Fibre Optic and Wireless Solutions

Fieldbus Converters

Low Cost Fieldbus Converters

Ethernet Converters

Device Servers

Wireless Converters
Access Point / Bridges

Po Box 1778, Cleveland DC, QLD 4163 Ph: 07 3488 0177 Fax: 07 3488 0144 sales1@automationwarehouse.com.au www.automationwarehouse.com.au

Product description

The AW 972-PBR range provide Fibre optical data transmission in bus networks. A special multifunctional fibre optic system allows creating optical ring structures.

These systems are especially suitable for applications with strict safety-related requirements such as in process industry, factory Automation, Water and Waste Water, Metals and Minerals handling, tunnel ventilation systems and in railway technology.

The ruggedness to electrical and magnetic interferences, the potential separation of transmitter and receiver as well as ranges up to 40km between two fiber optic systems are important performance features of the transmission with POF, HCS and multimode or singlemode fiber optics. LEDs and potential free contacts of a differential relay signalize defective states.

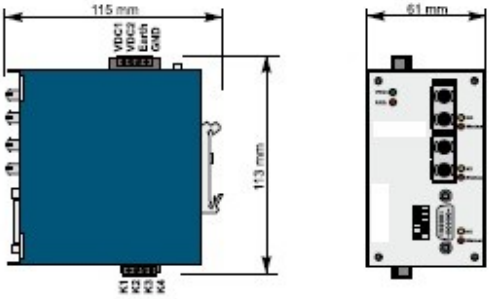
Apart from ST and SC as optical connection types, E2000 is also available. All systems feature communication with two fibers or a single fiber by BIDI technology with SC connection.

Star and Ring layouts, Multidrop with virtually unlimited Converters.
Longer Distances using the 1300nm Wavelength.
2 year warranty
Quality Stainless power coated all metal casing
DIN rail mounted, Dual 24VDC connections.
Alarm relay

Profibus Fibre Optic Converters (OLMs)

Redundant ring

Also for Siemens MPI



Technical data

Fiber optic connection	SMA, ST, SC, E-2000, FC-PC
Fiber types	POF 980/1000µm HCS (PCF) 200/230µm Multimode 50/125µm or 62,5/125µm Singlemode 9/125µm
Fiber optic range	up to 100km
Wavelength	650 nm, 850nm, 1300nm or 1510nm
Data rate max.	12 MBit/s
Transmission type	half duplex
Connection plug	9 pole SUB-D female and 6 pole terminal
Status LEDs	Power supply (green) Data reception (yellow) Status (red)
Operating voltage	12-30VDC, optionally 24-60VDC, other voltages on request
Housing	Stainless steel, powder coated

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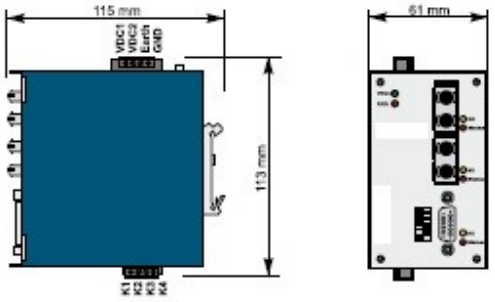
Quality Stainless power coated all metal casing
DIN rail mounted, Dual 24VDC connections.
Alarm relay

Serial Fibre Optic Converters (OLMs)

Redundant ring



Fibre Optic converters for the following Communications:

TTY

Technical data	
Fiber optic connection	ST, SMA, SC, E2000, FC-PC
Fiber types	POF 980/1000µm Multi-Mode 62,5 (50) /125µm Single-Mode 9/125µm
Fiber optic range	up to 100km, others in request
Wavelength	650 nm to 1300 nm
Data Rate	19,2 KBit/s
Transmission Type	Full duplex, half duplex
Connection plug	9 pol. SUB-D, female
Status LEDs	Power supply (green) Data reception (yellow) Status (red)
Operating Voltage	24 V (18...30 VDC), other voltages on request
Housing	Stainless steel, powder coated

