## **High-Performance Distance Sensor**

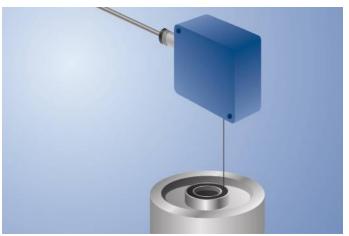
# CP70QXVT80 LASER

Part Number



- CMOS line array
- Highly accurate switching distance
- Minimal switching hysteresis
- Switching point independent of material, color and brightness

These sensors work with a high-resolution CMOS line and DSP technology and determine distance using angular measurement. As a result, material, color and brightness related switching point differences are virtually eliminated. Two independent switching outputs are available, at which two switching thresholds and one on or off-delay time (in 10 ms steps) can be configured. Sensor functions can be activated, and scanning results can be acquired via the RS-232 interface.



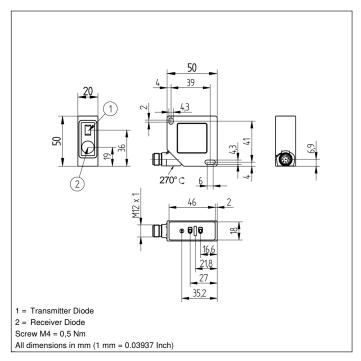
#### **Technical Data**

Range	Optical Data			
Switching Hysteresis	Range	660 mm		
Light Source	Adjustable Range	60660 mm		
Wavelength         655 nm           Service Life (T = +25 °C)         100000 h           Laser Class (EN 60825-1)         2           Max. Ambient Light         10000 Lux           Light Spot Diameter         see Table 1           Electrical Data           Supply Voltage         1030 V DC           Current Consumption (Ub = 24 V)         < 50 mA	Switching Hysteresis	< 1 %		
Service Life (T = +25 °C)         100000 h           Laser Class (EN 60825-1)         2           Max. Ambient Light         10000 Lux           Light Spot Diameter         see Table 1           Electrical Data           Supply Voltage         1030 V DC           Current Consumption (Ub = 24 V)         < 50 mA	Light Source	Laser (red)		
Laser Class (EN 60825-1)  Max. Ambient Light  Light Spot Diameter  Electrical Data  Supply Voltage  Current Consumption (Ub = 24 V)  Switching Frequency  Response Time  On-/Off-Delay (RS-232)  Cumber of Switching Outputs  Switching Output Voltage Drop  Reverse Polarity Protection  Teach Mode  Protection Class  FDA Accession Number  Mechanical Data  Setting Method  Connection  Error Output  Configurable as PNP/NPN/Push-Pull  Switchalp Rol  Suitable Connection Equipment No.  P8  Baud Rate  Control Panel No.  Control Panel No.  Suitable Connection Equipment No.  PSO mA  1030 V DC  10	Wavelength	655 nm		
Max. Ambient Light Light Spot Diameter See Table 1  Electrical Data  Supply Voltage 1030 V DC  Current Consumption (Ub = 24 V) Switching Frequency 250 Hz Response Time 2 2 ms On-/Off-Delay (RS-232) 01 s  Temperature Drift 7 cmperature Range 2560 °C Number of Switching Outputs 2 witching Output Voltage Drop Switching Output/Switching Current Short Circuit Protection Peach Mode Reverse Polarity Protection Faach Mode HT, VT, TP Baud Rate Protection Class III FDA Accession Number Mechanical Data Setting Method Teach-In Housing Material Plastic Degree of Protection Firor Output Configurable as PNP/NPN/Push-Pull Switchable to NC/NO RS-232 Interface Connection Diagram No. Control Panel No. Suitable Connection Equipment No.  80	Service Life (T = +25 °C)	100000 h		
Light Spot Diameter  Electrical Data  Supply Voltage  Current Consumption (Ub = 24 V)  Switching Frequency  Response Time  On-/Off-Delay (RS-232)  Temperature Drift  Temperature Range  Number of Switching Outputs  Switching Output Voltage Drop  Switching Output/Switching Current  Short Circuit Protection  Reverse Polarity Protection  Teach Mode  HT, VT, TP  Baud Rate  Protection Class  FDA Accession Number  Mechanical Data  Setting Method  Housing Material  Degree of Protection  Error Output  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  RS-232 Interface  Connection Equipment No.  80  1030 V DC  Comma  Som MA  Som Ma	Laser Class (EN 60825-1)	2		
Electrical Data  Supply Voltage 1030 V DC  Current Consumption (Ub = 24 V) < 50 mA  Switching Frequency 250 Hz  Response Time	Max. Ambient Light	10000 Lux		
Supply Voltage 1030 V DC Current Consumption (Ub = 24 V) < 50 mA Switching Frequency 250 Hz Response Time	Light Spot Diameter	see Table 1		
Current Consumption (Ub = 24 V) < 50 mA  Switching Frequency 250 Hz  Response Time < 2 ms  On-/Off-Delay (RS-232)	Electrical Data			
Switching Frequency  Response Time  On-/Off-Delay (RS-232)  Temperature Drift  Zesundary  Temperature Range  -2560 °C  Number of Switching Outputs  Switching Output Voltage Drop  Switching Output/Switching Current  Short Circuit Protection  Reverse Polarity Protection  Teach Mode  HT, VT, TP  Baud Rate  Protection Class  III  FDA Accession Number  Mechanical Data  Setting Method  Housing Material  Degree of Protection  Error Output  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  RS-232 Interface  Connection Diagram No.  Suitable Connection Equipment No.  Suitable Connection Equipment No.  Suitable Connection Equipment No.  80	Supply Voltage	1030 V DC		
