

INTERNATIONAL STANDARD

IEC 60870-5-103

First edition
1997-12

Telecontrol equipment and systems –

Part 5-103: Transmission protocols – Companion standard for the informative interface of protection equipment

*This **English-language** version is derived from the original **bilingual** publication by leaving out all French-language pages. Missing page numbers correspond to the French-language pages.*



Reference number
IEC 60870-5-103:1997(E)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TELECONTROL EQUIPMENT AND SYSTEMS –

**Part 5-103: Transmission protocols –
Companion standard for the informative interface
of protection equipment**

FOREWORD

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International Standard IEC 60870-5-103 has been prepared by IEC technical committee 57: Power system control and associated communications.

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

FDIS	Report on voting
57/327/FDIS	57/333/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.

Annexes A and B are for information only.

TELECONTROL EQUIPMENT AND SYSTEMS –

Part 5-103: Transmission protocols – Companion standard for the informative interface of protection equipment

1 Scope and object

This section of IEC 60870-5 applies to protection equipment with coded bit serial data transmission for exchanging information with control systems. It defines a companion standard that enables interoperability between protection equipment and devices of a control system in a substation. The defined companion standard utilizes standards of the IEC 60870-5 series.

This section of IEC 60870-5 presents specifications for the informative interface of protection equipment. This standard does not necessarily apply to equipment that combines protection and control functions in the same device sharing a single communication port.

This section of IEC 60870-5 describes two methods of information exchange: the first is based on explicitly specified APPLICATION SERVICE DATA UNITS (ASDUs) and application procedures for transmission of 'standardized' messages, and the second uses generic services for transmission of nearly all possible information. The 'standardized' messages do not cover all possible protection functions, and furthermore a protection device may support only a subset of the messages specified in this standard. For interoperability purposes, in specific applications, this subset has to be specified in clause 8.

The use of predefined messages and application procedures is mandatory, if applicable. In other cases generic services shall be used. The 'private ranges' defined in this standard are maintained for compatibility reasons; however, their use is not recommended for future applications.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this section of IEC 60870-5. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this section of IEC 60870-5 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60050(371): 1984, *International Electrotechnical Vocabulary – Chapter 371: Telecontrol*

IEC 60794-1: 1996, *Optical fibre cables – Part 1: Generic specification*

IEC 60794-2: 1989, *Optical fibre cables – Part 2: Product specifications*

IEC 60870-5-1: 1990, *Telecontrol equipment and systems – Part 5: Transmission protocols – Section 1: Transmission frame formats*

IEC 60870-5-2: 1992, *Telecontrol equipment and systems – Part 5: Transmission protocols – Section 2: Link transmission procedures*

IEC 60870-5-3: 1992, *Telecontrol equipment and systems – Part 5: Transmission protocols – Section 3: General structure of application data*

IEC 60870-5-4: 1993, *Telecontrol equipment and systems – Part 5: Transmission protocols – Section 4: Definition and coding of application information elements*

IEC 60870-5-5: 1995, *Telecontrol equipment and systems – Part 5: Transmission protocols – Section 5: Basic application functions*

IEC 60874-2: 1993, *Connectors for optical fibres and cables – Part 2: Sectional specification for fibre optic connector – Type F-SMA*

IEC 60874-10: 1992, *Connectors for optical fibres and cables – Part 10: Sectional specification – Fibre optic connector type BFOC/2,5*

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

EIA RS-485: *Standard for electrical characteristics of generators and receivers for use in balanced digital multipoint systems*

R 32 – IEEE Standard 754

R 64 - IEEE Standard 754