

Clock Signal Distributor






LNK711

User manual

IM23H22-E

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Symbol Definition	
	WARNING: Indicates information that a potentially hazardous situation which, if not avoided, could result in serious injury or death.
	RISK OF ELECTRICAL SHOCK: Indicates information that Potential shock hazard where HAZARDOUS LIVE voltages greater than 30V RMS, 42.4V peak, or 60V DC may be accessible.
	ESD HAZARD: Indicates information that Danger of an electro-static discharge to which equipment may be sensitive. Observe precautions for handling electrostatic sensitive devices
	ATTENTION: Identifies information that requires special consideration.
	TIP: Identifies advice or hints for the user.

Security& Caution Symbols

The following table lists Security& Caution symbols used on equipments.














No.	Symbol	Description
1		Direct current (DC)
2		Alternating current (AC)
3		Ground (Earth) terminal
4		Protective earth (ground) terminal
5		Reference ground (Earth) terminal
6		Frame or chassis
7		Equipotentiality
8		On (power)
9		Off (power)
10		Caution, risk of electric shock
11		Caution, hot surface
12		Caution, risk of danger
13		Electrostatic sensitive devices (ESD)

Table of Contents

Clock signal Distributor LNK711	1
Section 1 Description	1
Section 2 Technical Specifications	2
Section 3 Usage Instruction	3
3.1 External structural diagram.....	3
3.2 External dimension	3
3.3 Terminals definition & connection	3
3.3.1 Power supply terminal	3
3.3.2 Signal Input Terminal	4
3.3.3 Signal Output Terminal	4
Section 4 Application	5
4.1 Notices	5
4.2 Basic connections.....	5
4.3 Cascade connection	5
4.4 Fault diagnosis and troubleshooting.....	5
Section 5 Revision.....	6

Clock signal Distributor LNK711

Section 1 Description

When used together with GPS time synchronization server, the clock signal distributor LNK711 can realize time synchronization precision of the control station of grade 1ms. With this distributor, user can divide one second pulse signal of GPS time synchronization server into several second pulse signals to be used by several control stations, realizing high-precision time synchronization of several control stations.

The GPS time synchronization server receives the GPS clock signal from the GPS timing device. The server is connected to the process control network, providing SNTP time service to the devices in the control network and realizing time synchronization precision of grade several decades of seconds. Second pulse PPS signal sent by the GPS time synchronization server is required for higher synchronization precision. The signal will be sent to the control station which needs higher precision through the clock signal distributor.

The clock signal distributor can only be used together by GPS time synchronization.

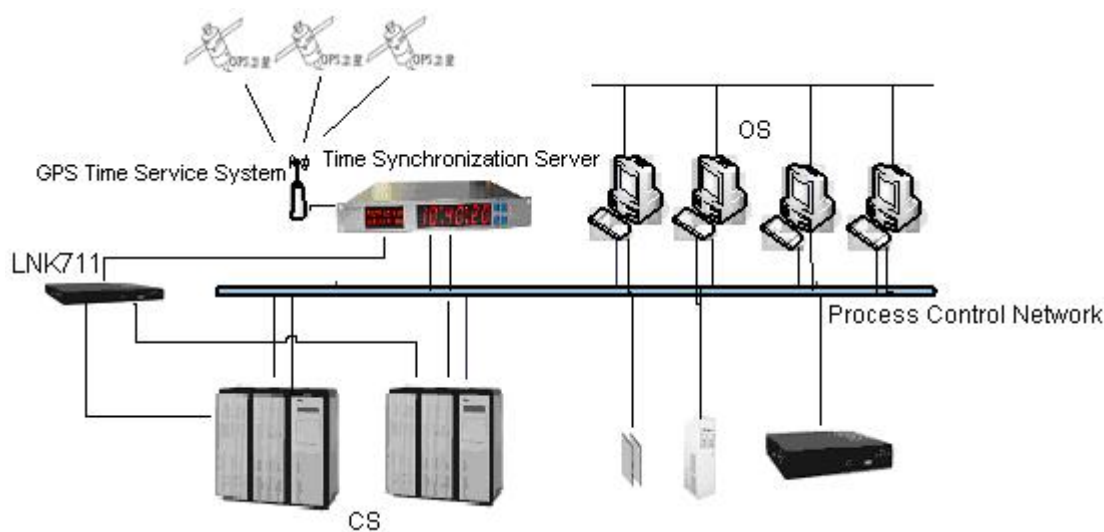


Figure 1-1 Sketch map of the time synchronization

Section 2 Technical Specifications

The performance specifications of the clock signal distributor are shown in Table 2-1.

