High-speed acquisition instrument

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蚌埠知重仪器销售有限公司BENGBUZZYQ

V6.03

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Safety tips

1. This product has a unique anti-interference design and filtering algorithm, so be sure to ground reliably and separate from the AC ground wire.
2. Ensure use in an environment that complies with the technical specifications of this product.
3. Avoid direct sunlight.
4. Personnel with corresponding professional knowledge and safe operation should be responsible for the installation, wiring and maintenance of this product.
5. It is strictly forbidden to open the chassis with electricity.

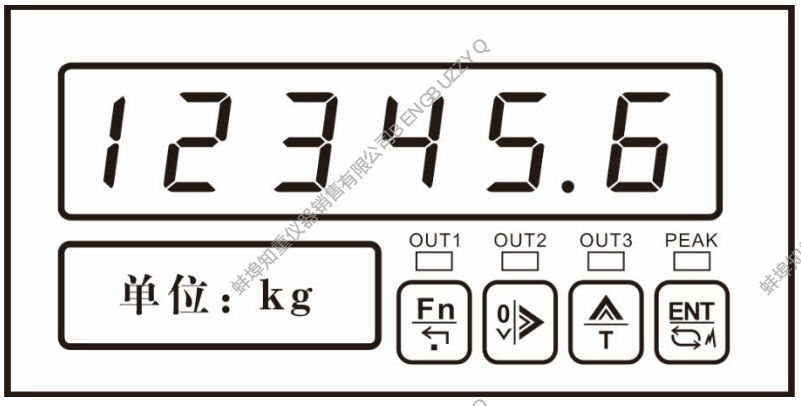
Technical indicators

Display: Upper 6-digit LED digital tube lower TFT LCD screen Chinese display
Working power supply: DC10-28V, AC85-265V (rated 100-240V, 50/60HZ), wide voltage power supply, choose one
Load capacity: 8 x 350Ω sensors
Signal range: 0.5~3.0mV/V
Excitation voltage: 5V
Sampling frequency: 10, 40, 640, 1280HZ can be set
Internal resolution: 24-bit ∑-ΔADC, internal resolution 1/1000000
Display resolution: 1/100000
Nonlinearity: 0.005% F.S
Maximum power consumption: 5W
Operating temperature: -25-+45°C
Relative humidity: <85%RH
Weight: Approx. 500g
Overall dimensions: 110×62×101mm (control cabinet cut-out size 94×47mm)

Model and selection

model	Description of the selection function
Basic Payments	The upper 6-digit LED digital tube has a TFT LCD screen Chinese display, 3 sets of relays, and a set of switching inputs
Analog output	Basic + analog output (0-5V, 0-10V, 0-5-10V, 0-20mA, 4-20mA, 4-12-20mA)
RS485 output	Basic model + RS485 output
Full-featured output model	Basic model + analog output + RS485 output

Display window and buttons



- Dual display window, main screen 6-digit LED digital tube display net weight, secondary screen TFT LCD screen Chinese display setting parameters, gross weight, peak, unit.
- Fn: Enter the menu/go back to the previous level, **long press to enter the decimal point selection interface**
- 0: Enter the calibration interface, move the cursor, move the main menu interface and parameter selection screen down, and **long press to enter the zeroing option**.
- T: Change the menu, increase the value, and **long press to enter the peeling option**.
- ENT: The menu interface is the confirmation menu, the display interface is the second window display, unit, total weight, peak switching, long **press to enter the clear peak interface**.
- The second window of the PEAK light is always on, and the peak light flashes to wait for the peak to be triggered.
- The lights of OUT1/OUT2/OUT3 are triggered by relays 1, 2, and 3, respectively, and are turned off by untriggered states

