

# Laser Distance Sensor

## High-Precision

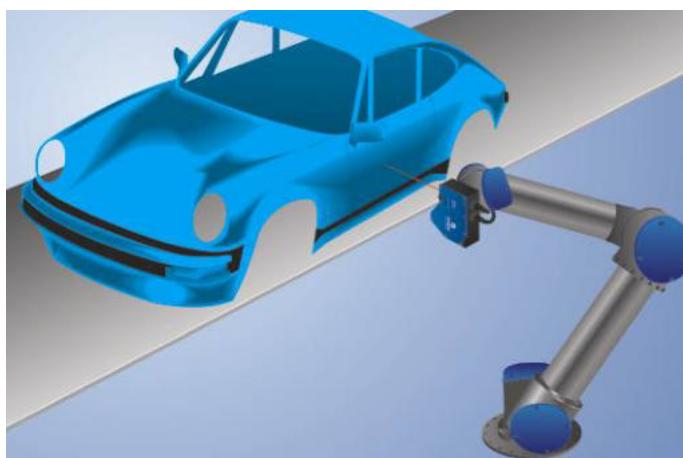
### PNBC005 LASER

Part Number



- Constant, surface-independent measured values
- Highly precise measurement with a maximum linearity deviation of 0.05%
- Industry 4.0 compatible thanks to Industrial Ethernet
- Thermally stable measured values without any warm-up phase

Sensors from the PNBC range work with a high resolution CMOS line array and determine distance to the object by means of angular measurement. Top quality optics permit measured values with 16-bit resolution. Thanks to proven algorithms, stable measured values are obtained even for complex surfaces, for example sheet metal with speckle effect. They demonstrate outstanding accuracy with maximum linearity deviation of just 0.05%, and required only a short warm-up phase thanks to minimized temperature drift. Values are read out simultaneously via the analog output and the interface. Up to 4 switching outputs can be taught in externally. An incremental encoder input rounds the product out.



#### Technical Data

##### Optical Data

Working Range	90...190 mm
Measuring Range	100 mm
Resolution	1,5 $\mu$ m
Linearity Deviation	50 $\mu$ m
Light Source	Laser (red)
Wavelength	658 nm
Service Life (T = +25 °C)	100000 h
Laser Class (EN 60825-1)	2
Max. Ambient Light	10000 Lux
Light Spot Diameter	< 0,75 mm

##### Electrical Data

Supply Voltage	15...30 V DC
Current Consumption (Ub = 24 V)	280 mA
Switching Frequency	15 kHz
Response Time	< 33 $\mu$ s
Output rate	10...30000 /s
Temperature Drift	0,005 %/K
Temperature Range	-10...40 °C
Number of Switching Outputs	4
Switching Output Voltage Drop	< 1,5 V
Switching Output/Switching Current	100 mA
Analog Output	4...20 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Teach Mode	VT, FT
Interface	Ethernet TCP/IP
Baud Rate	100 Mbit/s
Protection Class	III
FDA Accession Number	1620645-000

##### Mechanical Data

Setting Method	Teach-In
Housing Material	Aluminum
Degree of Protection	IP67
Connection	M12 x 1; 8-pin
Type of Connection Ethernet	M12 x 1; 4-pin, D-cod.
Optic Cover	Glass
Weight	240 g
Web server	yes
Scope of delivery	Calibration report
Push-Pull	
Connection Diagram No.	004   134
Control Panel No.	A16
Suitable Connection Equipment No.	51   89
Suitable Mounting Technology No.	341

