

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 |