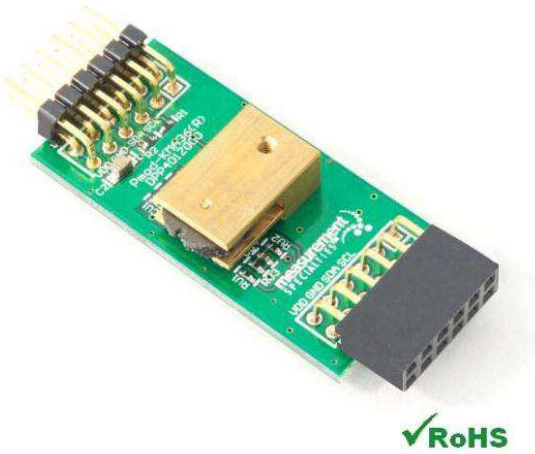


MEAS KMA36R PERIPHERAL MODULE

Digital Magnetic Encoder Sensor
Digital Component Sensor (DCS) Development Tools

The KMA36(A) peripheral module provides the necessary hardware to interface the KMA36, A universal magnetic encoder for precise rotational measurement. To any system that utilizes a Digilent Pmod™ compatible expansion ports configurable for I2C communication. The KMA36 sensor feature a system-on chip technology that combines a magnetoresistive element along with analog to digital converter and signal processing in a standard small package. This model can operate from 3.0V to3.6V, by using Anisotropic Magneto Resistive(AMR) technology, the KMA36 can determine contactlessly the magnetic angle of an external magnet over 360°.

Performance

- User programmable parameters
- Low power mode
- -40°C to 125°C accuracy:1°C
- Sleep and automatic wake-up through I^2C
- Programmable zero position
- Device address hardware configurable
- Operates from 3.0V to 3.6V

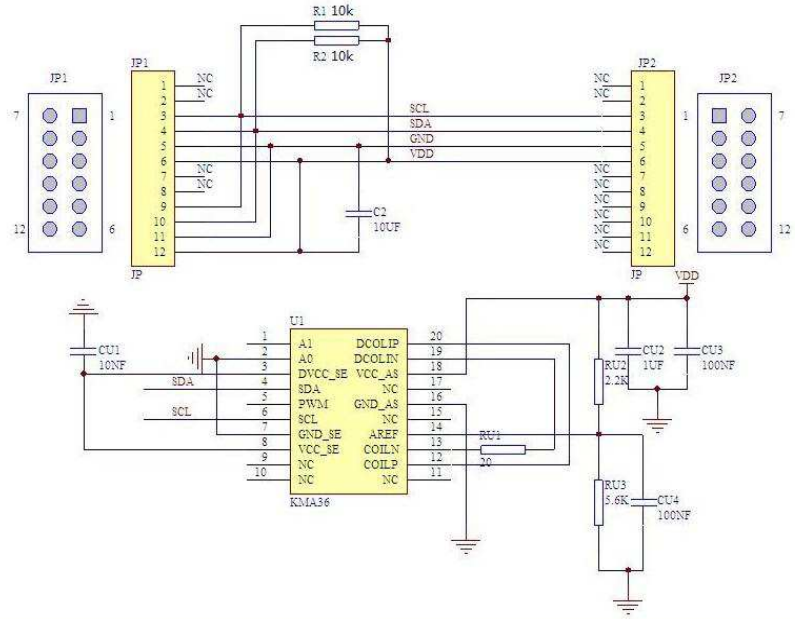
Specifications

- Contactless angle measurement from 0° to 360°
- Programmable resolution up to 13 bits
- I^2C communication
- Very low hysteresis
- Incremental model
- Programmable zero position
- low power consumption

Features

- 12-pin connector compatible with Digilent Pmod™
- I^2C interface
- Secondary 12-pin connector allows daisy chain
- FPGA fabric available for download
- µC C code available for download
- Programmable resolution up to 13 bits
- Very low hysteresis
- High accuracy mode

Schematic



Connector Pin Assignments (I²C Communications)

