PRODUCT INFORMATION

The new generation: WLL180T photoelectric sensor with fiber-optic cable

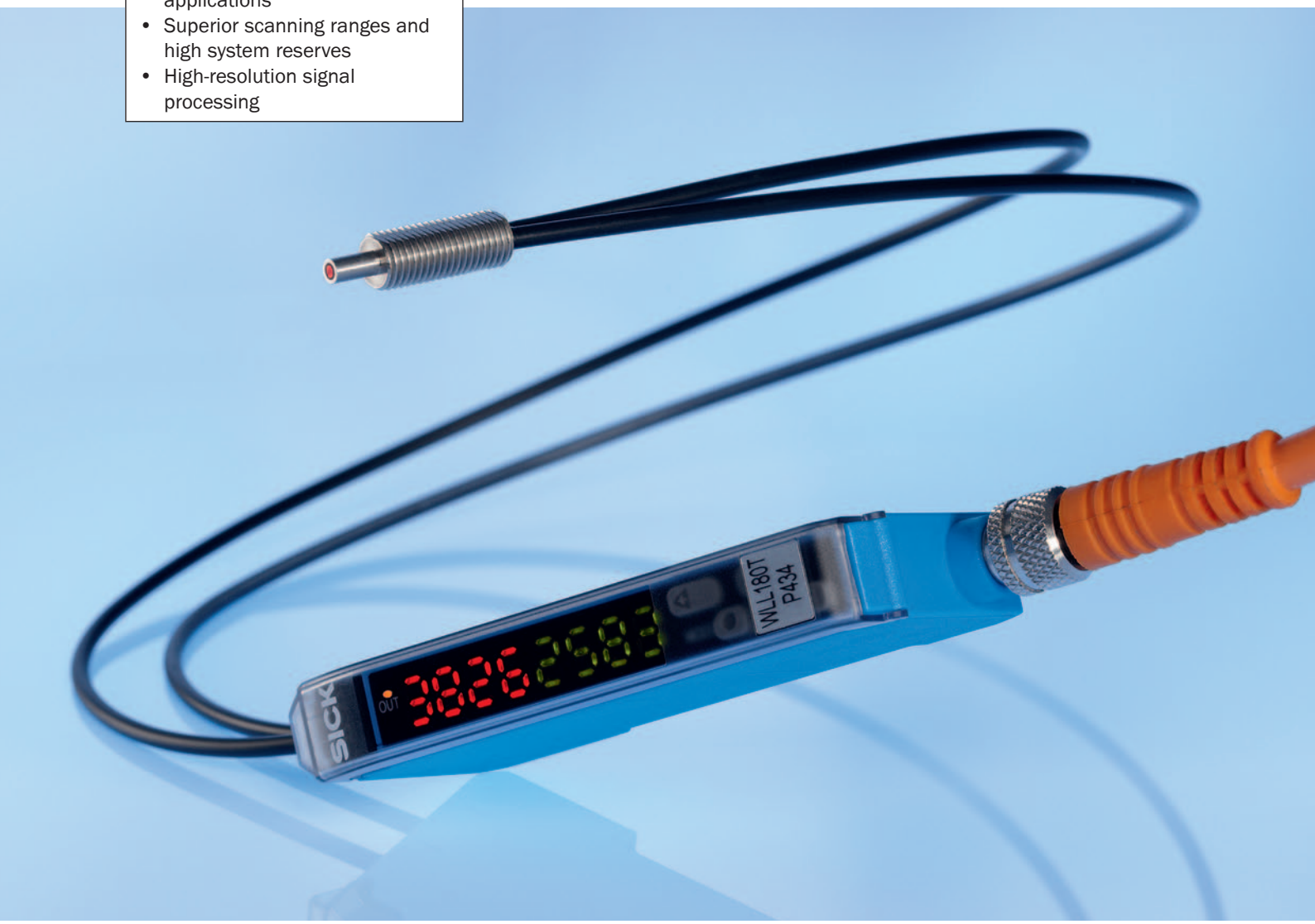
Around the corner at High Speed

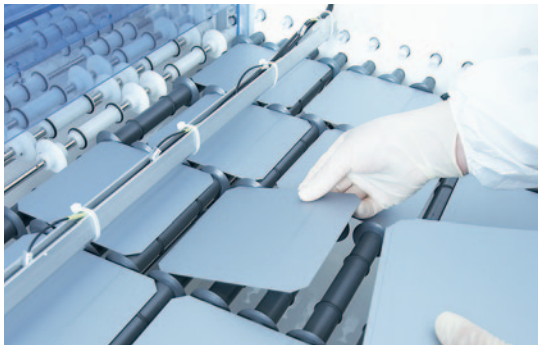
SICK
Sensor Intelligence.

WLL180T:
World-class performance and scanning range

SICK has been developing powerful and reliable sensors for more than 60 years, the most recent success being WLL180T, the world's fastest photoelectric sensor with fiber-optic cable. Its compact size enables reliable object detection even in hard-to-reach machine and system locations. Up to 16 sensors can be operated in a parallel bus mode, for optimum use of space.

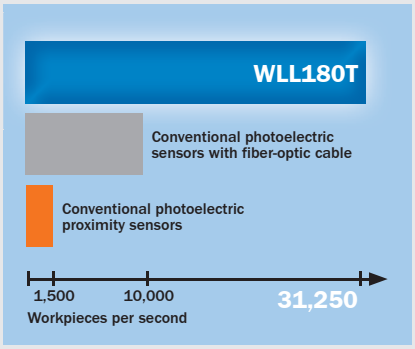
- High speed for fastest applications
- Superior scanning ranges and high system reserves
- High-resolution signal processing





- Response time up to 16 µs
- Scanning range up to 20 m
- Adjustable hysteresis
- 8-fold anti-interference
- Extremely low power consumption
- Time delays
- Flexible display:
  the display can be inverted, to enable easy readability in any mounting position
- Equally good as a stand-alone solution or bus configuration with up to 16 sensors
