

INTERNATIONAL STANDARD

NORME INTERNATIONALE

General purpose lead-acid batteries (valve-regulated types) –
Part 2: Dimensions, terminals and marking

(standards.iteh.ai)

Batteries d'accumulateurs au plomb-acide pour usage général (types à
soupapes) –
Partie 2: Dimensions, bornes et marquage

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**GENERAL PURPOSE LEAD-ACID BATTERIES
(VALVE-REGULATED TYPES) –****Part 2: Dimensions, terminals and marking**

FOREWORD

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International Standard IEC 61056-2 has been prepared by IEC technical committee 21: Secondary cells and batteries.

This third edition cancels and replaces the second edition of IEC 61056-2 published in 2002. It constitutes a technical revision.

The main changes consist in adding new battery designations and an update of the requirements like the one concerning the marking.

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

FDIS	Report on voting
21/766/FDIS	21/773/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 61056 series, published under the general title *General purpose lead-acid batteries (valve-regulated types)*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability 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- withdrawn,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.

iTeh STANDARD PREVIEW

The contents of the corrigendum of October 2012 have been included in this copy.

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GENERAL PURPOSE LEAD-ACID BATTERIES (VALVE-REGULATED TYPES) –

Part 2: Dimensions, terminals and marking

1 Scope

This part of IEC 61056 specifies the dimensions, terminals and marking for all general purpose lead-acid cells and batteries of the valve regulated type :

- for either cyclic or float charge application;
- in portable equipment, for instance, incorporated in tools, toys, or in static emergency, or uninterruptible power supply and general power supplies.

The cells of this kind of lead-acid battery may either have flat-plate electrodes in prismatic containers or have spirally wound pairs of electrodes in cylindrical containers. The sulphuric acid in these cells is immobilized between the electrodes either by absorption in a microporous structure or in a gelled form.

This standard defines the dimensions of the batteries in length, height and width, as well as the shapes of the terminals.

The lead-acid cells and batteries which are described in this standard should be tested according to the requirements of IEC 61056-1.

This part of IEC 61056 does not apply for example to lead-acid cells and batteries used for

- vehicle engine starting applications (IEC 60095 series),
- traction applications (IEC 60254 series) or
- stationary applications (IEC 60896 series).

Conformance to this standard requires that dimensions, terminals and marking correspond to these requirements.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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, conductor terminations and conductors*

IEC 61056-1:2012, *General purpose lead-acid batteries (valve-regulated types) – Part 1: General requirements, functional characteristics – Methods of test*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61056-1, as well as the following apply.

3.1

lead-type terminal

terminal in which one end comes from a battery and a connecting fitting to the equipment side is provided at another end through a lead wire such as a polyvinyl chloride insulated wire

3.2

screw contact

terminal having a construction such that a bolt or nut is embedded in a battery beforehand and a lead wire can be connected only with a nut or bolt

4 Dimensions

The standardized battery dimensions are listed in Tables 1 and 2, together with nominal voltage, configuration, and capacity.

5 Terminals

Terminal types and dimensions are depicted in Figures 3, 4, 5, 6 and 7.

6 Marking

6.1 Marking of polarity

The polarity shall be marked by the symbol of “+” on the positive pole and “–” on the negative pole. The case where the battery carries a marking of polarity of both terminals by the color of the lead wire connected to the battery shall be as specified in IEC 60445.

[IEC 61056-2:2012](https://standards.iteh.ai/catalog/standards/sist/3fa9a707-6115-45ad-ae0b-f23c498c25c/iec-61056-2-2012)

6.2 Marking items

<https://standards.iteh.ai/catalog/standards/sist/3fa9a707-6115-45ad-ae0b-f23c498c25c/iec-61056-2-2012>

The marking contains the minimum information which has to be supplied with the battery.

The following information shall be clearly and permanently marked on each battery:

- a) supplier's or manufacturer's name or trade mark;
- b) type designation or product name;

NOTE The standardized type designation is a mnemonic term to define the batteries covered under this standard.

