iQ Signal Amplifier – Technical Data

Parameter	iQAMP-004	iQAMP-005	iQAMP-007	iQAMP-008
Supply Voltage	9 VDC min. – 32 VDC max.			
Input Control Signal				
Control Voltage	0 - 10 VDC / 2 - 10 VDC		0 - 5 VDC / 1 - 5 VDC	
Control Current	4 - 20 mA		4 - 20 mA	
PWM Frequency	1.2 KHz Fixed			
Output Leap to I MIN.	@ 2V or 4 mA control ± 15%		@ 1V or 4 mA control ± 15%	
Dithering Frequency	30 - 300 Hz			
Dithering Amplitude	0 - 500 mA peak to peak			
Voltage Reference	5.0V ± 5% regulated			
Operating Temp.	-25° to +85° C			
Output Current @ 25°C				
Continuous	2.0 A	300 mA	2.0 A	300 mA
I MIN.	0 – 0.67A	0 – 100mA	0 – 0.67A	0 – 100mA
I MAX.	I MIN. + 1.33A	I MIN. + 200mA	I MIN. + 1.33A	I MIN. + 200mA
Regulation ΔV	± 0.2% / V			
Regulation ΔT	± 0.1% / °C			

Function

Minimum Current (I MIN.) & Maximum Current (I MAX.) - These two adjustments will vary the minimum and maximum output current limits. The minimum current can be set between 0 - 0.67 A or 0 – 100 mA, depending on unit part number. The maximum current can be set in the range between the minimum current setting and the minimum current setting plus 1.33 A or 200 mA, depending on the unit part number. The minimum current must be set first as described below.

Minimum Current Adjustment - Set both minimum (I MIN.) and maximum (I MAX.) current adjusters max counter-clockwise (approx. 18 turns or until it clicks). Apply the minimum input command signal. Adjust the minimum current adjuster (I MIN.) for a minimum current or to a desired system response. Proceed to max current adjuster.

Maximum Current Adjustment - Increase the input command signal maximum. Adjust max current adjuster (I MAX.) for a maximum current limit or to a desired system response.

> *Note: To minimize any effect of supply voltage, load resistance or temperature variation, make setup adjustments when these parameters are at the midpoint of the expected operating range for a particular installation. For example, if the expected operating temperature range is 20°C to 60°C make final setup adjustments when system is approximately 40° C. If the supply voltage has a tolerance of 22 to 32 volts, make adjustments when the supply voltage is approximately 27 VDC.*

PWM Frequency - The output is pulse-width modulated to control output current within the minimum and maximum current settings. The frequency of the modulation is fixed at 1.2 KHz.

Dither - The coil is sine wave modulated with adjustable frequency (30 – 300 Hz) and amplitude (0 - .5 A peak to peak).

Reference Voltage - A regulated 5.0 VDC voltage is available for on-site command voltage. Use of a 5K - 100K potentiometer connected from 5.0 VDC Reference to Supply Voltage (-) is recommended.

Output - The output is current regulated and will remain constant at the level set by the input command signal. Variations in supply voltage and load resistance have little effect as long as these values satisfy the equality stated below.

$$\text{Maximum Required Currents} \quad \leq \quad \frac{\text{Min. Supply Voltage}}{\text{Max. Load Resistance}}$$

Dimensional Data

Ø 6.0 Mounting Hole

OUTPUT

I MAX
I MIN
DITHER AMP
POWER
DITHER FREQ

51
25
51
77

Ø 3.0
Wire Terminal

13
19

ALL DIMENSIONS ARE SHOWN IN MILLIMETER

ON BOARD

COMMAND CURRENT — 1
COMMAND VOLTAGE — 2
5.0 VDC REFERENCE — 3
SUPPLY VOLTAGE - — 4
SUPPLY VOLTAGE + — 5
OUTPUT - — 6
OUTPUT + — 7

max
10k pot
min
DC power supply
Proportional valve coil

PLC OR DC SUPPLY

COMMAND CURRENT — 1
COMMAND VOLTAGE — 2
5.0 VDC REFERENCE — 3
SUPPLY VOLTAGE - — 4
SUPPLY VOLTAGE + — 5
OUTPUT - — 6
OUTPUT + — 7

0 - 5 VDC / 1 - 5 VDC
0 - 10 VDC / 2 - 10 VDC
control voltage
DC power supply
Proportional valve coil

COMMAND CURRENT — 1
COMMAND VOLTAGE — 2
5.0 VDC REFERENCE — 3
SUPPLY VOLTAGE - — 4
SUPPLY VOLTAGE + — 5
OUTPUT - — 6
OUTPUT + — 7

0 - 20 mA control current
DC power supply
Proportional valve coil