

Multi-channel radio frequency connectors - Part 3:
Sectional specification for MQ5 series circular
connectors

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN IEC 63138-3:2022 sisaldab Euroopa standardi EN IEC 63138-3:2022 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 63138-3:2022 consists of the English text of the European standard EN IEC 63138-3:2022.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 22.04.2022.	Date of Availability of the European standard is 22.04.2022.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 33.120.30

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardimis-ja Akrediteerimiskeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardimis-ja Akrediteerimiskeskusega: Koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation and Accreditation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation and Accreditation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation and Accreditation:

Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

English Version

Multi-channel radio frequency connectors - Part 3: Sectional
specification for MQ5 series circular connectors
(IEC 63138-3:2022)

Connecteurs radiofréquences multicanaux - Partie 3:
Spécification intermédiaire relative aux connecteurs
circulaires de série MQ5
(IEC 63138-3:2022)

Mehrkanalige Hochfrequenz-Steckverbinder - Teil 3:
Rahmenspezifikation für Rundsteckverbinder der Serie
MQ5
(IEC 63138-3:2022)

This European Standard was approved by CENELEC on 2022-04-13. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 46F/602/FDIS, future edition 1 of IEC 63138-3, prepared by SC 46F "RF and microwave passive components" of IEC/TC 46 "Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 63138-3:2022.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2023-01-13
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2025-04-13

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 63138-3:2022 was approved by CENELEC as a European Standard without any modification.

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Multi-channel radio frequency connectors –
Part 3: Sectional specification for MQ5 series circular connectors**

**Connecteurs radiofréquences multicanaux –
Partie 3: Spécification intermédiaire relatives aux connecteurs circulaires de
série MQ5**



THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2022 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Secretariat
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search - webstore.iec.ch/advsearchform

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee, ...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

IEC Products & Services Portal - products.iec.ch

Discover our powerful search engine and read freely all the publications previews. With a subscription you will always have access to up to date content tailored to your needs.

Electropedia - www.electropedia.org

The world's leading online dictionary on electrotechnology, containing more than 22 300 terminological entries in English and French, with equivalent terms in 19 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Recherche de publications IEC - webstore.iec.ch/advsearchform

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études, ...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et une fois par mois par email.

Service Clients - webstore.iec.ch/csc

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: sales@iec.ch.

IEC Products & Services Portal - products.iec.ch

Découvrez notre puissant moteur de recherche et consultez gratuitement tous les aperçus des publications. Avec un abonnement, vous aurez toujours accès à un contenu à jour adapté à vos besoins.

Electropedia - www.electropedia.org

Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 300 articles terminologiques en anglais et en français, ainsi que les termes équivalents dans 19 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Multi-channel radio frequency connectors –
Part 3: Sectional specification for MQ5 series circular connectors**

**Connecteurs radiofréquences multicanaux –
Partie 3: Spécification intermédiaire relatives aux connecteurs circulaires de
série MQ5**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 33.120.30

ISBN 978-2-8322-1083-6

**Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references	6
3 Terms and definitions	6
4 Mating face and gauge information	6
4.1 Mating face dimensions	6
4.1.1 MQ5 socket connector	6
4.1.2 MQ5 plug connector	8
4.1.3 Mating face of RF channel	11
4.2 Gauges.....	12
4.2.1 Gauge for RF channel.....	12
4.2.2 Gauge rings for plug outer contact.....	13
4.2.3 Gauge for MQ5 socket connector.....	14
4.2.4 Gauge for MQ5 plug connector	15
5 Quality assessment procedure.....	17
5.1 General.....	17
5.2 Rating and characteristics.....	17
5.3 Quality assessment.....	19
5.3.1 General	19
5.3.2 Inspection procedure	20
5.3.3 Lot-by-lot inspection	21
5.3.4 Periodic inspections.....	22
6 Instructions for preparation of detail specifications	23
6.1 General.....	23
6.2 Identification of the component	23
6.3 Performance	23
6.4 Marking, ordering information and related matters	23
6.5 Selection of tests, test conditions and severities	23
6.6 Blank detail specification pro-forma for MQ5 series circular connector	24
7 Marking	28
7.1 Marking of component.....	28
7.2 Marking and contents of package.....	28
Figure 1 – MQ5 socket connector	7
Figure 2 – MQ5 quick lock plug connector.....	9
Figure 3 – MQ5 threaded plug connector	10
Figure 4 – Mating face of RF channel	11
Figure 5 – Gauge for socket contact of RF channel.....	13
Figure 6 – Gauge for plug outer contact.....	14
Figure 7 – Gauge for MQ5 socket connector	15
Figure 8 – Gauge for MQ5 plug connector	16
Table 1 – Dimensions of MQ5 socket connector.....	8
Table 2 – Dimensions of MQ5 quick lock plug connector.....	9
Table 3 – Dimensions of MQ5 threaded plug connector	10

Table 4 – Dimensions of RF channel.....	12
Table 5 – Dimensions of gauge for socket contact	13
Table 6 – Dimensions of gauge for outer contact	14
Table 7 – Dimensions of gauge for MQ5 socket connector	15
Table 8 – Dimensions of gauge for MQ5 plug connector	17
Table 9 – Rating and characteristics	18
Table 10 – Qualification inspection	20
Table 11 – Lot-by-lot inspection	21
Table 12 – Sampling plans for mechanical compatibility and return loss inspection	21
Table 13 – Periodic inspection	22

This document is a preview generated by EVS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

MULTI-CHANNEL RADIO FREQUENCY CONNECTORS –**Part 3: Sectional specification for MQ5 series circular connectors**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 63138-3 has been prepared by subcommittee 46F: RF and microwave passive components, of IEC technical committee 46: Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories. It is an International Standard.

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

Draft	Report on voting
46F/602/FDIS	46F/614/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. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts in the IEC 63138 series, published under the general title *Multi-channel radio frequency connectors*, 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 in the data related to the specific document. At this date, the document will be

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

MULTI-CHANNEL RADIO FREQUENCY CONNECTORS –

Part 3: Sectional specification for MQ5 series circular connectors

1 Scope

This part of IEC 63138, which is a sectional specification (SS), provides information and rules for the preparation of detail specifications (DS) for MQ5 series circular connectors with five RF channels, as well as a detailed specification of the blank format.

An MQ5 series circular connector with 50 Ω nominal impedance has five RF channels that can be engaged and disengaged at the same time. There are two versions of plug connectors, one is a quick-lock version, and the other is a threaded version. The socket connector provides two coupling mechanisms, a quick-lock and a threaded coupling.

MQ5 series circular connectors can be used in mobile communication systems and in other communication equipment.

This document also specifies the mating face dimensions and gauging information of MQ5 series circular connectors, and tests selected from IEC 63138-1, applicable to all detail specifications relating to MQ5 series circular connectors.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 63138-1:2019, *Multi-channel radio-frequency connectors – Part 1: Generic specification – General requirements and test methods*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 63138-1 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.elctropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

4 Mating face and gauge information

4.1 Mating face dimensions

4.1.1 MQ5 socket connector

The mating face of MQ5 socket connectors is shown in Figure 1 and its dimensions are shown in Table 1.