

# INTERNATIONAL STANDARD

**IEC**  
**62317-4**

First edition  
2005-09

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## Ferrite cores – Dimensions –

### Part 4: RM-cores and associated parts

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## FERRITE CORES – DIMENSIONS –

## Part 4: RM-cores and associated parts

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 62317-4 has been prepared IEC technical committee 51: Magnetic components and ferrite materials.

This international standard cancels and replaces the second edition of IEC 60431 published in 1983, its amendment 1 (1995), and its amendment 2 (1996). This international standard constitutes a technical revision of IEC 60431.

The main changes with respect to the previous edition of IEC 60431 are listed below:

- low-profile RM-cores at present defined in IEC 61860 are added to this standard.

IEC 61860 will eventually be replaced by IEC 62317-9 which is under consideration. IEC 62317-9 will not include the low-profile RM-cores.

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

FDIS	Report on voting
51/833/FDIS	51/839/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.

IEC 62317 consists of the following parts, under the general title *Ferrite cores – Dimensions*:

- Part 1: General (under consideration)
- Part 2: Pot cores (under consideration, currently available as IEC 60133)
- Part 3: Half pot cores (under consideration, currently available as IEC 62323)
- Part 4: RM-cores and associated parts
- Part 5: EP-cores (under consideration, currently available as IEC 61596)
- Part 6: ETD-cores (under consideration, currently available as IEC 61185)
- Part 7: EER-cores
- Part 8: E-cores
- Part 9: Planar cores
- Part 10: PM-cores (under consideration, currently available as IEC 61247)
- Part 11: EC-cores (under consideration, currently available as IEC 60647)
- Part 12: Uncoated ring cores (under consideration, currently available as IEC 61604)

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.

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

The contents of the corrigendum of July 2016 have been included in this copy.

## FERRITE CORES – DIMENSIONS –

### Part 4: RM-cores and associated parts

#### 1 Scope

This part of IEC 62317 specifies the dimensions that are of importance for mechanical interchangeability for a preferred range of RM-cores and low-profile RM-cores made of ferrite, and the locations of their terminal pins on a 2,54 mm printed wiring grid in relation to the base outlines of the cores. It also specifies the test conditions and clamping forces to be used for inductance measurement.

The general considerations that the design of this range of cores is based upon are given in Annex A.

#### 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 60097:1991, *Grid system for printed circuits*

IEC 60205:2001, *Calculation of the effective parameters of magnetic piece parts*

#### 3 Primary standards

Compliance with the following requirements ensures mechanical interchangeability of complete assemblies and wound coil formers.

##### 3.1 Pin locations and base outlines

These shall be as shown in Figure 6 and Figure 8 (for power applications), in which the base is viewed from the pin side, i.e. from the underside of the printed wiring boards.

The pins shall fit into holes according to IEC 60097, the nominal hole diameter being:

- 1 mm when the shortest distance between pins is 2,54 mm;
- 1,3 mm when the shortest distance between pins is  $2,54\sqrt{2}$  mm or more.

##### 3.2 Dimensions of RM-cores

The dimensions of RM-cores shall be as given in Table 1 and the low-profile RM-cores shall be as given in Table 2.

### 3.3 Shape of coil former and pin numbering

When the coil former is viewed from the pin side, the pins shall be numbered in a clockwise direction. Pin 1 shall be a corner pin, or the pin immediately to the right of a corner, and closest to the base outline.

For asymmetrical arrangements, pin 1 shall be at the side with the largest number of pins. The coil former shall show an asymmetry which shall preferably be visible (or detectable) when the assembled inductor is held with the pins downwards. This asymmetry shall clearly indicate pin 1. For pin numbering of recommended core patterns and for recommended asymmetrical pin arrangements, see 3.1.

NOTE It is not required that the pin numbers be marked on the coil former.

### 3.4 Effective parameter values

The effective parameter values for cores having the dimensions given in 3.2 and 3.5 are as shown in Table 3 and Table 4.