RS232

Technical data	
Fiber optic connection	ST, SMA, SC, E2000, FC-PC
Data Rate	max. 230 kBit/s
Fiber type	Multimode 50/125µm or 62,5/125µm HCS (PCF) 200/230µm Singlemode 9/125µm
Fiber optic range	up to 100km, others on request
Wavelength	650nm, 850nm, 1300nm or 1510nm
Status - LEDs	Power (green), Error (red), Data (yellow)
Operating Voltage	12-30VDC, optionally 24-60VDC, other voltages on request
Housing	Stainless steel, powder coated

RS422

Technical data	
Fiber optic connection	ST, SC, SMA, E2000
Data rate	up to 1,5Mbit/s
Fiber types	POF 980/1000µm HCS (PCF) 200/230µm Multimode 50/125µm or 62,5/125µm Singlemode 9/125µm
Fiber optic range	up to 100km, others on request
Wavelength	650nm, 850nm, 1300nm or 1510nm
Transmission type	full duplex
Status - LEDs	Power supply (green) Data (yellow) Status (red)
Operating voltage	12-30VDC, optionally 24-60VDC, other voltages on request
Housing	Stainless steel, powder coated

RS485

Technical data	
Fiber optic connection	ST, SMA, SC, E2000, FC-PC
Fiber types	POF 980/1000µm HCS (PCF) 200/230µm Multimode 50/125µm or 62,5/125µm Singlemode 9/125µm
Fiber optic range	up to 100km, others on request
Wavelength	650 nm, 1300 nm, 1500 nm
Data rate	19,2 MBit/s
Transmission type	halfduplex
Connecting plug	9 pole SUB-D female and 6 pole terminal
Status-LEDs	Power supply (green) Data (yellow) Status (red)
Operating Voltage	12-30VDC, 24-60VDC, other voltages on request
Housing	Stainless steel, powder coated

RS485 x 2 ports

Technical data	
Fiber optic connection	ST, SMA, SC, E2000, FC-PC
Fiber types	POF 980/1000µm HCS (PCF) 200/230µm Multimode 50/125µm or 62,5/125µm Singlemode 9/125µm
Fiber optic range	up to 100km
Wavelength	650 nm, 850nm, 1300 nm or 1510nm
Data rate	1,5 MBit/s
Transmission type	halfduplex
Connecting plug	9 pole SUB-D female and 6 pole terminal
Status-LEDs	Power supply (green) Data (yellow) Status (red)
Operating Voltage	12-30VDC, 24-60VDC, other voltages on request
Housing	Stainless steel, powder coated

CanBus / Can Open and DeviceNet

Technical data	
Fiber optic connection	ST, SC, SMA, E2000, FC-PC
Fiber types	POF 890/1000 µm HCS (PCF) 200/230µm Multimode 50/125µm or 62,5/125µm Singlemode 9/125 µm
Fiber optic range	up to 100km
Wavelength	650nm, 1300nm, 1500nm
Data Rate	20KBit/s to 500 KBit/s
Transmission type	half duplex
Connection plug	9 pole SUB-D female, 6 pole terminals
Status LEDs	Power supply (green) Data reception (yellow) Status (red)
Housing	Stainless steel, powder coated

Modbus Plus

Technical data	
Fiber optic connection	ST, SC, SMA, E2000, FC-PC
Fiber types	POF 980/1000µm HCS (PCF) 200/230µm Multimode 50/125µm or 62,5/125µm Singlemode 9/125µm
Fiber optic range	up to 100km
Wavelength	650nm, 850nm, 1300nm or 1510nm
Data rate	1 MBit/s
Transmission type	half duplex
Connection plug	9 pole SUB-D female and 6 pole terminal
Status - LEDs	Power supply (green) Data reception (yellow) Status (red)
Housing	Stainless steel, lacked

Profibus Fibre Optic Converters (OLMs) **Very Low Cost Point to Point** **Also for MPI**		

- ✓ **Less than $600**
- ✓ **MPI / Profibus up to 5 Mb/s**
- ✓ **DIN rail mount**
- ✓ **24VDC**
- ✓ **Screw terminal no Profibus Connector needed**
- ✓ **Best for point to point or less than 5 FO converters in network**
- ✓ **2 year warranty**
- ✓
- ✓ **Part no. AW 972-PBLC538**

Fiber types:
Multimode 50/125µm or 62,5/125µm
Fiber optic range up to 2 Klm
Wavelength 820 nm
Data rate max. 5 MBit/s
Connection plug 9 pole SUB-D female and terminal
Status LEDs:
Power supply (green)
Data reception (yellow)
Operating voltage 9-36VDC

Ethernet
TCP/IP

Siemens S7 TCP
ISO on TCP
Modbus TCP

Fibre Optic Converters (OLMs)

Product description

The AW 972-TCP media converters have an extra small housing with a dimension of 80 x 62 x 25 mm.

