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» 4.1 PTCC-01 TEC controller

Accessories

PTCC-01 – Programmable “smart” TEC controller



PTCC-01 is a programmable, precision, low noise, thermoelectric cooler controller, intended to operate with VIGO IR detection modules. It is compatible with both classic (MIP, SIP, FIP) and new, programmable PIP preamplifiers.

Available options:

PTCC-01-OEM

- TEC controller with built-in power supply, without housing
- configurable by PC software
- status LED indicator and status/data connector.

PTCC-01-BAS

- TEC controller with built-in power supply, encapsulated in a small package
- configurable by PC software
- status LED indicator.

PTCC-01-ADV

- TEC controller with built-in power supply, encapsulated in a small package
- configurable by built-in function keys or PC software
- user interface: LCD and buttons.

Specification

Parameter	Value
Temperature stability [K]	± 0.01 ($T_{\text{det}}=233\text{K}$ (-40°C), $T_{\text{det}}=0.1\text{K}$)
Temperature readout stability [mK]	max 1 ($T_{\text{det}}=233\text{K}$ (-60°C), $T_{\text{det}}=0.1\text{K}$)
Detector temperature settling time [s]	25 ($T_{\text{det}}=233\text{K}$ (-40°C), $T_{\text{det}}=0.1\text{K}$) 45 ($T_{\text{det}}=233\text{K}$ (-60°C), $T_{\text{det}}=0.1\text{K}$) 60 ($T_{\text{det}}=233\text{K}$ (-80°C), $T_{\text{det}}=0.1\text{K}$)
Maximum TEC current [A]	1.2 (2TE) 0.45 (3TE) 0.45 (4TE)
Output voltage range [V]	min 3, max 14.5
Output current of the built-in power supply [mA]	± 200 (output voltage: 3...14.5V)
Power supply voltage V_{sup} [V]	min 9, max 16 (wider range available upon request)
Power supply current I_{sup} [mA]	500 ($I_{\text{TEC}}=0.45\text{A}$, $U_{\text{TEC}}=7.5\text{V}$)
Series resistance of the connecting cable [m Ω]	1000 (total resistance of the wires supplying TEC element)
Storage temperature [$^{\circ}\text{C}$]	from -20 to $+70$
Ambient temperature [$^{\circ}\text{C}$]	from $+5$ to $+45$
Relative humidity [%]	from 10 to 90 (from $+5^{\circ}\text{C}$ to $+35^{\circ}\text{C}$) from 10 to 50 ($> +35^{\circ}\text{C}$)

Code description

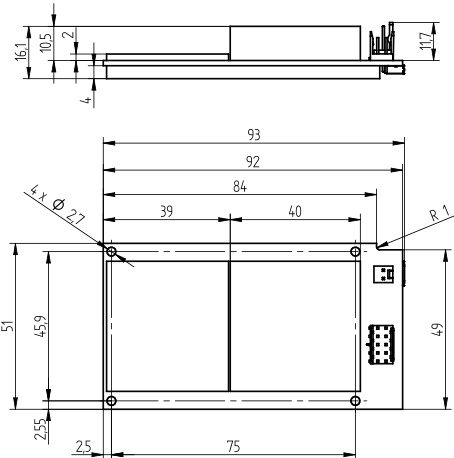
PTCC-01-BAS

VIGO thermoelectric cooler controller

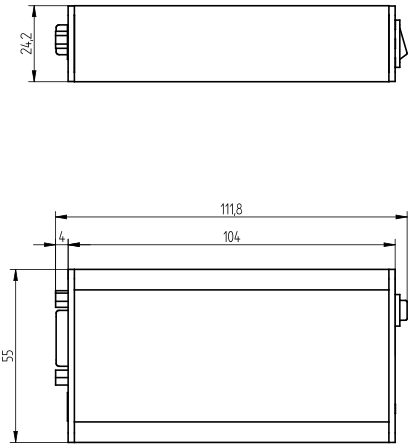
Version:
OEM - without package
BAS - Basic - with package
ADV - Advanced - with package, function buttons and LCD

Dimensions [mm]

