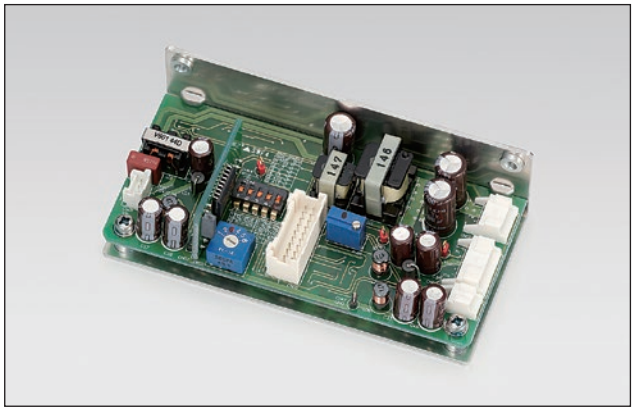
HAMAMATSU

PHOTON IS OUR BUSINESS

POWER SUPPLY UNIT WITH TEMPERATURE CONTROL

M13413/M13414

The M13413/M13414 are on-board type power supply units. By just connecting to 12 V supply, the M13413/M13414 provide power necessary to operate the H16721/H16722 series. The M13413/M13414 also control the thermoelectric cooler in the H16721/H16722 series so that the output and noise can be maintained at low constant levels even when the ambient temperature changes. The thermoelectric cooler and PMT operation can be controlled from an external device by connecting it to the I/O connector on the M13413/M13414.



SPECIFICATIONS

GENERAL

Parameter		M13413	M13414	Unit
Input power voltage		+11.4 to +12.6		V
Control signal input voltage Ⓐ	Thermoelectric cooler	Non-insulated TTL level input		—
	PMT	Non-insulated TTL level input		
	Fan	Non-insulated TTL level input		

MAXIMUM RATINGS (ABSOLUTE MAXIMUM VALUES)

Parameter		M13413	M13414	Unit
Input voltage		+13.2		V
Maximum input current		0.9		A
Control signal input voltage	Thermoelectric cooler	6		V
	PMT	6		
	Fan	6		

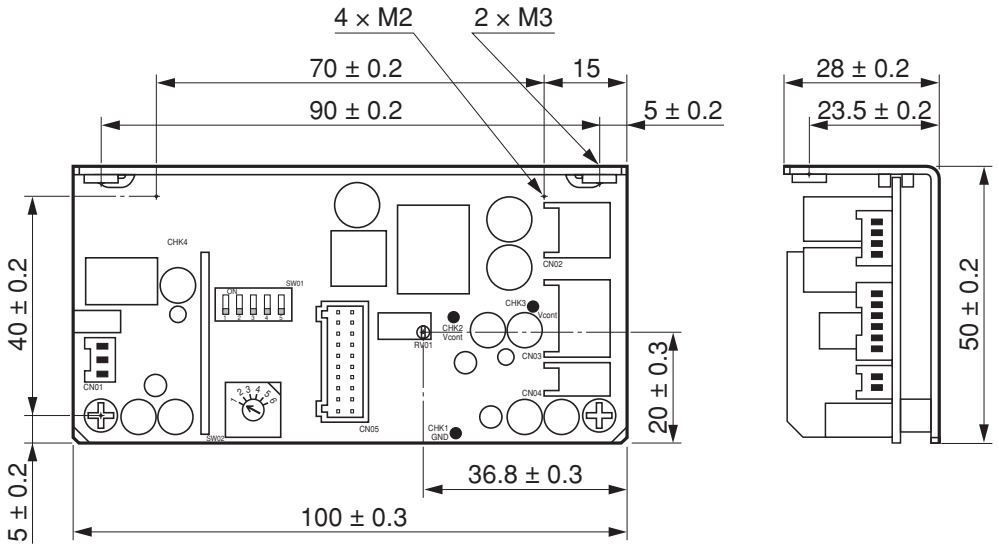
CHARACTERISTICS at 25 °C

Parameter		M13413	M13414	Unit
Applicable product		H16721	H16722	—
Output voltage for main unit Ⓑ		4.75 to 5.25	11.4 to 12.6	V
Maximum output current for thermoelectric cooler Ⓒ		2.0		A
Output voltage for fan		10.8 to 12.6		V
Maximum control voltage output Ⓓ		—	1.26	V
Maximum control voltage input		—	0.9	V
Error signal output voltage	Thermoelectric cooler	Non-insulated TTL level output		—
	PMT	Non-insulated TTL level output		
Output voltage for LED Ⓔ	Normal	4.5 to 5.5		V
	Error	4.5 to 5.5		
Cooling temperature Ⓕ		-10 / -5 / 0 / +5 / +10 / +15		°C
Operating ambient temperature		+5 to +40		°C
Operating ambient humidity Ⓖ		30 to 80		% Rh
Storage temperature		-20 to +50		°C
Storage humidity Ⓖ		10 to 85		% Rh
Maximum ripple noise (p-p) (at maximum load)	Main unit	100		mV
	Thermoelectric cooler	50		
	Fan	100		
	Control voltage Ⓓ	—	20	
Protective circuit		Excess current protection		—

NOTE: Ⓐ Inverted logic can be used.
Ⓑ Output voltage for main unit can be selected with the switch.
Ⓒ Peltier element is controlled with constant current. Supply voltage is less than 2.6 V when operated within the rated current.
Ⓓ When "Vcont-ADJ" is used & No load.
Ⓔ Maximum output current is 10 mA.
Ⓕ Factory setting temperature is 0 °C.
Ⓖ Non-condensation

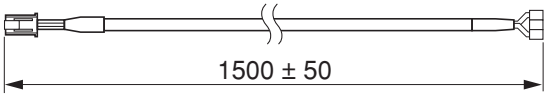
POWER SUPPLY UNIT
WITH TEMPERATURE CONTROL M13413/M13414

Figure 1: Dimensional outline (Unit: mm)

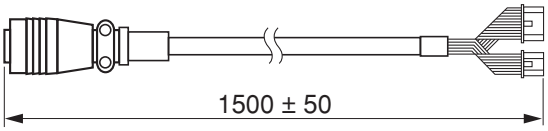


[ACCESSORIES] (Unit: mm) SUPPLIED

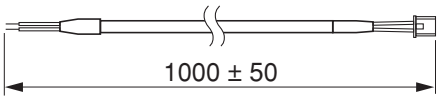
FAN CABLE



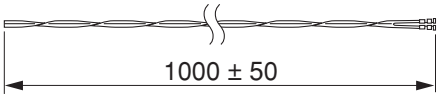
MODULE CABLE



POWER CABLE



EXTERNAL I/O CABLE



EXTERNAL I/O HOUSING

This product is exclusive for the use as a built-in part of a device. It is not a product designed and manufactured considering the end use.
Therefore, it is inhibited to use this product alone without being built in a device or that end users build it into a device by themselves.
For the use of this product, it is requested that customers (device manufactures) themselves have the responsibility to correspond to related laws and regulations.

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