SAN TELEQUIP

Connecting. Converting. Leading !

Document Name : User Manual for Self Healing Serial to Fiber Converter Model SC12 FS SH

The SC12FS SH is used to transmit the RS232 / RS485 / RS422 signal by the fiber optic ring network at a high rate, over long distances, offering immunity to various types of noise and increasing the dependability of data.

The communications system model of SC12FS SH is one Master to multiple Slaves.
It is easy to structure a network of Star, Chain and Loop type.

It is a Self Healing product. When any of Slave nodes fails or the Power is cut off or there is a break in fiber etc, the communication shifts to the alternate loop & resumes normal communication, through the normal loop, once the fault is restored.

Specifications :
Ports

Code error rate	: below 10-9
Wavelength	: SM : 1310 nm, MM : 850 nm
Cable	: SM : 09/125 µm
	: MM : 62.5/125 µm or 50/125 µm
Fiber Connectors	: ST, SC or FC. Select any one.
Distance	: SM : 20km, MM : 5km
Sensitivity	: -35 dbm
Code	: HDB3
Serial Port Connector	: 10 pin Screw type Industrial Connectors for RS-232, RS-422 and RS-485
Baud Rate	: 300bps to 115.2Kbps

Power

Power supply	: DC 9 - 30V DC. Optional, external AC 230V AC Adapter for 12V DC.
Power	: <2W

Mechanicals

Dimensions	: 100mm × 90mm ×3 0mm
Weight	: 0.7kg

Operating Conditions

Working temperature	: -20 to +70 ℃.
Storage temperature	: -40 to +85 ℃.
Relative humidity	: 95% rh non condensation

Protection

MTBF	: Better than 100 thousand hours
ESD Protection	: 15 KV ESD Surge Protection for all signals (Optional)
Isolation Protection	: 2.5KV Optical Isolation for Power and Signals (Optional)
Surge Protection	: 600W on RS485 lines

Indicators

MAIN	: Master station, Red
SUB	: Slave station, Green
LOOPA	: Fiber port A receiving, Green
LOOPB	: Fiber port B receiving, Green
TxA	: A Data Send, Green
RxA	: A Data Receive, Green
TxB	: B Data Send, Green
RxB	: B Data Receive, Green
TXD	: Serial port Data Send, Green
RXD	: Serial port Data Receive, Green

DIP Switches
DIP switch 1 is used for the configuration of the Master and Slave. Up (ON) is Master & Down (OFF) is Slave.
Switch 2 is used to add a 120 Ohm matching resistor on RS-485 data lines.
Up is with the terminations & Down is without terminators.
The switch 3 and 4 is not used.

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Pin Details :

A 10 pin Industrial grade Terminal Strip is used to connect with the device data port.

	RS485/RS422				RS232			Power	
Signal	T+	T-	R+	R-	Gnd	TX	RX	Gnd	V+	V-
Pin	1	2	3	4	5	6	7	8	9	10

Connections :

RS232 connections : Connect the TX of the converter to the RX of the external equipment and the RX to the TX, the GND to the GND.

RS-485/422 connection : RS485 / 422 is auto selectable. Pin 1 (T+) and Pin 2 (T-) are used for RS485, and pin 1,2,3,4 are used for RS422.
Important : It is necessary to add a matching resistance of 120 Ohm both at the start & at the end of the RS485 loop. (By turning on the switch 2)

Fiber connection : To construct a self-heal loop, the fiber network must be constructed as A
to B and B to A,TX to RX and RX to TX. In a self-heal loop network of 2 fibers there can be only one master station but several slave stations. Following is a sample connection.

Power :

DC9 - 30V power supply needed, the power is low than 2W.
Notice of the power polarity, the apparatus will be damaged when the polarity is reverse.

CONNECTION ARCHITECTURES

Ring network connection

Point-to-point connection