Table 2-1 technical specifications of LNK711

Performance item	Specific specifications
Input channel number	It supports TTL, SW, and RS485 signal input respectively.
Rated input voltage	24VDC
Output channel number	It supports 16 loops output. The physical interface is RS485. Meanwhile, it supports 3-level concatenation.
Isolation	Isolation between input and output, and isolation among 16-channel output.
Communication distance	≤200m nonshielded wire ≤1000m shielded wire

Section 3 Usage Instruction

3.1 External structural diagram

There is one indicator and three sets of connection terminals on the panel of the clock signal distributor, as shown in Figure 3-1. The indicator is kept on all the time under normal power supply condition and flashing when LNK711 receiving signal. The connection terminal marked with "24VDC" is used to connect redundant DC power for the distributor. The connection terminal marked with "Clock Signal Input" is used to input synchronization signal to the controller and the connection terminal marked with "Clock Signal Output" is used to output synchronization signal to the controller.

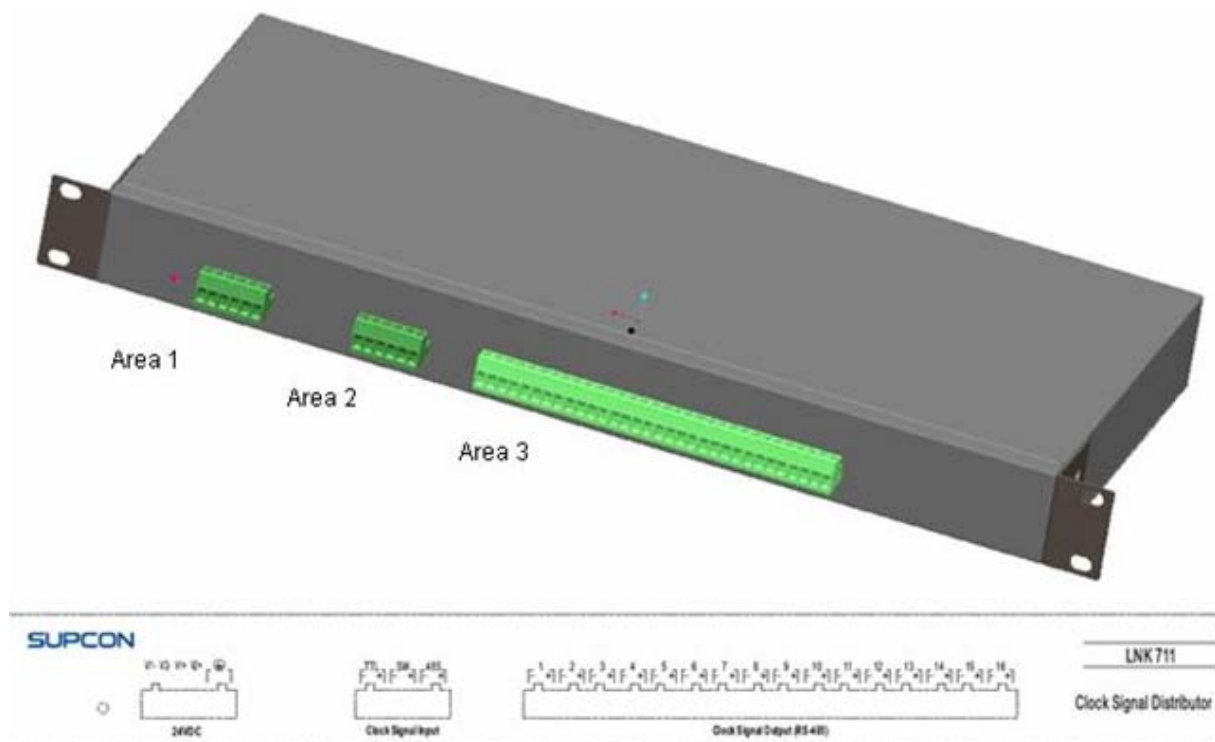


Figure 3-1 External structural diagram of LNK711



3.2 External dimension

- Dimension: 483cm*200cm*43.5cm (L*W*H)
- Installation method: 19" frame installation or panel installation, height: 1u

3.3 Terminals definition & connection

3.3.1 Power supply terminal

The power voltage of LNK711 is 24VDC. The power connection is shown in Figure 3-2. V1+, V1-,

V2+ and V2- are redundant power supply.  means two ground-protection terminals.  means the position of indicator. The light is on all the time as long as power is on and no signal is received and flashes when there is signal received.

