

### **FS-AL001 Use the manual**

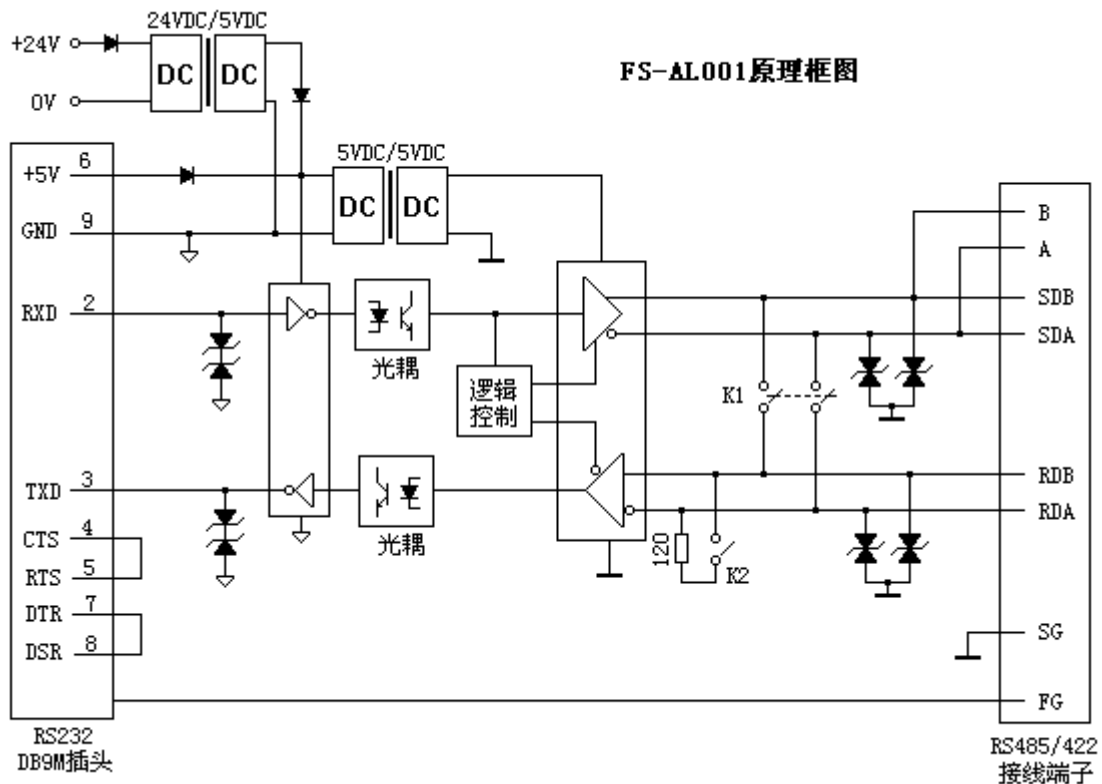
FS-AL001 is FourStar electronic specifically for Omron PLC and touch screen (PT) the development of RS232 to RS485/422 translation unit, the product design by industrial applications, which directly extrapolated Omron PLC or touch screen 9 core RS232 socket, by RS232 socket from the wall 6 feet supply 5VDC working power source, and receiving with no delay automatically, without conversion technology the CTS control signals. And RS485/422 at port is equipped with lightning surge protection circuit.

FS-AL001 is fully compatible with Omron companies of similar products in NT-AL001, and performance on large improvements, the following table is FourStar electronic of FS-AL001 and Omron of NT-AL001 Performance comparison:

Module	FS-AL001	NT-AL001
Function		
with PLC connect	directly inserted Omron PLC 的 RS232 socket ( DB9F )	Required to manufacture a forwarding cable
the power supply (note 1)	PLC of RS232 socket from the wall 6 feet supply 5VDC power or external 24VDC	PLC of RS232 socket from the wall 6 feet supply 5VDC power
Interface protection	RS485/422 estuary with lightning surge protection circuit, RS232 estuary surge protection	No
Communication indicator	Has	No
The biggest haul	2000m ( 9600bps )	500m ( 9600bps )
Traffic rate	0~ 115.2Kbps Automatically adapt	0~ 64 Kbps Automatically adapt
RS485 transceiver control	Automatic control without delay	RS232 of the CTS signal control
Maximum number of points of Group Web site	32	32
Isolation voltage	From	1500VAC

Note1: For PLC or touch screen 9 core RS232 ( DB9F ) socket of 6 feet supply FS-AL001 work need 5VDC power, for most of the Omron PLC or the touch screen 9 core RS232 from the wall 6 feet 5VDC and 150MA power output. For some old models of PLC such as CQM1/CQM1H of RS232 socket or other vintage module of 25 core RS232 port does not provide 5VDC power output, you can FS-AL001 of power supply terminals on the add-in 24VDC power supply (internal already isolated, so the power of the desirable to any device and not worry about the total GND problem).

