TDZ-LDJ Surge Peak Monitoring Terminal

Description

As electronic systems grow more automated and intelligent, they also become more vulnerable to electromagnetic interference—especially from lightning strikes, which can induce damaging surges through conduction or induction.

Surge Protective Devices (SPDs) protect equipment by diverting these surges, but they degrade over time. A failed SPD leaves systems exposed, particularly in widespread applications like rail, energy, or aviation where real-time maintenance isn't always feasible.

This monitoring device offers a solution by tracking SPD health in real time. It records operation status, protection switch state, lightning events (count, peak value, polarity, time/date), and stores alarm and surge history. When connected to dedicated monitoring software and hardware (such as RTUs), it forms an intelligent lightning protection system that enables remote data collection and centralized supervision—closing the gap in surge protection coverage.

Features

◆ Compact Size: Designed as a DIN rail-mounted instrument, it can be easily integrated into lightning protection boxes, distribution cabinets, network racks, etc., without modifying the original equipment layout or dimensions.

◆ Easy Installation: Features plug-in terminals and screw-on connectors for quick installation and maintenance.

◆ Diverse Interfaces: Supports dry contact input and lightning surge event monitoring, among other signal acquisition options.

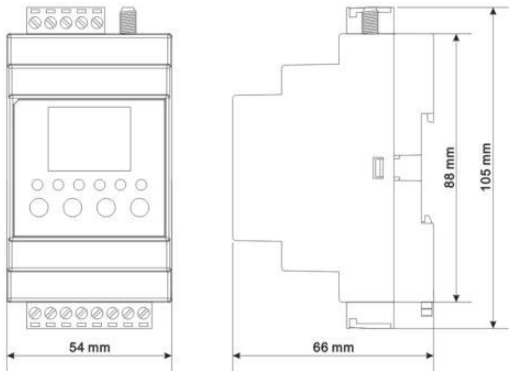
◆ Multiple Communication Options: Comes standard with an RS485 interface for data upload and daisy-chaining. Expandable to support Ethernet, LoRa, 4G, and other communication protocols.

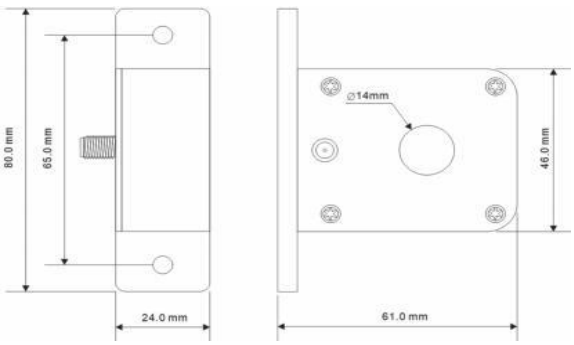
◆ High Noise Immunity: Equipped with surge protection on serial ports and opto-isolation on acquisition channels, ensuring reliable operation in electrically harsh environments.

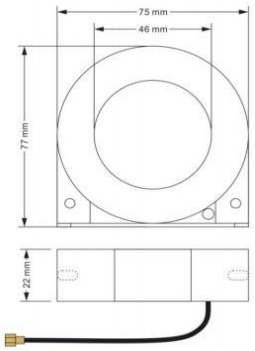
Specifications:

Model	TDZ-LDJ		
Power supply	9～28VDC input，reverse polarity protection		
Power consumption	2W		
Display	0.96inches OLED		
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.	
	RS232	Default communication interface for expanding the ground grid status monitoring terminal. Custom protocols are also supported for integrating other serial devices.	
Digital input：T01~ T04	Channels: T01–T04 (4 channels total) Connection: Plug-in terminals, photoelectric isolation, dry contact input (passive) Status Indication: Closed = Alarm, Open = Normal Alarm Feedback: LED indicator and buzzer warning per channel during alarm state	Monitoring Functions:SPD failure/ surge protector module loosening Circuit breaker tripping status Log Capacity: Stores up to 10 alarm records Record Details: Includes channel number, date, and time of each alarm	
Surge Monitoring Channel	Surge Data Recording	Logs polarity, peak current value, and date/time of lightning strikes. Maximum count: 9999 events.	
	Trigger Current	Selectable from 0.5/1/2.5/5 kA (default: 5 kA).	
	Resolution:	0.1kA	
	Multiple Strokes	Capable of identifying and recording up to 10 consecutive pulses (minimum interval ≥ 40ms).	
	Segment Counting	Provides segmented statistics for strokes at 20/40/60/80/100 kA levels (adapted to Imax).	
	Polarity Statistics	Classifies and counts lightning strikes by polarity.	
	SPD Life Prediction	Offers lifespan early warning based on algorithms considering count, peak value, energy, and operating time.	
	Surge Type	Supports T1/T2/T3 (T1 uses 10/350μs coil; T2/T3 use 8/20μs coil).	
	Sensor	Miniature Rogowski coil with measuring range from 0.5 to 100 kA.	
	Cable	Standard 1-meter length (customizable). Note: Sensors require individual calibration when cable exceeds 5 meters or when monitoring T1 surges. Please specify when ordering.	
Serial Port	Built-in surge protection circuit, 4000V lightning strike protection		
Housing 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 & wire connection:







8/20us Rogowski coil **10/350usRogowski coil**