

TP-USB-IEC

Communication Optical Probe Datasheet

The TP-USB-IEC optical probe is independently developed and manufactured by Tespro for data acquisition and communication with electronic electricity meters compliant with IEC 62056-21 (IEC 1107). It supports DLMS and meets global meter reading and commissioning requirements.

Featuring a standard USB 2.0 interface and strong magnetic attachment, it provides reliable, interference-resistant communication. It supports customized circuitry and housing, as well as flexible OEM/ODM services, for meter reading, production testing, field verification, and system integration.



Baud rate
300-115200bps



USB 2.0



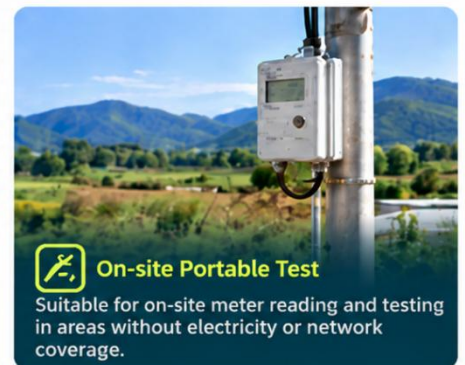
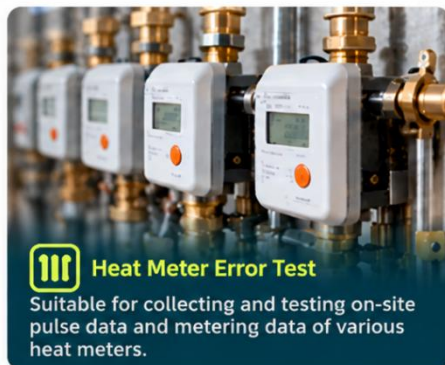
IEC 62056-21 (IEC1107)



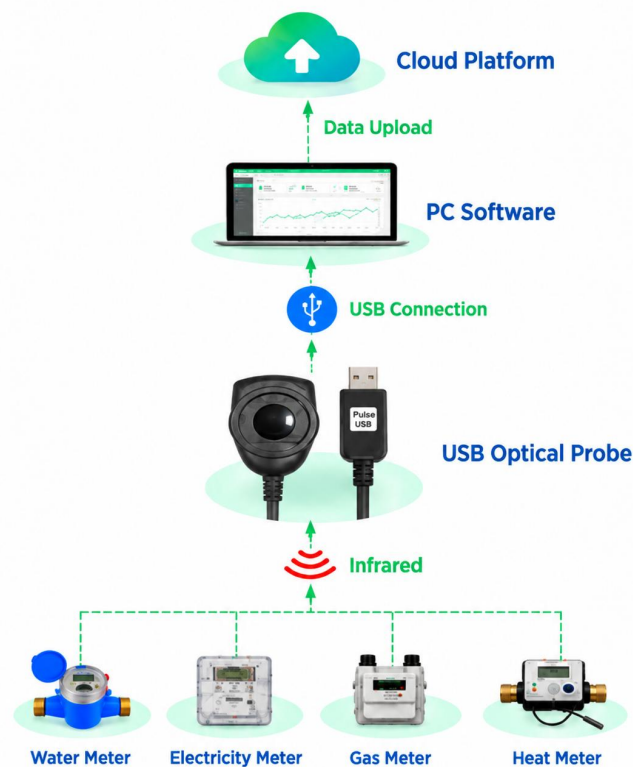
Protection: IP54
Temperature: -40°C ~ +70°C
Humidity: 5% ~ 95% RH
(non-condensing)



Typical application scenarios



Applied Topology



Wireless



USB communication interface

Features a standard USB 2.0 Type-A connector, compatible with computers and handheld devices. Powered directly via USB, it requires no external supply and supports plug-and-play operation.



Full protocol compatibility

Supports IEC 62056-21 (IEC 1107) and DLMS protocols, ensuring accurate data exchange with IEC-standard electronic electricity meters.



Mechanical fixation

Features a strong magnetic attachment compliant with IEC 62056-21, with optional N40/N52 magnets for secure mounting and convenient field operation.



Wide-range baud rate

Supports a wide baud rate range of 300 to 115,200 bps, enabling flexible compatibility with various instruments and applications for stable data acquisition and efficient on-site operations.



