



Industrial Sensing and Control

Product Selection Guide

OPTEK Technology BI Technologies Roxspur Measurement & Control



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About Industrial Sensing and Control

Measurement Solutions

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Discretes

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Fiber Optics

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Rotary Panel Potentiometers

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Precision Potentiometers

Slide Potentiometers

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Model Numbers and specifications contained within this brochure were verified by technical personnel at the time of printing and should be used for reference purposes only. These reference Model Numbers are not intended to be used for systems design or sensor sizing. In the interests of continuous product improvement, TT Electronics' product specifications are subject to change without notice. For assistance with sensor selection, please contact a TT Electronics applications engineer, or your nearest authorized sales representative. All products shown are RoHS compliant unless otherwise noted.

WARRANTY: Seller warrants that the Products sold to Buyer hereunder will be free from defects in material and workmanship furnished by Seller and will conform, within normal commercial tolerances, to applicable Model #. This warranty shall apply only when Buyer has given Seller written notice of such defect or nonconformity within ninety (90) days after delivery of the Products by Seller and the warranty does not extend to any Product which has been subjected to abuse, misuse, neglect or accident, nor to any Product which has been repaired or altered by other than Seller. THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, AS TO MERCHANT ABILITY, FITNESS FOR A PARTICULAR PURPOSE, DESCRIPTION, QUALITY, PRODUCTIVENESS, OR OTHERWISE.

About TT Electronics

TT Electronics is a global provider of engineered electronics for performance critical applications.

We harness our leading expertise to engineer electronics that put our customers ahead.



TT Electronics has years of experience and expertise in engineering and delivering electronics for applications in the harshest environments across industrial, transportation, aerospace, defence and medical markets.

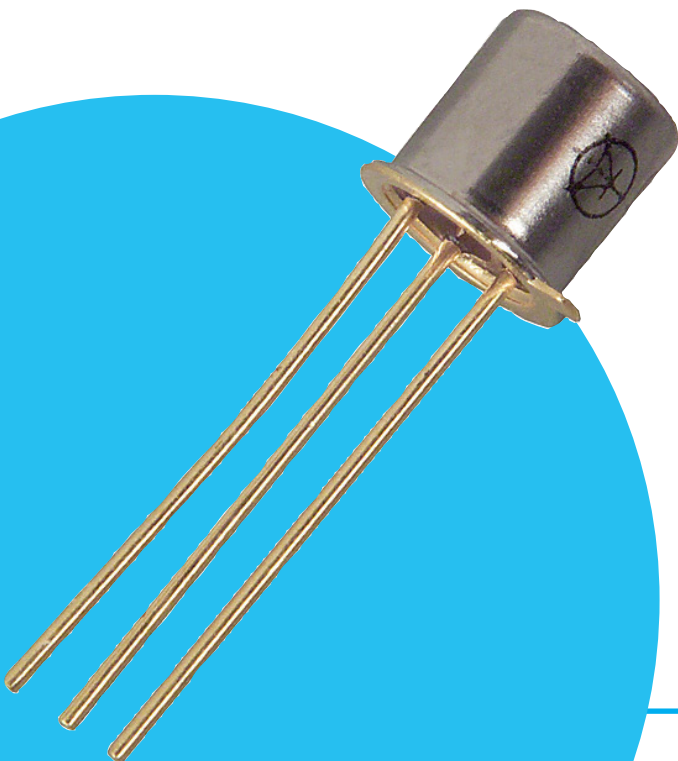
We work hard to develop strong long-term relationships with our customers, many of which are global leaders, working on cutting-edge innovation in some of the fastest growing markets in the global economy. We are proud to be able to say that our customers regularly seek us out as technology partners because they value us most for our:

- Expertise to provide electronics products and solutions that perform to the highest standards
- Personalised and responsive service, which because of our global presence we can deliver wherever they are in the world.

We love the challenges that our customers bring us and we work hard to develop solutions that work best for them.