- Anti-blooming for the detection of highly reflective objects

HIGH SPEED FOR FASTEST APPLICATIONS



With the shortest response time of 16 µs (WLL180T High Speed), even the fastest process operations are detected without loss of reliability, at up to 31,250 operations per second.

SUPERIOR SCANNING RANGES AND HIGH SYSTEM RESERVES

Scanning ranges up to 20 m present no major problems for the WLL180T with the appropriate fiber-optic cable. Objects are reliably detected even in difficult ambient conditions, such as dust, spray, mist or water jets. The powerful light beam penetrates the particles and reliably detects the object.

HIGH-RESOLUTION SIGNAL PROCESSING

With new high-resolution signal processing, even the smallest level changes in the light received are reliably detected, enabling perfect detection of the tiniest or transparent objects.

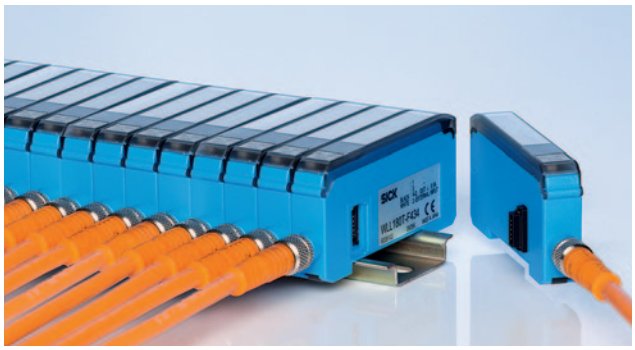
Superior bus capabilities, easy operation

Bus mode allows the synchronisation of up to 16 devices, a feature which eliminates mutual interference (“anti-interference”) where multiple fiber-optic cable heads are mounted close to each other and may inter-react.

