Application Note | 8 + 2 pole XLR

1. What are the features of the 8 + 2 pole XLR?

- Suitable for data offering CAT 5e performance
- Up to 16 A and 50 V DC power
- Superior ruggedness compared to RJ45 type connectors
- All metal housing offers best overall RF protection and electromagnetic shielding
- D-size housing provides installation compatibility with industry standard D mounting dimensions
- Receptacle with duplex ground contact for excellent signal integrity

2. Why 8 + 2 poles?

With the irresistible evolution of networking standards like Dante, AvB, AES67, Cobranet, etc.) the RJ45 connector made its way into the professional AV industry.

Having the 8 + 2 pole XLR Neutrik offers a solution with a rugged contact system, making the data connection road prove. It was taken for granted to base this new connector standard on the million-fold profen XX Series XLR connectors and adapt it for an 8 + 2 poled version.

The name already gives it away that we have not simply squashed 10 pins into a standard insert. The 8 thinner pins are intended for twisted pair data up to 1Gb bandwidth while the 2 larger pins can be used for either a power supply or additional control data.

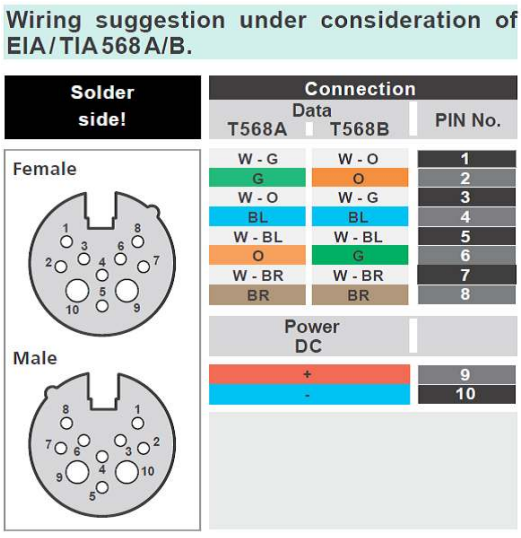
3. What do I do with the two extra pins?

If the 2 power pins are not needed they are still beneficial. Since they are sturdier than the data pins they provide a proper guided mating process and protect the smaller pins from unintended bending.

If power is not transmitted over the 2 dedicated extra pins, it is still possible to transmit 4 pair PoE over the 8 signal pins.

4. How should I wire the connector?

In general, it is up to the customer how the 8 + 2 pole XLR is used. However, to achieve the best performance Neutrik suggest to wire it the following way:



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5. What are potential applications?

Ethernet Microphone:
A major benefit of using the system as the standard Neutrik XLR connectors is that the insert has exactly the same form factor as a commonly used 3 pole XLR. This way a microphone manufacturer doesn't need to change the design of his housing to fit an Ethernet connection.

Amplifiers and Active Speakers:
With the rise of digital audio and/or video networks all components in the signal chain will receive a network connection. For some high powered amplifiers, a PoE or even PoE+ power supply might not suffice.

Stageboxes and Looms:
Of course the 10 pins could also be used to combine multiple balanced or unbalanced signals in a single cable. For example, in a stage box or a loom.

LED Fixtures/Stripes:
Even though LEDs are a lot more energy efficient than other light sources, PoE will not deliver enough power for bigger lights with a number of high powered LEDs.

DMX Switches and Nodes:
IP based networks also made their way into the lighting applications. Especially in a stage environment the 8 + 2 pole XLR can prove its superiority compared to an RJ45 connection.

"Industrial" applications:
Of course the 8 + 2 pole XLR is not limited to IP based protocols or networks. It would be perfectly feasible to use it for any application where data and power needs to be combined, e.g. motor control units for chain hoists etc.





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