

Catalogue

Industrial Data Communication Excellence

MAXON

Fieldbus | Serial | Ethernet | Fiber | GPS



NanJing MAXON O.E.TECH. CO., LTD

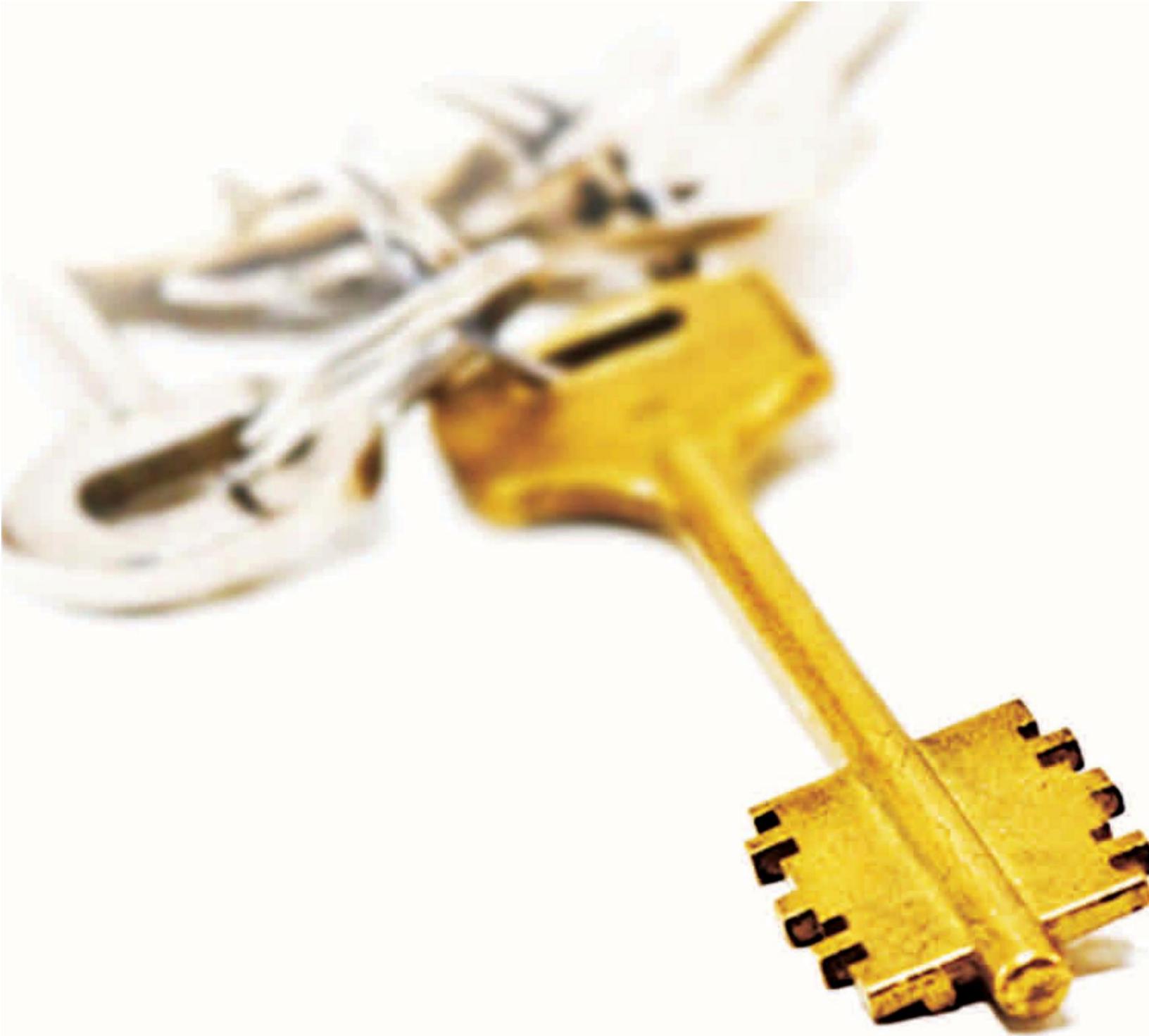
Tel: +86-25-83969790

Fax: +86-25-86644313

Add: FL 6 BLDG A3, Zidong Road, Qixia District, Nanjing, Jiangsu, China

E-mail: info@maxonc.com

www.maxonc.com



Optimizing Your Industrial Networks

About MAXON

Company Profile

MAXON founded in 2007, is a high-technology enterprise specialized in industrial communication products R&D and production. As a professional manufacturer of industrial communication products, our products include various Serial/Fieldbus/Ethernet/Fiber Transceivers, GPS time servers and other industrial automation products.

We have a strong R&D team working on new products development and our principle is to provide most advanced products and perfect service for our customers. Currently 80% of our staff have bachelor, master and doctoral degrees and we have continuous technical and funding supports from Nanjing University of Technology and Southeast University who have great achievement in communication and engineering subjects.

Our products are widely used in many world-famous projects such as Railways, High-ways, Power grid, Oil & gas plants, Steel plants, Smart Home, M2M, Petrochemical plants, power meter system, Water sewage treatment, Irrigation, Security & Surveillance, Traffic, Buildings, Solar plants, Wind farms & various industrial sites and we are the leading industrial control and automation products manufacturer in China.

Our Mission and Values:

Our Mission:

- Become your first choice of industrial networking products

Our Values:

- We treasure every contact with customers. You succeed, so do we
- Creativity is our lifeblood for everything we do
- Continuous improvement and performance to increase value to customers
- Employee is our asset. Mutual trust is built into our business foundation

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Optimizing Your Industrial Networks



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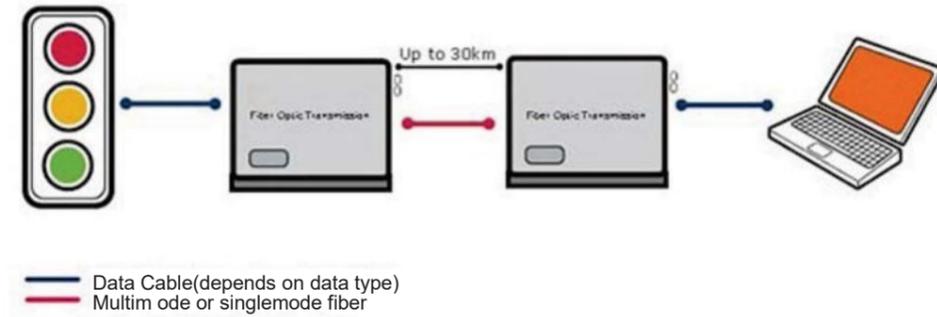


01 DIN-Rail Industrial Fiber Optic Converters

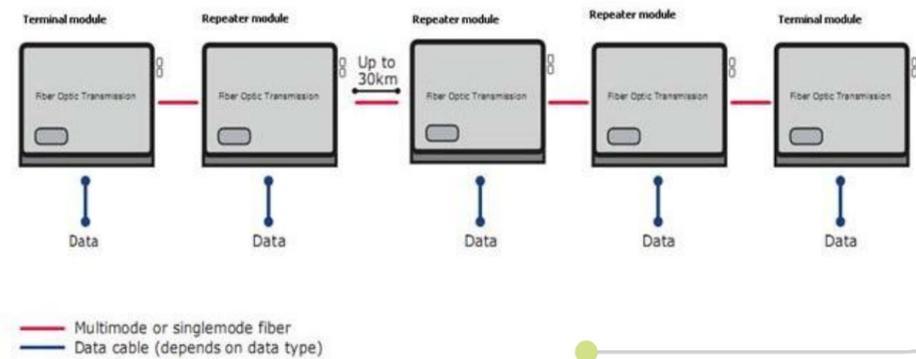
- Profibus Optical Link Modules RS-232/485/422 Optic Modems
- CAN/Devicenet/CANOPEN Optic Converters
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- Lonworks Optic Converters

Fiber Optic Modems Typical Configuration:

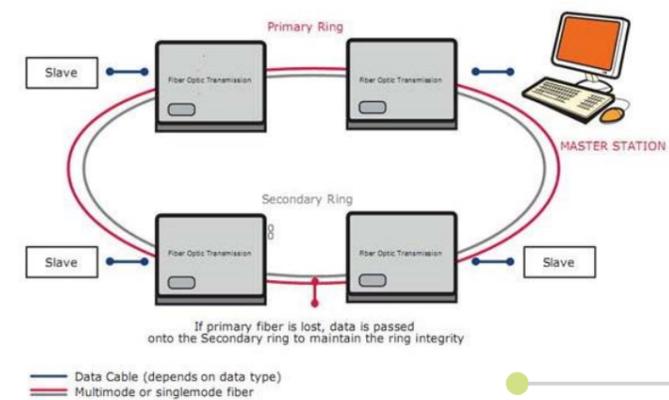
Point to Point:



Multi Drop Bus:



Self-healing Ring:



HFD-FO Series

Profibus Fiber Optic Modem(OLM)

Transmission rate:

The HFD-FO-PRO series Profibus OLM support all the transmission speeds (transmission rates) defined in the EN 50170 standard:: 9.6 kBit/s, 19.2 kBit/s, 45.45 kBit/s, 93.75 kBit/s, 187.5 kBit/s,500 kBit/s,1.5 MBit/s, 3 MBit/s, 6 MBit/s,12MBit/s.

The transmission rate is set automatically as soon as the PROFIBUS HFD-FO-PRO receives a frame. The setting or adjustment is dependent on the transmission rate. Depending on the HFD-FO-PRO Settings in automatic mode, this can last a maximum of between 0.1 s (at 12 MBit/s) and 2.5 s (at 9.6 KBit/s).If the transmission speed has not been recognized, the outputs of all ports are blocked. If the transmission rate changes during operation, this is detected by the modules, which then automatically adjust their settings accordingly.Transfer malfunctions may temporarily occur while the rate is being altered.



Product Features

- Zero delay auto forwarding
- Auto sensing serial rate, distinguish and control direction of data
- Broken fiber alarm lamp
- Dry node alarm function
- Redundant Power Input : 9~36VDC or 85~265V AC/DC
- Provide 1500W surge protection and 15KV electrostatic protect
- Link ways:Point to Point, Multi-drop Bus,Redundant Ring

Specifications	
Standard	Comply with EIA RS-485 standards,Profibus
Profibus signal	Pro+,Pro-.GND
Direction control	Auto control for traffic
Baud rate	9.6; 19.2; 45.45; 93.75; 187.5; 500 kBit/s,1.5; 3; 6M;12M
Optical ports Nos	1 or 2 (2 as standard) , 2or 4
Wavelength	SM:1310 nm, MM:850nm
optical power:	SM :-9dBm – -18 dBm MM:-13 dBm – -20 dBm
Receiver sensitivity	-34dBm
Transmission distance	SM:0 – 2km (0.3 dB/km) MM:0 – 3km (2.0 dB/km)
Connector	Fiber:ST/FC/SC(ST standard) Electrical:Terminal or DB9
Environmental specifications	
Working temperature	-30°C~ +70°C
Storage temperature	-40°C~ +85°C
Humidity	5% to 90% (Non-condensing)
Power supply	
Power input	9 to 36VDC or 85~265V AC/DC (Redundant Power
Power consumption	>=1w
Physical specifications	
Dimension	40 x 120 x 92mm(WxDxH)
Package and protection class	Obturator Alnico outer shell, IP30 protection
Color	Black
Weight	0.6kg
Ways of Mounting	Din Rail(horizontal or vertical) or any flat surface
Regulations and approvals	
Safety	Complies with UL, cUL, EN60950
EMI	FCC Class A, EN55022 Class A
EMS	EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5
Shock	IEC 60068-2-27
Free throw	IEC 60068-2-32
Vibration	IEC 60068-2-6

Model Selection:

Model Number		Description	Fiber No.	Fiber Connector
Single Mode	Multi Mode			
HFD-FO-PRO-P1S	HFD-FO-PRO-P1M	Point to Point Link,1 Fiber(BI-DI),	1	ST/SC/FC
HFD-FO-PRO-P2S	HFD-FO-PRO-P2M	Point to Point Link,2 Fiber,	2	ST/SC/FC
HFD-FO-PRO-M2S	HFD-FO-PRO-M2M	Multi Drop Link,2 Fiber(BI-DI),	2	ST/SC/FC
HFD-FO-PRO-M4S	HFD-FO-PRO-M4M	Multi Drop Link,4 Fiber	4	ST/SC/FC
HFD-FO-PRO-R2S	HFD-FO-PRO-R2M	Redundant Ring 2 Fiber(BI-DI),	2	ST/SC/FC
HFD-FO-PRO-R4S	HFD-FO-PRO-R4M	Redundant Ring,4 Fiber,	4	ST/SC/FC

HFD-FO-232

RS-232/485/422 (Modbus)Fiber Optic Modems

Many important devices in harsh environments still adopt RS-232/RS-485/RS-422 interfaces

adoption of RS-232/485/422serial fiber converters.

RS-232/RS-485/RS-422serial fiber converter designed based upon industrial standards.It provides peer to peer transparent transmission on RS-232/RS-485/RS-422 serial ports.

