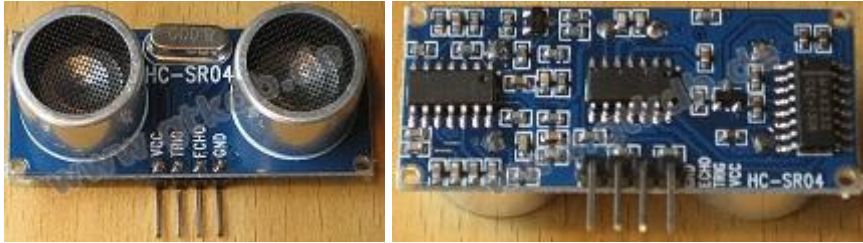


Detecting the distance to an object with an ultrasonic sensor

With the capture capability of Netzer a simple ultrasonic sensor like the HC-SR04 module can be used.



For that reason the sensor shall be connected like:

Sensor signal	Netzer signal	Further descriptions
VCC	-	Connect the sensor to +5V
GND	GND	Ground signal
TRIG (I)	IO3	The trigger signal
ECHO (O)	IO0, SPI_INT	The echo signal. Due to the Netzer pins are +5V tolerant, no voltage divider is needed!

IO3

IO3 is used for generating the trigger signal. Datasheet of the sensor stats that at least 10 μ s pulse must be generated to start the measurement.

IO3 (ID d)

Digital input
Alert events:

Digital output
Startup value: 0 1

PWM output
Frequency ^{*}: Hz
Logic: 0 1
Startup value:

Impulse output
Logic: 0 1
Startup value:

Input capture
Capture: On falling edges On rising edges

Mode ^{*}:
Unit ^{*}: ns

*Parameter for IO3 and SPI_INT

The image shows how to configure IO3.

Depending on the configured unit the following value must be written to IO3 to get the 10 µs impulse:

Unit	Value
100ns	100 (0x64)
200ns	50 (0x32)
400ns	25 (0x19)
800ns	13 (0x0D)

The easiest way is to configure the impulse as startup value like shown in image above.

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