High-Performance Distance Sensor

LASER

YP09PA3 Part Number

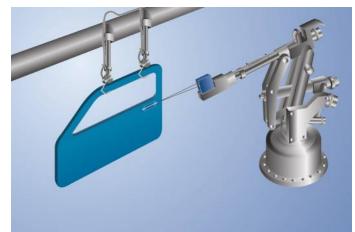


- Smallest recognizable distance difference: 200 µm
- Spot diameter: 0,8 mm

Technical Data

Range100 mmAdjustable Range60100 mmSwitching Hysteresis< 200 µmLight SourceLaser (red)Wavelength660 nmService Life (T = +25 °C)100000 hLaser Class (EN 60825-1)2Max. Ambient Light10000 LuxLight Spot Diameter0.8 mmFocus Distance110 mmElectrical Data1030 V DCCurrent Consumption (Ub = 24 V)< 30 mASwitching Frequency1500 HzResponse Time333 µsTemperature Drift<15 µm/KTemperature Range<2560 °CSwitching Output Voltage Drop×2,5 VPNP Switching Output/Switching Current200 mAShort Circuit ProtectionyesProtection ClassIIIMechanical DataSetting MethodPotentiometerHousing MaterialPlasticFull EncapsulationyesDegree of ProtectionIP67Connection Diagram No.101Connection Diagram No.101Suitable Connection Equipment No.2Suitable Mounting Technology No.380	Optical Data			
Switching Hysteresis< 200 µmLight SourceLaser (red)Wavelength660 nmService Life (T = +25 °C)100000 hLaser Class (EN 60825-1)2Max. Ambient Light10000 LuxLight Spot Diameter0,8 mmFocus Distance110 mmElectrical Data1030 V DCCurrent Consumption (Ub = 24 V)< 30 mA	Range	100 mm		
Light SourceLaser (red)Wavelength660 nmService Life (T = +25 °C)100000 hLaser Class (EN 60825-1)2Max. Ambient Light10000 LuxLight Spot Diameter0,8 mmFocus Distance110 mmElectrical Data1030 V DCCurrent Consumption (Ub = 24 V)< 30 mA	Adjustable Range	60100 mm		
Wavelength660 nmService Life (T = +25 °C)100000 hLaser Class (EN 60825-1)2Max. Ambient Light10000 LuxLight Spot Diameter0,8 mmFocus Distance110 mmElectrical DataSupply Voltage1030 V DCCurrent Consumption (Ub = 24 V)< 30 mA	Switching Hysteresis	< 200 <i>µ</i> m		
Service Life (T = +25 °C)100000 hLaser Class (EN 60825-1)2Max. Ambient Light10000 LuxLight Spot Diameter0,8 mmFocus Distance110 mmElectrical Data1030 V DCCurrent Consumption (Ub = 24 V)< 30 mA	Light Source	Laser (red)		
Laser Class (EN 60825-1)2Max. Ambient Light10000 LuxLight Spot Diameter0,8 mmFocus Distance110 mmElectrical Data1030 V DCSupply Voltage1030 V DCCurrent Consumption (Ub = 24 V)< 30 mA	Wavelength	660 nm		
Max. Ambient Light10000 LuxLight Spot Diameter0,8 mmFocus Distance110 mmElectrical Data1030 V DCSupply Voltage1030 V DCCurrent Consumption (Ub = 24 V)< 30 mA	Service Life (T = +25 °C)	100000 h		
Light Spot Diameter0,8 mmFocus Distance110 mmElectrical Data1030 V DCSupply Voltage1030 V DCCurrent Consumption (Ub = 24 V)< 30 mA	Laser Class (EN 60825-1)	2		
Focus Distance110 mmElectrical Data1030 V DCSupply Voltage1030 V DCCurrent Consumption (Ub = 24 V)< 30 mA	Max. Ambient Light	10000 Lux		
Electrical DataSupply Voltage1030 V DCCurrent Consumption (Ub = 24 V)< 30 mA	Light Spot Diameter	0,8 mm		
Supply Voltage1030 V DCCurrent Consumption (Ub = 24 V)< 30 mA	Focus Distance	110 mm		
Current Consumption (Ub = 24 V)< 30 mASwitching Frequency1500 HzResponse Time333 µsTemperature Drift< 15 µm/K	Electrical Data			
Switching Frequency1500 HzResponse Time333 µsTemperature Drift<15 µm/K	Supply Voltage	1030 V DC		
Response Time333 µsTemperature Drift< 15 µm/K	Current Consumption (Ub = 24 V)	< 30 mA		
Temperature Drift< 15 µm/KTemperature Range-2560 °CSwitching Output Voltage Drop< 2,5 V	Switching Frequency	1500 Hz		
Temperature Range-2560 °CSwitching Output Voltage Drop< 2,5 V	Response Time	333 <i>µ</i> s		
Switching Output Voltage Drop< 2,5 VPNP Switching Output/Switching Current200 mAShort Circuit ProtectionyesReverse Polarity ProtectionyesOverload ProtectionyesProtection ClassIIIMechanical DataIIISetting MethodPotentiometerHousing MaterialPlasticFull EncapsulationyesDegree of ProtectionIP67ConnectionM12 × 1; 4-pinPNP NO/NC antivalentID1Connection Diagram No.ID1Control Panel No.2	Temperature Drift	< 15 <i>µ</i> m/K		
