

**Long distance hybrid optical/electrical communication node for multiplexed electrical sensors (Technion)**  
**code:** COM-1640

In order to transmit data over large distances, electrical sensors relay their information via wires or wireless communication. Transmission via electrical wiring is direct, but wires can corrode and are susceptible to electro-magnetic interference (EMI). The use of wireless sensors improves on this, although they only work across short distances and are still susceptible to EMI and jamming. This invention presents a hybrid electrical-optical approach, incorporating the versatility and low cost of electrical sensors with the advantages of optical fiber communication. Optical fibers are used to transmit electrical data by converting the sensor voltage output to light. They are lightweight, not susceptible to corrosion or EMI, and have low power loss, making this an efficient method for data transmission.

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