

Fiber-CAN converter

The LxCAN-y converter has integrated two standard CAN-Bus interface, one fiber interface (Single mode, multi mode, SC, ST). LxCAN-y converter can build a connection between Fiber Bus and CAN-Bus. With this converter in pairs, users can easily extend the distance of CAN-Bus and eliminate the interference effectively. It can also prevent the bus from electromagnetic interference, ground loop interference and lightning strike.



FEATURE

- Power supply: 9~30V(50mA, 24V DC)
- Surge immunity level: ±1KV
- Working temperature range from -40 to 85°C
- Operating humidity range: 5% to 95% RH no condensation
- Integrated 2 CAN-Bus interface with terminal
- CAN-Bus signals include: CAN_H, CAN_L, CAN_GND
- CAN-Bus supports CAN2.0A and CAN2.0B frame format, conform to ISO/DIS 11898 standards
- CAN-Bus baud rates range from 5Kbps to 1Mbps, configured by DIP switch
- CAN-Bus isolation converter insulation voltage: DC 1500V
- Fiber interface: SC, ST optional
- Fiber transmission mode: single mode, multi mode optional
- Size: (L)121mm * (W)93mm * (H)22mm

INTERFACE SPECIFICATIONS

LxCAN-yF converter interface specification are shown in figure 2.1. After power up the converter, it will be work in the working state.



Fig 2.1 Interface definition

Power Interface	Description
9-30V	9-30V DC+
EARTH	Earth
GND	9-30V DC-
CAN-Bus interface	
CAN1-H	CAN1 channel CAN_H
CAN1-G	CAN1 channel CAN_G
CAN1-L	CAN1 channel CAN_L
CAN2-H	CAN2 channel CAN_H
CAN2-G	CAN2 channel CAN_G
CAN2-L	CAN2 channel CAN_L
Fiber Interface	
Tx	Fiber transmit interface
Rx	Fiber receive interface

Table 2.1 Interface definition

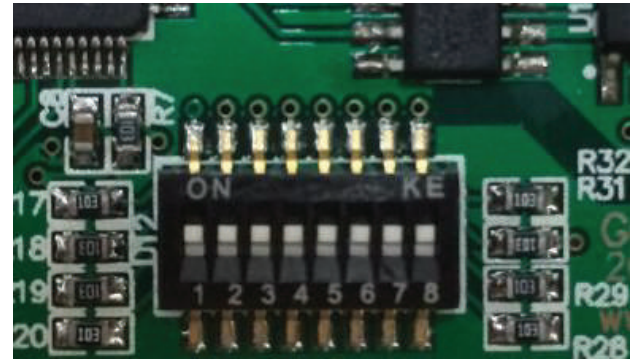
CONNECTION AND USE

1. CAN-Bus configuration

Before using the LxCAN-yF converter, users have to configure the parameter of the CAN-Bus.

2. Configure CAN-Bus baud rate

The baud rate of CAN-Bus range from 5K to 1000K, configured by DIP switch. Before power on the converter, open the shell of the converter. The baud rate can be configured by DIP switch. "1, 2, 3, 4" are used to configure CAN1. "5, 6, 7, 8" are used to configure CAN2. Table 3.1 is the example of the baud rate of CAN1.



Graphics	Definition	Baud rate	Graphics	Definition	Baud rate
	0000	1000k		0001	800k
	0010	666k		0011	500k
	0100	400k		0101	250k
	0110	200k		0111	125k
	1000	100k		1001	80k
	1010	50k		1011	40k
	1100	20k		1111	13.33k
	1101	10k		1110	5k

Table 3.1 Baud rate of LxCAN-yF

4. Configure CAN-Bus termination

Two CAN channels of LxCAN-yF converter have already integrated 120Ω termination by DIP switch.

5. Connect to Fiber

The two fiber interface of LxCAN-yF converter can be SC or ST. It can be singlemode or multimode.

6. Connect to CAN-Bus

In practical use, users only need to connect the CAN_H to CAN_H and CAN_L to CAN_L, then communication can be realized.

The CAN-Bus network adopts topological structure, only the two furthest terminal need to connect 120Ω terminal resistance between CAN_H and CAN_L. For branch connection, its length should not be more than 3 meters. CAN-Bus nodes connection as shown in figure 3.1.

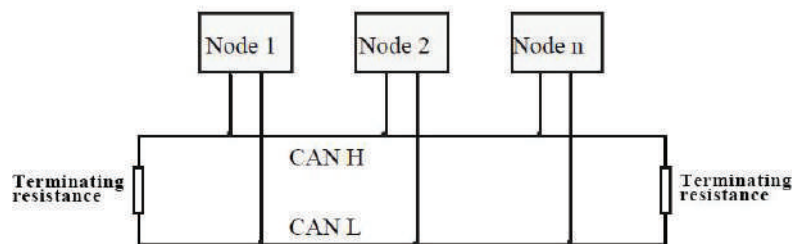


Figure 3.1 CAN-Bus network

Note: CAN-Bus using ordinary twisted pair. The relationship between the bus length and baud rate is shown in Table 3.2.

