



Test Report

2023 - 42

Type Test of a (mechanical) Connector for 240 mm² Aluminium Conductor

Customer: Techtronic Industries ELC GmbH
 Max-Eyth-Straße 10
 71364 Winnenden

Reporter: Dr.-Ing. R. Badent
 Dr.-Ing. B. Hoferer

This report includes 19 numbered pages and is only valid with the original signature. Copying of extracts is subjected to the written authorization of the test laboratory. The test results concern exclusively to the tested objects.

1 Purpose of Test

The electrical properties of a mechanical connector (class A) manufactured by Pfisterer Kontaktsysteme GmbH and installed with the Milwaukee M18 BSBT were tested according IEC 61238-1-3 05/2018.

2 Miscellaneous Data

Test object: 6 mechanical connectors
Type SICON-SV-TS 50 - 240 mm² Al/Cu
Drawing number: 332592012AI Rev. 02 dated 07.11.2022
Installation instruction: 040 209 182 dated 2020-09
Figures 2.1 - 2.4.
The connectors were mounted on aluminium conductors 240 mm², circular, stranded and compacted, outside diameter d = 17,9 mm.

Manufacturer: Pfisterer Kontaktsysteme GmbH
Rosenstraße 44
73650 Winterbach

Delivery: 28.06.2023
Mounting: 28.06.2023
Assembler: Mr. Weichert, Pfisterer Kontaktsysteme GmbH
Mr. Romano, Techtronic Industries ELC GmbH
Mr. Stirm, Techtronic Industries ELC GmbH

Place of test: Lab 028 and Lab 21 at the
Institut für Elektroenergiesysteme und Hochspannungstechnik (IEH)
Karlsruher Institut für Technologie (KIT)
Engesserstr. 11 – 76128 Karlsruhe
Testing laboratory accredited by DAkkS according to DIN EN
ISO/IEC 17025:2018.
The accreditation is valid only for the standards listed in the
annex of the accreditation certificate No. D-PL-11068-09-00.

Atmospheric conditions: Temperature: 18 - 30°C
Air pressure: 980 - 1020 hPa
Rel. humidity: 30 - 70 %

Representatives: Representatives responsible for the test:
Dr.-Ing. R. Badent
Dr.-Ing. B. Hoferer

Tests: Type test (electrical part) including thermal short circuit test (class A)
according IEC 61238-1-3 05/2018.
For conformity assessment, the decision rules according IEC Guide
115:2021 procedure 1 and ILAC-G8:2019, subclause 4.2.1 were
applied.