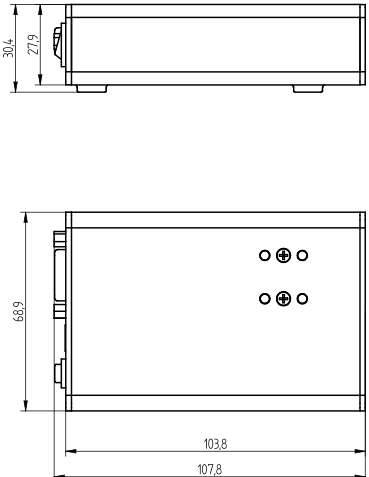
PTCC-01-OEM



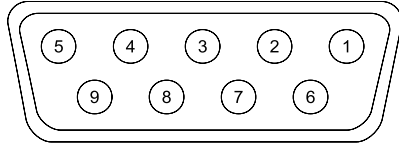
PTCC-01-BAS



PTCC-01-ADV

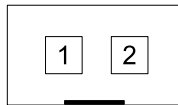


Power supply and control connector (PTCC-01-BAS and PTCC-01-ADV) - DB9 connector female



Pin number	Symbol	Function
1	TEC+	TEC supply output (+)
2	TEC-	TEC supply output (-)
3	GND	power ground
4	TH1	thermistor input (1)
5	TH2	thermistor input (2)
6	-V _{sup}	power supply output (-)
7	+5V	FAN and programmable preamp internal logic auxiliary supply
8	DATA	bidirectional data port
9	+V _{sup}	power supply output (+)
metal cover	GND-SH	shield

Power supply connector (PTCC-01-OEM) - KK2 connector male



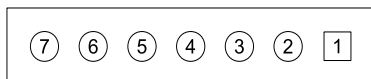
Pin number	Symbol	Function
1	TECC+	TEC controller supply input (+)
2	TECC GND	TEC controller power ground

Control connector (PTCC-01-OEM) - DUBOX2x5 connector male



Pin number	Symbol	Function
1	TEC+	TEC supply output (+)
2	TEC-	TEC supply output (-)
3	GND	power ground
4	TH1	thermistor input (1)
5	TH2	thermistor input (2)
6	-V _{sup}	tower supply output (-)
7	+5V	FAN and PIP preamp internal logic auxiliary supply
8	DATA	bidirectional data port
9	+V _{sup}	power supply output (+)
10	GND-SH	shield

Status/DATA connector (PTCC-01-OEM) - Pin Header 1x7



Pin number	Symbol	Function
1	ERR - LED	error indicator
2	LOCK - LED	temperature control loop lock indicator
3	SUP - LED	module power supply on indicator
4	3.3 V	auxiliary supply
5	TXD	transmitted data (RS-232)
6	GND	common (signal) ground (RS-232)
7	RXD	received data (RS-232)



PPS-03 is a small size preamplifier power supply, designed to operate with VIGO IR detection modules with uncooled detectors (VIP, SIP-TO39, uIP)

Specification

Parameter	Value
Power supply voltage V_{sup} [V AC]	100 to 240 (50Hz to 60Hz)
Output voltage [V DC]	± 15 , ± 9 , $+12$, -5
Output current [mA]	± 100
Weight [g]	100

