



Industrial Ethernet – Which is the right connector?

Spoilt for Choice!

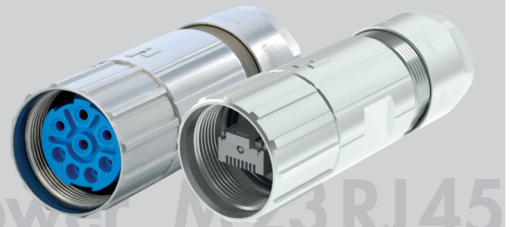
The industrial Ethernet is becoming increasingly important in the world of automation technology. In this era of Industry 4.0, everything is about the reliability and speed of data transmission. However, to ensure the performance reaches the end device to its full extent, choosing the right plug connection is a decisive factor. There are a variety of plug connector sizes and types which offer users a wide range of options: from classic solutions with signal and power plugs through to an innovative hybrid connection. The most typical choice is the 2-plug solution. There

is a clear physical separation between data and power supply and the complexity of the wiring is fairly comprehensible. Separated plugs, separated housing and separated shields – if there is enough space; everything is fine. However, the trend is for single cable solutions. This is despite 'hybrid' solutions opening up new potential for cost reduction since two cables become one and two plug connectors become one. Installation expense/effort is also reduced on site and space requirements are lessened. Summary: numerous plug connector

series feature physical properties which allow end devices to be controlled using a fast Ethernet connection whilst simultaneously being supplied with power. In the target market, both performance data and the application itself should always be able to be assessed. The environment for the end application and how the user interacts with the plug system are important factors that often take precedence over purely technical aspects.

M23 RJ45

The established M23 plug connector size has an answer to this issue. HUMMEL's M23RJ45 plug system features suitable RJ45 patch cables which are housed in a sturdy metal case. The shielded patch cables are pre-assembled according to the requirements (e.g. Cat5 or Cat 5e) and integrated into the M23 plug. When performance is key, the classic M23 round plug is put into action. With 6-/8- or 9-pole inserts and performance data of 28 A/630 V, it is capable of covering the majority of applications.



The 2-plug solution

M16 circular connector

The M16 connection system comes along with above average strength. As a plug connector for the transmission of signals, the 10 pole version can be made use of. Data packages can be transmitted at up to 100 Mbit per second according to Cat5e. In order to provide the final device with sufficient power, the user can choose between the 3/7 or 8 pole versions. If one puts the space requirements and the performance in relationship, this connector size ranks among the best.



M12 circular connector

The M12 plug series has already established itself over the past few years for data transmission via fast Ethernet using so-called 'D-coding'. The 4-pole plug supplies bandwidths of up to 100 MHz (Cat5e). The M12 power plug connector is a new addition to this model size, which is capable of transmitting data up to 16 A/630 V despite being extremely miniaturised using new materials and contact systems. It is EMC capable thanks to the 360° shield support.



1-plug solution

M23 hybrid circular connector

The new M23 hybrid (4+4+4) by HUMMEL is the compact all-in-one solution for the transmission of power, industrial Ethernet (IE) and signals. The plug-connector series unites the separate, shielded data transmission on 4 contacts according to CAT.5e with a high processing power on 4 additional power contacts (up to 28 A and 630 V). Data transmission rates of up to 500 MBit/s are possible without any problems. In addition 4 other contacts are available for signal transmission. The assembly effort remains within limits, the Ethernet element is simply snapped into the side.

