CSS-JI-VD Concentrator Instructions V1.2

Contents

1. Foreword

Please read each chapter carefully before using this product.

1.1. Requirements

Under no circumstances should it be operated by personnel without professional qualifications or training. The user must be a professional technician with experience in the installation and operation of electrical equipment. The equipment may be damaged if it is set up and operated by unqualified personnel, or if it is not packaged, stored, transported, installed and connected to the power supply in accordance with the relevant provisions of this book.

1.2. Warning

Improper transportation or storage will cause damage to the equipment;

Wrong power supply voltage will cause damage to the equipment or fire;

If you find any problem that cannot be solved, please contact our company in time or send the equipment back to our company for processing. Do not disassemble and repair it by yourself.

2. Product Introduction

The concentrator adopts the Linux operating system, uses advanced G3 power carrier technology and LTE mobile communication technology, and is a new generation of data collection products. In addition to traditional functions such as remote meter reading, it also has anti-tampering monitoring and active reporting functions. It has the characteristics of powerful functions, simple use, stable operation and convenient maintenance, and can meet the application requirements in many aspects such as remote meter reading.

3. Executive Standards

《Mechanical, vibrations, heat and fire resistance tests IEC 60068-2 》

《Insulation test IEC 60060-1》

《Test of immunity to electrostatic discharges IEC 61000-4-2》

《Test of immunity to electromagnetic RF fields IEC 61000-4-3》

《Test of immunity to fast transient bursts IEC 61000-4-4》

《Surge immunity test IEC 61000-4-5》

《Test of immunity conducted disturbances IEC 61000-4-6》

《Conducted and radiated emissions test EN 55022》

4. Technical indicators

4.1. Environmental conditions

4.1.1. Air environment

Type of place	Level	Air temperature		Humidity	
		Range ° C	Maximum rate of change a° C/h	Relative humidity b %	Maximum absolute humidity g/m³
Outdoor	C3	-25～+75	1	5-95	35

4.1.2. Barometric pressure

63.0kPa～108.0kPa (altitude 4000m and below), except for special requirements.

4.2. Mechanical influence

The concentrator should be able to withstand mechanical vibration and impact under normal operation and conventional transportation conditions without causing failure or damage. Strong mechanical vibration
Degree requirements:

Requirements for mechanical vibration intensity:
Frequency range: 10Hz~150Hz;
Displacement amplitude: 0.075mm (frequency ≤60Hz);
Acceleration amplitude: 10m/s2 (frequency>60Hz)

4.3. Working power supply

4.3.1. General requirements

The concentrator can work when powered by three-phase four-wire AC. When the voltage of one or two phases is cut off during three-phase four-wire power supply, the AC power supply can maintain the normal operation of the concentrator.

4.3.2. Rated Value and Allowable Deviation

- Rated voltage: 480V(277Vx3), with an allowable deviation of -20%~+20%;
——Frequency: 60Hz, allowable deviation -6%～+2%.

4.3.3. Power Consumption

The active power consumption per phase is not more than 5W, and the apparent power consumption is not more than 10VA.

4.3.4. Power loss data and clock hold

After the power supply of the concentrator is interrupted, there are data and clock retention measures to store data for at least fifteen years.

4.3.5. Ground fault resistance

When the power supply of the concentrator is supplied by a three-phase four-wire distribution network with a non-effectively grounded system or an ungrounded neutral point system, in the event of a grounding fault and a 10% overvoltage relative to ground, the voltage between the two phases without grounding will reach 1.9 times the nominal voltage; in this case, the concentrator will not be damaged. After the power supply returns to normal, the concentrator works normally and the saved data remains unchanged.

4.4. Enclosure and its protective performance

4.4.1. Mechanical strength

The chassis shell of the concentrator has sufficient strength, and deformation caused by foreign object impact does not affect its normal operation.

4.4.2. Flame retardant performance

The non-metallic shell meets the flame retardant requirements of GB/T 5169.11.

4.4.3. Insulation performance requirements

Fire hazard test for electrical and electronic products, with flame retardant non-metallic casing.

4.4.4. Enclosure protection performance

The protection performance of the concentrator housing meets the IP51 level requirements specified in GB/T 4208-2008, that is, dust and drip prevention.

4.5. Wiring terminal

——The external connection line of the concentrator passes through the terminal block, and the terminal block and its insulating parts can form a terminal block. The strong and weak terminals are arranged separately, with effective insulation isolation. The structure of the current outlet terminal is matched with the lead wire with a cross-section of 2.5 to 4 mm2. The structure of the voltage outlet terminal is matched with the lead wire with a cross-section of 1.5 to 2.5 mm2. The structure of other weak current outlet terminals is coordinated with the lead wire with a cross-section of 0.5 to 1.5 mm2

- The insulation strength of the terminal block meets the requirements of 4.10 of this part.

