

Pulse Stretcher Input Modules

G-IPS5FS

G-Type I/O

I/O Compatibility

G-Series
 'G4' types
 'C4' types
 'G5' types

Overview

G-IPS5FS Input Pulse Stretcher Modules allow detection of momentary input signals by “stretching” the input signal. Upon detecting intermittent inputs such as push buttons, proximity sensors, flowmeters, contact closures (relays, etc.) and communications signals, a single logic low ‘ON’ pulse may be read by the computer. A one-second pulse output is standard (other pulse lengths are available). This is especially useful when an input occurs too fast for controller detection or debouncing contacts which might otherwise be read multiple times if “contact bounce” occurs.

Basic **G-IPS5FS** types trigger on the pulse “OFF-edge” of the input signal. (See timing diagrams). It offers event-triggered one-shot operation in several modes, including Non-retriggerable (-NR), Non-retriggerable/Sustained (-NRS) and retriggerable (standard). 4.5V to 32V Input pulses can be detected.

Refer to **G-IPS5FS-INV** types for “ON-edge” triggered model(s).



Product Features

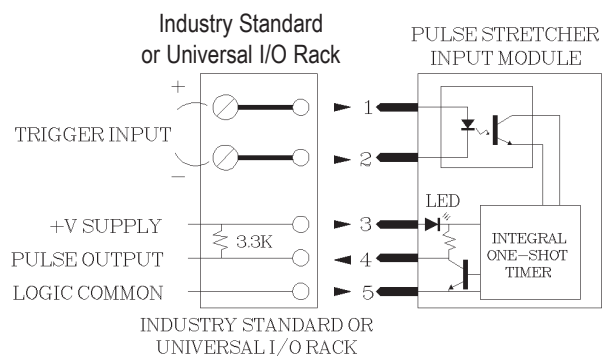
- ▶ Ultra-fast Detection 5μS typ.
- ▶ 5000 Vrms Optical Isolation
- ▶ Opto Isolated 4.5V to 32V Input
- ▶ Fits Standard “G4” I/O Racks
- ▶ White I/O Case
- ▶ High Reliability
- ▶ Captive #4-40 Screw
- ▶ LED Output Indicator
- ▶ Operating Temp -40°C to +85°C
- ▶ 3 Year Limited warranty**
- ▶ Encapsulated Design
- ❖ Configuration Options Available

Recommended Operating Parameters

SYMBOL	PARAMETER	LIMITS			UNIT	CONDITION
		MIN	TYP	MAX		
V+	Supply Voltage	3.5		5.25	VDC	Pins 3(+) & 5(-)
I _{SUPPLY}	Supply Current		20	25	mA	Output Active Low
T _A	Operating Temperature	-40		+85	°C	Ambient Temperature
F _{MAX}	Maximum Input Trigger Frequency		50	100	KHz	Input Pins 1(+) & 2(-) 50% duty cycle, 14Vp-p
T _{MIN}	Minimum Pulse Width (Re-trigger time)	5	10		μS	Input Pins 1(+) & 2(-) 50% duty cycle, 14Vp-p
T	Standard Timeout		1		Sec	Output Pulse, Pin 4, Negative True. Tolerance ±15%
R _{IN}	Input Resistance		1.5		KOHMS	Input Pins 1(+) & 2(-)
V _{TRIG}	Input Trigger Voltage	4.5	5	32	Vp-p	Input Pins 1(+) & 2(-)
I _C	Output Sink Current			50	mAdc	Pin 4

Consult factory for other logic voltages.

Connection Diagram



** Refer to warranty section for limited warranty details.

***Absolute Maximum Ratings**

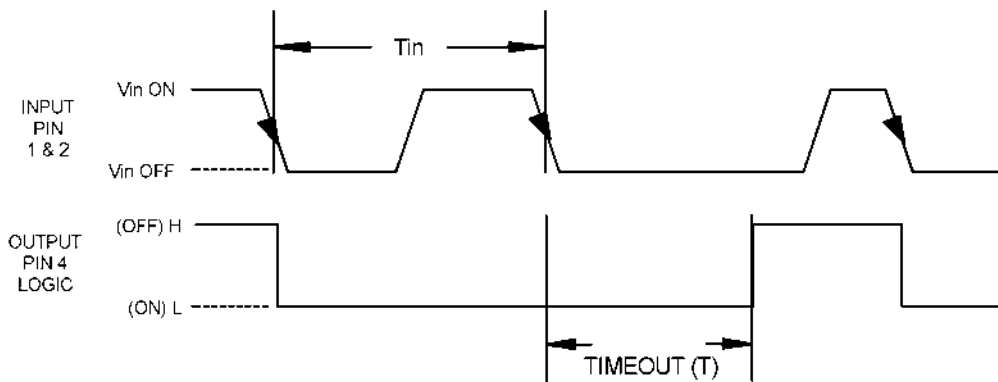
Supply Voltage (between pins 3 & 5)...	(see recommended operating parameters)
Input (pins 1 & 2).....	± 36 V
Output Sinking Current (pin 4).....	75 mA
Output Transistor Voltage.....	35 Vdc
Isolation Voltage (Input to Output).....	5000 Vrms
Ambient Operating Temperature.....	-40 to +85°C

***NOTE:** STRESSES ABOVE THOSE LISTED UNDER ABSOLUTE MAXIMUM RATINGS MAY CAUSE PERMANENT DEVICE DAMAGE. OPERATION AT THESE RATINGS FOR EXTENDED PERIODS MAY AFFECT RELIABILITY.