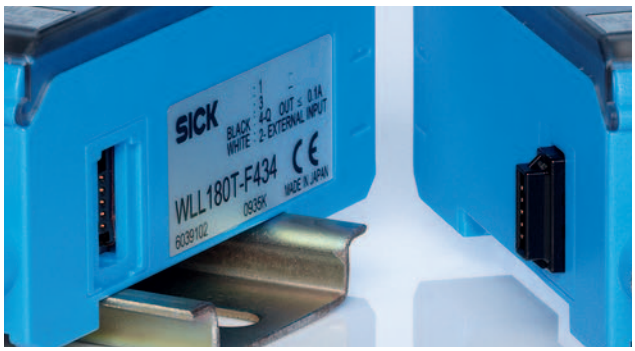
All connected WLL180Ts can be adjusted individually on the sensor itself, or remotely via the respective Teach-in cable. Sensors coupled together on a bus may be simultaneously programmed by a single action.

The “copy” function facilitates commissioning, whereby all settings may be copied to the other sensors connected to the bus at the touch of a button.

The plug/socket system means extremely easy rail mounting.



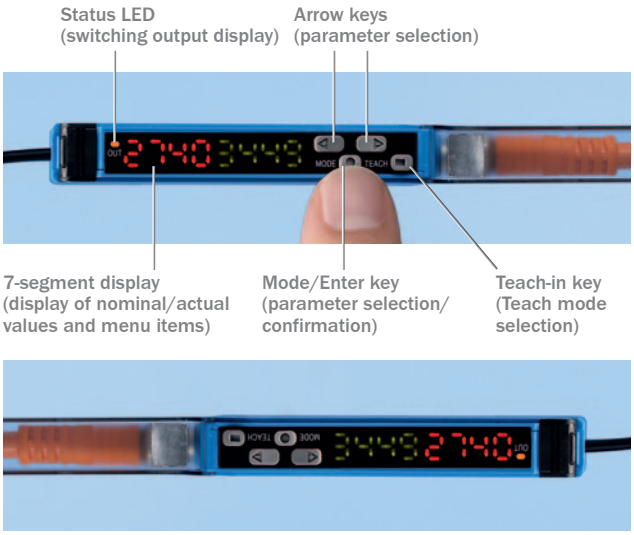
Easy assembly of up to 16 sensors, for bus operation, on a mounting rail



Easy sensor connections with the plug/socket system

Installing, connecting, producing – even in difficult installation conditions

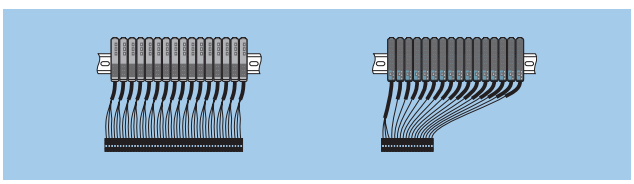
For individual applications, the WLL180T photoelectric sensor with fiber-optic cable can be adjusted very easily through the intuitive operating menu structure and the self-explanatory menu items. Teach-in and parametrization are performed easily and comfortably, directly on the unit.



Ensures comfortable reading: for difficult installation conditions, the 7-segment display can be inverted.

Reduced wiring, thanks to Wire Saving concept

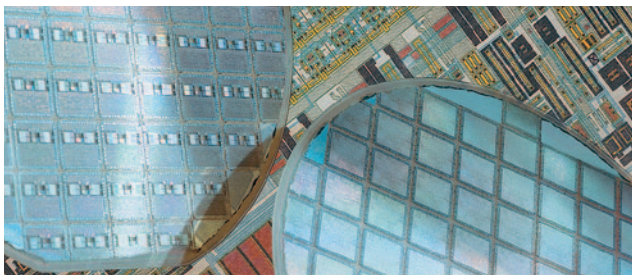
The Wire Saving concept means less wiring. Only the voltage supply for the base unit is connected. The extension units receive their supply via the bus. Thus, only the switching output and the Teach-in input of the extension units need to be wired.



Simple calculation: 64 terminals will be required without Wire Saving (shown on left), only 34 terminals with Wire Saving (shown on right).

Bottom line: 30 fewer terminals, and less wiring!

