FIELD SELECTABLE ISOLATED FREQUENCY to DC Transmitter

API 7580 G

Specifications

Input Impedance
10KOhms nominal (maximum sensitivity)
100KOhms nominal (minimum sensitivity)

Input Sensitivity/Hysteresis
Maximum sensitivity: +/-25mV typical
Minimum sensitivity: +/-2.5V typical

Input Amplitude Range
100mV to 150VRMS

Response Time
HI Ranges: 110mSec. typical
LO Ranges: 600mSec typical

Temperature Stability
Better than .02% of Span per Deg. C

Output Capability
Current: 25mADC, 20V Compliance
Voltage: +/-10VDC, +/-10mADC

Accuracy (Overall),
Includes effects of repeatability, hysteresis, linearity and adjustment resolution: better than 0.8% Repeatability Better than 0.2%

Isolation Input/Output/Power
2000VRMS

Zero/Span Controls
Zero: +/-15% typical
Span: +/-10% typical

Functional Test Pushbutton
Adjustable from 0-100% of Span

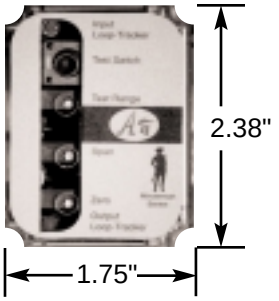
Ambient Temperature Range
-10 to +60 degrees C (operating)

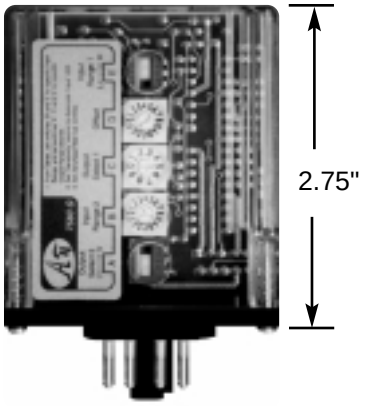
Power
Standard: 115VAC +/-10%, 50/60Hz, 2.5W max.
Optional: 230VAC +/-10%, 50/60Hz, 2.5W max.
* 12VAC +/-10%, 50/60Hz, 2.5W max.
* 24VAC +/-10%, 50/60Hz, 2.5W max.
* 12VDC +/-5%, 125mA max.
* 24VDC +/-5%, 65mA max.
* 9-30VDC @1.5W Typical.

FEATURES

- **30 Selectable Input Ranges from 0-100Hz to 0-30KHz**
- **16 Selectable Output Ranges, DC Voltage or Current**
- **Setup via Rotary Switches and Easy-to-Use Tables**
- **2000VRMS Isolation Input/Output/Power**
- **Adjustable Input Sensitivity (Hysteresis)**
- **Input/Output Looptracker™ LED's**
- **Functional Test Pushbutton**
- **LIFETIME WARRANTY**

CASE DIMENSIONS





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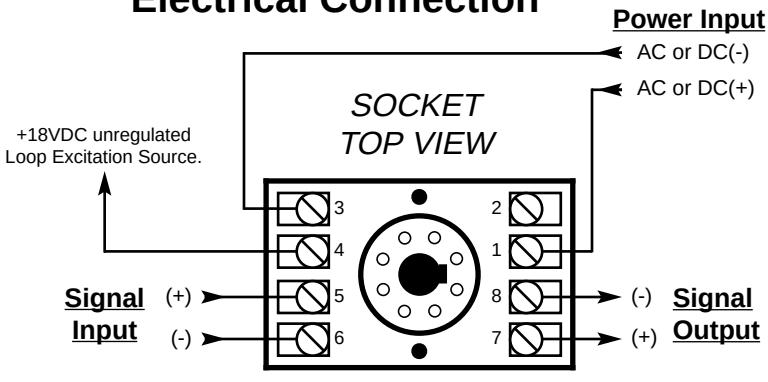
Chart of Common Ranges