PNP Switching Output/Switching Current200 mAShort Circuit ProtectionyesReverse Polarity ProtectionyesOverload ProtectionyesProtection ClassIIIMechanical DataIIISetting MethodPotentiometerHousing MaterialPlasticFull EncapsulationyesDegree of ProtectionIP67Connection Diagram No.101Connection Diagram No.2	Temperature Range	-2560 °C		
Short Circuit ProtectionyesReverse Polarity ProtectionyesOverload ProtectionyesProtection ClassIIIMechanical DataIIISetting MethodPotentiometerHousing MaterialPlasticFull EncapsulationyesDegree of ProtectionIP67ConnectionM12 × 1; 4-pinPNP NO/NC antivalent●Connection Diagram No.101Control Panel No.₽2Suitable Connection Equipment No.2	Switching Output Voltage Drop	< 2,5 V		
Reverse Polarity ProtectionyesOverload ProtectionyesProtection ClassIIIMechanical DataIIISetting MethodPotentiometerHousing MaterialPlasticFull EncapsulationyesDegree of ProtectionIP67ConnectionM12 × 1; 4-pinPNP NO/NC antivalent●Connection Diagram No.101Control Panel No.P2Suitable Connection Equipment No.2	PNP Switching Output/Switching Current	200 mA		
Overload ProtectionyesProtection ClassIIIMechanical DataIIISetting MethodPotentiometerHousing MaterialPlasticFull EncapsulationyesDegree of ProtectionIP67ConnectionM12 × 1; 4-pinPNP NO/NC antivalent●Connection Diagram No.101Control Panel No.P2Suitable Connection Equipment No.2	Short Circuit Protection	yes		
Protection Class III Mechanical Data III Setting Method Potentiometer Housing Material Plastic Full Encapsulation yes Degree of Protection IP67 Connection M12 × 1; 4-pin PNP NO/NC antivalent ● Connection Diagram No. 101 Control Panel No. ₽2 Suitable Connection Equipment No. 2	Reverse Polarity Protection	yes		
Mechanical Data Setting Method Potentiometer Housing Material Plastic Full Encapsulation yes Degree of Protection IP67 Connection M12 × 1; 4-pin PNP NO/NC antivalent Connection Diagram No. 101 Control Panel No. P2 Suitable Connection Equipment No. 2 	Overload Protection	yes		
Setting MethodPotentiometerHousing MaterialPlasticFull EncapsulationyesDegree of ProtectionIP67ConnectionM12 × 1; 4-pinPNP NO/NC antivalentIO1Connection Diagram No.IO1Control Panel No.P2Suitable Connection Equipment No.2	Protection Class	III		
Housing Material Plastic Full Encapsulation yes Degree of Protection IP67 Connection M12 × 1; 4-pin PNP NO/NC antivalent Connection Diagram No. Control Panel No. Suitable Connection Equipment No. 2 	Mechanical Data			
Full Encapsulation yes Degree of Protection IP67 Connection M12 × 1; 4-pin PNP NO/NC antivalent • Connection Diagram No. 101 Control Panel No. P2 Suitable Connection Equipment No. 2	Setting Method	Potentiometer		
Degree of Protection IP67 Connection M12 × 1; 4-pin PNP NO/NC antivalent • Connection Diagram No. 101 Control Panel No. P2 Suitable Connection Equipment No. 2	Housing Material	Plastic		
ConnectionM12 × 1; 4-pinPNP NO/NC antivalent•Connection Diagram No.101Control Panel No.P2Suitable Connection Equipment No.2	Full Encapsulation	yes		
PNP NO/NC antivalent Connection Diagram No. IO1 Control Panel No. P2 Suitable Connection Equipment No. 2	Degree of Protection	IP67		
Connection Diagram No. 101 Control Panel No. P2 Suitable Connection Equipment No. 2	Connection	M12 × 1; 4-pin		
Control Panel No. P2 Suitable Connection Equipment No. 2	PNP NO/NC antivalent			
Suitable Connection Equipment No. 2	Connection Diagram No.	101		
	Control Panel No.	P2		
Suitable Mounting Technology No. 380	Suitable Connection Equipment No.	2		
	Suitable Mounting Technology No.	380		

