

# FSOD1 Free Space Optical Detector



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The **FSOD1 Free Space Optical Detector** is a fibre-coupled optical detector for the reception of optical free space communication. The detector features a highly responsive InGaAs avalanche photodiode (APD) with fibre-coupled input. The amplified and limited output make it suitable for receiving hard-

decision on-off-keying (O3K) signals according to CCSDS standards 141.0-B-1 and 142.0-B-1. Built in a 19" rack mount housing both a frontpanel user interface and network access via SNMP and HTTP interface provide easy integration into satellite ground station infrastructures.

<b>Optical signal input:</b>	Diode: InGaAs APD Fibre input: 50 µm multimode Connector: FC/APC Peak sensitivity wavelength: 1550 nm <i>w/ option L1550</i> <b>Contact factory for other wavelengths.</b> Wavelength range: 1000...1630 nm <i>w/ option L1550</i> O3K symbol rate: 100 Msps <i>w/ option S100M</i> Filter bandwidth is matched to specified symbol rate to optimize sensitivity. <b>Contact factory for other rates.</b> Sensitivity: < -47.6 dBm @BER 1E-3 < -47.3 dBm @BER 1E-4 < -46.8 dBm @BER 1E-5 < -45.8 dBm @BER 1E-6 < -45.0 dBm @BER 1E-7 < -43.5 dBm @BER 1E-8 Typical values 1..2 dB below given thresholds. Values apply for peak sensitivity wavelength and matched symbol rate.
<b>Electrical signal output:</b>	Connector: SFP+ Signal: amplified and limited output of the diode as differential signal on SFP+ TX pair Amplitude: 1.7 Vpp Connector: 2x SMA Signal: amplified and limited output of the diode as differential signal on SMA pair Amplitude: tbd Vpp
<b>Frontpanel interface:</b>	LCD-Display 2x40 characters, 4 cursor keys, 4 function keys
<b>Remote monitoring and control:</b>	Protocol: SNMP Connection: UDP/IP over Ethernet/RJ-45 Protocol: HTTP web browser interface Connection: TCP/IP over Ethernet/RJ-45
<b>Temperature range:</b>	Operating: 0°C...50°C Storage: -30°C...80°C Relative humidity: < 95% non condensing
<b>Mains power:</b>	Input: 100...240 V AC nominal, 90...264 V AC max, 50...60 Hz Consumption: 20 VA / 15 W typical Connector: IEC C14 Fuse: 2x 2.5 A time-lag fuse
<b>Dimension and weight:</b>	483 x 44 x 505 mm <sup>3</sup> (WxHxD), 1 RU 19" approx. 3 kg

Specifications are subject to change

# FSOD1

## Free Space Optical Detector

### Order information:

**FSOD1** Free Space Optical Detector

### Hardware options:

Hardware options have to be defined with the order and are not field-upgradable. Not all device types may support all combinations. Contact factory with specific requests.

**L1550** 1550 nm peak sensitivity wavelength  
**S100M** 100 Msps symbol rate filter bandwidth