

## Optical receivers OD006, OD006-55

### Product description

Optical receivers OD006, OD006-55 (in text – receivers) are intended for FTTH (Fiber to the Home) applications to convert signals from optical to electrical and amplify them. Devices are equipped with AGC based on optical level and optical input power indicator.

OD006-55 has integrated 1550 nm optical filter for WDM (Wavelength-Division Multiplexing) systems.

The receivers are powered from 5 V DC PSU (power supply unit) as well as TV set, set-top box or other USB port.

Devices are intended for indoor use only.

Suitable for moderate and tropical climates.

### Safety instructions

Installation of the receiver must be done according IEC60728-11 and national safety standards.

Any repairs must be done by a qualified personnel.

Output of PSU +5V must have a short circuit protection.

To ensure safe operation of the receiver follow these instructions:

do not plug the PSU into the mains supply until all cables have been connected correctly;

to disconnect the receiver completely, disconnect the PSU +5V from the mains or unplug USB cable;

the mains socket must be easily accessible;

receiver shall not be exposed to dripping or splashing water and no objects filled with liquids, such as vases, shall be placed on it;

avoid placing the receiver next to central heating components and in areas of high humidity;

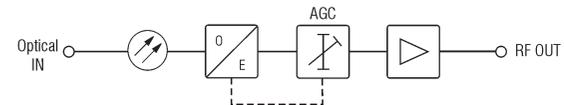
no naked flame sources, such as lighted candles, should be placed on receiver;

if the receiver has been kept in cold conditions for a long time, keep it in a warm room no less than 2 hours before plugging into the mains;

an optical connector after disconnection emits optical radiation;

avoid looking directly into beam, laser light can cause eye injuries and result in permanent loss of vision.

### Structure diagram



Vers. 1.02



This product complies with the relevant clauses of the European Directive 2002/96/EC. The unit must be recycled or discarded according to applicable local and national regulations.



Equipment intended for indoor usage only.



Equipment is double insulated from the mains.



Functional grounding. Connect to the main potential equalization.

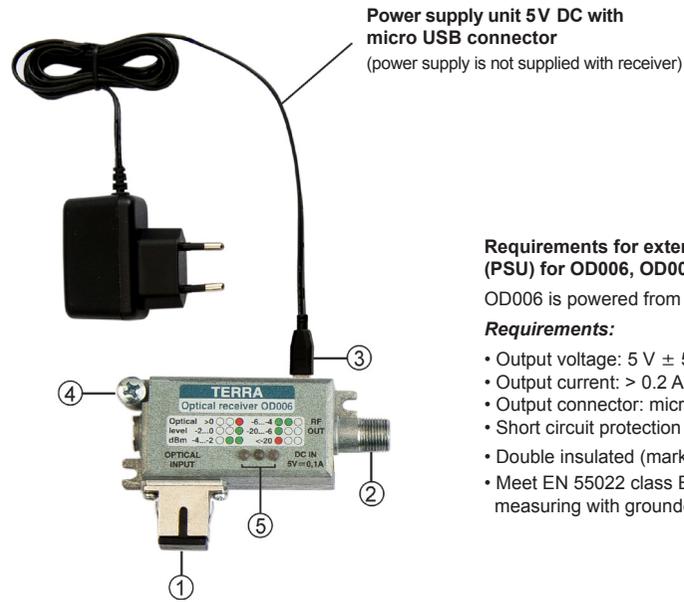


TERRA confirms, that this product is in accordance to following norms of EU: EMC norm EN50083-2, safety norm EN60065 and RoHS norm EN50581.



TERRA confirms, that this product is in accordance with Custom Union Technical Regulations: "Electromagnetic compatibility of technical equipment" CU TR 020/2011, "On safety of low-voltage equipment" CU TR 004/2011.

