HFAH-20 HFAH-40

Wide-Band Amplifiers for PMTs and MCPs

Overload indicator

Overload signal for detector shutdown

Gain versions 20 dB and 40 dB

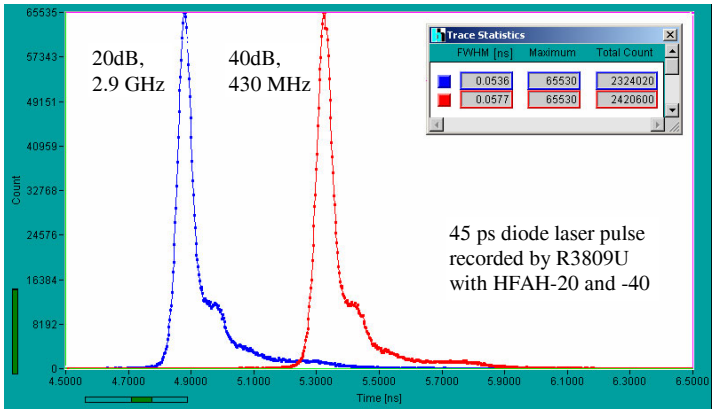
Cutoff frequency 430 MHz and 2.9 GHz

Low noise, high linearity

Input and output impedance 50 Ω

Input protection

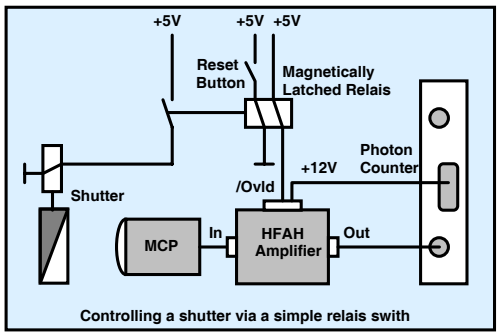
The HFAH series amplifiers are used to amplify the output signals of high speed PMTs or MCPs for single photon counting applications. The gain of the amplifier allows the detector to be operated at reduced signal current. This increases the available count rate and extends the lifetime of MCP tubes. Furthermore, the amplifier gain helps to reduce noise pickup in long signal cables. The amplifiers have an input protection circuit preventing damage by overload or by charged signal cables. Exceeding of a specified detector current is indicated by two LEDs and a buzzer. If the detector current exceeds 200% of the specified value a TTL overload signal is activated. This signal can be used to shut down the detector or to close a shutter via the BH DCC-100 detector controller card. The power supply of the HFAH amplifier comes from the BH SPC card or from the DCC-100.
The HFAH comes in two gain / bandwidth and several overload threshold versions. The 20 dB / 2.9 GHz version is used if maximum time resolution is to be obtained from a fast PMT or MCP. The 40dB / 430 MHz is used to obtain MHz count rates from MCP-PMTs within their limited output current capability. The 430 MHz bandwidth filtering maximises the signal-to-noise ratio of the single photon pulses thus providing optimum TCSPC time resolution at reduced detector gain.



Becker & Hickl GmbH
Nahmitzer Damm 30
12277 Berlin, Berlin
Tel. +49 / 30 / 787 56 32
Fax. +49 / 30 / 787 57 34
email: info@becker-hickl.com
www.becker-hickl.com

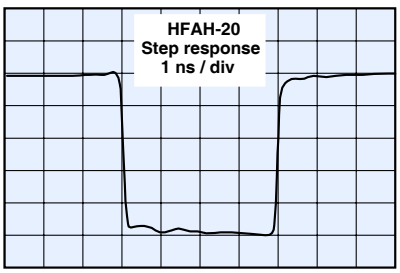
US Representative:
Boston Electronics Corp
tcspc@boselec.com
www.boselec.com

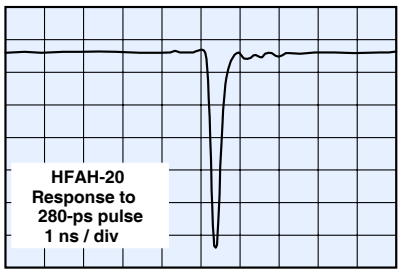
UK Representative:
Photonic Solutions PLC
sales@psplc.com
www.psplc.com

