

ISOBUS

## **Breakaway, diagnostic, and in-cab connectors**

**The ISO 11783-2 standard specifies the so-called Isobus connectors. Multiple suppliers offer such products.**



*Isobus networks are increasingly used in agriculture machines to connect tractors and implements (Photo: Erich Jaeger)*

The ISO 11783-2 standard specifies three types of connectors: the implement bus breakaway connector, the diagnostic connector, and the in-cab connector. There is also a bus-extension connector described in the annex of ISO 11783-2. Connectors compliant to this standard are available from several companies. Amphenol offers the IBIC (Isobus implement connector) family, which is designed for more than 100 mating cycles. The lockable products (bayonet) provide a protection cap. Also Conec expanded its Isobus portfolio to support larger wire cross-sections. Both companies offer access to cables with 6-mm<sup>2</sup>, 10-mm<sup>2</sup>, and 16-mm<sup>2</sup> wires for ground and supply voltage. The IBIC is plugged into the so-called Isobus breakaway connectors (IBBC). This makes it possible to connect and power all implements and systems that require Isobus communication. The necessary electronics to enable communication is integrated.

Littlefuse manufactures IBBCs compliant with ISO 11783-2. They are sealed against water and dust featuring IP67 protection. In the IBBC socket, the bayonet coupling is disabled and the connector is locked by means of a spring bracket. The spring bracket serves to secure the inserted IBIC. At the same time, it fulfills the “breakaway” function, which guarantees defined opening of the bracket in case of sudden pulling force on the cable. In unmated condition, a cap against dust and humidity protects the IP67-rated connector. When not plugged in, the IBBC socket is protected from moisture and dirt by a protective cap with integrated seal. The product is equipped with a landing plate to protect the sealing of the protective cap even when plugged in. The normal version of the landing plate is round, optionally there is also a landing plate with a flattened outer surface on both sides. Upon request, the connector can also be supplied complete without landing plate.



*Isobus connectors with different cables (Photo: Amphenol)*

Another supplier producing Isobus connectors is Erich Jaeger. Since about 16 years, the company supports the ISO 11783 standard series. Already in 2015, an improved version of IBBC socket connectors has been introduced. Based on analyses from ageing systems, as well as on collaboration with customers made field tests, these products comply strictly with both the ISO 11783 series and customer-specific requirements. The socket, along with plugs and attachments, is also compatible with all other solutions available on the market, for example, with Isobus products by Powell (IBBC, IBIC, and IBRC). The IBRC (Isobus rear connector) allows for rapid installation of the connector during final assembly. The 4-position connector is installed on the cabin harness assembly, while the IBBC is mounted on the tractor.

Powell's IBIC provides a mating cap. It is intended for two cases. One is to provide an environmental sealing to the IBIC in case not mated. The other is to have a storage place, when not in use. The cap is therefore equipped with a lanyard enabling a connection to the cable or it can also be fitted in a bracket at the implement. The company supplies diagnostic connectors, too. Additionally, a terminating bias circuit (TBC) is available. It enables a CAN stand-alone termination.

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