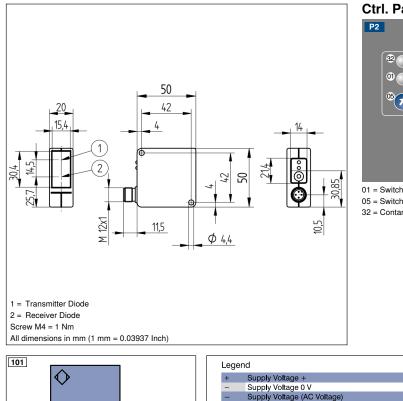
These sensors detect distance by measuring angles. They are particularly good at recognizing objects in front of any background. The color, shape and surface characteristics of the object have practically no influence on sensor switching performance.



Complementary Products

PNP-NPN Converter BG2V1P-N-2M Protective Housing ZSV-0x-01 Set Protective Housing ZSP-NN-02





А Ā

Ctrl. Panel	
P2	
01 = Switching Status In	•

Switching Status Indicator

05 = Switching Distance Adjuster 32 = Contamination Warning/Error Warning

.egen	d		PT	Platinum measuring resistor	ENAR5422	Encoder A/Ā (TTL)
+	Supply Voltage +		nc	not connected	ENBR5422	Encoder B/B (TTL)
-	Supply Voltage 0 V		U	Test Input	ENA	Encoder A
~	Supply Voltage (AC Voltage)		Ū	Test Input inverted	ENв	Encoder B
A	Switching Output	(NO)	W	Trigger Input	Amin	Digital output MIN
Ā	Switching Output	(NC)	W -	Ground for the Trigger Input	Амах	Digital output MAX
V	Contamination/Error Output	(NO)	0	Analog Output	Аок	Digital output OK
V	Contamination/Error Output	(NC)	0 -	Ground for the Analog Output	SY In	Synchronization In
=	Input (analog or digital)		BZ	Block Discharge	SY OUT	Synchronization OUT
Т	Teach Input		Awv	Valve Output	OLT	Brightness output
Z	Time Delay (activation)		а	Valve Control Output +	м	Maintenance
S	Shielding		b	Valve Control Output 0 V	rsv	reserved
RxD	Interface Receive Path		SY	Synchronization	Wire Co	olors according to DIN IEC 757
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
0	IO-Link		Rx+/-	Ethernet Receive Path	GN	Green
PoE	Power over Ethernet		Tx+/-	Ethernet Send Path	BU	Blue
IN	Safety Input		Bus	Interfaces-Bus A(+)/B(-)	VT	Violet
DSSD	Safety Output		La	Emitted Light disengageable	GY	Grey
Signal	Signal Output		Mag	Magnet activation	WH	White
BI_D+/-	Ethernet Gigabit bidirect. data	a line (A-D)	RES	Input confirmation	PK	Pink
ENO RS422	Encoder 0-pulse 0-0 (TTL)		EDM	Contactor Monitoring	GNYE	Green/Yellow

Switching Distance Deviation

Typical characteristic curve based on white, 90 % remission