### 3.5 Spring recess

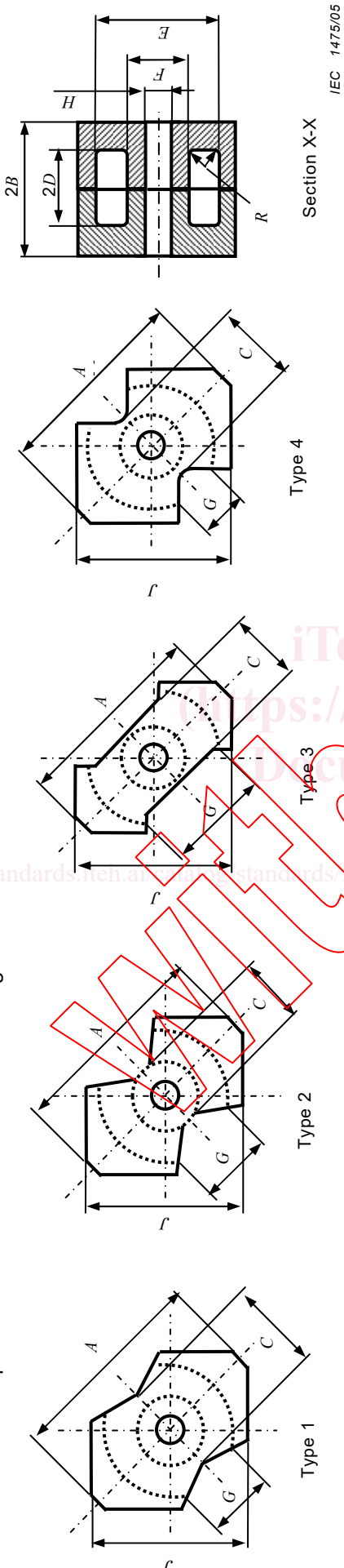
RM-cores shall have recesses which allow the core halves to be held together by two spring clamps snapping into these recesses. The recesses consist of a flat spring rest and a locking ridge. The dimensions are given in Table 5; the profile of this spring recess is not defined but the limit dimensions shall be complied with.

### 3.6 Stud recess

Those RM-cores with centerpost holes may have recesses for the fixed part of the adjusting device with dimensions in accordance with Table 6. These dimensions are not mandatory for manufacturers who supply cores with the fixed part of the adjusting device attached.



The dimensions specified in Table 1 are illustrated in Figure 1.



IEC 1475/05

Figure 1 – Dimensions of RM-cores

Table 1 – Dimensions of RM-cores

Size	A mm		B mm		C mm		D mm		E mm		F mm		G mm		H <sup>a)</sup> mm		J mm		R mm		Type
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
RM 4	10,6	11,8	5,15	5,25	4,40	4,60	3,50	3,70	7,95	8,35	3,70	3,90	5,80	5,80	2,0	2,1	9,40	9,80	0,3	0,3	3
RM 5	14,0	14,9	5,15	5,25	6,40	6,80	3,15	3,35	10,2	10,6	4,70	4,90	6,00	6,00	2,0	2,1	11,8	12,3	0,3	0,3	3
RM 6-S	17,2	18,3	6,15	6,25	7,80	8,20	4,00	4,20	12,4	12,9	6,10	6,40	8,40	8,40	3,0	3,1	14,1	14,7	0,3	0,3	1
RM 6-R	17,2	18,3	6,15	6,25	7,00	7,40	4,00	4,20	12,4	12,9	6,10	6,40	6,30	6,30	3,0	3,1	14,1	14,7	0,3	0,3	4
RM 7	19,5	20,3	6,65	6,75	6,95	7,25	4,20	4,45	14,75	15,4	6,95	7,25	9,30	9,30	3,0	3,1	16,5	17,2	0,3	0,3	2
RM 8	22,3	23,2	8,15	8,25	10,6	11,0	5,40	5,65	17,0	17,7	8,25	8,55	9,50	9,50	4,4	4,6	18,9	19,7	0,3	0,3	3
RM 10	27,2	28,5	9,25	9,35	13,0	13,5	6,20	6,50	21,2	22,1	10,5	10,9	10,9	10,9	5,4	5,6	23,6	24,7	0,3	0,3	3
RM 12	36,1	37,4	12,2	12,3	15,6	16,1	8,40	8,70	25,0	26,0	12,3	12,8	12,9	12,9	-	-	28,7	29,8	0,3	0,3	3
RM 14	40,8	42,2	14,4	14,5	18,4	19,0	10,4	10,7	29,0	30,2	14,4	15,0	17,0	17,0	5,4	5,6	33,5	34,7	0,3	0,3	3
RM 14A	40,8	42,2	15,0	15,1	18,4	19,0	10,4	10,7	29,0	30,2	14,4	15,0	17,0	17,0	-	-	33,5	34,7	0,3	0,3	3

a) Solid centerpost cores are available for each size.

