

TP-PDA Series

Communication Optical Probe Datasheet

The TP-PDA Series optical communication probes are independently developed and manufactured by Tespro for data acquisition across complex communication terminal scenarios. They offer RS232, RS485, TTL, and USB interfaces, support external power supply and various connectors, and comply with IEC 62056-21 (IEC1107), ANSI C12.18 Type 2, DL/T-645, and DLMS standards for global meter reading and commissioning.

Featuring standard USB or RS232 interfaces, the TP-PDA Series provides convenient connectivity with customizable circuitry, housing, and flexible OEM/ODM services. It is suitable for electricity meter reading, production testing, field verification, and system integration.



Baud rate
300-115200bps



RS232 / RS485 / TTL / USB



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



Rich communication interfaces

Features RS232, RS485, TTL, and USB interfaces with external power support for industrial handheld terminals. Compatible with various connectors and custom plugs for stable power and efficient field operation.



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 32 × 45 × 30 mm body and 88g weight, it features a durable ABS+PC housing that withstands knocks and drops in the field.



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.

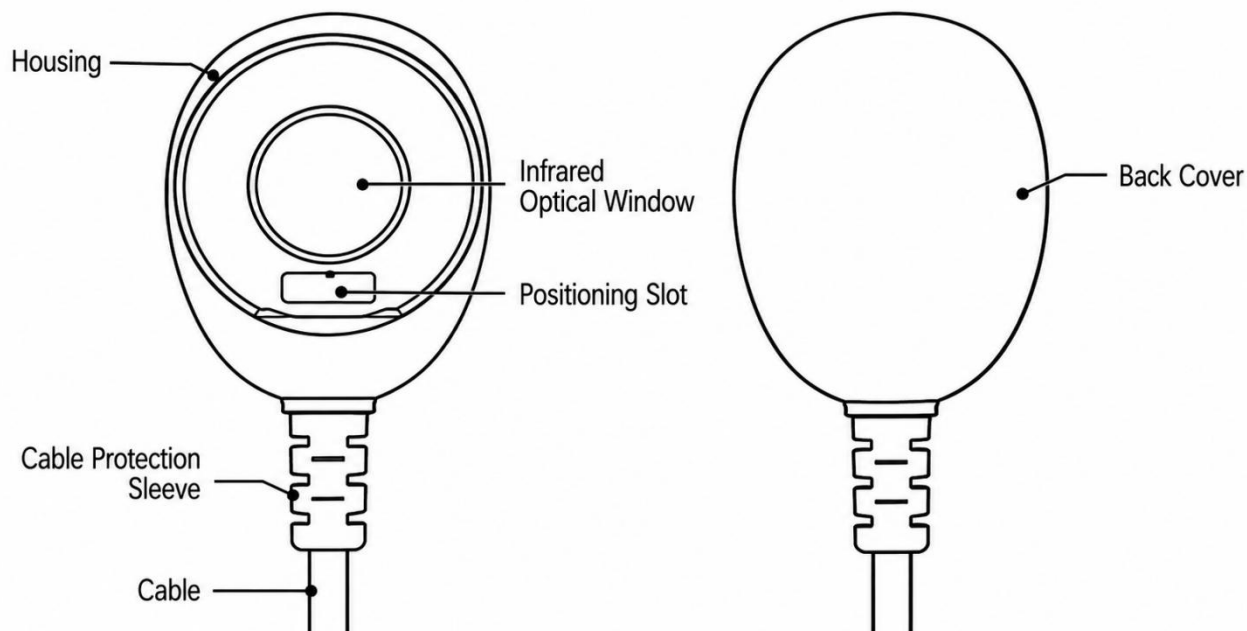
Features

- Comes standard with an RS485 communication interface and aviation-grade connectors (customizable); supports external power supply—no additional configuration required, simply plug and play.
- 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 × 30mm body, weighing only 88g for easy portability.

