



# CYGNUS 835F- 4P

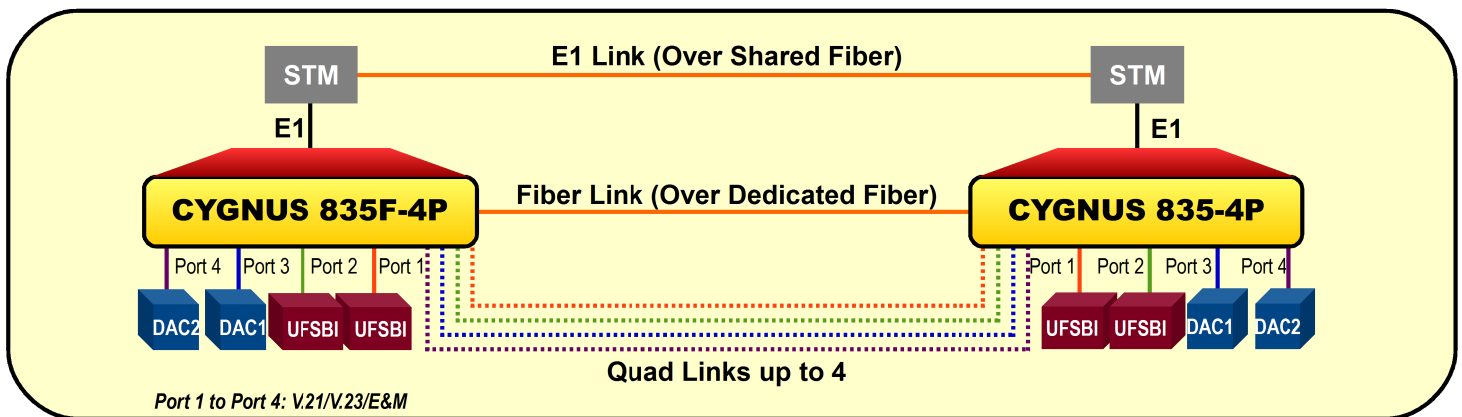
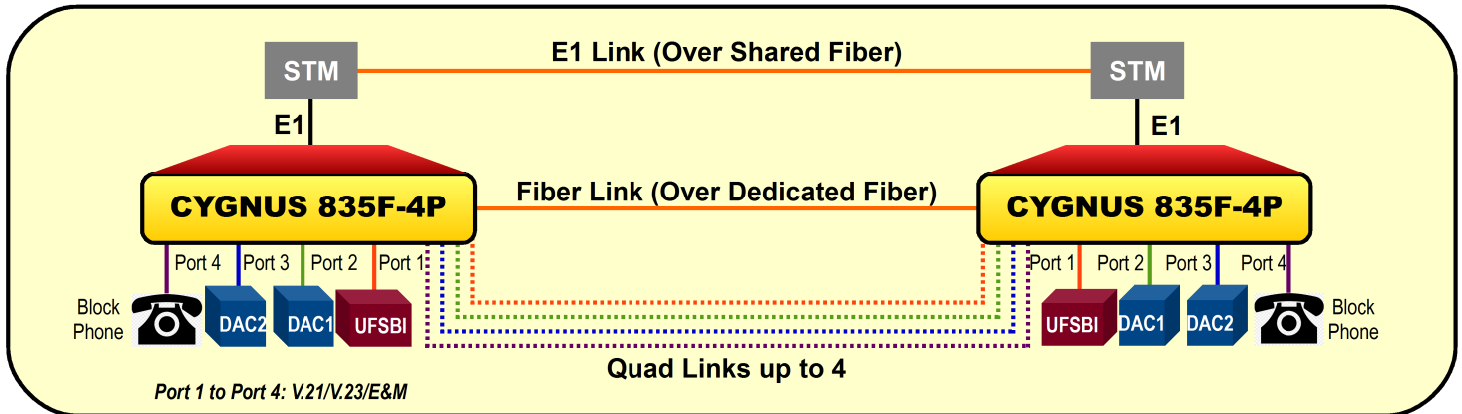
## DUAL MEDIA AUTO CHANGEOVER CONVERTER

