

Optical Power Meter OPM1

1 General

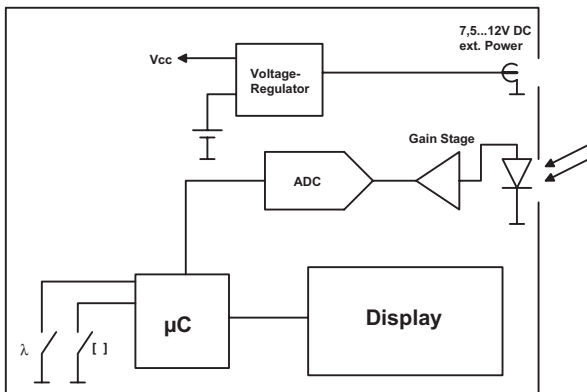
The power meter is used to determine the optical power of a light source (LED or Laser), or it measures the attenuation of optical cables in association with a stabilised light source. Using of microprocessor technology the meter allows measuring at two different wavelengths as well as displaying the absolute optical power in μW or dBm . For relative power measurements the measured value will be displayed as (dB). A system of adaptors allows coupling of all common optical cable connectors.

2 Applications

Favourable characteristics plus accurate coupling with all system adaptors on terminated optical cable enables a great number of applications:

- laboratory analysis
- installation inspections
- quality control
- testing of optical transmitters
- attenuation readings on optical cable

3 Block Diagram



Pic. 1

4 Features

- Optical Power Meter
- 660nm and 850nm calibrated wavelengths
- M12 Adaptor System
- 9 V Block Battery or external Power Supply
- 25 x 50 mm LC-Display
- Plastic Housing
- Easy Handling

5 Ordering Information

Model	Part Number
Basic device (no adaptors)	909 PM 000 00 111

Appropriate adaptors for different connector styles must be ordered separately

Note :

Please refer to data sheet **T09PMADASM001** for System Adaptors

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6 Operation

Please attach the required adaptor. Activate ON / OFF switch positioned on left top half of housing. By activating the measuring instrument an automatic zero offset will be conducted. After completion of the automatic zero offset the LC-Display shows 850nm as wavelength and dBm as units of measured value. By operating the keys [λ] and [] on the top side of the measuring instrument the wavelength ($\lambda = 850/660\text{nm}$) as well as the unit of the measured value ([] = $\mu\text{W}/\text{dBm}/\text{dB}$) may be toggled.

Should the supply voltage of the block battery or the external power supply drop below 6 V, a warning will be displayed. If the supply voltage sinks below 4.7 V the device will switch off.

7 Attenuation Measuring

For standard measurements of insertion losses on optical cables the IEC 874-1 recommends nine different methods of measurement. As one of a better method for determining attenuation on optical fibres we recommend method 6: Measurement of optical cable with two connectors or, for measurement of insertion loss.

At first an optical signal generator and the power meter are connected by two measuring leads plus coupling for reference measuring. Choose measured value display [μW], after stabilisation of the display read-out, switch over to measured value display [dB]. The instrument saves the present measured value, which serves as reference value for following measurements.

Insert, by using a second coupling, the device under test inbetween both reference cables. Now the measuring instrument displays the line attenuation.

— **Caution** —

By switching off the measuring instrument the reference value is lost.

8 Maximum Ratings

Power supply +V _____ +15V DC
Storage temperature _____ -20..+70°C
Operating temperature _____ -10..+60°C

Stresses beyond those listed under 'Maximum Ratings' may cause permanent damage to the instrument. Above listed values are stress limits only and functional operation of the power meter at these conditions is not recommended. Exposure to maximum rating conditions for extended periods may affect the instrument reliability.

9 Technical Data

opt. port:	Adaptor, for all common fiber optic connectors
opt. detector:	Silicon-PIN-Diode
meas. range:	0,01 μW - 2000 μW -50,0dBm - +3dBm -50dB - +33dB (depending on reference value)
accuracy:	$\pm 1\%$ (μW); $\pm 0,04\text{dBm}$
max. error value:	1Digit
temperature drift:	0,01%/°C
power supply:	9V block battery (t_{Life} appr. 10h) external 9V DC via 3,5mm socket
current consumption:	appr. 32mA
case:	plastic
dimensions:	appr. 128x70x26 mm (L x W x H)
protection class:	IP40
weight:	appr. 160g
temperature range:	-0 .. +50°C (operation)

10 Technical Drawing