Product Features

- Support RS232, RS422, RS485 serial port.
- Zero delay auto forwarding
- Support RS232/485/422 interfaces,
- Auto sensing serial rate, distinguish and control direction of data
- Max transmission rate:500Kbps
- 9~36VDC or 85~265V AC/DC input•Provide 1500W surge protection and 15KV electrostatic protect
- Link ways:Point to Point, Multi-drop Bus,Redundant Ring



Specifications	
Standard	Comply with EIA RS-232,RS-485 standards
RS-232 signal	IN,OUT,GND
RS-485 signal	D+,D-,GND
RS-422 signal	R+,R-,T+,T-,GND
Working mode	Asynchrony,Peer to peer
Direction control	Auto control for traffic
Baud rate	RS-232:115.2kbps RS-485/422:512kbps
Optical ports Nos	1 or 2 (2 as standard) , 2or 4
Wavelength	SM:1310 nm, MM:850nm
optical power:	SM :-9dBm – -18 dBm MM:-13 dBm – -20 dBm
Receiver sensitivity	-34dBm
Transmission distance	SM:0 – 2km (0.3 dB/km) MM:0 – 3km (2.0 dB/km)
Connector	Fiber:ST/FC/SC(ST standard) Electrical:Terminal or DB9

Environmental specifications	
Working temperature	-30°C~ +70°C
Storage temperature	-40°C~ +85°C
Humidity	5% to 90% (Non-condensing)
Power supply	
Power input	9 to 36VDC or 85~265V AC/DC (Redundant Power Inputs)
Power consumption	>=1w
Physical specifications	
Dimension	40 x 120 x 92mm(W×D×H)
Package and protection class	Obtured Alnico outer shell, IP30 protection
Color	Black
Weight	0.6kg
Ways of Mounting	Din Rail(horizontal or vertical) or any flat surface
Regulations and approvals	
Safety	Complies with UL, cUL, EN60950
EMI	FCC Class A, EN55022 Class A
EMS	EN61000-4-2. EN61000-4-3. EN61000-4-4. EN61000-4-5. EN61000-4-6, EN61000-4-8, EN61000-4-11
Shock	IEC 60068-2-27
Free throw	IEC 60068-2-32
Vibration	IEC 60068-2-6

Model Selection:

HFD-FO-232 Series				
Model Number			Fiber	Fiber Connector
Single Mode	Multi Mode	Description		
HFD-FO-232-P1S	HFD-FO-232-P1M	Point to Point Link,Single Fiber(BI-DI)	1	ST/SC/FC
HFD-FO-232-P2S	HFD-FO-232-P2M	Point to Point Link,Dual Fiber	2	ST/SC/FC
HFD-FO-232-M2S	HFD-FO-232-M2M	Multi Point Link,Dual Fiber(BI-DI),	2	ST/SC/FC
HFD-FO-232-M4S	HFD-FO-232-M4M	Multi Point Link,4 Fiber, 2	4	ST/SC/FC
HFD-FO-232-R2S	HFD-FO-232-R2M	Redundant Ring,Dual Fiber(BI-DI),	2	ST/SC/FC
HFD-FO-232-R4S	HFD-FO-232-R4M	Redundant Ring,4 Fiber,	4	ST/SC/FC
HFD-FO-485/422 Series				
Model Number			Fiber No.	Fiber Connector
Single Mode	Multi Mode	Description		
HFD-FO-485-P1S	HFD-FO-485-P1M	Point to Point Link,Single Fiber(BI-DI)	1	ST/SC/FC
HFD-FO-485-P2S	HFD-FO-485-P2M	Point to Point Link,Dual Fiber,	2	ST/SC/FC
HFD-FO-485-M2S	HFD-FO-485-M2M	Multi Point Link,Dual Fiber(BI-DI),	2	ST/SC/FC
HFD-FO-485-M4S	HFD-FO-485-M4M	Multi Point Link,4 Fiber,	4	ST/SC/FC
HFD-FO-485-R2S	HFD-FO-485-R2M	Redundant Ring,Dual Fiber(BI-DI),	2	ST/SC/FC
HFD-FO-485-R4S	HFD-FO-485-R4M	Redundant Ring,4 Fiber,	4	ST/SC/FC

HFD-FO-CAN Series

DIN Rail CAN /CANopen/Device Net) Fiber optic Converter(SDS、NMEA2000、SAE J1939、SAE J2284 compatibility)



The HFD-FO-CAN fiber optic transmission system can be used to transmit CAN-based bus systems such as DeviceNet or CANopen via fiber optics. The main advantage of this system is the electrically isolated connection of bus devices, which prevents the negative effects of voltage equalization currents and electromagnetic interference on the bus lines. In addition, bus line short circuits only affect the relevant potential segment. This increases the overall availability of the system, and improves flexibility in terms of the design of the bus topology in a linear, star, ring or point to point

- Product Features
- Auto sensing serial rate, distinguish and control direction of data
- Broken fiber alarm lamp
- Dry node alarm function
- Redundant Power Input : 9~36VDC or 85~265V AC/DC
- Provide 1500W surge protection and 15KV electrostatic protect
- Link ways:Point to Point, Multi-drop Bus,Single Ring

Specifications	
Standard	Comply with CAN2.0A CAN2.0B ISO11989
CAN signal	CANH ,CANL,GND
Working mode	Asynchony,Peer to peer
Direction control	auto control for traffic
Baud rate	Can-bus:0-1Mbps, DeviceNet,:125K/250K/500K
Optical ports Nos	1 or 2 (2 as standard) , 2or 4
Wavelength	SM:1310 nm, MM:850nm
optical power:	SM:-9dBm - -18 dB MM:-13 dBm - -20 dBm
Receiver sensitivity	-34dBm
Transmission distance	SM:0 - 2km (0.3 dB/km) MM:0 - 3km (2.0 dB/km)
Connector	Fiber:ST/FC/SC(ST standard) Electrical:Terminal
Environmental specifications	
Working temperature	-30°C~ +70°C
Storage temperature	-40°C~ +85°C
Humidity	5% to 90% (Non-condensing)
Power supply	
Power input	9 to 36VDC or 85~265V AC/DC (Redundant Power Inputs)
Power consumption	>=1w
Physical specifications	
Dimension	40 x 120 x 92mm(W×D×H)
Package and protection class	Obtured Alnico outer shell, IP30 protection
Color	Black
Weight	0.6kg
Ways of Mounting	Din Rail(horizontal or vertical) or any flat surface
Regulations and approvals	
Safety	Complies with UL, cUL, EN60950
EMI	FCC Class A, EN55022 Class A
EMS	EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-7, EN61000-4-8
Shock	IEC 60068-2-27
Free throw	IEC 60068-2-32
Vibration	IEC 60068-2-6

Model Selection:

Model Number		Description	Fiber No	Fiber Connector
Single Mode	Multi Mode			
HFD-FO-CAN-P1S	HFD-FO-CAN-P1M	Point to point Link,Single Fiber(BI-DI),	1	ST/SC/FC
HFD-FO-CAN-P2S	HFD-FO-CAN-P2M	Point to point Link,Dual Fiber,	2	ST/SC/FC
HFD-FO-CAN-M2S	HFD-FO-CAN-M2M	Multi point Link,Dual Fiber(BI-DI)	2	ST/SC/FC
HFD-FO-CAN-M4S	HFD-FO-CAN-M4M	Multi point Link,4 Fiber	4	ST/SC/FC

HFD-FO-LON Series

DIN Rail Lonworks Fiber optic Converter



The LONWORKS Fiber Optic Modem is a multi-master and high performance Field bus Control System (FCS). Our Fiber Optic Modem uses the fiber cable as its transmission medium and utilizes Optical Fiber modulation/demodulation technology to changes the electric medium into a light medium transmission.

The LONWORKS Fiber Optic Modem product eliminates many of the disadvantages of copper cable. Examples of these disadvantages are EMI/RFI, ground loops (electrical isolation with fiber), high attenuation (high signal loss), short transmission distance between nodes of a system, and potential lightning damage.

The LONWORKS Fiber Optic Modem can be widely used, such as Industrial Controls, Intelligent Transportation Systems (ITS), Industrial Networking, Supervisory Control and Data (SCADA) and so on.

Product Features

- Auto sensing serial rate, distinguish and control direction of data
- Broken fiber alarm lamp
- Dry node alarm function
- Redundant Power Input : 9~36VDC or 85~265V AC/DC
- Provide 1500W surge protection and 15KV electrostatic protect
- Link ways:Point to Point, Multi-drop Bus

Specifications	
Standard	Lonworks (Lon Talk)
Lon signal	LonA ,LonB, GND
Working mode	Asynchony,Peer to peer
Direction control	auto control for traffic
Baud rate	78.6kbps
Optical ports&Electrical port	Fiber: 1 or 2 (2 as standard) , 2or 4 Electrical : Terminal
Wavelength	SM:1310 nm, MM:850nm
Optical power: in glass fiber	- 9dBm - - 18 dBm
Receiver sensitivity	- 34dBm
Transmission distance	SM:0 - 2 km(0.3 dB/km) MM: 0 - 3km (2.0 dB/km)
Connector	ST/FC/SC(ST fitted as standard)
Environmental specifications	
Working temperature	- 30° C~ +70° C
Storage temperature	- 40° C~ +85° C
Humidity	5% to 90% (Non - condensing)
Power supply	
Power input	9 to 36VDC or 85~265V AC/DC (Redundant Power Inputs)
Power consumption	>=1w
Physical specifications	
Dimension	40 x 120 x 92 mm (W x D x H)
Package and protection class	Obtured Alnico outer shell, IP30 protection
Color	Black
Weight	0. 6kg
Ways of Mounting	Din Rail(horizontal or vertical) or any flat surface
Regulations and approvals	
Safety	Complies with UL, cUL, EN60950
EMI	FCC Class A, EN55022 Class A
EMS	EN61000-4-2, EN61000 -4-3, EN610 00-4-4, EN61000 -4-5, EN61000 -4-6, EN61000-4-8, EN61000 -4- 11
Shock	IEC 60068 -2-27
Free throw	IEC 60068 -2-32
Vibration	IEC 60068 -2-6

Model Selection:

Model Number		Description	Fiber No.	Fiber Connector
Single Mode	Multi Mode			
HFD-FO-LON-P1S	HFD-FO-LON-P1M	Point to point Link,Single Fiber(BI-	1	ST/SC/FC
HFD-FO-LON-P2S	HFD-FO-LON-P2M	Point to point Link,Dual Fiber	2	ST/SC/FC
HFB-FO-LON-M2S	HFB-FO-LON-M2M	Multi point Link,Dual Fiber(BI-DI)	2	ST/SC/FC
HFB-FO-LON-M4S	HFB-FO-LON-M4M	Multi point Link,4 Fiber	4	ST/SC/FC

HFD-FO Series

DIN Rail Ethernet Fiber Media Converters

The HFD Series 10/100M & 10/100/1000M Auto-Sensing Ethernet Fiber Optic Converter is designed using advanced fiber optic technology. This series transmit and receive 10/100 Mbps & 10/100/1000 Mbps (no adjustment is required) data over two single-mode optical fibers, extending the Ethernet transmission distance from its normal few hundred meters to 0-120 kilometers. By using optical fiber as transmission media, this series continue to perform its secured, high-speed and long-distance communication even under the adverse condition such as lightning, power surge and electromagnetic interference; Substantial saving on lightning and power surge protection equipments if copper wires were used.

The HFD Series is fully assembled using SMT components for stability and reliability.



Model selection

Model Number	Description	Fiber No.	Fiber Mode	Fiber Connector
HFD -FO -100M -P1M	Point to point Link,Single Fiber(BI -DI), 2km	1	Multi Mode	ST/SC/FC
HFD -FO -100M -P2M	Point to point Link,Dual Fiber, 2km	2	Multi Mode	ST/SC/FC
HFD -FO -100M -P1S	Point to point Link,Single Fiber(BI -DI), 20km	1	Single Mode	ST/SC/FC
HFD -FO -100M -P2S	Point to point Link,Dual Fiber, 20km	2	Single Mode	ST/SC/FC
HFD -FO -1000M -P1M	Point to point Link,Single Fiber(BI -DI), 2km	1	Multi Mode	ST/SC/FC
HFD -FO -1000M -P2M	Point to point Link,Dual Fiber, 2km	2	Multi Mode	ST/SC/FC
HFD -FO -1000M -P1S	Point to point Link,Single Fiber(BI -DI), 20km	1	Single Mode	ST/SC/FC
HFD -FO -1000M -P2S	Point to point Link,Dual Fiber, 20km	2	Single Mode	ST/SC/FC

02 WallMount Fiber Optic Converters
 Fieldbus Fiber Optic Converters
 Ethernet Fiber Media Converters



HFB-FO Series

RS-232/485/422 Fiber Optic Modems



The RS-232/485/422 Fiber Optic Converter data series uses the most advanced digital technologies to provide excellent repeatable performance for today's data systems. It supports transmission of one bi-directional data channel over one multimode or single mode optical fiber. RS232, RS422 and RS485 (2 wire & 4 wire) standards are fully supported. The plug-and-play design ensures ease of installation with no electrical or optical adjustment needed. LED indicators are provided to show the operational status of the unit clearly.

The series is available in compact wall mount or 3U chassis card.

The RS-232/485/422 Series converter is equipped with a multiple interface circuit that can handle RS-232/485/422 serial interfaces and multi-mode or single-mode fiber. RS-232/485/422 converters are used to extend serial transmission distance up to 2 km (multi-mode fiber) or up to 20-100km (single-mode fiber)...Auto Baud Rate Detection. The RS-232/485/422 Series incorporates a method for automatically detecting the serial signal baud rate by hardware. This is an extremely convenient feature for the user. Even if a device's baud rate is changed, the signal will still be transmitted through the RS-232/485/422 to fiber converter without any problem.

