

HIGH-SPEED DATA TRANSFER

USB 3.1



USB 3.1 up to 10 Gb/s

Guaranteed Signal Integrity

Compact & Robust Push-Pull



High-speed data: Everywhere - All the time

Equipped with ever more sensors, objects, vehicles and machines are intensively communicating with each other and with the outside world thanks to the emergence of the Internet of Things (IoT). The reliable transfer of an increasing amount of data in the shortest possible time is becoming more and more important.

The new LEMO USB 3.1 connectors were developed to satisfy the most demanding connection requirements for high-speed data transfer using the USB protocol up to 10 Gb/s. They complete LEMO's extensive portfolio for robust and durable High-speed solutions and testify to the company's long experience in signal integrity.

Very compact and robust, these Push-Pull connectors are available in different models and series; and they can be used for indoor as well as outdoor demanding environments (e.g. extreme temperatures, high humidity) for applications in defense, industrial & robotics, data communication, automotive and test & measurements.

ORIGINAL
PUSH-PULL

YOUR CONFIGURABLE SOLUTIONS









Product safety notice & disclaimers:

Please read and follow all instructions specified on <https://www.lemo.com/en/about-lemo/product-safety-notice-and-disclaimers>

LEMO's USB portfolio

LEMO is completing its USB 2.0 compliant portfolio with a new range of USB 3.1 connectors providing data transfer speed up to 10 Gb/s and available in its reliable field proven B, K and T Series.

Ethernet protocol	Product series & sizes	Insert configuration	Number of pairs	Max. speed
USB 2.0	 B, K, T Series (Push-Pull) Sizes 0 & 1	 0*.304 1*.304	1 High-speed	480 Mb/s
USB 2.0	 M Serie (Ratchet Coupling) Size L	 LM.U2A	USB 2.0 Type A std connector	480 Mb/s
New USB 3.1	 B, K, T Series (Push-Pull) Size 2	 2*.542	1 High-speed 2 SuperSpeed	10 Gb/s

New state-of-the-art USB 3.1 insert configurations

These new USB 3.1 insert configurations are composed with :

- 2 pairs of USB 3.1 shielded SuperSpeed contacts (5&6 and 7&8)
- 2 drain wires (9)
- 1 legacy pair of USB 2.0 contacts to ensure backwards compatibility with USB 2.0 connectors (3&4)
- 2 low voltage contacts providing power supply (1&2)



USB Signal name

1. Vbus 5V (PWR)
2. Vbus GND
3. USB 2.0 D-
4. USB 2.0 D+
5. SS TX-
6. SS TX+
7. SS RX-
8. SS RX+
9. SS Drain/Shield

Key features of LEMO's USB 3.1 solutions

These new USB 3.1 configurations are ensuring high quality and reliable High-speed interconnect solutions for both indoor and outdoor environments where absolute signal integrity is needed, with the following key features:

	B Series	K Series	T Series
Ingress protection	IP50	IP66 to IP68	IP66 to IP68
Temperature range	-55 to 250°C	-55 to 200°C	-55 to 200°C
Mating cycles	> 5000	> 5000	> 3000
Alignment Key	12 different keyways	8 different keyways	5 different keyways
Form attribute	miniature	robust	miniature

Main customer benefits of LEMO's USB 3.1 solutions

Proprietary interface¹

to carry sensitive information in total security in harsh environments

Guaranteed **signal integrity** and compliance to **USB 3.1 protocol** enabling to transmit data up to **10 Gb/s**

360° screening for full EMC shielding



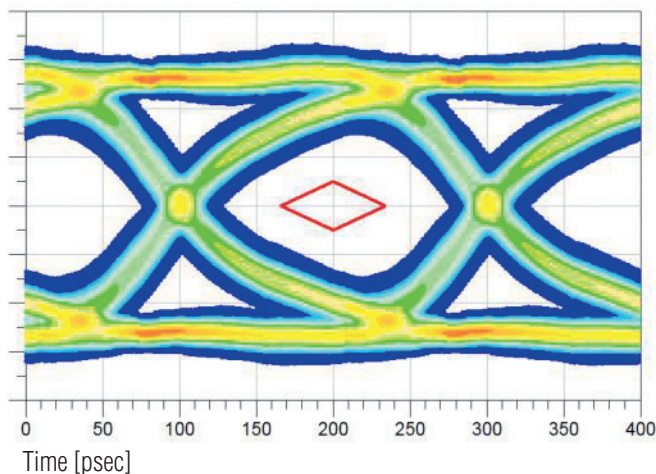
Push-Pull latching system enabling simple/quick yet safe and reliable frequent connect and disconnect