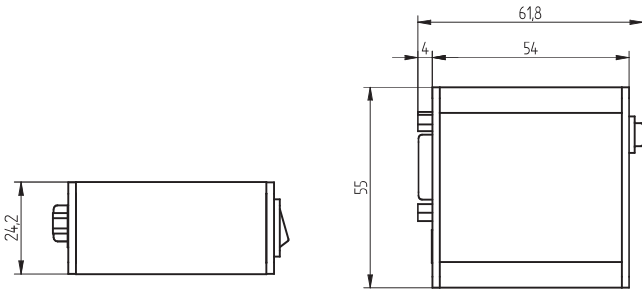
Code description

PPS-03-15

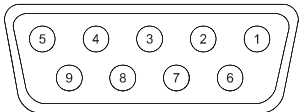
VIGO preamplifier power supply type

Power supply:
09 - $\pm 9V$
15 - $\pm 15V$
G1 - combined $+12V$, $-5V$

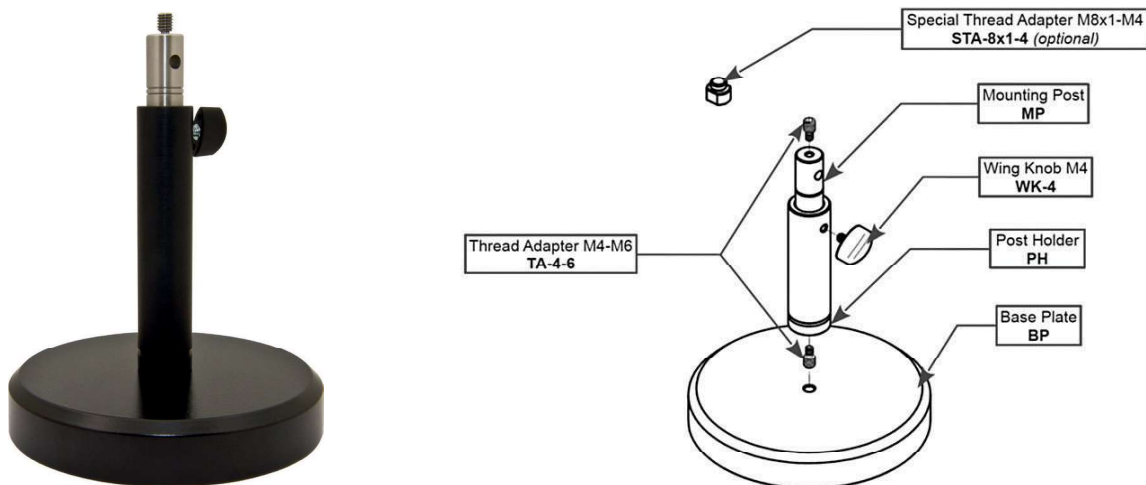
Dimensions [mm]



Power supply connector - DB9 connector female



Pin number	Symbol	Function
1	N.C.	not connected
2	N.C.	not connected
3	GND	power ground
4	N.C.	not connected
5	N.C.	not connected
6	$-V_{sup}$	power supply output (-)
7	N.C.	not connected
8	N.C.	not connected
9	$+V_{sup}$	power supply output (+)
metal cover	GND-SH	shield



DRB-2 is a stable base mounting system dedicated for bench-top IR detection module (MIP, FIP, PIP, AIP, μ IP) and IR detectors in BNC packages.

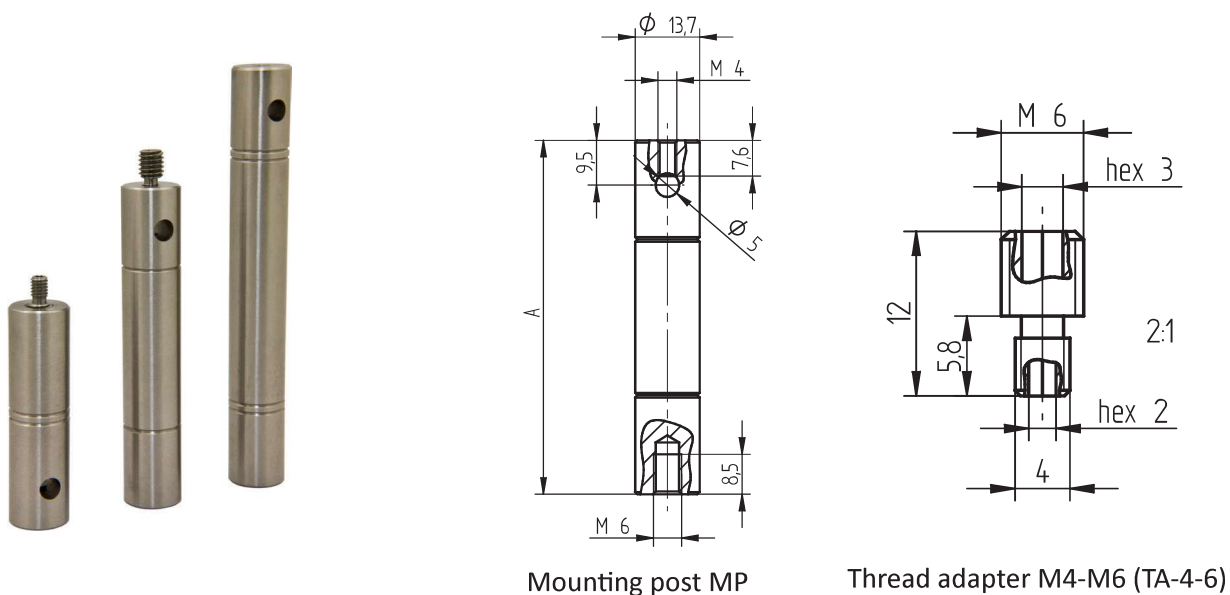
Standard DRB-2 consists of:

- Base plate BP
- Mounting post MP-100
- Post holder PH-100

Features

- Stable construction
- Adjustable height
- Durable elements
- Compatible with M6 optical breadboards

MP mounting post



Mounting post MP

Thread adapter M4-M6 (TA-4-6)

MP is a mounting post made of stainless steel. It is equipped with two thread adapters TA-4-6 as a standard. MP-50, MP-75 and MP-100 models are available.

