

Current-source 4 Input/2 Output Analog Blocks

June 2002

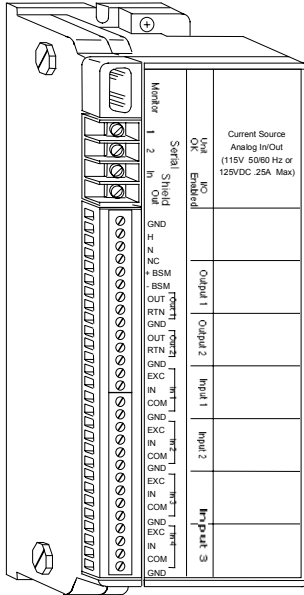
GFK-0422D

Description

Current Source Analog I/O blocks are used to interface a controller to devices that provide or accept 4mA to 20mA analog signals. Two block versions are available:

- **115 VAC Current-source Analog I/O Block (IC66*BBA104)**
- **24/48 VDC Current-source Analog I/O Block (IC66*BBA024)**

These blocks are identical except for the power supply.



Features

Block features include:

- Six 4-to-20 mA analog circuits: 4 inputs and 2 outputs
- Isolated channels
- No user calibration required for operation
- Software configurable
- Advanced diagnostics
- Dedicated Bus Switching Module control

A Current Source Analog I/O block has four 4 to 20mA current inputs. Each input provides a 24 volt current loop power supply and is isolated from all other circuits within the block. The two output channels provide power and control of two 4-to-20mA current loops. The output channels and BSM circuitry are electrically common, but isolated from the inputs.

All circuits on the block support independent selection of linear scaling values. These values can be used to convert the internal values into engineering units suitable for the application.

Block diagnostics include:

- input low and high alarm detection
- overrange and underrange detection for inputs and outputs
- input open wire detection
- output feedback error detection
- internal fault reporting

A dedicated digital output is provided to drive a Bus Switching Module (version IC66*BSM021 only).

Specifications

Catalog Numbers

115 VAC/125 VDC Current Source Analog I/O Block	IC66*BBA104
Terminal Assembly	IC66*TBA104
Electronics Assembly	IC66*EBA104
24/48 VDC Current Source Analog I/O Block	IC66*BBA024
Terminal Assembly	IC66*TBA024
Electronics Assembly	IC66*EBA024

Block Specifications

Size (height x width x depth)	8.83" (22.44cm) x 3.34" (8.48cm) x 3.91" (9.93cm)		
Weight	4 lbs. (1.8 kg)		
LEDs (I/O Block)	Unit OK, I/O Enabled		
Block to Block Isolation	1500V for one minute		
Group to Group Isolation	1500V RMS		
Heat Dissipation	12 Watts maximum		
BSM Control	Switches one 24/48 VDC BSM (IC66*BSM021)		
Block Power (nominal);	115VAC	125VDC	24/48VDC
Power supply voltage	98-132 VAC	105-145 VDC	18-56
Maximum current	250mA	140mA	600mA
Frequency/ripple	47-63 Hz	10% max. ripple	10% max. ripple
PS dropout time	1 cycle	10 ms min.	10ms min.

Input Specifications

Input accuracy (at 25° C)	0.1% of full scale reading *		
Input resolution	1µA		
Input conversion time	16.6ms to 400ms (user selectable)		
Range	4mA to 20mA		
Overrange capacity	0mA to 25mA		
Input diagnostics	Under / Overrange, High /Low Alarm, Open Wire		
Channel to channel isolation	1500V rms		
Thermal drift (from 25° C)	70 PPM per degree C typical		
Input Impedance	100 Ohms +/-5%		
Normal Mode Rejection	-45 dB at 50, 60 Hz		
Input Excitation:			
Open circuit voltage	24VDC		
Short circuit current	< 75mA		
Loop impedance	1000 Ohms maximum (0mA to 20mA) 800 Ohms maximum (20mA to 25mA)		

Output Specifications

Output accuracy at 25° C	0.15% of full scale reading		
Output resolution	6µA		
Output update frequency	6ms to 8ms typical		
Range	4mA to 20mA		
Overrange capacity	0mA to 24mA		
Output diagnostics	Underrange, Overrange, Feedback error		
Output load	0 Ohms to 850 Ohms		
Thermal drift (from 25°C)	35 PPM per degree C typical		

Environmental Specifications

Operating temperature	0° C to +60° C (+32° to +140° F)		
Storage temperature	-40° to +100° C (-40° to +212° F)		
Humidity	5% to 95% (non-condensing)		
Vibration	5-10 Hz 0.2" (5.08mm) displacement, 10-200 Hz at 1G		

Refer to GFK-0867B for product standards and general specifications.

* In the presence of severe RF interference (IEC 801-3, 10 V/m), accuracy may be degraded to +/-0.25% of full scale reading.