Input

Low Range
Min.:
0-100Hz
Max.:
0-1500Hz
@ 100Hz
Increments

High Range
Min.:
0-2KHz
Max.:
0-30KHz
@ 2KHz
Increments

Electrical Connection



Output

Voltage
Min.:
0 to 1V
Max.:
+/- 10V

Current
Min.:
0 to 2mA
Max.:
0 to 20mA

FUNCTIONAL DESCRIPTION

The API 7580 G accepts a Frequency Input and provides an Optically Isolated DC Voltage or Current Analog Output that is linearly proportional to the input. Common applications include Frequency to DC conversions from frequency output type devices such as rotary encoders, magnetic pick-ups, variable speed drives and flowmeters. In addition, many PLCs do not have analog outputs available but, through creative programming, can vary the pulse rate of a discreet output. By connecting the API 7580 G to this discreet output, a proportional analog signal can be generated.

The Optical Isolation between Input and Output makes this module useful for Ground Loop Elimination, Common Mode Signal Rejection or Noise Pickup Reduction. The API 7580 G uses the latest technology in linear optical isolation for optimum noise immunity and complete freedom from AC artifacts in the Output. In addition, the module Power Supply is isolated, resulting in full 3-way (Input, Output, Power) Isolation. Standard power is 115VAC; options include 230VAC or 9-30VDC.

The API 7580 G distinguishes itself from other similar products in that both it's Input and Output can be field-configured (without requiring the case to be opened) via external rotary & slide switches. The more common ranges (30 Input & 16 Output) can be selected from the table on the module; however, many additional combinations are possible. (Consult the factory for assistance.)

The API 7580 G plugs into an industry standard octal (8-Pin) socket (sold separately). The socket provided by API (part #API 008) allows for either DIN rail or panel mounting.

UNIQUE FEATURES

API Exclusive Features include two ***LoopTracker™ LEDs*** and a ***Functional Test Pushbutton***. The LoopTracker™ LEDs (Green for Input; Red for Output) vary in intensity with changes in the Input (process) signal. Monitoring the state of these LEDs can provide a quick visual picture of your process loop at all times. The Functional Test Pushbutton provides a fixed output (independent of the input) when held depressed. The Test Output level can be field-adjusted via a top-accessible multiturn pot to any value from 0 to 100% of the calibrated range. Both the ***LoopTracker™ LEDs*** and ***Functional Test Pushbutton*** greatly aid in the reduction of time during initial startup and/or troubleshooting.

Also available on the API 7580 G is an unregulated Loop Excitation Source (18VDC). This internal power supply can be used to power passive input devices, possibly eliminating the need for an additional external power supply (refer to specs for maximum current drive).

OPERATION

The API 7580 G consists of two slide switches ("Input Range 1" and "Output Select 2") and three rotary switches ("Input Range 2", "Offset" and "Output Range 1") which determine the configuration of the module. The frequency input to the API 7580 G is capacitively coupled (to remove any DC component at the input) to a comparator whose thresholds are determined by the setting of the "Sensitivity" control. When fully clockwise (maximum sensitivity), the input thresholds are typically +/-25 millivolts. In the fully counterclockwise position (minimum sensitivity), the input thresholds are typically +/- 2.5 volts. The Input LoopTracker™ LED illuminates when the input is sufficiently large to trigger the input comparator. The output from the comparator passes through an opti-coupler to the output stage.

RELATED PRODUCTS

The following products are also available. Refer to the appropriate data sheets in this section for details.

API 7010 G
Same as API 7580 G, but factory configured. Used in applications requiring special offsets and ranges.

API 1700 G
Frequency Input, Single Setpoint Alarm

API 1720 G
Frequency Input, Dual Setpoint Alarm

API 7500 G
DC to Frequency Isolating Transmitter

ABSOLUTE PROCESS INSTRUMENTS, Inc.

Proudly Represented By:

MOD-TRONIC INSTRUMENTS LIMITED
48 Haggert Ave N
Brampton, ON L6X 1Y3
Tel: 905 457-6322
Fax: 905 457-4716
Toll Free: 800 794-5883