

Laser Distance Sensor

Triangulation

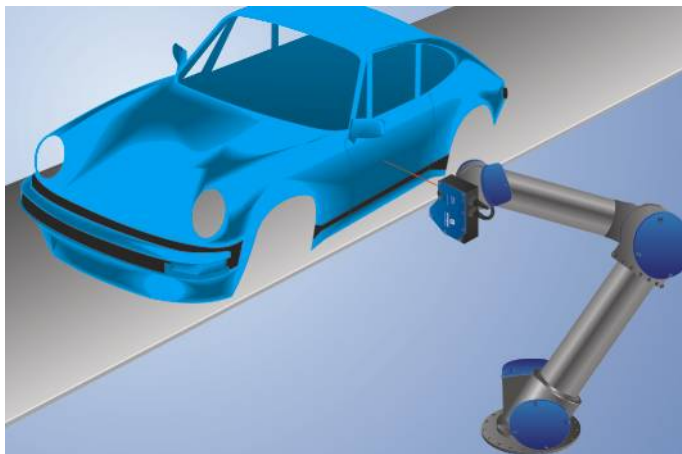
PNBC003 LASER

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	40...60 mm
Measuring Range	20 mm
Resolution	0,3 µm
Linearity Deviation	10 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	< 0,25 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	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	220 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

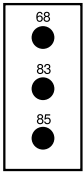
Protective Screen Retainer ZNBS003

Software

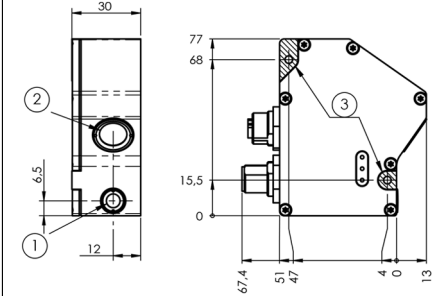
Switch ZAC51xN01

Ctrl. Panel

A16

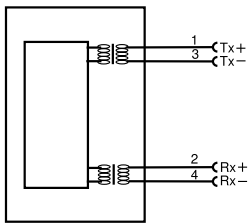


68 = supply voltage indicator
83 = Signal
85 = Link/Act LED

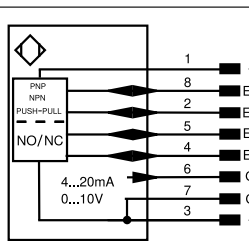


3 = Bearing surface with M4 on both sides
All dimensions in mm (1 mm = 0.03937 Inch)

004



134



Legend			
+	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
Ȳ	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	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
BL_D+/-	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation
ENo RS422	Encoder 0-pulse 0/Ü (TTL)	EDM	Contact Monitoring
PT	Platinum measuring resistor	ENARs422	Encoder A/Ä (TTL)
ENBRS422	Encoder B/B (TTL)	ENA	Encoder A
ENB	Encoder B	AMIN	Digital output MIN
AMAX	Digital output MAX	ACK	Digital output OK
SY In	Synchronization In	SY OUT	Synchronization OUT
OLT	Brightness output	M	Maintenance
rsv	Reserved		
Wire Colors according to DIN 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		