

CYGNUS 855

Fiber Optic Modem

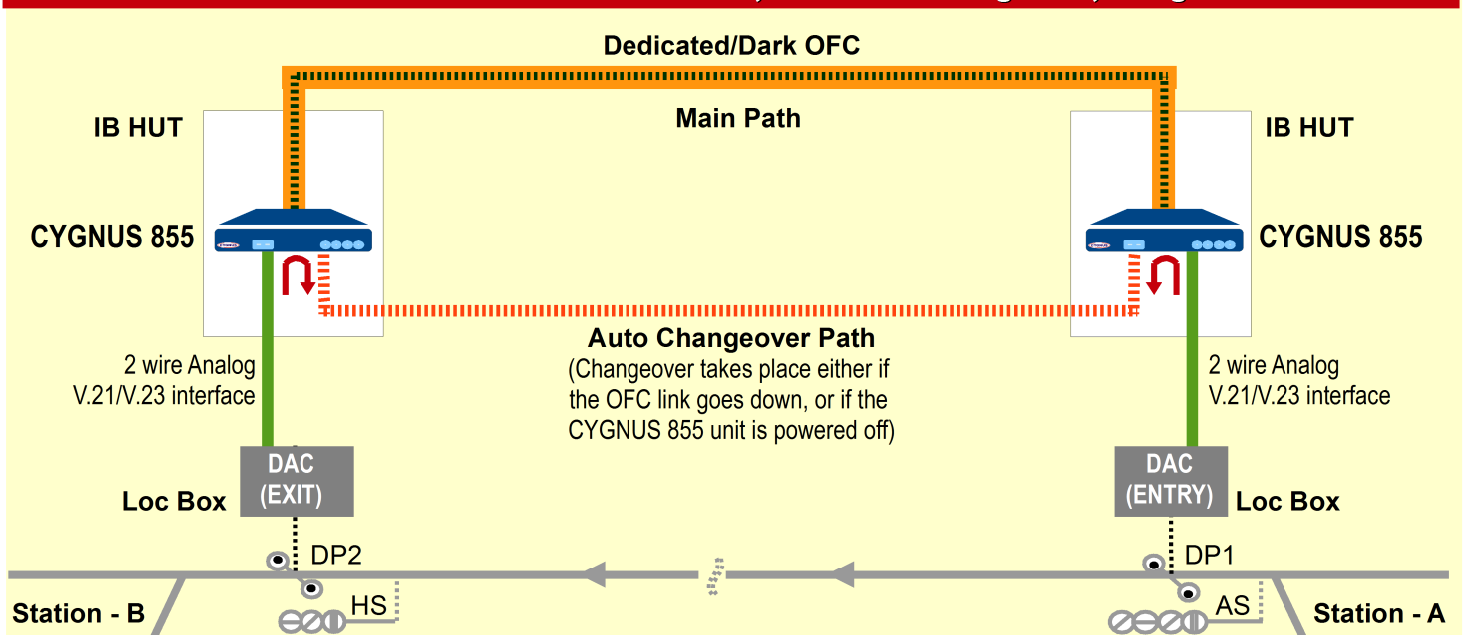
CYGNUS 855 allows user devices with ITU-T V.21 or V.23 compatible communication interface to connect to a Dark Fiber channel. Its built-in Copper Bypass facility with automatic changeover allows enhanced reliability for critical applications, by automatically diverting V.21/V.23 traffic to a standby Copper Circuit in case the Fiber link fails or if the CYGNUS 855 units gets powered off for some reason. Extensive facilities for critical event reporting aid in prompt addressing of faults, and further enhance the products suitability for critical applications. Available with either 48 VDC or 24 VDC power input, CYGNUS 855 is ideal for use in Digital Axle Counter interconnection applications in Railway signalling.

FEATURES

- CYGNUS 855 operates in pairs to transmit and receive ITU-T V.21/V.23 signals over a Dark/Dedicated optical fiber link.
- The analog interface provided on the unit is compatible with ITU-T V.21/V.23 and allows transport of full-duplex voice band analog modem signals.
- **Automatic Changeover to bypass copper circuit:** This automatically switches data traffic between the Digital Axle Counters to a bypass copper circuit if (a) the OFC link fails, or (b) if the CYGNUS 855 unit is powered off for some reason.
- **Bypass link checking:** The bypass copper circuit is constantly checked for availability as long as the OFC Link is up.
- **V.21 Signal Monitoring:** Status of the V.21 signal between the unit and the connected Digital Axle Counter is continuously checked as long as the OFC link is up. This facility is not fully available when OFC link is down and data traffic between the user devices has switched to the bypass copper link.
- Ordering time options for 24 VDC or 48 VDC power supply.
- **Potential Free Alarm Relay Contacts:** The unit provides relay contacts to indicate events such as Unit power down, OFC link down, Bypass link down, and Loss of V.21 signal. These relay contacts may be connected to a Data Logger for centralised monitoring of these alarms, or they may be used locally for raising an alarm (using external circuitry).
- **Event logs:** Facility is provided to record and display time stamped events related to Unit power On/Off, OFC link Up/Down, Bypass Link Up/Down, V.21 link Up/Down
- **SMS Alert:** Unit can be programmed to send SMS messages to specified phone numbers if some specified alarms occur. This facility requires an external GSM modem with SMS facility (not included with the unit), which is compatible with the unit. Contact Cygnus for a list of compatible GSM modems.
- Indicators are provided for unit status display.
- Manufactured using industrial temperature grade components.