Specification

Model	Weight [g]	Dimension A [mm]
MP-50	55	50
MP-75	85	75
MP-100	115	100

PH post holder

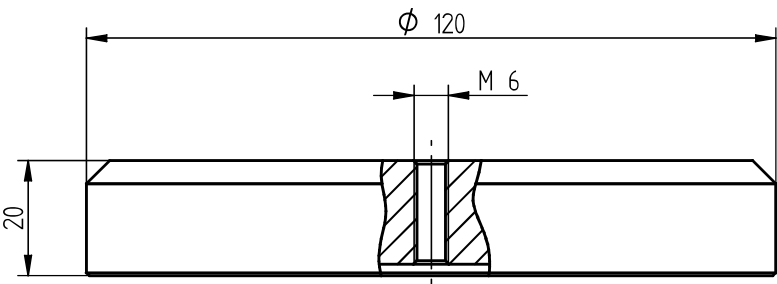
PH is a post holder made of black anodized aluminium. It is equipped with wink knob WK-4 as a standard. PH-50, PH-75 and PH-100 models are available.



Specification

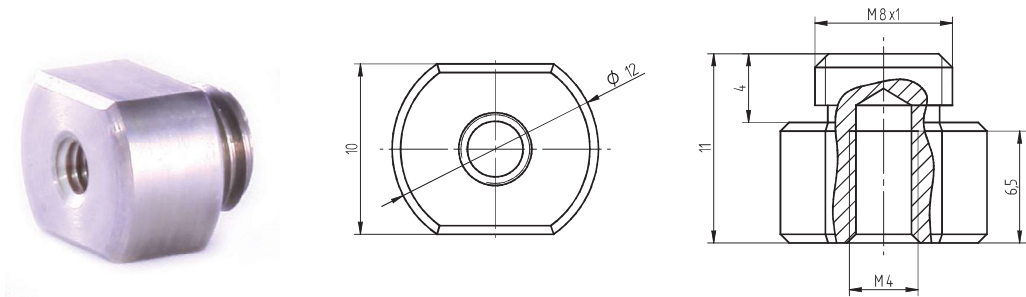
Model	Weight [g]	Dimension A [mm]
PH-50	35	50
PH-75	50	75
PH-100	60	100

BP base plate



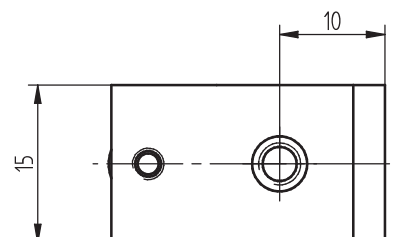
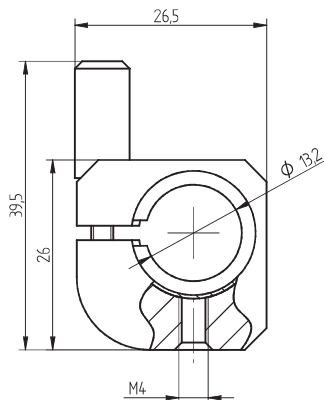
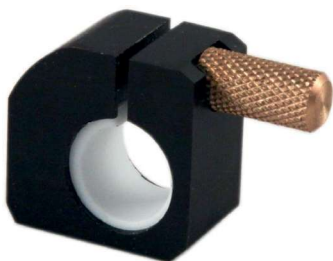
BP is a base plate made of black, lacquered steel. It provides mechanical stable conditions for mounting system. Weight: 1756g.

STA-8xI-4 special thread adapter

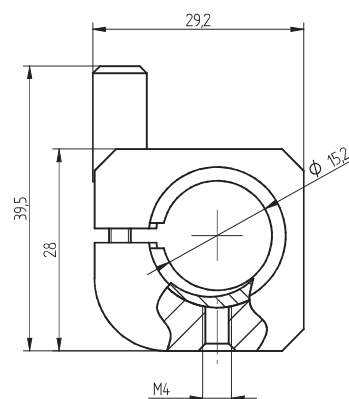
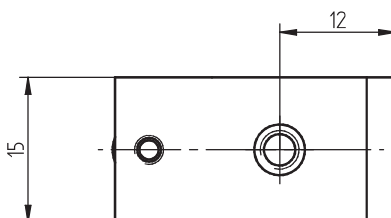
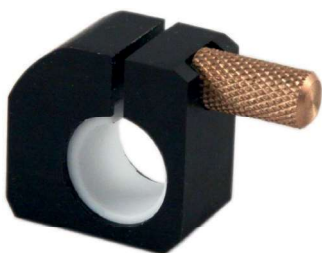


STA-8xI-4 is a special thread adapter M8xI to M4, made of stainless steel. It allows to install detection modules with M8xI mounting hole on Base Mounting System DRB-2. Weight: 6g.