——The flame retardant performance of the terminal block meets the flame retardant requirements of GB/T 5169.11.

4.6. Wiring diagram and identification

The concentrator is engraved with wiring diagrams such as terminal blocks and auxiliary terminals on the inside of the terminal cover, and the wiring diagrams are clear.

4.7. Sealed

The flip cover and terminal block of the concentrator can be sealed.

4.8. Corrosion protection of metal parts

Metal parts that may be corroded or rusted under normal operating conditions have anti-rust and anti-corrosion coatings or plating.

4.9. Grounding terminal

Concentrators with non-metallic shells do not need to be grounded.

4.10.Clock battery

The battery used in the concentrator does not need to be replaced during the life cycle of the concentrator, and can maintain the correct working time of the internal clock for no less than 10 years after power failure.

4.11.Components in the concentrator

All devices in the concentrator can prevent rust and oxidation, and the internal connection lines are welded or plugged. When the plug-in method is used, it should be tightened and reliable. The current wiring of the terminal block is tightened with embedded double screws.

4.12.Radiated electromagnetic interference (level 4)

The concentrator can work normally in a radio environment with a field strength of 10V/m and a frequency of 80-1000MHz.

4.13.Surge immunity (Level 4)

The test voltage is ±4kV, and the positive and negative poles are tested five times each. The equipment is not damaged and the concentrator can work normally.

4.14.Electrical fast transient pulse group immunity (level 4)

Test voltage ±4kV, test time 60 seconds

The equipment is not damaged and the concentrator works normally.

5. Product configuration

Project	Concentrator
FLASH capacity	4G
RAM capacity	512M
Ethernet	Support
4G	Support
LED indication	4 pcs.
RTC accuracy	≤±1s/d
Remote upgrade	Support

6. Functional description

Serial number	Item		Concentrator
1	Data collection	Load curve	√
		Monthly billing	√
		Daily billing	√
		Event record	√
2	Data Management And storage	Historical load curve	√
		History Day Freeze	√
		Historical Month Freezing	√
		Own event record	√
3	Parameter setting And Inquiry	Task parameters	√
		Archive parameters	√
		Other parameters	√

Serial number	Item		Concentrator
4	Event record	Event record of the table	√
		Own event record	√
5	Data transmission	Communication with master station	√
		Communicate with meter	√
6	Local function	Operation status indication	√
		Local maintenance interface	√
7	Terminal maintenance	Self-inspection and self-recovery	√
		Remote upgrade	√

7. LED indicator

The concentrator has 4 LED lights to indicate some status. The specific definitions are as follows:

Indicator light status

- 1: Normally on;
- 0: Normally off;
- 2: flashing;

Indicator color

- R: Red;
- G: Green;

Power:
R1 after power-on
RUN:
Normal main program R2-0.5HZ

ALARM1:
Uplink connection status

1. Connect to the master station: G1
2. Unable to connect to the main station:
    - ppp dialing is normal: G2

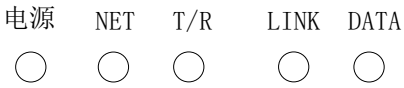
ALARM2:

Downlink working mode

1. Spot reading: G2-2HZ
2. Task: G2-1HZ
   - Downlink upgrade: R1

8. Other status indications of concentrator

8.1. Remote communication module status indication



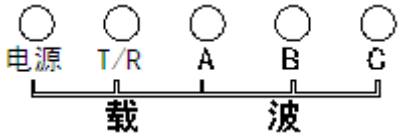
Remote communication module indicator

Power light-module power-on indicator, red. When the light is on, it means that the module is powered on; when the light is off, it means that the module is de-energized.

NET light-network status indicator, green.

T/R light-module data communication indicator, red and green. When the red light flashes, it means that the module receives data; when the green light flashes, it means that the module sends data.

8.2. Carrier communication module status indication



Carrier communication module indicator

Power light-module power-on indicator, red. When the light is on, it means that the module is powered on; when the light is off, it means that the module is de-energized.

T/R light-module data communication indicator, red and green. When the red light flashes, it means that the module receives data; when the green light flashes, it means that the module sends data.

Light A-Phase A sending status indicator, green.

B light-B phase sending status indicator, green.

C light-C phase sending status indicator, green.

LINK light-Ethernet status indicator, green. Indicates that after the Ethernet port successfully establishes a connection, the LINK light is always on.

DATA light-Ethernet data indicator, red. When there is data exchange on the Ethernet port, the DATA light flashes.