The flat design of the stainless steel housing offers an extremely high degree of flexibility and safety for all kinds of indoor and outdoor applications. AW 972-TCP can either be mounted onto a DIN EN rail or fastened onto the wall. A clip is already included in the scope of delivery. AW 972-TCP is suitable wherever there is little space, e.g. in small distribution boxes.

Can be used in conjunction with other systems out of the AW 972-TCP series.

Technical data	
Fiber connectors	SMA ST SC-BiDi E2000 crimpless assembly without connector (clamp lock) for POF
Fiber types	POF 990/1000 µm HCS 200/230 µm Multimode 50/125 µm and 62,5/125 µm Singlemode 9/125 µm
Wavelengths	650 nm, 850 nm, 1300 nm, 1550 nm, WDM 1300/1500 nm
Fiber optic range	up to 100 km
Status LEDs	TX data per port
Housing	stainless steel, powder coated

Ethernet
TCP/IP

Siemens S7 TCP
ISO on TCP
Modbus TCP

Fibre Optic Converters (OLMs)

Part Number:
AW 972-TCP202
Description:
Fibre Optic Ethernet Switch - 4 ports Ethernet + 2 port FO
Slimline, low cost Fibre Optic Ethernet switch which can be used in conjunction with our Blue OLM range as well

24VDC dual power supply connections
Fault Relay
DIN rail mount
RJ-45 port support Auto MDI/MDI-X Function
Store-and-Forward Switching Architecture
Back-plane (Switching Fabric): 1Gbps
448Kbits Memory Buffer
2K MAC Address Table
Support Wide Operating Temperature (-40°C to 75°C)
Wide-range Redundant Power Design
Power Polarity Reverse Protect
Overload Current Re-settable Fuse Present
Provides broadcast storm protection
Supports 4000 VDC Ethernet ESD protection
Provides EFT protection 3000 VDC for power line

IEEE 802.3 10Base-T Ethernet
IEEE 802.3u 100Base-TX and 100Base-FX Fast Ethernet
IEEE802.3x Flow Control and Back Pressure

Switch Architecture: Back-plane (Switching Fabric):
1Gbps Packet throughput ability (Full-Duplex):
1.49Mpps @64bytes
Transfer Rate: 14,880pps for Ethernet port
148,800pps for Fast Ethernet port
Memory Buffer: 448Kbits
MAC Address: 2K MAC address table
Connector: 10/100TX: 4 x RJ-45 with auto MDI/MDI-X function
100M fiber: 2 x SC type connector for Singlemode or Multimode type fiber cable
Network Cable: 10Base-T: 2-pair UTP/STP Cat. 3, 4, 5 cable
EIA/TIA-568 100-ohm (100m)
100Base-TX: 2-pair UTP/STP Cat. 5 cable
EIA/TIA-568 100-ohm (100m)

Optical Cable:
Multimode: 50/125ìm~62.5/125ìm
Singlemode: 9/125ìm
Available distance: 2km (Multimode)/30km (Singlemode)
Wavelength: 1310nm (Multimode/Singlemode)
Protocol: CSMA/CD
LED Per unit: Power 1 (Green), Power 2 (Green), Fault(Red)
Per port: Link/Activity (Green), Full duplex/Collision (Yellow)
Reserve polarity protection:Present
Overload current protection:Present

Managed Ethernet TCP/IP

Siemens S7 TCP
ISO on TCP
Modbus TCP

Fibre Optic Converters (OLMs)
Managed, Redundant Rings

Part Number:
AW 972-TCP16RED
Description:
Fibre Optic Ethernet Switch - 16 ports Ethernet + 2 port FO via Mini GBIC modules

Managed Dual Redundant Fibre Optic Ethernet switch which can be used in conjunction with our Blue OLM range as well

