B&R X20IF1086-2

01 Function and selected configuration

Product function

B&R X20IF1086-2 extends the controller network over multimode fiber, allowing the same interface hardware to operate as a managing or controlled node.

Selected configuration

The duplex LC port uses the 100BASE-FX physical layer. Its optical connection electrically separates the PLC from the POWERLINK segment and supports 62.5/125 or 50/125 micrometre multimode fiber.

Functional path

X20 controller	POWERLINK interface	Multimode fiber	Remote network node

Physical layer	100BASE-FX
Network rate	100 Mbit/s
Optical port	1 duplex LC

The permitted span depends on operating mode: POWERLINK allows up to 2 km between stations, while Ethernet TCP/IP is limited to 400 m. Optical budget also depends on the fiber, at 11 dB for 62.5/125 micrometre and 7.5 dB for 50/125 micrometre cable.

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02 Technical operating envelope

Physical layer	100BASE-FX
Network rate	100 Mbit/s
Optical port	1 duplex LC
Fiber type	Multimode 62.5/125 or 50/125 micrometres
Typical wavelength	1300 nm
POWERLINK segment	Up to 2 km

Ethernet TCP/IP segment	Up to 400 m
Optical budget	11 dB (62.5/125); 7.5 dB (50/125)
Power consumption	1.8 W; revisions before D0: 2 W
Horizontal operation	-25 to +60 C
Vertical operation	-25 to +50 C

The technical values apply to this model in the specified installation and configuration.

Signal interpretation

The permitted span depends on operating mode: POWERLINK allows up to 2 km between stations, while Ethernet TCP/IP is limited to 400 m. Optical budget also depends on the fiber, at 11 dB for 62.5/125 micrometre and 7.5 dB for 50/125 micrometre cable.

Interface boundary

POWERLINK operation is half-duplex; full-duplex is available in Ethernet mode only. The project firmware and station settings must match the network role, and successful optical link establishment must be followed by cyclic communication verification.

Does X20IF1086-2 negotiate its Ethernet speed automatically?

No. Autonegotiation is not supported; the interface operates at 100 Mbit/s.

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03 System integration and applications

Optical controller expansion

Add a fiber-based network interface to a compatible X20 controller slot.

Long POWERLINK segments

Use an optical span within 2 km when the fiber budget and POWERLINK topology permit it.

Electrical separation

Use the isolated optical network boundary where a conductive network path is unsuitable.

Network-role configuration

Implement the managing or controlled node role assigned in the Automation Studio project.

System and supply context

The powerlink interface is applied in the X20 controller / POWERLINK interface / Multimode fiber / Remote network node arrangement. Select associated equipment for the actual channel or installation.

Application boundary

The technical values apply to this model in the specified installation and configuration. The examples below address the stated product function.

Why does X20IF1086-2 have different Ethernet and POWERLINK distance limits?

The allowed segment is mode-dependent: 400 m for Ethernet TCP/IP and 2 km for POWERLINK. The selected mode and optical power budget must both be satisfied.

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04 Engineering selection decisions

Can X20IF1086-2 use an ordinary RJ45 Ethernet cable?

No. Its port is duplex LC for multimode optical fiber, not a copper Ethernet socket.

Which fiber offers the larger optical budget on X20IF1086-2?

The 62.5/125 micrometre fiber option has an 11 dB budget, compared with 7.5 dB for 50/125 micrometre fiber.

What does an illuminated L/A X1 indicator on X20IF1086-2 establish?

A steady light establishes a link to the remote station. Blinking indicates link plus Ethernet activity; neither alone proves the application data are correct.

Why should the hardware revision of X20IF1086-2 be included in the power calculation?

Power consumption is 1.8 W from revision D0, while earlier revisions require 2 W. The controller expansion budget must allow the actual revision.

Separate loss and distance limits	Calculate the installed fiber and connector losses against the applicable 11 dB or 7.5 dB budget.
Keep the optical ends clean	Isolate the controller according to its service procedure before changing the interface.

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05 Configuration boundary and references

Lifecycle and support

The current manufacturing and factory-support phase of X20IF1086-2 is unconfirmed.

Replacement assessment

Preserve physical layer 100BASE-FX, network rate 100 Mbit/s, optical port 1 duplex LC. Check physical layer and network rate against the installed configuration.

Document roles

Use the original manufacturer excerpt for its preserved technical tables and drawings. This product brief explains selection and system context. The separate installation guide covers preparation, connection, tests and handover; use it together with the applicable manufacturer instructions.

Technical basis

B&R X20IF1086-2 Data sheet V1.20.

Related product navigation

- B&R X20CP1486
- B&R X20CP1485

These are related references, not confirmed substitutes or an automatically approved assembly.

Product enquiries