IPS5 Types
SM/M-IPS5 Types

Pulse Stretcher Input Modules

Optically Isolated

Description

The IPS5-Series modules detect momentary input signals in computer controlled systems by "debouncing" and "stretching" the input signal. Upon detecting intermittent inputs such as push buttons, flowmeters, optical detectors, relay contacts and communications signals, a single logic low pulse may be read by the computer. A one-second pulse is standard (other pulses are available). This is especially useful when inputs occur too fast to be scanned and to prevent multiple input detection as a result of contact bounce. "Interrupt-driven" inputs can use the IPS5 to eliminate bogus interrupts, such as multiple push-button operations and contact bounce.

This series is optically isolated to 5000 Vrms and is fully compatible with industry standard I/O Mounting Racks. It offers event triggered one-shot operation in several modes, including, Retriggerable (R), Non-Retriggerable (NR) and Sustained (NRS). Models are available for 5V, 12V, 15V and 24V logic operation with input voltage ranges of 2-32 Vac/dc.

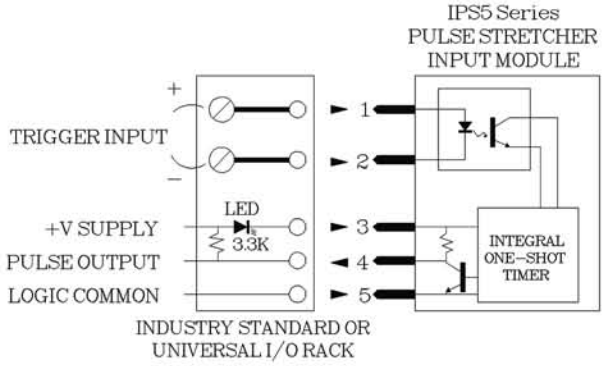
Features

- *5000 Vrms Optical Isolation*
- *Event-Triggered Input*
- *Fits Standard Type I/O Racks*
- *White Case Color Code*
- *High Reliability*
- *Captive #4-40 Screw*
- *Operating Temp. –40ºC to +85ºC*
- *Captive #4-40 Screw*
- *3 Year Factory Warranty*
- *Also Available in SM/M Sizes*

Recommended Operating Parameters

SYMBOL	PARAMETER	LIMITS			UNIT	CONDITION
		MIN	TYP	MAX		
Vcc	Supply Voltage (IPS5) (IPS12) (IPS15) (IPS24)	2.95 9.50 12.00 20.00		5.25 14.00 18.00 28.00	Vdc	Pins 3 & 5
Icc	Supply Current		12	18	mAdc	Pulse Output Active
TA	Ambient Temp.	-40		+85	ºC	Operating
fmax	Maximum Trigger Input Frequency			50	Hz	(TRIG @50% Duty Cycle)
Tmin	Re-trigger Time	20			mSec	Edge to Edge
T	Standard Timeout	0.86	1	1.15	Sec	Output Pulse Width
Vtrig	Input Voltage	2.0		32	Vac/Vdc	Pins 1(+) and 2(-)
Itrig	Input Current @Max Line			25	mA	Pins 1 & 2
Ic	Output Sink Current			50	mAdc	Pin 4
Vce(sat)	Output Saturation Voltage		0.5		Vdc	Pins 4 & 5, 10 mA

Connection Diagram



Pulse Stretcher Input Modules

*Absolute Maximum Ratings

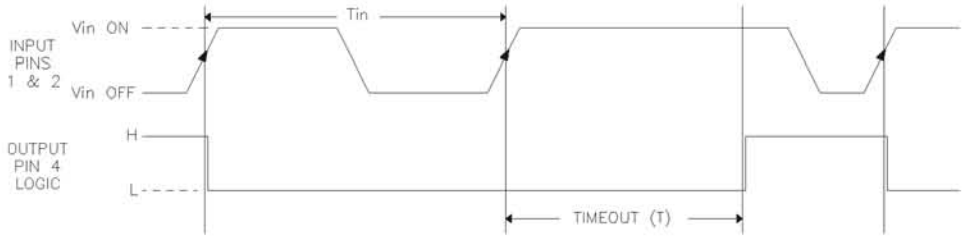
Supply Voltage (between pins 3 & 5)...	(see recommended operating parameters)	
Input (pins 1 & 2).....	± 36 V	
Output Sinking Current (pin 4).....	75 mA	
Output Transistor Voltage.....	35 Vdc	
Isolation Voltage (Input to Output).....	5000 Vrms	
Ambient Operating Temperature.....	–40 to +85°C	

