# 2D/3D Profile Sensor

MLSL101 **LASER**

Part Number

- ● **Compact, lightweight design – even suitable for robot applications**
- ● **Precise measuring range resolution X (> 1200 measuring points)**
- ● **Up to 3.6 million measuring points per second**

2D/3D Profile Sensors project a laser line onto the object to be detected and generate an accurate, linearized height profile with an internal camera which is set up at a triangulation angle. Thanks to its uniform, open interface, the weCat3D series can be incorporated by means of the DLL program library or the GigE Vision standard without an additional control unit. Alternatively, wenglor offers its own software packages for implementing your application.
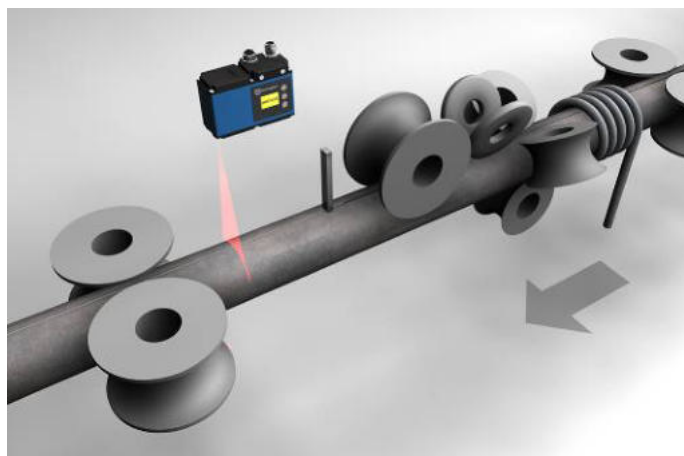
Technical Data

Optical Data	
Working range Z	72...108 mm
Measuring range Z	36 mm
Measuring range X	27...34 mm
Linearity Deviation	18 μm
Resolution Z	3,3...5,2 μm
Resolution X	22...28 μm
Light Source	Laser (red)
Wavelength	660 nm
Laser Class (EN 60825-1)	1M
Max. Ambient Light	5000 Lux
Electrical Data	
Supply Voltage	18...30 V DC
Current Consumption (Ub = 24 V)	300 mA
Measuring Rate	200...4000 /s
Subsampling	800...4000 /s
Temperature Range	0...45 °C
Storage temperature	-20...70 °C
Inputs/Outputs	4
Switching Output Voltage Drop	< 1,5 V
Switching Output/Switching Current	100 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Interface	Ethernet TCP/IP
Baud Rate	100/1000 Mbit/s
Protection Class	III
FDA Accession Number	1610443-001
Mechanical Data	
Housing Material	Aluminium; Plastic
Degree of Protection	IP67
Connection	M12 × 1; 12-pin
Type of Connection Ethernet	M12 × 1; 8-pin, X-cod.
Optic Cover	Plastic
Weight	290 g
Web server	yes

Configurable as PNP/NPN/Push-Pull		●
Switchable to NC/NO		●

Connection Diagram No.	**1022**	**1034**
Control Panel No.	**X2**	**A22**
Suitable Connection Equipment No.	**50**	**87**
Suitable Mounting Technology No.		**343**

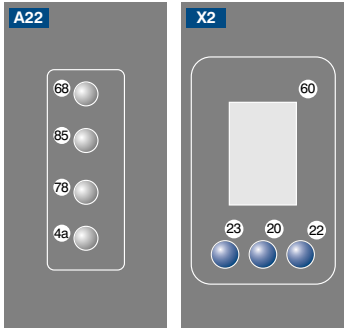Display brightness may decrease with age. This does not result in any impairment of the sensor function.

Complementary Products

Control Unit	
Cooling Unit ZLSK001	
Protective Housing ZLSS003	
Protective Screen Retainer ZLSS001	
Software	
Switch EHSS001	

![wenglor the innovative family]
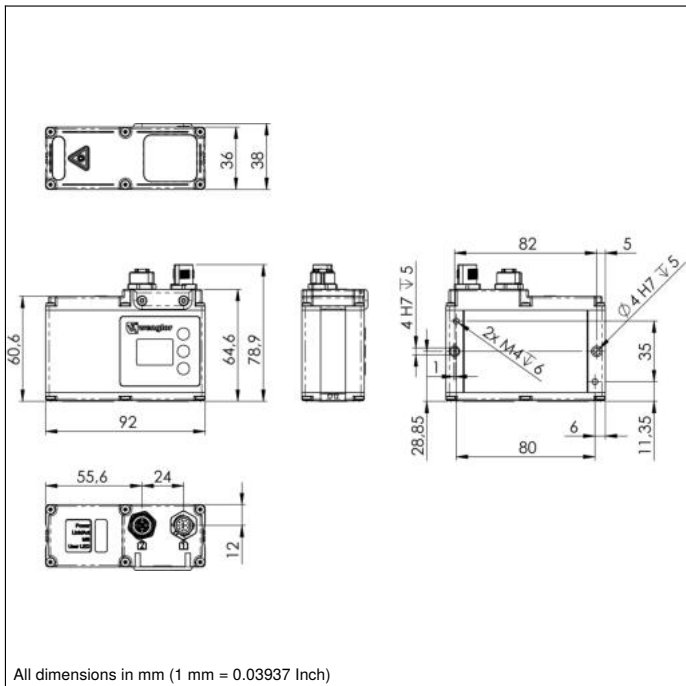
All dimensions in mm (1 mm = 0.03937 Inch)

