

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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**Industrial networks – Profiles –  
Part 1-19: Fieldbus profiles – Communication Profile Family 19**

**Réseaux industriels – Profils –  
Partie 1-19: Profils de bus de terrain – Famille de profils de communication 19**





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COMMISSION

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## CONTENTS

FOREWORD.....	5
INTRODUCTION.....	7
1 Scope.....	8
2 Normative references .....	8
3 Terms, definitions, abbreviated terms, symbols, and conventions .....	9
3.1 Terms and definitions.....	9
3.2 Abbreviations and symbols .....	9
3.2.1 Common abbreviations and symbols.....	9
3.2.2 Other abbreviations and symbols.....	9
3.3 Conventions.....	9
4 CPF 19 (MECHATROLINK).....	9
4.1 General overview.....	9
4.2 CP 19/1 (MECHATROLINK-II).....	10
4.2.1 Physical layer selection .....	10
4.2.2 Data-link layer .....	12
4.2.3 Application layer.....	23
4.3 CP 19/2 (M-III).....	29
4.3.1 Physical layer .....	29
4.3.2 Data-link layer .....	30
4.3.3 Application layer.....	40
4.4 CP 19/3 (Σ-LINK II).....	44
4.4.1 Physical layer selection .....	44
4.4.2 Data-link layer .....	46
4.4.3 Application layer.....	57
Bibliography.....	63
Table 1 – CPF 19: overview of profile sets (CP19/1 and CP19/2).....	10
Table 2 – CPF 19: Overview of profile sets (CP19/3 and CP19/4) .....	10
Table 3 – CP 19/1 profile: PhL selection .....	11
Table 4 – CP 19/1: DLL service selection.....	12
Table 5 – DLL service selection for C1 master of CP 19/1.....	14
Table 6 – DLL service selection for C2 master of CP 19/1.....	15
Table 7 – DLL service selection for slave of CP 19/1 .....	16
Table 8 – CP 19/1: DLL protocol selection .....	16
Table 9 – DLL protocol selection for C1 master of CP 19/1 .....	19
Table 10 – DLL protocol selection for C2 master of CP 19/1 .....	20
Table 11 – DLL protocol selection for slave of CP 19/1 .....	21
Table 12 – CP 19/1: AL service selection.....	23
Table 13 – Class selection for C1 master of CP 19/1 .....	24
Table 14 – Master class attribute selection for C1 master of CP 19/1.....	24
Table 15 – Master class service selection .....	24
Table 16 – FDCMaster-AR class attribute selection for C1 master of CP 19/1 .....	24
Table 17 – FDCMaster-AR class service selection .....	25
Table 18 – Class selection for C2 master of CP 19/1 .....	25

Table 19 – Monitor class attribute selection for C2 master of CP 19/1 .....	25
Table 20 – Monitor class service selection .....	26
Table 21 – FDCMonitor-AR class attribute selection for C2 master of CP 19/1 .....	26
Table 22 – FDCMonitor-AR class service selection .....	26
Table 23 – Class selection for slave AP of CP 19/1 .....	27
Table 24 – Slave class attribute selection for slave AP of CP 19/1 .....	27
Table 25 – Slave class service selection .....	27
Table 26 – FDCSlave-AR class attribute selection for slave AP of CP 19/1 .....	28
Table 27 – FDCSlave-AR class service selection .....	28
Table 28 – CP 19/1: AL protocol selection .....	29
Table 29 – CP 19/2: DLL service selection .....	30
Table 30 – DLL service selection for C1 master of CP 19/2 .....	31
Table 31 – DLL service selection for C2 master of CP 19/2 .....	32
Table 32 – DLL service selection for slave of CP 19/2 .....	33
Table 33 – CP 19/2: DLL protocol selection .....	33
Table 34 – DLL protocol selection for C1 master of CP 19/2 .....	35
Table 35 – DLL protocol selection for C2 master of CP 19/2 .....	37
Table 36 – DLL protocol selection for slave of CP 19/2 .....	38
Table 37 – CP 19/2: AL service selection .....	40
Table 38 – Class selection for C1 master of CP 19/2 .....	41
Table 39 – EventManager class attribute selection for C1 master of CP 19/2 .....	41
Table 40 – EventManager class service selection .....	41
Table 41 – Class selection for C2 master of CP 19/2 .....	42
Table 42 – EventManager class attribute selection for C2 master of CP 19/2 .....	42
Table 43 – EventManager class service selection .....	42
Table 44 – Class selection for slave AP of CP 19/2 .....	43
Table 45 – EventManager class attribute selection for slave AP of CP 19/2 .....	43
Table 46 – EventManager class service selection .....	43
Table 47 – CP 19/2: AL protocol selection .....	44
Table 48 – CP 19/3 profile: PhL selection .....	44
Table 49 – CP 19/3: DLL service selection .....	46
Table 50 – DLL service selection for C1 master of CP 19/3 .....	48
Table 51 – DLL service selection for C2 master of CP 19/3 .....	49
Table 52 – DLL service selection for slave of CP 19/3 .....	50
Table 53 – CP 19/3: DLL protocol selection .....	50
Table 54 – DLL protocol selection for C1 master of CP 19/3 .....	52
Table 55 – DLL protocol selection for C2 master of CP 19/3 .....	54
Table 56 – DLL protocol selection for slave of CP 19/3 .....	55
Table 57 – CP 19/3: AL service selection .....	57
Table 58 – Class selection for C1 master of CP 19/3 .....	58
Table 59 – Master class attribute selection for C1 master of CP 19/3 .....	58
Table 60 – Master class service selection .....	58
Table 61 – FDCMaster-AR class attribute selection for C1 master of CP 19/3 .....	59

