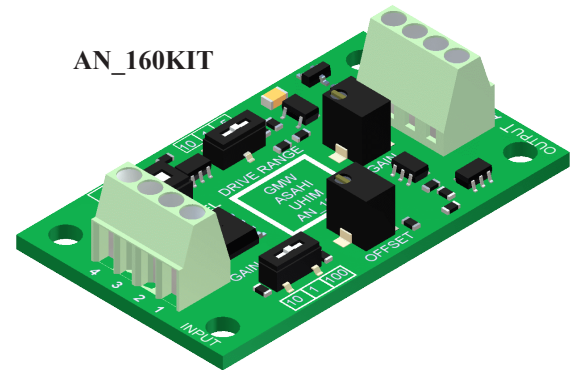


The AN_160KIT is a Universal Hall Interface Module (UHIM) which provides an easy means to evaluate the Asahi Hall elements for magnetic field, electric current or position sensing applications.

The UHIM consists of a differential amplifier, a voltage drive circuit for Hall elements requiring a voltage drive, a current drive circuit for Hall elements requiring current drive, and two analog output circuits to provide the standard $2.5V \pm 2.5V$ signal and a $1.5V \pm 1.5V$ signal for 0-3V input level A/D circuits.

The kit provides selector switches to configure the UHIM to optimize the parameters for the various Asahi Hall elements and both a gain adjustment potentiometer and an offset adjustment potentiometer. The UHIM will interface with GMW's Asahi element test PCB kits (AN_161 series) and the SIP element packages



Features:

- Terminal strips for all input/output connections
- User selectable current drive or voltage drive
- User selectable current or voltage drive ranges (10/1/5) mA or volts
- User selectable coarse gain ranges (1-10,10-100,100-1000)
- Fine Gain adjustment (1-10X)
- Offset adjustment
- Two Analog outputs ($2.5 \pm 2.5V$ and $1.5V \pm 1.5V$ for 0-3V ADCs)
- Compatible with all Asahi/GMW Element test PCB KITS and SIP devices

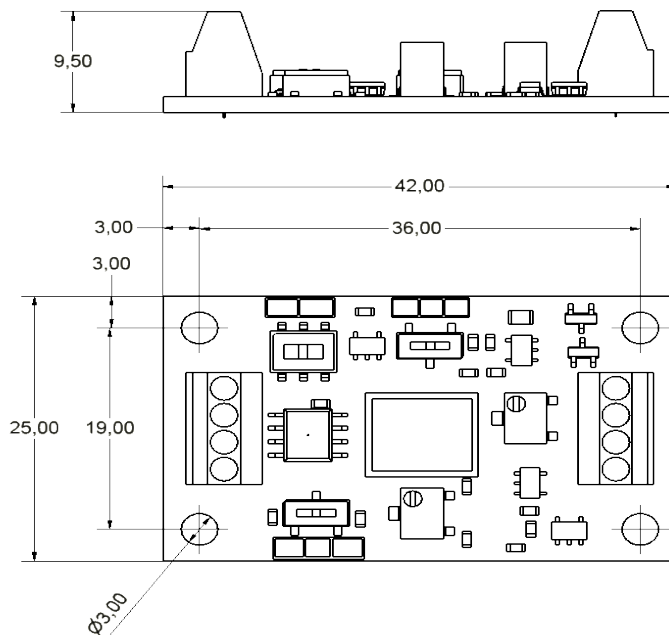


Fig 1. AN_160KIT Outline Drawing

Revision Date: 22 SEP 2010

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Absolute Maximum Ratings

Symbol	Parameter	Min.	Typ.	Max.	Unit	Remarks
T _{STG}	Storage Temperature	-40		100	°C	
T _A	Ambient Temperature	-10		85	°C	With power applied
V _{DD}	Supply Voltage	-0.5		+16.0	V	

