

Patent title:	Optoelectronic sensor and method for measuring a distance
FBK center:	CMM
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Application number(s):	EP Patent Application No. 17180828.0 — priority date 2017-07-11; US Patent Application No. 16/031,625 — filing date 2018-07-10; JP Patent Application No. 20180130962 — filing date 2018-07-10
Bibliographic data:	EP3428683 (A1) — 2019-01-16; US2019018117 (A1) — 2019-01-17; CN109239694 (A) — 2019-01-18; JP2019032305 (A) — 2019-02-28; EP3428683 (B1) — 2019-08-28
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IP status:	Patent pending. Available for license or assignment
Patent family:	EP3428683 (B1) — 2019-08-28
Application(s):	Factory automation, Logistics automation, Safety engineering
Keyword(s):	Optoelectronic sensor, Time of flight principle, Distance measurement
Abstract:	An optoelectronic sensor (10) for measuring a distance of an object (18) in accordance with a time of flight principle comprises a light transmitter (12) for transmitting a light signal (14), a light receiver (22) for receiving the light signal (20) after reflection or remission by the object (18), the light receiver (22) having a first plurality of pixel elements (24, 24a) each configured as an avalanche photo diode element biased with a bias voltage greater than a breakdown voltage and thus operated in a Geiger mode in order to trigger an avalanche event upon light reception, a distance measuring unit (34) having a second plurality of time of flight measuring units (34a) connected to pixel elements (24a) for determining a time of flight between transmission and reception of a light signal, the second plurality being less than the first plurality, switching means (32, 32a) for connecting selected pixel elements (24a) to time of flight measuring units (34a) in a one-to-one fashion, and a pixel selection unit (28, 30) for determining pixel elements (24a) to be connected by the switching means (32, 32a) based on an intensity measurement.