Product Features:

Supports RS232, RS422 and RS485

Multimode and single mode solutions

Switchable 120Ω Termination and biasing

LED indicators provide quick diagnosis of all important system parameters

Up to 16 units in a 2U chassis

Compact and 2U chassis card configuration

Link ways: Point to Point, Multi-drop Bus, Redundant Ring



Wall Mount Fiber Optic Converters

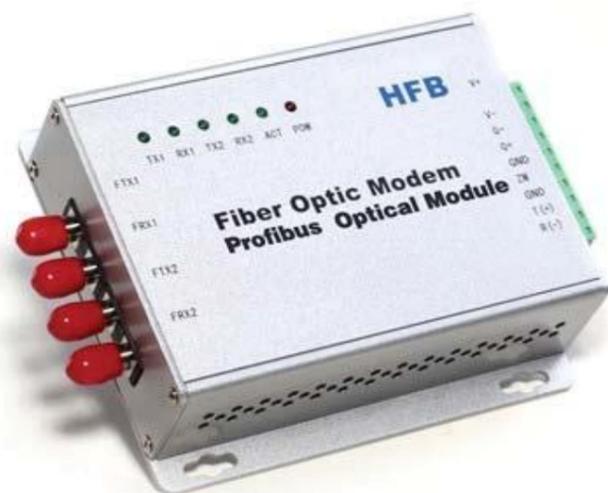
Data	
Data Formats	RS232,RS422,RS485
RS232 Data Rate	115.2kbps
RS422 / 485 Data Rate	256kbps or 512kbps
Bit Error Rate	<1 x 10 ⁻¹²
Connectors	
Data	Screw Block Terminal
Fiber	ST, SC or FC (ST fitted as standard)
Environmental	
Operating Temperature	- 3 0 C--- +70 C
Storage Temperature	- 3 0 C--- +70 C
Operating Humidity	0- 95%
MTBF	>100,000 Hours
Optical	
Fiber	Multi mode or Single mode
Wavelength	MM: 850nm, SM: 1310nm
Number of fibers	2 or 1 , 4 or 2
Power	
Power Input	9 to 36VDC or 85~265VAC/DC
Mechanical	
Dimensions	125(L)×110(W)×36(H)Wall Mount

Model Selection:

HFB-FO-232 Series				
Model Number				
Single Mode	Multi Mode	Description	Fiber No.	Fiber Connector
HFB-FO-232-P1S	HFB-FO-232-P1M	Point to Point Link,Single Fiber(BI-DI),	1	ST/SC/FC
HFB-FO-232-P2S	HFB-FO-232-P2M	Point to Point Link,Dual Fiber	2	ST/SC/FC
HFB-FO-232-M2S	HFB-FO-232-M2M	Multi Point Link,Dual Fiber(BI-DI),	2	ST/SC/FC
HFB-FO-232-M4S	HFB-FO-232-M4M	Multi Point Link,4 Fiber, 2	4	ST/SC/FC
HFB-FO-232-R2S	HFB-FO-232-R2M	Redundant Ring,Dual Fiber(BI-DI),	2	ST/SC/FC
HFB-FO-232-R4S	HFB-FO-232-R4M	Redundant Ring,4 Fiber,	4	ST/SC/FC
HFB-FO-485/422 Series				
Model Number				
Single Mode	Multi Mode	Description	Fiber No.	Fiber Connector
HFB-FO-485-P1S	HFB-FO-485-P1M	Point to Point Link,Single Fiber(BI-DI)	1	ST/SC/FC
HFB-FO-485-P2S	HFB-FO-485-P2M	Point to Point Link,Dual Fiber,	2	ST/SC/FC
HFB-FO-485-M2S	HFB-FO-485-M2M	Multi Point Link,Dual Fiber(BI-DI),	2	ST/SC/FC
HFB-FO-485-M4S	HFB-FO-485-M4M	Multi Point Link,4 Fiber,	4	ST/SC/FC
HFB-FO-485-R2S	HFB-FO-485-R2M	Redundant Ring,Dual Fiber(BI-DI),	2	ST/SC/FC
HFB-FO-485-R4S	HFB-FO-485-R4M	Redundant Ring,4 Fiber,	4	ST/SC/FC

HFB-FO Series

Profibus Fiber Optic Converters



The HFB-FO-PRO series uses the most advanced digital technologies to provide excellent repeatable performance for today's data systems. It supports transmission of one bi-directional data channel over one multimode or single mode optical fiber. Profibus standards are fully supported. The plug-and-play design ensures ease of installation with no electrical or optical adjustment needed. LED indicators are provided to show the operational status of the unit clearly. The series is available in compact wall mount or 2U chassis card.

The Profibus Series converter is equipped with a multiple interface circuit that can handle Profibus serial interfaces and multi-mode or single-mode fiber. Profibus converters are used to extend serial transmission distance up to 2 km (multi-mode fiber) or up to 20-100km (single-mode fiber)...Auto Baud Rate Detection. The Profibus Series incorporates a method for automatically detecting the serial signal baud rate by hardware. This is an extremely convenient feature for the user. Even if a device's baud rate is changed, the signal will still be transmitted through the Profibus to fiber converter without any problem.

Product Features

- Up to 1.5-12Mbps data rate
- Multimode and single mode
- Single fiber solution
- Link ways: Point to Point, Multi-drop Bus, Redundant Ring

Data	
Data Formats	Profibus RS-485
Profibus Data Rate	1.5Mbps/3Mbps/6Mbps/12Mbps for Option
Bit Error Rate	<1 x 10 ⁻¹²
Connectors	
Data	Screw Block Terminal
Fiber	ST, SC or FC (ST fitted as standard)
Environmental	
Operating Temperature	-30 C--- +70 C
Storage Temperature	-40 C--- +85C
Operating Humidity	0- 95%
MTBF	>100,000 Hours
Optical	
Fiber	Multi mode or Single mode
Wavelength	MM: 850nm, SM: 1310nm
Number of fibers	2 or 1,2 or 4
Power	
Power Input	9 to 36VDC or 85~265V AC/DC
Mechanical	
Dimensions	125(L)×110(W)×36(H)Wall Mount

Model Selection:

Model Number		Description	Fiber	Fiber Co
Single Mode	Multi Mode			
HFB-FO-PRO-P1S	HFB-FO-PRO-P1M	Point to Point Link, 1 Fiber(BI-DI)	1	ST/SC/FC
HFB-FO-PRO-P2S	HFB-FO-PRO-P2M	Point to Point Link, 2 Fiber,	2	ST/SC/FC
HFB-FO-PRO-M2S	HFB-FO-PRO-M2M	Multi Drop Link, 2 Fiber(BI-DI),	2	ST/SC/FC
HFB-FO-PRO-M4S	HFB-FO-PRO-M4M	Multi Drop Link, 4 Fiber	4	ST/SC/FC
HFB-FO-PRO-R2S	HFB-FO-PRO-R2M	Redundant Ring 2 Fiber(BI-DI),	2	ST/SC/FC
HFB-FO-PRO-R4S	HFB-FO-PRO-R4M	Redundant Ring, 4 Fiber,	4	ST/SC/FC

HFB-FO Series

CAN /CANopen/ DeviceNet Fiber Optic Converters



The HFB-FO-CAN series CAN Bus products provide an optical point-to-point or bus network connection for CAN bus data interfaces on one or two, multi mode or single mode optical fibers. The CAN Bus FiberTransmission units operate as the end or terminal points and provide an electrical connection and a two fiber optical connection. The units support CAN 1.0 and CAN 2.0 CAN standards, and Device Net. And are transparent to all high level protocols. This series is available in either wall mount, DIN rail or 3U chassis card configurations.

Product Features

- Up to 1Mbps data rate
- Multimode and single mode
- Wall mount, rack or chassis configurations
- Link ways:Point to Point, Multi-drop Bus,

Wall Mount Fiber Optic Converters

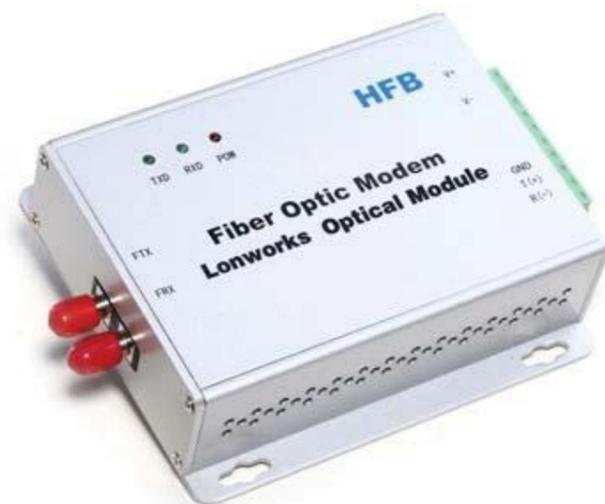
Data	
Data Formats	CAN1.0 ,CAN2.0 , DeviceNet
CAN Data Rate	0~1Mbps
Bit Error Rate	<1 x 10 ⁻¹²
Connectors	
Data	Screw Block Terminal
Fiber	ST, SC or FC (ST fitted as standard)
Environmental	
Operating Temperature	- 30 C--- +70 C
Storage Temperature	- 40 C--- +85 C
Operating Humidity	0- 95%
MTBF	>100,000 Hours
Optical	
Fiber	Multi mode or single mode
Wavelength	MM: 850nm, SM: 1310nm
Number of fibers	2 or 1 , 4 or1
Power	
Power Input	9 to 36VDC or 85~265V AC/DC
Mechanical	
Dimensions	125(L)×110(W)×36(H)Wall Mount

Model Selection:

Model Number		Description	Fiber	Fiber
Single Mode	Multi Mode			
HFB -FO-CAN -P1S	HFB -FO-CAN -P1M	Point to point Link,Single Fiber(BI-DI),	1	ST/SC/FC
HFB -FO-CAN -P2S	HFB -FO-CAN -P2M	Point to point Link,Dual Fiber,	2	ST/SC/FC
HFB -FO-CAN -M2S	HFB -FO-CAN -M2M	Multi point Link,Dual Fiber(BI-DI)	2	ST/SC/FC
HFB -FO-CAN -M4S	HFB -FO-CAN -M4M	Multi point Link,4 Fiber	4	ST/SC/FC

HFB-FO Series

Lonworks Fiber Optic Converters



The HFB-FO-LON series Lonworks Fiber Optic Modem is a multi-master and high performance Field bus Control System (FCS). Our Fiber Optic Modem uses the fiber cable as its transmission medium and utilizes Optical Fiber modulation/demodulation technology to changes the electric medium into a light medium transmission.

The LONWORKS Fiber Optic Modem product eliminates many of the disadvantages of copper cable. Examples of these disadvantages are EMI/RFI, ground loops (electrical isolation with fiber), high attenuation (high signal loss), short transmission distance between nodes of a system, and potential lightning damage.

The LONWORKS Fiber Optic Modem can be widely used, such as Industrial Controls, Intelligent Transportation Systems (ITS), Industrial Networking, Supervisory Control and Data (SCADA) and so on

Product Features

- Up to 78.6kbps data rate
- Multimode and single mode
- Wall mount, rack or chassis configurations
- Link ways:Point to Point, Multi-drop Bus,

Technical Parameter

Data	
Data Formats	Lonworks(LonTalk)
LONWORKS Data Rate	78kbps
Bit Error Rate	< 1 x 10 ⁻¹²
Connectors	
Data	Screw Block Terminal
Fiber	ST, SC or FC (ST fitted as standard)
Environmental	
Operating Temperature	-30 C--- +70 C
Storage Temperature	-40 C--- +90 C
Operating Humidity	0-95%
MTBF	> 100,000 Hours
Optical	
Fiber	Multi mode or Single mode
Wavelength	MM: 850nm, SM: 1310nm
Number of fibers	2 or 1
Power	
Power Input	AC220V 110v or DC+110V +5V +12V +24V +48V Option
Mechanical	
Dimensions	125(L)× 110(W)× 36(H)Wall Mount & DIN Rail

Model Selection:

Model Number		Description	Fiber	Fiber Co
Single Mode	Multi Mode			
HFB-FO-LON-P1S	HFB-FO-LON-P1M	Point to point Link,Single Fiber(BI-DI)	1	ST/SC/FC
HFB-FO-LON-P2S	HFB-FO-LON-P2M	Point to point Link,Dual Fiber	2	ST/SC/FC
HFB-FO-LON-M2S	HFB-FO-LON-M2M	Multi point Link,Dual Fiber(BI-DI)	2	ST/SC/FC
HFB-FO-LON-M4S	HFB-FO-LON-M4M	Multi point Link,4 Fiber	4	ST/SC/FC

HFB-FO Series

Ethernet Fiber Optic Converters

The HFB-FO Series 10/100M & 10/100/1000M Auto-Sensing Ethernet fiber optic converter is designed using advanced fiber optic technology. This series transmit and receive 10/100 Mbps or 10/100/1000M (no adjustment is required) data over two single-mode optical fibers, extending the Ethernet transmission distance from its normal few hundred meters to 0-120 kilometers. By using optical fiber as transmission media, this series continue to perform its secured, high-speed and long-distance communication even under the adverse condition such as lightning, power surge and electromagnetic interference; Substantial saving on lightning and power surge protection equipments if copper wires were used.



The HFB-FO Series is fully assembled using SMT components for stability and reliability.

