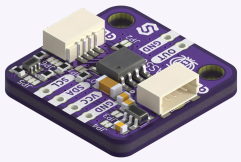
PRODUCT DATASHEET



Soldered Position sensor AS5600 breakout

333183

The AS5600 Position Sensor Breakout offers precise 12-bit contactless angle measurement for endless-rotation applications without wear.

Full product documentation, files and tutorials: **solde.red/333183**

CORE ATTRIBUTES

SKU	**333183**
DIMENSIONS	**222.0 × 22.0 × — mm**
ORIGIN	**HR**
BARCODE	**732388648702**

DESCRIPTION

The Soldered **AS5600** Position Sensor Breakout measures rotation without ever touching the thing that's turning. Built around the AMS AS5600, a 12-bit contactless magnetic angle sensor, it reads the absolute position of a small diametrically magnetized magnet spinning above the chip and reports it as a **full 0-360° angle** with 4096 steps per turn - a true "contactless potentiometer".

That makes it a great fit for endless-rotation knobs, motor and joystick feedback, robot joints, pedals, or RC-style servos. You can read the angle over I2C - plug straight in with the two **Qwiic** connectors, or use the 4-pin header if your microcontroller runs a 5 V bus, since an on-board level shifter and 3.3 V regulator sort out the voltages for you either way - or take the sensor's analog/PWM signal directly from the 2-pin OUT header for the simplest possible hookup.

A DIR jumper flips the direction of rotation, solder jumpers enable or remove the I2C pull-ups on each side, and the AS5600's programmable start and stop positions let you map any part of a turn onto the full output range. It's all open-source hardware on a compact 22 × 22 mm board with two M3 mounting holes - just add a magnet and start measuring angles, today!

TECHNICAL DETAILS

Sensor: AMS AS5600 (AS5600-ASOM, SOIC-8), 12-bit contactless magnetic rotary position sensor
Principle: Hall-based absolute angle of a diametrically magnetized on-axis magnet (contactless, no wear)
Resolution: 12-bit → 4096 positions per revolution (~0.088° step)
Angle range: 0-360° default; programmable start/stop (min span ~18° up to 360°)
Digital interface: I2C, address 0x36 (fixed)
Magnet handling: automatic magnet detection + AGC (present / too-weak / too-strong status)
Typical magnetic field: ~60 mT (diametric magnet, on-axis)

Analog/PWM output: 2-pin header (OUT, GND)
Pull-ups: 10 kΩ on both 3.3 V and 5 V I²C sides, removable via solder jumpers
Sensor supply: runs at 3.3 V on-board (AS5600 core rated 3.3 V / 5 V)
Board size: 22 × 22 mm
Mounting: 2 × 3.2 mm holes (M3)

SPECIFICATIONS

INTERFACE	I2C
QWIIC COMPATIBLE	Yes
I2C ADDRESS DEFAULT	0x36
I2C ADDRESS CHANGEABLE	No
BREADBOARD COMPATIBLE	Yes
MEASUREMENT TYPES	Position
MEASUREMENT RANGE	0 - 360° absolute, 12-bit (4096 steps)
MEASUREMENT ACCURACY	±1° INL; 12-bit resolution; 0.015° RMS noise
IC PART NUMBER	AS5600
SUPPLY VOLTAGE MIN V	3.3
SUPPLY VOLTAGE MAX V	5
LOGIC LEVEL	3V3 Or 5V
PROTECTION FEATURES	Overcurrent, Thermal Shutdown

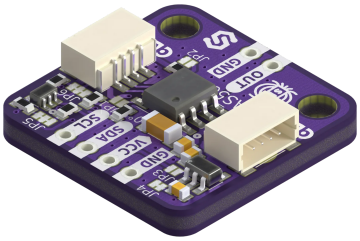
DOCUMENTS

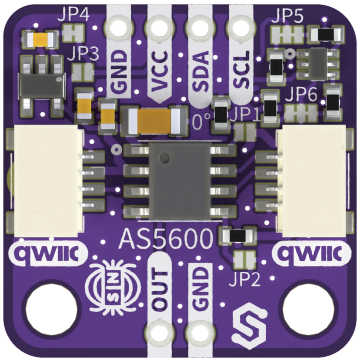
Main IC Datasheet · EN	https://cms.soldered.com/products/333183/documents/ic-datasheet/333183_ic-datasheet_38e612.pdf

LINKS

Arduino Library	https://github.com/SolderedElectronics/Soldered-Position-sensor-AS5600-breakout-Arduino-Library
mim_package	https://checkmim.com/packages/solderedelectronics+Soldered-AS5600-MicroPython-Library
MicroPython Module	https://github.com/SolderedElectronics/Soldered-AS5600-MicroPython-Library
Arduino Library Documentation	https://docs.soldered.com/as5600/arduino/direction/
Arduino: Get Started	https://docs.soldered.com/as5600/arduino/getting-started/
Full Documentation	https://docs.soldered.com/as5600/overview/

GALLERY


GND
OUT
SCL
SDA
VCC
GND


JP4
JP3
GND
VCC
SDA
SCL
JP5
JP6
0°
JP1
AS5600
qwiic
qwiic
JP2
OUT
GND