AC Sensing Current Module with Digital Data output

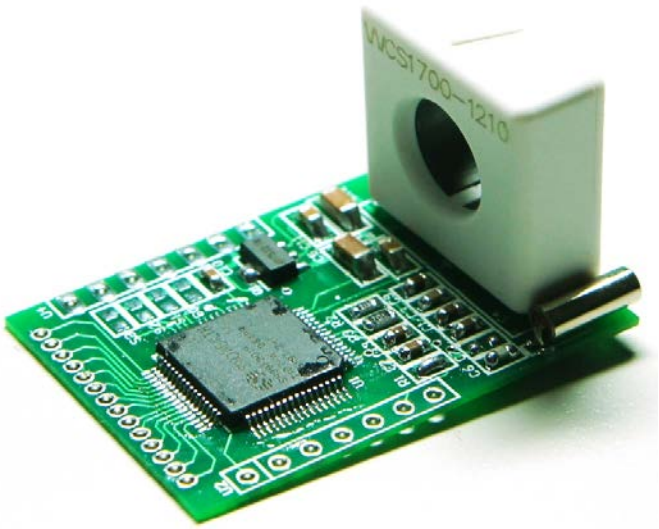
Feature

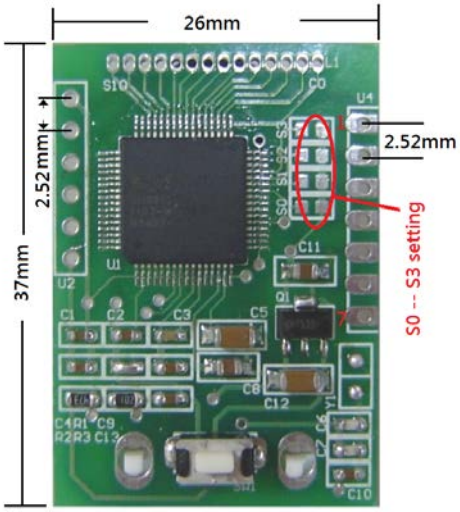
- Operating Voltage: 4.0 V ~12.0 V for Vcc
- Isolation Voltage 4KV
- Digital current data output, easy interface with MCU (UART communication)
- Baud Rate: 2.4K bps
- Internal regulated voltage for sensor
- Measurement range: 0 ~ 20 A
- Built-in LCD driver
- Resolution: I < 10A: 1 mA
  I ≧ 10A: 10 mA
- Accuracy (0 ～ 20A): 80mA~± 5%
- Can setting 1~15A over-current protection control
- Calibrated by 5V,could customize different voltage calibration
- Provide 3.3V operating module

Application

AC Current meter

Current Protector





L x W x H = 37mm x 26mm x 22mm

General Description

The Winson WCM3720A provides economical and precise solution for AC current sensing in industrial, commercial and communications systems. The unique package allows for easy implementation without breaking original system and make current sensing possible. Typical applications include load detection and management, over-current fault detection and any intelligent power management system etc…

The WCM3720A consists of a current sensor and a very high accuracy A/D converter, power on/off switch, digital signal of current and a setting current over control output and an internal regulator for sensor.

The WCM3720A includes a current sensor with a diameter 9mm hole, users can just use system's own electric wire by pass it through this hole to measure passing current without breaking original system, user's MCU can get the real data from DATA pin.

The WCM3720A can set 1~15A over-current indicator, detail description can refer to the **Iset Table.**

Iset Table

User can set Iset to detect passing current. The selection table shown as following:

S3	S2	S1	S0	**Iset**	S3	S2	S1	S0	**Iset**
1	1	1	1	15A	0	1	1	1	7A
1	1	1	0	14A	0	1	1	0	6A
1	1	0	1	13A	0	1	0	1	5A
1	1	0	0	12A	0	1	0	0	4A
1	0	1	1	11A	0	0	1	1	3A
1	0	1	0	10A	0	0	1	0	2A
1	0	0	1	9A	0	0	0	1	1A
1	0	0	0	8A	0	0	0	0	X

Note: 1: Open the jumper
0: Short the jumper
X: No limit

If the measured current is more than the setting maximum current, then the CONT will output a high-level signal.
Normally, the CONT pin is kept in low-level.

