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TP-18 Narrow-Pitch

Calibration Optical Probe Datasheet



Developed by Tespro, TP-18 narrow-spacing optical probe is designed for simultaneous active/reactive meter accuracy testing. Featuring an ultra-thin 10mm design, it accurately senses visible/infrared LED pulses and converts them into electrical signals at a 2KHz sampling rate for precise meter calibration. It offers broad compatibility with EMH meters and portable calibrators, supporting circuit/casing customization and flexible OEM/ODM services for calibration, production testing, and system integration.



CE RoHS COMPLIANT

- Sampling Rate: 2 kHz
- Standard: DC 5V±10%, ≤10mA
  Optional: DC 12~36V
- High level ≥ 4.0V, Low level ≤ 0.3V
  DC 5V / DC 12–24V (Optional)
- IP54
  -40°C to +70°C
  5% to 95% RH (Non-condensing)

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Typical Application Scenarios



Electricity Meter Accuracy Verification

For on-site data collection and accuracy verification of various electronic electricity meters.



Single-phase / Three-phase Meters

For pulse collection and metering accuracy verification of single-phase and three-phase electricity meters.



Smart Meter Testing

For LED optical pulse collection, communication function testing and system integration testing of smart meters.



Mechanical Meter Pulse Collection

For auulliary optical pulse collection and metering accuracy verification of mechanical (induction) meters.



Production Line Mass Testing

For batch pulse collection and centralized verification in electricity meter manufacturing.



On-site Portable Verification

For field verification and inspection in remote areas without grid power or network access.

Application Topology



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Core Advantages

Power Supply

Standard: DC 5V±10% (≤10mA); Optional: DC 12~36V wide input. Compatible with production testers, EMH standard meters, and portable calibrators for diverse deployments.

High-frequency Pulse Acquisition

Sampling rate up to 2KHz. Accurately captures active/reactive meter pulses without delay, greatly improving on-site calibration and test bench efficiency.

Mechanical Fixing

Requires TP-GS2 bracket for flexible mounting on round, square, and test bench meters. Standard 70CM cable and bare wire connector, customizable, plug-and-play.

High-sensitivity Optical Sensing

High-sensitivity optical sensing for visible/infrared LED pulses, converting light into electrical signals to ensure accurate simultaneous active/reactive testing data.

Structural Design

Optical head width only 10mm, weighing 50g. Impact-resistant ABS+PC casing, ultra-thin design for space-constrained calibration environments, compact and durable.

Strong Weather Resistance

Operating temperature -40℃~+70℃, IP54 rated. Withstands harsh environments (cold, heat, humidity) for long-term stable operation.

Product Features

·Standard: DC 5V±10%, ≤10mA; Optional: DC 12~36V wide input.

·Pulse Output: High ≥4.0V, low ≤0.3V, forward pulse (DC 5V / DC 12~24V optional).

·Compatible with EMH high-precision meters, production testers, and portable calibrators.

·Sampling rate up to 2KHz for high-frequency active/reactive pulse acquisition.

·Standard 70CM cable, custom lengths available.

·Standard bare wire connector; optional plugs for calibration devices.

·Requires TP-GS2 bracket for round, square, and test bench meters.

·Optical head width only 10mm, weight 50g. Ultra-thin, easy to install.

·Impact-resistant ABS+PC casing, compact and durable.

·Operating temp -40℃~+70℃, IP54 rated for harsh environments.

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Specifications

Category	TP-18
Power Supply & Consumption	
Power Supply	Standard: DC 5V±10%, ≤ 10mA; Optional: DC 12~36V
ndicator Light	1 pc
Signal Output	
Output Type	Forward electrical pulse (senses visible/infrared light)
High Level	≥4.0V
Low Level	≤0.3V
Wavelength	Approx. 900nm
Sampling Rate	Up to 2KHz
Interface & Cable	
Cable Length	Standard 70cm, custom lengths available
Connector	Standard bare wire (custom plugs available)
Installation & Fixing	
Fixing Method	Requires TP-GS2 bracket (customizable), mounts on various meters
Mechanical Properties	
Casing Material	Impact-resistant ABS+PC
Dimensions	0 x 32 x 32mm (ultra-thin design)
Weight	50 g
Environment & Protection	
Operating Temperature	-40°C ~ +70°C
Storage Temperature	-20°C ~ +60°C
Operating Humidity	5% ~ 95% RH（Non-condensing）
Protection Rating	IP54
Standards & Certifications	
Product Certification	CE，RoHS

