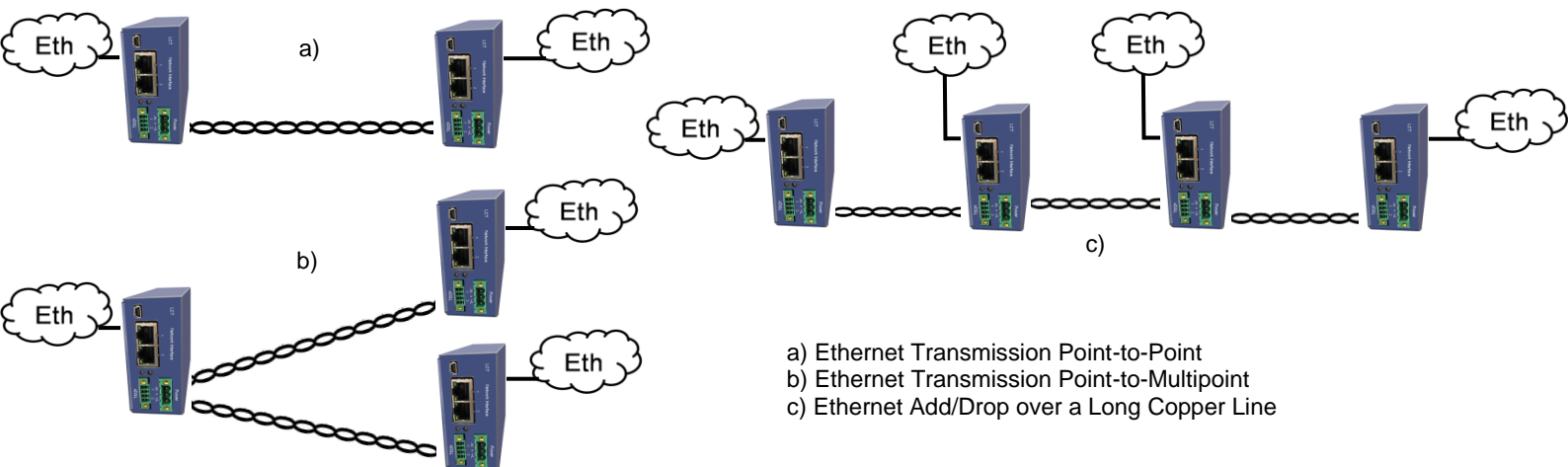# MiniFlex DIN Rail Industrial DSL Modem

Features

- Up to 15Mbps Data Transmission per Copper Pair
- SHDSL and SHDSL.bis, TC-PAM16/32
- Additional TC-PAM4/8/64/128 Available
- 1 or 2 Copper Pairs Support
- 2 Port Ethernet Switch (10/100BaseT)
- QoS, VLAN and RSTP Support
- Point-to-Point and Point-to-Multipoint Operation
- Console Port, Telnet, Web, SNMP Management
- 24/48VDC or 110/230VAC Powered, Low Power Consumption
- Included Primary Protection
- Robust DIN-Rail Metal Enclosure
- Smallest Size
- Industrial Temperature Range Available

Overview

The FlexDSL Orion3 and MiniFlex SHDSL.bis product family offers a broad range of products, which are based on the latest SHDSL.bis standards (ITU-T G.991.2 & ETS TS 101524), while also being fully interoperable with all our existing SHDSL equipment (Orion1, Orion2). The FlexDSL MiniFlex supports the TC-PAM16/32 standard line coding plus the extended TC-PAM4/8/64/128. The support of these extended line codes ensure compatibility with existing SHDSL equipment and provides an upgrade path to the newest DSL technologies.