24VDC dual power supply connections
Fault Relay
DIN rail mount
System Interface/Performance

- RJ-45 port support Auto MDI/MDI-X Function
- SFP(Mini-GBIC) supports 100/1000 Dual Mode
- Store-and-Forward Switching Architecture
- Back-plane (Switching Fabric): 7.2Gbps
- 1Mbits Packet Buffer
- 8K MAC Address Table

Power Supply

- Wide-range Redundant Power Design
- Power Polarity Reverse Protect
- Overload Current Protection

Case/ Installation

- IP-30 Protection
- DIN Rail and Wall Mount Design

Provides EFT protection 3000 VDC for power line

- Supports 4000 VDC Ethernet ESD protection

IEEE Standard IEEE 802.3 10Base-T Ethernet
IEEE 802.3u 100Base-TX
IEEE802.3ab 1000Base-T
IEEE802.3z Gigabit fiber

IEEE802.3x Flow Control and Back Pressure

Transfer Rate 14,880pps for Ethernet port
148,800pps for Fast Ethernet port
1,488,000pps for Gigabit Fiber Ethernet port
Packet Buffer 1Mbits
Mac Address 8K MAC address table
Connector 10/100TX: 16 x RJ-45
10/100/1000T/ Mini-GBIC Combo: 2 x RJ-45 + 2 x 100/1000 SFP sockets
Network Cable 10Base-T: 2-pair UTP/STP Cat. 3, 4, 5 cable
EIA/TIA-568 100-ohm (100m)
100Base-TX: 2-pair UTP/STP Cat. 5/ 5E cable
EIA/TIA-568 100-ohm (100m)
Optical Cable Multimode: 50/125μm~62.5/125μm
Singlemode: 9/125μm
Protocol CSMA/CD
LED
Per unit: Power 1 (Green), Power 2 (Green), Fault (Red)
16 10/100TX : Link/Activity (Green), Full duplex/Collision (Yellow)
Giga Copper: Link/Activity (Green), speed (1000M Green)

SFP: Link/Activity (Green)

Reserve polarity protection Present
Overload current protection Present
Power Supply DC 12~48V
Redundant power with polarity reverse protect function and removable terminal block
Power Consumption 9 Watt (Open Issue)
Operating Humidity 5% to 95% (Non-condensing)
Operating Temperature -10°C ~ 60°C
Storage Temperature -40°C ~ 85°C
Case Dimension Metal case. IP-30, 72mm (W) x 105mm (D) x 152mm (H)
Installation DIN Rail and Wall Mount Design

1xRS232/422/485 to 2x10/100TX Industrial Device Server

Hardware Specification

LAN	Ethernet: 2 10/100Mbps, RJ-45 (Redundant mode, Switch mode) Protection: Built-in 1.5 KV magnetic isolation
Serial	No. of ports: 1 RS-232/ 422/ 485 port, male DB-9, S/W selectable RS-232 Signals: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND Serial Line Protection: 15 KV ESD for all signals
DIP Switch	4 modes available for RS-232, RS-422, RS-485 two-wire, RS-485 four-wire
Beeper	Beeper for event warning or unit positioning
Serial Communication Parameters	Parity: None, Even, Odd, Space, Mark Data bits: 5, 6, 7, 8 Stop bits: 1, 1.5, 2 Flow control: RTS/CTS, XON/XOFF Speed: 110 bps to 460.8Kbps
LED	PWR 1 / Ready: 1) Red On: Power is on and booting up. Red Blinking: Indicates an IP conflict, or DHCP or BOOTP server did not respond properly. 2) Green On: Power is on and functioning normally. Green Blinking: Located by Administrator's Location function. PWR 2 / Ready: 1) Red On: Power is on and booting up. Red Blinking: Indicates an IP conflict, or DHCP or BOOTP server did not respond properly. 2) Green On: Power is on and functioning normally. Green Blinking: Located by Administrator's Location function. Eth1 Link / ACT: Orange Blinking: 10 Mbps Ethernet; Green Blinking:100 Mbps Ethernet Eth2 Link / ACT: Orange Blinking:10 Mbps Ethernet; Green Blinking:100 Mbps Ethernet TX / RX: Serial port is receiving data(Orange); Serial port is transmitting data(Green).
Power Supply	Power Input 1: 12 to 48 VDC (3-pin Terminal Block) Power Input 2 (Redundant Power): 12 to 48 VDC (Φ2.0 DC Jack) Power Line protection: ▪ 1 KV Burst (EFT), EN61000-4-4 ▪ 0.5 KV Surge, EN61000-4-5
Power Consumption	3.55 Watt
Operating Humidity	5% to 95% (Non-condensing)
Operating Temperature	-10°C to 60°C
Storage Temperature	-40°C to 85°C
Mechanical Specifications	Material: Metal, IP-30
Case Dimension	72mm (W) x 32mm (D) x 100mm (H)
Regulatory Approval	RoHS
EMC	FCC Class A, CE Class A
Safety	UL, CUL

