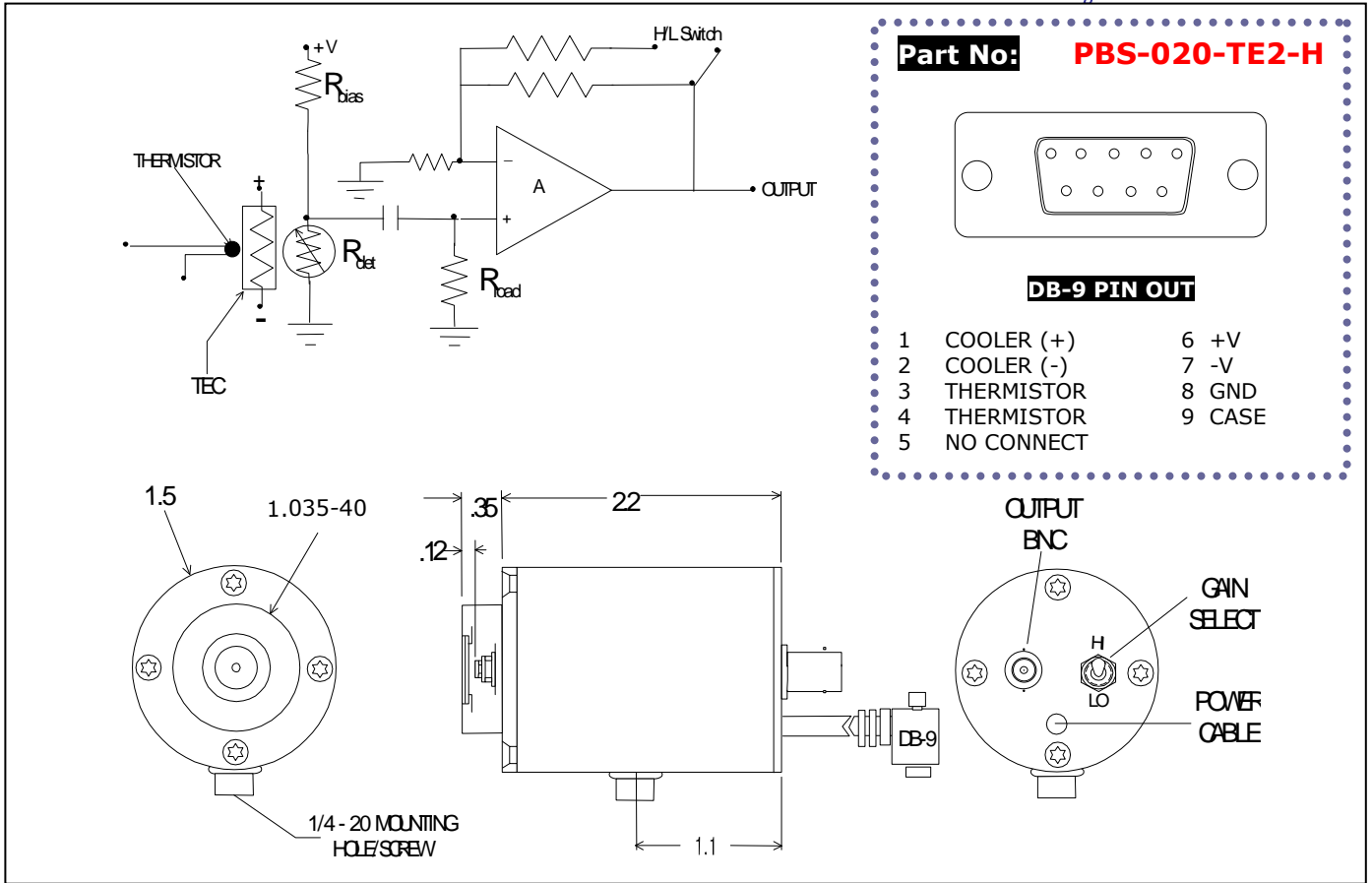


## H - SERIES PHOTOCODUCTOR / RECEIVER



### Application Note

This unit is a high performance photoconductor/receiver operated with a thermoelectric cooler for stabilization/cooling with a dual gain voltage amplifier. The detector's bias voltage is linked to the amplifier power supply and no additional biasing is necessary. The PC/AMP is an AC coupled, dual gain detector system requiring a modulated input signal for operation.

