

**Low-Noise Photoreceiver
Fixed-Gain Cased Module**

Features

- Compact 84 x 55 x 24 mm
- High Gain
- Low Noise

Applications

- Low Level Light Detection
- Spectroscopy
- Fluorescence Measurement

The A640X Series are state-of-the-art low-noise transimpedance amplifier modules with integrated photodiode. They provide reliable detection of low level visible and infrared light coupled in per fiber.

A Silicon- or InGaAs-Photodiode can be selected as the detector. These cased amplifier modules have a F-SMA receptacle as fiber optical input. A matching power supply is available as an accessory.

Model	A6401-SI	A6402-SI	A6403-SI	A6404-SI	A6405-SI
Transimpedance Gain	10 ⁷ V/A	10 ⁸ V/A	10 ⁹ V/A	10 ¹⁰ V/A	10 ¹¹ V/A
Bandwidth ±10%	DC – 500 kHz	DC – 50 kHz	DC – 5 kHz	DC – 400 Hz	DC – 40 Hz
Spectral Range [nm]	400 to 1100	400 to 1100	400 to 1100	400 to 1100	400 to 1100
Max. Conversion Gain	6.0 x 10 ⁶ V/W @ 850 nm	6.0 x 10 ⁷ V/W @ 850 nm	6.0 x 10 ⁸ V/W @ 850 nm	6.0 x 10 ⁹ V/W @ 850 nm	6.0 x 10 ¹⁰ V/W @ 850 nm
Min. NEP (typ.)	100 fW/√Hz @10 kHz	40 fW/√Hz @1 kHz	12 fW/√Hz @200 Hz	4 fW/√Hz @40 Hz	1.5 fW/√Hz @10 Hz
Active Area	1 x 1 mm ²	1 x 1 mm ²	1 x 1 mm ²	1 x 1 mm ²	1 x 1 mm ²

Model	A6401-IN	A6402-IN	A6403-IN	A6404-IN	A6405-IN
Transimpedance Gain	10 ⁷ V/A	10 ⁸ V/A	10 ⁹ V/A	10 ¹⁰ V/A	10 ¹¹ V/A
Bandwidth ±10%	DC – 500 kHz	DC – 50 kHz	DC – 5 kHz	DC – 400 Hz	DC – 40 Hz
Spectral Range [nm]	900 to 1700	900 to 1700	900 to 1700	900 to 1700	900 to 1700
Max. Conversion Gain	9 x 10 ⁶ V/W @ 1550 nm	9 x 10 ⁷ V/W @ 1550 nm	9 x 10 ⁸ V/W @ 1550 nm	9 x 10 ⁹ V/W @ 1550 nm	9 x 10 ¹⁰ V/W @ 1550 nm
Min. NEP (typ.)	70 fW/√Hz @10 kHz	25 fW/√Hz @1 kHz	11 fW/√Hz @200 Hz	9 fW/√Hz @40 Hz	8 fW/√Hz @10 Hz
Active Area	∅ 500 μm	∅ 500 μm	∅ 500 μm	∅ 500 μm	∅ 500 μm

Model A640X Series Data Sheet

Common Characteristics	
Nonlinearity	< 0.1% (A6405 < 1%)
Output Voltage Range	± 10 V (>10 kΩ Load)
Output Impedance	50 Ω
Max. Output Current	± 10 mA
Power Supply Voltage	± 15 V
Power Supply Current	± 30 mA typ.
Case	Anodized Aluminum
Weight	130 g
Storage Temperature	-20 .. +80 °C
Operating Temperature	10 .. 50 °C

All characteristics are for ±15 V power supply and 25 °C ambient temperature.

Absolute Maximum Ratings	
Optical Input Power	10 mW
Power Supply Voltage	± 20 V

Ordering Information		
Ordering Code: A640X-Y		
X = Gain:	Y = Detector:	
1 = 10 ⁷ V/A	SI = Silicon Photodiode	
2 = 10 ⁸ V/A	IN = InGaAs Photodiode	
3 = 10 ⁹ V/A		
4 = 10 ¹⁰ V/A		
5 = 10 ¹¹ V/A		

Ordering Code Example:

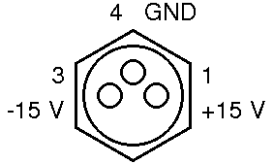
A6403-SI = Gain 10⁹ V/A, Input with Silicon Photodiode in F-SMA receptacle

Physimetron – Christian Grundel
Winterfeldtstr. 45
10781 Berlin

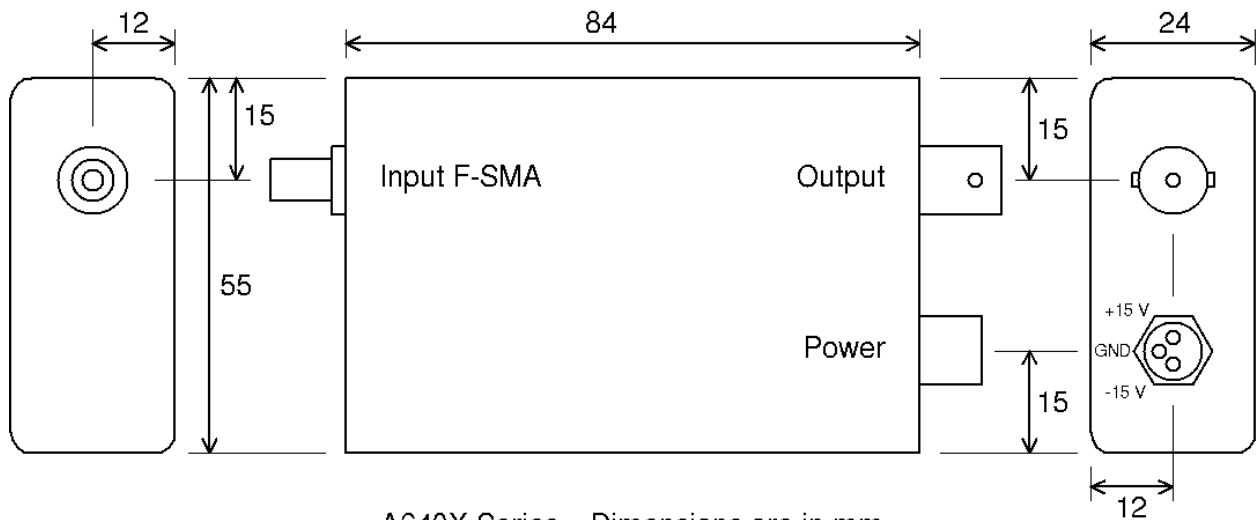
Tel.: +49 30 23 63 44 96
Fax: +49 30 23 63 44 97
E-Mail: info@physimetron.de

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Connections	
Input	SMA Fiber Optical Receptacle
Output	BNC Connector
Power Supply	M8 Connector Pin 1 = +15V Positive Supply Pin 3 = -15V Negative Supply Pin 4 = Ground



Dimensions



Power Supply is a female 3-pin industry standard M8-connector.