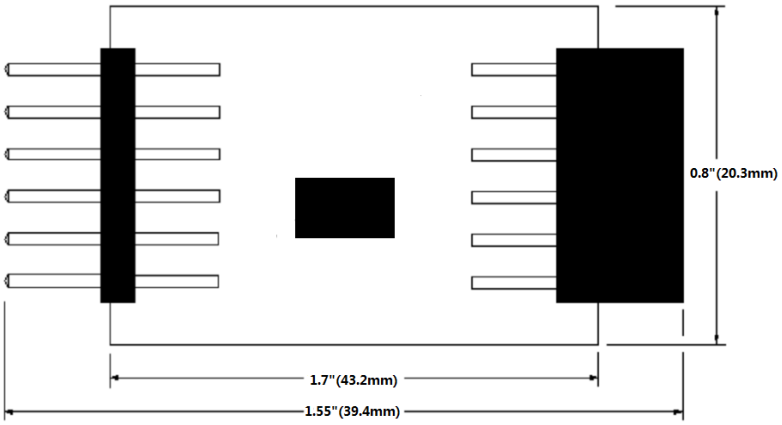
System Plug (Table 1)

Connector J1		
Pin No.	**Signal**	**Description**
1	N/C	Not Connected
2	N/C	Not Connected
3	SCL	I²C Serial Clock
4	SDA	I²C Serial Data
5	GND	Ground
6	Vdd	Power Supply
7	N/C	Not Connected
8	N/C	Not Connected
9	SCL	I²C Serial Clock
10	SDA	I²C Serial Data
11	GND	Ground
12	Vdd	Power Supply

Expansion Socket (Table 2)

Connector J2		
Pin No.	**Signal**	**Description**
1	N/C	Not Connected
2	N/C	Not Connected
3	SCL	I²C Serial Clock
4	SDA	I²C Serial Data
5	GND	Ground
6	Vdd	Power Supply
7	N/C	Not Connected
8	N/C	Not Connected
9	N/C	Not Connected
10	N/C	Not Connected
11	N/C	Not Connected
12	N/C	Not Connected

Dimensions



Detailed Description

I²C Interface

The peripheral module can interface to the host in one of two ways. It can plug directly into a Digilent Pmod™ compatible port (configured for I²C) through connector J1, or to other I²C boards that have a Digilent Pmod™ compatible expansion connector.

I²C Interface (Daisy Chaining Modules)

Connector J1 provides connection of the module to the Digilent Pmod™ host. The pin assignments and functions adhere to the Digilent Pmod™ standard as shown in Table 1. The J2 connector allows additional Digilent Pmod™ modules to be connected in a daisy-chain fashion. See Table 2.

External Control Signals

The module operates as an I²C slave using the standard 2 wire I²C connection scheme. The module is controlled by the host (through the Digilent Pmod™ connector). In cases where one or more of the SCL and SDA signals are driven from an external source, resistors R1, R2 provide pull-up. However, this also increases the apparent load to the external driving source. If the external source is i*n*capable of driving these loads, they could be removed from the board.

Ordering Information

Description	Part Number
MEAS KMA36R PERIPHERAL MODULE	DPP401Z000

Reference Material

- Detailed information regarding operation of the IC:
  MEAS KMA36R Datasheet
- Detailed information regarding the single port mother board driver:
  MEAS KMA36R for MicroZed Driver
- Complete software sensor evaluation kit for the single port mother board:
  MEAS KMA36R for MicroZed Software
- Detailed information regarding the multiple port mother board driver:
  MEAS KMA36R for ZedBoard Driver
- Complete software sensor evaluation kit for multiple port mother board:
  MEAS KMA36R for ZedBoard Software

te.com/sensorsolutions

PRODUCT SHEET

MEAS France SAS,
a TE Connectivity company.
Impasse Jeanne Benozzi CS 83 163
31027 Toulouse Cedex 3, FRANCE
Tel:+33 (0) 5 820 822 02
Fax: +33 (0) 5 820 821 51
customercare.tlse@te.com