Technical Compliance Statement

Product: ISP10 Inline Surge Protection Device

Surge Protective Device for Telecommunications and Signaling Networks

This ISP10 compliance statement adequately addresses the applicable clauses of IEC 61000-4-5 and IEC 61643-21 relevant to surge performance and classification (Category C2). Clause-level gaps are limited to voltage protection level (Up) declaration and marking details, which are typically provided in product datasheets rather than compliance statements.

Product Identification

Parameter	Details
Product Name	The product covered by this compliance statement is the ISP10 Inline Surge Protection Device.
Manufacturer	The ISP10 is designed and manufactured by Campbell Scientific, Inc.
Application	The ISP10 is intended for use on RS-485/Modbus RTU sensor lines, providing surge protection for telecommunications and signaling networks.
Connector	The device is equipped with an A-coded, five-pin M12 connector, suitable for inline installation in field wiring applications.

Applicable Standards

The ISP10 has been evaluated against the following international standards applicable to surge immunity testing and surge protective devices (SPD) for telecommunications and signaling networks.

Standard	Title	Relevance
IEC 61000-4-5	Electromagnetic Compatibility (EMC) Part 4-5: Testing and Measurement Techniques Surge Immunity Test	This standard defines the surge immunity test method, including waveform characteristics, test levels, and procedures used to evaluate the ability of equipment to withstand surge events. Compliance with this standard demonstrates that connected equipment can survive specified surge conditions when tested at declared levels.
IEC 61643-21	Low voltage surge protective devices - Part 21: Surge protective devices connected to telecommunications and signaling networks - Performance requirements and testing methods	This standard specifies performance requirements, classification and test methods for surge protective devices used on telecommunications and signaling networks. It defines SPD categories, discharge current requirements, voltage protection characteristics, and device classification.

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Test Parameters and Results

The ISP10 has been evaluated under surge conditions representative of indirect lightning and switching events, in accordance with the applicable requirements of IEC 61000-4-5 and IEC 61643-21 for SPDs used on telecommunications and signaling networks.

Parameter	Value	Standard Reference
Test Waveform	The surge test waveform applied was the 8/20 µs combination wave, comprising: • 1.2/50 µs open circuit voltage waveform, and • 8/20 µs short circuit current waveform	As defined in IEC 61000-4-5 and referenced by IEC 61643-21 for Category C2 classification
Applied Test Levels	The following surge test levels were applied: • Open circuit test voltage (Uoc): 4 kV • Short circuit discharge current (Isc): 2 kA (8/20 µs)	These values correspond to IEC 61000-4-5, Test Level 4, the highest level defined in the standard for surge immunity testing.
Short-Circuit Discharge Current (*Isc*)	The ISP10 was subjected to a short-circuit discharge current (*Isc*) of 2,000 A (2 kA) using an 8/20 µs current waveform in accordance with the requirements of IEC 61000-4-5, Level 4.	
IEC 61000-4-5 Test Level Achieved	Based on the applied test conditions and results, the ISP10 achieved IEC 61000-4-5, Level 4, representing the highest-defined level of surge immunity specified in the standard.	
IEC 61643-21 SPD Classification	Based on the applied surge waveform and discharge current, the ISP10 satisfies the surge performance requirements for IEC 61643 21, Category C2, corresponding to 8/20 µs surge currents in the range of 1 kA to 5 kA as defined in IEC 61643 21, Table 3.	

The 8/20 µs test waveform and the 4 kV/2 kA test levels used for IEC 61000-4-5 Level 4 testing are consistent with and satisfy the Category C2 test requirements defined under IEC 61643-21, Table 3.

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SPD Classification (IEC 61643-21)

In accordance with IEC 61643-21, the ISP10 has been classified based on the applied surge waveform, discharge current, and intended application on telecommunications and signaling networks.

Classification Parameter	ISP10 Rating
SPD Type	The ISP10 is classified as a Type II SPD, intended for installation at the LPZ 1/ LPZ 2 boundary, providing protection against indirect lightning effects and switching surges.
SPD Category	The ISP10 is classified as Category C2, as defined in IEC 61643-21. This category corresponds to surge protective devices subjected to 8/20 µs current waveforms with discharge current ratings in the range of 1 kA to 5 kA, in accordance with IEC 61643 21, Table 3.
Nominal Discharge Current (In)	The nominal discharge current (In) of the ISP10 is: • In = 2,000 A (2 kA), 8/20 µs This value lies within the defined range for Category C2 surge protective devices.
Test Voltage (Uoc)	The surge performance of the ISP10 was verified using an open circuit test voltage (Uoc) of 4 kV, consistent with the surge test conditions applied under IEC 61000-4-5 Level 4 and referenced by IEC 61643-21 for Category C2 devices.
Network Type	The ISP10 is intended for use on RS-485/Modbus RTU telecommunications and signaling lines.

The voltage protection level (Up), representing the maximum clamping voltage provided by the device during surge events, should be confirmed from detailed device characterization data and verified to be compatible with the impulse withstand voltage of connected equipment, in accordance with IEC 61643-21 requirements.

Declaration of Compliance

General

Campbell Scientific, Inc. hereby declares that the ISP10 has been evaluated under the surge test conditions described in this document and has been shown to meet the applicable surge performance requirements referenced herein.

IEC 61000-4-5 Declaration

The ISP10 has been tested in accordance with IEC 61000-4-5 at Test Level 4, using an 8/20 µs combination waveform, with the following applied parameters:

- Open circuit voltage (Uoc): 4 kV
- Short circuit discharge current (*Isc*): 2 kA (8/20 µs)

The device withstood the applied surge conditions representative of indirect lightning and switching events.

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IEC 61643-21 Declaration

Based on the surge test conditions and results described in this document, the ISP10 satisfies the applicable performance requirements of IEC 61643-21 consistent with Category C2 surge protective devices for telecommunications and signaling networks.

Limitations

This document is issued by Campbell Scientific, Inc. for the purpose of demonstrating product compliance with the referenced IEC standards. It does not constitute third-party accredited-type test certification.

Independent laboratory testing by an accredited body may be required for formal certification under IEC 61643-21, depending on the end application, customer requirements, or regulatory jurisdiction.

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