

High-Performance Distance Sensor

PNBC004

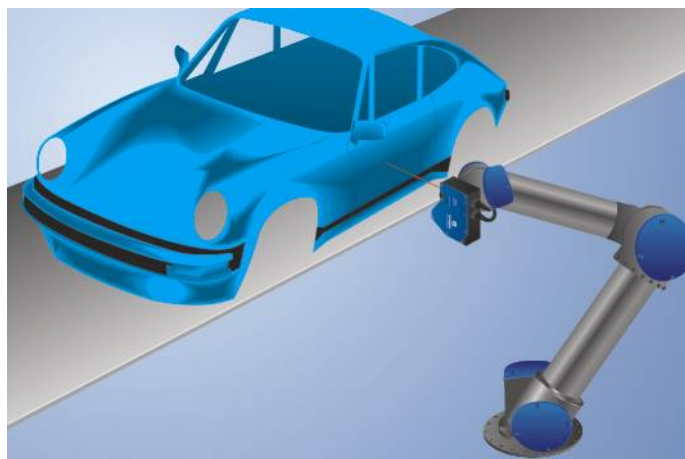
LASER

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.

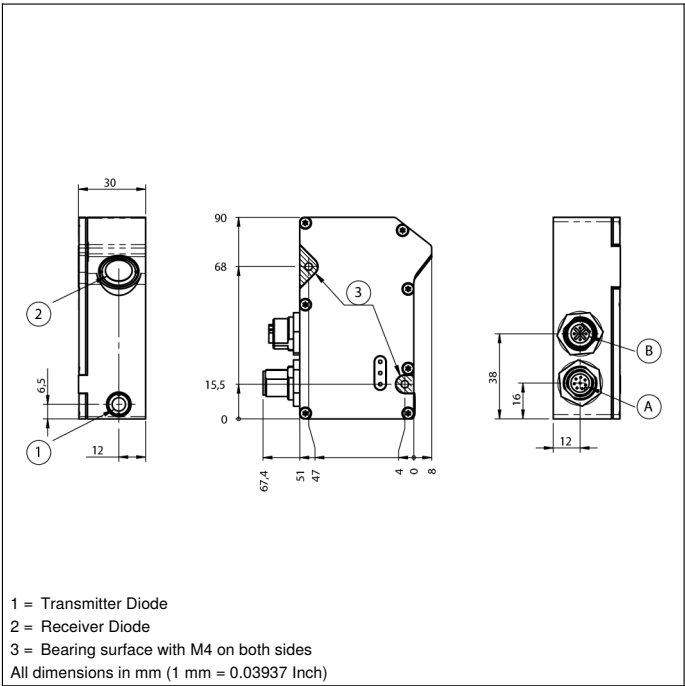


Technical Data

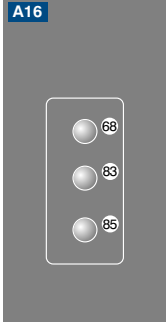
Optical Data	
Working Range	58...108 mm
Measuring Range	50 mm
Resolution	0,8 µm
Linearity Deviation	25 µm
Light Source	Laser (red)
Wavelength	658 nm
Service Life (T = +25 °C)	100000 h
Laser Class (EN 60825-1)	2
Max. Ambient Light	10000 Lux
Light Spot Diameter	< 0,35 mm
Electrical Data	
Supply Voltage	15...30 V DC
Current Consumption (U _b = 24 V)	280 mA
Switching Frequency	15 kHz
Response Time	< 33 µs
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	0...10 V/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 × 1; 8-pin
Type of Connection Ethernet	M12 × 1; 4-pin, D-cod.
Optic Cover	Glass
Weight	230 g
Web server	yes
Scope of delivery	Calibration report
Configurable as PNP/NPN/Push-Pull	●
Switchable to NC/NO	●
Connection Diagram No.	004 134
Control Panel No.	A16
Suitable Connection Equipment No.	51 89
Suitable Mounting Technology No.	341

Complementary Products

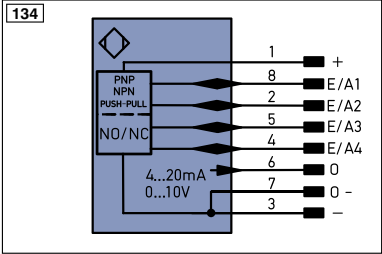
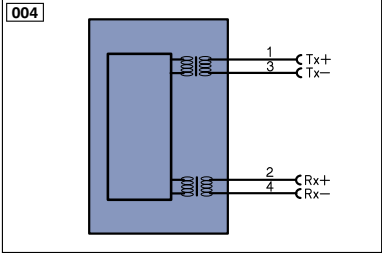
Cooling Unit ZNBK001
Protective Screen Retainer ZNBS004
Software
Switch ZAC51xN01



Ctrl. Panel



68 = Supply Voltage Indicator
83 = Signal
85 = Link/Act LED



Legend

+	Supply Voltage +	PT	Platinum measuring resistor
-	Supply Voltage 0 V	nc	not connected
~	Supply Voltage (AC Voltage)	U	Test Input
A	Switching Output (NO)	U	Test Input inverted
Ā	Switching Output (NC)	W	Trigger Input
V	Contamination/Error Output (NO)	W-	Ground for the Trigger Input
Ṽ	Contamination/Error Output (NC)	O	Analog Output
E	Input (analog or digital)	O-	Ground for the Analog Output
T	Teach Input	BZ	Block Discharge
Z	Time Delay (activation)	Awv	Valve Output
S	Shielding	a	Valve Control Output +
RxD	Interface Receive Path	b	Valve Control Output 0 V
TxD	Interface Send Path	SY	Synchronization
RDY	Ready	SY-	Ground for the Synchronization
GND	Ground	E+	Receiver-Line
CL	Clock	S+	Emitter-Line
E/A	Output/Input programmable	±	Grounding
IO-Link	IO-Link	SnR	Switching Distance Reduction
PoE	Power over Ethernet	Rx+/-	Ethernet Receive Path
IN	Safety Input	Tx+/-	Ethernet Send Path
OSSD	Safety Output	Bus	Interfaces-Bus A(+)/B(-)
Signal	Signal Output	La	Emitted Light disengageable
BI...D+/-	Ethernet Gigabit bidirect. data line (A-D)	Mag	Magnet activation
EN0...5422	Encoder 0-pulse 0-0 (TTL)	RES	Input confirmation
		EDM	Contact Monitoring

EN0...5422	Encoder A/Ā (TTL)
EN0...5422	Encoder B/B̄ (TTL)
ENa	Encoder A
ENb	Encoder B
AMIN	Digital output MIN
AMAX	Digital output MAX
AOK	Digital output OK
SY in	Synchronization In
SY OUT	Synchronization OUT
OLt	Brightness output
M	Maintenance
rsv	reserved
Wire Colors according to IEC 60757	
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

