

# LH MODBUS USER INSTRUCTIONS

1. The instrument RS485 communication

Start bit	Data bit	Stop bit	Odd/even check	Baud rate
1	8	1	None	9600

2. The format of the data reading and writing is a same as standard Modbus protocol. Definitons as follows:

Request :

01	03	224(00EO)	0003	043D
ADD	COM	PV1	Counts	CRC

Response :

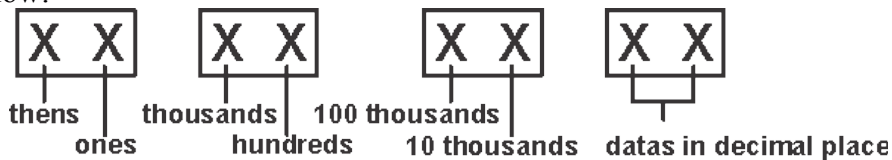
01	03	06	D8FF31000000	2945
ADD	COM	Counts	PV1	CRC

Count the first 5 bytes of PV1 from left to right (neglect the last byte): D8FF310000, the first 2 bytes (D8FF) is POINT, the other 3 bytes (310000) is INT. Then write the data from right to left as 000031.FFD8H, (INT 000031H=49, POINT 0.FFD8=0.99938), Therefore, the actual value is 49.99938; 000031.FFD8H, (INT 000031H=49, POINT 0.FFD8H, FFD8H=65496DHEX, 65496/65536=0.99938, 000031.FFD8H=49.999)

When the count value is negative, please convert to its complement and add 1, and that's what the want. Then follow the steps of counting a positive one eg. the response value=01030680CCFFFF0057F5, count the first 5 byte of PV1=80CC2CFFFF, and write the data from right to left = FFFF2C.CC80, convert to it's complement and add 1 = 0000D3.337F. (INT 0000 D3 = 211, POINT 0. 337F=0.2011). Therefore, the actual value is -211.2011.

**Note1:** When read OUT1 preset values, it's a 5 fixed-point value, complement representation and write down according to the count value by BCD code.

**Note2:** When read other parameters, please present it by BCD code. Count Count=0002 4 bit, 0001 2bit, Details as bellow:



The decimal part counts from ones. When data in position of 100 thousands is bigger than 9, A stands for negative, B stands for -1.

- eg. 1.2345=Request 45 32 01 04 put them in low-to-high arrangment, "04" means 4 decimals;
- 1.2345=Request 45 32 A1 04 put them in low-to-high arrangment, "04" means 4 decimals, "A" mean negative;
- 19.8765=Request 65 87 B9 04 put them in low-tohigh arrangment, "04" means 4 decimals, "B" mean -1;

Count 2-bytes datas in low order only, data in high order is invalid.

Eg: Write AL2=5000; 01 10 00 08 00 02 04 00 50 00 00 F2 18;

3. When setting parameters, can read multi-parameters; when writing, can write 1 parameter only every time.

4. Offset & Calibration operation:

Offseting is to set current SV to 0, and clear tare weight at the same time. The order can be any data to offsetting. Eg. Send order 01 060 00 48 00 01 09 DC.

Below the calibration order. The order can be any data. Eg.

Zero calibration order: 01 06 00 40 00 00 88 1E,

Full calibration order: 01 06 00 44 00 00 C9 DF

## 5. Communication parameters:

Factory settings	Parameters	Parameter address (W/R)	Counts (WORD)	Function	Remarak
	PV1	0224 (00E0H)	0003	Weight value	Read only
1000,0	AL1	0000	0002	Alarm1 value setting	R/W
H	AM1	0004	0001	AL1 mode setting	R/W
500,0	AL2	0008	0002	AL2 value setting	R/W
H	AM2	0012	0001	AL2 mode setting	R/W
001.000	HY1	0016	0002	AL1 AL2 common hysteresis setting	R/W
0030,00	AL3	0020	0002	Alarm3 vale setting	R/W
H	AM3	0024	0001	AL3 mode setting	R/W
0001.00	HY2	0028	0002	AL3 hysteresis value setting	R/W
000.000	PVF	0032	0002	Material lose value setting	R/W
0100.00	USP	0036	0002	Test weight settings	R/W
0000.00	DP	0040	0001	Decimal point settings	R/W
000.00	TRL	0044	0002	Low analog settings	R/W
0100.00	TRH	0048	0002	High analog settings	R/W
0-3	SFT	0052	0001	Filter constants	R/W
T/Kg/g	UNIT	0053	0001	Weight unit setting	R/W
001	ADD	0054	0001	Communication address settings	R/W
0	PF1	0072	0002	Offset values	W
	MAL	0064	0001	Zero calibration	W
	MAH	0068	0001	Full calibration	