

TP-TTL Series

Communication Optical Probe Datasheet



The TP-TTL Series optical communication probes are independently developed and manufactured by Tespro for data acquisition in various communication terminal scenarios. Featuring a TTL interface and external power support, they accommodate various connectors and custom plugs. They support IEC 62056-21 (IEC1107), ANSI C12.18 Type 2, DL/T-645, and DLMS standards for global electricity meter reading and commissioning.

The TP-TTL Series uses a standard TTL interface and supports customized circuitry and housing designs with flexible OEM/ODM services. It is suitable for electricity meter reading, production testing, field verification, and system integration.



Baud rate
300-115200bps



TTL



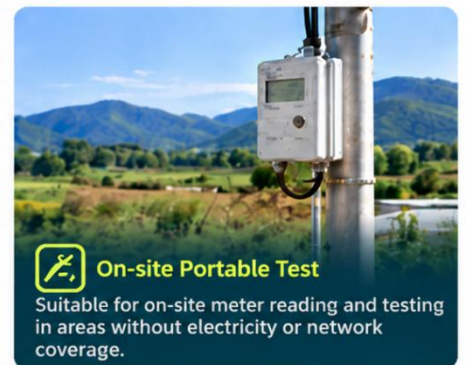
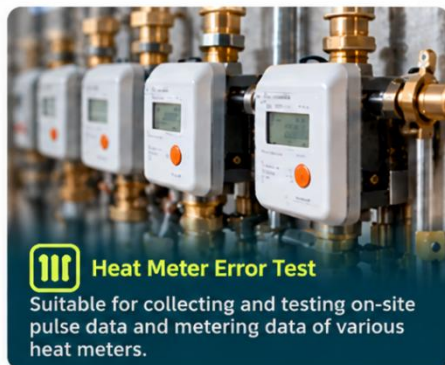
IEC / ANSI / DL/T-645 / DLMS



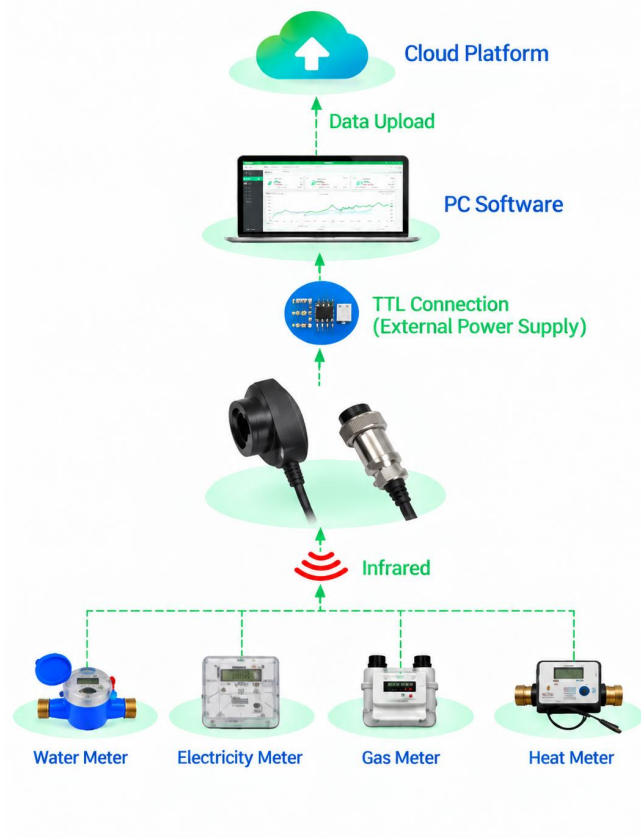
Protection: IP54
Temperature: -40°C ~ +70°C
Humidity: 5% ~ 95% RH
(non-condensing)



Typical application scenarios



Applied Topology



Wireless



TTL communication interface

Features an TTL interface with a customizable aviation connector and external power supply, supporting plug-and-play connectivity with industrial terminals and embedded devices.



Full protocol compatibility

Supports IEC 62056-21 (IEC 1107), ANSI C12.18 Type 2, DL/T-645, and DLMS standards, ensuring compatibility with various electronic meters for accurate data reading and parameter writing.



Mechanical fixation

Features an IEC 62056-21-compliant magnetic attachment with optional N40/N52 magnets, ensuring 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.

