectors.....	92
8.5 Device taps and power taps	101
8.6 Link powered devices	103
8.7 Miswiring protection	103
8.8 Power supplies.....	103
8.9 Electromagnetic compatibility (EMC)	104
8.10 Additional functional safety requirements related to EMC	106
9 Tests.....	106
9.1 General.....	106
9.2 Electrical and EMC testing	106
9.3 Logical testing.....	114
Bibliography.....	118

Figure 1 – Typical DeviceNet controller-device interfaces	17
Figure 2 – DeviceNet protocol architecture compared with the OSI reference model	18
Figure 3 – DeviceNet’s use of the CAN identifier field	19
Figure 4 – Explicit message CAN data field use	21
Figure 5 – Explicit message data field format	21
Figure 6 – Explicit message header format	21
Figure 7 – Service field format	22
Figure 8 – Open explicit messaging connection request format	23
Figure 9 – Open explicit messaging connection response format	26
Figure 10 – Close connection request format	27
Figure 11 – Close connection response format	28
Figure 12 – Non-fragmented explicit request message format, values 0 – 3	29
Figure 13 – Non-fragmented explicit request message format, value 4	30
Figure 14 – Non-fragmented success response message format	30
Figure 15 – Error response message	31
Figure 16 – Data field of an I/O message	31
Figure 17 – Format of DeviceNet fragmentation protocol	32
Figure 18 – I/O message fragment format	33
Figure 19 – Explicit message fragment format	33
Figure 20 – Acknowledgement message format	35
Figure 21 – Establishing the offline ownership	37
Figure 22 – Multicast nature of the offline ownership	38
Figure 23 – Offline ownership request message	39
Figure 24 – Offline ownership response message protocol	39
Figure 25 – Communication faulted request message – Multicast protocol	40
Figure 26 – Communication faulted request message – Point-to-point protocol	41
Figure 27 – Identify communication faulted request message – Multicast protocol	42
Figure 28 – Communication faulted identify response message	43
Figure 29 – Identify communication faulted request message – Point-to-point protocol	43
Figure 30 – Who communication faulted request message	44
Figure 31 – Who response message	45
Figure 32 – Change MAC ID communication faulted request message	45
Figure 33 – Device heartbeat message	46
Figure 34 – Device shutdown message	48
Figure 35 – Duplicate MAC ID check CAN identifier field	49
Figure 36 – Duplicate MAC ID check message data field format	49
Figure 37 – Link access state transition diagram	53
Figure 38 – Allocation choice byte contents	58
Figure 39 – Allocate_master/slave_connection_set request message	58
Figure 40 – Success response to allocate_master/slave_connection_set request	59
Figure 41 – Parent explicit messaging connection logic	61

Figure 42 – Release choice byte contents.....	62
Figure 43 – Release_master/slave_connection set request message.....	62
Figure 44 – Success response to release_master/slave_connection_set request.....	63
Figure 45 – Predefined master/slave I/O connection state transition diagram.....	65
Figure 46 – Predefined master/slave explicit messaging connection state transition diagram.....	67
Figure 47 – Physical layer block diagram.....	74
Figure 48 – Device containing a non-isolated physical layer.....	76
Figure 49 – Device containing an isolated physical layer.....	77
Figure 50 – DeviceNet medium topology.....	78
Figure 51 – Thick cable: physical configuration.....	85
Figure 52 – Thick cable: current available on the DeviceNet power bus.....	85
Figure 53 – Thin cable: physical configuration.....	88
Figure 54 – Thin cable: current available on the DeviceNet power bus.....	88
Figure 55 – Flat cable: physical configuration.....	91
Figure 56 – Flat cable: current available on the DeviceNet power bus.....	91
Figure 57 – Open connector pinout.....	95
Figure 58 – Open connector geometry.....	95
Figure 59 – Mini connector pinout.....	97
Figure 60 – Micro connector pinout.....	98
Figure 61 – Flat trunk connector layout – Pin out.....	100
Figure 62 – Flat trunk connector layout – Geometry.....	101
Figure 63 – Power supply rise time test circuit.....	106
Figure 64 – Current consumption test circuit.....	107
Figure 65 – Power ON test circuit.....	108
Figure 66 – Test circuit for reversal of V+ and V-, and also V- interruption.....	108
Figure 67 – Differential impedance test circuit.....	109
Figure 68 – Transmit level test setup.....	110
Figure 69 – Transmit levels.....	110
Figure 70 – Timing test setup.....	111
Figure 71 – Timing.....	111
Figure 72 – CDI test configuration.....	112
Figure 73 – Test circuit for logical tests.....	114