Broad range of robust and miniature models, including IP68 mated, providing **lasting compact integrations**

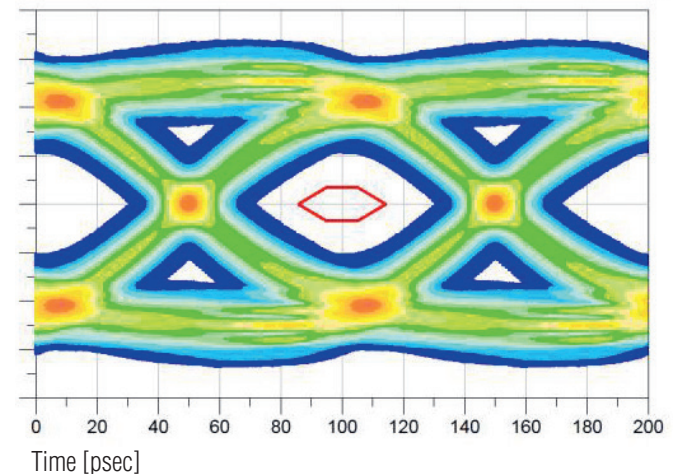
Up to 5000 mating cycles guaranteed providing longer service life & optimized cost of ownership

¹ These LEMO specific connectors can transmit data using the USB 3.1 protocol, but they are not USB®-standard connectors. Their proprietary interface is compliant with the Universal Serial Bus specification 3.1 and can be used for 10 Gb/s applications with cables up to 1.5m. While using a proprietary interface guaranteeing high-quality signal within a very robust casing, the LEMO connectors can also be used in conjunction with standard USB type interfaces (e.g. Type-C) in a cable assembly.

Eye Diagram at Receiver Output 5 GT/s



Eye Diagram at Receiver Output 10 GT/s



High-speed interconnect solutions

Selecting a USB 3.1 connector does not automatically guarantee compliance to this protocol and the related data transfer speed for the complete interconnect solution. In fact, the cable has to at least comply to the same protocol, respect the maximum length given in the protocol and be carefully assembled to the connector; the solution has then to be fully tested.

LEMO's experts are ready to assist you for compliant Interconnect solutions, please feel free to reach out.

Applications



Automotive



Communication



Defense



Industrial & Robotics



Test & Measurement

About LEMO

LEMO is the industry pioneer in the design and manufacture of high-quality and high-performance interconnect solutions. LEMO's Push-Pull and ratchet coupling connectors are found in a variety of challenging application environments including medical, industrial & machines, automotive, test & measurement, defense, audio-video and telecommunications.

LEMO has been designing precision connectors for more than 75 years. Offering over 90,000 combinations of product that continue to grow through custom specific designs, LEMO and its brand REDEL, NORTHWIRE and COELVER currently serve more than 150,000 customers in over 80 countries around the world.



Cable assembly

LEMO is renowned for the quality of its connectors and this is matched by the cable assemblies supplied.

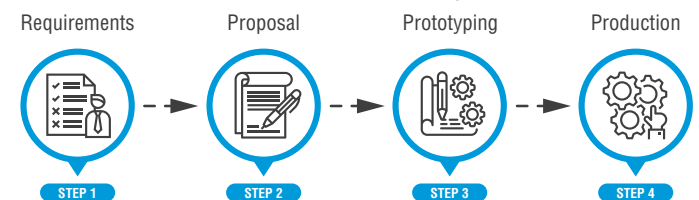
Commitment to quality is supported by 100% testing of all assemblies. Capabilities include potting and overmolding to support rapid prototype and development through to high volume series production. LEMO subsidiaries are equipped with modern equipment, much of it custom built specifically for customer needs. These include cut and strip machinery, robotic assembly and automatic test equipment to ensure maximum reliability and confidence in LEMO cable assemblies.

Custom solutions

Contacts, connectors and integrated cable assembly solutions meet the most demanding technical market requirements. LEMO's connector solutions and value-added services are characterized by their exclusive focus on meeting the customer's needs.

- Precise implementation of application-specific requirements regarding design, functionality, cost and exclusivity
- Custom connector solutions derived from standard products
- One-to-one local expertise
- Quick prototyping and production turn around

Custom interconnect solutions based on your requirements



Discover more on lemo.com