Ctrl. Panel

A22

68
85
78
4a

X2

60
23   20   22

20 = Enter Button
22 = UP Button
23 = Down Button
4a = User LED
60 = Display
68 = Supply Voltage Indicator
78 = Module status
85 = Link/Act LED

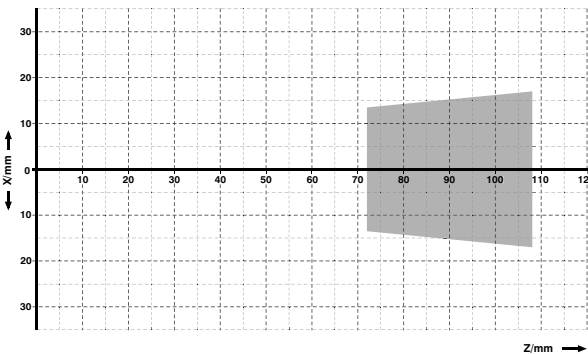### 1022

1	Bi_DA +
2	Bi_DA −
3	Bi_DB +
4	Bi_DB −
5	Bi_DD +
6	Bi_DD −
7	Bi_DC −
8	Bi_DC +

1034

ENCODER RS 422 (TTL)

1	+
3	E/A1
4	E/A2
5	E/A3
6	E/A4
7	En A
8	En $\bar{A}$
9	En B
10	En $\bar{B}$
11	En 0
12	En $\bar{0}$
2	−
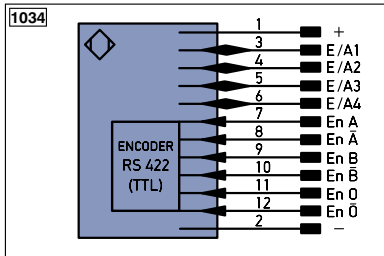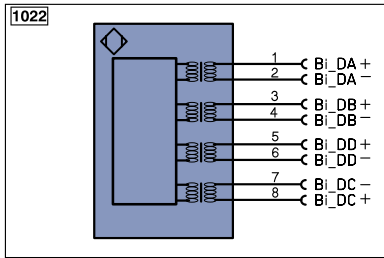
Legend

+	Supply Voltage +	PT	Platinum measuring resistor	EN$_{ARS422}$	Encoder A/$\bar{A}$ (TTL)
−	Supply Voltage 0 V	nc	not connected	EN$_{BRS422}$	Encoder B/$\bar{B}$ (TTL)
~	Supply Voltage (AC Voltage)	U	Test Input	EN$_A$	Encoder A
A	Switching Output (NO)	$\bar{U}$	Test Input inverted	EN$_B$	Encoder B
$\bar{A}$	Switching Output (NC)	W	Trigger Input	A$_{MIN}$	Digital output MIN
V	Contamination/Error Output (NO)	W −	Ground for the Trigger Input	A$_{MAX}$	Digital output MAX
$\bar{V}$	Contamination/Error Output (NC)	O	Analog Output	A$_{OK}$	Digital output OK
E	Input (analog or digital)	O −	Ground for the Analog Output	SY In	Synchronization In
T	Teach Input	BZ	Block Discharge	SY OUT	Synchronization OUT
Z	Time Delay (activation)	A$_{MW}$	Valve Output	0$_{LT}$	Brightness output
S	Shielding	a	Valve Control Output +	M	Maintenance
RxD	Interface Receive Path	b	Valve Control Output 0 V	rsv	reserved
TxD	Interface Send Path	SY	Synchronization		Wire Colors according to IEC 60757
RDY	Ready	SY−	Ground for the Synchronization	BK	Black
GND	Ground	E+	Receiver-Line	BN	Brown
CL	Clock	S+	Emitter-Line	RD	Red
E/A	Output/Input programmable	⏚	Grounding	OG	Orange
⊘	IO-Link	SnR	Switching Distance Reduction	YE	Yellow
PoE	Power over Ethernet	Rx+/−	Ethernet Receive Path	GN	Green
IN	Safety Input	Tx+/−	Ethernet Send Path	BU	Blue
OSSD	Safety Output	Bus	Interfaces-Bus A(+)/B(−)	VT	Violet
Signal	Signal Output	La	Emitted Light disengageable	GY	Grey
BI_D+/−	Ethernet Gigabit bidirect. data line (A-D)	Mag	Magnet activation	WH	White
EN$_{0RS422}$	Encoder 0-pulse 0-$\bar{0}$ (TTL)	RES	Input confirmation	PK	Pink
		EDM	Contactor Monitoring	GNYE	Green/Yellow

Measuring field X, Z

MLSL1x1

Z = Working distance
X = Measuring Range

LASER CLASS 1M EN60825-1 | EAC | CE | RoHS | ⟨!!!⟩ | c UL us LISTED