Recommended Operating Conditions

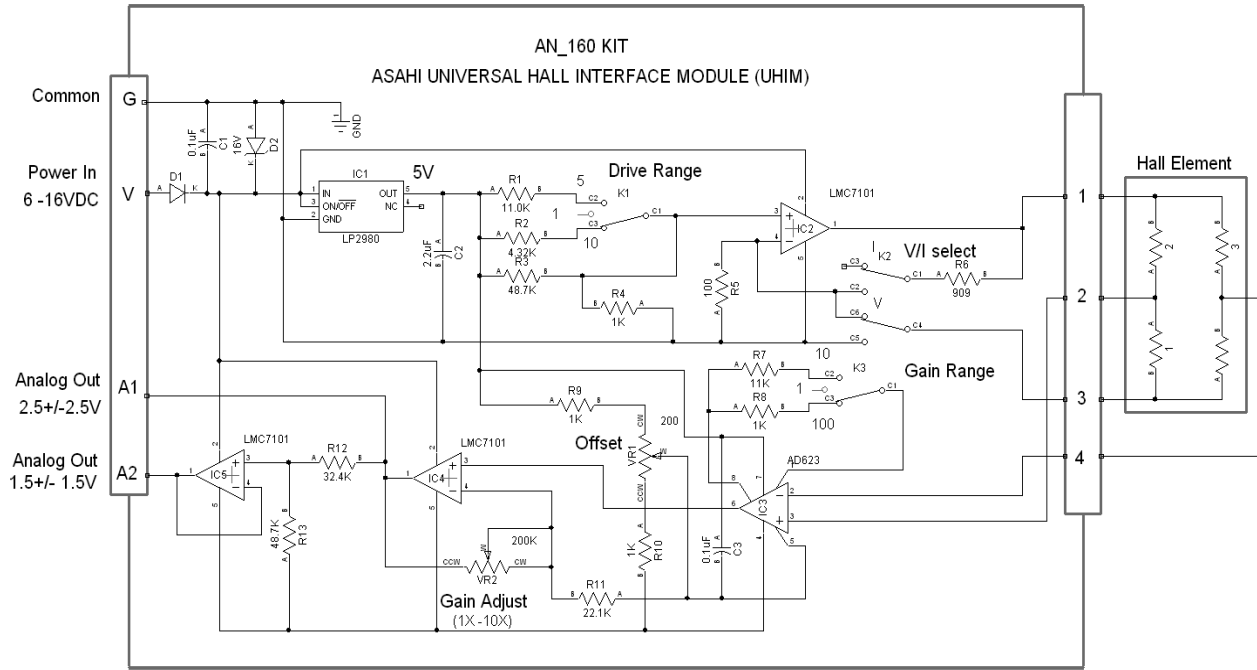
Symbol	Parameter	Min.	Typ.	Max.	Unit	Remarks
V _{DD}	Supply Voltage	5.5	5.5	16	V	
A1	Analog Output 1	0.05	2.5	4.95	V	
A2	Analog Output 2	0.05	1.5	2.95	V	For 0-3 V A/D's

Table 2. Asahi Hall Element Test Kit Selection and UHIM Configuration table

				UHIM Configuration							
Hall Elements	Element Kit Type	Hall Element Kit P/N (Ordered separately)	Extension Cable	Drive Select		Drive Range (V) or (mA)			Coarse Gain Range		
				I (current)	V (voltage)	10	1	5	10	1	100
HG-0111, HG-0112	1	AN_161-xx-xxxx (1)	Required	X			X		X	X	X
HG-0114, HG-0115	1	AN_161-xx-xxxx (1)	Required	X			X		X	X	X
HS-0111	1	AN_161-xx-xxxx (1)	Optional		X		X		X	X	X
HG-0113	1	AN_161-xx-xxxx (1)	Required	X				X	X	X	X
HQ-0111	1	AN_161-xx-xxxx (1)	Optional		X			X	X	X	X
HW-105A, HW-108A, HW-105C, HW-108C	2	AN_161-xx-xxxx (1)	Optional		X		X		X	X	X
HG-106C, HG-106A	3	AN_161-xx-xxxx (1)	Required	X		X			X	X	X
HG-176A, HG-186A	3	AN_161-xx-xxxx (1)	Required	X			X		X	X	X
HG-166A	3	AN_161-xx-xxxx (1)	Required	X				X	X	X	X
HW-101A	4	AN_161-xx-xxxx (1)	Optional		X		X		X	X	X
HW-300B, HW-302B, HW-322B	N/A	SIP (no kit required)	Optional		X		X		X	X	X
HG-302C, HG-302A	N/A	SIP (no kit required)	Optional	X		X			X	X	X
HG-362A	N/A	SIP (no kit required)	Optional	X				X	X	X	X
HG-372A	N/A	SIP (no kit required)		X			X		X	X	X

Note: 1) Example: For a kit with the HG-0111 device the Hall element kit number would be AN_161-HG-0111