Allows simultaneous interconnection of Axle Counters, Block Phones and UFSBIs across a Block Section

Main Links: Fiber & E1  
Auto Changeover Link: Quad copper

Dual hot standby power supplies, Time-stamped logs, Potential Free Contacts for alerts

### APPLICATIONS



Reliable interconnection of signalling equipment is important in Railway applications. CYGNUS 835 set the standard by allowing reliable interconnection of Axle Counters over E1 and Quad Copper channels. CYGNUS 835F further improves reliability and uptime by allowing Fiber channels between the sites in addition to E1 and Quad Copper. It is versatile, and is ideal for interconnecting not only Digital Axle Counters but also UFSBI units, Block Phones, etc. High connectivity uptime due to media diversity, automatic changeover between media and an intrinsically reliable design are hallmarks of CYGNUS 835F.

### FEATURES

- Operates in pairs to transmit and receive ITU-T V.21/V.23 (E&M) signals over Dark/Dedicated Fiber or E1 links.
- May be used to interconnect 2-wire devices such as Digital Axle Counters /Block Phones and 4-wire devices such as UFSBI, to their counterpart devices across a Block Section. Provides built in gain adjustment facility for 2/4-wire ITU-T V.21/V.23 (E&M) ports.
- E1 and Fiber ports serve as main links and operate as back ups to each other. User port traffic automatically switches to another main link if the currently used main link fails.
- Automatic Changeover to Quad Port:** User port traffic automatically changes over to a quad copper port (a) if none of the E1 or Fiber main links are up or (b) if the unit is powered off.
- Quad Health Monitoring:** When interconnected on E1 or Fiber main links the units continuously check whether the quad links/health between them are active. Alarm is raised if any quad link is down, or if the loss on any quad link exceeds -30 dB.
- Dual Hot Standby Power Supply** units operating in hot standby mode are provided. Both power supply units can operate from 24 VDC or 48 VDC. If the power supply unit in use fails, operation continues with the other power supply. Ordering option is available for 230 VAC operation using external AC to DC adaptor.
- Event logs:** Unit maintains time stamped event logs of up to 1000 events such as Unit Power On/Off, E1 Link Up/Down, Fiber Link Up/Down, Quad Active, Quad Health, etc. This log is accessible via Console Port, or by using Telnet (ordering option).
- Potential Free Relay Contacts (PFCs):** 4 PFCs are provided to indicate alarms such as Unit Power Down, E1 Link Down, Fiber Link Down, Quad Active, Quad Health. These PFCs may be connected to the Data Logger network for centralised monitoring of alarms.
- Unit Management:** RS232 based supervisory and Ethernet based Telnet/SNMP management (ordering option) are provided.
- Resettable buzzer provided to draw attention in case E1/Fiber link fails.
- Compact 1U height, 19 inch Rack Mountable.

## SPECIFICATIONS

### E1 PORT

Number of ports: 1  
Interface type: 4-wire balanced 120 ohm G.703  
Connector: RJ45 socket  
Protection: Surge voltage protection in shunt; resettable current limiting fuses in series

### FIBER PORT

Number of ports: 1  
Fiber Type: Single Mode.  
Range: Up to 20 km\* (Standard model)  
Connector: Std. model provides SC Bi-Di ports. Ordering option for LC Duplex.  
Mounting: SFP (pluggable)

### V.21/V.23 (E&M) USER PORTS

Number of ports: Std model has 4 ports. Ordering option for 2 port.  
Interface type: 2/4-wire analog voice band V.21/V.23 (E&M) interface (voice-only for E&M). 600 ohm characteristic impedance. Transformer coupled. Provided Gain adjustment facility.(Ordering time option for E&M signalling also available)  
Connector: RJ45 Socket  
Protection: Surge voltage protection in shunt; resettable current limiting fuses in series

### QUAD PORTS

Number of ports: As many as the number of V.21/V.23 (E&M) user ports.  
Interface type: 2/4-wire analog voice band interface. 600 ohm characteristic impedance. Transformer coupled.  
Connector: RJ45 Socket  
Protection: Surge voltage protection in shunt; resettable current limiting fuses in series

### CLOCKING MODES

E1 Slave Clock: Uses clock recovered from the E1 link for sending and receiving data on E1 link and the DTE interface.  
Internal Clock: Uses an internal crystal controlled clock for sending and receiving data on the fiber/E1 link and the DTE interface.