Response Time	Current Consumption (Ub = 24 V)	< 50 mA		
On-/Off-Delay (RS-232)  Temperature Drift  Temperature Range -2560 °C  Number of Switching Outputs 2 Switching Output Voltage Drop <1,5 V Switching Output/Switching Current 200 mA Short Circuit Protection Reverse Polarity Protection Teach Mode HT, VT, TP Baud Rate Protection Class III  FDA Accession Number  Mechanical Data  Setting Method Housing Material Degree of Protection Error Output Configurable as PNP/NPN/Push-Pull Switchable to NC/NO RS-232 Interface Connection Diagram No.  Teach Mo. Suitable Connection Equipment No.  01 s 50 µm/K 20 µm/K 20 µm/K 20 °C 21,5 V 22 22 23 24 24 2560 °C 20 °C 20 °C 20 mA	Switching Frequency	250 Hz		
Temperature Drift Temperature Range -2560 °C Number of Switching Outputs 2 Switching Output Voltage Drop Switching Output/Switching Current Short Circuit Protection Reverse Polarity Protection Teach Mode HT, VT, TP Baud Rate Protection Class III FDA Accession Number Mechanical Data Setting Method Housing Material Degree of Protection Perror Output Configurable as PNP/NPN/Push-Pull Switchable to NC/NO RS-232 Interface Connection Equipment No. Suitable Connection Equipment No.	Response Time	< 2 ms		
Temperature Range -2560 °C  Number of Switching Outputs 2  Switching Output Voltage Drop <1,5 V  Switching Output/Switching Current 200 mA  Short Circuit Protection yes  Reverse Polarity Protection yes  Teach Mode HT, VT, TP  Baud Rate 38400 Bd  Protection Class III  FDA Accession Number 0820587-000  Mechanical Data  Setting Method Teach-In  Housing Material Plastic  Degree of Protection IP67  Connection M12 × 1; 8-pin  Error Output  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  RS-232 Interface  Connection Diagram No.  Tagh	On-/Off-Delay (RS-232)	01 s		
Number of Switching Outputs  Switching Output Voltage Drop  Switching Output/Switching Current  Short Circuit Protection  Reverse Polarity Protection  Teach Mode  HT, VT, TP  Baud Rate  Protection Class  III  FDA Accession Number  Mechanical Data  Setting Method  Housing Material  Degree of Protection  Error Output  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  RS-232 Interface  Connection Diagram No.  Suitable Connection Equipment No.  2  1,5 V  2  2  2  2  2  2  2  2  2  2  2  2  2	Temperature Drift	< 50 μm/K		
Switching Output Voltage Drop  Switching Output/Switching Current  Short Circuit Protection  Reverse Polarity Protection  Teach Mode  HT, VT, TP  Baud Rate  Protection Class  III  FDA Accession Number  Mechanical Data  Setting Method  Housing Material  Degree of Protection  Plastic  Degree of Protection  Error Output  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  RS-232 Interface  Connection Diagram No.  Suitable Connection Equipment No.  80	Temperature Range	-2560 °C		
Switching Output/Switching Current  Short Circuit Protection  Reverse Polarity Protection  Teach Mode  HT, VT, TP  Baud Rate  Protection Class  III  FDA Accession Number  Mechanical Data  Setting Method  Teach-In  Housing Material  Degree of Protection  Connection  Error Output  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  RS-232 Interface  Connection Diagram No.  Control Panel No.  Suitable Connection Equipment No.	Number of Switching Outputs	2		
Short Circuit Protection  Reverse Polarity Protection  Teach Mode  HT, VT, TP  Baud Rate  Protection Class  III  FDA Accession Number  Mechanical Data  Setting Method  Housing Material  Degree of Protection  Connection  Error Output  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  RS-232 Interface  Connection Equipment No.  Suitable Connection Equipment No.	Switching Output Voltage Drop	< 1,5 V		
Reverse Polarity Protection  Teach Mode  HT, VT, TP  Baud Rate  38400 Bd  Protection Class  III  FDA Accession Number  0820587-000  Mechanical Data  Setting Method  Teach-In  Housing Material  Degree of Protection  Connection  Error Output  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  RS-232 Interface  Connection Diagram No.  Control Panel No.  Suitable Connection Equipment No.	Switching Output/Switching Current	200 mA		
Teach Mode Baud Rate Baud Rate Protection Class III FDA Accession Number 0820587-000 Mechanical Data Setting Method Housing Material Degree of Protection For Connection Error Output Configurable as PNP/NPN/Push-Pull Switchable to NC/NO RS-232 Interface Connection Equipment No. Suitable Connection Equipment No.	Short Circuit Protection	yes		