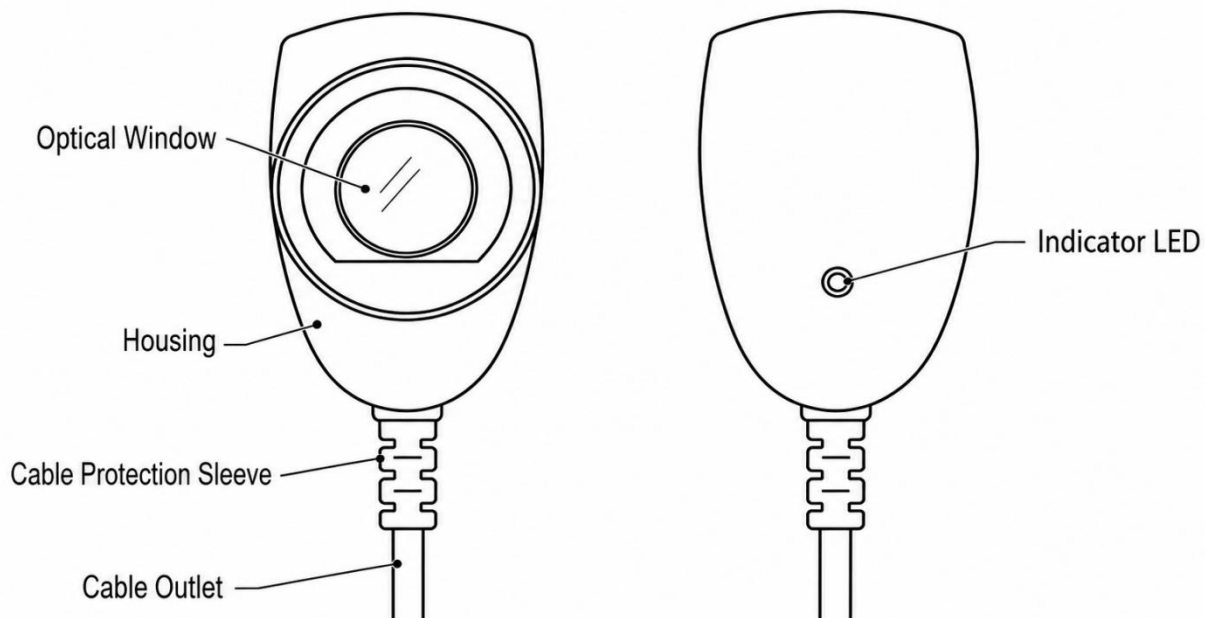
Features

- Features a standard TTL communication interface and supports external power supply, offering flexible compatibility with various industrial terminals and embedded devices.
- Supports a wide voltage range of 3.3V to 5V, making it compatible with the TTL serial ports of various industrial motherboards and embedded systems; requires no additional level shifting and offers strong compatibility.
- Fully supports IEC 62056-21 (IEC1107), ANSI C12.18 Type 2, DL/T-645, and DLMS communication standards.
- 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.
- Compact, durable housing made of impact-resistant PC material.
- Operates from -40°C to +70°C with IP54 protection for harsh environments.
- Compact 32mm × 45mm × 34mm body, weighing only 88g for easy portability.

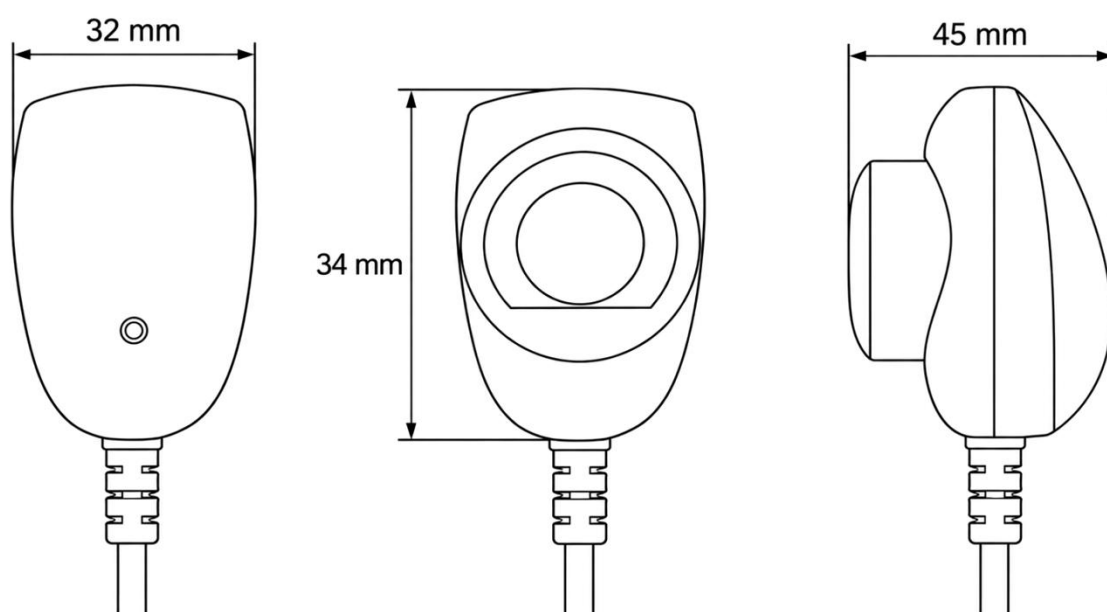
Specifications

Category	TP-TTL
Communication and Protocols	
Communication interface	TTL
Communication standards	IEC 62056-21 (IEC1107) / ANSI C12.18 Type 2 / DL/T-645 / DLMS
Sub-model	TP-TTL-IEC / TP-TTL-ANSI-N / TP-TTL-ANSI-S / TP-TTL-IR645
Baud rate	300 ~ 115200 bps
Optical parameters	
Wavelength	About 900nm
Communication range	0 ~ 80mm
Electrical parameters	
Power supply	Powered by an external power source
Interfaces and Cables	
Cable length	Standard 2m (customizable)
Connector	Aviation Connector (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



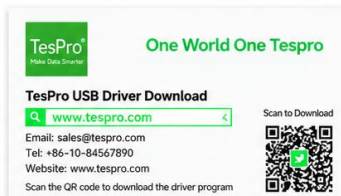
Accessories and Packaging



Accessories Information



TP-TTL
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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