ETHERNET	
Supporting standards	IEEE802.3 10Base-T, 100Base-T
Data Rate	10/100Mbps auto-sensing, Full Duplex or Half Duplex
Physical Interface	RJ45, DCE interface

OPTICAL	
Number of Fibers	2
Wavelength	1310nm
Fiber Type	9/125μ m(SM)
Distance	0 ~ 25km, 0~40km, 0~60km, 0-80km
Connector Type	ST/FC/SC

GENERAL	
Operating Temperature	-40 ~ 70C / -40 ~ +158F
Relative Humidity	0 ~ 95% non-condensing
Mean Time Between Failure (MTBF)	> 600, 000hrs
Power Supply Adaptors	AC 220V 110v or DC+110V, +5V, +12V, +24V, +48V Option
Enclosure Color	Silver
Dimensions (L× W× H)	25(L)× 110(W)× 36(H)Wall Mount & DIN Rail

03 Industrial Ethernet Switches

DIN-Rail Managed & Unmanaged Ethernet Switches

Rackmount Managed & Unmanaged Ethernet Switches

IEC 61850-3 Ethernet Switches

IP67 Water-Proof Ethernet Switches



HFB Series

Unmanaged DIN-rail 10/100M Industrial Ethernet Switches

- 10/100BaseT(X), 100BaseFX(SC/ST Connectors)
- Low Voltage redundant AC/DC Power Inputs
- Metal Case with IP40 Protection
- Broadcasting Storm Control
- Operating Temperature:-40°C~75°C



Specifications

Technology

- Network Standards:
 - IEEE802.3 10Base-T
 - IEEE802.3u 100BaseT(X) and 100BaseFX
 - IEEE802.3x Flow Control
- Processing Type:Store and Forward
- MAC Address:8K MAC Address Table
- Broadcasting Storm Control:Automatic
- Flow Control:Full/Half Duplex Back Pressure Flow Control

Interface

- RJ45 Port Connectors:10/100Base Auto-sensing, Full/Half Duplex MDI/MDI-X Auto-Negotiation
- Fiber Port Connectors:100BaseFX, SC or ST connectors, Single-Mode or Multi-Mode
- LED Indicators:Power, Port Status

Power Requirements

- Low Voltage Range:12~36VDC; 10~24VAC
- High Voltage Range:200~350VDC; 165~265VAC
- Connection:Standard 4 Pin Dual Power Connector

Optical Fiber

Mode	Typical Dist	Wavelength	Cable Size	TX Power	Rx Sensitivity	Transmission speed
Multi	2km	1310nm	62.5/125um	-23.5~-14dBm	< -35dBm	10/100Mbps
Single	15km	1310nm	9/125um	-15~-8dBm	< -35dBm	10/100Mbps

Physical Characteristics

- Case: Slim Metal Case, IP40 Design
- Dimensions:(W×H×D):
 - HFB5:30×127×80mm
 - HFB8:44×130×95mm
 - HFB16:70×149×130mm
 - HFB24:91×149×130mm

Environment Limits

- Standard Temp Models:-10°C to 60°C
- Extended Temp Models:-40°C to 75°C
- Storage Temperature:-40 to 85°C
- Ambient Relative Humidity: 10 to 95% (Non-condensing)

Environment Limits

- Standard Temp Models:-10°C to 60°C
- Extended Temp Models:-40°C to 75°C
- Storage Temperature:-40 to 85°C
- Ambient Relative Humidity: 10 to 95% (Non-condensing)

Agency Approvals

- EMI:FCC Part15, CISPR(EN55022) Class A
- EMS:
 - EN61000-4-2(ESD), Lv3
 - EN61000-4-3(RS), Lv3
 - EN61000-4-4(EFT), Lv3
 - EN61000-4-5(Surge), Lv3
 - EN61000-4-6(CS), Lv3

Ordering Information

Product Model		Connectors			
Standard	Temperatur	Extended	Temperatur	100BaseFX	
				10/100BaseT(X)	MM, SC
HFB5 Series					
HFB5		HFB5-W		5	
HFB5-SC		HFB5-SC-W		4	1
HFB5-SSC		HFB5-SSC-W		4	1
HFB5-2SC		HFB5-2SC-W		3	2
HFB5-2SSC		HFB5-2SSC-W		3	2
HFB8 Series					
HFB8		HFB8-W		8	
HFB8-2SC		HFB8-2SC-W		6	2
HFB8-2SSC		HFB8-2SSC-W		6	2
HFB8-4SC		HFB8-4SC-W		4	4
HFB8-4SSC		HFB8-4SSC-W		4	4
HFB16 Series					
HFB16		HFB16-W		16	
HFB16-2SC		HFB16-2SC-W		14	2
HFB16-2SSC		HFB16-2SSC-W		14	2
HFB16-4SC		HFB16-4SC-W		12	4
HFB16-4SSC		HFB16-4SSC-W		12	4
HFB24 Series					
HFB24		HFB24-W		24	
HFB24-2SC		HFB24-2SC-W		22	2
HFB24-2SSC		HFB24-2SSC-W		22	2
HFB24-4SC		HFB24-4SC-W		20	4
HFB24-4SSC		HFB24-4SSC-W		20	4
HFB24-6SC		HFB24-6SC-W		18	6
HFB24-6SSC		HFB24-6SSC-W		18	6

- All fiber cables can be equipped with ST connectors
- Typical Distance:Multi mode<3km; Single mode: Ranging from 15km to 120km
- The standard models are powered by 24VDC, 220VAC custom models are also available

HFB Series

Managed DIN-rail 10/100M Industrial Ethernet Switches

RingOn™ Redundant Ring Technology, Recovery Time within 15ms, Supports RSTP/STP

* Enriched Management Features: QoS, IGMP snooping/GMRP, VLAN, SNMP V1/V2/V3

* Multiple Redundant AC/DC Power Choices

* Upgraded EMI Immunity



Specifications

Technology

- Network Standards:
- IEEE802.3 10Base-T
- IEEE802.3u 100BaseT(X), 100BaseFX
- IEEE802.3x Flow Control
- IEEE802.1p Class of Service
- IEEE802.1Q VLAN Tagging
- IEEE802.1ad LACP
- Processing Type:Store and Forward
- MAC Address:8k MAC Address Table
- Management:by Web Browser
- RingOn™:Recovery Time within 15ms
- Broadcasting Storm Control:Automatic
- Flow Control:Full/Half Duplex Back Pressure Flow Control
- Protocols:SNMP V1/V2/V3, DHCP Server, SNTTP, SMTP, IGMP Snooping/GMRP, LACP, RMON, HTTPS, Telnet, Syslog, HTTP

Switch Properties

- Priority Queues:4
- IGMP Groups:64
- Max. Available VLANs:256
- VLAN ID Range:1~4096

Optical Fiber

Mode	Typical Distance	Wavelength	Cable Size	TX Power	Rx Sensitivity	Transmission speed
Multi	2km	1310nm	62.5/125um	-23.5~-	< -35dBm	10/100Mbps
Single	15km	1310nm	9/125um	-15~-8dBm	< -35dBm	10/100Mbps

Interface

- RJ45 Port Connectors:10/100Base Auto-sensing, Full/Half Duplex MDI/MDI-X Auto-Negotiation
- Fiber Port Connectors:100BaseFX, SC or ST connectors, Single-Mode or Multi-Mode
- LED Indicators:Power, Port Status
- Console Port:DB9 male
- Output Warning:Relay, Standard 2 Pin, 0.5A@24VDC

Power Requirements

- Low Voltage Range:12~36VDC; 10~24VAC High
- Voltage Range:200~350VDC; 165~265VAC
- Connection:Standard 4 Pin Dual Power Connector



Physical Characteristics

- Case: Slim Metal Case, IP40 Design
- Dimensions:(W×H×D):
- HFB8M:49×139×115mm
- HFB16M:70×149×130mm
- HFB24M:91×149×130mm
- DIN Rail or Panel Mounting

Environment Limits

- Standard Temp Models:-10°C to 60°C
- Extended Temp Models:-40°C to 75°C
- Storage Temperature:-40 to 85°C
- Ambient Relative Humidity: 10 to 95% (Non-condensing)

Agency Approvals

- EMI:FCC Part15, CISPR(EN55022) Class A
- EMS:
- EN61000-4-2(ESD), Lv3
- EN61000-4-3(RS), Lv3
- EN61000-4-4(EFT), Lv3
- EN61000-4-5(Surge), Lv3

Ordering Information

Product Model		Connectors		
Standard Temperature Models(-)	Extended Temperature	10/100BaseT(X)	100BaseFX	
			MM,S	SM,SC
HFB8M Series				
HFB8M	HFB8M-W	8		
HFB8M-2SC	HFB8M-2SC-W	6	2	
HFB8M-2SSC	HFB8M-2SSC-W	6		2
HFB8M-4SC	HFB8M-4SC-W	4	4	
HFB8M-4SSC	HFB8M-4SSC-W	4		4
HFB16M Series				
HFB16M	HFB16M-W	16		
HFB16M-2SC	HFB16M-2SC-W	14	2	
HFB16M-2SSC	HFB16M-2SSC-W	14		2
HFB16M-4SC	HFB16M-4SC-W	12	4	
HFB16M-4SSC	HFB16M-4SSC-W	12		4
HFB24M Series				
HFB24M	HFB24M-W	24		
HFB24M-2SC	HFB24M-2SC-W	22	2	
HFB24M-2SSC	HFB24M-2SSC-W	22		2
HFB24M-4SC	HFB24M-4SC-W	20	4	
HFB24M-4SSC	HFB24M-4SSC-W	20		4
HFB24M-6SC	HFB24M-6SC-W	18	6	
HFB24M-6SSC	HFB24M-6SSC-W	18		6

- All fiber cables can be equipped with ST connectors
- Typical Distance:Multi mode<3km; Single mode: Ranging from 15km to 120km
- The standard models are powered by 24VDC, 220VAC custom models are also available

HFB Series

Unmanaged DIN-rail Gigabit Industrial Ethernet Switches

Up to 4 Gigabit Ports

- * Elastic configuration, 100Base fiber port with SC/ST connectors, multi-mode/single-mode models are available
- * Multiple power inputs include low voltage redundant power models and 220VAC models
- * Broadcasting Storm Controller



Specifications

Technology

- > Network Standards:
 - > IEEE802.3 10Base-T
 - > IEEE802.3u 100BaseT(X) and 100BaseFX
 - > IEEE802.3ad 1000Base(X)
 - > IEEE802.3z 1000BaseSX/LX/HLX/ZX
 - > IEEE802.3x Flow Control
- > Broadcasting Storm Control:Automatic
- > Flow Control:Full/Half Duplex Back Pressure Flow Control

Interface

- > RJ45 Port Connectors:10/100Base(X) or 10/100/1000BaseT(X) Auto-Negotiation
- > Fiber Port Connectors:1000BaseSX/CX/LHX/ZX(SFP slots, LC connectors)
- > LED Indicators:Power, Port Status, 10/100/1000M

Power Requirements

- > Low Voltage Range:12~36VDC; 10~24VAC
- > High Voltage Range:200~350VDC; 165~265VAC
- > Connection:Standard 4 Pin Dual Power Connector

Optical Fiber

Mod e	Typical Dist	Wavelengt h	Cable Size	TX Power	Rx Sensitivity	Transmission speed
Multi	2km	1310nm	62.5/125u m	-23.5~-14dBm	< -35dBm	10/100/1000Mbps
Single	15km	1310nm	9/125um	-15~-8dBm	< -35dBm	10/100/1000Mbps

Physical Characteristics

- > Case: Slim Metal Case, IP40 Design
- > Dimensions:(W×H×D):
 - > HFB10-2G:89×144×125mm
 - > HFB18-2G:70×149×130mm
 - > HFB28-4G:91×166×130mm
- > DIN Rail or Panel Mounting

Environment Limits

- > Standard Temp Models:-10°C to 60°C
- > Extended Temp Models:-40°C to 75°C
- > Storage Temperature:-40 to 85°C
- > Ambient Relative Humidity: 10 to 95% (Non-condensing)

Agency Approvals

- > EMI:FCC Part15, CISPR(EN55022) Class A
- > EMS:
 - EN61000-4-2(ESD), Lv3
 - EN61000-4-3(RS), Lv3
 - EN61000-4-4(EFT), Lv3
 - EN61000-4-5(Surge), Lv3

Ordering Information

Product Model		Connectors			
Standard Temperature Models(-10°C~60°C)	Extended Temperature	10/100/1000BaseT(X) Or	10/100 BaseT(X)	100BaseFX	
				MM,SC	SM,SC
HFB10-2G Series					
HFB10-2G	HFB10-2G-W	2	8		
HFB10-2G-2SC	HFB10-2G-2SC-W	2	6	2	
HFB10-2G-2SSC	HFB10-2G-2SSC-W	2	6		2
HFB10-2G-4SC	HFB10-2G-4SC-W	2	4	4	
HFB10-2G-4SSC	HFB10-2G-4SSC-W	2	4		4
HFB18-2G Series					
HFB18-2G	HFB18-2G-W	2	16		
HFB18-2G-2SC	HFB18-2G-2SC-W	2	14	2	
HFB18-2G-2SSC	HFB18-2G-2SSC-W	2	14		2
HFB18-2G-4SC	HFB18-2G-4SC-W	2	12	4	
HFB18-2G-4SSC	HFB18-2G-4SSC-W	2	12		4
HFB28-4G Series					
HFB28-4G	HFB28-4G-W	4	24		
HFB28-4G-2SC	HFB28-4G-2SC-W	4	22	2	
HFB28-4G-2SSC	HFB28-4G-2SSC-W	4	22		2
HFB28-4G-4SC	HFB28-4G-4SC-W	4	20	4	
HFB28-4G-4SSC	HFB28-4G-4SSC-W	4	20		4
HFB28-4G-6SC	HFB28-4G-6SC-W	4	18	6	
HFB28-4G-6SSC	HFB28-4G-6SSC-W	4	18		6

- All fiber cables can be equipped with ST connectors
- Typical Distance:Multi mode<3km; Single mode: Ranging from 15km to 120km
- The standard models are powered by 24VDC, 220VAC custom models are also available



HFB Series

Managed DIN-rail Gigabit Industrial Ethernet Switches

Up to 4 Gigabit Ports

* RingOn™ Redundant Ring Technology, Recovery Time within 15ms, Supports RSTP/STP

* Enriched Management Features: QoS, IGMP snooping/ GMRP, VLAN, SNMP V1/V2/V3

* Multiple Redundant AC/DC Power Choices



Specifications

Technology

- Network Standards:
- IEEE802.3 10Base-T
- IEEE802.3u 100BaseT(X) and 100BaseFX
- IEEE802.3ad 1000Base(X)
- IEEE802.3z 1000BaseSX/LX/HLX/ZX
- IEEE802.3x Flow Control
- IEEE802.1p Class of Service
- IEEE802.1Q VLAN Tagging
- IEEE802.1ad LACP
- IEEE802.1D for Spanning Tree Protocol
- IEEE802.1W for Rapid STP
- IEEE802.3X for Authentication
- Broadcasting Storm Control:Automatic
- Processing Type:Store and Forward
- Management:by Web Browser
- RingOn™:Recovery Time within 15ms
- Flow Control:Full/Half Duplex Back Pressure Flow Control
- Protocols:SNMP V1/V2/V3, DHCP Server, SMTP, IGMP Snooping/GMRP, LACP, RMON, HTTPS, Telnet, Syslog, HTTP