Interface definitions

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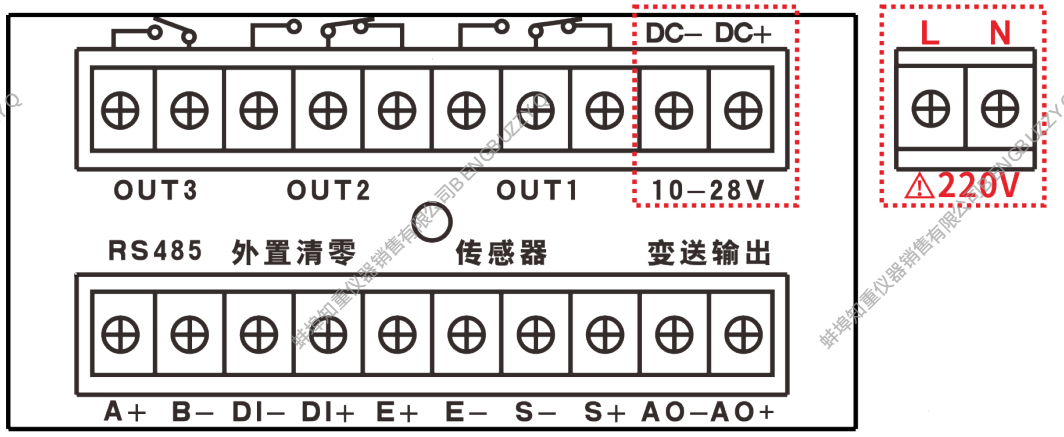


Terminal Description:

- Terminals 19 and 20 are the instrument power supply interface, [DC+, DC-] is 10-28V DC power supply, and [N,L] is 85-265V (rated 100-240V) AC power supply.
- [OUT1], [OUT2], [OUT3] are relay alarm output terminals, all of which are passive dry contacts, which can be set to the upper limit output, lower limit output, and interval

  Internal output, out-of-range output, see menu 3 for details**Relay output settings.**
- [Transmission output] **(optional),** which can output 0-20mA, 4-20mA, 4-12-20mA, 0-3.3V, 0-5V, 0-10V, 0-5-10V and other analog signals, see the menu for details

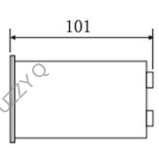
  6. Analog output.
- [Sensor] S+: Sensor Signal +, S-: Sensor Signal -, E-: Sensor Excitation -, E+: Sensor Excitation +, this meter can be ignored in ballast calibration mode

  The slightly positive and negative sensor signal can be directly calibrated to a positive value.
- 【External Clearing】Shorting the 3rd and 4th terminals can achieve the following functions: (1) tPEEL **peeling** (power-down does not save) (2) SPEEL **peeling** (power-down preservation).

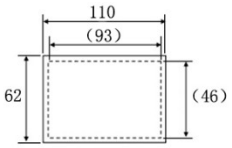
  (3) CPEEL **cancellation peeling** (power-down save) (4) SZEro **zeroing** (power-down not saving) (5) CZEro **zero point calibration** (power-down save) (6) REMAX clearing peakThis function is turned off by default, see menu **1System Settings**.
- 【RS485】**(optional)** MODBUS-RTU protocol, the maximum transmission rate is 1280HZ, and the transmission frequency is up to 1000HZ, see the menu for details

  5. 485 communication settings.

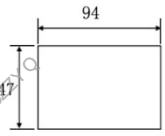
Shape and opening size



外形尺寸



前面板尺寸



盘面开孔尺寸


安装方式

List of functional parameters

Main menu	Secondary menu			
Function	Function	Default	Range	Function description
1. System settings	**Sampling rate**	40H	10,40,640,1280HZ	Four sample rates are available
	Gain adjustment	128B	1,2,64,128B	AD gain adjustment is optional
	Median filtering	5	1,3,5,9	Take the middle value from x values as valid values
	Average filtering	5	1-50	The average value of x values is the valid value, and the higher the set value, the more stable the weight display will be, but the response speed will be slower
	The secondary screen is displayed by default	uNit	0：Gross 1: pEak 2: uNit 3: out1 4: out2 5: out3	0: Gross Weight 1: Peak 2: Units 3: Relay 1 set value 4: Relay 2 setting 5: Relay 3 setting The upper limit of the relay setting displays the upper limit Set the lower limit to display the lower limit Set the interval to display the interval
	Unit selection	kG	0-9	0:**NoNE(**none) 1:**G**(g) 2:**kG**(kg) 3:t(T) 4:**N**(N) 5:**pa**(pa) 6:**kpa**(Kpa) 7:**mpa**(Mpa) 8:**N.M**(N·m) 9:**kN**(kN)
	Decimal position	0	0-4	Up button to switch decimal point position (loop) 88888,8888.8,888.88,88.888, 8.8888
	Index value	1		1,2,5,10,20,50,100
	Maximum weighing	99999	0-999999	The maximum weight allowed by the sensor exceeds the set value and the second screen shows ALoL **Maximum Weighing ≤ Total Sensor Range - Tareweight**