Baud Rate Protection Class III FDA Accession Number 0820587-000  Mechanical Data Setting Method Housing Material Degree of Protection IP67 Connection Error Output Configurable as PNP/NPN/Push-Pull Switchable to NC/NO RS-232 Interface Connection Diagram No. Control Panel No. Suitable Connection Equipment No.	Reverse Polarity Protection	yes		
Protection Class  FDA Accession Number  Mechanical Data  Setting Method  Housing Material  Degree of Protection  Error Output  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  RS-232 Interface  Connection Diagram No.  Control Panel No.  Suitable Connection Equipment No.	Teach Mode	HT, VT, TP		
FDA Accession Number  Mechanical Data  Setting Method Housing Material Degree of Protection Error Output Configurable as PNP/NPN/Push-Pull Switchable to NC/NO RS-232 Interface Connection Diagram No. Control Panel No. Suitable Connection Equipment No.	Baud Rate	38400 Bd		
Mechanical Data  Setting Method Teach-In Housing Material Plastic Degree of Protection IP67  Connection M12 × 1; 8-pin  Error Output Configurable as PNP/NPN/Push-Pull Switchable to NC/NO RS-232 Interface Connection Diagram No. T37 Control Panel No. Suitable Connection Equipment No.	Protection Class	III		
Setting Method  Teach-In  Housing Material  Degree of Protection  IP67  Connection  M12 × 1; 8-pin  Error Output  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  RS-232 Interface  Connection Diagram No.  737  Control Panel No.  Suitable Connection Equipment No.	FDA Accession Number	0820587-000		
Housing Material  Degree of Protection  Connection  Error Output  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  RS-232 Interface  Connection Diagram No.  Control Panel No.  Suitable Connection Equipment No.	Mechanical Data			
Degree of Protection IP67  Connection M12 × 1; 8-pin  Error Output  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  RS-232 Interface  Connection Diagram No.  Control Panel No.  Suitable Connection Equipment No.	Setting Method	Teach-In		
Connection M12 × 1; 8-pin  Error Output  Configurable as PNP/NPN/Push-Pull Switchable to NC/NO RS-232 Interface  Connection Diagram No.  Control Panel No. Suitable Connection Equipment No.  80	Housing Material	Plastic		
Error Output  Configurable as PNP/NPN/Push-Pull  Switchable to NC/NO  RS-232 Interface  Connection Diagram No.  Control Panel No.  Suitable Connection Equipment No.  80	Degree of Protection	IP67		
Configurable as PNP/NPN/Push-Pull Switchable to NC/NO RS-232 Interface Connection Diagram No. Control Panel No. Suitable Connection Equipment No. 80	Connection	M12 × 1; 8-pin		
Switchable to NC/NO RS-232 Interface Connection Diagram No. Control Panel No. Suitable Connection Equipment No.  80	Error Output			
RS-232 Interface  Connection Diagram No.  Control Panel No.  Suitable Connection Equipment No.  80	Configurable as PNP/NPN/Push-Pull			
Connection Diagram No. 737  Control Panel No. P8  Suitable Connection Equipment No. 80	Switchable to NC/NO			
Control Panel No.  Suitable Connection Equipment No.  P8  80	RS-232 Interface			
Suitable Connection Equipment No.	Connection Diagram No.	737		
	Control Panel No.	P8		
Suitable Mounting Technology No. 380	Suitable Connection Equipment No.	80		
	Suitable Mounting Technology No.	380		

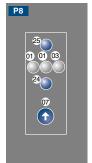
### **Complementary Products**

Interface Cable S232W3	
Protective Housing ZSV-0x-01	
Set Protective Housing ZSP-NN-02	
Coffuero	

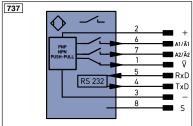




### Ctrl. Panel



- 01 = Switching Status Indicator
- 03 = Error Indicator
- 07 = Selector Switch
- 24 = Plus Button
- 25 = Minus Button



Leger	na	PT	Platinum measuring resistor	ENARS422	Encoder A/Ā (TTL)
+	Supply Voltage +	nc	not connected	ENBRS422	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
Α	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
E	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	lors 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
•	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
OSSD	Safety Output	La	Emitted Light disengageable	GY	Grey
Signal	Signal Output	Mag	Magnet activation	WH	White
BI_D+/-	- Ethernet Gigabit bidirect. data line (		Input confirmation		Pink
	2 Encoder 0-pulse 0-0 (TTL)	EDM	Contactor Monitoring	GNYE	Green/Yellow

Table 1

Detection Range	60 mm	660 mm
Spot Size	0,6 × 2,5 mm	3 × 8 mm











