

Compatible
ZIVersys®



4CCN

Communications Concentrator / Diffuser

Communications



Description

4CCN terminal units are optically transparent concentrators / diffusers, designed to organize a communications network, at substation level, between protection and control Intelligent Electronic Devices (IEDs) and higher level equipment and/or concentrators.

The **4CCN** is equipped with one input port (optionally, it may have an additional RS232 port) and a number of output ports (selectable between 4 and 20) to support a variety of configurations.

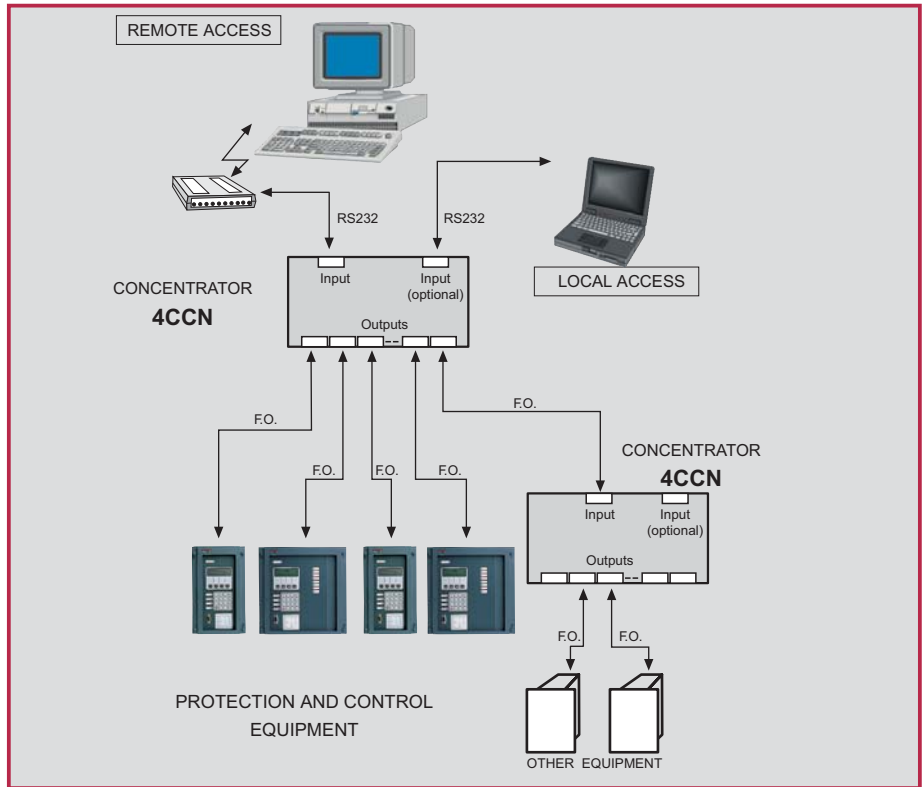
The inputs connections can be specified from the following:

- RS232 (DB-9 or DB-25)
- Plastic Fiber Optics (1 mm diameter)
- Glass Fiber Optics with SMA connector
- Glass Fiber Optics with ST connector

Two types of output ports are available: plastic fiber optics or glass fiber optics and they can be selected in multiples of 4, up to a maximum of 20 outputs per unit.

The terminal unit requires an auxiliary voltage, either dc or ac, specified according to the installation needs.

Application



The **4CCN** concentrator / diffuser has been designed to establish a physical communications network in the substation with out the use of control signals (RTS, CTS, etc.).

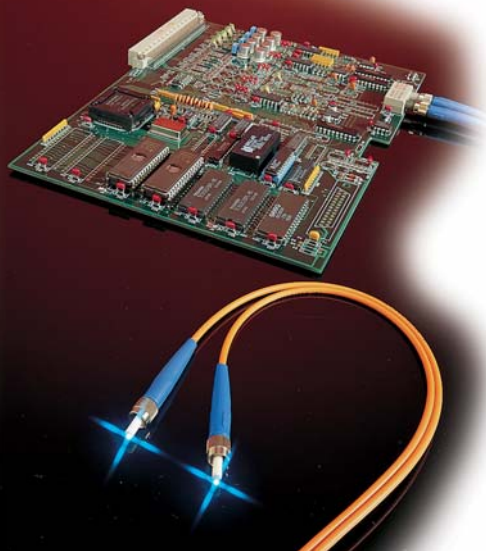
Communications are bi-directional at the input(s) and outputs. This allows an input (coming from a PC or a telephone modem) to be equally diffused through all the outputs in a protection and control system. The signals received from each IED connected to the diffuser are also communicated to the modem or PC source.