The dimensions specified in Table 2 are illustrated in Figure 2.

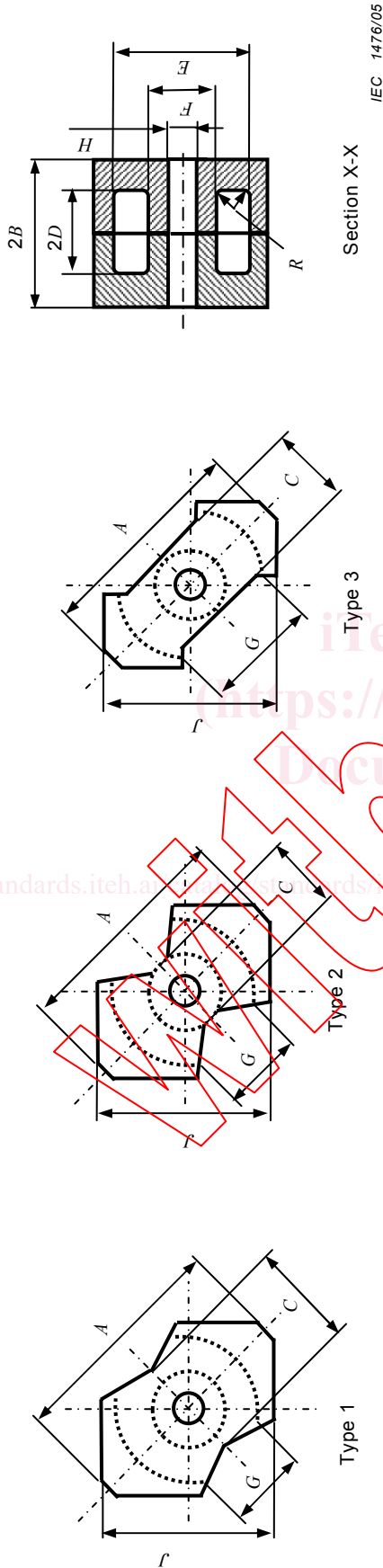


Figure 2 – Dimensions of low-profile RM-cores

Table 2 – Dimensions of low-profile RM-cores

Size	A mm		B mm		C mm		D mm		E mm		F mm		G mm		H <sup>a)</sup> mm		J mm		R mm		Type
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
RM 4/8	10,6	11,8	3,80	3,90	4,40	4,60	2,15	2,35	7,95	8,35	3,70	3,90	5,3	5,8	2,0	2,1	9,40	9,80	0,3	0,3	3
RM 5/8	14,0	14,9	3,80	3,90	6,40	6,80	1,80	2,00	10,2	10,6	4,70	4,90	6,0	6,0	2,0	2,1	11,8	12,3	0,3	0,3	3
RM 6/9	17,2	18,3	4,40	4,50	7,80	8,20	2,25	2,45	12,4	12,9	6,10	6,40	8,4	8,4	3,0	3,1	14,1	14,7	0,3	0,3	1
RM 7/10	19,5	20,3	4,80	4,90	6,95	7,25	2,35	2,60	14,75	15,4	6,95	7,25	9,3	9,3	3,0	3,1	16,5	17,2	0,3	0,3	2
RM 8/11	22,3	23,2	5,70	5,80	10,6	11,0	2,95	3,15	17,0	17,7	8,25	8,55	9,5	9,5	4,4	4,6	18,9	19,7	0,3	0,3	3
RM 10/13	27,2	28,5	6,40	6,50	13,0	13,5	3,35	3,55	21,2	22,1	10,5	10,9	10,9	10,9	5,4	5,6	23,6	24,7	0,3	0,3	3
RM 12/17	36,1	37,4	8,30	8,40	15,6	16,1	4,50	4,75	25,0	26,0	12,3	12,8	12,3	12,3	5,4	5,6	28,7	29,8	0,3	0,3	3
RM 14/20	40,8	42,2	10,15	10,25	18,4	19,0	5,55	5,85	29,0	30,2	14,4	15,0	17,0	17,0	5,4	5,6	33,5	34,7	0,3	0,3	3

<sup>a)</sup> Solid centerpost cores are available for each size.