	DI switch input	NoNE	0-5	0: NoNE (invalid). 1: tPEEL (peeled and not preserved). 2: SPEEL (peeled and preserved). 3: CPEEL (cancel peeling and saving). 4: SZEro (set zero and do not save). 5: CZEro (proofreading zero preservation). 6: rEMAX (clear peak).	The main interface works
	Peak judgment threshold	50	0-50000	If the peak is redetected after the setpoint, and the setting is 0 or the zero point is greater than this setting, the new peak will be refreshed only if the new peak is greater than the current original peak.	
	Peak detection interval	0.5	0-5.000	Peak redetection (seconds) above set value and greater than the judgment threshold	
	Display brightness	L5	L1-L8	The segment code tube displays brightness adjustment	
	Displays refresh time	0.02	0.02-1.000	Refresh display based on setpoint (seconds)	
	Backup parameters	NO	YES/NO	Back up the current configuration parameters, including calibration parameters, and load the current backup when needed to avoid the removal of parameters caused by factory reset.	The meter will restart, please disconnect the power to the external controlled device
	Load the backup parameters	NO	YES/NO		
	Factory reset	NO	YES/NO	Restore factory default parameters (operate with caution)	
2. Calibration parameters	**Zero point calibration**		AD internal code value	After entering, the AD value will be displayed, and the upper key will be cleared and saved at the same time	

	Calibration mode		Load	Load/data	Load ballast calibration, data digital calibration	
	Weight value				The actual weight value entered during ballast calibration	
	Sensor range			10-999999	Single sensor range X number of sensors	Data is only displayed when the numbers are calibrated
	Sensor sensitivity		2.000	0.010-10.000	（mv/v）	
	Sensor excitation voltage		5	0.010-10.000	V	
	Range correction factor		1.000	0.010-2.000	The sensor linearity is further corrected by modifying this factor	
	Multi-point correction enablement		0		0: CLosE (Off). 1: opEN (open).	
	Multi-point calibration				See the operation example for details	
	Calibration points					
3. Relay output	Relay 1	**OUT1 working mode**	0	0-4	0: NoNE (no output). 1: hiGh (upper output) 2: Low (Lower Output) 3: iNraN (In-Interval Output) 4: outrN (out-of-range output)	
		OUT1 data type	0	0-2	0: GroSS (gross weight). 1: NEt (net weight). 2: pEak (peak).	
		OUT1 falls back difference	0	0.001-1	By setting the return difference value, the relay is avoided from moving frequently at the alarm point, 0.500 is 50% of the alarm value.	
		OUT1 action delay	0	0-9.999	Relay delay (seconds)	
		OUT1 output limit	9000	0-999999	The upper limit of the relay output	
		OUT1 lower output limit	1000	0-999999	The lower limit of the relay output	
	Relay 2	**OUT2 working mode**	0	0-4		Same as relay 1
		OUT2data type	0	0-2		
		OUT2 falls	0	0.001-1		

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		back to the difference				
		OUT2 action delay	0	0-9.999		
		OUT2 output limit		0-999999		
		OUT2 output limit		0-999999		
	Relay 3	**OUT3 working mode**	0	0-4		Same as relay 1
		OUT3 data type	0	0-2		
		OUT3 falls back to the difference	0	0.001-1		
		OUT3 action delay	0	0-9.999		
		OUT3 output limit		0-999999		
		OUT3 output lower limit		0-999999		