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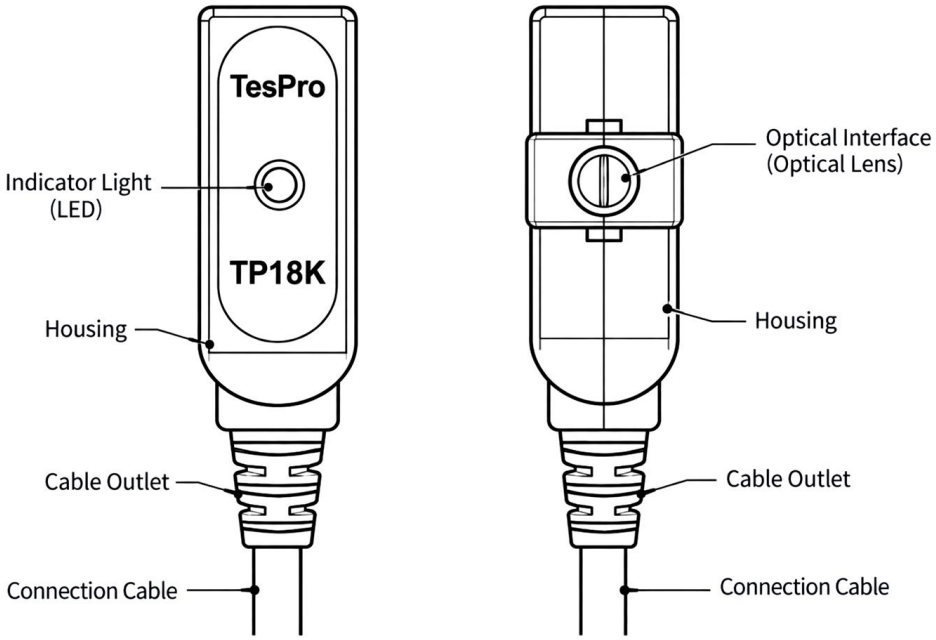
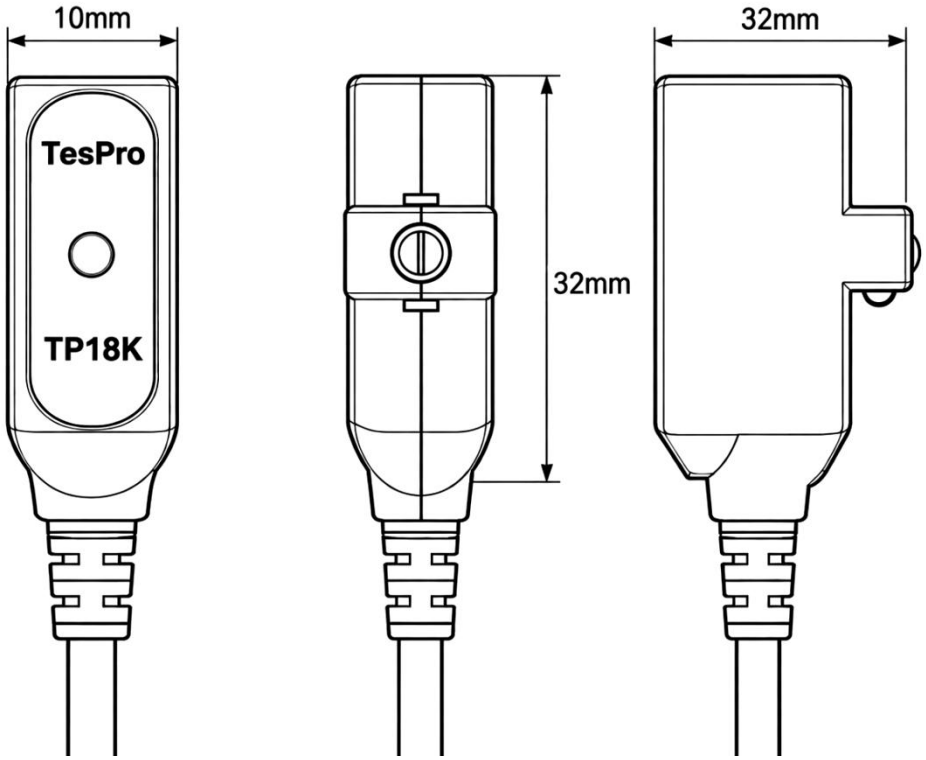
Interface Diagram



Dimensions



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Accessories & Packaging

Component Information



TP-18 Calibration Optical Probe



Driver Download Card

Packaging Information



Dimensions

139 × 125.7 × 56.8 mm

Made of eco-friendly, recyclable packaging materials, in compliance with green environmental standards.

About Tespro

Tespro is a 25-year veteran industrial IoT equipment manufacturer specializing in AI computing devices, industrial IoT terminals, and power communication equipment, along with proprietary software. It has grown into a top global manufacturer in IoT and power acquisition. Its product matrix includes AI devices, gateways, routers, DTUs, meter optical probes, testing instruments, and smart management platforms, serving power energy, industrial automation, and smart buildings. With branches in the US, UK, Singapore, Hong Kong, and Zhuhai (China), its products are exported to over 150 countries. Partnering with Fortune 500 companies, Tespro is a trusted global partner.

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