Typical application areas



SEMICONDUCTOR INDUSTRY

Wire break control during wire bonding, detection of wafers and solar cells. Routine tasks for a WLL180T, particularly where the system runs at high speeds.

ELECTRONICS INDUSTRY

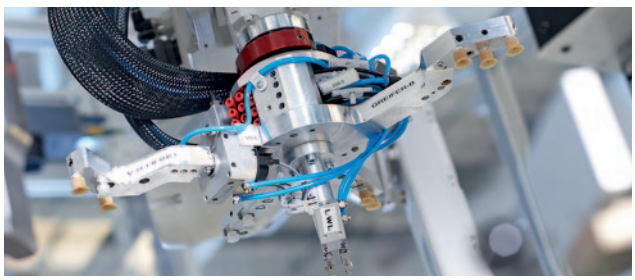
Fiber-optic cables are an ideal solution where installation space is restricted in the electronics industry, e.g. to detect small pins on integrated circuits. Sensors can be mounted some distance away from the object, still detecting the smallest changes in dimensions.

ASSEMBLY AND HANDLING

Counting objects, detecting perforation marks, inserting parts – the easy-to-teach WLL180T proves itself in any industrial operation.

PHARMACEUTICAL INDUSTRY

Detecting contrast marks, product recognition, positioning and counting small tablets – the WLL180T performs the tasks extremely reliably and in the tightest of spaces.



ROBOTICS

Long scanning ranges, compact designs, special vibration resistance – robotics represent a challenge to sensor technology. The WLL180T: tailor-made for high end applications in this environment.

Technical Data

Type	WLL180T				
Bus function	Up to 16 sensors can be operated in bus mode; anti-interference; Wire Saving; copying of parameters				
Connection	M8 plug connector or cable 2 m				
Output type	PNP/NPN open collector				
Input/output	1 external input/1 switching output				
Light sender, type of light	LED, red light, 650 nm				
Switching mode	Light-/dark-switching, selectable				
Response time (depending on setting)	16 µs (High Speed)	70 µs (Fast)	250 µs (Standard)	2 ms (Long)	8 ms (Super Long)
Display	LED status display/8-digit digital dual display; nominal value (green display) and actual value (red display) are displayed simultaneously; display of the parameters				
Time type	OFF delay, ON delay, single-step timer, ON + OFF delay, ON delay + single-step timer; selectable time duration: 0.1 ms to 9999 ms				
External input function	Teach-in, sender LED cut-off, synchronisation				
Supply voltage	12 to 24 V DC				
Power consumption	< 50 mA				
Protective circuits	Reverse-polarity protection, overload and short-circuit protection				
Ambient temperature, operation	–25 °C to +55 °C				
Protection class	III				
Enclosure rating	IP 50				
Dimensions	33.2 mm (H) x 10.5 mm (W) x 71.9 mm (L)				
Housing material	Polycarbonate				

Fiber-optic cables and further photoelectric sensors with fiber-optic cable from SICK can be found in the data sheet “Fiber-optic sensors and fibers” with the order number 8012052 or at www.sick.com

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Please find detailed addresses and additional representatives and agencies in all major industrial nations at **www.sick.com**

Handed over by:

Our Business Segment Expertise

Factory automation

With its intelligent sensors, safety systems, and automatic identification applications, SICK provides comprehensive solutions for factory automation.

- Non-contact detecting, counting, classifying, and positioning of any type of object
- Accident protection and personal safety using sensors, as well as safety software and services

Logistics automation

Sensors made by SICK form the basis for automating material flows and the optimisation of sorting and warehousing processes.

- Automated identification with barcode and RFID reading devices for the purpose of sorting and target control in industrial material flow
- Detecting volume, position, and contours of objects and surroundings with laser measurement systems

Process automation

Optimised system solutions from SICK ensure efficient acquisition of environmental and process data in many industrial processes.

- Precise measurement of gases, liquids and dust concentrations for continuous monitoring of emissions and the acquisition of process data in production processes
- Gas flow measurements with maximum accuracy thanks to compact gas metres

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