Table 1 – Message body format values	24
Table 2 – Group select values	25
Table 3 – Source message ID in open explicit messaging connection request.....	25
Table 4 – Destination message ID in open explicit messaging connection response	26
Table 5 – UCMM error conditions/codes	28
Table 6 – Fragment type bit values	32
Table 7 – Ack status bit values	35
Table 8 – Offline connection set.....	37
Table 9 – Addresses reporting based upon mask.....	41
Table 10 – Device shutdown message shutdown code ranges	48
Table 11 – Device shutdown message “Open” shutdown codes	49
Table 12 – Link access state event matrix.....	53
Table 13 – Predefined master/slave connection set identifier fields.....	56
Table 14 – Allocate_master/slave_connection_set request service data field parameters	57
Table 15 – Allocate_master/slave_connection set response parameters	59
Table 16 – Release_master/slave_connection_set request service data field parameters	62
Table 17 – DeviceNet object specific additional error codes.....	64
Table 18 – Connection instance IDs for predefined master/slave connections.....	65
Table 19 – Predefined master/slave I/O connection state event matrix.....	66
Table 20 – Predefined master/slave explicit messaging connection state event matrix	68
Table 21 – Predefined master/slave I/O connection object attribute access	69
Table 22 – General physical layer characteristics	73
Table 23 – Transmitter characteristics	75
Table 24 – Receiver characteristics	75
Table 25 – Load limits.....	79
Table 26 – Cable profile: data pair specifications	81
Table 27 – Cable profile: DC power pair specifications	81
Table 28 – Cable profile: general specifications	82
Table 29 – Cable profile: topology	82
Table 30 – Thick cable: data pair specifications	83
Table 31 – Thick cable: DC power pair specifications	83
Table 32 – Thick cable: general specifications	84
Table 33 – Thick cable: topology.....	84
Table 34 – Thick cable: maximum current available (A) based on network length.....	85
Table 35 – Thin cable: data pair specifications.....	86
Table 36 – Thin cable: DC power pair specifications	87
Table 37 – Thin cable: general specifications.....	87
Table 38 – Thin cable: topology	87
Table 39 – Thin cable: maximum current available (A) based on network length	88
Table 40 – Flat cable: data pair specifications	89

Table 41 – Flat cable: DC power pair specifications	90
Table 42 – Flat cable: general specifications	90
Table 43 – Flat cable: topology	90
Table 44 – Flat cable: maximum current available (A) based on network length	91
Table 45 – Connector profile template	93
Table 46 – Open connector	94
Table 47 – Sealed mini connector	96
Table 48 – Sealed micro connector	97
Table 49 – Flat trunk connector	99
Table 50 – Internal pass-through conductor specifications	102
Table 51 – Internal drop conductor specifications	102
Table 52 – Internal pass-through conductor specifications	102
Table 53 – Internal power drop conductor specifications	103
Table 54 – Voltage regulator specifications	103
Table 55 – DeviceNet power supply specifications	104
Table 56 – Immunity performance criteria	105

INTERNATIONAL ELECTROTECHNICAL COMMISSION

LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR – CONTROLLER-DEVICE INTERFACES (CDIs) –

Part 3: DeviceNet

FOREWORD

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International Standard IEC 62026-3 has been prepared by subcommittee 17B: Low-voltage switchgear and controlgear, of IEC technical committee 17: Switchgear and controlgear.

This second edition of IEC 62026-3 cancels and replaces the first edition published in 2000. This second edition constitutes a technical revision.