### CHANGEOVER FUNCTIONALITY

Basic functionality: Automatic changeover between E1 and Fiber main links based on link status  
Selectable priority between E1 and Fiber: Yes  
Conditions for automatically switching user data to Quad Link: - All Main Links (E1 & Fiber) are down  
- Unit gets powered off  
**Note:** Available only for voice signals on V.21/V.23 (E&M) user ports

### CONSOLE PORT

ITU-T V.24/RS232 compatible interface on RJ45 socket. Asynchronous; 8 data bits, 1 stop bit, no parity. Default speed 9600 bps.

### EVENT LOGS

The unit can record the time of occurrence of up to 1000 specified critical events and store them in non volatile memory. These events may be viewed through a supervisory terminal connected to the console port or via Telnet (if TELNET/SNMP Management option is ordered)

### POTENTIAL-FREE CONTACTS (PFCs)

Number: 4  
Functionality: Used to indicate alarms such as Power off, E1 Link down, Fiber Link down, Quad Active, Quad Health  
Connector: Terminal block  
Protection: Surge and Over Voltage Protection in shunt; Resettable Fuse in series  
Maximum current: 50 mA  
External voltage & Contact resistance on closure of alarm contact: 48 VDC  
90-110 ohm

### AUDIBLE ALARM (BUZZER)

When enabled the buzzer sounds whenever an E1/Fiber link goes down. A switch is provided to acknowledge the alarm and silence the buzzer.

### QUAD HEALTH MONITORING

Unit monitors signal loss in the quad circuits and triggers an alarm if the loss exceeds -30 dB. This will be applicable only if any of the main links is active.

### MANAGEMENT PORT (TELNET/SNMP) (Ordering time option)

10/100 Base-T Ethernet on RJ45 socket. SNMP Traps for important events. Telnet access for configuration and monitoring.

### UNIT TEMPERATURE MONITORING (Ordering time option)

Unit monitors ambient temperature inside the box. If temperature is out of range, an alarm is generated and an event is logged.

### LED INDICATORS

Unit related: Power, Test/Default, Master/Slave, Primary Link Select, Alarm  
E1 Link related: E1 Link Status, E1 AIS Status  
Fiber Link related: Fiber Link status  
Quad related: Quad Mode, Quad Active, Quad Health  
Power supply related: Status of DC i/p Polarity Reversal

### GENERAL

Size: 19 inch rack mountable, 1U height  
Power input: Std configuration - Dual Hot Standby Power Supplies to operate the unit from either 48 VDC or 24 VDC. (Ordering time option for 230 VAC external AC to DC adaptors)

Operating Temperature Range: -5°C to +55°C

**STANDARD MODEL: CYGNUS 835F-4P** having 4xV.21/V.23 user ports (without E&M signalling), 1xE1 main link, 1xFiber main link with SFP-SC Bi-Di 20 km connector, Dual Hot Standby 24/48 VDC power supplies.

### In lieu of standard model, following optional models are also available: ORDERING CODE: CYGNUS 835F-4P/A/B/C/D/E

"A": Specify "4PS" for 4 user ports with E&M signalling/ "2PS" for 2 user ports with E&M signalling/ "2P" for 2 user ports without E&M signalling  
"B": Specify "LC" for Duplex Single Mode fiber (20 km range) on LC connector in lieu of SC Bi-Di connector. \*[Models with higher driving ranges on fiber are also available. Contact Cygnus for details]  
"C": Additional Telnet/SNMP Management Port: Specify "MGMT"  
"D": Additional Unit Temperature Monitoring feature: Specify "TEMP"  
"E": Additional one or two 230 VAC adaptors: Specify "1AC" or "2AC"

**Note:** In the interest of product improvement, specifications are subject to change without notice

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