

absolutely necessary, a storage element is not needed and the solar generator can be connected directly or via an adaptive converter to the water pump.

17.2.1.2 Photovoltaically powered intelligent emergency telephone

Emergency telephones along motorways and roads across sparsely populated country are necessary, sometimes even life-saving [5]. Extensive cabling can be avoided, both during new road construction and when emergency roadside telephones are subsequently installed, if photovoltaically powered emergency telephones with radio contact to a central receiver station are used (see Figure 17.4).

A solar generator of only a few watts power is sufficient, as the telephones are not used frequently. The “multifunctional emergency call and information system” developed at Fraunhofer ISE does not require external cabling, has an autonomous power supply and



Figure 17.4 Photovoltaically powered emergency telephone (Source: Fraunhofer ISE, Freiburg)