DOtech TypeU53

Optical transmission system for analog signals

General information

The measuring system can be used for optical digital transmission of analog signals at a resolution of 8 bit per channel and an analog bandwidth of 10 MHz. The system consists of a transmitter (powered by an external battery pack), combined filters and voltage dividers, a simplex optical fibre and a receiver (powered by an external power supply). The transmitter is able to withstand the high fieldstrength commonly used at immunity tests in the automotive area in TEM-cells, stripline antennas and anechoic chambers. The measured signal is filtered, digitized and transmitted optically and potential free to the receiver where the analog voltage signal is recovered from the high speed digital signal and can be measured with a high impedance voltage measuring system, e.g. a digital storage Oscilloscope.

Technical Data

System

- Analog bandwidth: DC to 10 MHz
  +/- 5,0 V (ratio Uin/Uout=1:1)
  +/- 15,0 V (ratio Uin/Uout=1:1)
  +/- 30,0 V (ratio Uin/Uout=2:1)
  +/-100,0 V (ratio Uin/Uout=20:1)
- resolution: 8 Bit
- accuracy: < 1 LSB @ Ê < 500 V/m bei $f_{interference}$ > 60 MHz
- housing: aluminium

Transmitter

- Uin max. (without divider): +/- 1,0 V
- Input voltage divider ratio: 1.1; 1:5; 1:15; 1:30 further customized values upon request
- Transmitter accumulator (external): 5,7 V < U_{Akku} < 7,0 V
- Battery life: 5 h (with supplied accumulator)
- Battery control: via LED (3x)
- Operating temp: 0°C – 70°C
- Storage temp: -20°C – 85°C

Receiver

- Output voltage range: 5 V/15 V reversible (R_{in} > 10 kOhm)
- Power supply: 12 V–13 V via external floating power supply output
- Max. output current: 60 mA (non short circuit proof)
- Output connector: BNC
- Operating temp: 0°C – 50°C
- Storage temp: -20°C – 85°C

Optical fibre

Type: Multimode-optical fibre 62,5/ 125 µm oder 100/140 µm
Optical connectors for RX und TX: ST

Stand: 04.11.2004