E DIN EN 4165-001:2023-07 (E)

Erscheinungsdatum: 2023-06-02

Aerospace series - Connectors, electrical, rectangular, modular - Operating temperature 175 °C continuous - Part 001: Technical specification; English version prEN 4165-001:2023

Contents

Page

European foreword 4

1 Scope 5

2 Normative references 5

3 Terms and definitions 6

4 Description 7
4.1 General 7
4.1.1 Introduction 7
4.1.2 Centre coupling 7
4.1.3 Rack and panel plug 7
4.1.4 Push-pull latching 7
4.2 Housing 8
4.3 Receptacle 8
4.3.1 Centre coupling mechanism 8
4.3.2 Push-pull latching mechanism 8
4.4 Plugs 8
4.4.1 General 8
4.4.2 Centre coupling mechanism 8
4.4.3 Rack and panel 8
4.4.4 Push-pull latching mechanism 9
4.5 Rear accessories 9
4.6 Modules 9
4.7 Keying mechanism 9
4.7.1 Central coupling mechanism and rack and panel 9
4.7.2 Push-pull latching mechanism 10
4.8 Materials and surface treatment 10
4.8.1 General 10
4.8.2 Housings 10
4.8.3 Contacts 10
4.8.4 Non-metallic materials 10

5 Design 11
5.1 Housings 11
5.2 Modules 11
5.3 Connector mating sequence 11
5.3.1 Centre coupling mechanism 11
5.3.2 Push-pull latching mechanism 12
5.3.3 Rack and panel coupling 12
5.4 Connector mating 12

6 Definition drawings and masses 13
6.1 Receptacle and plug mating dimensions 13
6.1.1 Connector mated conditions, series 2 and 3 13
6.1.2 Plug and receptacle, series 2 14
6.1.3 Plug and receptacle, series 3 17
6.1.4 Plug and receptacle single module 20
6.2 Receptacle dimensions 24
6.2.1 2 cavities receptacle dimensions, series 2 24

6.2.2 4 cavities receptacle dimensions, series 2 25
6.2.3 2 cavities receptacle dimensions, series 3 26
6.2.4 4 cavities receptacle dimensions, series 3 27
6.3 Receptacle coding pin cavity dimensions, series 2 and series 3 28
6.4 Receptacle module cavities dimensions, series 2 and series 3 29
6.5 Receptacle single module cavities dimensions, series 2 30
6.6 2 cavities plug dimensions, series 2 31
6.7 4 cavities plug dimensions, series 2 31
6.8 2 cavities plug dimensions, series 3 33
6.9 4 cavities plug dimensions, series 3 33
6.10 Plug coding key cavity dimensions, series 2 and series 3 35
6.11 Plug module cavity dimensions, series 2 and series 3 35
6.12 Plug single module cavity dimensions, series 2 37
6.13 Receptacle and plug module cavity coding dimensions, series 2 and series 3 39

7 Details on contact and module interface 41
7.1 Male module and contact interfacial sealing dimensions 41
7.2 Female module and contact interface dimensions 41
7.3 Male module and contact interfacial sealing dimensions, size 23 42
7.4 Female module and contact interfacial sealing dimensions, size 23 42

8 Contact arrangements 43

9 Tests according to EN 2591-100 54

10 Tooling testing 69
10.1 Gauges to test the holding force of the grounding spring system of the housing 69
10.1.1 Gauges for 4 cavities housing series 2 and 3 69
10.1.2 Gauges for 2 cavities housing series 2 and 3 70
10.2 Gauges to test the stability of male contacts in module 71
10.3 Gauges to test EN 2591-419 for 23R modules 72

11 Quality assurance 73

12 Qualification 73
12.1 Sampling and definition of specimens 73
12.1.1 Sampling for qualification of metallic housings and modules 73
12.1.2 Sampling for qualification of composite housings and modules 74
12.1.3 Sampling for qualification of push-pull latching mechanism housing and modules 74
12.1.4 Sampling for qualification of a new module arrangement 75
12.2 Preparation of specimens 75
12.3 Programme of qualification tests 76

13 Maintenance of qualification 80
13.1 Tests 80
13.2 Sampling distribution 80
13.3 Acceptance 81

14 Quality control 82

15 Designation and marking 82

16 Delivery conditions 82

17 Packaging 82

18 Storage 82

Bibliography 83