Switch Properties

- Priority Queues:4
- IGMP Groups:64
- Max. Available VLANs:256
- VLAN ID Range:1~4096

Interface

- RJ45 Port Connectors:10/100Base(X) or 10/100/1000BaseT(X) Auto-Negotiation
- Fiber Port Connectors:1000BaseSX/CX/LHX/ZX(SFP slots, LC connectors)
- LED Indicators:Power, Port Status, 10/100/1000M
- Console Port:DB9 male
- Output Warning:Relay, Standard 2 Pin, 0.5A@24VDC

Power Requirements

- Low Voltage Range:12~36VDC; 10~24VAC High
- Voltage Range:200~350VDC; 165~265VAC
- Connection:Standard 4 Pin Dual Power Connector

Optical Fiber

Mode	Typical Dist	Wavelength	Cable Size	TX Power	Rx Sensitivity	Transmission speed
Multi	2km	1310nm	62.5/125um	-23.5~-14dBm	< -35dBm	10/100/1000Mbps
Singl	15km	1310nm	9/125um	-15~-8dBm	< -35dBm	10/100/1000Mbps

Physical Characteristics

- Case: Slim Metal Case, IP40 Design
- Dimensions:(W×H×D):
- HFB10M-2G:89×144×125mm
- HFB18M-2G:70×149×130mm
- HFB28M-4G:91×166×130mm
- DIN Rail or Panel Mounting

Environment Limits

- Standard Temp Models:-10 to 60°C
- Extended Temp Models:-40 to 75°C
- Storage Temperature:-40 to 85°C
- Ambient Relative Humidity: 10 to 95% (Non-condensing)

Agency Approvals

- EMI:FCC Part15, CISPR(EN55022) Class A
- EMS:
- EN61000-4-2(ESD), Lv3
- EN61000-4-3(RS), Lv3
- EN61000-4-4(EFT), Lv3
- EN61000-4-5(Surge), Lv3

Ordering Information

Product Model		Connectors			
Standard Temperature Models(-)	Extended Temperature	10/100/1000BaseT(X) Or 1000Base	10/100 BaseT(X)	100BaseFX	
				MM,S	SM,SC
HFB10M-2G Series					
HFB10M-2G	HFB10-2G-W	2	8		
HFB10M-2G-2SC	HFB10-2G-2SC-W	2	6	2	
HFB10M-2G-2SSC	HFB10-2G-2SSC-W	2	6		2
HFB10M-2G-4SC	HFB10-2G-4SC-W	2	4	4	
HFB10M-2G-4SSC	HFB10M-2G-4SSC-W	2	4		4
HFB18M-2G Series					
HFB18M-2G	HFB18M-2G-W	2	16		
HFB18M-2G-2SC	HFB18M-2G-2SC-W	2	14	2	
HFB18M-2G-2SSC	HFB18M-2G-2SSC-W	2	14		2
HFB18M-2G-4SC	HFB18M-2G-4SC-W	2	12	4	
HFB18M-2G-4SSC	HFB18M-2G-4SSC-W	2	12		4
HFB28M-4G Series					
HFB28M-4G	HFB28M-4G-W	4	24		
HFB28M-4G-2SC	HFB28M-4G-2SC-W	4	22	2	
HFB28M-4G-2SSC	HFB28M-4G-2SSC-W	4	22		2
HFB28M-4G-4SC	HFB28M-4G-4SC-W	4	20	4	
HFB28M-4G-4SSC	HFB28M-4G-4SSC-W	4	20		4
HFB28M-4G-6SC	HFB28M-4G-6SC-W	4	18	6	
HFB28M-4G-6SSC	HFB28M-4G-6SSC-W	4	18		6

- All fiber cables can be equipped with ST connectors
- Typical Distance:Multi mode<3km; Single mode: Ranging from 15km to 120km
- The standard models are powered by 24VDC, 220VAC custom models are also available

HFB Series

Rack Mount Industrial Ethernet Switches

- Rack Mount Managed Industrial Ethernet Switches(10/100M)
- Rack Mount Unmanaged Industrial Ethernet Switches(10/100M)
- Rack Mount Gigabit Managed Industrial Ethernet Switches
- Rack Mount Gigabit Unmanaged Industrial Ethernet Switches

Up to 26 Fast-Ethernet Ports and 2 Gigabit Ports(Gigabit Series)

* RingOn™ Redundant Ring Technology, Recovery Time within 15ms, Supports RSTP/STP(Manager Series)

* Enriched Management Features: QoS, IGMP snooping/GMRP, VLAN, SNMP V1/V2/V3

* Multiple Redundant AC/DC Power Choices



Specifications

Technology

- Network Standards:
 - IEEE802.3 10Base-T
 - IEEE802.3u 100BaseT(X) and 100BaseFX
 - IEEE802.3ad 1000Base(X)
 - IEEE802.3z 1000BaseSX/LX/HLX/ZX
 - IEEE802.3x Flow Control
 - IEEE802.1p Classe of Service
 - IEEE802.1Q VLAN Tagging
 - IEEE802.1ad LACP
 - IEEE802.1D for Spanning Tree Protocol
 - IEEE802.1W for Rapid STP
 - IEEE802.1X for Authentication
 - Flow Control:Full/Half Duplex Back Pressure Flow Control
 - Protocols:SNMP V1/V2/V3, DHCP Server, STMP, SMTP, IGMP Snooping/GMRP, LACP, RMON,
 - HTTPS, Telnet, Syslog, HTTP

Switch Properties

- Priority Queues:4
- IGMP Groups:64
- Max. Available VLANs:256
- VLAN ID Range:1~4096

Interface

- RJ45 Port Connectors:10/100Base(X) or 10/100/1000BaseT(X) Auto-Negotiation
- Fiber Port Connectors:1000BaseSX/CX/LHX/ZX(SFP slots, LC connectors)
- LED Indicators:Power, Port Status, 10/100/1000M
- Console Port:DB9 male
- Output Warning:Relay, Standard 2 Pin, 0.5A @24VDC

Power Requirements

- Power Inputs:48VDC(8~56VDC); 110/220VAC(85~265VDC);
- 220VDC(120~370VDC); 110VDC(100~120VDC);

Optical Fiber

Mode	Typical Dist	Wavelength	Cable Size	TX Power	Rx Sensitivity	Transmission speed
Multi	2km	1310nm	62.5/125um	-23.5~-14dBm	< -35dBm	10/100/1000Mbps
Singl	15km	1310nm	9/125um	-15~-8dBm	< -35dBm	10/100/1000Mbps

Physical Characteristics

- Case: Slim Metal Case, IP40 Design
- Dimensions:(W×H×D):443×44×220mm(HFB18MC-2G/26MC-2G)
- Installation:19" rack mounting

Environment Limits

- Standard Temp Models:-10°C to 60°C
- Extended Temp Models:-40°C to 75°C
- Storage Temperature:-40 to 85°C
- Ambient Relative Humidity: 10 to 95%(Non-condensing)

Ordering Information

Product Model		Connectors			
Standard Temperature (-10°C~60°C)	Extended Temperature (-40°C~75°C)	10/100/1000BaseT(X) Or	10/100 BaseT(X)	100BaseFX	
				MM Fiber, SC	SM Fiber, SC
HFB18MC-2G Series					
HFB18MC-2G	HFB18MC-2G-W	2	16		
HFB18MC-2G-2SC	HFB18MC-2G-2SC-W	2	14	2	
HFB18MC-2G-2SSC	HFB18MC-2G-2SSC-W	2	14		2
HFB18MC-2G-4SC	HFB18MC-2G-4SC-W	2	12	4	
HFB18MC-2G-4SSC	HFB18MC-2G-4SSC-W	2	12		4
HFB26MC-2G Series					
HFB26MC-2G	HFB26MC-2G-W	2	24		
HFB26MC-2G-2SC	HFB26MC-2G-2SC-W	2	22	2	
HFB26MC-2G-2SSC	HFB26MC-2G-2SSC-W	2	22		2
HFB26MC-2G-4SC	HFB26MC-2G-4SC-W	2	20	4	
HFB26MC-2G-4SSC	HFB26MC-2G-4SSC-W	2	20		4

Remarks : 2G stands for Gigabit port and M is for managed switches.



HFB Series

IEC 61850 Ethernet Switches

HFB IEC 61850-3 Ethernet switches are designed specifically for substation environments. The entire line of PowerTrans series has passed IEC 61850-3 and IEEE 1613 (conducted by KEMA) for GOOSE compliance and zero packet loss performance. The series also supports IEEE 1588 protocol for timing accuracy over substation LAN, which is highly favorable for large-scale distributed power grids.

- * IEC 61850-3, IEEE1613 (power substations),
- * Smart web-based management makes configuration easy
- * Port-based VLAN to enhance security/network performance and ease network planning
- * 802.1p priority queues and port-based QoS to increase determinism
- * -40 to 85°C operating temperature range



Introduction

- The HFB6128 is designed to meet the demands of power substation automation systems (IEC 61850-3, IEEE 1613), and railway applications (EN50155/EN50121-4). The MX6000's Gigabit and fast Ethernet backbone, redundant ring, and 48 VDC or 110/220
- VDC/VAC dual isolated redundant power supplies increase the reliability of your communications and save on cabling/wiring costs.
- The switches design of the MX6000 also makes network planning easy, and allows greater flexibility by letting you install up to 12 fast fiber ports and 20 fast Ethernet ports.

Features and Benefits

- RingOn (recovery time < 15 ms), RSTP/STP for network redundancy
- IGMP snooping for filtering multicast traffic
- Port-based VLAN, IEEE 802.1Q VLAN to ease network planning
- QoS (IEEE 802.1p/1Q) and TOS/DiffServ to increase determinism
- Port Trunking for optimum bandwidth utilization
- RMON for efficient network monitoring and proactive capability
- SNMP v1/v2c/v3 for network management of different levels
- Bandwidth management to prevent unpredictable network status
- Lock port function for blocking unauthorized access based on MAC address
- Automatic warning by exception through e-mail or relay output
- Port mirroring for online debugging
- -40 to 85°C operating temperature range (W models)

Cyber-security Features

- User passwords with multiple levels of security protect against unauthorized configuration
- 802.1Q VLAN allows you to logically partition traffic transmitted between selected switch ports
- Secure switch ports so that only specific devices and/or MAC addresses can access the ports
- SNMP v3 provides encrypted authentication and access security

Technology

- Standards:
- IEEE802.3 10Base-T
- IEEE802.3u 100BaseT(X) and 100BaseFX IEEE802.3x Flow Control
- IEEE802.1p Classe of Service
- IEEE802.1Q VLAN Tagging
- IEEE802.1D for Spanning Tree Protocol
- IEEE802.1W for Rapid STP IEEE802.1X for Authentication
- Flow Control: Full/Half Duplex Back Pressure Flow Control Protocols: SNMP V1/V2c/V3, DHCP
- Server, SNTTP, SMTP, IGMP Snooping, RMON, HTTPS, Telnet, Syslog, HTTP

Switch Properties

- Priority Queues: 4
- IGMP Groups: 256
- Max. Available VLANs: 64
- VLAN ID Range: 1~4094

Interface

- RJ45 Port Connectors: 10/100Base Auto-sensing, Full/ Half Duplex MDI/MDI-X Auto-Negotiation
- Fiber Port Connectors: 100BaseFX, SC or ST connectors, Single-Mode or Multi-Mode
- LED Indicators: Power, Port Status, 10/100M Console Port: DB9 male

Power Requirements

- Power Inputs:
- 200~350VDC @ 20W MAX; 165~265VAC @ 20VA MAX Optical Fiber
- 100BaseFX
- Typical Dist:
- Multi-mode: 2km, 1310nm(62.5/125µm) Single-mode: 15km, 1310nm(9/125µm) Min. TX:
- Multi-mode: -23.5dBm Single-mode: -15dBm Max. TX:
- Multi-mode: -14dBm
- Single-mode: -8dBm
- RX Sensitivity: <-35dBm(Multi/Single) Physical Characteristics
- Case: Slim Metal Case, IP40 Design Dimensions: (W×H×D): 443×44×237.8mm Installation: 19" rack mounting



HFB Series

IP67 Water-Proof Ethernet Switches

HFB67 series are IP67 Water-Proof managed Industrial Ring Redundant Ethernet switches. HFB67 series fully complies with IEEE802.3 standard, and support full speed non-blocking 10M/100M store-forwarding. HFB67 series provide 8 * 10/100 Base-T(X) M12 ports. HFB67 series are equipped with high strength alloyed frame shell, which could provide a satisfied protection rank. The fan free design prevents dust and reduces the down time due to the fan fault. The reconfiguration time is only 20ms in case of a network fault. The M12 junctions apply to extreme environments with high vibration and shock. It can work in working temperature ranging from -40°C to +80°C .



HFB67 series use store-forward switching technique with a max learning ability of 8K addresses. SNMP agent and Web Management have been embedded in the switch; online status of each port is shown in web page. To optimize network traffic, network administrators can segment ports into different VLANs, or filter multicast traffic by IGMP Snooping. HFB67 series series can inspect IEEE 802.1p CoS tags information to provide a consistent classification of the entire network. Bandwidth can be managed by port rate control to avoid abnormal broadcast storm. To enhance security, port access can be limited to pre-defined IP address table.

Product Features Protection rank IP67, specially designed for critical industrial applications. M12 connector anti-vibration and shock for extreme environments. Redundant Ethernet "Supreme-Ring" with recovery time of link faults less than 20ms. IEC61850 standard, protection of harsh electrical environments. Ingenious size design, Din-Rail and Wall mounted installation is convenient for local network arrangement. High strength obturated alloyed shell provides resistance to shock and vibration, firm and durable. Provide complete network function such as VLAN, QoS, SNMP and RMON.