Pad Description

Pad No	Pad Name	I/O	Description
1	CONT	O	The over-current indicator. If the current ≧Iset , the CONT pin will outputs high level. Otherwise, the CONT pin outputs low level.
2	DRX	I	The data of measured current output. Its output is UART communication. The baud rate is 2.4K bits/sec.
3	DTX	O	
4	SYNC	O	The SYNC pin indicates the output of data. It will output low level when the UART is start and output high level when URAT is terminated
5	SW1	I	Reserve
6	GND	—	The system ground
7	VDD	—	The positive power input pin

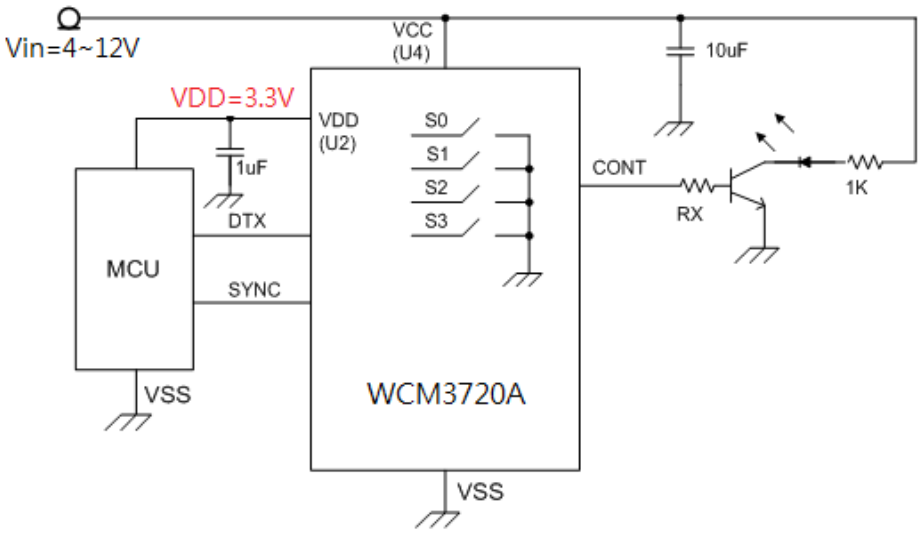
Electrical Characteristics

Symbol	**Parameter**	**Test Condition**		**Min.**	**Typ.**	**Max.**	**Unit**
		VDD	**Condition**				
V_{DD}	Operation Voltage	—	—	4.0	5.0	12.0	V
I_{DD}	Operation Current	5V	Without Loading	—	20	25	mA
P_{OP}	Measureable Current Range	5V	—	0.1	—	20	A
Top	Operating temperature	—	—	- 20	—	85	℃
T_{ST}	Store temperature	—	—	- 30	—	125	℃