Operation(s)

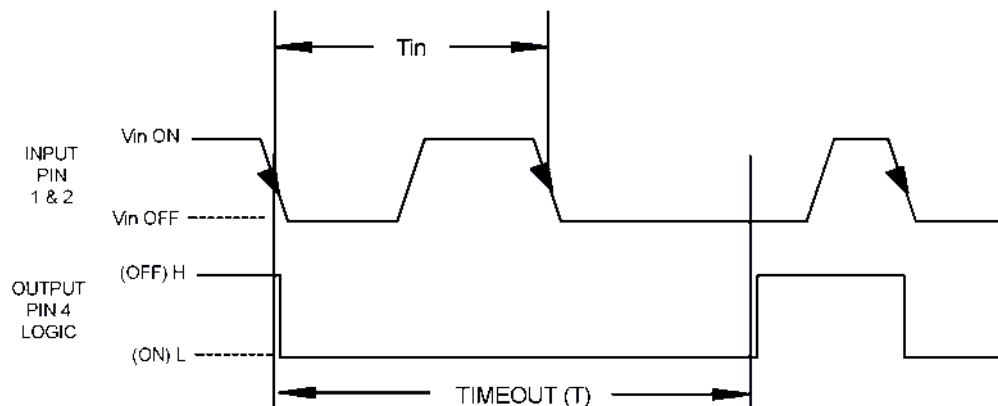
RETIGGERABLE — Standard

The G-IPS5 Input Pulse Stretcher modules provide a very reliable way to condition ON/OFF input signals. An input voltage applied across pins 1(+) and 2(-) is detected by an opto isolator. When the input voltage is removed, an internal one-shot timer is triggered and output pin 4 is pulled low (ON) during the time-out period (standard time is 1 second). Standard 'RETIGGERABLE' types allow the internal timer to reset each time an ON to OFF transition occurs on the input. The output is held low (ON) until time-out occurs from the last OFF-Edge is detected on the input. This mode is especially useful for Watchdog Timer or Comm signal detection applications.



NON-RETIGGERABLE — “-NR” Option

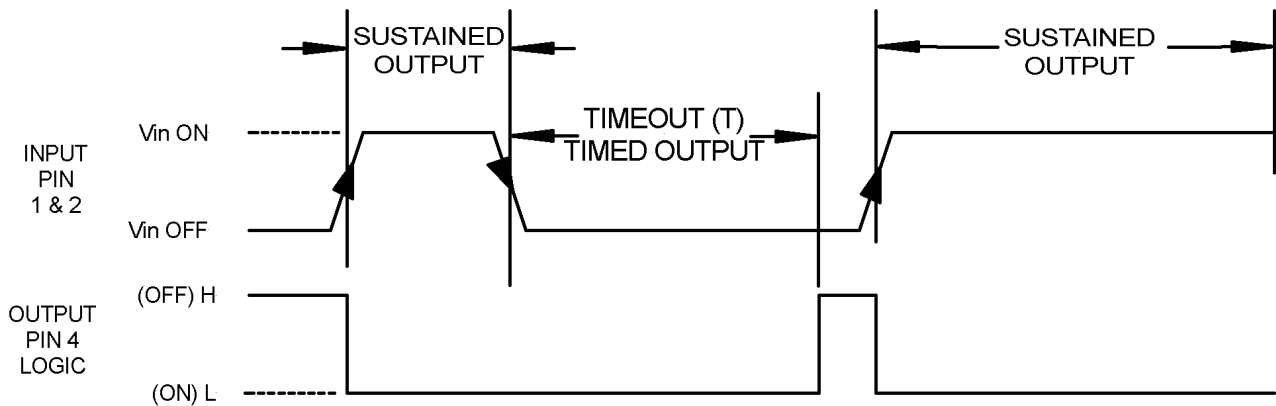
The 'NON-RETRIGGERABLE' (-NR) option operates much the same way as 'retiggerable' types, except the internal timer is only reset by the first OFF-Edge detected, thus ignoring all subsequent input transitions until the time-out occurs.



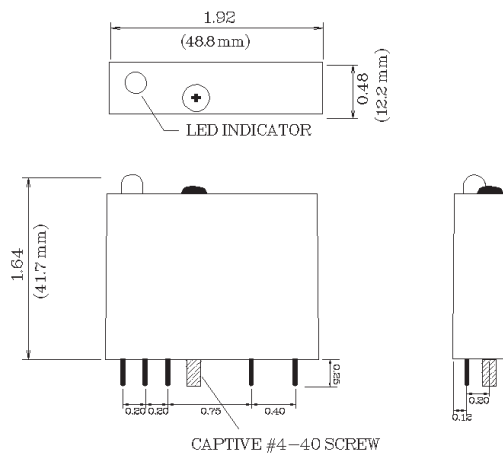
Operation(s) – con't

SUSTAINED — “-NRS” Option

The 'SUSTAINED' (-NRS) option functions as a conventional DC Input module with an extended output period. Output pin 4 is pulled to logic low (ON) when a voltage is applied across pins 1(+) and 2(-) functioning as a conventional DC input. When the input voltage is removed, additional time (T) is added on output pin 4 (standard time is 1 second). This mode is especially suited to 'de-bouncing' inputs from mechanical relay contacts and switches, pushbuttons, etc. It is also recommended to detect fast or intermittent input signals which could otherwise be missed.



Dimensions



Units are in inches unless noted otherwise.

Part Numbering

