

Beckhoff — FC Lightbus Cards

FC2001_4A

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The **FC2001_4A** is a Lightbus interface card manufactured by Beckhoff within the FC Lightbus Cards series. The board occupies a single PCI slot and converts parallel host data into serial optical telegrams so a PC-based controller can communicate with Lightbus I/O stations. By hosting the protocol hardware on the card, it relieves the CPU of time-critical bit timing and provides deterministic exchange of process data in factory automation systems.

The optical transceiver moves user data across the fiber at **2.5 Mbit/s**, and each telegram receives a **32-bit acknowledgment within 25 µs**, establishing the deterministic cycle time seen by the control program. One Lightbus channel serves the network, and eight logical communication channels per physical link segment permit simultaneous access from different software tasks. A dual-port RAM of **4 kB** buffers cyclic process images between the PCI bus and the Lightbus controller, while onboard flash memory of **256 kB** stores firmware and configuration data. The card also includes **512 kB** of working RAM for telegram management. Two selectable IRQ lines allow the host to receive synchronization events with minimal latency. A single channel can address up to 65,280 I/O points, supporting large system layouts.

The board uses a **32-bit Plug & Play PCI** interface and draws a typical **385 mA** from the backplane's **5 V** supply rail, so it operates without auxiliary power leads. The Lightbus optical fiber medium provides electrical isolation, eliminating ground loops between up to **255 attached devices**. The card occupies 106 × 187 mm of slot space, leaving room for adjacent modules in standard industrial PCs. One optical transmitter-receiver pair on the bracket forms the Lightbus channel and uses LED indicators for bus status and error diagnosis.

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Specifications

Current Rating:	4 A	Data Transfer Rate:	2.5 Mbit/s	Dimensions:	106 x 187 mm
Dpram Size:	4 kB	Enclosure Material:	Thermoplastic	Fieldbus:	Lightbus (optical fiber)
Flash:	256 kB	Frequency:	50/60 Hz	Fuse Size Supported:	10 x 38 mm
Ingress Protection:	IP20	Irq Support:	2	Lightbus Channels:	1
Logical Comm Channels:	8 per channel	Max Bus Devices:	255	Max I/o Points:	65280 per channel
Mounting Type:	DIN Rail	Operating Temperature:	-20°C to +60°C	Pc Interface:	32-bit Plug & Play PCI
Pci Current Draw:	385 mA (typ.)	Pci Supply Voltage:	5 V	Ram:	512 kB
Terminal Type:	Screw Terminal	Type:	Fuse Carrier	User Data Time:	32-bit in 25 µs
Voltage Rating:	600 V	Last Verified:	10/22/2026 6:01 AM		

Contact Us

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