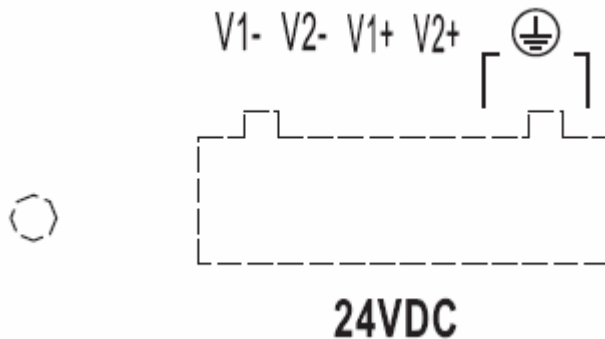


Figure 3-2 Power supply connection diagram of LNK711

3.3.2 Signal Input Terminal

The signal input terminal of LNK711 is shown in Figure 3-3. One is TTL signal input terminal, another is SW input terminal, and the other is 485 input terminal. The input signal is provided by outside signal resource.

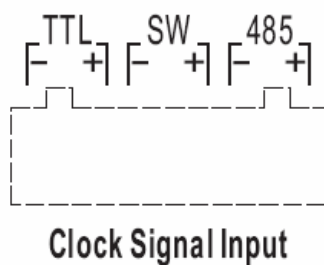


Figure 3-3 Connection diagram of signal input terminal of LNK711

3.3.3 Signal Output Terminal



Figure 3-4 Connection diagram of signal output terminal of LNK711

The signal output terminal of LNK711 is shown in Figure 3-4. LNK711 can synchronously output 16 ways 485 signals to 16 control stations. And the output signal is connected to the CLK+ and CLK-connection terminals of the controller.

Section 4 Application

4.1 Notices

LNK711 doesn't support anti-misconnection function. Please confirm that the wiring is correct before power on. Otherwise, LNK711 may be damaged.

4.2 Basic connections

The cabinet provides 24V redundant power directly to LNK711. There are two ground-protection terminals beside the power terminal for ground protection. Meanwhile, an earthing screw on the back the box provides general earthing of the shell.

The signal input terminal directly introduces in signal resource from outside, and supports TTL, SW, and 485 signal respectively.

The output signal is 485 signal. 16 ways are independent with each other. 485 special double-twisted cable is used as output signal line, which is used to connect the controller.

If RS485 output signal wire applies shield twisted pair, the shield layer should connect ground by single end. Wiring are shown in Figure 4-1. The side connecting LNK711 should connect work ground, while the side connecting controller is no need (suspended).

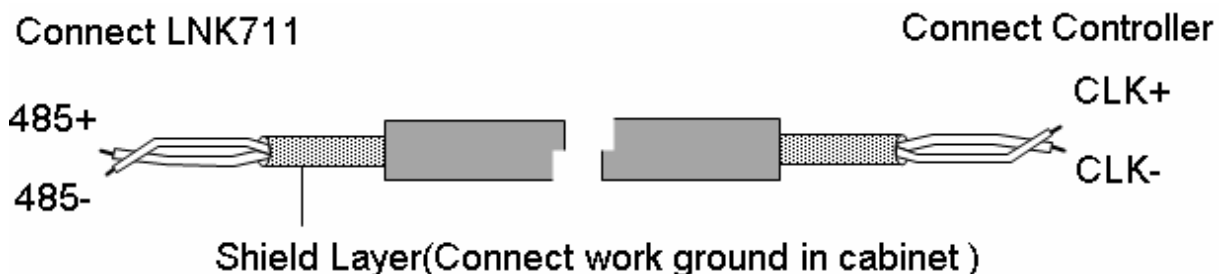


Figure 4-1 Wiring

4.3 Cascade connection

LNK711 signal distributor can be concatenated to meet the need of expansion. The concatenation level should be no more than 3, and the concatenation delay error is less than 0.1ms. Choose the lead of one of the 16 ways output terminals as the in-and-out terminal of concatenation. Because the output terminal is 485 signal, so only 485 signal input terminal can be used for concatenation.

4.4 Fault diagnosis and troubleshooting

1. Check the connection sequence if the indicator is OFF when power is connected.

2. The indicator keeps on when power is connected, but it doesn't flash when input signal is connected.
 - 1) Check whether there's input signal.
 - 2) Check whether the input signal is in accordance with the requirement.
 - 3) Check whether the connection of the input signal is correct.
3. The indicator keeps ON when power is connected, but it turns off when input signal is connected.
 - 1) Check whether the type of the input signal is correct.
 - 2) Check whether the connection of the input signal is correct.
4. The indicator keeps ON when power is connected and it flashes when input signal is connected. But there's no signal output in the output terminal. Please try another output terminal. If there is no terminal work properly, please contact corresponding technician.
5. If any indicator flashes abnormally after power is connected under the condition of concatenation. Check whether the connection of the anode and cathode of the signal input terminal is correct.

Section 5 Revision

Table 5-1 Retrofit list of the version

Document Version	Applicable Module Version	Remarks
V1.0	LNK711-2.0.0.0	
V1.1(20150716)	LNK711 V12.10.00 and later versions	
V1.2(20161116)	LNK711 V12.10.00 and later versions	