Industrial Sensing and Control

- Formed in January 2015, the TT Electronics Industrial Sensing and Control division is an amalgamation of our BI Technologies, OPTEK Technology, and Roxspur Measurement & Control brands.
- We provide reliable standard and custom sensing solutions for industrial, aerospace and defence, oil and gas, process manufacturing, medical equipment, and off-road transportation sectors.
- We offer a diverse product portfolio, comprised of multiple core sensing technologies which address a broad range of measurement requirements, including position, temperature, pressure, flow, level and fluid quality, as well as calibration services.
- We have the full in-house capabilities to offer custom solutions with competitive lead times.
- We have earned a strong industry reputation as a trusted partner for industry leading OEMs, often times providing complex custom solutions for the most challenging applications.
- We have a dedicated global sales and engineering team that is entirely focused on delivering sustainable growth for TT Electronics and its customers.
- We seek to become a valued strategic partner to our end customers, helping them to anticipate present and future market needs.
- We offer field-proven, high-reliability designs that are rarely made obsolete, allowing our customers to warranty and service their own finished product designs with confidence.



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Measurement Solutions

Position and Torque



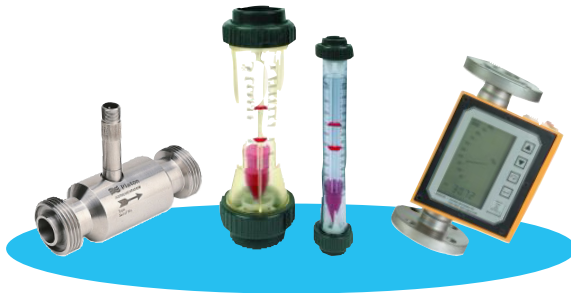
- Contact and non-contacting position and torque sensors; fibre optics; magnetics; optocouplers, rotary encoders
- Optical encoder switches; infrared emitting diodes; photodiodes; LED/sensor pairs; transmissive switches

Pressure



- Ceramic sensors and submersible transducers; pressure transmitters; flush mount pressure transducers; abrasive media sensors

Flow



- Glass and plastic VA; metal VA and ultrasonic flowmeters; control valves; sensor transmitters; dataloggers and controllers

Temperature



- Thermocouples, refractory sheaths and cables, transmitters; thermal imaging; infrared thermometers; multi-spot thermometers; averaging thermometers

Calibration Services



- Onsite or in-house UKAS accredited calibration and certification under BS/EN ISO17025 accredited procedures

Markets we serve

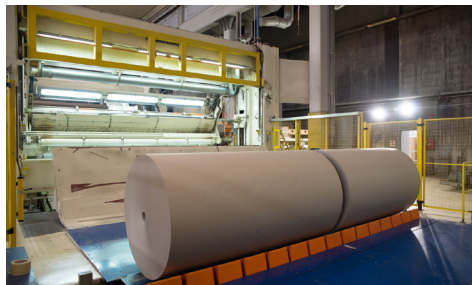
Continuous investments in R&D and the very latest in manufacturing equipment ensure that TT Electronics' industrial sensing and control products keep pace with evolving customer needs.

Oil and Gas



- Exploration
- Distribution
- Refining

Continuous Process



- Continuous flow manufacturing of chemicals, synthetic fibres, papers, metals and glass

Utilities



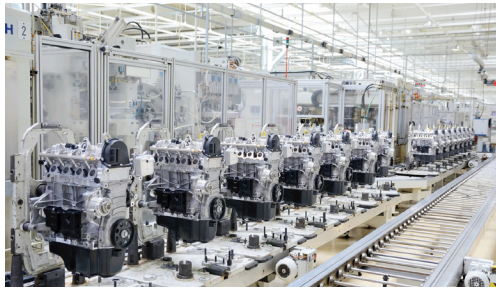
- Power generation, transmission and distribution
- Water and wastewater treatment
- Irrigation systems

Aerospace and Defence



- Aircraft and satellite
- Defence electronics
- Unmanned aerial vehicles
- Cockpit controls

Discrete Manufacturing



- Production of factory automation machinery and supporting equipment for pumping, heating, fluid handling, and refrigeration

Medical Equipment



- Medical diagnostics
- Portable patient care equipment
- Drug therapy dispensers
- Blood analysers

Offroad Vehicles



- Materials handling
- Agricultural
- Construction
- Recreational (ATVs)