**FS-AL001 Principle diagrams:**

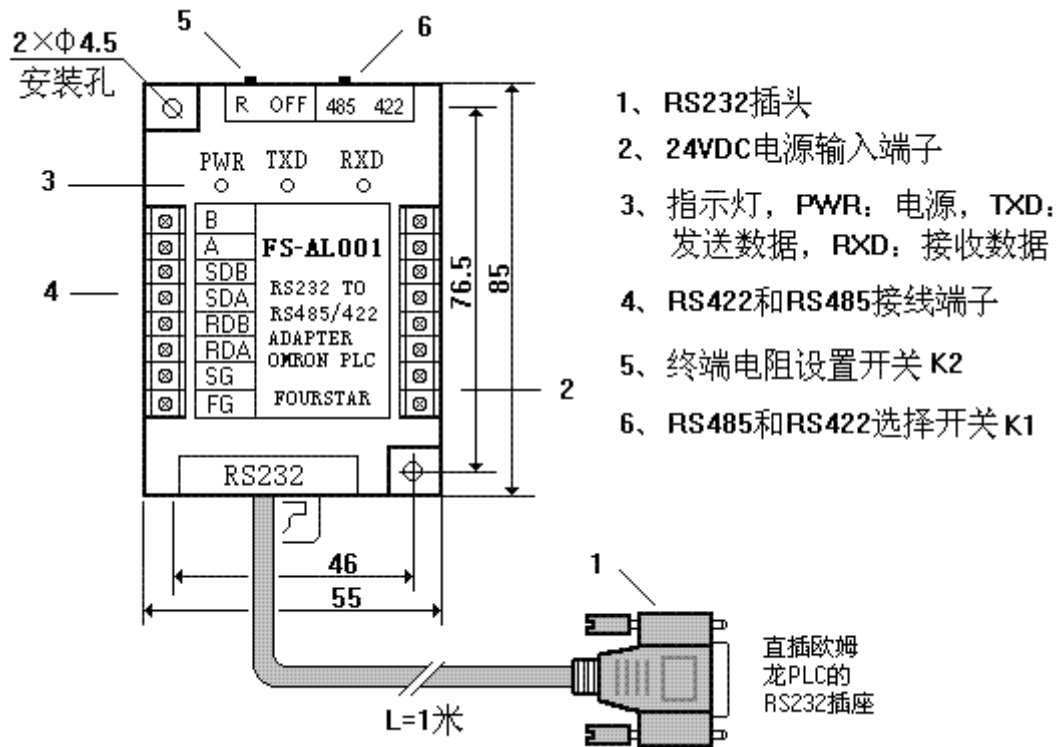


**The main technical parameters:**

- 1、 A direct connection Omron PLC or touch screen 9 core serial RS232

- 2、 Output for 4 duplex RS422 interface and second-line half duplex RS485 interface
- 3、 Power supply: Omron PLC or touch screen 9 core RS232 socket 6 foot supply 5VDC, or external power supply in 24VDC power supply
- 4、 Communication line selected on the cross-sectional area to 0.5mm above up
- 5、 Isolation voltage: 1000VDC (maximum achievable 5000VDC , hedgers you want)
- 6、 Largest haul to 2000 m ( 9600bps)
- 7、 Maximum group network site count of 32
- 8、 For the communication rate 0 ~115.2Kbps, baud rate Adaptive
- 9、 RS485/422 port has a transient voltage suppression can accommodate , is as high as 500W Power of the transients, be lightning and antioxidant  $\pm 15\text{kV}$  electrostatic shock
- 10、 Working temperature of : -20 ~ 70 °
- 11、 Installation methods:35 mm standard guide way installation or install bolt holes
- 12、 Shape size: 85×55×25

**Product shape and Terminal signal definition:**



RS485/422 terminals signal definition      RS22 DB9 plug (PIN) signals defined

Signal names	Notes	PIN numbers	Signal names	Notes
B	RS485 signals are	1	NC	Not connected
A	RS485 of the signal negative	2	RXD	RS232 signal reception
SDB	RS422 the signal being	3	TXD	RS232The signal send
SDA	RS422 the signal negative	4	CTS	allowed to send, and 5

					connect
RDB	RS422 signal receiving positive		5	RTS	request is sent, and 4 connect
RDA	RS422 signal receiving negative		6	+5V	5VDC , Over power input
SG	RS485/422 signal ground		7	DTR	data terminal ready, and 8 feet connect
FG	Shield (casing)		8	DSR	data equipment ready, and 7 feet connect
			9	GND	RS232 signal GND

Switch K1: RS485 and RS422 select switch.