Baud Rate	Bus Length
1 Mbit/s	40m
500 kbit/s	110m
250 kbit/s	240m
125 kbit/s	500m
50 kbit/s	1.3km
20 kbit/s	3.3km
10 kbit/s	6.6km
5 kbit/s	13km

Table 3.2 Baud rate and maximum bus length reference table

7. System LED

The LxCAN-yF converter has integrated one POWER indicator, one SYS indicator, one Fiber indicator and two CAN indicators. More functions are shown in table 3.3 and 3.4

Indicator light	Color	Indicates the state
POWER	Green	System power supply indication
SYS	Green	System operation indication
Fiber	Green	Fiber communication indication
CAN1	Red/green	CAN1 communication status indication
CAN2	Red/green	CAN2 communication status indication

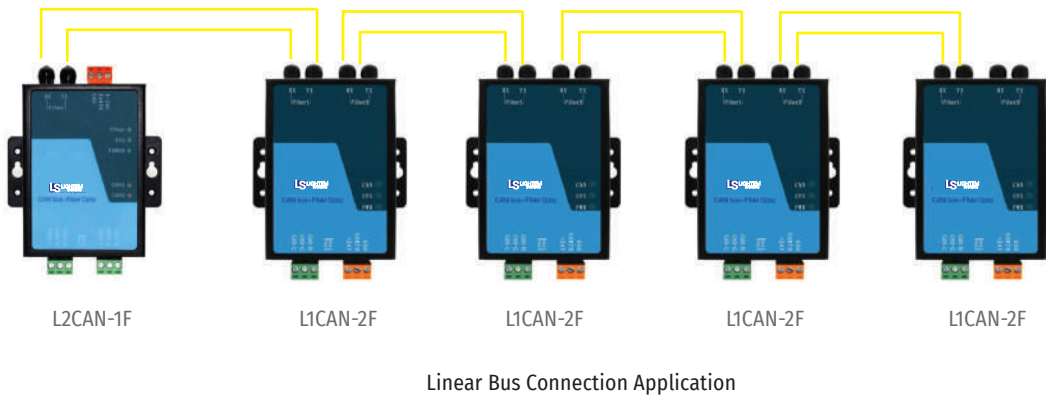
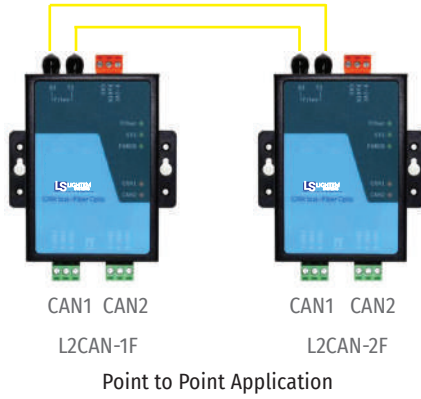
Table 3.3 Indicator of LxCAN-yF

After power on the converter, the POWER and SYS indicator lights indicate that power is being supplied and the system is initializing. Otherwise, it indicates power failure or an error occurred. After the connection of Fiber Bus and CAN-Bus, when the bus has data transmission, corresponding Fiber and CAN indicators will flash.

SPECIFICATIONS

<i>Connection</i>	
<i>Fiber</i>	SC, ST optional
<i>CAN</i>	OPEN3 terminal blocks
<i>Interface characteristics</i>	
<i>Fiber transmission mode</i>	Single mode, multi mode optional
<i>CAN interface</i>	ISO 11898 standard, CAN2.0A/B
<i>CAN baud rate</i>	5Kbit/s~1Mbit/s, configured by DIP switch
<i>Electrical isolation</i>	1500V, DC-DC
<i>CAN termination resistor</i>	Integrated, through the DIP switch to enable
<i>Power supply</i>	
<i>Power supply voltage</i>	+9~30V DC
<i>Power supply current</i>	Maximum 50mA (24V DC)
<i>Environmental testing</i>	
<i>Working temperature</i>	-40 degree C ~ +85 degree C
<i>Working humidity</i>	15%~90%RH, no condensation
<i>EMC test</i>	EN 55024:2011-09 EN 55022:2011-12
<i>Protection grade</i>	IP 20
<i>Basic information</i>	
<i>Outline size</i>	121mm *93mm *22mm
<i>Weight</i>	230g

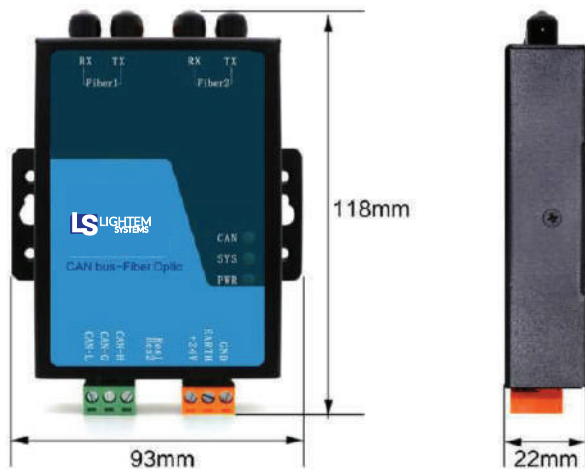
APPLICATION DIAGRAM



	L2CAN-1F	L1CAN-2F
No. of Fiber	1	2
No. of CAN	2	1
No. of fiber required	Simplex or Duplex	
Fiber Type	Single mode / Multi mode	
Fiber Connector Type	SC or ST Type	
Typical Application	Must be used in pair. Two independent CAN bus can be supported for each pair of converter	With the use of L2CAN-1F together, it can be used as a linear bus architect with fiber connections.



DIMENSIONS



ORDERING INFORMATION

P/N	Descriptions
L2CAN-1F	2Ch CAN Bus 1x Fiber Converter
L1CAN-2F	1Ch CAN Bus 2x Fiber Converter
F-	SDST- Singlemode Duplex ST
	SDSC- Singlemode Duplex SC
	SSST- Singlemode Simplex ST
	SSSC- Singlemode Simplex SC
	MDST- Multimode Duplex ST
	MDSC- Multimode Duplex SC
eg L2CAN-1SDST	2Ch CAN Bus 1xFiber Converter Singlemode Duplex ST