

AIP series preamplifiers

AIP is a new generation of transimpedance, AC or DC coupled preamplifiers. It is designed to operate with either biased or non-biased VIGO detectors. AIP is „all-in-one“ device – a preamplifier is integrated with a fan and a thermoelectric cooler controller in a compact housing. It is very convenient and user-friendly device, thus can be easily used in a variety of applications.

Features

- Integrated TEC controller and fan
- Frequency bandwidth up to 250 MHz
- Single power supply
- DC monitor
- Optimised for effective heat dissipation
- Compatible with optical accessories
- Cost effective OEM version available
- Universal and flexible



Specification ($T_a = 20^\circ\text{C}$)

Parameter	Typical value	Conditions, remarks
Low cut-off frequency f_{lo} , Hz	DC, 10, 100, 1k, 10k	
High cut-off frequency f_{hi} , Hz	100k, 1M, 10M, 100M, 250M	
Transimpedance K_i , V/A	up to 200k	fixed
Output impedance R_{out} , Ω	50	
Output voltage swing V_{out} , V	± 2 ± 1	$f_{hi} \leq 1$ MHz, $R_L = 1$ M $\Omega^*)$ $f_{hi} > 1$ MHz, $R_L = 50$ $\Omega^*)$
Output voltage offset V_{off} , mV	max $\pm 20^{**})$	
Power supply voltage V_{sup} , V	+5 +12	with 2TE and 3TE cooled detectors with 4TE cooled detectors
Power supply current I_{sup} , mA	max ± 50	
Ambient operating temperature T_a , $^\circ\text{C}$	10 to 30	
Signal output socket	SMA	RF output
DC output socket	SMA	DC monitor
Supply socket	DC 2.1/5.5 DC 2.5/5.5	$V_{sup} = +12$ V $V_{sup} = +5$ V
Mounting hole	M4	
Fan	yes	

^{*)} R_L – load resistance

^{**)} Measured with equivalent resistor at the input instead of the detector, it is to avoid the environmental thermal radiation impact.

Types of VIGO detectors that can be integrated with AIP preamplifier

- **Photoconductive**
PC-2TE, PC-3TE, PC-4TE
- **Photoconductive optically immersed**
PCI-2TE, PCI-3TE, PCI-4TE
- **Photovoltaic**
PV-2TE, PVA-2TE, PV-3TE, PV-4TE
- **Photovoltaic optically immersed**
PVI-2TE, PVIA-2TE, PVI-3TE, PVI-4TE
- **Photovoltaic multiple junction**
PVM-2TE
- **Photovoltaic multiple junction optically immersed**
PVMI-2TE, PVMI-3TE, PVMI-4TE

Code description

Type	f_{lo} , Hz	f_{hi} , Hz	Version
AIP	DC	100	S ^{*)} (with package)
	10	1M	
	100	10M	
	1k	100M	
	10k	250M	

^{*)} OEM version available upon request.

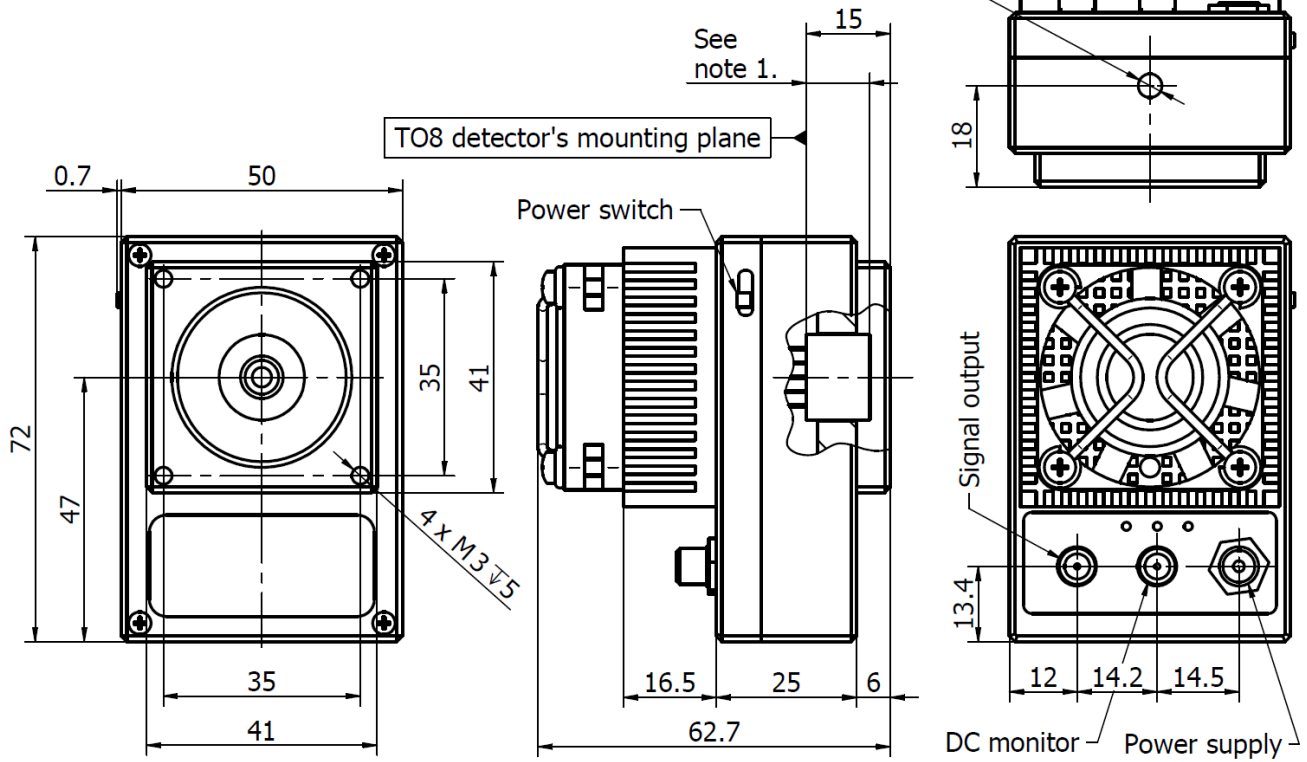
Included accessories

- 2x **SMA-BNC** cables + **AC adaptor**

Dedicated accessories

- **OTA** optical threaded adapter
- **DRB-2** base mounting system

Mechanical layout, mm



- Notes:
1. TO8 detector dimensions in the "TO8 technical drawing".