Technical Parameters

switching capacity	
Standard	IEEE802.3 10Base-T IEEE802.3u 100Base-TX/100Base-FX IEEE802.3x Flow Control and Back Pressure IEEE802.3ad Port Trunk with LACP
Switch Architecture	Store and Forward Switch Technology
Back-plane	6.4Gbps
MAC Address	8K MAC address table with Auto learning function
Package Switching Rating	10Mbps 14880pps 100Mbps 148800pps
Flow control	IEEE802.3x Flow control for full duplex, Back pressure for half duplex
Port Performance	
Port Number	10
Port Types	8*10/100Base-TX; M12 100M 2*100Base-FX ;waterproof LCsingle/multi mode optical fiber modules
LED Indicator	POWER; LINK/ACT
Port Trunk	IEEE802.3ad with LACP function

Environment Limits

- Extended Temp Models: -40°C to 85°C Storage Temperature: -40 to 85°C
- Ambient Relative Humidity: 10 to 95%(Non-condensing) Agency Approvals
- Power Automation: IEC 61850-3, IEEE 1613
- EMI:FCC Part15, CISPR(EN55022) Class A
- EMS:
- EN61000-4-2(ESD), Lv4
- EN61000-4-3(RS), Lv4
- EN61000-4-4(EFT), Lv4
- EN61000-4-5(Surge), Lv4
- EN61000-4-6(CS), Lv4
- EN61000-4-8
- EN61000-4-11
- Warranty
- Warranty Period: 5 years

Model Selection:

KEMA Standard	Port	100M	SC Fiber	Gigabit	Work Temperature
HFB6128-24T	24	24			-40 -- +85
HFB6128-20T4MC	24	20	4		-40 -- +85
HFB6128-16T8MC	24	16	8		-40 -- +85
HFB6128-12T12MC	24	12	12		-40 -- +85
HFB6128-8T16MC	24	8	16		-40 -- +85
HFB6128-4T20MC	24	4	20		-40 -- +85
HFB6128-24MC	24		24		-40 -- +85
HFB6128-24T-4G	28	24		4	-40 -- +85
HFB6128-20T4MC-4G	28	20	4	4	-40 -- +85
HFB6128-16T8MC-4G	28	16	8	4	-40 -- +85
HFB6128-12T12MC-4G	28	12	12	4	-40 -- +85
HFB6128-8T16MC-4G	28	8	16	4	-40 -- +85
HFB6128-4T20MC-4G	28	4	20	4	-40 -- +85
HFB6128-24MC-4G	28		24	4	-40 -- +85

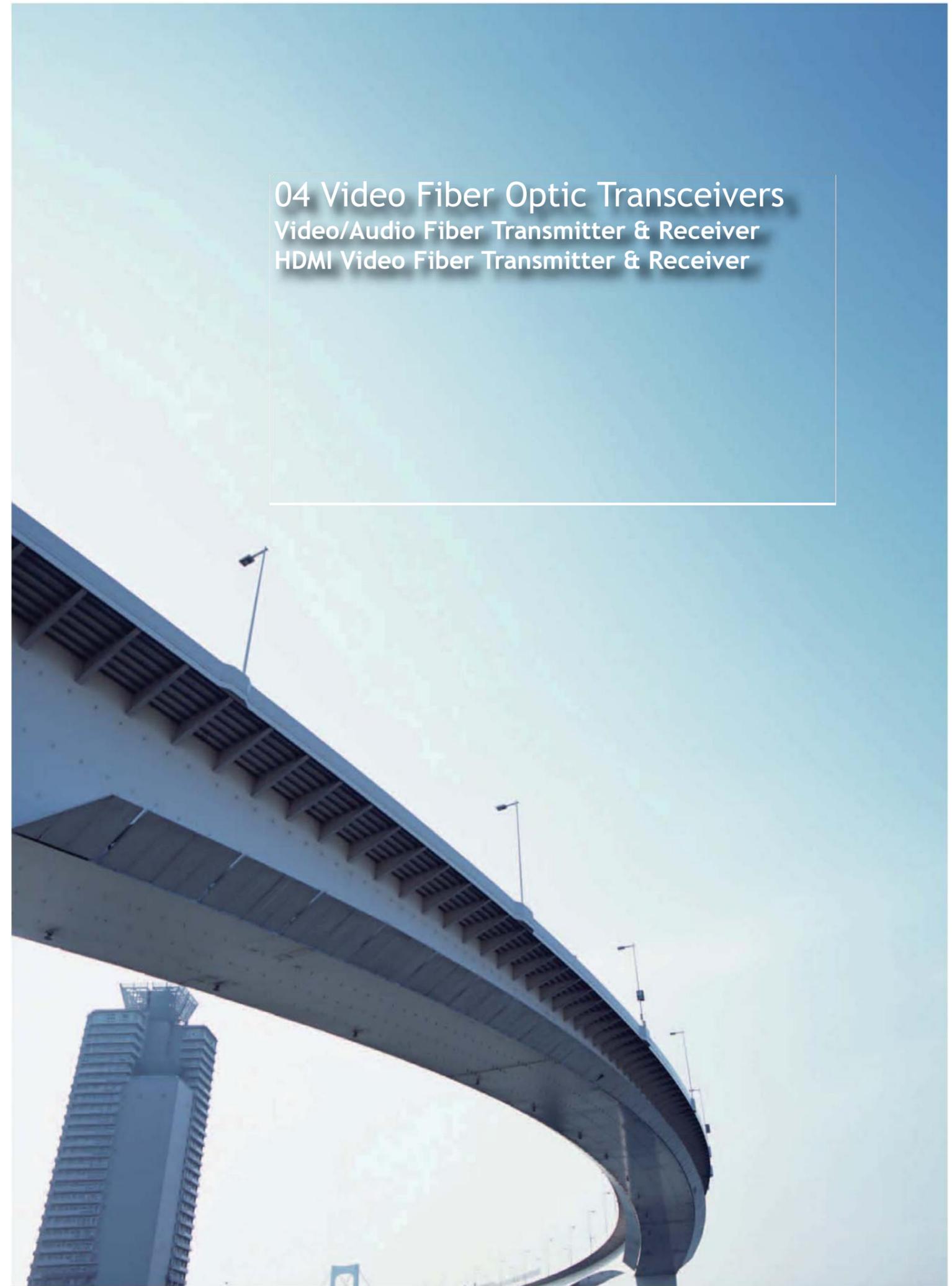
Industrial Ethernet Switch

Port Mirror	Support
Speed Limit	Support, granularity (min):128K
Flow Control	Support broadcast control
Port Security	Support secure IP control
Warning	Support power relay output warning and port LED fault warning
PoE (Optional)	Feed-voltage 24V current (max)300mA
Network Performance	
Network management	Console WEB SNMP v1/v2/v3 RMON 1 2 3 9
Redundant Ring Network Function	Support "Supreme-Ring" protection time of ring network<20ms,Support network topology such as single ring, double ring and rings coupling
VLAN	Support port based VLAN/IEEE802.1Q Tag VLAN
STP	IEEE802.1D/IEEE802.1W/IEEE802.1S
QoS Policy	IEEE 802.1p Class of service,4 priority levels every port
IGMP	Support IGMP Snooping and 256 multicast groups
User Authentication	IEEE802.1x user authentication and Radius
DHCP	Support DHCP Client
Multicast	Support IGMP v1/v2 and GMRP
System Log	Support system log
Mechanical Performance	
Dimension	160mm x 80mm x 54mm (W x D x H)
Weight	1.2kg
Ways of Mounting	Industrial Din-Rail or wall mounting.
Package and Protection	Obtured alloyed shell, IP67 protection
Electric Performance	
Power Input	Optional 24VDC 110V AC/DC 220V AC/DC
Power Consumption	<10W
Power Connector	M12 terminal
Working Environment	
Operating Temperature	-40°C to +85°C
Storage Temperature	-45°C to +85°C
Relative Humidity	0%~95% (non-condensing)
Redundant Property	
Network Redundant	Support Supreme-Ring and STP/RSTP
Port Redundant	Support Port Trunk
Certification	
ISO	ISO9001:2008 authentication
EMC	EMI: FCC Part 15 (Class A), EN55022 (CISPR22 Class A) EN55024 (Class A) CE EMS: EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-12
Safety	UL60950, cUL, EN60950
Vibration Resistance	IEC 60068-2-6
Shock Resistance	IEC 60068-2-27
Fall	IEC 60068-2-32
MTBF	1000000h (measured)

Model Selection:

Product Model	Connectors		
Extended Temperatur	10/100BaseT(X)	100BaseFX	
		MM,	SM,SC
HFB67 Series			
HFB67	8		
HFB67-2SC	6	2	
HFB67-2SSC	6		2
	4	4	
	4		4

04 Video Fiber Optic Transceivers
Video/Audio Fiber Transmitter & Receiver
HDMI Video Fiber Transmitter & Receiver



HFB-FO-V Series

Video/Audio Fiber Optic Transmitter & Receiver

Our main product, digital fiber optic video transmitter can simultaneously transmit 1-128 channels of 8-bit or 10-bit digitally encoded video/return or bidirectional data/unidirectional or bidirectional audio / Ethernet / Telephone / binary input/output over one multimode or single-mode optical fiber. These multiplexers are typically used in applications where the cameras have P/T/Z capabilities. Plug and Play design ensures the ease of installation and operation. Electronic and optical adjustments are never required. LED indicators are provided for instantly monitoring system status. Devices are available for either standalone or rack-mount installation, which is suitable for different working environment .

Features

8-bit or 10-bit digitally encoded and non-compression video transmission
 IDirectly compatible with NTSC, PAL, and SECAM CCTV camera systems and support
 RS-232, RS-422, and RS-485 data protocols
 Power supply and other parameter state indication, which can monitor the operation condition of system
 Support no-damage regenerative trunk of video
 Constant input optical power, and large dynamicrange, no electrical or optical adjustments required.
 pecial ASIC design.



Industry-grade of operating temperature from -10c to 75c , which is applied to the different working environment
 Hot-swap function
 Stand-alone type or card-type installed in 19" 2U or 4U rack-mount chassis.
 Optical interface: FC,ST, SC (optional)
 Abundant signal interface, such as video, data, audio, telephone, Ethernet, binary input/output and talkback
 IMax range 80km
 Application
 City traffic monitoring system
 Police and safe city monitoring
 High way security protection and toll station system
 Building and campus monitoring system
 Industrial monitoring(airport, chemical plant, steel, oil, railway, irrigation works, mine and so on)
 Military monitoring(storage, frontier defense, guard, national defense and so on)
 Electronic power oil field, TV station program broadcasting system
 Gymnasium/live video and audio transmission)

Specifications

Optical

Wavelength	1310nm&1470nm~1610nm
Output Power	-10~-3dBm / -3~+2dBm
Optic fiber	50/125u multimode 62.5/125u multimode 9/125u single mode
Rx sensitivity	-25dBm
Optical connector	FC ST (optional)
Distance	0~2KM (MM) / 0~80KM (SM)

Video

Number of Channels	1
Input/output impedance	BNC 75Ω (unbalance)
Video bandwidth	5HZ~8MHZ
Standard video	
Video voltage range	0.6~2.0Vp-p
Differential Gain	< ±1.5%
Differential Phase	< ±1%
SNR	>60dB (8 bit) / >70dB (10 bit)
Connector	BNC

Video/Audio Fiber Optic Transmitter & Receiver

Audio

Input/output Impedance	600ohm(unbalance)
Max input/output voltage	3.0Vp-p
Frequency Response	10 Hz-20kHz @±3dB
SNR	> 70dB
Connector	Standard terminal lead

Data

Data protocol	RS232 RS422 RS485 Manchester, BIPHASE data
Data rate	0~200 Kbps
Error rate	< 10-9
Connector	Standard terminal lead

Ethernet

Work mode	Full duplex/half duplex
Data Rate	10/100Mbps(AUTO)
connection terminal	RJ45

Telephone

Connector	Standard RJ11
Phonetic bandwidth	8KHz
Work mode	Point to point hot line, program controlling switch/extension mode
Distortion	<1%

Binary input/Output

Connector	Standard terminal lead
Signal input	Alarm, Binary input, support TTL, RS-232/422/485 or passive
	Switch button
Signal output	Arbitrary alarm, Binary output, support TTL, RS-232/422/485 or passive relay output

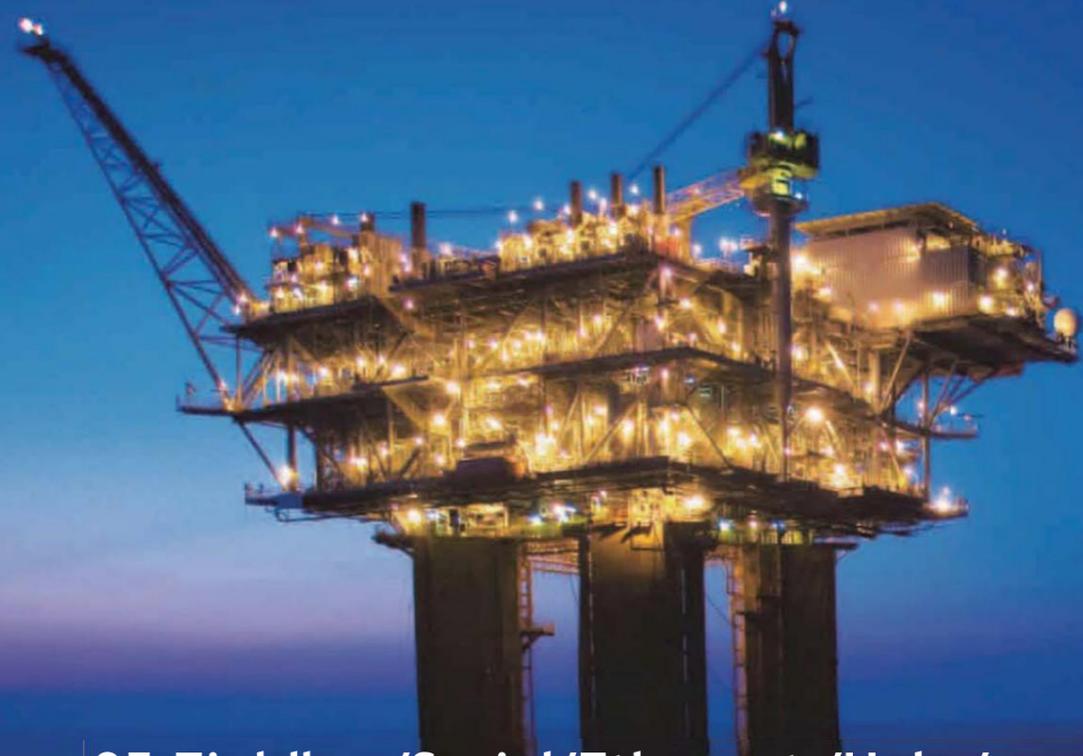
Total Weight: 1kg/pair (with power and package)