Structural Design

With a compact 32mm × 45mm × 34mm body and 88g weight, its impact-resistant PC housing ensures durability against on-site impacts and drops.



Excellent weather resistance

With a -40°C to +70°C operating range and IP54 protection, the device ensures reliable long-term operation in harsh environments, including extreme temperatures and humidity.

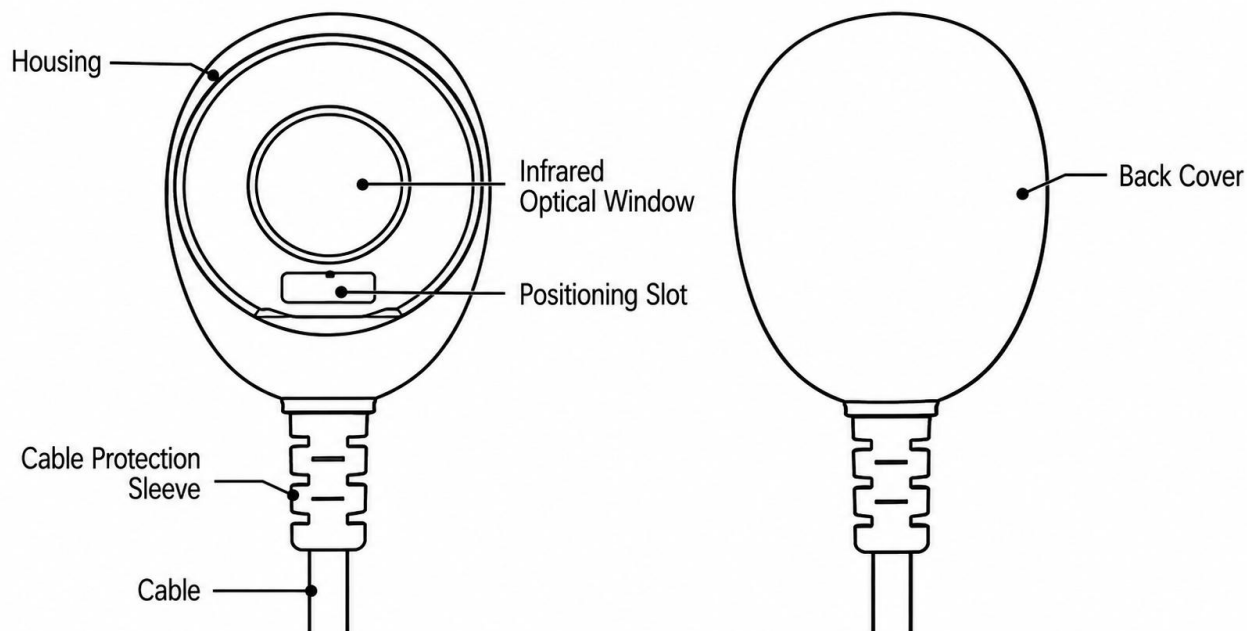
Features

- Features a standard USB 2.0 A male connector; powered directly via the USB port—no external power supply required—and supports plug-and-play functionality.
- Fully supports the IEC 62056-21 (IEC 1107) communication standard and is compatible with the DLMS protocol, ensuring precise compatibility with various IEC-standard electricity meters.
- Uses ~900nm infrared optical communication for long-distance, high-fidelity data transmission.
- Supports 300 – 115,200 bps transmission rates for flexible compatibility with different meters and applications.
- Standard 2m cable; other cable lengths can be customized.
- Comes standard with aviation connectors and offers optional adapters, flexibly meeting the interface requirements of various industrial terminals and embedded devices.
- Strong magnetic attachment compliant with the IEC 62056-21 standard.
- Optional N40/N52 magnets support flexible mounting on various meter faces with optical probe brackets.
- Impact-resistant ABS+PC composite housing; compact and durable construction.
- Operates from -40°C to +70°C with IP54 protection for harsh environments.
- Compact 32mm × 45mm × 34mm body, weighing only 88g for easy portability.