9. Outline structure

9.1. Overall dimensions

Overall dimensions: 290*180*95 (mm)

Unit: millimeter (mm)

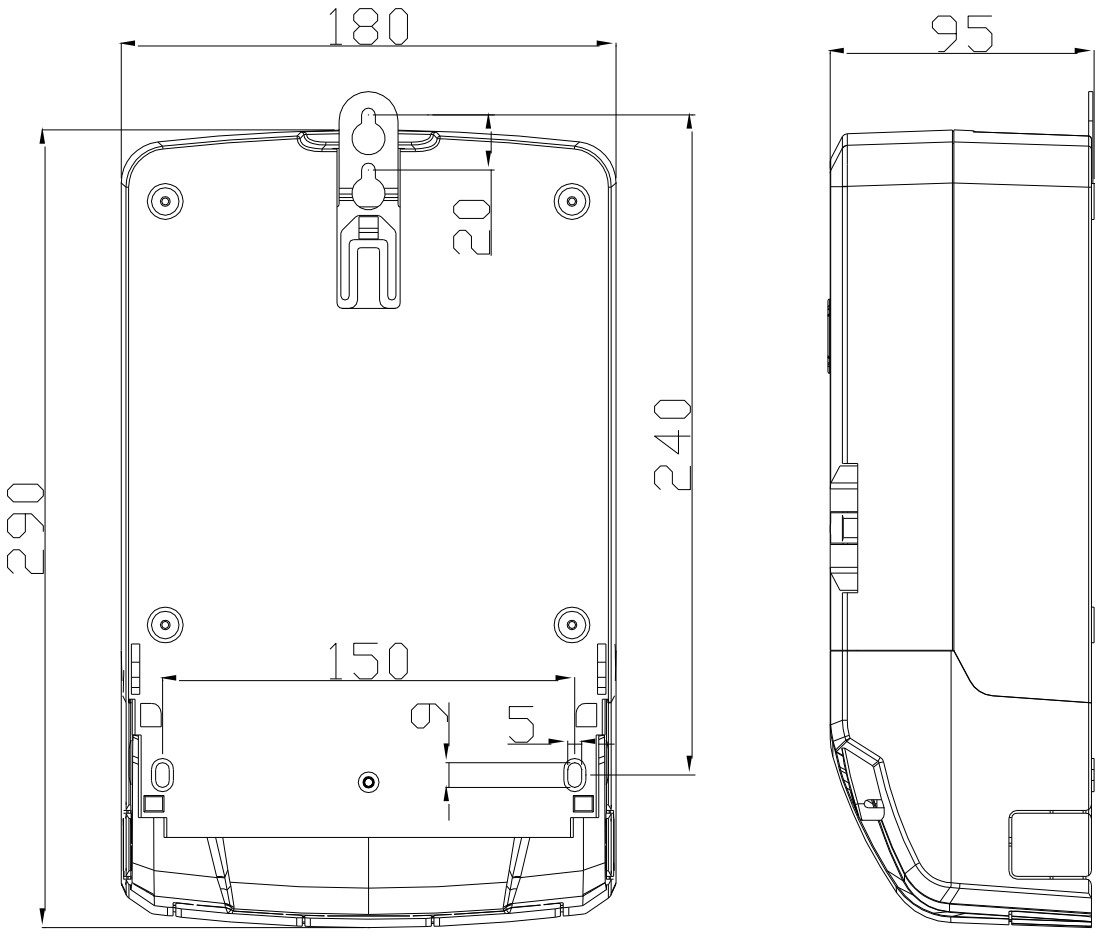


Figure 1 Overall Dimensions

9.2. Wiring terminal

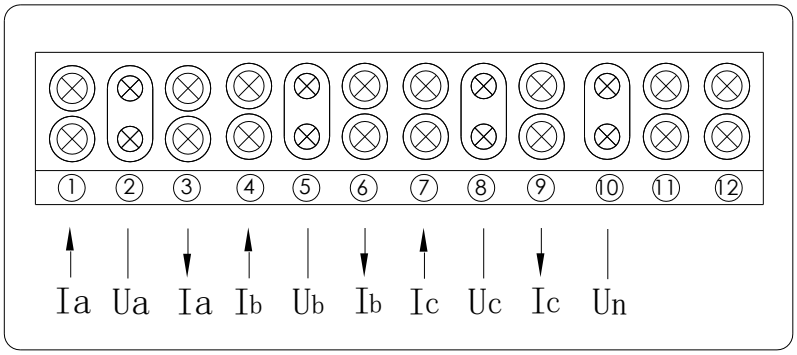


Fig. 2 Wiring Terminal

10.FCC warning statements:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The device has been evaluated to meet general RF exposure requirement. This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.