Industrial Printing



- High-end industrial printing on paper and plastic
- 3D printing

Banking and Security



- Automated teller machines
- Safety equipment
- Identification equipment

Photologic® Slotted Optical Switches

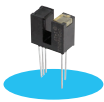


Model Number	OPB970N51	OPB971N51	OPB973N51	OPB980L51Z	OPB980L55Z	OPB980T55Z	OPB982P51Z	OPB983P51Z	OPB983T51Z
Package	Slotted N	Slotted N	Slotted N	Slotted L	Slotted L	Slotted T	Slotted P	Slotted P	Slotted T
Sensor Type	Totem-Pole	Open-Collector	Inv-Open-Collector	Totem-Pole	Totem-Pole	Totem-Pole	Inv-Totem-Pole	Inv-Open-Collector	Inv-Open-Collector
Wavelength (nm) (Typ)	0.125"/0.345"	0.125"/0.345"	0.125"/0.345"	0.125"/0.345"	0.125"/0.345"	0.125"/0.345"	0.125"/0.345"	0.125"/0.345"	0.125"/0.345"
Slot Width/Depth	0.05"/0.01"	0.05"/0.01"	0.05"/0.01"	0.05"/0.01"	0.05"/0.05"	0.05"/0.05"	0.05"/0.01"	0.05"/0.01"	0.05"/0.01"
Aperture Emitter/Sensor	890	890	890	890	890	890	890	890	890
I _F (mA) Typ/Max	20/50	20/50	20/50	20/50	20/50	20/50	20/50	20/50	20/50
I _{CCL} /I _{CCH} (mA) Max	15/15	15/15	15/15	15/15	15/15	15/15	15/15	15/15	15/15
V _{CC} (V) Min/Max	4.5/16.0	4.5/16.0	4.5/16.0	4.5/16.0	4.5/16.0	4.5/16.0	4.5/16.0	4.5/16.0	4.5/16.0
Lead Length/Spacing	0.425"/0.320"	0.425"/0.320"	0.425"/0.320"	24"/26 AWG Wire	24"/26 AWG Wire	24"/26 AWG Wire	24"/26 AWG Wire	24"/26 AWG Wire	24"/26 AWG Wire



Model Number	OPB990L51Z	OPB990P51Z	OPB990T51Z	OPB990T55Z	OPB991L51Z	OPB992T51Z	OPB993L11Z
Package	Slotted L	Slotted P	Slotted T	Slotted T	Slotted L	Slotted T	Slotted L
Sensor Type	Totem-Pole	Totem-Pole	Totem-Pole	Totem-Pole	Open-Collector	Inv-Totem-Pole	Inv-Open-Collector
Wavelength (nm) (Typ)	0.125"/0.345"	0.125"/0.315"	0.125"/0.345"	0.125"/0.345"	0.125"/0.345"	0.125"/0.345"	0.125"/0.345"
Slot Width/Depth	0.05"/0.01"	0.05"/0.01"	0.05"/0.01"	0.05"/0.05"	0.05"/0.01"	0.05"/0.01"	0.01"/0.01"
Aperture Emitter/Sensor	890	890	890	890	890	890	890
I _F (mA) Typ/Max	20/50	20/50	20/50	20/50	20/50	20/50	20/50
I _{CCL} /I _{CCH} (mA) Max	15/15	15/15	15/15	15/15	15/15	15/15	15/15
V _{CC} (V) Min/Max	4.5/16.0	4.5/16.0	4.5/16.0	4.5/16.0	4.5/16.0	4.5/16.0	4.5/16.0
Lead Length/Spacing	24"/26 AWG Wire	24"/26 AWG Wire	24"/26 AWG Wire	24"/26 AWG Wire	24"/26 AWG Wire	24"/26 AWG Wire	24"/26 AWG Wire

Photologic® Slotted Optical Switches



Model Number	OPB460N11
Package	Slotted N
Sensor Type	10K Pull-up
Gap Width/Depth	0.125"/0.345"
Aperture Emitter/Sensor	0.01"/0.01"
Wavelength (nm) (Typ)	890
I _F (mA) Typ/Max	20/50
I _{CCL} /I _{CCH} (mA) Max	7.5/7.5
V _{CC} (Volts) Min/Max	4.5/16.0
Lead Length/ Spacing	0.425"/0.320"

Deep Gap Slotted Switch Wire and Connector Options



Model Number	OPB815L	OPB815WZ
Package	Slotted T	Slotted T
Wavelength (nm) (Typ)	890	890
Slot Width/Depth	0.375"/0.350"	0.375"/0.430"
Aperture Emitter/Sensor	0.06"/0.06"	0.06"/0.06"
I _F (mA) Typ/Max	20/50	20/50
Light Current I _{C(ON)} (mA) Min/Max	0.05/N/A	1.0/N/A
V _{CE} (V) (Max)	30	30
Lead Length/Spacing	0.100"/0.530"	24"/26 AWG Wire