4. Advanced applications	**Creep tracking**	0	0-10	10 levels, adjusted according to true creep, 0: nullified
	Displays the zeroing range	0	0-50000	For example, if the actual zero point of the sensor is 4, the current parameter is set to 5, the display will be 0, and when the pressure is 20, the gauge will show 24.
	Dynamic tracking range	0	0-50000	0: Do not turn on dynamic tracking, see [Explanation of terms] for details.
	Dynamic tracking refresh	0.2	0-2.000	
	Stabilizing weight switch	0	0-1	0:close 1:Open When the weight display is turned on, the final value will be displayed directly, for example, the actual weight is 200, and the display will directly display 200 from 0, and the change process from 0 to 200 will not be displayed.
	Zero range	500	0-50000	The absolute value of the zero point is allowed to be set manually and automatically within this parameter

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	Power on and set a zero switch	0	0-1	0：close 1：Open
	Power-on set to zero time	10	0-1800	The re-power-up counts down to this time
	Power-on set the zero range	50	0-50000	When the power-on zero is turned on, the power is turned on again, and when the absolute value of the zero point is detected within this parameter, the zero point is automatically zeroed
	Automatic zero switch	0	0-1	0：close 1：Open
	Automatic zero time	0.100	0.100-9.999	
	Auto-zeroing range (indexing)	1.0	0.1-50.0	During the automatic zeroing time, when the absolute value of the zero point is within the automatic zeroing range, it will be automatically zeroed (the value of this parameter X index is the final range, which is different from [Display zeroing range], and the zero point is 0 after automatic zeroing). *Effective when "weight stability" is determined by [Stabilization Range] and [Stabilization Time]
	Judge the range (Index)	0	0-5	Determine whether "weight stability" is effective, =0: It means that the weight is always stable >0: **When the weight change is within the** stabilization range during the **stabilization time**, it means "weight stability" This parameter affects manual peeling, and the X index value of this parameter is automatically zeroed to the final range
	Judge the time	1.000	0.01-9.999	The two parameters of [Stability Range] and [Stability Time] jointly determine whether it is a stable state
	Correspondence address	1	1-253	
	Porter rate	3	1-15	**1:**2400 **2:**4800 **3:**9600 **4:**19200 **5:**22800 **6:**38400 **7:**57600 **8:**115200 **9:**128000 **10:**230400

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5.485 Communication				**11:**256000 **12**:460800 **13:**500000 **14:**512000 **15:**600000 The modification of the baud rate takes effect immediately, and needs to be powered off and reconnected, due to the limited number of display bits, the last two digits are removed when displaying, such as 2400 displays 24, 15200 displays 1152	
	Check position	0	0-2	0:None 1: even (even check) 2: odd	
	stop position	1	1/2	Stop 1 or 2 digits	
	Active send mode	0	0-1	0：close 1：Open The active transmission mode indicates the modbus-rtu communication mode when it is turned off	
	Active sending frequency	2	0-9	**0:**1Hz **1:**2Hz **2:**5Hz **3:**10Hz **4:**20Hz **5:**25Hz **6:**60Hz **7:**100Hz **8:**500Hz **9:**1000Hz ***The relationship between transmission frequency and baud rate is shown in the attached table**	
6. Analog output	**Output data selection**	1	0-3	**0:**NONE（无）**1:**GroSS（总重） **2:** NEt (net weight) **3:** pEak (peak).	
	Signal type	0	0-1	**0:** Curr (current) **1:** VoLt (voltage).	
	Output maximum weight	5000	0-999999	The analog output corresponds to the full scale	Bipolar output is possible, and when the minimum weight polarity is selected as negative, the minimum weight of the AO output is negative full-scale
	Output minimum weight	0	0-9999	The analog output corresponds to the zero point	
	Minimum weight polarity	0	0-1	**0:**plus(正) **1:**miNus(负) When this parameter is selected 1, 4-12-20mA, 0-5-10V output can be achieved	

