

OCE Series Optical CAN/VAN extenders



CAN

By OCE we mean a family of fiber optic links for extension of CAN and VAN buses.

The CAN (Controller Area Network) is a bidirectional data stream standardized by ISO specifications.

It is already popular nowadays with the automotive community as it represents the typical connection between on board controllers that exchange data. The need for passing data to and from microprocessor based units on vehicles is growing rapidly and the CAN will get even more popular in the future.

The usage of the bus is also expanding to other application areas requiring relatively high bit rates at a cheap price like industrial automation, intelligent home, etc...

Different speeds are accounted for by different standards.

Low data rates are covered by ISO 11519 part 2 and high data rates by ISO 11898.

OBE519 and OBE898 are TESEO ISO compliant fiber optic extenders.

The differences are confined to the transceivers and, in particular, to few components in the transceiver circuitry.

The reasons for utilizing a CAN bus optical extender in an EMC hostile environment are more than one:

- *you may have part of the bus and attached equipment in the chamber being radiated from an antenna and part of same bus and related equipment to be kept out of the high field zone in the control room*
- *you may need to monitor and/or stimulate the bus during an immunity test from a remote terminal unit outside the anechoic chamber (CAN analyzer)*
- *you have to isolate a portion of the bus*

For the above and other possible cases the solution is the extension of the CAN bus by means of the OCE.

VAN

The VAN standard is covered by ISO specification 11519 part 3.

The ISO compliant TESEO product is OBE519VAN. Again the differences are confined to the transceivers.

The reasons for utilizing a VAN optical extender are the same as those explained above for CAN. Each extender consists of:

- two identical Rx/Tx units. They are shielded and battery powered to be independent from the bus power source, for example the vehicle battery. The part number of each unit is OBE519, OBE519-F (Special version compliant with FIAT standards), OBE898 or OBE519VAN.
- two battery chargers, model CB1, to recharge the OBE internal battery

- a bifiber cable, part number FBxxx, with xxx equal to the length expressed in meters. The standard cable is the 10 meters long FB010

The connections of the OBE's to the electrical bus are a customer's responsibility.

The use of short twisted shielded wires is recommended.



OBE898

TECHNICAL CHARACTERISTICS

	OBE898	OBE519	OBE519VAN
Data rate	1 Mbit/s	125 kbit/s	125 kbit/s
Bus interface	ISO11898 compliant	ISO11519 part 2 compliant	ISO11519 part 3 compliant
Bus terminations	60Ω, O.C., 120Ω switch Selectable (OBE898)	<ul style="list-style-type: none"> • O.C., active termination switch selectable (OBE 519) • 1kΩ, 2.2kΩ, switch (OBE 519-F) 	none (OBE519VAN)
Electrical connector	DB9		
Optical connectors	ST		
Power supply	Rechargeable 6V lead battery		
Battery operating time	8 hours		
Battery charging time	2 hours		
Fiber cable type	200 um		
Fiber cable length	10m at max data rate		
Size of OBE	108 x 69 x 59 mm		
Operating temperature	0 to 50 °C		
Shielding	200 V/m up to GHz		