The contact less intelligent water meter usage manual

1. Summarization

The Radio Frequency intelligent water meter is a kind of new type meter that makes use of a modern micro-electronics technique, RF communication technique, etc. to carry on calculating the amount of water used, delivering data and settling accounts bargain. The product completely matches the design request of our company's standard Q/01SYS001-2007 "wireless water meters of SW series “, and carries out the calculating examination rules such as JJG162-85 “ water meter and its experimental equip examination rules” and JJG258-88“ screw wing type water meter “ and GB/T778-1996 “cold water meter” or JB/T8802-1998 “Hot water meter” and CJ/T133-2001 “IC Card water meter”.

That water meter adopts special integral design; it is mainly composed of Infrared signal transceiver, low power consumption microprocessor, unique new electrical engineering valve, and flow data acquisition electric circuits. It's a kind of pure electronics water meter based on improvement of traditional machine type. It has the characteristics such as intuitionist electronic display and word count etc.

It has advantages such as advanced design, high technique content, complete function, accurate calculation, function credibility, small physical volume, intuitionistic display, elegant shape, convenient installation and usage. It is for the applicable of the city residents' water calculates and charges. The usage of that product can thoroughly solve the antinomies that perplexes customers and water suppliers over a long period of time, can avoid stealing, leaking and emitting water. The way of electronic charge comes to a purpose of economy use, scientifically management and changes on method of traditional city water-supply management. The way of Radio Frequency communications can change the
management style of water enterprises, improve modern management level of the
water-supply industry, provide convenience to the user, avoid inconvenience in
checking and charging and can produce good economic and social performance.

2. Functional characteristics

A. It takes RF card as an information carrier and has Characteristics of very
strong confidentiality and anti-interference.

B. The data adopts the encryption calculating way of DES, and each meter has
the only number, in order to correspond one by one.

C. It adopts lithium battery power supplies and can promise to use normally for
over eight years.

D. The appropriation dynamoelectric valve promises a dependable switch.

E. The integral whole type designs, beauty and hard, water tightness, attack
defend and breakage defend.

F. The LCD shows appearance of the amount of water, date, time, meter number,
mode etc.

G. Advanced alarm function: When the customer’s intelligence water has already
closed, such as low power, communication abnormality etc. It can provide an
alarm hint to the customer with the buzzer, so that the customer handles it as
soon as possible, insuring customer to use water normally.

H. Close valve function: the meter will close valve when it reach alarm level and
when the prepay amount used out.
I. Low power hint function: When the battery gives or gets an electric shortage, the LCD displays "{-}" \[{-}\] , reminding the customer to replace battery.

J. The water meter adopts in volatile memory to store data. The data will not lose while power-fail, the data can keep over a decade.

K. Intelligent self-check function: guarantee working credibility under various interference circumstances.

L. The total amount calculating function: the intelligent meter can record the month and history usage of customer, for the purpose of customer’s search.

3. The major technological index

A. Power voltage: DC3.6V (lithium battery)
B. Quiescent current: \(\leq 20\mu\text{A}\)
C. Nominal working pressure: \(\leq 1.0\text{MPa}\)
D. Gauged grade: \(B\)
E. Working life: \(>8\) years;
F. Water medium temperature: \(0^\circ\text{C} \sim +45^\circ\text{C}(\text{Cold water}); +30^\circ\text{C} \sim +90^\circ\text{C}(\text{hot water})\)
G. Indication error limit
   a. The low area from minimum flow \((Q_{\text{min}})\) included to boundary flow \((Q_t)\) excluded: \(\pm 5\%\)
   b. The high area from boundary flow \((Q_t)\) included to over-carried flow included \((Q_s)\): \(\pm 2\% (\text{cold water})\), \(\pm 3\% (\text{hot water})\)
H. Relative humidity: \(< 85\%\)
I. Standard caliber: \(\text{DN15; DN20; DN25}\)
4. The installation regulations

A. The choice for the caliber of the water meter should base on the size of piping flow.

B. The installation position should avoid insulation, water flood, frost and pollution, be with convenience of assembles and disassembles etc.

C. The user should keep water meter clean, and be sure to cover the protection cover while it's unused. When it's with dirt or dust, please clean it with soft cloth (or damp cloth that wringed out).

D. The water meter must be installed horizontally and with typeface upward, the piping exit should be above and over the water meter.

E. Direction of arrowhead on the watch body is homology to water flow direction.

F. The miscellaneous articles or objects, such as freestone, sediment and thread...etc. in the new assembled piping should be cleaned before assembling water meter, in order to prevent water meter from breaking down.

G. While installing, a valve should be installed in front of the water meter, in order to cutoff headwaters to mantle or dismantle water meter.

H. When the water meter breaks down, please don't dismantle it and call the technical Personnel of the water enterprise to maintain.
5. Display

Water volume loaded this time: 100.0 m³

Remaining water volume: 99.4 m³

Accumulated used water volume: 0.6 m³

Current date: 06-12-08  DD-MM-YY
Current time: 23:23:15  HH-MM-SS

Meter number (first half)

Meter number (second half)

Meter Mode: Prepay meter mode 02

First alarm level: 10.0 m³
Second alarm level: 5.0m³

Notes:

- ☐ (loaded volume)
- ☑ (remaining volume)
- ☑ (accumulated used volume)
- ☐ (date)
- ☐ (time)
- ☐ (recharge notice)
- ☐ (valve open)
- ☐ (valve close)
- ☑ (data transmission error)
- ☐ (valve error)
- ☒ (low power)
- ☒ (meter inner data error)
- ⚠ (Magnetic influence)
- ☐ (check leaking)

When the meter shows "☒" or "☐" or "☑" or "☒", the user must contact the water meter management company to check and repair.