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	Lower current output limit	4	0-10.00	0-20mA input 0 4-20mA, 4-12-20mA input 4
	Upper limit of current output	20	10.00-21.00	
	Lower voltage output limit	0	0-5.00	
	Voltage output limit	10.00	5.00-10.00	0-5V input 5.00 0-10V, 0-5-10V input 10.00
7. Login password	**Log in to the password switch**	0	0-1	0：close 1：Open
	Change your password	0000	0-9999	The default password is 0000, and you need to enter the default password to change the new password
8. Manufacturer calibration	**Manufacturer password**			For internal use by manufacturers
	Exit factory calibration			
	0.1mA output calibration			
	4mA output calibration			
	10mA output calibration			
	12mA output calibration			
	20mA output calibration			
	10V output calibration			
	ADC datum setting			
	High-speed filtering settings			
9. Version information	**Software version number**			
	Device unique code			

Fault or character description

Secondary screen display	Fault or character description
Initializing	Power-on initialization status, displayed when power-on, automatically exits after obtaining the first valid data, and exits at the end of the countdown if the power-on zeroing function is turned on

-----	No effective peaks were captured
ROM failure	The fault EEPROM fails to read and write, and the user presses the OK key to release it
ADC failure	ADC failure
Signal overload	ADC failure, the sampling signal is too large, and the ADC reads the maximum or minimum value (automatically canceled)
Range overload	Sensor overload or exceed maximum range
Power-on zero failed	The sensor fails to power on and clear, exceeding the set power-on zero value
Cannot be peeled	Manual peeling fails, does not meet the peeling conditions **Peeling conditions:** (1) cannot be negative, (2) the relay cannot be suctioned, and (3) it needs to be in a stable state
Exceeded the zeroing range	Manual zeroing fails and does not meet the zeroing conditions
The main screen display	**Fault or character description**
-----	Appears when modifying the sample rate, automatically exits
He.doM	If the value set by the user is too small, it will be automatically set to the minimum value that can be set
Er.up	If the value set by the user is too large, it will be automatically set to the maximum value that can be set
He.iNV	The user input is invalid
He.pwE	The user entered the wrong password
FA.roM	The configured parameter write failed, but the parameter has taken effect
FA.AdC	ADC setup failed
He.buy	The system is busy and cannot perform operations, and generally the data is not collected and stabilized, and the zeroing or calibration operation is performed

Attachment: The relationship between the maximum transmission frequency and baud rate

Maximum transmission frequency	Porter rate	Maximum transmission frequency	Porter rate	Maximum transmission frequency	Porter rate
5	2400	50	19200-22800	1000	460800-600000
10	4800	100	38400-128000		
20	9600	500	230400-256000		

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Master-slave modbus-RTU communication register table

Data Name	Address			RMS type		Read and write	Function description:
	decimal	Hexadecimal	PLC				
Total weight	0	0X0000	40001	32 bits are signed	low	R	
	1	0X0001	40002		High	R	
Net weight	2	0X0002	40003	32 bits are signed	low	R	
	3	0X0003	40004		High	R	
peak	4	0X0004	40005	32 bits are signed	low	R	
	5	0X0005	40006		High	R	
Internal code value	6	0X0006	40007	32 bits are signed	low	R	
	7	0X0007	40008		High	R	
Decimal point	8	0X0008	40009	16-bit unsigned		R/W	**0:**00000 **1:**0000.0 **2:**000.00 **3:**00.000 **4:**0.0000
unit	9	0X0009	40010	16-bit unsigned		R/W	0：**NoNE**（none） 1:**G**（g） 2:**kG**（kg） 3:**t**（T） 4:**N**(N) 5:**pa**(pa) 6:**kp**（Kpa） 7:**mpa**（Mpa） 8:**N.M**(N·m) 9:**kN**(kN)
state	10	0X000A	40011	16-bit unsigned		R	0: The data is valid 1: Peak detection status 2: ROM failure 3: ADC failure 4: The ADC signal is too large 5: Gross Weight Overweight (Overload) 6: Failed to set zero on power-on 7: Does not meet the peeling