TYPICAL APPLICATION

DAC interconnection over Dedicated/Dark OFC, with Auto Changeover, using CYGNUS 855



The Automatic Changeover feature enables the Digital Axle Counter to be get connected with a redundant copper circuit path in case of there is an OFC link failure, or if the CYGNUS 855 unit is powered off

SPECIFICATIONS

OPTICAL FIBER INTERFACE

Fiber Type:	Ordering option for Single Mode or Multi mode
Range:	Up to 20 km (single mode) or 2 km (multi mode) [Models with higher driving ranges on fiber are also available. Contact Cygnus for details]
Connector:	Ordering option for SC Duplex, SC Bi-Di, LC Duplex or LC Bi-Di
Mounting:	Ordering option for 1x9 Fixed or SFP (pluggable)

USER PORT

Interface type:	2-wire analog voice band interface. 600 ohm characteristic impedance. Transformer coupled. (At ordering time, specify whether CYGNUS 855 is to be connected to a user device with ITU-T V.21 communication interface, or to a user device with ITU-T V.23 communication interface.)
Connector:	2 Pin Terminal Block

COPPER BYPASS PORT

Interface type:	2-wire Analog voice band interface. 600 ohm. Transformer coupled.
Connector:	2 Pin Terminal Block

POTENTIAL FREE CONTACTS

Functionality:	Relay output 1: OFC link down, Power down. Relay output 2: OFC link down, Bypass link down, V.21 down
Connector:	4 Pin Terminal Block (Pins 1 and 2 for Relay output 1, Pins 3 and 4 for Relay output 2)
Maximum current permissible through contact on contact closure:	50 mA
Maximum external voltage that can be applied to potential free contacts during contact open condition:	48 VDC
Contact resistance on 90-110 ohm closure of alarm contact (As seen at the connector):	

EVENT LOG

Function:	The unit can record occurrence of certain specified critical events, and store the event and its time of occurrence in non volatile memory may be viewed through a supervisory terminal connected to the console port of the unit.
Events which may be	Unit power On/Off, OFC link Up/Down, Bypass

logged:

Link Up/Down, V.21 link Up/Down

Note: The V.21 signal monitoring feature is available only when the Fiber Link is up and backup link is not being used. Also, it is an effort whose success depends upon the length of copper cable between the analog modem and V.21 port of the CYGNUS 855 unit. Hence efficacy of status and alarms monitoring functions that operate on observation of modem V.21 signal may vary from installation to installation.

SMS alerts:

Occurrence of specified critical events can be reported via SMS, using an External GSM modem (the GSM modem is not included along with the CYGNUS 855 unit).

CLOCKING MODES

Recovered Clock:	Uses clock recovered from the remote unit over fiber link for sending and receiving data on the Fiber Link and the DTE interface.
Internal Clock:	Uses an internal crystal controlled clock for sending and receiving data on the fiber link and the DTE interface.

LED INDICATORS

Unit level:	Power, Alarm, Default Parameter Status, LT status
Fiber related:	Link Status, Error Status
Copper Bypass related:	Bypass Test, Bypass Mode
Power supply related	DC i/p Polarity Reversed

GENERAL

Power input:	Ordering option for 48 VDC or 24 VDC
Operating Temp. Range:	-10 to +70° C (Industrial temperature grade components used)
Humidity:	0 – 85% RH, non condensing

ORDERING INFORMATION

Ordering Code: CYGNUS 855 A/B/C/D/E

"A": Specify power supply option: "24VDC" or "48VDC"

"B": Specify Fiber interface option:

- SM" for Single Mode Fiber; "MM" for Multi-mode Fiber
- "DPLX" for Duplex Fiber Port; "BIDI" for Bi directional Port

"C": Specify Fiber connector option: "SC" or "LC"

"D": Specify Fiber connector mounting option: "1x9" or "SFP"

"E": Specify Fiber driving range:

- Leave Blank for range up to 20 km
- "xx" for range above 20 km, where "xx" is the range required

(Note: Not all combination of options above may be available. Please check with Cygnus before placing the order)

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

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CYGNUS 855 is ideal for Digital Axle Counter connectivity because it allows you to interconnect Digital Axle Counters via Dark Fiber circuits, and at the same time retain copper quads as a bypass circuit for use in case of failure of the fiber circuit. Its utility is further increased by the host of status reporting and alerting options provided for critical faults such as fiber link failure. Manufactured with industrial grade components.



CYGNUS MICROSYSTEMS (P) LIMITED

93, IDA Phase II, Cherlapally, Hyderabad 500051, India

Tel: +91 (40) 2726 1327

URL: www.cygnusmicro.com e-mail: mktg@cygnusmicro.com

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