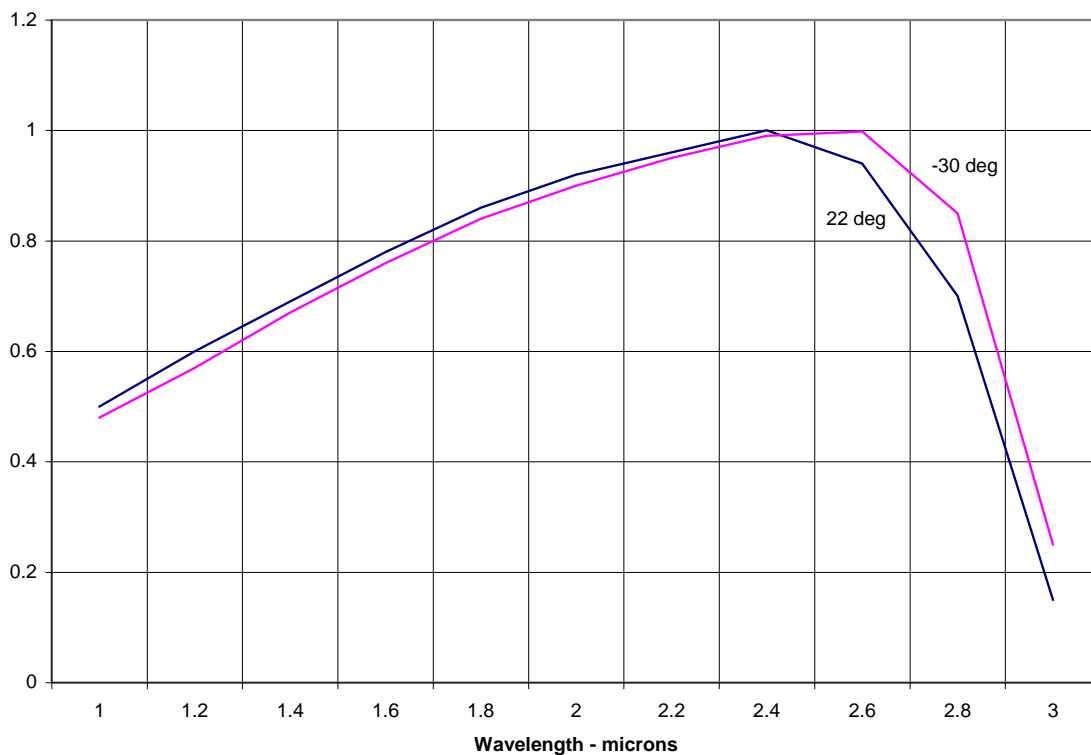
## SPECIFICATIONS

Detector Type	2 x 2 mm PbS Photoconductor	
Operating Temperature- °C	22 @ $I_{tec} = 0.0 \text{ A}$	-30 @ $I_{tec} = 0.6 \text{ A}$
Operating Wavelength - $\mu\text{m}$	1.0 - 2.8	1.0 - 2.8
Responsivity- V/W @ 2.6	$10^7 / 10^6$	$2 \times 10^7 / 10^6 \text{ typ}$
Noise- V/Hz <sup>1/2</sup> @ 400 Hz	$2 \times 10^{-5} / 10^{-6}$	$2 \times 10^{-5} / 10^{-6}$
NEP- W/Hz <sup>1/2</sup> @ 2.6, 400 Hz	$< 2 \times 10^{-12}$	$< 1 \times 10^{-12}$
Bandwidth (-3dB)- Hz	5 - 500	5 - 400
Power Requirements	+/- 9 VDC to +/- 15 VDC	
Connections	BNC signal output. Shielded power cable terminated with a DB-9 connector directly couples the unit with the PS/TC-1 Low Noise Power Supply.	



## H - SERIES PHOTCONDUCTOR / RECEIVER

### TYPICAL PBS RELATIVE SPECTRAL RESPONSE





### H - SERIES PHOTCONDUCTOR / RECEIVER

#### OPERATING THE H-SERIES PHOTCONDUCTOR/AMPLIFIER

**POWER SUPPLY:** A bipolar power supply is required, +,- 6VDC to +,-15VDC, 20mA. This means a +V, central/common ground and a -V connection - 3 wires total, to pins 6, 7, & 8 on the D-sub connector. The power supply pins should be bypassed physically close to the amplifier module. Double check wiring prior to turning on power. Improper /reverse wiring will damage the unit.

**GAIN SELECT:** The unit is supplied with a switch which provides a 10:1 HI/LO gain function. Consult the individual data sheet for specific values.

**AC COUPLING / DETECTOR BIAS:** The unit is AC-coupled and requires modulated input radiation to operate. This can be accomplished by using a chopper or other electronic or optical modulation. Consult the individual data sheet for the operating frequency band. The photoconductors require a DC bias for operation. This bias is provided internally and no user biasing is needed.

**AMBIENT LIGHT:** Because of the high gains involved, the unit must be shielded from ambient background light during operation. Measurement errors and/or saturation can result from improper shielding.

**OUTPUT CONNECTION:** The signal output is thru a BNC connector (or BNC terminated cable in the case of the 2-color units) located on the back of the module.