Fig. 2 Schematic, AN_160KIT

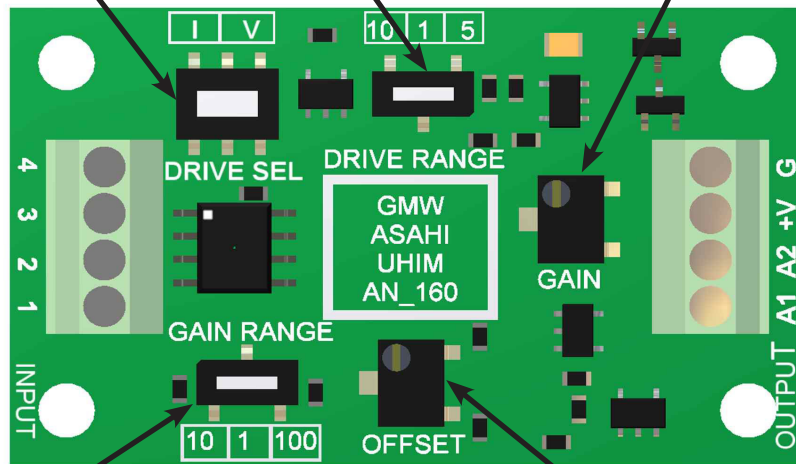


Current Drive or Voltage Drive Select switch

Drive Range Select switch- When I/V Sel Switch is in I, range is 10mA, 1mA or 5mA . When I/V Sel switch is in V, range is 10V, 1V or 5V

Analog Output Fine Gain adjustment 11 turn potentiometer

Hall Element Input or AN_161KIT Connection



Analog Outputs coarse Gain Range selection switch - 10X, 1X, 100X

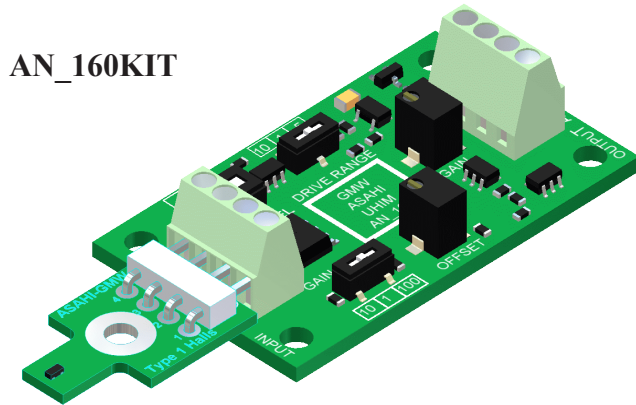
Analog Outputs Offset voltage adjustment- 11 turn potentiometer

Common
Power Input 5.5V-16V
Analog Output 1.5±1.5V
Analog Output 2.5±2.5V

Fig. 3 - AN_160KIT Controls and Interconnect Layout

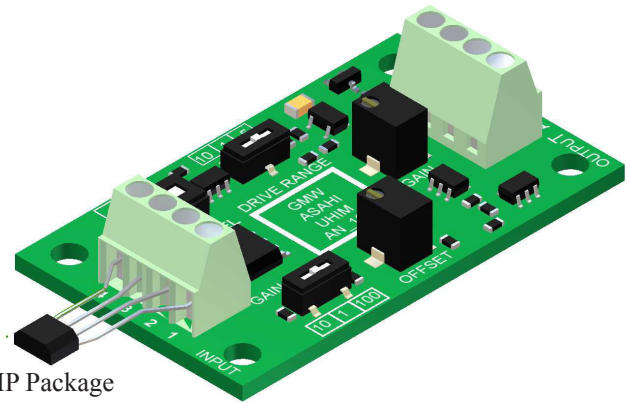
Revision Date: 22 SEP 2010

Fig 4 AN_160KIT UHIM with direct connection to the AN_161 Hall Element Kit



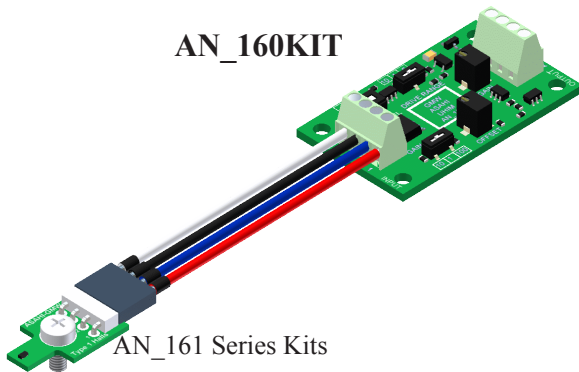
AN_161 Series Kits

Fig 5 AN_160KIT UHIM with direct Hall Element SIP package connection



SIP Package
Hall elements

Fig 6 AN_160KIT UHIM with direct connection to the AN_161 Hall Element Kit via AN_162KIT extension cable



AN_160KIT

AN_161 Series Kits

Fig 7 AN_162KIT Extension Cable for AN_160KIT and AN_161 Hall Element Series Kit



Application Notes:

- Connect the Hall element kit (AN_161-xx-xxx) or SIP Hall element to the AN_160KIT as shown in the above Figures (4 thru 7).
- Configure the AN_160KIT Module “Drive Sel” and “Drive Range” for the device being tested per the criteria shown in Table 2
- Apply power (5.5V to 16VDC) to the terminals shown in Figure 3
- Monitor the output (s) shown in Fig 3 with respect to common
- Set the “GAIN RANGE” switch, and adjust the “GAIN” and “OFFSET” potentiometers as needed