Operating Voltage: DC 5V (we will offer external power supply from AC100-240V to DC 5V for each unit) Operating Temperature : -10°C~ +75°C Storing Temperature : -40°C~ +85°C

Humidity: 0~95% Non-condensing

MTBF : ≥ 100000Hours

Model Number	Description
HFB-FO-V-P1	Single Mode or Multi Mode, 1 Fiber+1 Video(RS-485/RJ45 Ports as Option)
HFB-FO-V-P2	Single Mode or Multi Mode, 1 Fiber+2 Video(RS-485/RJ45 Ports as Option)
HFB-FO-V-P4	Single Mode or Multi Mode, 1 Fiber+4 Video(RS-485/RJ45 Ports as Option)
HFB-FO-V-P6	Single Mode or Multi Mode, 1 Fiber+6 Video(RS-485/RJ45 Ports as Option)
HFB-FO-V-P8	Single Mode or Multi Mode, 1 Fiber+8 Video(RS-485/RJ45 Ports as Option)
HFB-FO-V-P10	Single Mode or Multi Mode, 1 Fiber+10 Video(RS-485/RJ45 Ports as Option)
HFB-FO-V-P12	Single Mode or Multi Mode, 1 Fiber+12 Video(RS-485/RJ45 Ports as Option)
HFB-FO-V-P16	Single Mode or Multi Mode, 1 Fiber+16 Video(RS-485/RJ45 Ports as Option)
HFB-FO-V-P32	Single Mode or Multi Mode, 1 Fiber+32 Video(RS-485/RJ45 Ports as Option)
HFB-FO-V-HDMI	Single Mode or Multi Mode, 1 Fiber+1 Video(RS-485/RJ45 Ports as Option)



05 Fieldbus/Serial/Ethernet /Hubs/ Protocol Converters

Serial/CAN/Ethernet/LON/USB Converters
Serial/CAN/Profibus/LON/Fiber Hubs

BUE-S-E Series

Serial/Ethernet Device Servers

The BUE-S-E series serial device servers are designed to make serial devices network-ready in an instant and give your PC software direct access to serial devices from anywhere on the network. The device servers are ultra lean, ruggedized, and user friendly, making simple and reliable serial to Ethernet solutions possible.

Features and Benefits

- World's lowest power consumption
- Speedy 3-step web-based configuration
- Surge protection for serial, Ethernet, and power lines
- COM port grouping and UDP multicast applications
- Screw connectors for secure installation
- DC power inputs with terminal block
- Versatile TCP and UDP operation modes

A Greener Serial-to-Ethernet Solution

The BUE-S-E serial device server is a small but powerful ARM-based serial-to-Ethernet SoC with RAM and Flash embedded. With the ARM7 inside, the BUE-S-E series becomes the lowest power consumption device server in the world. The BUE-S-E series saves at least 50% on power consumption compared to existing solutions on the market, helping engineers meet the tough environmental compliance challenges found in today's industrial environments.

3-step Web-based Configuration

The BUE-S-E 3-step web-based configuration tool is straightforward and user-friendly. The BUE-S-E web console guides users through 3 simple configuration steps that are necessary to activate the serial-to-Ethernet application. With this speedy 3-step web-based configuration, a user only needs to spend an average of 30 seconds to complete the settings and

COM Port Grouping

The BUE-S-E COM Grouping function allows you to create a COM Group and redirect data from it to several physical COM ports on device servers. With COM Grouping, you will be able to control multiple physical serial ports simultaneously by operating only one COM port.

The BUE-S-E series can conveniently connect up to 2 serial devices to an Ethernet, allowing you to network your existing serial devices with only basic configuration. With BUE-S-E series, you can both centralize the management of your serial devices, and distribute management hosts over the network. BUE-S-E series can be used to connect different devices for remote management, each serial port operates independently to provide maximum versatility, each port can be operate in Driver, TCP Server, and TCP Client mode independently.

Features:

1. Adopt 32 bit ARM processor
 2. 2 serial ports, with support for RS-232/RS-485/RS-422
 3. Support 10/100M Ethernet
 4. Support 300bps-460.8Kbps
 5. Support TCP, UDP, ARP, ICMP, HTTP, TELNET and DHCP protocol
 6. Support across gateway, router communication
 7. Support standard TCP/IP SOCKET
 8. Support Virtual serial driver access and auto connect after the network disconnect
 9. Choice of configuration methods: Windows, TELNET and WEB
 10. Support DIN-Rail or wall mounting installation
- Specifications:



Ethernet

Number of ports:1/2/4/8 ports
Standard:10/100Base-T(X)
Speed:10/100M auto-sensing
Working mode: half /full duplex
Working: TCP Server, TCP Client, UDP and Real COM driver
Memory: 128KB RAM, 512K flash
Electromagnetism isolate: 1.5KV
Connector: RJ45
Serial
Standard:RS-232/RS-485/RS-422
Number of ports: 2
Signals: RS-232:DCD,RXD,TXD,DTR,GND,DSR,RTS,CTS
RS-485:Data+,Data-,GND
RS-422:TXD+,TXD-,RXD+,RXD-,GND
Parity: None, Even, Odd, Space, Mark
Data bits: 5bit, 6bit, 7bit, 8bit
Stop bits: 1, 1.5, 2
Baud rate: 300bps ~ 460.8Kbps
Flow control: RTS/CTS or XON/XOFF
Direction control: RS485 side adopt ADDC technology, auto text and control data transfer direction
Loading: RS-485/422 side support 32 nodes (customize 128 nodes) loopback
Transmission: RS-485/422 side 1200M, RS-232 port 15M
Interface protection : 600W surge protection, 15KV ESD protection

Software

Network protocols: Support TCP, UDP, ARP, ICMP, HTTP, TELNET and DHCP
Driver support: Windows Real COM driver(Windows NT/2000, Windows XP/2003)
Configuration options: Windows, TELNET and WEB

Power

Power input: 9-40VDC
Consumption: <1W

Environment

Working temperature:-20°C~60°C
Storage temperature:-25°C~85°C
Humidity: Relative humidity 5% to 95%

Appearance

Color: Black
110*74*24mm (L*W*H)
Material: Iron (Enclosure)

BUE-H Series

Rs-232/485/422/Profibus/CAN/Lonworks Hubs

The BUE-H series Star Hub transforms RS-232/485/422/Canbus/Profibus/Lonworks Bus into star topology or stelliform topology. Viz. transform two ways RS-232/485/422/CAN/Profibus/Lonworks bus input into N(2--24) ways output, and the installation will be quite simple. This enables serial/fieldbus technology to be quite flexible. The product transforms long-distance distributed nodes, slave devices, and a master device into a dependable serial/fieldbus network. It supports POLLING Protocol. This product is a simple interface converter. It is transparent and compatible with all upper protocol levels.

The Star hub can be widely used, such as Industrial Controls, Intelligent Transportation Systems (ITS), Industrial Networking, Supervisory Control and Data (SCADA) and so on.



1.2 Technical Specification

- Working Rate: 0 ~ 500Kbps
- Distance: 0 ~ 1200m
- Maximum Interface Access Nodes Number: 128
- Connector Type: Terminal or DB9

GENERAL

- Operating Temperature: -30 ~ 70°C / -30 ~ +158°F
- Operating Humidity: 0 ~ 95% non-condensing
- Mean Time Between Failure (MTBF): > 70,000hrs
- Power Supply Adaptor: AC,DC 220V/110V,24V,12V,+5V
- Enclosure Color: Silver or Black

BUE-CAN Series

Rs-232/485 to CAN Gateway

The Rs-232/485 to CAN Bus Converter utilizes automatic bidirectional switching requiring no control signal.High efficiency, power & signal double isolated product. It can convert RS-232/S-485 system fit with CAN Bus system. Then we can use CAN realize RS-232/485 signal to further transmission. Support Can Bus 2.0A/B protocol
Can set the RS-232/485 and CAN Bus baud rate and communication format by software



Model	BUE-C-232,BUE-C-485	
Extended Terminal	BUE-C-232	1channel CAN2.0A/B<->RS232,Transparent Transmission.Data indication light
	BUE-C-485	1channel CAN2.0A/B<->RS485,Transparent Transmission.Data indication light
CANPort Parameter	SAJ1000 CAN control chip,Max 1Mbps/channel,Rate Optional,64bits receive cache,13 bits transmit cache	
485 Port Parameter	Max rate115200 bps,Can be set up without calibration,odd,even check-up ,5,6,7,8 data bits,1,2stop bits.Auto-sensing.Bus conflict examination.Avoid-collision function,Each port can maximumly connect 64 nodes	
232 Port Parameter	3-wire RS232 port,maximum 115200bps,Can be set up without calibration,odd,even check-up ,5,6,7,8data bits,1,2 stop bits,Auto-sensingdes	
CAN Transmit Mode	1.Flow transfer mode,Compatible with RS232/RS485 2.CAN data pack mode,support CAN2.0A/Bdata transmission	
Terminator	CAN Terminator	
Security	Internal IP filter,maximum 8 certified IP Optional RC6 encryption module to the data transmission,a 64 Bit or 128 Bit data encryption	
Power Voltage	DC8-48V	
Power Supply Mode	Site Power or CAN Bus power	
Protection	Power:400W surge protection,Polarity line protection order All terminators: ESD 15kv,surge protection System: Auto Restart function. Optical Isolation(Optional)	
Optical Isolation	Isolate the wires between CAN,RS485 and MCU,ground,power supply.	
Work Condition	Temperature:-20-60C,Humidity:5% - 95% RH,Non-condensed.	
Accessory	VSPM virtual serial software,manuals.	

Fieldbus/Serial/Ethernet /Hubs/Protocol Converters

BUE-CAN Series

Ethernet to CAN Gateway

Our CAN Bus to Ethernet (CAN/Ethernet) module converter is an intelligent CAN bus communication interface that is compatible with TCP/IP protocol and supports one or two CAN channel. Using this module will enable PC to connect to CAN-bus network via USB bus, forming the CAN-bus network control nodes for the data processing and data collection for the CAN-bus networks such as bus laboratory, industrial control, intelligent residential zone, auto electronics network, and etc.

CAN Bus to Ethernet module comes with an electrical isolation module, which could be used to avoid the damage caused by the ground loop and enhance the system reliability when working under a tough environment.

CAN Bus to Ethernet module can use our Tester software provided by us to directly finish CAN Bus message sending, and receiving.

1.2 Parameters

Application as Ethernet based interface to the CAN bus
Microcontroller STR912FAW44X6(ARM9 Based)
Ethernet 10M/100M
Baud rates up to 1MB



CAN 2.0A (11-bit ID standard frames) and 2.0B (29-bit ID extended frames) Config software available through the Ethernet interface
Examples of Visual C++, C++Builder are available; Max data flow 6000PS (extend frame)
Operating temperature: -30C to +70C
Physical size: (length) 105mm * (width) 84mm * (height) 28mm. Powered by DC (7 to 40V)
Can Bus port number: 1 or 2

1.3 Typical applications

CAN-bus network diagnosis and test
Auto electronic applications
Electric power communication network
Industrial control devices
High-speed and large data communications

RITE CAN Series

CAN to USB Converter

CAN to USB is a very small dongle that plugs into any PC USB Port and gives an instant CAN connectivity. This means it can be treated by software as a standard COM Port (serial RS232 port) which eliminates the need for any extra drivers or by installing a direct driver DLL for faster communications and higher CAN bus loads. Sending and receiving can be done in standard ASCII format.

Specifications:
Can handle up to 1Mbit/s CAN bitrate
Industrial Temp range -30C to +85C
USB 2.0 Full Speed,
Compliant to CAN 2.0A (11bit ID's) and CAN 2.0B (29bit ID's)
32 CAN frames deep FIFO buffer for incoming frames in CANUSB firmware



Time Stamp option in mS for incoming frames
CANbus connection according to CiA DS102-1 standard
Power supplied via USB
Free Interface DLL and ActiveX controller or low level Ascii Commands via USB driver
Green LED for CAN activity
Red LED for CAN error activity

BUE-CAN Series

CAN PCI Card

One or Dual-port Isolated PCI CAN Interface Cards

Introduction:

The PCI-CAN card is a Controller Area Network (CAN) interface card. It supports one or dual-port CAN's interface that can run independently or bridged at the same time. The built-in CAN controller of this card is Philips SJA1000, which provides bus arbitration and error detection with auto correction and re-transmission function.