*: Future release

Software Feature

Protocols	ICMP, IP, TCP, UDP, DHCP, BootP, ARP / RARP, Telnet, RTelnet, DNS, SNMP MIB II, HTTP, SMTP, SNTP
Serial mode	Virtual Com / TCP Server / TCP Client / UDP / Serial Tunnel with advanced settings of ▪ TCP Alive Check Timeout ▪ Inactivity Timeout ▪ Delimiter for Data Packing ▪ Force TX Timeout for Data Packing
4 Hosts simultaneous connection	Virtual Com / TCP server / TCP Client (only raw data)
Security	HTTPS, SSH v2, SSL v3(data encryption)**
Event notification	Email / SNMP trap / Beeper SNMP Trap ▪ Cold/Warm Start ▪ DSR, DCD Changed ▪ IP Changed ▪ Authentication Fail SNMP Response ▪ System MIB, ▪ Interface MIB, ▪ ICMP, IP, TCP MIB ▪ UDP MIB ▪ RS-232 MIB
Utilities	X-Ware for Windows NT/2000/XP/2003/Vista ▪ Device discovery ▪ Auto IP report ▪ Device setting (run-time change, no rebooting) ▪ Access control list ▪ Group setting ▪ Device monitoring ▪ Serial port monitoring ▪ Log info ▪ Group Firmware update batch
Virtual COM/TTY Drivers (WDM mode, configuration in windows device manager)	Windows NT/2000/XP/2003, ▪ Unix Fixed TTY driver by request **, Linux real TTY driver by request **
Management	Web, X-Ware Utilities , SNMP , and Telnet
Serial API Function	Port Control, Input/Output Data, Port Status Inquiry

*: Future release
**: Optional

Order number: AW 972-DSER680

1 x RS232/422/485 port to 2 x 10/100TX Ethernet Industrial Device Server

Wireless

Ethernet
TCP/IP

Siemens S7 TCP
ISO on TCP
Modbus TCP

Wireless Converters (WLMs)

LONG RANGE - Wireless Bridge and Access Point

360 degree OMNI

40 degree PANEL DIRECTIONAL

120 degree SECTOR

2.4GHz and 5Ghz, 300Mbps, 802.11b_g_n with superior performance

Screw mount and pole mount kit included.

It features a high transmit output power and high receive sensitivity

Distances from 1km to 30km with RSSI indicator are possible.

24VDC 0.6A DC power input, via POE injector included means that only one cable is required to run to the unit

Wide operating temperature range of -20 degrees to 70 degrees C.

WEP, WPA, WPA2-PSK using TKIP or AES, WPA2-EAP using TKIP, MAC filtering

LEDs:

1 x Power _ Status

1 x LAN 10_100Mbps

1 x WLAN

3 x link quality

Physical connections

1 or 2 x 10_100 Ethernet RJ45

1 x Reset button

Features

Up to 10x normal coverage

Integrated Dual Polarization, 11-16dbi High Gain Antenna

Long Range Transmitting(ACK Timeout)

Auto/Best Channel selection

MSSID and VLAN

Signal Strength Display

QoS (WMM)

PPPoE/PPtP (CR mode)

Traffic Shaping

802.11i WEP

WPA-PSK (TKIP or AES)

WPA2

IEEE 8021x Authenticator

MAC Address Filter

L2 Isolation

SNMP V1, V2c

MIB1, MIB2, Private MIB