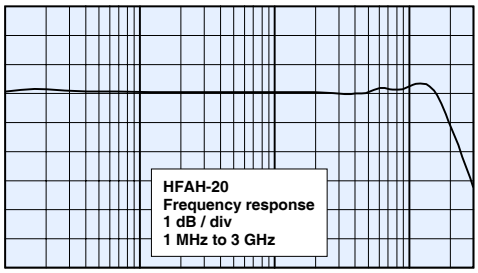


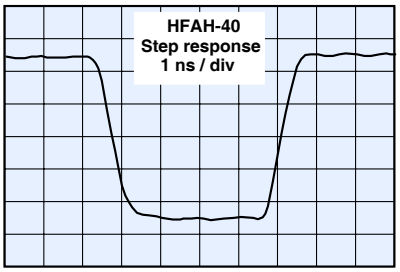
HFAH-20 HFAH-40

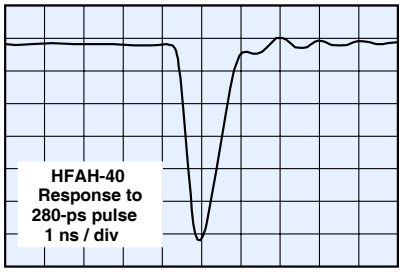
Input / output impedance	50 Ω	50 Ω
Singal Connectors	SMA	SMA
Gain	20 dB, non inverting	40 dB, non inverting
Bandwidth	2.9 GHz	430 MHz
Lower cutoff frequency	500 kHz	500 kHz
Max. linear output voltage	1V	1V
Noise Figure	4 dB	6 dB
Detector overload current threshold, I_{ovl}	0.1 1 2 or 10 µA	0.1 1 2 or 10 µA
Detector overload warning	LEDs and buzzer	LEDs and buzzer
Detector overload signal	TTL, active low, can be or-wired	TTL, active low, can be or-wired
Activation of yellow LED at	0.6 I_{ovl}	0.6 I_{ovl}
Activation of red LED and buzzer at	1.0 I_{ovl}	1.0 I_{ovl}
Activation of overload signal at	2.0 I_{ovl}	2.0 I_{ovl}
Overload signal response time	10 ms	10 ms
Power Supply Voltage	+12 V	+12 V
Maximum safe power supply voltage	+15 V	+15 V
Power Supply Current at +12V	80 mA	45 mA
Dimensions	50 x 60 x 28 mm	50 x 60 x 28 mm
Connector for power and overload out	15 pin HD sub D	15 pin HD sub D
Pin assignment of sub-D connector	5 and 15: GND, 10: +12V	5 and 15: GND, 10: +12V
	14: /overload (active low)	14: /overload (active low)

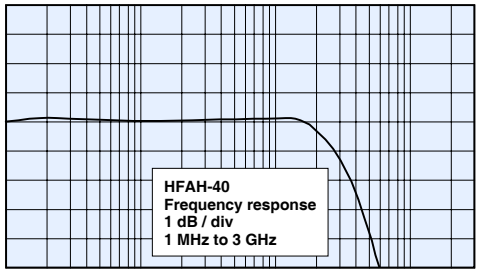


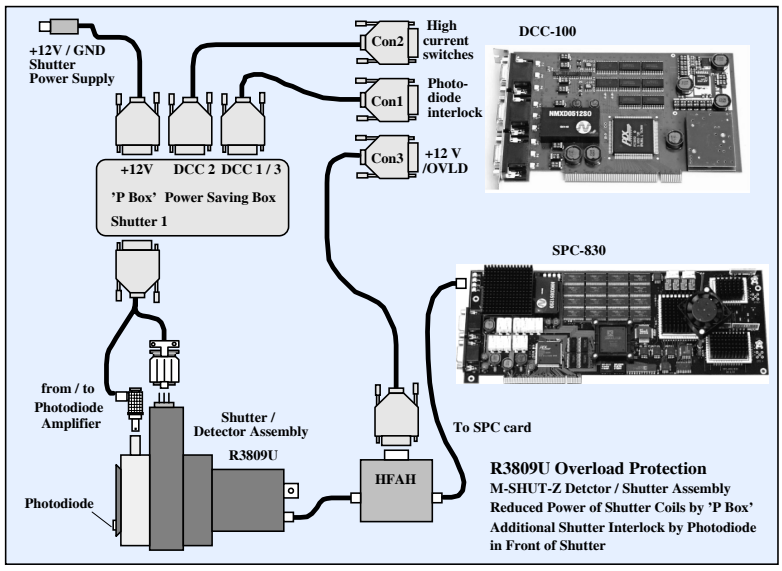












Becker & Hickl GmbH
Nahmitzer Damm 30
12277 Berlin, Berlin
Tel. +49 / 30 / 787 56 32
Fax. +49 / 30 / 787 57 34
email: info@becker-hickl.com
www.becker-hickl.com

US Representative:
Boston Electronics Corp
tcspc@boselec.com
www.boselec.com

UK Representative:
Photonic Solutions PLC
sales@psplc.com
www.psplc.com