DAQ93P03

6 channel mechanical and proximity sensor interface circuit

Benefit

I   LOW COST sensor preconditioning circuit with selectable filter

I   Direct interfacing external digital sensors with DAQ83Q03 or TTL compatible circuits.

I   Accommodate input voltage of 1 – 10volts for Low and Hight level limit.

I   Low power consumption and durable in constant running conditions.

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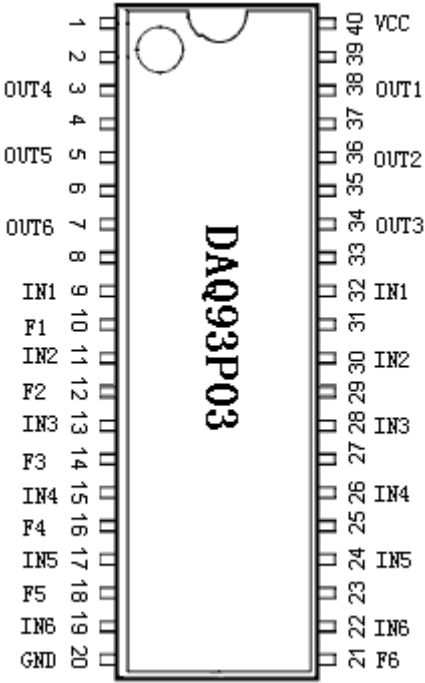
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6 channel mechanical and proximity sensor interface circuit

l 6 channel direct sensor input

l Applicable for 1-10v voltage input

l On-chip filters

l TTL output.

l +5v Power supply

l Low power consumption

l 40-Pin DIP

Description

The DAQ93P03 is a 6 channel digital sensor preconditioning circuit to interface external mechanical switches or inductive/conductive proximity switches to TTL circuits. The chip itself consist of internal Schmitt Triggers to shape the external On-Off level input, moreover, RC filter function is also integrated inside the chip to eliminate sharp noises carried by the external sensors. No external filter should be used for DAQ83Q03 since it has integrated digital filter itself, but external filter circuit has to be used for 8253/8254 counters. The filter function can be achieved by connect filter pins to the ground of DAQ93P03.

INPUT/OUTPUT DESCRIPTION

Vcc(Pin40   +5v)

Supply Voltage Positive Terminal

GND(Pin20   Ground)

Supply Voltage Negative Terminal

PIN ASSIGNMENT - TOP VIEW

STANDARD 40 PIN PLASTIC DIP

IN1(Pin9, Pin32)	IN2(Pin11, Pin30)
IN3(Pin13, Pin28)	IN4(Pin15, Pin24)
IN5(Pin17, Pin24)	IN6(Pin19, Pin22)

These inputs are connected directly to the external sensors or On-Off signals within the range of 1-10volts.

OUT1(Pin38)	OUT2(Pin36)	OUT3(Pin34)
OUT4(Pin3)	OUT5(Pin5)	OUT6(Pin7)

These pins are TTL compatible output for counter or

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quadrature integrated circuit chips.

F1(Pin10)   F2(Pin12)   F3(Pin14)   F4(Pin16)   F5(Pin18)   F6(Pin21)

These pins are designated for filtering the external spark noses carried by the external sensor lines. When F1 is connected to the GND, input sensor of IN1 is filtered with internal RC circuit; and when F2 is connected to the GND, input sensor of IN2 is filtered with internal RC circuit and so on. If no filtering is deemed necessary to the counter or quadrature circuit, just leave the corresponding pin at NC(not connected).

TECHNICAL PARAMETER

Supply volts	5	VDC
Operating Temperature	0 – 70	°C
Storage Temperature	-55 – 150	°C
Input low level	0.6 - 1	V
Input high level	3 – 10	V
Output sink current	1.75	mA
Impedance	700	Ohm

