Fork Sensor
for Label Detection

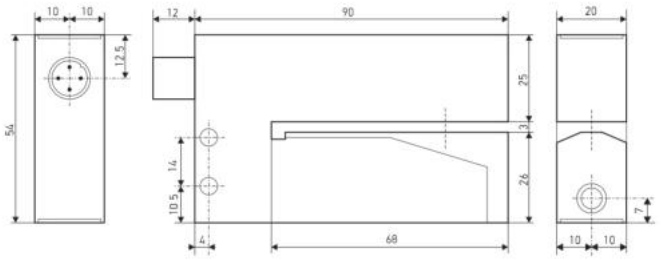
U1HJ001
Part Number

- **Detection of dark, transparent or printed labels**
- **Easy setup via teach-in**
- **Flexible output settings (PNP/NPN, NC/NO)**
- **High switching frequency**

Technical Data

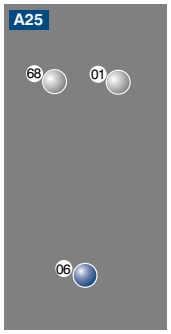
Ultrasonic Data	
Fork Width	3 mm
Smallest Detectable Gap	2 mm
Ultrasonic Frequency	300 kHz
Electrical Data	
Supply Voltage	12...30 V DC
Current Consumption (Ub = 24 V)	< 45 mA
Switching Frequency	400 Hz
Response Time	1,25 ms
Temperature Range	0...50 °C
Switching Output Voltage Drop	< 1,5 V
Switching Output/Switching Current	250 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Protection Class	III
Mechanical Data	
Setting Method	Teach-In
Housing Material	Aluminum
Degree of Protection	IP54
Connection	M12 × 1; 4-pin
PNP NO/NC switchable	●
NPN NO/NC switchable	●
Connection Diagram No.	1024
Control Panel No.	A25
Suitable Connection Equipment No.	2

Thanks to their functional principle, ultrasonic fork sensors are ideally suited for reliable, contactless label detection. The emitter and the receiver are arranged as a light barrier in a single housing and detect even the smallest change in ultrasound attenuation. Attenuation results from the different material thicknesses of the base material with label and the bare base material. Transparent labels or labels made of paper and plastic can thus be reliably detected on any base material. The emitter and the receiver are slightly recessed into the housing in order to protect them from contact with the objects to be scanned.

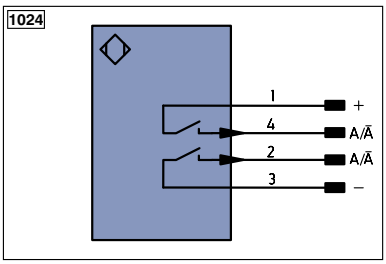


All dimensions in mm (1 mm = 0.03937 Inch)

Ctrl. Panel



01 = Switching Status Indicator
06 = Teach Button
68 = Supply Voltage Indicator



Legend

+	Supply Voltage +	PT	Platinum measuring resistor	EN_{ARS422}	Encoder A/Ā (TTL)
–	Supply Voltage 0 V	nc	not connected	EN_{BRS422}	Encoder B/B (TTL)
~	Supply Voltage (AC Voltage)	U	Test Input	EN_A	Encoder A
A	Switching Output (NO)	Ū	Test Input inverted	EN_B	Encoder B
Ā	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
V̄	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_{MV}	Valve Output	O_{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 DIN IEC 757	
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 0-0̄ (TTL)	RES	Input confirmation	PK	Pink
		EDM	Contactor Monitoring	GNYE	Green/Yellow