Features :

Passive CAN Interface for PCI slots

One, two CAN channels with Controller NXP SJA1000

Baud rates up to 1MBaud, 82C251 Transceiver



CAN is connected via a 9-pin SUB-D as defined by the CiA DS102-1 standard

CAN 2.0A (11-bit ID standard frames) and 2.0B (29-bit ID extended frames)

Development kits for Windows 2000/XP/Vista

Examples of Visual Basic 6.0, Visual C++ 6.0, C++builder 6.0, Delphi7.0, Labview are available

Max data flow 3000 fps (extend frame)

Operating temperature: -25 to +85C

Model number	CAN	Work temperat	Description
BUE-CAN-PCI-5001 One Channel CAN-PCI	1	-25°C ~	Industrial PCI to 1 CAN
BUE-CAN-PCI-5002 2 Channels CAN-PCI Card	2	-25°C ~	Industrial PCI to 2 CAN
BUE-CAN-PCI-6001 One Channel CAN-PCI	1	0°C ~ +70°C	Intelligent PCI to 1 CAN
BUE-CAN-PCI-6002 2 Channels CAN-PCI Card	2	0°C ~ +70°C	Intelligent PCI to 2 CAN

BUE-CAN Series

CAN Repeater

CAN Bus Isolated Repeater (BUE-CAN-RP)

The BUE Series CAN Bus Isolated Repeater utilizes automatic bidirectional switching requiring no control signal. This product can insulate CAN bus for a distance up to 10Km. This product enables equipment connections to the bus to be doubled. All upper levels protocol is supported.

The Series CAN Bus Isolated Repeater can be widely used, such as Industrial Controls, Intelligent Transportation Systems (ITS), Industrial Networking, Supervisory Control and Data (SCADA) and so on.



Fieldbus/Serial/Ethernet /Hubs/Protocol Converters

ELECTRICAL

Isolation 3000Vsm

Lightning/Surge Protection 1~2 lightning strikes

ESD Protection 15KV

CAN BUS

Connector Type Terminal

Data Rate DC -1.2Mbps

Extended Distance 10Km

GENERAL

Operating Temperature -40 ~ 70C / -40 ~ +158F

Operating Humidity 0 ~ 95% non-condensing

Mean Time Between Failure (MTBF) > 70,000hrs

Power Supply Input Voltage 9~18V DC

Power Supply Output Voltage 5V DC

Dimensions (H x L x W) 80mm x 60mm x 23mm/3.15" x 2.36"

BUE-S-C Series

RS-232/485/422/USB Converters



Ordering Information:

Model Number	Description
BUE-232-485	Port powered RS-232 to RS-485 converter
BUE-H485-D	RS-232/485/422 Isolated converter
BUE-232-ISO	RS-232 isolator
BUE-232-RP	Long distance RS-232 repeater
BUE-POE232-485	RS-232 to RS-485 isolated converter
BUE-POE232-422	Port powered RS-232 to RS-422 converter
BUE-485-RP	RS-485 isolated repeater
BUE-232-USB	RS-232 to USB converter
BUE-485-USB	RS-485 to USB converter
BUE-TCP-USB	Ethernet to USB Converter

06 Industrial Wireless

Zigbee Gateways

Wireless AP

Mesh Point



Industrial Wireless

BUE-ZIG Series

**RS-232/485/Ethernet/USB/
Canbus to Zigbee Gateways**

Product Description

ZIGBEE wireless module is full zigbee wireless communication equipment,integrated with zigbee 2.4G RF modem and MCU,excellence with far distance communication, excellently anti-jamming capacity.The zigbee network is constituted of the center node and access node, the center node is PAN_Coord, the access node is router or end device. you should install the PAN_Coord first, then install the access node.



Ordering Information:

Model Number	Description
BUE-ZIG-485	Wireless RS-485 to Zigbee gateway
BUE-ZIG-232	Wireless RS-232 to Zigbee gateway
BUE-ZIG-USB	Wireless USB to Zigbee gateway
BUE-ZIG-CAN	Wireless CAN to Zigbee gateway

BUE-AP Series

Industrial Wireless Access Point

In computer networking, a wireless access point (AP) is a device that allows wireless devices to connect to a wired network using Wi-Fi, or related standards. The AP usually connects to a router (via a wired network) if it's a standalone device, or is part of a router itself.The wireless access points are managed by a WLAN Controller which handles automatic adjustments to RF power, channels, authentication, and security. Further, controllers can be combined to form a wireless mobility group to allow inter-controller roaming. The controllers can be part of a mobility domain to allow clients access throughout large or regional office locations. This saves the clients time and administrators overhead because it can automatically re-associate or re-authenticate.
Indoor AP:



Outdoor AP(8km distance):

Model:	BUE-AP01A	BUE-AP02A	BUE-AP03A
	802.11 a/b/g/n	802.11 a/b/g/n	802.11a/b/g/n
Frequency	2.4/5GHz	2.4/5GHz	2.4/5GHz
Chip	AR7240(400MHz)	AR7161 (680MHz)	AR7130 (300MHz)
Rate	300Mbps	300Mbps	300Mbps
RAM	32MB (Max 64MB) DDR SDRAM	32MB (Max 64MB) DDR SDRAM	32MB (Max64MB) DDR SDRAM
Flash	4MB (Max16MB)	8MB (Max16MB)	4MB (Max16MB)
Ethernet Port	2 x 10/100 BASE-T RJ45	1 x 10/100 BASE-T RJ45	1 x 10/100 BASE-T RJ45
Output Power	21dBm	29dBm	29dBm
Work Power	5.5Watts	7.5watts	7.5watts
Antenna	2dBi Omnidirectional	2dBi Omnidirectional	2dBi Omnidirectional
Antenna Head	2 x Fix Omnidirectional 2 x RP-SMA head	2XRP-SMA head	2XRP-SMA head
POE	Passive PoE	Passive/ 802.3af PoE	Passive/ 802.3af PoE
Temperature	Work : -20°C— 70°C Storage: -40°C— 90°C	Work : -20°C— 70°C Storage: -40°C— 90°C	Work : -20°C— 70°C Storage: -40°C— 90°C

Outdoor AP(3km distance):

Model	BUE-AP01B	BUE-AP02B	BUE-AP03B
Standard	802.11 b/g/n	802.11a/n	802.11a/n
Frequency	2.4GHz	5GHz	5GHz
Chip	AR7240	AR7240	AR7240
Rate	300Mbps	300Mbps	300Mbps
RAM	32MB (Max 64MB) DDR SDRAM	32MB (Max64MB) DDR SDRAM	32MB (Max64MB) DDR SDRAM
Flash	4MB (Max 16MB)	4MB (Max 16MB)	4MB (Max 16MB)
Ethernet port	1 x 10/100 BASE-T RJ45	1 x 10/100 BASE-T RJ45	1 x 10/100 BASE-T RJ45
Output Power	26dBm	20dBm	26dBm
Work Power	7Watts	5.5watts	7watts
Antenna	8dBi Point to point	13dBi Point to point	13dBi Point to point
POE	Passive PoE	Passive PoE	Passive PoE

Outdoor AP(10km distance)

Model	BUE-AP01C	BUE-AP-2C	BUEAP-03C	BUE-AP04C
Standard	802.11 b/g/n	802.11a/n	802.11 a/n	802.11b/g/n
Frequency	2.4GHz	5GHz	5GHz	2.4GHz
Chip	AR7130 (300MHz)	AR7130(300MHz)	AR7130 (300MHz) AR7240 (400MHz) AR7161	AR7130 (300MHz) AR7240 (400MHz) AR7161 (680MHz)
Rate	300Mbps	300Mbps	300Mbps	300Mbps
RAM	32MB DDR	32MB (Max 64MB) DDR	32MB(Max 64MB) DDR SDRAM	32MB(Max 64MB) DDR SDRAM
Flash	4MB	4MB (Max16M)	4/8MB (Max16M)	4/8MB (Max16M)
Ethernet port	1 x 10/100 BASE-T	1 x 10/100 BASE-T RJ45	1-2 x 10/100 BASE-T RJ45	1-2 x 10/100 BASE-T RJ45
Output	29dBm	26dBm	20-29dBm	20-29dBm
Work Power	8.9 Watts	7.5 Watts	7.9 Watts	7.9 Watts
POE	Passive PoE	Passive PoE	Passive/802.3af PoE	Passive/802.3af PoE

**BUE-MP Series****Mesh Point**

BUE-MP series MeshPoints, powered by patented BUENO Mesh@work are enterprise grade mesh nodes strategically deployed to form intelligent wireless mesh networks, each one of which is generally built with three or more mesh nodes. The MeshPoint product line, including indoor as well as outdoor are specifically designed for enterprises that need robust, reliable, and adaptable WiFi backed by a simple, efficient, and centralized management system.

**Descriptions:**

- Enterprise Grade CPU (AR7240– 400MHz ; AR7161 – 680MHz)
- Single & Dual 802.11n Radio Solution
- Horizontally polarized and vertically polarized Omnidirectional antennas
- 802.3af PoE Compatible
- High- Power (Aggregate 26dBm – 29 dBm)
- Self- healing mesh, routes the traffic on alternate link in cases of failure, ensuring service & network availability
- Managed by Internet Cloud Manager/ Embedded MeshController

	Model	Band	Chipset	Power			
Indoor	BUE-MP01	b/g/n 2 x (2.4GHz) FE Ports	AR7240 (400MHz)	26dBm@11g aggregate	2	x	2dBi
	BUE-MP02	a/b/g/n (680MHz) Gigabit Ports	AR7161 23dBm@11g	26dBm@11a	4 x	2dBi	2 x (2.4/5GHz)
Outdoor	BUE-MP03	b/g/n 2 x (2.4GHz)	AR7240 (400MHz)	29dBm@11g 6.5dBi@2.4GHz aggregate	Integrated	omni	antennas
	BUE-MP04	a/b/g/n Integrated Ports	AR7161 6.5dBi@2.4GHz (2.4/5GHz) (680MHz)	29dBm@11a/g	1	x	aggregate 7dBi@5GHz omni antennas Gigabit



07 GPS Time Servers

NTP/SNTP/IRIG Time Servers

SY Series

GPS NTP/SNTP Time Servers

Product Description:

Signal source: BUENO SY series GPS time server supports GPS or BD satellite systems.
 Time output: NTP, SNTP, IRIG-B, RS-485 Terminal, RS-232 DB9, BNC, fiber optic, PPS
 Power supply: DC or AC, redundant dual power supply supported
 Standard package: Master clock, 30 meters GPS antenna, software
 Redundancy master clock: Supported
 Enclosure: Silver or black color, 1U, 2U or 3U chassis
 OEM service: NTP/SNTP RJ45, RS485/232 and Irig-B output ports can be extended according to customer's requests. Other OEM also can be supported.



Model Selection:

Model	Technical Parameters	Comment
SY-GPS-2-G	2 channel 1 PPS, 2 channel 1 PPM, 1 channel 1 PPH (TTL/ active optical isolation and passive) 4 channel RS232, 2 channel RS485 (serial code) 2 "RS485 (IRIG-B (DC) difference), lose electric/out-of-step alarm to the 2	Ac/dc power supply terminals wide input Optional NTP and optical output
SY-GPS-2-E16	2 channel 1 PPS, 2 channel 1 PPM, 1 channel 1 PPH (TTL/ active optical isolation and passive) 4 channel RS232, 2 channel RS485 (serial code) 16channel"RS485 (IRIG-B (DC) difference), lose electric/out-of-step alarm to the	Ac/dc power supply terminals wide input Optional NTP and optical output
SY-2U-TIME SY-2U-GPS-CPU X1 SY-2EX-IRIG-B (DC) X1	12 "RS485 (IRIG-B (DC) difference), lose electric/out-of-step alarm to the 2	2U chassis Can be expanded plug-in
SY-GPS-2-E32	2 channel 1 PPS, 2 channel 1 PPM, 1 channel 1 PPH (TTL/ active optical isolation and passive) 4 channel RS232, 2 channel RS485 (serial code) 32 "RS485 (IRIG-B (DC) difference), lose electric/out-of-step alarm to the 2	Ac/dc power supply terminals wide input Optional NTP and optical output
SY-2U-TIME SY-2U-GPS-CPU X1 SY-2EX-IRIG-B (DC) X3	32channel"RS485 (IRIG-B (DC) difference), lose electric/out-of-step alarm to the 2	2U chassis Can be expanded plug-in
SY-GPS-2-FS16 (PPS OutPut)	2 channel 1 PPS, 2 channel 1 PPM, 1 channel 1 PPH (TTL/ active optical isolation and passive) 4 channel RS232, 2 channel RS485 (serial code) 2 "RS485 (IRIG-B (DC) difference), 16 channel 1 PPS / 1 PPM high-pressure high-speed photoelectric isolated active and passive output lose electric/out-of-step alarm to the 2 With expand output interface (can direct drive extension device)	Ac/dc power supply terminals wide input Optional NTP and optical output
SY-GPS-2-FM16 (PPM ,Pulse Per Minute		
SY-2U-TIME SY-2U-GPS-CPU X1 SY-2EX-1PPS/1PPM X1	12 "RS485 (IRIG-B (DC) difference), , lose electric/out-of-step alarm to the 2	2U chassis
SY-GPS-2-FS32 (PPS Output)	2 channel 1 PPS, 2 channel 1 PPM, 1 channel 1 PPH (TTL/ active optical isolation and passive) 4 channel RS232, 2 channel RS485 (serial code) 2 "RS485 (IRIG-B (DC) difference), 32 channel 1 PPS / 1 PPM high-pressure high-speed photoelectric isolated active and passive output lose electric/out-of-step alarm to the 2 With expand output interface (can direct drive extension device)	Ac/dc power supply terminals wide input Optional NTP and optical output
SY-GPS-2-FM32 (PPM ,Pulse Per Minute		
SY-2U-TIME SY-2U-GPS-CPU X1 SY-2EX-1PPS/1PPM X3	36 "RS485 (IRIG-B (DC) difference), , lose electric/out-of-step alarm to the 2	2U chassis
SY-GPS-2-NET	2 channel 1 PPS, 2 channel 1 PPM, 1 channel 1 PPH (TTL/ active optical isolation and passive) 4 channel RS232, 2 channel RS485 (serial code) 2 "RS485 (IRIG-B (DC) difference), lose electric/out-of-step alarm to the 2 With expand output interface (can direct drive extension device)	Ac/dc power supply terminals wide input. Optional fiber optical output