Measured Current Data Output

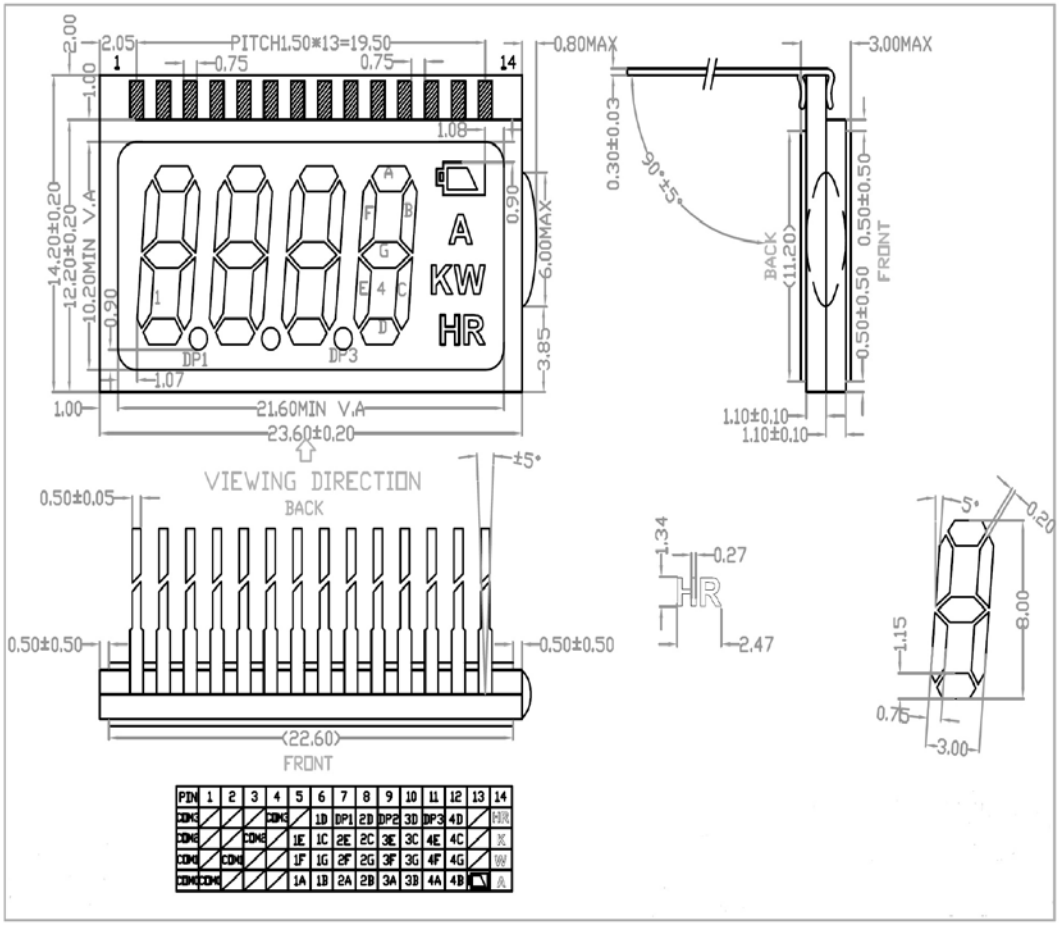
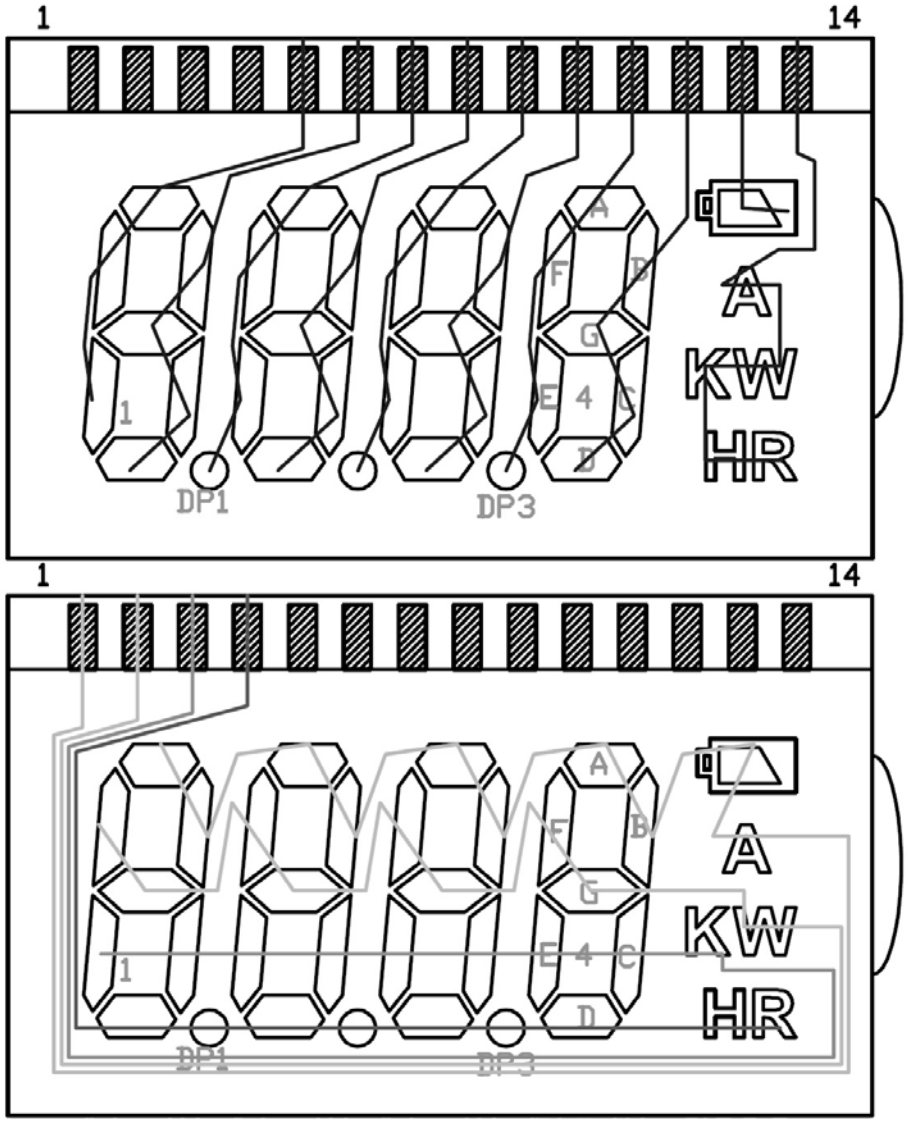
The measured current can be transmitted by UART format. There are total 7 bytes of data will be output. For example, if the measured data is “5.376”A, then the output data is ‘0’, ‘5’, ‘3’, ‘7’, ‘6’, ‘\r’,‘\n’, total of 7 bytes; the output data is ASCII code. If the measured data is “10.76” A, then the output data is ‘1’, ‘0’, ‘7’, ‘6’, ‘0’, ‘\r’,‘\n’, total of 7 bytes.

Application Diagram –



LCD4X32 is a LCD panel applied this module

Dimension



Wiring Diagram