Table 62 – FDCMaster-AR class service selection ..... 59

Table 63 – Class selection for C2 master of CP 19/3 ..... 59

Table 64 – Monitor class attribute selection for C2 master of CP 19/3 ..... 59

Table 65 – Monitor class service selection ..... 60

Table 66 – FDCMonitor-AR class attribute selection for C2 master of CP 19/3 ..... 60

Table 67 – FDCMonitor-AR class service selection ..... 60

Table 68 – Class selection for slave AP of CP 19/3 ..... 60

Table 69 – Slave class attribute selection for slave AP of CP 19/3 ..... 61

Table 70 – Slave class service selection ..... 61

Table 71 – FDCSlave-AR class attribute selection for slave AP of CP 19/3 ..... 61

Table 72 – FDCSlave-AR class service selection ..... 61

Table 73 – CP 19/3: AL protocol selection ..... 62

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PROFILES –****Part 1-19: Fieldbus profiles –  
Communication Profile Family 19****FOREWORD**

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NOTE Combinations of protocol types are specified in the IEC 61784-1 series and the IEC 61784-2 series.

IEC 61784-1-19 has been prepared by subcommittee 65C: Industrial networks, of IEC technical committee 65: Industrial-process measurement, control and automation. It is an International Standard.

This first edition, together with the other parts of the same series, cancels and replaces the fifth edition of IEC 61784-1 published in 2019. This first edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC 61784-1:2019:

- split of the original IEC 61784-1 into several subparts, one subpart for the material of a generic nature, and one subpart for each Communication Profile Family specified in the original document;
- addition of profile CP 19/3;
- update of selection tables for CPF 19.

The text of this International Standard is based on the following documents:

Draft	Report on voting
65C/1207/FDIS	65C/1236/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

A list of all parts of the IEC 61784-1 series, published under the general title *Industrial networks – Profiles – Part 1: Fieldbus profiles*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

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

## INTRODUCTION

The IEC 61784-1 series provides a set of Communication Profiles (CP) in the sense of ISO/IEC TR 10000-1. These answer the need of identifying the protocol families co-existing within the IEC 61158 series, as a result of the international harmonization of fieldbus technologies available on the market. More specifically, these profiles help to correctly state the compliance with the IEC 61158 series, and to avoid the spreading of divergent implementations, which would limit its use, clearness and understanding. Additional profiles to address specific market concerns, such as functional safety or information security, can be addressed by future parts of the IEC 61784-1 series.

The IEC 61784-1 series contains several Communication Profile Families (CPF), which specify one or more communication profiles. Such profiles identify, in a strict sense, protocol subsets of the IEC 61158 series via protocol specific communication profiles. They do not define device profiles that specify communication profiles together with application functions needed to answer the need of a specific application ("application profiles").

It is agreed that these latter classes of profiles would facilitate the use of the IEC 61158 series of standards; the profiles defined in the IEC 61784-1 series are a necessary step to achieve that task.

It is also important to clarify that interoperability – defined as the ability of two or more network systems to exchange information and to make mutual use of the information that has been exchanged (see ISO/IEC TR 10000-1) – can be directly achieved on the same link only for those devices complying with the same communication profile.

Profiles contained in the IEC 61784-1 series are constructed of references to IEC 61158-2 and the IEC 61158-3, IEC 61158-4, IEC 61158-5 and IEC 61158-6 series, and other IS, TS or worldwide-accepted standards, as appropriate<sup>1</sup>. Each profile is required to reference at least one part of the IEC 61158 series in addition to IEC 61158-1.

Two or more Profiles, which are related to a common family, are specified within a "Communication Profile Family" (CPF).

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<sup>1</sup> International Standardised Profiles may contain normative references to specifications other than International Standards; see ISO/IEC JTC 1 N 4047: *The Normative Referencing of Specifications other than International Standards in JTC 1 International Standardized Profiles – Guidelines for ISP Submitters*.