Print Mark Sensors

WP04NAT80

Part Number

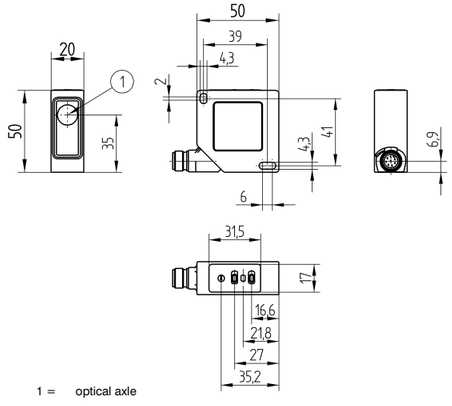
- **Digital read-out of gray-scale values via the RS-232 Interface**
- **High geometric resolution and very high contrast resolution**
- **Teach-In, dynamic Teach-In, external Teach-In, RS-232 Interface**
- **Very small spot: 1.4 mm x 4 mm**

These sensors have been specially designed to recognize print marks. They have a very small spot and use a white light LED with long service life. Only one sensor is required for the recognition of all color combinations, as well as the difference in brightness between print marks and the background.

Technical Data

Optical Data	
Working Range	30...40 mm
Working Distance	35 mm
Resolution	100 Gray Scale
Switching Hysteresis	< 1 %
Light Source	White Light
Wave Length	400...700 nm
Service Life (T = +25°C)	100000 h
max. Ambient Light	10000 Lux
Light Spot Size a (a x b)	1.4 mm
Light Spot Size b (a x b)	4 mm
Electrical Data	
Supply Voltage	10...30 V
Current Consumption (Ub = 24V)	< 50 mA
Switching Frequency	25 kHz
Response Time	20 µs
ON-/OFF-Delay	yes
Time Delay	1...100 ms
Temperature Drift	< 1 %
Temperature Range	-25...60 °C
Switching Outputs	2
Switching Output Voltage Drop	1.5 V
Switching Output/Switching Current	100 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Lockable	yes
Teach Mode	ZT,DT,TP
Interface	RS-232
Baud Rate	38400 Bd
Digital Inputs	2
Mechanical Data	
Adjustment	Teach-In
Housing	Plastic
Protection Mode	IP 67
Connection	M 12x1
Protective Insulation, Rated Voltage	50 V

All dimensions in mm (1 mm = 0.03937 Inch)



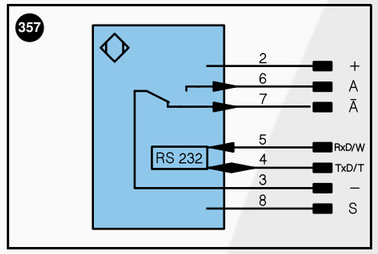
1 = optical axle

Specifications are subject to change without notice

37/03

	Plug Version
	Part Number: WP04NAT80
NPN NO/NC antivalent	●
RS-232 Interface	●
Connection Diagram No.	357
Control Panel No.	P 6
Suitable Plug No.	80

50 V



Legend

+	Power supply "+"	U	Test input
–	Power supply "0V"	W	Trigger input
~	Power supply (AC Voltage)	O	Analog output (1,2,3,...)
A	Switching output (1,2,3...) / NO	O–	Ground for the analog output
Ā	Switching output (1,2,3...) / NC	BZ	Block discharge
V	Contamination / Error output (NO)	AMV	Valve output
V̄	Contamination / Error output (NC)	a	Valve control output "+"
E	Input (analog or digital)	b	Valve control output "0V"
T	Teach input	SY	Synchronization
Z	Time delay (activation)	E+	Receiver-Line
S	Shielding	S+	Emitter-Line
RxD	RS-232 receive path	⏚	Grounding
TxD	RS-232 send path		

Wire colors according to DIN IEC 757

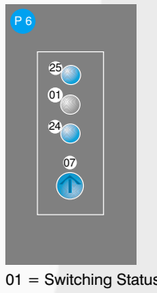
BK	black
BN	brown
RD	red
OG	orange
YE	yellow
GN	green
BU	blue
VT	violet
GY	grey
WH	white
PK	pink
GNYE	green yellow

Accessories

Mounting Bracket WP

Serial Interface Adapter S232W2

Ctrl.Panel



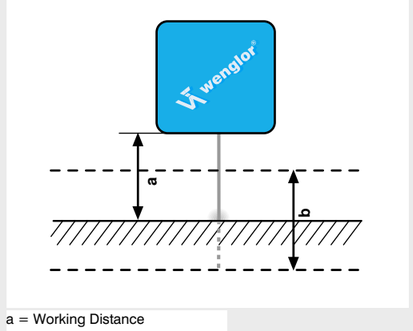
01 = Switching Status Indicator

07 = Selector Switch

24 = Plus Button

25 = Minus Button

Ideal Working Distance



a = Working Distance

b = Working Range