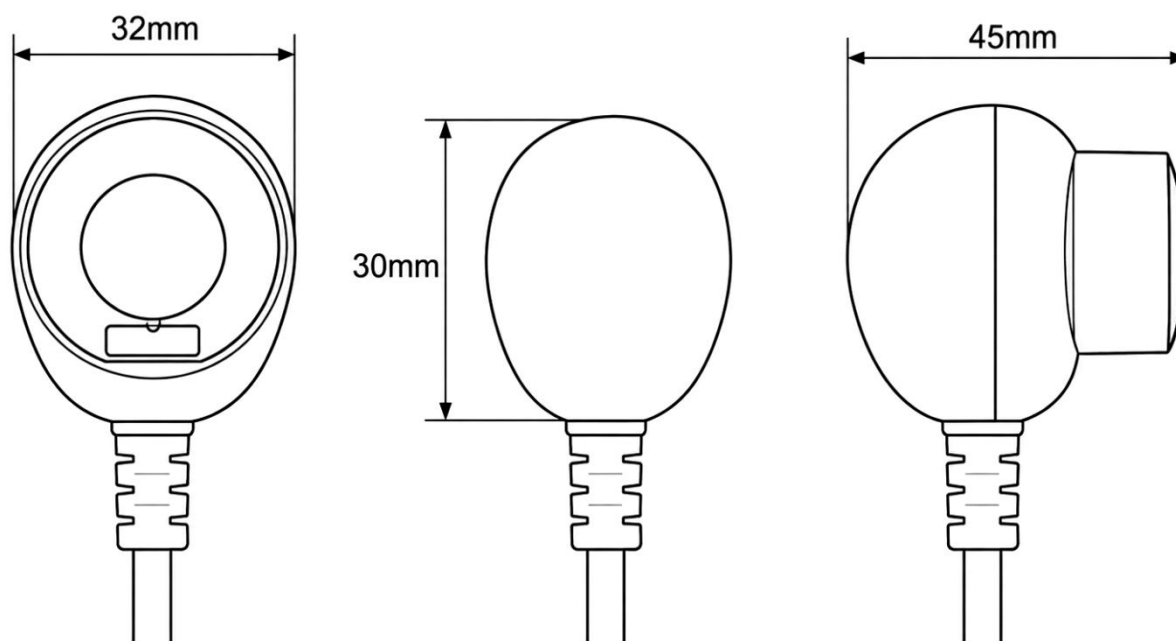
Specifications

Category	TP-PDA
Communication and Protocols	
Communication interface	RS232 / RS485 / TTL / USB
Communication standards	IEC 62056-21 (IEC1107) / ANSI C12.18 Type 2 / DL/T-645 / DLMS
Sub-model	TP-PDA-IEC / TP-PDA-ANSI-N / TP-PDA-ANSI-S / TP-PDA-IR645
Compatible Devices	Dolphin 9700 / Motorola MC75xx / Apple iPad / TA-262 / Zhenzhong Handheld 900 / Jiebao Handheld 9800 and A188, etc.
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 2 meters; optional 3 meters / 4 meters / 5 meters
Connector	RS232-DB9 / USB-A / Type-C (customizable)
Installation and Mounting	
Mounting method	Strong magnetic attachment (compliant with IEC 62056-21 standard)
Magnetic attraction force	N40 / N52 (optional)
Mechanical Characteristics	
Housing structure	Impact-resistant ABS + PC housing
Casing material	PC
Product dimensions	Diameter 32mm / Length 45mm / Height 30mm
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-PDA Optical
Communication Head



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.

Global Office Locations

USA: 39 S Hayman Ave, Colorado Springs, CO 80910, US

UK: Flat 601 Ontario Tower, 4 Fairmont Avenue, London, UK, E14 9JA

Australia: 43 Tribeca Cct, North Lakes QLD, Australia 4509

Singapore: 3 Gambas Crescent, #04-01, Nordcom One, Singapore 757088

Hong Kong: Flat 602, 6/F, No. 2C Argyle Street, Mong Kok, Kowloon, HK

China: 2nd Floor, Liti Technology Building, No. 184 Bailian Road, Jida, Zhuhai City