The main changes with respect to the previous edition are listed below:

- addition of new services to the base messaging protocol in 5.2;
- replacement of detailed application layer requirements in former annexes by references in 5.3 to corresponding specifications in the new edition of IEC 61158 (2007);
- addition of requirements for a corresponding safety protocol in 5.6 (by reference to IEC 61784-3);
- modified presentation of cable and connector specifications in 8.2 and 8.4, and addition of a new type;
- addition of references for safety tests for both EMC and logical tests in 8.10 and 9.3)

The text of this standard is based on the first edition and the following documents:

FDIS	Report on voting
17B/1580/FDIS	17B/1585/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 62026, under the general title *Low-voltage switchgear and controlgear – Controller-device interfaces (CDIs)*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

INTRODUCTION

DeviceNet™¹⁾ 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.

1) DeviceNet™ is a trade name of Open DeviceNet Vendor Association, Inc. This information is given for the convenience of users of this International Standard and does not constitute an endorsement by IEC of the trademark holder or any of its products. Compliance to this standard does not require use of the trade name DeviceNet™. Use of the trade name DeviceNet™ requires permission of Open DeviceNet Vendor Association, Inc.

LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR – CONTROLLER-DEVICE INTERFACES (CDIs) –

Part 3: DeviceNet

1 Scope

This part of IEC 62026 specifies an interface system between single or multiple controllers, and control circuit devices or switching elements. The interface system uses two twisted shielded conductor pairs within one cable – one of these pairs provides a differential communication medium and the other pair provides power to the devices. This part establishes requirements for the interchangeability of components with such interfaces.

This part of IEC 62026 specifies the following particular requirements for DeviceNet:

- requirements for interfaces between controllers and switching elements;
- normal service conditions for devices;
- constructional and performance requirements;

tests to verify conformance to requirements.

These particular requirements apply in addition to the general requirements of IEC 62026-1.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*
Amendment 1 (1999)

IEC 60947-5-2:1997, *Low-voltage switchgear and controlgear – Part 5-2: Control circuit devices and switching elements – Proximity switches*
Amendment 1 (1999)
Amendment 2 (2003)

IEC 61000-4-2:1995, *Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test*
Amendment 1 (1998)
Amendment 2 (2000)

IEC 61000-4-3:2006, *Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test*

IEC 61000-4-4:2004, *Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test*

IEC 61000-4-5:2005, *Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test*

IEC 61000-4-6:2003, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*

Amendment 1 (2004)

Amendment 2 (2006)

IEC 61158 (all parts), *Digital data communications for measurement and control – Fieldbus for use in industrial control systems*

IEC 61158-4-2, *Industrial communication networks – Fieldbus specifications – Part 4-2: Data-link layer protocol specification – Type 2 elements*

IEC 61158-5-2, *Industrial communication networks – Fieldbus specifications – Part 5-2: Application layer service definition – Type 2 elements*

IEC 61158-6-2, *Industrial communication networks – Fieldbus specifications – Part 6-2: Application layer protocol specification – Type 2 elements*

IEC 61508 (all parts), *Functional safety of electrical/electronic/programmable electronic safety-related systems*

IEC 61784-3-2, *Industrial communication networks – Profiles – Part 3-2: Functional safety fieldbuses – Additional specifications for CPF 2*

IEC 62026-1:2007, *Low-voltage switchgear and controlgear – Controller-device interfaces (CDIs) – Part 1: General rules*

ISO/IEC 7498-1:1994, *Information technology – Open Systems Interconnection – Basic Reference Model: The Basic Model*

ISO 11898-1:2003, *Road vehicles – Controller area network (CAN) – Part 1: Data link layer and physical signalling*

ISO 11898-2:2003, *Road vehicles – Controller area network (CAN) – Part 2: High-speed medium access unit*

CISPR 11:2003, *Industrial, scientific and medical (ISM) radio-frequency equipment – Electromagnetic disturbance characteristics – Limits and methods of measurement*

Amendment 1 (2004)

Amendment 2 (2006)