

## What is GlideWheel-AS Angle Sensor

GlideWheel-AS is an Angle Sensor to measure angles of a rotating shaft.



## Connections and Placement

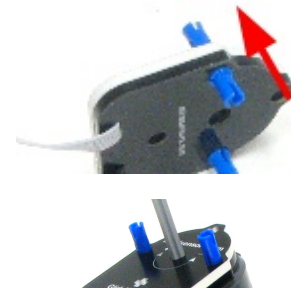
Connect GlideWheel-AS connector to Sensor Port of your NXT.

### Mechanical Mounting

The side holes of GlideWheel-AS are designed for pins shown here.



Insert the pins from bottom of the GlideWheel-AS as seen in adjacent picture.



Your rotating axle would be inserted through the center + hole (as seen in adjacent picture).



### NOTE

The holes are designed for tight fit of the pins. When you dismantle your contraption, it is recommended to leave the pins on the GlideWheel.

## Programming Techniques for reading

### NXT-G:

Download the NXT-G block that's available in the NXT-G Blocks Repository at Mindsensor's website at following URL.

[http://www.mindsensors.com/index.php?module=documents&JAS\\_DocumentManager\\_op=viewDocument&JAS\\_Document\\_id=221](http://www.mindsensors.com/index.php?module=documents&JAS_DocumentManager_op=viewDocument&JAS_Document_id=221)

You can download and modify the sample program from following url:

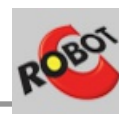
[http://www.mindsensors.com/index.php?module=documents&JAS\\_DocumentManager\\_op=viewDocument&JAS\\_Document\\_id=222](http://www.mindsensors.com/index.php?module=documents&JAS_DocumentManager_op=viewDocument&JAS_Document_id=222)



### NOTE

Ensure to use latest LEGO firmware on NXT (1.29 or higher).

### RobotC:



The driver implementation is available in Xander's driver suite at following url:

<http://botbench.com/blog/category/programming/robotc-drivers/>

the header file for the driver is: mindsensors-angle.h

**NXC:**

Download the library file and sample programs from following URL, and modify the sample programs to suit your needs.

[http://www.mindsensors.com/index.php?module=documents&JAS\\_DocumentManager\\_op=viewDocument&JAS\\_Document\\_id=223](http://www.mindsensors.com/index.php?module=documents&JAS_DocumentManager_op=viewDocument&JAS_Document_id=223)

If you need to use *GlideWheel-AS* in your existing program, at the top of your NXC program file, include the library with following directive:

```
#include "AngleSensor-lib.nxc"
```

## APPENDIX A - Advanced Information

### I2C Registers:

The Angle Sensor appears as a set of registers as follows:

Register	Read	Write
0x41	-	Command Register
0x42	Angle (4 bytes)	-
0x46	Raw Value (4 bytes) This value has 0.5 degree resolution.	-
0x4A	RPM (Revolutions per minute)	

### Supported Commands

Command	Function
'r'	Reset Angle to zero.

### I2C Bus address

**Factory Default Address: 0x30.**

### Current Consumption

Average measured current profile is as follows:

Current Consumption	Duration
9mA	Continuous

## Calibration

*GlideWheel-AS does not need any calibration.*

## Device Specs

**Max operating Speed:** 4000 RPM

**Host Interface:** I2C

**Sample Rate:** less than 1 milli-second (Note however, reading speed from NXT sensor port is about 16 milli-seconds).

**RPM Computations:** RPM is computed based on the rotations in past 1 second.