

**New Standard DIN 46228-4: 2020-03 for ferrules**



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Ferrules offer many advantages in mechanical and electrical terms in electrical engineering systems. The main task of the ferrules is to prevent the conductor from splicing and to protect the individual strands against mechanical influences, e.g. when connecting to screw terminals. When using spring-cage terminal block, a firm connection between the copper conductor and the ferrule is also essential. In addition to the appropriate crimping tool, the material quality of the ferrule is crucial for an optimal and therefore secure connection.

We had to find out that our high-quality and actually process-reliable tools in combination with some ferrules available on the market could only achieve inferior work results. The connections did not meet the standard deduction values and could sometimes be deducted by hand. - This phenomenon was also confirmed by other well-known market players in the field of terminal blocks and crimping tools- Corresponding studies have shown that the excessive material hardness is the reason for the defective deformation, which can inevitably lead to contact problems and increased safety risks.

Based on the high security risks, we at Phoenix Contact took the initiative and applied to the DIN committee for a definition of maximum material hardness.

The DIN 46228-4: 1990-09 was consequently replaced by the now published DIN 46228-4: 2020-03.

The update includes the maximum permissible hardness of 105 HV and the corresponding test specifications to determine those values.

By specifying the tensile strength (Rm) of min. the minimum hardness was already defined in the previous version at 250 N/mm<sup>2</sup>.

DIN 46228-4: 2020-03 defines the ferrules with insulation collars from 0.5 to 50 mm<sup>2</sup>. In addition to the color and size variants not defined in the standard, the Phoenix Contact portfolio also includes the uninsulated ferrules described in DIN 46228-1. Of course, the same requirements apply to these types of ferrules and are hereby also confirmed.

For Phoenix Contact, this update and addition does not mean a change in the products, but rather a confirmation that we have always been right with our ferrule specifications.

Always a secure connection.

As a system provider in the field of connection technology, we offer high-quality ferrules - made in Germany - and tools for reliable processing.