- c) nominal voltage ($n \times 2,0$ V);
- d) rated capacity C_{20} ;
- e) polarity;
- f) date of manufacture, its abbreviation or code;
- g) safety symbols according to national or international standards;
- h) recycling symbol (see IEC 61429).

7 Classification of battery-shapes

The batteries shall be classified as shown in Tables 1 and 2 according to their shape.

The prismatic design batteries (P-type) are shown in Figure 1. The cylindrical batteries (C-type) are shown in Figure 2.

Table 1 – Prismatic design (P-type)

External container dimensions							
Type designation ^a	Nominal Voltage V	Length mm	Width mm	Height mm	Tolerance ± mm	Max. overall height mm	Capacity C ₂₀ Ah
2P100	2	53	51	94	2	103	10,0
4P10	4	35	42	51	2	60	1,0
4P30	4	91	35	60	2	69	3,0
6P10	6	51	42	51	2	60	1,0
6P12	6	97	25	51	3	60	1,2
6P30	6	134	34	60	2	69	3,0
6P32A	6	66	33	119	3	128	3,2
6P40	6	70	48	102	2	111	4,0
6P42	6	62	52	98	2	107	4,2
6P60	6	151	34	94	3	103	6,0
6P70	6	98	56	118	2	127	7,0
6P100	6	152	50	94	3	103	10,0
6P200	6	157	83	125	2	134	20,0
8P25	8	134	36	63	3	72	2,5
8P30	8	179	34	60	2	65	3,0
12P7	12	96	25	61,5	2	63,5	0,7
12P12	12	98	49	51	4	61	1,2
12P19	12	178	34	60	3	69	1,9
12P25	12	199	36	63	3	72	2,5
12P29	12	79	56	98	2	103	2,9
12P30	12	134	67	60	2	69	3,0
12P40	12	195	47	70	2	75	4,0
12P50	12	90	70	102	2	111	5,0
12P50A	12	152	50	94	3	103	5,0
12P60	12	151	65	94	2	103	6,0
12P100	12	152	98	94	3	103	10,0
12P150	12	181	77	167	3	176	15,0
12P240	12	175	167	125	3	134	24,0
12P240A	12	166	125	175	2	177	24,0
12P380	12	204	172	172	4	178	38,0
12P380A	12	194	162	172	5	179	38,0
12P500	12	234	169	190	3	193	50,0
12P600	12	275	170	190	5	193	60,0
12P650	12	350	166	174	2	176	65,0

NOTE 1 The column "Capacity" should be taken as an approximate capacity, for reference value only.

NOTE 2 The dimensions are based on Figure 1.

a The numerals and symbols used for the type designation denote the following meanings:

- the first numeral, for example "2", designates the nominal voltage;
- "P" is the symbol for "prismatic";
- the last number, for example "25" means 25 = Capacity × 10 (Ah).

Table 2 – Cylindrical shape (C-type)

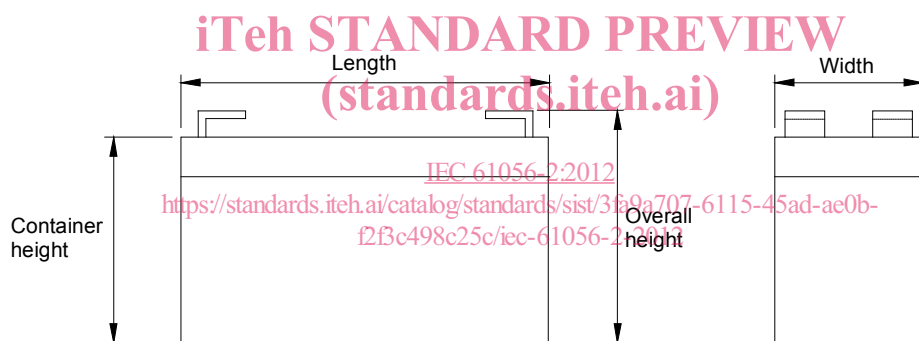
External dimensions						
Type designation ^a	Nominal voltage V	Height mm	Diameter mm	Tolerance ± mm	Max. overall height mm	Capacity C ₂₀ Ah
2C25	2	61	34	2	69	2,5
2C50	2	72	44	2	82	5,0
2C130	2	123	52	2	137	13,0
2C250	2	158	64	2	176	25,0

NOTE 1 The column “Capacity” should be taken as an approximate capacity, for reference value only.

