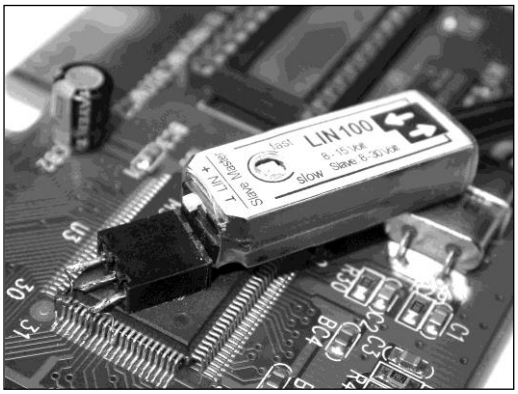
LANGER

EMV-TECHNIK

Operating instructions

LIN 100
Optical fibre probe

	Contents:	Page
1.	**Use**	**2**
2.	**Operation**	**2**
2.1.	Mechanical connection	2
2.2.	Optical connection	3
2.3.	Electrical connection	3
3.	**Safety instructions**	**4**
4.	**Technical specifications**	**4**
5.	**Scope of delivery**	**4**



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Transmission of LIN signals via optical fibre

1. Use

Transmission of LIN signals via optical fibre especially

- **during EMC measurements**
- **at high potential differences** (high voltage)

2. Operation

2.1. Mechanical connection

The LIN 100 has a GND, a supply and a LIN pin.

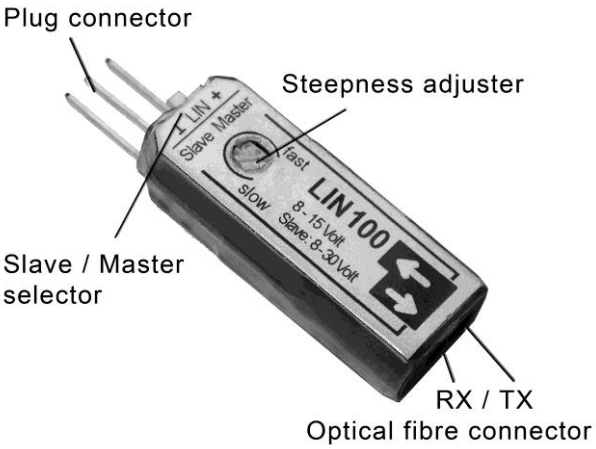

Figure 1: LIN 100 pin assignment

The LIN 100 must be connected with the device under test (DUT) at a very short distance to prevent errors during burst and ESD measurements under RF radiation. The usual probe tips are too big. We recommend that you solder the LIN 100 directly to the module via a ***socket*** (included in the delivery) to confine the arrangement to a small space:
Glue the socket to the circuit board or IC of the DUT (super glue or double-face adhesive tape) and connect to the DUT with CuL wire according to the LIN 100 pin assignment.

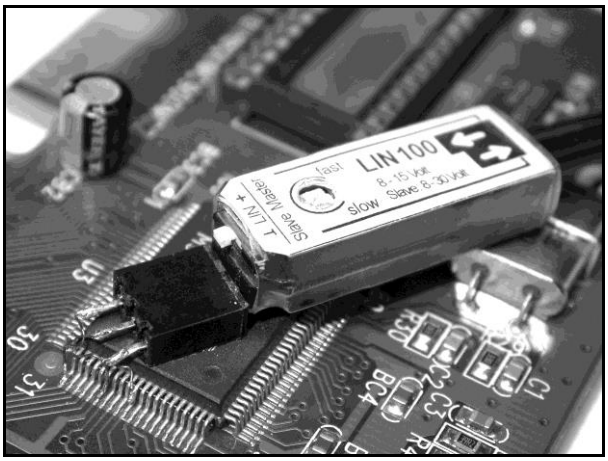

Figure 2: LIN 100 in the module

To avoid measuring errors make sure:

- to arrange the LIN 100 close to the DUT's GND surfaces.
- to tap the current from the immediate vicinity of the signal (pins or blocking capacitor of the IC associated with the signal).

The closer the LIN 100 housing is arranged to the GND system of the DUT and the shorter the GND connection between the LIN 100 and the GND of the module is, the higher its disturbance immunity.

2.2. Optical connection

The double optical fibre is simply plugged into the LIN 100. The two individual optical fibres are of different lengths at both ends and can thus be assigned to the correct LIN 100 opening. The optical fibre which is slightly longer must always be connected to the optical input, the shorter one to the optical output. The longer optical fibre must also be pushed farther into the LIN 100 (up to the limit stop) so that the double optical fibre is flush with the LIN 100 when connected correctly.

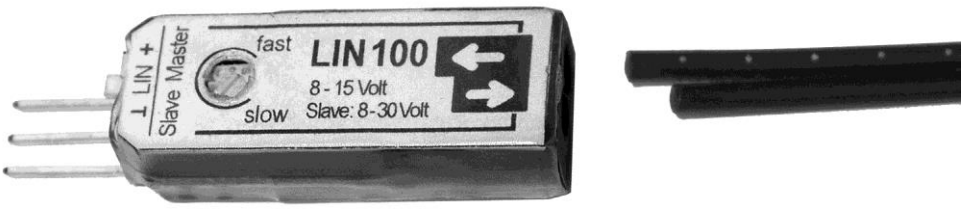

Figure 3: LIN 100 connection with the optical fibre

The maximum length of the optical fibre is 20 m.

2.3. Electrical connection

The LIN 100 is connected to the GND and supply voltage of the electronic module. The LIN pin is connected to the LIN signal of the electronics. An internal 1 kOhm pull-up resistor can be switched in (for operation as a master) via the switch on the LIN 100 if required.

The steepness of the signals output by the LIN 100 can be changed with a screwdriver. A minimum steepness is required depending on the transmission rate. The regulator should be set to "fast" for a transmission rate of 20 kHz (state on delivery).

3. Safety instructions

- Never use any damaged or defective devices.
- Always observe the operation and safety instructions for the respective disturbance source used (burst generator, RF power amplifier, transmitting aerials etc.).
- Only technically competent personnel skilled in the field of EMC are allowed to use the device under the influence of disturbances.
- The LIN 100 may only be connected and disconnected if it is free from any influences.

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4. Technical specifications

Dimensions (incl. plug-connector)	37x12x8 mm
Supply voltage	8 ... 15 Volt (as master) 8 ... 30 Volt (as slave)
Electric strength	+/- 40 V
Current input	approx. 40 mA (recessive) max. approx. 80 mA (master, reception, dominant)
Max. transmission rate	20 kbps
Optical fibre connection	2 x 2.2 mm Ø
Max. optical fibre length	20 m

5. Scope of delivery

Item	Designation	Type	Quantity
01	Sensor	LIN 100	2
02	Double optical fibre	10 m	1
03	Adapter socket	3-polig	6
04	Cu enamelled wire 0.2 mm	Reel of 34 m	1
05	Transport case with foam insert(240x185x50) mm	1	
06	Operating instructions		1