

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

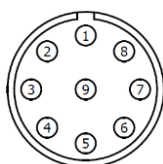
- Wide frequency bandwidth up to 1 GHz
- Integrated fan
- DC monitor as an option

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

Parameter	Typical value	Conditions, remarks
Low cut-off frequency f_{lo} , Hz	1k, 10k	
High cut-off frequency f_{hi} , Hz	1G	
Transimpedance K_i , V/A	up to 8.5k	fixed
Output impedance R_{out} , Ω	50	
Output voltage swing V_{out} , V	± 1	$R_L = 50 \Omega^*)$
Power supply voltage V_{sup} , V	+12 / -5	
Power supply current I_{sup} , mA	+100 -50	
Ambient operating temperature T_a , $^\circ\text{C}$	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	

^{*)} R_L – load resistance

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 (-)	$-V_{sup}$	4
Ground	GND	5
Power supply input (+)	$+V_{sup}$	6
TEC supply input (+)	TEC+	7
Thermistor output (1)	TH1	8
Data pin	DATA	9



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_{lo} , Hz	f_{hi} , Hz	Version
FIP	1k 10k	1G	D (with DC monitor) ND (without DC monitor)

Included accessories

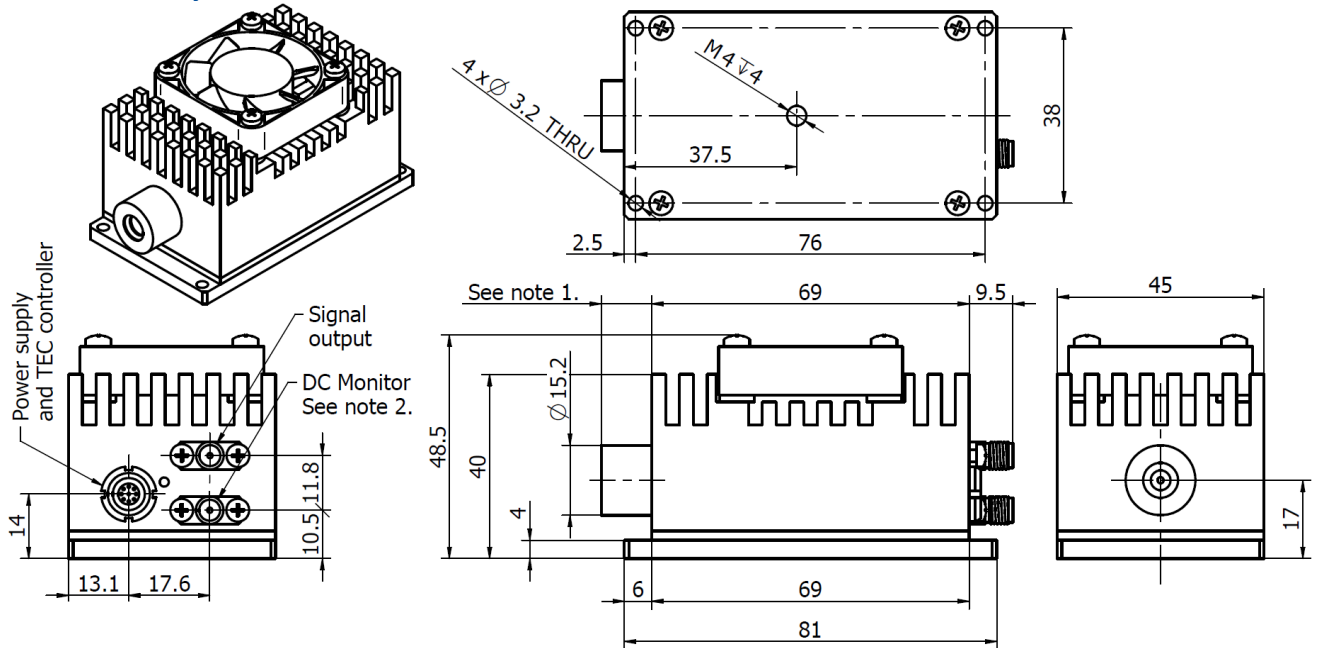
- SMA-BNC^{*)}, LEMO-DB9** cables

^{*)} 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.