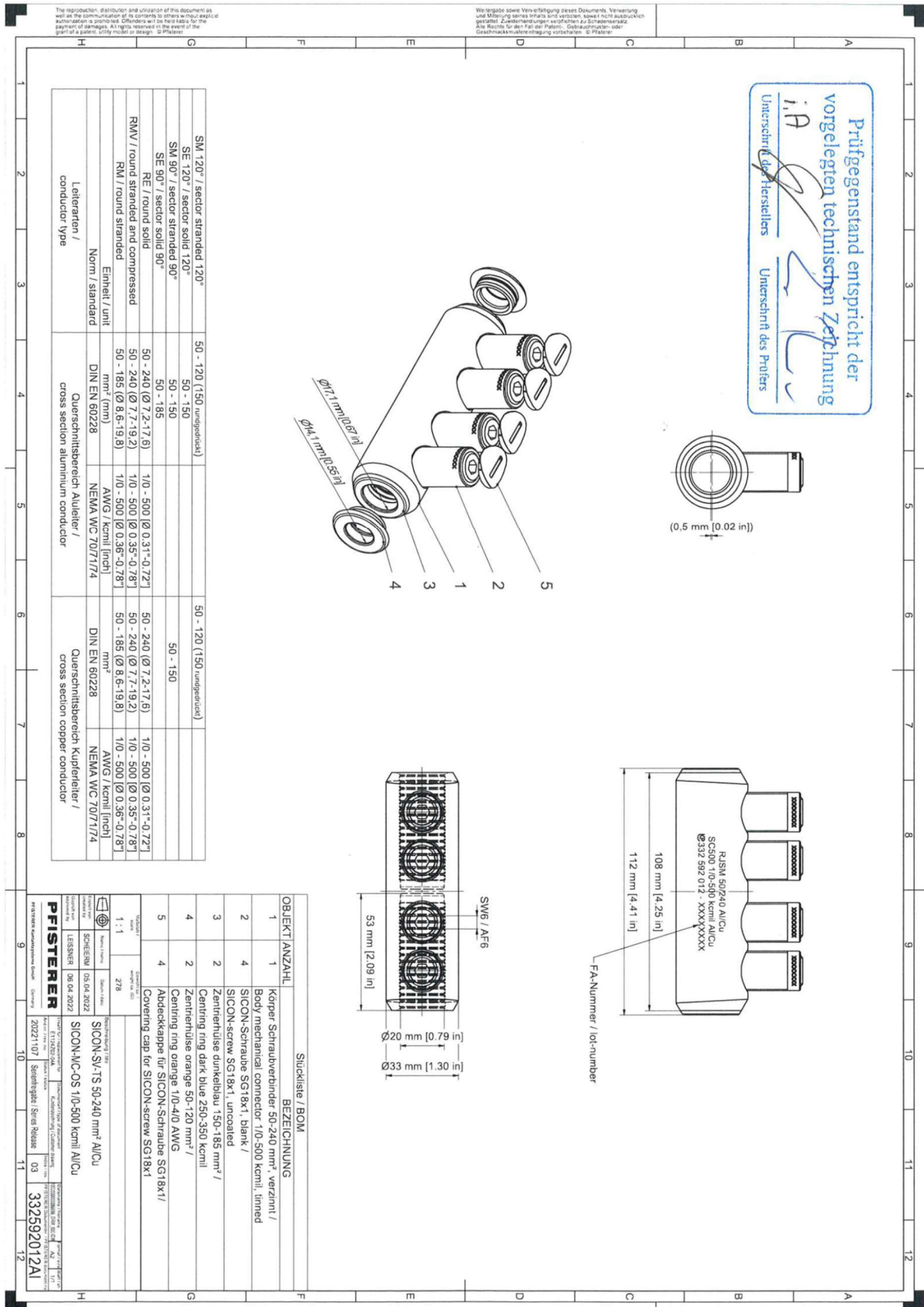


Figure 2.1: Mechanical connector

3 Mounting

The conductors were provided with welded equalizers. The mechanical connectors were mounted by technicians of TTI corresponding mounting instruction using a torque amplifier type Milwaukee M18 BSBT (TTI article code: 4933493288 M18BSBT-0X M18 SHEAR BOLT TOOL XXX), Figure 3.1.



Figure 3.1: Torque amplifier type Milwaukee M18 BSBT (TTI article code: 4933493288 M18BSBT-0X M18 SHEAR BOLT TOOL XXX)

After brushing the conductors all screws of the connectors were tightened using level 4 of the torque amplifier. Thereafter all screws were sheared off using level “drilling” of the torque amplifier. In each mechanical connector a thermocouple was placed in a previously prepared hole (diameter: 2,1 mm, depth: 5,0 mm); the position was designated by the customer. The test circuit for the thermal short-circuit was dismantable. Terminal lugs were mounted on each conductor, Figure 3.2.

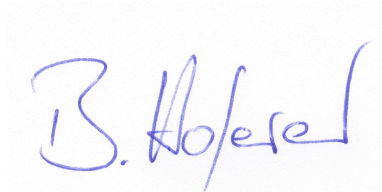
6 Conclusion

The mechanical connector type SICON-SV-TS 50 - 240 mm² Al/Cu (manufacturer Pfisterer Kontaktsysteme GmbH) mounted with the Milwaukee M18 BSBT on aluminium conductor 240 mm², circular, stranded and compacted, fulfilled the requirements of the type test according to IEC 61238-1-3 05/2018, electrical part.

Karlsruhe, 02.11.2023

A handwritten signature in blue ink, appearing to read 'R. Badent', is shown above a horizontal line.

Dr.-Ing. R. Badent
Bereichsleiter HPT

A handwritten signature in blue ink, appearing to read 'B. Hoferer', is shown above a horizontal line.

Dr.-Ing. B. Hoferer
Stellv. Bereichsleiter HPT