

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Industrial systems, installations and equipment and industrial products –
Labelling of cables and cores**

**Systèmes industriels, installations et appareils et produits industriels –
Etiquetage des câbles et des conducteurs isolés**



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IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland
Email: inmail@iec.ch
Web: www.iec.ch

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

INDUSTRIAL SYSTEMS, INSTALLATIONS AND EQUIPMENT AND INDUSTRIAL PRODUCTS – LABELLING OF CABLES AND CORES

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International Standard IEC 62491 has been prepared by IEC technical committee 3: Information structures, documentation and graphical symbols.

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

CDV	Report on voting
3/849/CDV	3/881/RVC

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.

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- withdrawn,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.

INTRODUCTION

Additional labelling of cables and cores might be required within larger systems or installations with many cores of the same colour or with many cables, and where therefore the use of the designations provided by the cable manufacturer only would be ambiguous.

Due consideration should be given to the fact that additional labelling will cause additional cost, usually increasing with the number of characters in the labelling string and the number of different labelling elements. The available space may also impose restrictions with regard to the number of characters, their height and the length of the labelling. As a general rule the use of additional labelling should therefore be limited to a necessary minimum and be kept as short as practicable.

However, also the advantages and benefits should be taken into considerations in choosing additional labelling of cables and cores.

It is important to notice that a single machine or a system has different needs of information in the different phases of its lifecycles (assembling, production, service and maintenance).

Additional labelling of cables and cores gives the following advantages:

- the possibilities to communicate and identify signals and connections across different involved engineering disciplines and departments like:
 - process engineering,
 - software engineering,
 - electrical engineering,
 - mechanical/fluid engineering,
 - control engineering;
- minimizing the time used to locate an eventual error (and the reason for it) in the test phase;
- saving time when locating an eventual error (and the reason for it) in the service and maintenance phase;
- remove the doubt of which core should be connected to which terminal, when replacing components that are placed close to each other;
- if used in pre-planning, it gives a clear view for panel-builders, electricians/technicians; service/maintenance and system controllers which will minimize misunderstandings regarding connections.

Besides being used in connections between terminal blocks, labelling can also be used when single core cables connect components inside units as: cubicle, pulpit, case, etc.; such methods make possible:

- a rapid and secure cabling between the terminals of two objects;
- a rapid visual check of cabling, not necessarily looking up in the circuit diagrams;
- a correct and secure change of an object during the maintenance operations of plants.

INDUSTRIAL SYSTEMS, INSTALLATIONS AND EQUIPMENT AND INDUSTRIAL PRODUCTS – LABELLING OF CABLES AND CORES

1 Scope

This standard provides rules and guidelines for the labelling of cables and cores/conductors used in industrial installations, equipment and products, in order to maintain a clear relation between the technical documentation and the actual equipment and for other purposes. The following methods are described and designated:

- use of coloured cables and designated cores;
- additional identification labelling;
- additional connection labelling; and
- additional signal labelling.

The physical design of the labels, the material to be used for the labels as well as cable manufacturers' product bound marking of cables and cores are not part of this standard.

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 60445, *Basic and safety principles for man-machine interface, marking and identification – Identification of equipment terminals and conductor terminations*

IEC 60757, *Code for designation of colours*

IEC 61082-1:2006, *Preparation of documents used in electrotechnology – Part 1: Rules*

IEC 61175, *Industrial systems, installations and equipment and industrial products – Designation of signals*

IEC 81346-1, *Industrial systems, installations and equipment and industrial products – Structuring principles and reference designations – Part 1: Basic rules (to be published)*

IEC 61666, *Industrial systems, installations and equipment and industrial products – Identification of terminals within a system*

ISO/IEC 646, *Information technology – ISO 7-bit coded character set for information interchange*