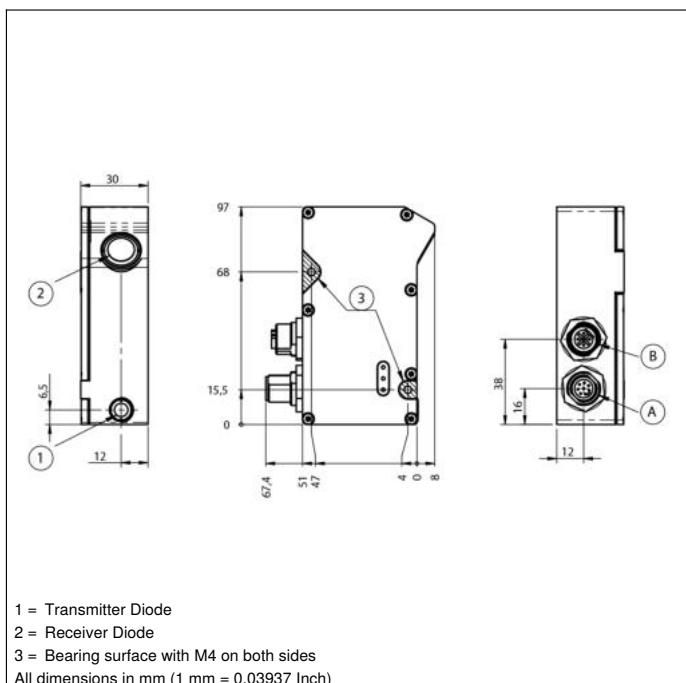
#### Complementary Products

Cooling Unit ZNBK001

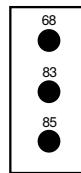
Protective Screen Retainer ZNBS005

Software

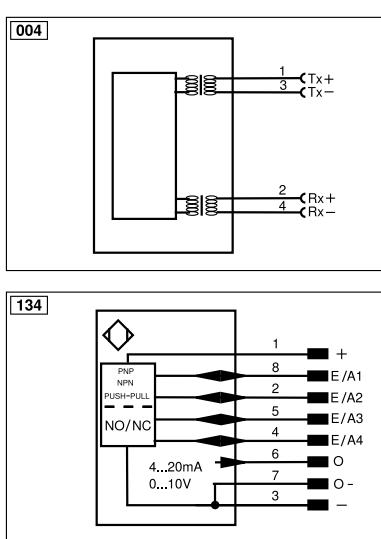
Switch ZAC51xN01



### Ctrl. Panel



68 = supply voltage indicator  
83 = Signal  
85 = Link/Act LED



Legend		Wire Colors according to DIN IEC 60757	
+	Supply Voltage +	nc	Not connected
-	Supply Voltage 0 V	U	Test Input
~	Supply Voltage (AC Voltage)	Ü	Test Input inverted
A	Switching Output (NO)	W	Trigger Input
Ä	Switching Output (NC)	W-	Ground for the Trigger Input
V	Contamination/Error Output (NO)	O	Analog Output
Ü	Contamination/Error Output (NC)	O-	Ground for the Analog Output
E	Input (analog or digital)	BZ	Block Discharge
T	Teach Input	AmV	Valve Output
Z	Time Delay (activation)	a	Valve Control Output +
S	Shielding	b	Valve Control Output 0 V
RxD	Interface Receive Path	SY	Synchronization
TxD	Interface Send Path	SY-	Ground for the Synchronization
RDY	Ready	E+	Receiver-Line
GND	Ground	S+	Emitter-Line
CL	Clock	±	Grounding
E/A	Output/Input programmable	SnR	Switching Distance Reduction
IO-Link		Rx+/-	Ethernet Receive Path
PoE	Power over Ethernet	Tx+/-	Ethernet Send Path
IN	Safety Input	Bus	Interfaces-Bus A(+)/B(-)
OSSD	Safety Output	La	Emitted Light disengageable
Signal	Signal Output	Mag	Magnet activation
BI_D+/-	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation
EN0_RS422	Encoder 0-pulse 0/0 (TTL)	EDM	Contactor Monitoring
PT	Platinum measuring resistor	ENARS422	Encoder A/A (TTL)
		BK	Black
		BN	Brown
		RD	Red
		OG	Orange
		YE	Yellow
		GN	Green
		BU	Blue
		VT	Violet
		GY	Grey
		WH	White
		PK	Pink
		GNYE	Green/Yellow