## Powering of receiver

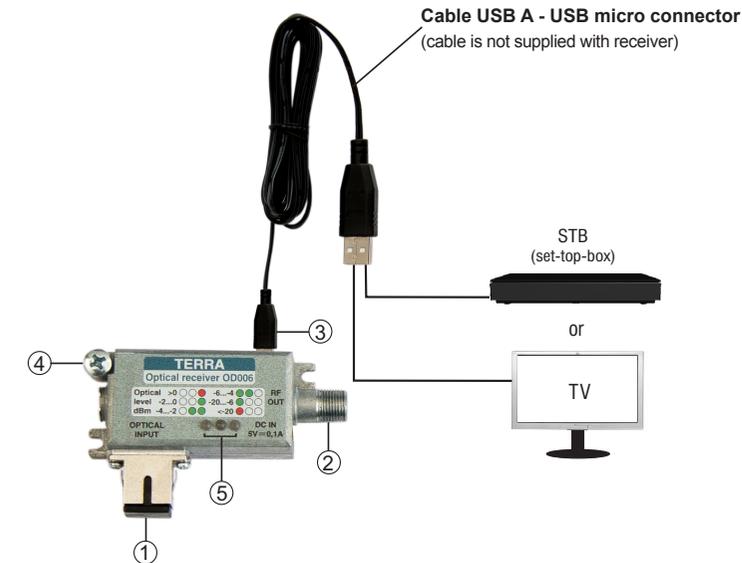


### Requirements for external power supply unit (PSU) for OD006, OD006-55

OD006 is powered from external 5 V DC power supply unit.

#### Requirements:

- Output voltage:  $5\text{ V} \pm 5\%$
- Output current:  $> 0.2\text{ A}$
- Output connector: micro USB
- Short circuit protection
- Double insulated (marked )
- Meet EN 55022 class B conducted emissions requirements, measuring with grounded load



1. Optical input SC/APC
2. **OUTPUT** - RF signal output connector (F socket)
3. micro USB connector
4. Functional grounding clamp
5. 3 LED optical input power indicator

## Installation instructions

Read the product description and safety instruction first.

Fiber installation should be done very carefully. Bending radius of fibers must be not less 25 mm. All optical connectors and adaptors should be cleaned before connecting them. Power on the receiver after all cables have been connected correctly.

## Technical characteristics

Type		OD006	OD006-55
Optical input	optical wave length	1100-1600 nm	1550 nm
	optical input level (AGC range)	-6 ...0 dBm	
	optical return loss	> 40 dB	
	noise current density	$\leq 6.5\text{ pA}/\sqrt{\text{Hz}}$	
RF output	frequency range	47-1006 MHz	
	impedance	75 $\Omega$	
	return loss	$\geq 14\text{ dB}$ at 40 MHz-1.5 dB/octave	
	frequency response	$\pm 0.75\text{ dB}$	
	output level (AGC controlled, 4.9% OMI)	80 dB $\mu$ V	
	output level (CTB, EN50083-3)	80 dB $\mu$ V (42 ch.)	
	output level (CSO, EN50083-3)	80 dB $\mu$ V (42 ch.)	
Power consumption		DC 5 V $\approx$ 0.1 A	
Operating temperature range		$-20^\circ \div + 50^\circ\text{ C}$	
Dimensions/Weight (packed)		72x53x19 mm/0.08 kg	

## Operating and adjusting

Optical Level Control (OLC) is active at optical input power  $-6 \dots 0\text{ dBm}$ . RF level remains constant while optical input power fluctuates in range of  $-6 \dots 0\text{ dBm}$ . Out of this range receiver continues to operate though OLC is disabled.

The receiver owns optical input power indicator formed from 3 LED. Note the table below for detailed description.

Indication			OLC	Optical input power
Left LED	Middle LED	Right LED		
Not glowing	Not glowing	<b>Glowing red</b>	OFF	$> 0\text{ dBm}$
Not glowing	Not glowing	<b>Glowing green</b>	ON	$-2 \dots 0\text{ dBm}$
Not glowing	<b>Glowing green</b>	<b>Glowing green</b>	ON	$-4 \dots -2\text{ dBm}$
<b>Glowing green</b>	<b>Glowing green</b>	Not glowing	ON	$-6 \dots -4\text{ dBm}$
<b>Glowing green</b>	Not glowing	Not glowing	OFF	$-20 \dots -6\text{ dBm}$
<b>Glowing red</b>	Not glowing	Not glowing	OFF	$< -20\text{ dBm}$