							conditions 8: Exceeding the zeroing range 9: Relay 1 state 10: Relay 2 status 11: Relay 3 status
order		11	0X000B	40012	16-bit unsigned	R/W	1: Peel (do not preserve) 2: Peel (preserve) 3: Unpeel (save) 4: Zero (not saved) 5: Proofreading Zero (Save) 6: Clear the spikes 7: Calibration 9: Factory restore
Weight value		12	0X000C	40013	32 bits are signed low	R/W	The weight weight entered at the time of calibration
		13	0X000D	40014	32 bits are signed High	R/W	
Creep tracking		14	0X000E	40015	16-bit unsigned	R/W	0-10
Display zeroing		15	0X000F	40016	16-bit unsigned	R/W	0-5000
Dynamic tracking range		16	0X0010	40017	16-bit unsigned	R/W	0-5000
Dynamically track update times		17	0X0011	40018	16-bit unsigned	R/W	0-2000 (in ms)
Stabilizing weight switch		18	0X0012	40019	16-bit unsigned	R/W	0: Close 1: On
Zero range		19	0X0013	40020	16-bit unsigned	R/W	0-5000
Power on and set to zero		20	0X0014	40021	16-bit unsigned	R/W	0: Close 1: On
Power-on set to zero time		21	0X0015	40022	16-bit unsigned	R/W	0-1800 (Unit S)
Power-on set the zero range		22	0X0016	40023	16-bit unsigned	R/W	0-50000
Automatic zeroing enable		23	0X0017	40024	16-bit unsigned	R/W	0: Close 1: On
Automatic zero time		24	0X0018	40025	16-bit unsigned	R/W	100-9999 (in ms)
Automatic zeroing range		25	0X0019	40026	16-bit unsigned	R/W	10-500 (unit 0.1)
Judge and stabilize the range classification		26	0X001A	40027	16-bit unsigned	R/W	0-5
Judge the time		27	0X001B	40028	16-bit unsigned	R/W	100-9999 (in ms)
Rel	Working mode	28	0X001C	40029	16-bit unsigned	R/W	0: No output 1: Upper limit action

							2: Lower limit action 3: Intra-range action 4: Actions outside the range
ay 1	Round	29	0X001D	40030	16-bit unsigned	R/W	
	Data type	30	0X001E	40031	16-bit unsigned	R/W	
	Action delay	31	0X001F	40032	16-bit unsigned	R/W	
	Output limit	32	0X0020	40033	16-bit unsigned low	R/W	
		33	0X0021	40034	16-bit unsigned High	R/W	
	Lower output limit	34	0X0022	40035	16-bit unsigned low	R/W	
		35	0X0023	40036	16-bit unsigned High	R/W	
Relay 2	Working mode	36	0X0024	40037	16-bit unsigned	R/W	Same as relay 1
	Movement Difference	37	0X0025	40038	16-bit unsigned	R/W	
	Data type	38	0X0026	40039	16-bit unsigned	R/W	
	Action delay	39	0X0027	40040	16-bit unsigned	R/W	
	Output limit	40	0X0028	40041	16-bit unsigned low	R/W	
		41	0X0029	40042	16-bit unsigned High	R/W	
	Lower output limit	42	0X002A	40043	16-bit unsigned low	R/W	
		43	0X002B	40044	16-bit unsigned High	R/W	
Relay 3	Working mode	44	0X002C	40045	16-bit unsigned	R/W	Same as relay 1
	Movement Difference	45	0X002D	40046	16-bit unsigned	R/W	
	Data type	46	0X002E	40047	16-bit unsigned	R/W	
	Action delay	47	0X002F	40048	16-bit unsigned	R/W	
	Output limit	48	0X0030	40049	16-bit unsigned low	R/W	
		49	0X0031	40050	16-bit unsigned High	R/W	
	Lower output limit	50	0X0032	40051	16-bit unsigned low	R/W	
		51	0X0033	40052	16-bit unsigned High	R/W	

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