

## C 091 D Characteristics

| General Characteristics                         | Standard                          | Characteristics                                                                                                                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |
|-------------------------------------------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|---------------------|
| Number of contacts                              |                                   | 3                                                                                                                                                                                              | 4                                                                                 | 5                                                                                 | 5 Stereo                                                                          | 6                                                                                 | 7                                                                                   | 7                                                                                   | 8                                                                                   | 12                                                                                  | 14                                                                                              |                     |
| View on termination side of male contact insert |                                   |                                                                                                               |  |  |  |  |  |  |  |  |              |                     |
| Contact arrangement                             | DIN EN 61076-2-106                | 03-a<br>✓                                                                                                                                                                                      | 04-a<br>✓                                                                         | 05-a<br>✓                                                                         | 05-b<br>✓                                                                         | 06-a<br>✓                                                                         | 07-a<br>✓                                                                           | 07-b<br>✓                                                                           | 08-a<br>✓                                                                           | 12-a<br>✓                                                                           | 14-a<br>✓                                                                                       |                     |
| Contact arrangement                             | IEC 60130-9 <sup>1)</sup>         | ✓                                                                                                                                                                                              | ✓                                                                                 |                                                                                   | ✓                                                                                 | ✓                                                                                 |                                                                                     | ✓                                                                                   | ✓                                                                                   |                                                                                     |                                                                                                 |                     |
| Electrical Characteristics                      |                                   |                                                                                                                                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |
| Rated voltage <sup>2)</sup>                     | IEC 60664-1                       | 300 V ≈<br>(100 V ≈)                                                                                                                                                                           |                                                                                   | 300 V ≈<br>(63 V ≈)                                                               |                                                                                   | 100 V ≈<br>(32 V ≈)                                                               |                                                                                     | 300 V ≈<br>(63 V ≈)                                                                 |                                                                                     | 100 V ≈<br>(32 V ≈)                                                                 |                                                                                                 | 150 V ≈<br>(32 V ≈) |
| Rated voltage                                   | UL 1977                           | 250 V                                                                                                                                                                                          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 60 V                                                                                            |                     |
| Rated impulse withstand voltage <sup>2)</sup>   | IEC 60664-1                       | 1500 V<br>(840 V)                                                                                                                                                                              |                                                                                   |                                                                                   | 1200 V<br>(500 V)                                                                 |                                                                                   | 1500 V<br>(840 V)                                                                   |                                                                                     | 1200 V<br>(500 V)                                                                   |                                                                                     |                                                                                                 |                     |
| Pollution degree <sup>2)</sup>                  | IEC 60664-1                       | 1 (3 <sup>3)</sup> )                                                                                                                                                                           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |
| Installation category                           | IEC 60664-1                       | I                                                                                                                                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |
| Insulation group                                | IEC 60664-1                       | II, 400 ≤ CTI < 600                                                                                                                                                                            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |
| Current rating                                  | IEC 60512-5-2<br>UL 1977          | 5 A / + 40 °C / + 104 °F<br>please refer also to current derating curves page 59                                                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 3 A / + 40 °C /<br>+ 104 °F                                                                     |                     |
| Insulation resistance                           | IEC 60512-3-1                     | > 10 <sup>10</sup> Ω <sup>4)</sup>                                                                                                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |
| Contact resistance                              | IEC 60512-2-1                     | < 5 m Ω                                                                                                                                                                                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |
| Climatic Characteristics                        |                                   |                                                                                                                                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |
| Climatic category                               | IEC 60668-1                       | 40 / 100 / 56                                                                                                                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |
| Temperature range                               | IEC 60668-1                       | - 40 °C ... + 100 °C / - 40 °F ... + 212 °F                                                                                                                                                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |
| Salt Spray Resistance                           | DIN IEC 60068-2-11, Test Ka       | 720h                                                                                                                                                                                           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |
| Mechanical Characteristics                      |                                   |                                                                                                                                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |
| IP-degree                                       | IEC 60529                         | IP 67 and IP 65 (in mated condition)                                                                                                                                                           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |
| Insertion and withdrawal forces                 | IEC 60512-13-2                    | 25 N<br>90.oz                                                                                                                                                                                  | 30 N<br>110.oz                                                                    | 35 N<br>125.oz                                                                    |                                                                                   | 50 N<br>180.oz                                                                    |                                                                                     | 55 N<br>200.oz                                                                      |                                                                                     | 60 N<br>220.oz                                                                      | 50 N<br>180.oz                                                                                  |                     |
| Mechanical operation                            | IEC 60512-9-1                     | Silver ≥ 500 mating cycles<br>Gold ≥ 1000 mating cycles                                                                                                                                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |
| Materials                                       |                                   |                                                                                                                                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |
| Housing material                                |                                   | coupling ring brass, strain relief, die cast, nickel plated                                                                                                                                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |
| Dielectric material                             |                                   | thermoplastic                                                                                                                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |
| Contact plating                                 |                                   | silver plated / gold plated <sup>5)</sup>                                                                                                                                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |
| Further Characteristics                         |                                   |                                                                                                                                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |
| Termination technique                           |                                   | solder, crimp                                                                                                                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |
| Wire gauge                                      |                                   | solder: ≤ 0,5 mm <sup>2</sup> / 20 AWG<br>crimp: 2 - 6 pol (excluding 5S): 0,09 - 1,00 mm <sup>2</sup> / 28 - 18 AWG<br>crimp: 5S, 7, 7S and 8-pol.: 0,09 - 0,75 mm <sup>2</sup> / 28 - 20 AWG |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | solder: ≤ 0,25 mm <sup>2</sup> /<br>24 AWG<br>crimp: 0,09-0,25 mm <sup>2</sup> /<br>28 - 24 AWG |                     |
| Flammability                                    |                                   | UL 94 V0                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |
| Locking system                                  | IEC 60130-9<br>DIN EN 61076-2-106 | metal screw coupling; tightening torque 0,7 Nm                                                                                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |
| UL                                              | UL 1977                           | Conditions of acceptability                                                                                                                                                                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                     |

**Caution:** Do not connect or disconnect under load. Metal housing parts shall be securely incorporated to protected ground.

<sup>1)</sup> Edition 2000-05

<sup>2)</sup> values in brackets are according to DIN EN 61076-2-106

<sup>3)</sup> designed acc. pollution degree 2; can be used under pollution degree 3 when the rules of IEC 60644-1 are fulfilled

<sup>4)</sup> under operating conditions >10<sup>8</sup> Ω

<sup>5)</sup> Remark for gold plated contacts: In order to avoid brittle inter-metallic connections, gold-plated terminals have to be tin-plated in the solder area.

IEC 60 664 ≙ DIN VDE 0110 ; IEC 60 512-x ≙ DIN EN 60 512-x; IEC 60 130-9 ≙ DIN EN 60 130-9; IEC 61076-2-106 ≙ DIN EN 61076-2-106