

2.32 PIP series

PIP is a series of programmable “smart” preamplifiers. Due to the modern internal configuration, it offers extreme flexibility combined with superior signal parameters and high reliability. Built-in voltage monitor allows to check and optimize the working conditions (supply voltages, detector bias voltage, first and last stage output voltage offset, etc.).

There is also possible to change the gain, coupling (AC/DC), optimize the first stage transimpedance, and manually or automatically suppress the voltage offset.

Optimized parameters are stored into the internal EEPROM memory and automatically loaded after the power is on. Reset to default settings is available at any time. For detection module safety detector bias adjusting is blocked by default. Users can request to enable this option while ordering.

For proper operation, PTCC-01 TEC controller is required.

Parameters configurable by the user

- Output voltage offset
- Gain (in 40 dB range)
- Bandwidth:
 - 150 kHz/1.5 MHz/20 MHz
 - 1.5 MHz/15 MHz/200 MHz
- Coupling AC/DC
- Detector’s parameters (temperature, reverse bias etc.)



Specification (T_a = 20°C)

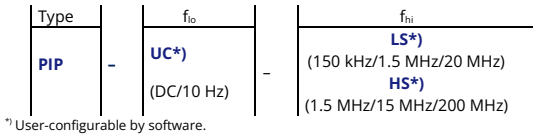
Parameter	Typical value	Conditions, remarks
Low cut-off frequency f_{lo} , Hz	DC/10	user-configurable by software
High cut-off frequency f_{hi} , Hz	150k/1.5M/20M 1.5M/15M/200M	user-configurable by software
Transimpedance K_v , V/A	2.5k – 150k 0.5k – 30k	digitally adjustable first stage transimpedance = 1 kΩ first stage transimpedance = 5 kΩ
Output impedance R_{out} , Ω	50	
Output voltage swing V_{out} , V	±1	$R_{Load} = 50 \Omega$
Output voltage offset V_{off} , mV	max ±20 ^{*)}	
Ambient operating temperature T_a , °C	10 to 30	
Signal output socket	SMA	
Power supply and TEC control socket	LEMO (female)	ECG.0B.309.CLN
Mounting hole	M4	
Fan	yes	

^{*)} 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 PIP 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



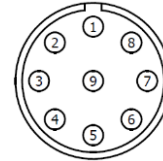
Included accessories

- SMA-BNC, LEMO-DB9 cables

Dedicated accessories

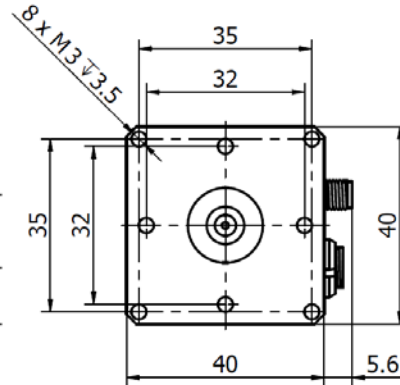
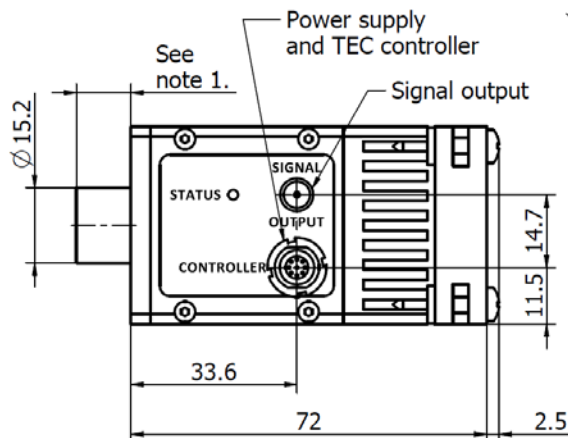
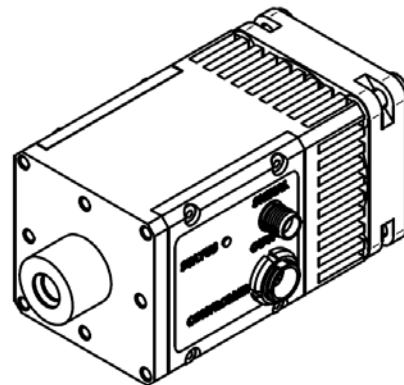
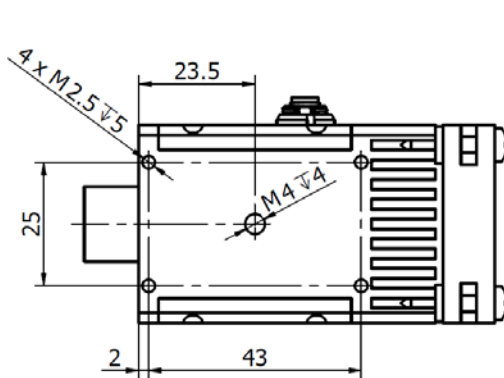
- PTCC-01-BAS TEC controller + USB:
TypeA-MicroB cable+ AC adaptor
- PTCC-01-ADV TEC controller + USB:
TypeA-MicroB cable + AC adaptor
- PTCC-01-OEM TEC controller + USB: TypeA-MicroB,
- KK2-POWER cables
- OTA optical threaded adapter
- DRB-2 base mounting system

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



Function	Symbol	Pin number
Fan and programmable preamp internal logic auxiliary supply	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
Bidirectional data pin	DATA	9

Mechanical layout, mm



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