Fork Sensor
for Label Detection

U1HJ001
Part Number

Technical Data

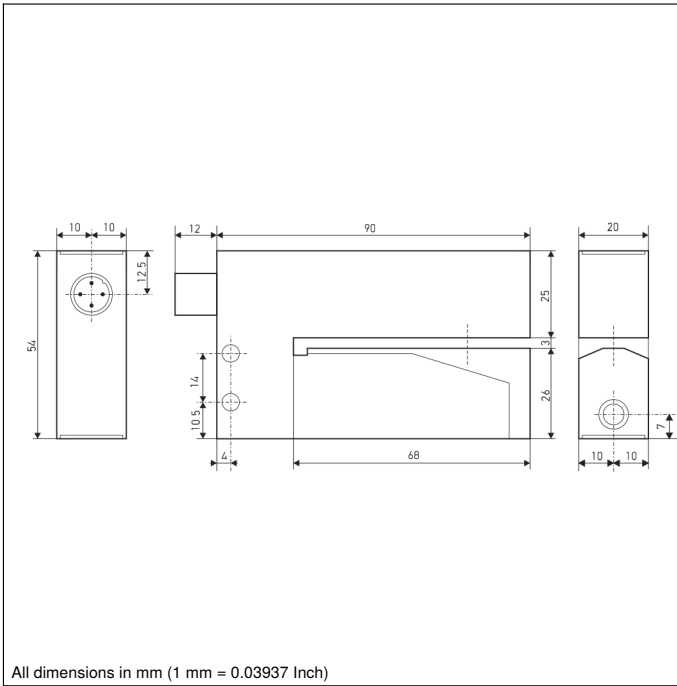| Ultrasonic Data	
Fork Width	3 mm
Smallest Detectable Gap	2 mm
Ultrasonic Frequency	300 kHz
Electrical Data	
Supply Voltage	12...30 V DC
Current Consumption (Ub = 24 V)	< 45 mA
Switching Frequency	400 Hz
Response Time	1,25 ms
Temperature Range	0...50 °C
Switching Output Voltage Drop	< 1,5 V
Switching 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

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

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.
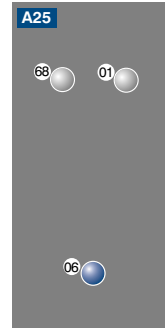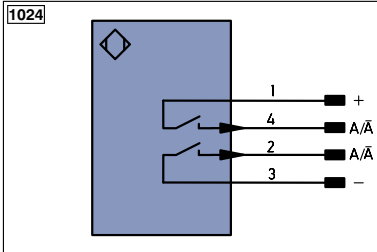
All dimensions in mm (1 mm = 0.03937 Inch)

Ctrl. Panel

A25

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

1024

1 +
4 A/Ā
2 A/Ā
3 −

Legend

+	Supply Voltage +
−	Supply Voltage 0 V
~	Supply Voltage (AC Voltage)
A	Switching Output (NO)
Ā	Switching Output (NC)
V	Contamination/Error Output (NO)
V̄	Contamination/Error Output (NC)
E	Input (analog or digital)
T	Teach Input
Z	Time Delay (activation)
S	Shielding
RxD	Interface Receive Path
TxD	Interface Send Path
RDY	Ready
GND	Ground
CL	Clock
E/A	Output/Input programmable
⬡	IO-Link
PoE	Power over Ethernet
IN	Safety Input
OSSD	Safety Output
Signal	Signal Output
BI_D+/−	Ethernet Gigabit bidirect. data line (A-D)
EN0 RS422	Encoder 0-pulse 0-0̄ (TTL)

PT	Platinum measuring resistor
nc	not connected
U	Test Input
Ū	Test Input inverted
W	Trigger Input
W−	Ground for the Trigger Input
O	Analog Output
O−	Ground for the Analog Output
BZ	Block Discharge
AMW	Valve Output
a	Valve Control Output +
b	Valve Control Output 0 V
SY	Synchronization
SY−	Ground for the Synchronization
E+	Receiver-Line
S+	Emitter-Line
⏚	Grounding
SnR	Switching Distance Reduction
Rx+/−	Ethernet Receive Path
Tx+/−	Ethernet Send Path
Bus	Interfaces-Bus A(+)/B(−)
La	Emitted Light disengageable
Mag	Magnet activation
RES	Input confirmation
EDM	Contactor Monitoring

ENA RS422	Encoder A/Ā (TTL)
ENB RS422	Encoder B/B̄ (TTL)
ENA	Encoder A
ENB	Encoder B
AMIN	Digital output MIN
AMAX	Digital output MAX
AOK	Digital output OK
SY In	Synchronization In
SY OUT	Synchronization OUT
0LT	Brightness output
M	Maintenance
rsv	reserved

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