

### 2.34 FIP series

FIP is a series of high speed, transimpedance, AC coupled preamplifiers, intended to operate with biased TE cooled VIGO detectors. Fast preamplifier enables precise I-V conversion, detector biasing up to 800 mV and simultaneously maintains compact size and keeps current noise low. FIP is equipped with a fan and does not require additional heat dissipation. It is suitable for applications requiring wide frequency bandwidth. Additional DC output is available as an option.

#### Features

- Wide frequency bandwidth up to 1 GHz
- Integrated fan
- DC monitor as an option



#### Specification (T<sub>a</sub> = 20°C)

Parameter	Typical value	Conditions, remarks
Low cut-off frequency f <sub>lo</sub> , Hz	1k, 10k	
High cut-off frequency f <sub>hi</sub> , Hz	1G	
Transimpedance K <sub>v</sub> , V/A	up to 8.5k	fixed
Output impedance R <sub>out</sub> , Ω	50	
Output voltage swing V <sub>out</sub> , V	±1	R <sub>Load</sub> = 50 Ω
Power supply voltage V <sub>sup</sub> , V	+12 / -5	
Power supply current I <sub>sup</sub> , mA	+100 -50	
Ambient operating temperature T <sub>op</sub> , °C	10 to 30	
Signal output socket	SMA	RF output
DC output socket	SMA	DC monitor (option)
Power supply and TEC control socket	LEMO (female)	ECG.0B.309.CLN
Mounting hole	M4	
Fan	yes	

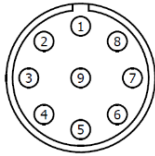
#### Types of VIGO detectors that can be integrated with FIP preamplifier

- Photovoltaic: PV-2TE, PV-3TE, PV-4TE
- Photovoltaic optically immersed: PVI-2TE, PVI-3TE, PVI-4TE

#### Code description

Type	f <sub>lo</sub> , Hz	f <sub>hi</sub> , Hz	Version
FIP	1k 10k	1G	D (with DC monitor) ND (without DC monitor)

**Power supply and TEC control socket LEMO (female)**  
**ECG.0B.309.CLN**



Function	Symbol	Pin number
Fan (+)	FAN+	1
Thermistor output (2)	TH2	2
TEC supply input (-)	TEC-	3
Power supply input (-)	-V <sub>sup</sub>	4
Ground	GND	5
Power supply input (+)	+V <sub>sup</sub>	6
TEC supply input (+)	TEC+	7
Thermistor output (1)	TH1	8
Data pin	DATA	9

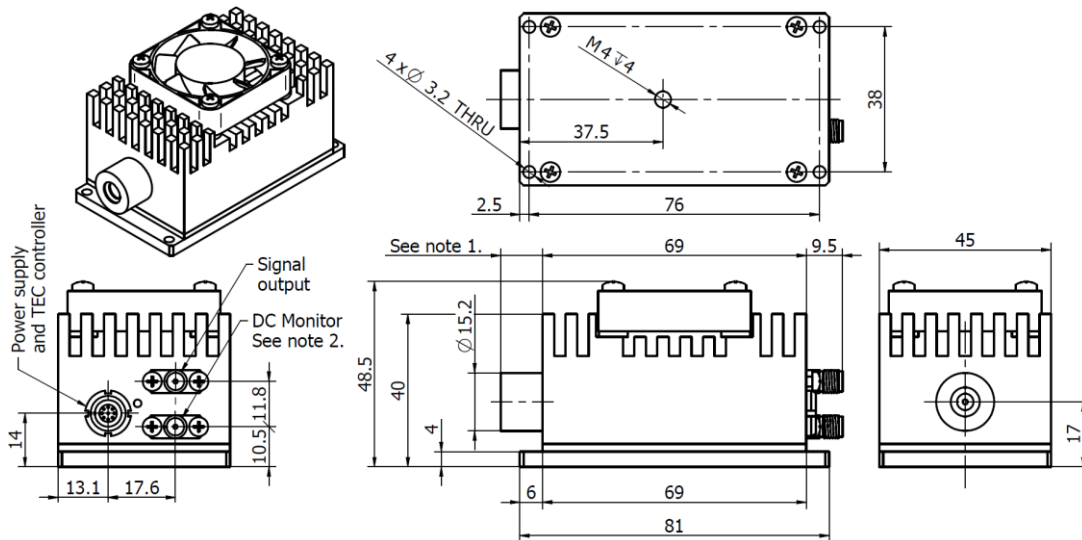
**Included accessories**

- SMA-BNC<sup>\*)</sup>, LEMO-DB9 cables
- <sup>\*)</sup> Additional SMA-BNC cable for FIP-xx-xx-D version.

**Dedicated accessories**

- PTCC-01-BAS TEC controller + USB: TypeA-MicroB cable + AC adaptor
- PTCC-01-ADV TEC controller + USB: TypeA-MicroB cable + AC adaptor
- PTCC-01-OEM TEC controller + USB: TypeA-MicroB KK2-POWER cables
- DRB-2 base mounting system

**Mechanical layout, mm**



Notes:  
 1. TO8 detector dimensions in the "TO8 technical drawing".  
 2. Only for FIP-xx-xx-D version.