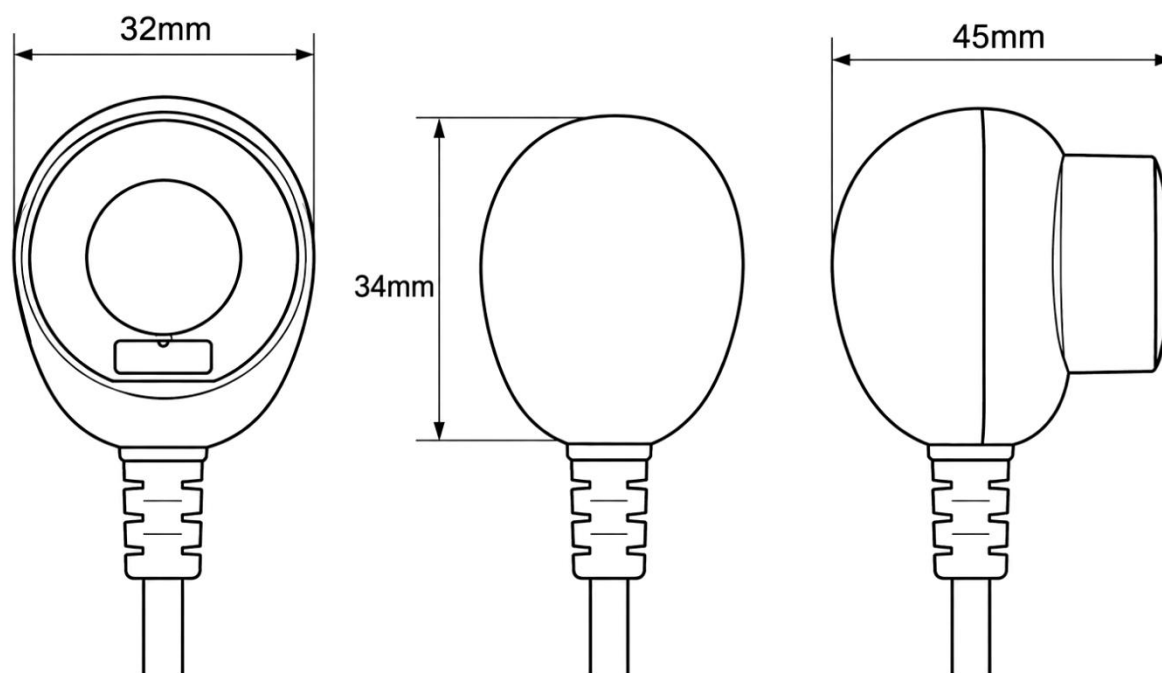
Specifications

Category	TP--USB-IEC
Communication and Protocols	
Communication interface	USB 2.0 A Male Connector
Communication standards	IEC 62056-21 (IEC1107) / DLMS
Electricity meter	Supports only IEC standard electricity meters
Baud rate	300 ~ 115200 bps
Optical parameters	
Wavelength	About 900nm
Communication range	0 ~ 80mm
Electrical parameters	
Power supply	DC 5V (powered via USB port)
Operating current	≤ 100mA
Interfaces and Cables	
Cable length	Standard 2m (customizable)
Indicator light	1
Installation and Mounting	
Mounting method	Strong magnetic attachment (compliant with IEC 62056-21 standard)
Magnetic attraction force	N40 / N52 (optional)
Compatible mount/bracket	Compatible with the TP-GS2 optical probe mounting bracket for attachment to various types of electricity meters
Mechanical Characteristics	
Casing material	Impact-resistant ABS + PC composite material
Product dimensions	Diameter 32mm / Length 45mm / Height 34mm
Product weight	88g
Environment and Protection	
Operating temperature	-40°C ~ +70°C
Storage temperature	-20°C ~ +60°C
Operating humidity	5% ~ 95% RH (No coagulation)
Ingress protection rating	IP54

Interface Diagram



External dimensions



Accessories and Packaging

Accessories Information



TP-USB-IEC
Communication Optical Probe



Driver Download Card

Packaging Information



Package Size

139 × 125.7 × 56.8 mm

Made of environmentally friendly and recyclable packaging materials, compliant with green environmental protection requirements

About Tespro

Tespro is an industrial IoT manufacturer with 25 years of experience, specializing in AI computing, industrial IoT, power communication equipment, and software. Its products include industrial gateways, routers, DTUs, optical probes, testing instruments, and management platforms for energy, automation, smart buildings, and commercial applications. With branches in the U.S., U.K., Singapore, Hong Kong, and Zhuhai, Tespro serves 150+ countries and partners with Fortune Global 500 companies.

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