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Block Function
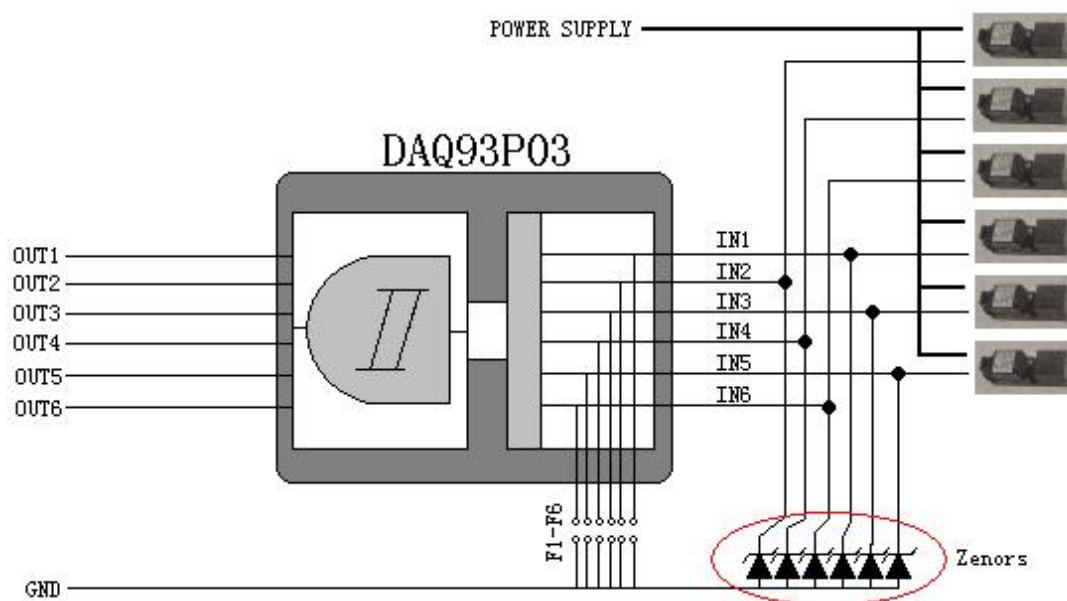
Above picture shows external proximity switch sensors connect to the DAQ93P03 whereby the sensors are commonly power supplied with 8volts regulated PSU and return signals are directly feed into each input channel of the chip. For mechanical switches, the power supply is recommended to 5Volts.

Caution

The impedance of each channel is 700 ohm. Zenor diodes are not mandatory for low power supplied sensors, but highly recommended for high power supplied sensors eg.15volts and above. As 3volts can be effectively identified as high level to the DAQ93P03, medium sized 5volts zenors are acceptable for the purpose of input protection.

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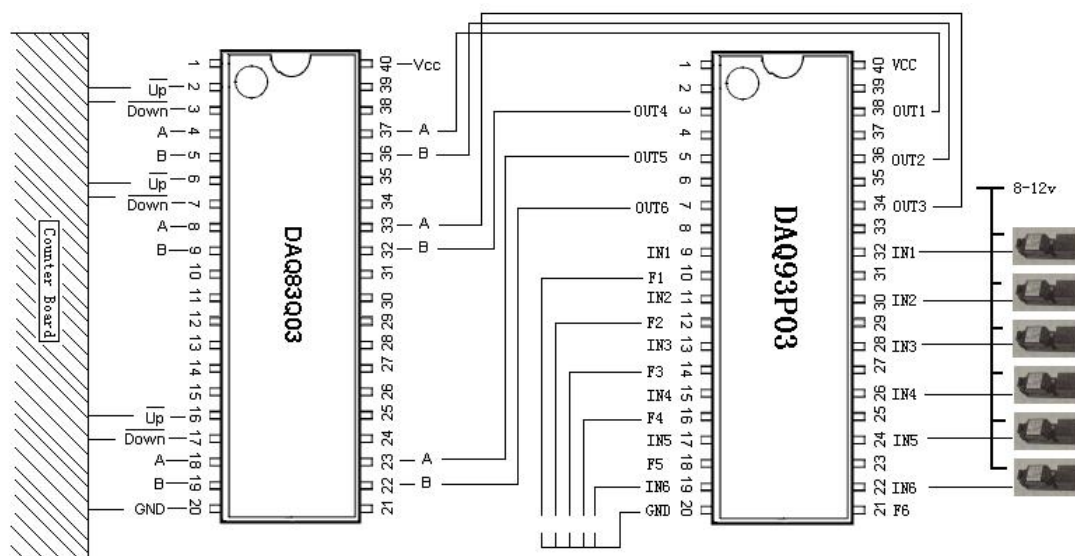| DAQCHINA INDUSTRIAL AUTOMATION Website: www.daqchina.net Email: daqchina@daqchina.net DAQ93P03 Data Sheet Edition 1.0/03/04	**DAQCHINA**

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Typical Application --- Interface DAQ93P03 with DAQ83Q03

Above figure shows a typical connection for a counter board, DAQ83Q03 and DAQ93P03 whereby filters is to be connected as per requirement of specific project.

Below are the tested sensors for the circuit

P+F   NCB15-U1-NO

P+F   SJ3 5-N

TURCK   BI15-CP40-Y1X

For counting purpose without need of quadrature detection, OUT pins of DAQ93P03 can be directly connected to the counter board since DAQ93P03 is TTL compatible.

Please visit www.daqchina.net for more information regarding applications of the chip.