K1 in the “485 ”: using B A second line RS485 of half duplex work styles.

K1 in the “422 ”: : using the SDB , SDA , RDB four line for RDA full-duplex RS422 works.

Switch K2: the terminal resistor set the switch.

K2 in the “R ”: internal access 120 termination.

K2 in the “OFF ”: there are no terminal resistor.

Indicator PWR: when you have working power input, said FS-AL001 can work properly.

Indicator TXD: send data to Flash, and not to send always light extinguished fault.

Indicator RXD: Twinkle when receiving data, not receiving always light extinguished fault.

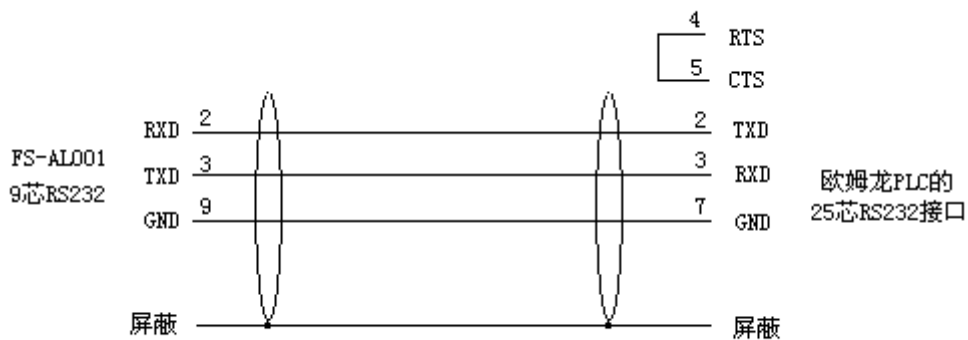
**FS-AL001 and Omron PLC or touch screen of connections:**

FS-AL001 and Omron PLC or touch screen 9 core RS232 hole socket connection is very simple, direct FS-AL001 of DB9M plug into PLC or touch screen DB9F socket. The vast majority of

Omron PLC or touch screen RS232 socket DB9F 6 feet have provided power output 5VDC.

FS-AL001 therefore does not need another power.

Some old-fashioned PLC such as CQM1/CQM1H or touch screen second auxiliary mouth 9 core RS232 receptacles, its 6 feet no 5VDC power output, when the need to FS-AL001 of add-ins on the power supply terminal 24VDC power.



For Omron PLC or on the other modules RS232 socket for 25-core, the need to FS-AL001 of

RS232 plugs and PLC of 25 core RS232 socket a handoff between self-made cable was shown.

Since of 25 core of socket and RS232 without power output 5VDC, and therefore need to FS-AL001 on the add-in 24VDC power supply.

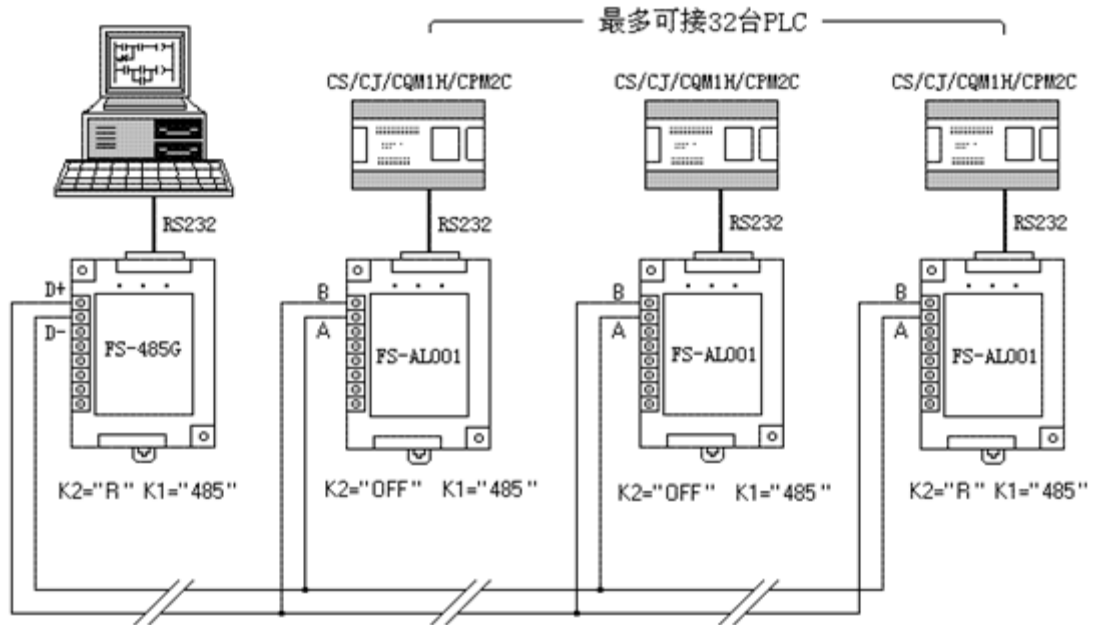
**FS-AL001 of the application instance:**

