

Beckhoff — FC Lightbus Cards

FC3102-1258

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The **FC3102-1258** is a dual-channel PROFIBUS communication card produced by Beckhoff within the FC Lightbus Cards series. Installed in a PCI slot of an industrial PC, the board links the control platform to remote I/O stations over the PROFIBUS fieldbus. By supporting master or slave operation on each channel, it allows the host controller to coordinate peripheral devices or participate as a subordinate node in larger distributed automation networks.

Physical integration starts with two D-Sub sockets that route both channels to the plant wiring through an **RS485** transceiver stage. The board draws its logic supply directly from the backplane at **5 V**, and the typical load on that rail is **1000 mA**. These values help designers determine power requirements inside compact controllers.

Communication with the PC takes place over a **plug-and-play PCI** interface; enumeration and resource assignment therefore occur automatically without manual jumper settings. Data moves across a **32-bit** bus width, so process images can be transferred in double-word increments, reducing CPU cycles compared with narrower interfaces. Galvanic isolation separates field wiring from the computer ground to limit noise injection and protect electronics during fault conditions.

Each channel can accept up to **244 bytes** of cyclic data from a single slave and map that traffic into a maximum process image of **3 kbytes** inside the host memory. The onboard DPRAM allocates **4 kbytes** per channel, ensuring sufficient buffering for telegram sequencing when network load peaks. A single link can supervise **125** addressed slaves, providing capacity for modular valve terminals, drives, and remote I/O nodes on one trunk. Two status LEDs per channel provide local diagnostics. Mixed master-and-slave operation permits network arrangements in which

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the Beckhoff PC controls downstream devices and forwards data upstream to higher-level controllers.

Specifications

Bus Connectors:	2 x D-Sub sockets	Bus System:	PROFIBUS DP, DP-V1, DP-V2, PROFIBUS MC	Communication Mode:	Master and slave (mixed)
Connector Type:	Circular Connector	Contact Gender:	Socket	Contact Type:	Crimp
Current Consumption:	1000 mA typ.	Current Rating:	13A	Diagnostics:	2 LEDs per channel
Dpram Per Channel:	4 kbytes	Fieldbus Channels:	2	Fieldbus Interface:	RS485
Insert Arrangement:	58	Isolation:	Galvanically isolated	Mating Style:	Threaded Coupling
Max Data Per Slave:	244 bytes	Max Process Image:	3 kbytes	Max Slaves Per Channel:	125
Mounting Style:	Box Mount	Number Of Contacts:	8	Operating Temperature Range:	-55°C to +125°C
Pc Interface:	Plug-and-play PCI	Pci Bus Width:	32 bit	Plating:	Cadmium
Rohs Status:	Compliant	Sealing:	Environment Resistant	Shell Material:	Aluminum Alloy
Shell Size:	12	Software Compatibility:	TwinCAT	Supply Voltage:	5 V
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