SHDSL.bis allows symmetrical data and voice transmission at speeds up to 15Mbps over a single pair of copper. In addition, the FlexDSL MiniFlex SHDSL.bis modem range also supports DSL channel bonding for up to 2 copper pairs in order to achieve speeds to 30.4Mbps! An integrated 2 port Ethernet layer 2 managed switch with VLAN, QoS and RSTP support (10/100BaseT) ensures connectivity to IP services. The FlexDSL MiniFlex SHDSL.bis modems are a perfect solution for a wide range of applications in which IP services need to be transmitted over copper wires. The MiniFlex product is a small-sized Orion3 unit with all the functionality included. The FlexDSL MiniFlex SHDSL.bis modems are based on industrial components and manufactured according to highest quality standards providing additional value due to the extended temperature ranges and higher reliability. This combination of comprehensive functions provides maximum flexibility make the FlexDSL MiniFlex SHDSL.bis product family the perfect choice for all your DSL needs.

Applications

a) Ethernet Transmission Point-to-Point
b) Ethernet Transmission Point-to-Multipoint
c) Ethernet Add/Drop over a Long Copper Line

SHDSL Technical Specification

Specification	ITU-T G.991.2 G.shdsl and G.shdsl.bis
Line Code	TC-PAM16/32, Extended: TC-PAM4/8/64/128
Impedance	135Ω
Transmit Power	13.5 (Annex A) or 14.5 (Annex B) dBm @ 135Ω
Number of Pairs	2
Bit Rate	192 to 5704kbit/s, Extended: 128 to 15232kbit/s
Over voltage Protection	ITU-T Rec. K.20/K.21
Connector Type	Phoenix Mini Combicom MC 1, 5/4-GF-3, 5 (female), 4 pins.
Matching Type for the cable	FK-MCP 1,5/ 4-STF-3,5 For AWG 16-26, Area 0.14–1.5 mm^2 or Diameter 0.4-1.4 mm

SHDSL Connector Specification

	Pin No	Description
4	1	SHDSL interface A
	2	SHDSL interface A
1	3	SHDSL interface B
	4	SHDSL interface B

Monitor/Local Craft Terminal Technical Specification

Specification	USB V2.0 full and low speed
Data Rate	12Mbit/s
Protocol	Master/Slave, Uses the USB communication device class (CDC) drivers to take advantage of the installed PC RS-232 software to talk over the USB
Connector Type	USB Type Mini-B female connector

Monitor/LCT Connector Specification

Pin No	Description
1	+5V
2	Data -
3	Data +
4	NC (not used)
5	SGND

Power Supply Technical Specification

Specification	ETSI ETS 300 132-2
Voltage (-24V models)	18-72VDC local power
Voltage (-230V models)	85-264VAC, 120-370VDC local power
Connector Type	Phoenix Combicom MSTB 2, 5/ 3-GF-5, 08(male), 3 pins.
Matching Type for the cable	FKCT 2,5/ 3-STF-5.08 For AWG 12-24, Area 0.2–2.5 mm^2 or Diameter 0.5-1.75 mm
Power Consumption	Typically 4 Watts

Power Supply Connector Specification

	Pin No	Description
3	1	Negative power terminal or N (Neutral power terminal)
	2	Protection ground
1	3	Positive power terminal or L (Life power terminal)

Environment, EMC and Safety

Storage:	ETS 300 019-1-1 Class 1.2	(-25°C … +55°C)
Transportation:	ETS 300 019-1-2 Class 2.3	(-40°C … +70°C)
Operation:	ETS 300 019-1-3 Class 3.4	(-25°C … +70°C)

Higher Operation Temperature range available on request (-25°C … +80°C)

Dimension:	143(W)x87(D)x37(H) mm, 153(W)x87(D)x37(H) mm with Clip
Weight	< 0.5kg in Metal DIN-Rail Enclosure

Standards:	EN 300386 V1.4.1:2008	EN 61000-4-2/A2:2001
	EN 50121-4:2006	EN 61000-4-3:2006
	EN 60950-1:2006	EN 61000-4-4:2004
	EN 55022:2006, Class B	EN 61000-4-5:2006
	EN 55024/A2:2003	EN 61000-4-6:2007
		EN 61000-4-6/A1:2001