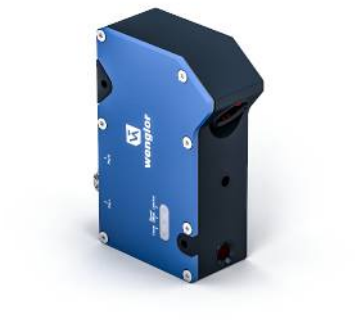
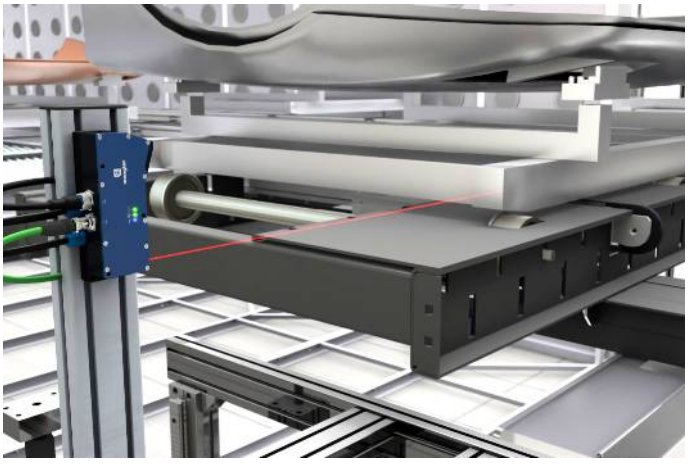
Laser Distance Sensor
Triangulation

PNBC104 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.

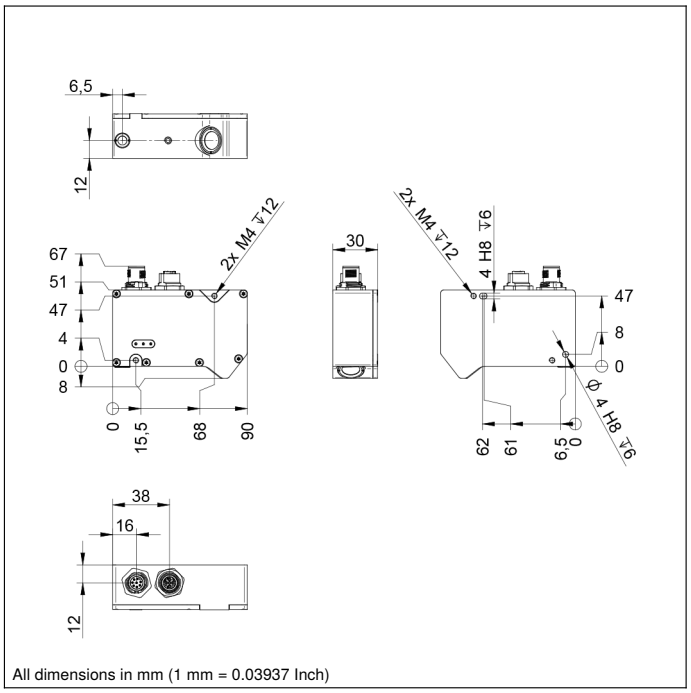


Technical Data

Optical Data	
Working Range	58...108 mm
Measuring Range	50 mm
Reproducibility maximum	20 µm
Reproducibility: 1 Sigma	2,5 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 (Ub = 24 V)	280 mA
Switching Frequency	15 kHz
Response Time	< 33 µs
Output rate	10...30000 /s
Temperature Drift	2,5 µm/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/0...10 V
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Teach Mode	VT, FT
Interface	Ethernet TCP/IP; EtherCat
Baud Rate	100 Mbit/s
Protection Class	III
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
Optic Cover	Glass
Weight	230 g
Web server	yes
Scope of delivery	Calibration report
Push-Pull	●
EtherCAT	●
Connection Diagram No.	004 134
Control Panel No.	A52
Suitable Connection Equipment No.	51 89
Suitable Mounting Technology No.	341

Complementary Products

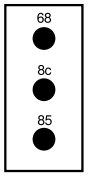
Cooling Unit ZNBK001
Protective Screen Retainer ZNBS004
Software
Switch ZAC51xN01



All dimensions in mm (1 mm = 0.03937 Inch)

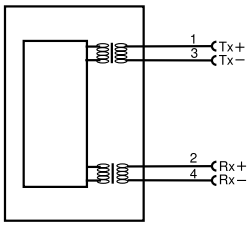
Ctrl. Panel

A52



68 = supply voltage indicator
85 = Link/Act LED
8c = signal/status

004



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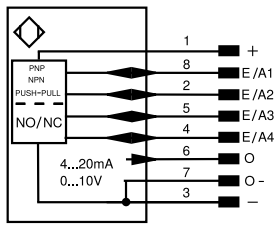

Legend					
+	Supply Voltage +	nc	Not connected	ENBRS422	Encoder B/B̄ (TTL)
–	Supply Voltage 0 V	U	Test Input	ENA	Encoder A
~	Supply Voltage (AC Voltage)	Ū	Test Input inverted	ENB	Encoder B
A	Switching Output (NO)	W	Trigger Input	AMIN	Digital output MIN
Ā	Switching Output (NC)	W–	Ground for the Trigger Input	AMAX	Digital output MAX
V	Contamination/Error Output (NO)	O	Analog Output	AOK	Digital output OK
V̄	Contamination/Error Output (NC)	O–	Ground for the Analog Output	SY In	Synchronization In
E	Input (analog or digital)	BZ	Block Discharge	SY OUT	Synchronization OUT
T	Teach Input	AMV	Valve Output	OLT	Brightness output
Z	Time Delay (activation)	a	Valve Control Output +	M	Maintenance
S	Shielding	b	Valve Control Output 0 V	rsv	Reserved
RxD	Interface Receive Path	SY	Synchronization	Wire Colors according to DIN IEC 60757	
TxD	Interface Send Path	SY–	Ground for the Synchronization	BK	Black
RDY	Ready	E+	Receiver-Line	BN	Brown
GND	Ground	S+	Emitter-Line	RD	Red
CL	Clock	⏚	Grounding	OG	Orange
E/A	Output/Input programmable	SnR	Switching Distance Reduction	YE	Yellow
	IO-Link	Rx+/–	Ethernet Receive Path	GN	Green
PoE	ower over Ethernet	Tx+/–	Ethernet Send Path	BU	Blue
IN	Safety Input	Bus	Interfaces-Bus A(+)/B(–)	VT	Violet
OSSD	Safety Output	La	Emitted Light disengageable	GY	Grey
Signal	Signal Output	Mag	Magnet activation	WH	White
BI_D+/–	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation	PK	Pink
EN0 RS422	Encoder 0-pulse 0/0̄ (TTL)	EDM	Contactor Monitoring	GNYE	Green/Yellow
PT	Platinum measuring resistor	ENARS422	Encoder A/Ā (TTL)		