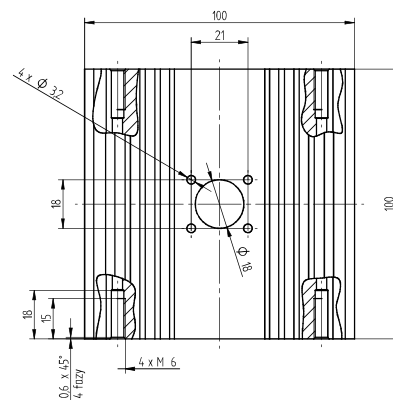
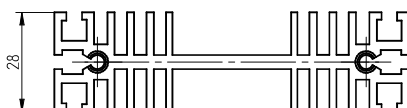
DH-2 is a detectors' holder with M4 mounting hole, dedicated for assembly VIGO uncooled detectors in BNC and PEM-SMA packages. It is compatible with DRB-2 mounting system.



MH-I is a modules' holder with M4 mounting hole, dedicated for assembly VIGO μ IP modules. It is compatible with DRB-2 mounting system.

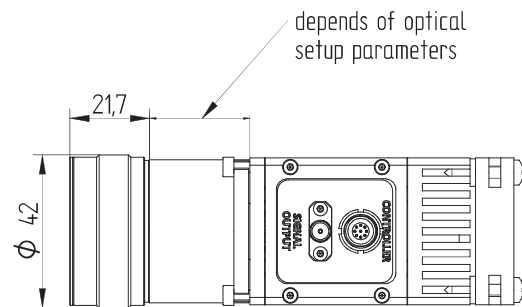
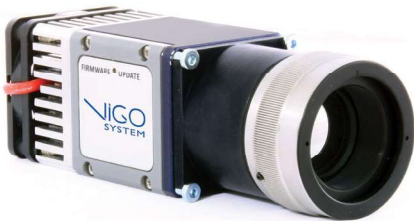


MHS-2 is an external heat sink made of black anodized aluminium, dedicated for OEM preamplifier SIP-TO8. It provides suitable dissipation of heat generated by the Peltier cooler. Thermal resistance: ~ 1.5 K/W.

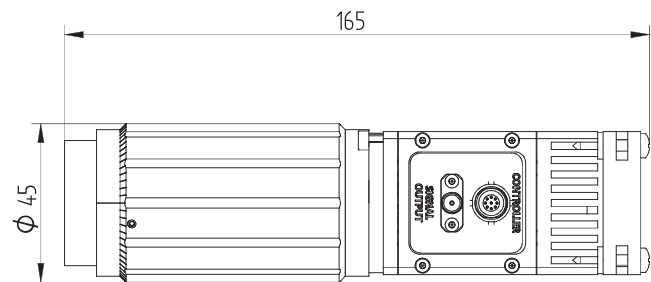


EL accessory lens with mount

EL-2



EL-3



Every optical system is designed according to the individual requirements of the user. There are available two options of EL: EL-2 and EL-3. In order to determine which type of system is the best choice for the application, please contact us.

AC adaptor



Signal output cables



BNC-BNC



MCX-BNC



MCX-SMA



MMCX-BNC



MMCX-SMA



SMA-BNC



SMA-SMA

Power supply and TEC control cables



AMP2x4-DB9



LEMO-DB9



AMP2x4-DUBOX2x5



LEMO-DUBOX2x5

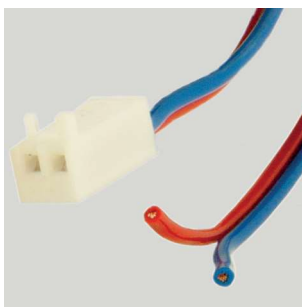
Power supply cables



DB9-4mmPLUGS



DB9-DB9



KK2-POWER

Cable for PC connection



USB: TypeA-MicroB