Use the FS-AL001 adapter can be a maximum of 32 bench Omron PLC of the RS232 interface with the RS485/422 the Topper communication network, host computer having to install a RS232 to RS485/422 the converter, the recommended FourStar electronic converter, model number: FS-485G that optoelectronic isolated, need to 5V power supply (available from the computer's USB estuary supply 5VDC It is convenient to power, ), 9600bps the maximum baud rate to haul up to 2000m. If use shield double to line ,you should be shielded received individual converter “ FG ” terminals.

**The second line half duplex RS485 network:**

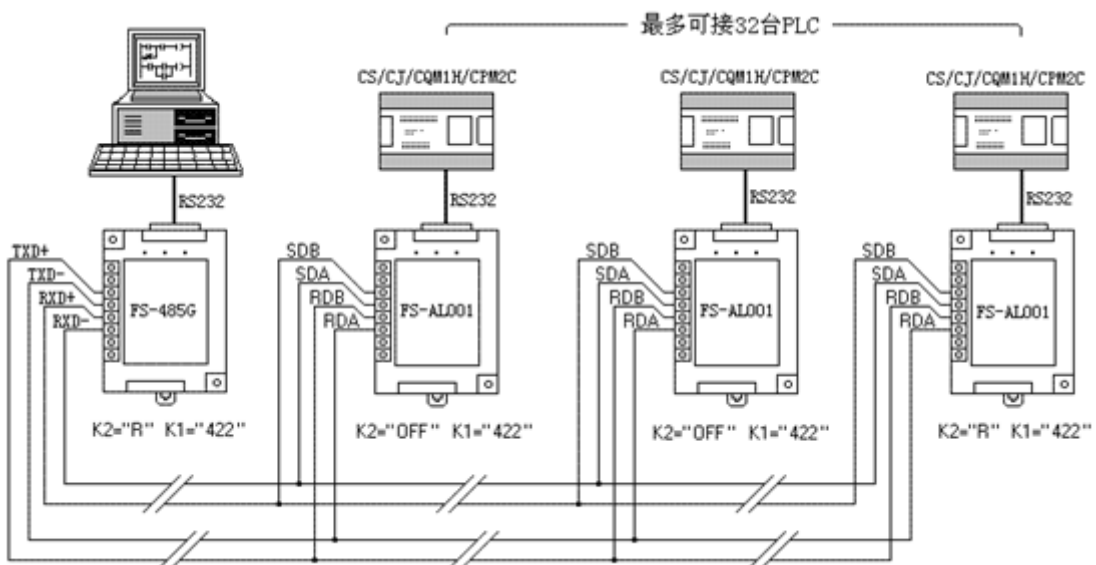
First to FS-AL001 on the adapter RS485 and RS422 select switch K1 change to“485 ”, beginning of your network's RS232/RS485 converter FS-485G The and Terminal FS-AL001 on terminal resistor set switch K2 change to“R ”, other on the network FS-AL001 on terminal resistor set switch K2 change to“ OFF”。





#### Four line duplex RS422 network

First to FS-AL001 on the adapter RS485 and RS422 select switch K1 change to“ 422 ”, beginning of your network's RS232/RS485 converter FS-485G The and Terminal FS-AL001 on terminal resistor set switch K2 change to“ R ”, other on the network FS-AL001 on terminal resistor set switch K2 change to“ OFF”。



About FS-AL001 more application examples from Omron Corporation's technical support Web site to download NT631/NT631C use manual, in the Handbook contains about Omron NT-AL001

Many application instance .Download address:

<http://www.FA.Omron.com.CN/doc/source/608.PDF>