As an example, the figure depicts a network integrated by a **4CCN** concentrator with two RS232 inputs, one for remote connection by telephone modem and another for a local PC connection. The fiber optic outputs are connected to different protection and/or control IEDs. However, one output is connected to a second **4CCN** with a fiber optic input from which additional protection and control systems are connected via fiber optics.

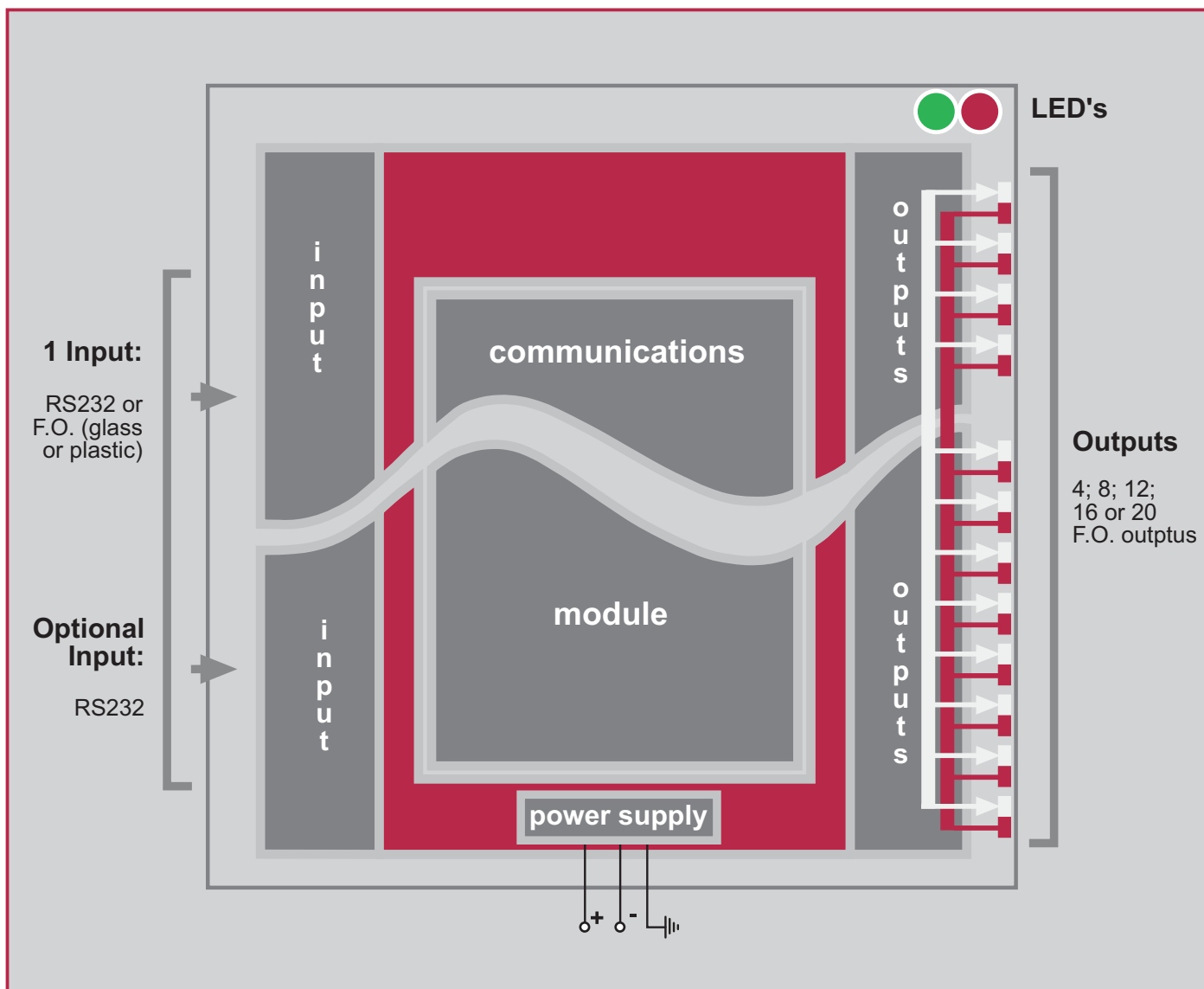
Protection Against Interlocking

If an optical fiber concentrator connector becomes disconnected, the concentrator input, which operates within the visible light spectrum, is susceptible to activation due to the presence of external light. This could cause a malfunction of the communications

network. The same effect could be produced in the event that a transmission LED becomes permanently energized. To avoid these problems, the **4CCN** is equipped with a protection system against interlocking of the transmission signals.



Generic Block Diagram



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