NOTE 2 The dimensions are based on Figure 2.

^a The numerals and symbols used for the type designation denote the following meanings:

- the first numeral, for example “2”, designates the nominal voltage;
- “C” is the symbol for “cylindrical”;
- the last number, for example “25” means 25 = Capacity × 10 (Ah).



IEC 072/12

Figure 1 – P-type batteries

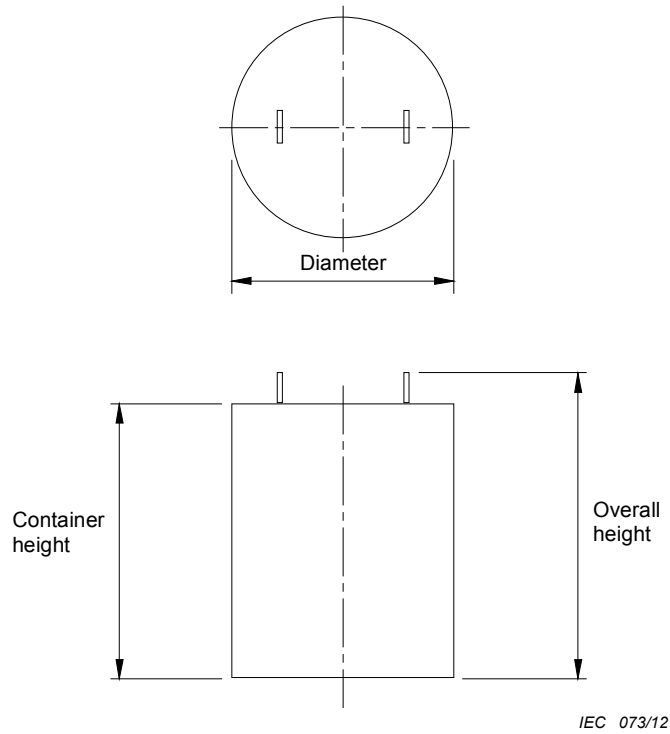


Figure 2 – C-type cells
 (standards.iteh.ai)

8 Classification of terminal types

IEC 61056-2:2012

Typical shapes of terminals are illustrated in Figures 3 to 7.

Unit:mm

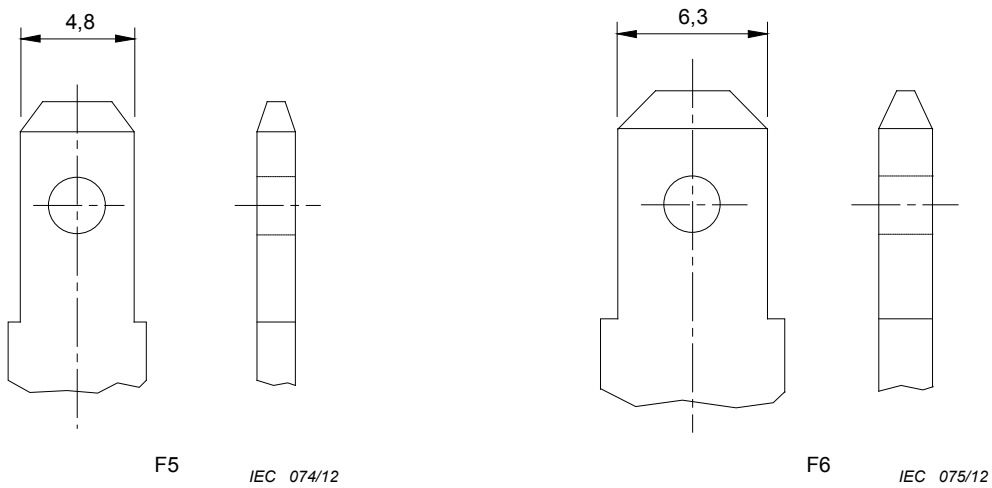


Figure 3 – F-contacts (flat contacts)