

TDZ-ZLJ Direct Lightning Monitoring Terminal



Description

Modern electronic systems are increasingly vulnerable to electromagnetic interference, especially lightning-induced overvoltage, which can damage equipment and disrupt operations in critical sectors such as railways, highways, wind farms, and aviation. SPDs protect equipment by sacrificing their own lifespan. However, failed SPDs are often not replaced in time—especially in decentralized installations where inspections are periodic—leaving systems unprotected and at risk. This intelligent monitoring device addresses that gap. It continuously tracks SPD status, protection switch states, and lightning events (count, peak value, polarity, timestamp), while recording alarms and strike data. It can also monitor lightning current from air terminals or down conductors. When paired with dedicated monitoring software and hardware (e.g., RTU), it forms a complete intelligent lightning protection system that enables real-time data transmission and remote centralized management

Features

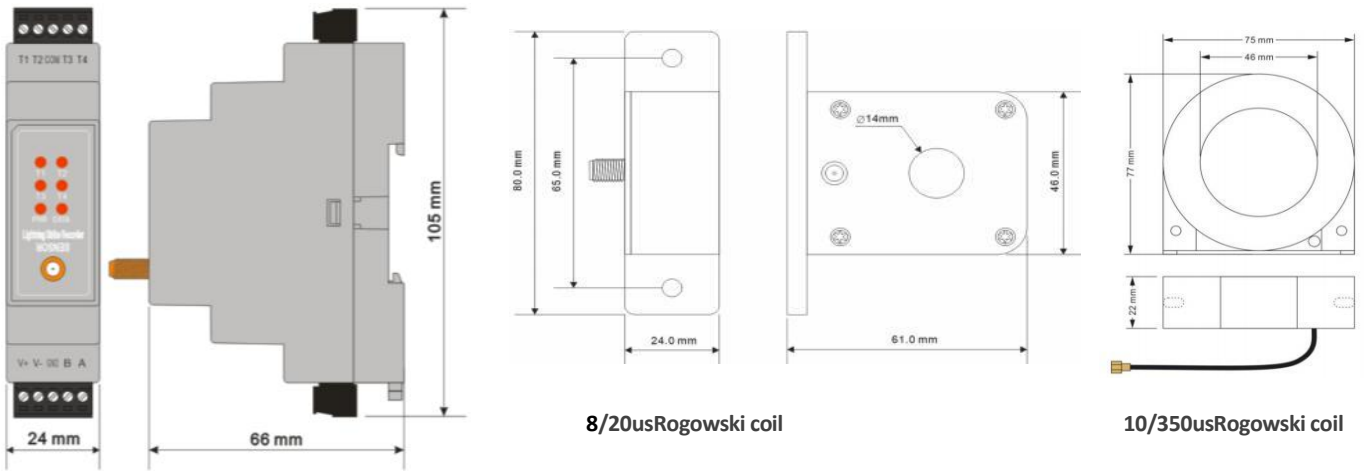
- **Compact Size:** This DIN-rail mounted instrument is just 24 mm wide, allowing easy integration into surge protection boxes/cabinets, distribution boxes/cabinets, and network cabinets without altering the original dimensions or layout.
- **Easy Installation:** All interfaces use pluggable terminal blocks and screw-type connectors for fast installation and maintenance.
- **Interface Types:** Equipped with dry contact acquisition ports and lightning data acquisition ports.
- **Communication Methods:** Standard RS485 interface supports data upload and cascading expansion; optional extension modules enable Ethernet, Lora, 4G, and other communication methods.
- **High Anti-Interference Capability:** Surge protection circuits are integrated into the serial ports, and optoelectronic isolation circuits are designed for the acquisition ports to maximize resistance against surge and electromagnetic interference



Specifications:

Model		TDZ-ZLJ	
Power supply		9~28VDC input, reverse polarity protection	
Power consumption		2W	
Communication Interface	RS485	Plug-in Terminal. MODBUS RTU PROTOCOL	
		Baud rate: selectable from 1200/2400/4800/9600/19200, default 9600; Parity: N; Data bits: 8; Stop bits: 1.	
		Device address: selectable from 1 to 255, default is 1.	
Discrete Signal Acquisition		4 channels, pluggable terminals, optoelectronic isolation, passive dry contact input. Alarm on closed contact, normal on open contact. LED indicator for each channel when in alarm state.	Collects the remote signaling status of SPD and SSD. Can record up to 10 channel alarm entries, each including alarm channel number, alarm date, and time.
Lightning Strike Acquisition	Surge information	Records surge current polarity, peak value, wavefront and wavetail times, Q value (charge), specific energy, and lightning strike occurrence date/time. Maximum count: 9999 times..	
	Trigger Current	Selectable from 0.5/1/2.5/5 kA (default: 5 kA).	
	Resolution:	0.1kA	
	Multiple Lightning Pulses	Capable of identifying and recording up to 10 consecutive pulses (minimum interval ≥ 40ms).	
	Lightning Strike Segmentation	Segmented count statistics at 20 / 40 / 60 / 80 / 100 kA (adapted to I _{max} setting).	
	Polarity Statistics	Classifies and counts lightning strikes by polarity.	
	SPD Life Expectancy Warning	Life expectancy warning algorithm based on count / peak value / energy / online time.	
	Surge Type	T1 / T2 / T3.	
	Sensor	Flexible open-loop Rogowski coil, 40 mm aperture; other apertures available on request.	
	Measurement Range	Standard 0.5 – 100 kA; other ranges (150 / 200 / 400 kA) available on request.	
Cable	Standard 1 meter; custom lengths available. For cables exceeding 5 meters and monitoring...		
Serial Port	Built-in surge protection circuit, 4000V lightning strike protection		
Enclosure Material	PC+ABS, gray (custom colors available for orders of 500+ units), flame retardant V0		
Installation	Standard 35mm DIN rail mounting		
Operating Environment	-40~85℃, 0~95% RH		

5. Dimension



6. Wie connection:

