



# SURGE Series: Lightning & Transient Protectors



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SURGE 4D: 4-Wire & Shield Transient Protection.  
Shown in typical mounting on a DIN rail.

Wiring, particularly long horizontal wiring, can convert transient electrical fields to destructive voltages at sensors and data logger terminals. Transient protection equipment can be used to divert these transients to ground, increasing installed system reliability.

The SURGE Series of transient protectors consist of multi-stage devices which includes three terminal gas discharge tubes, thyristor crowbar devices, and coordinating resistors. They are capable of protecting against high-speed (100 volts per microsecond) transients of up to 20,000 amps, letting only 77 volts through before clamping to 4 volts. The protector is housed in a NEMA-4X enclosure or in a compact T35 DIN-rail housing with screw-terminal input/output and ground connection through the DIN rail, simplifying connections, and facilitating good signal practices: i.e. labeling, shielding, and routing outside cables away from protected lines.

In normal operation, the protector appears as a low resistor in series with each wire, typically having no effect on operation. During a transient, the 4 signal lines and up to 2 shield lines are clamped to ground. Once the transient is over, the device self-resets, allowing normal operation to resume. The protector is suitable for use with most devices, including vibrating wire sensors, data loggers, 4-20 mA transmitters and other DC-powered sensors<sup>1</sup>.

## applications

Diverts transient electrical fields in wiring to ground; increasing installed system reliability.

## features

Protects against high-speed (100 volts per microsecond) transients of up to 20,000 amps.

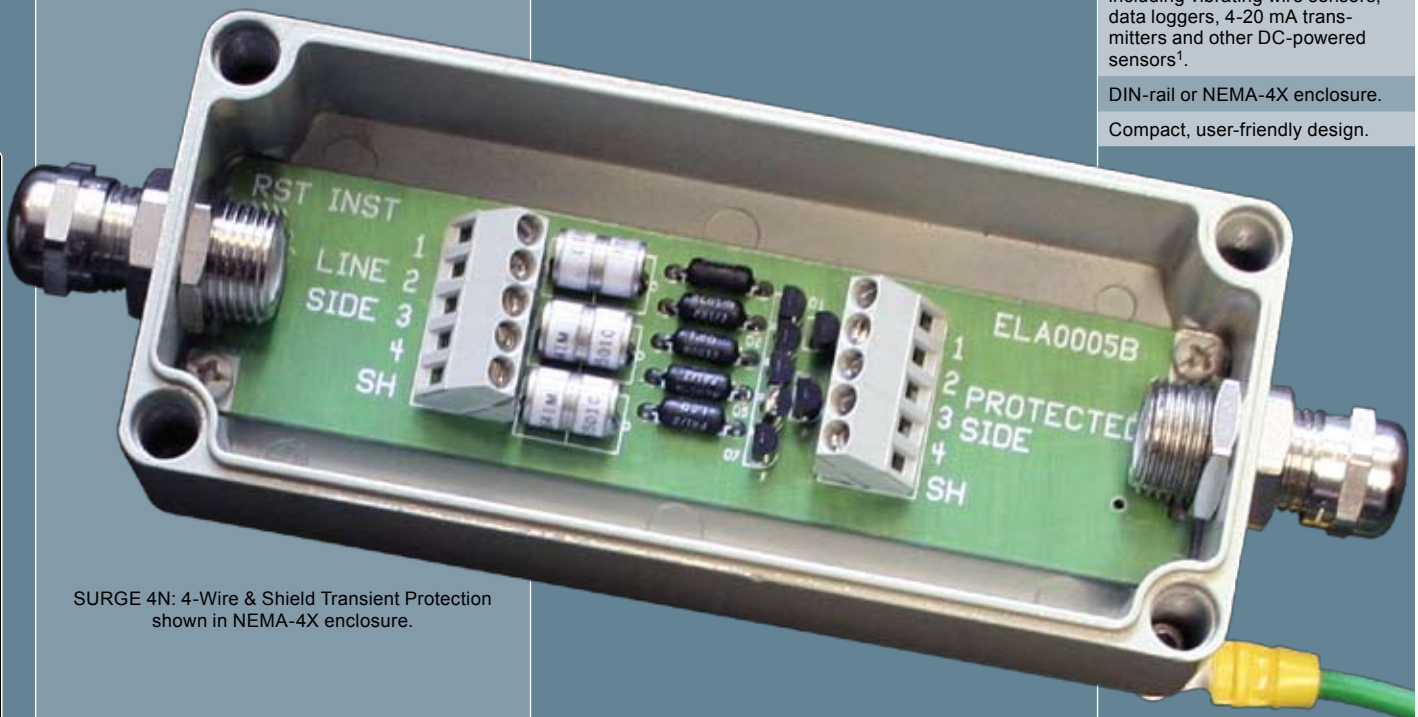
Low resistance in dormant state.

Self-resetting for uninterrupted operation after transient has been completed.

Compatible with most devices, including vibrating wire sensors, data loggers, 4-20 mA transmitters and other DC-powered sensors<sup>1</sup>.

DIN-rail or NEMA-4X enclosure.

Compact, user-friendly design.



SURGE 4N: 4-Wire & Shield Transient Protection  
shown in NEMA-4X enclosure.

<sup>1</sup> For continuously powered DC devices including 4-20 mA transmitters, a fuse (1 amp fast blow) in series with the DC supply is recommended. The fuse will prevent latch-on of the protector, where the DC supply current holds the protector in clamp mode after the transient.

RST Instruments Ltd. reserves the right to change specifications without notice.





specifications + ordering info

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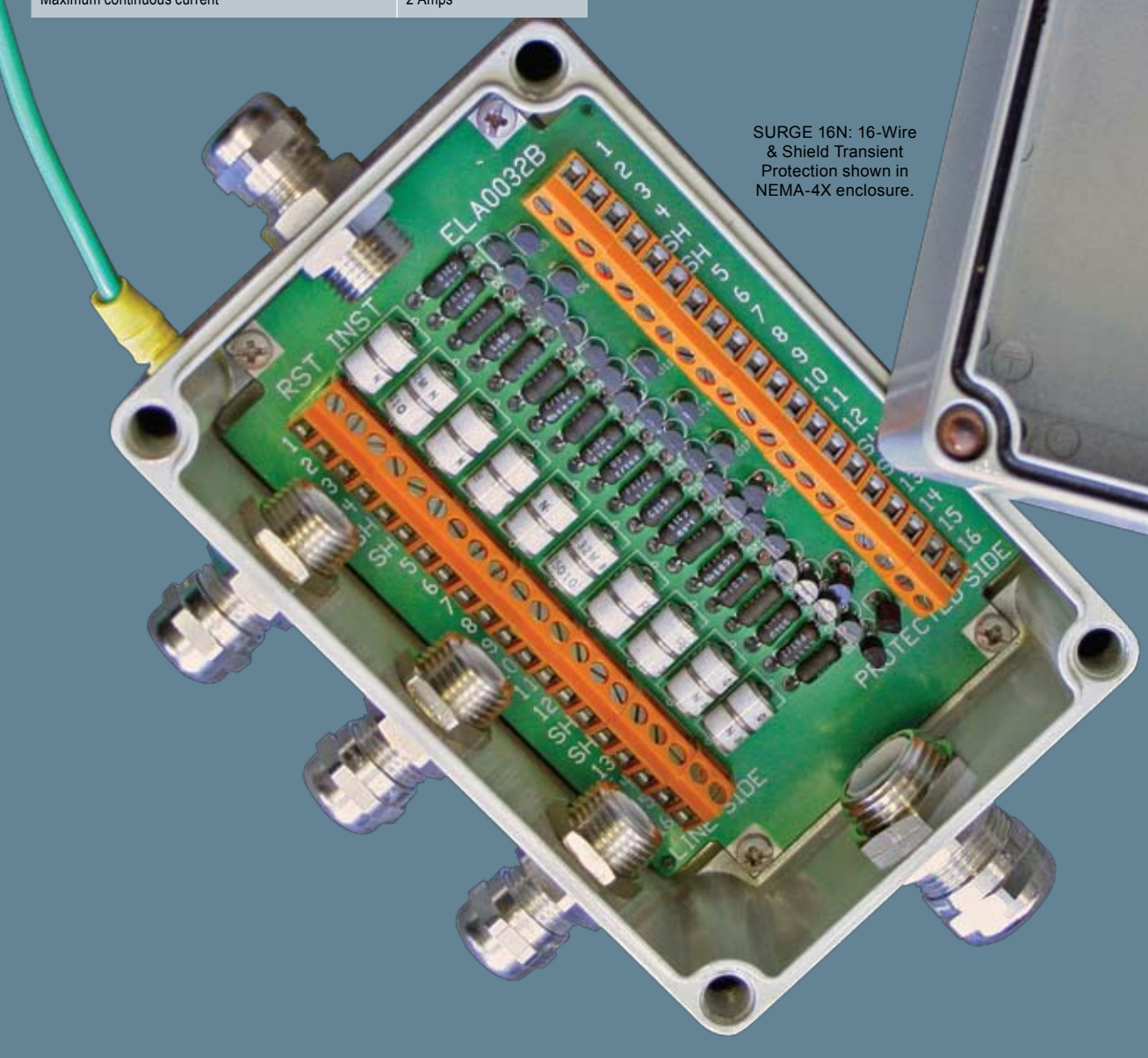


## specifications

ITEM	DESCRIPTION
Lines Protected	SURGE 4D: 4+2 shields SURGE 4N: 4+1 shield SURGE 16N: 16+4 shield
Maximum transient current per line (1 event, 8/20 $\mu$ s)	20,000 Amps
Minimum conduction threshold voltage	58 Volts
Peak pass-through voltage (common or normal mode)	77 Volts
Output clamp voltage	4 Volts
Series resistance per line	1.6 Ohms
Maximum leakage current	5 Microamps
Hold current	150 Milliamps
Maximum AC current (1 line cycle)	30 Amps RMS
Maximum continuous current	2 Amps

## ordering info

ITEM	PART #
SURGE 4D: 4-Wire and Shield Transient Protector for DIN rail mounting	ELLP4501
SURGE 4N: 4-Wire and Shield Transient Protector in NEMA-4X enclosure	ELLP4500
SURGE 16N: 16-Wire and Shield Transient Protector in NEMA-4X enclosure	ELLP4504



SURGE 16N: 16-Wire  
& Shield Transient  
Protection shown in  
NEMA-4X enclosure.

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