

When purchasing electrical wires, cables, connectors and other components, one of the most common challenges is making sure you have matched the connector to the size of wire you are using.

All manufacturers are required to specify the maximum and/or minimum wire gauge that each specific connector will accept, but this information can sometimes be confusing due to the use of several different international size classification systems, including the AWG (American wire gauge) standard.

To make this process simpler, Northern Connectors has created this simple guide to explain the basics of how this system works, as well as a straightforward conversion chart to help you figure out which products you need, no matter which measurement standard you prefer to use.

How are **AWG grades** calculated?

The AWG system has been in use as an industry standard since the 19th century, and is commonly used by many US and international manufacturers. For those who are more accustomed to dealing with specific metric measurements, AWG is difficult to work with, as the scale does not comfortably convert easily into centimetres or millimetres.

Because calculating AWG values from the diameter or cross-sectional area of a wire requires a complex mathematical formula, it does not produce simple results; as such, any conversion between AWG and metric measurements may require you to round the resulting number up or down, according to the needs of the application.

By consulting the chart below, you should be able to get a close estimate of the conversions between AWG and millimetre measurements:

AWG	Diameter (mm)	Cross sectional area (mm ²)
1	7.34	42.41
2	6.54	33.63
4	5.19	21.15
6	4.12	13.30
8	3.26	8.37
10	2.59	5.26
12	2.05	3.31
14	1.63	2.08
16	1.29	1.31
18	1.02	0.82
20	0.81	0.52
22	0.64	0.33
24	0.51	0.2
26	0.40	0.13
28	0.32	0.08
30	0.25	0.05



Find out **More**

Selecting the right wire gauge is essential for ensuring that your systems fit together and function as intended. If you have any further questions about wire gauges and the AWG system, get in touch with the expert team at Northern Connectors.

We are specialist providers of industrial connectors and components, working with leading international manufacturers and clients from multiple sectors, and will be able to answer any queries you may have.

Give us a call on **01744 815 001** for information and technical advice on any aspect of ingress protection, or fill in our [online contact form](#).