*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)

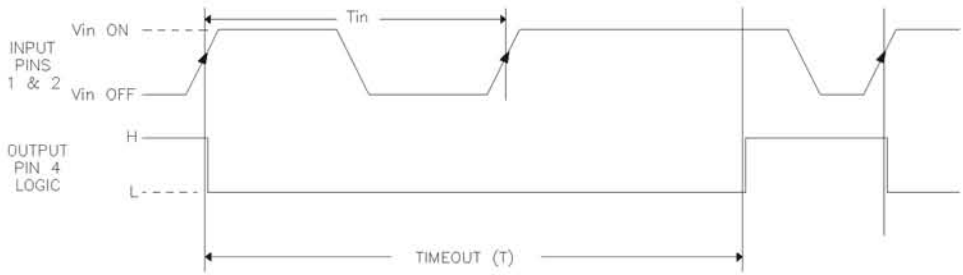
RETRIGGERABLE — *Standard*

The 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 optical isolator which in turn resets an event-triggered internal timer circuit. Output pin 4 is pulled to a logic low state during the time-out period (standard time-out is one second). Standard "RETRIGGERABLE" types allow the internal timer to be reset each time the input voltage is applied only timing out after the last input is detected. This mode is especially useful for Watchdog or Communication Timer applications.



NON-RETRIGGERABLE — *"–NR" Option*

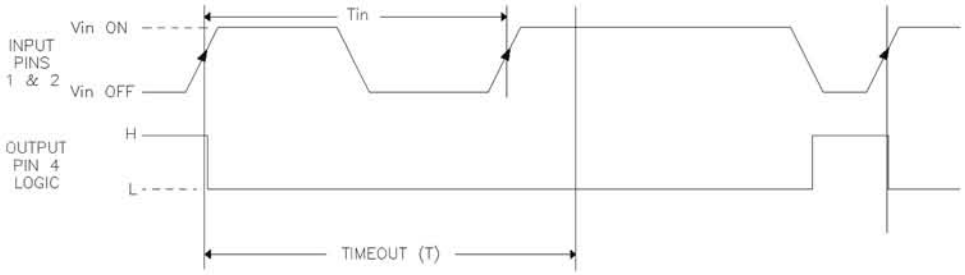
The "NON-RETRIGGERABLE" (–NR) option operates much the same way as Retriggerable types, except internal timer will reset on the first detection of an input voltage and will ignore additional input signals during the time-out period. Again, pin 4 is low during the time-out period and then returns to a high logic state. This mode is applicable to Pulse Stretching and Detecting Intermittent Inputs which occur to fast for reading on a polled input system.



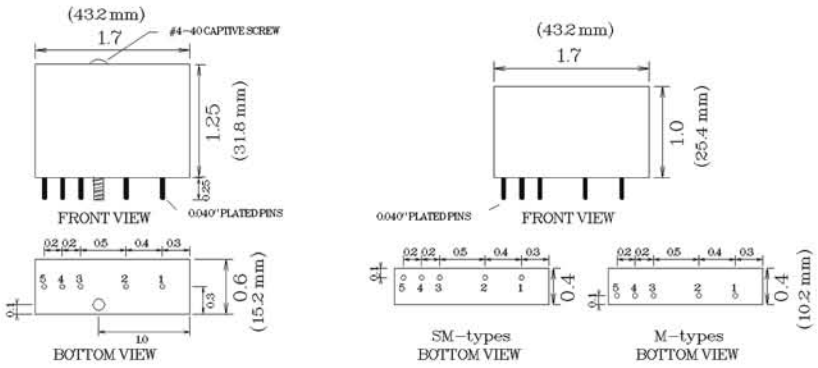
Operation(s) - con't

SUSTAINED — *"-NRS" Option*

The "SUSTAINED" (–NRS) option is well suited to Debouncing Contact Inputs and Detecting Intermittent Inputs. The operation is identical to the (–NR) described above, but maintains a logic low on pin 4 as long as the input voltage is present, even after time-out occurs. This ensures a minimum period for pin 4 to indicate a voltage was present at pins 1 and 2 and provides a "real-time" voltage-still-present indication. This mode is ideal for use as typical input for polled control systems where inputs might occur to fast to be detected at times or to ensure multiple input signals are not processed caused by contact bounce.



Dimensions



Dimensions are in inches unless noted otherwise.

Part Numbering