



# FUNCTIONAL SAFETY PRODUCT CERTIFICATE

**No.: CSFS22.00351**

**NAME AND ADDRESS OF THE APPLICANT**

Shanghai CITEL Electronics Co.,LTD.

Building 1, 339 Xiupu Road, Pudong New Area, Shanghai

**NAME AND ADDRESS OF THE MANUFACTURER**

CCSH Manufacturing CO.,LTD.

Building 2, 339 Xiupu Road, Pudong New Area, Shanghai

**NAME AND ADDRESS OF THE FACTORY**

CCSH Manufacturing CO.,LTD.

Building 2, 339 Xiupu Road, Pudong New Area, Shanghai

**PRODUCT TRADEMARK**



**CITEL**

**NAME, MODEL AND SPECIFICATION**

Surge protectors for dataline/telecom DLC series

**THE STANDARDS AND TECHNICAL REQUIREMENTS FOR THE PRODUCTS**

IEC 61508-1:2010、IEC 61508-2:2010

**This is to certify that the products mentioned above have met  
the requirement of certification rules:**

**SITIAs-RJ03-02 B/2: Implemented rules for certification of functional safety products**

**Product information detailed in the attachment.**

**CERTIFICATION MODE**

Functional safety assessment + Initial industry inspection + Supervision after obtaining the certificate

**Date of Issued:** September. 11, 2025

**Date of expiry:** August. 31, 2027

**Date of original certification:** September. 1, 2022

**Validity of this certificate is subject to positive result of the regular follow up inspection  
by issuing certification body until the expiry date. The specific information of this certificate  
can be inquired through the official website of the issuing authority.**

**Authorized by :** \_\_\_\_\_ **Date :** September. 11, 2025

**Shanghai Inspection and Testing Institute of  
Instrumentation and Automation Systems Co.,Ltd.**

Address: 103 Caobao Road Shanghai, P.R. of China, 200233

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# FUNCTIONAL SAFETY PRODUCT CERTIFICATE ANNEX

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**Product:**

Surge protectors for dataline  
/telecom

**Model:**

DLC series

**Description:**

The names, models, and specifications of the covered products are listed in Table 1:

Table 1 Covered Model Specifications of DLC series Surge protectors for dataline/telecom

DLC series	DLC- a b / c - d / e ;
a stands for the working voltage	06 (6V), or 24 (24V)
b stands for the function-related aspect	D2 (floating ground application), DBC (cut-off frequency), D3 (fine protection), D3G (dedicated signal ground protection)
c stands for the wiring method	blank (screw connection) , R (spring clamp connection)
d represents the explosion-proof product identification	blank (non-explosion-proof product), EX (explosion-proof product)
e represents the CCC certification product identification	blank (non-CCC certified product), C (CCC certified product)

**Safety function:** Transmitting passing analog or digital signals.

**Standards :**

IEC 61508-1: 2010 Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 1: General Requirements  
IEC 61508-2: 2010 Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 2: Requirements for electrical/electronic/programmable electronic safety-related systems

**Safety**

**Integrity**

According to IEC 61508: 2010, the hardware safety integrity level is determined via

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# FUNCTIONAL SAFETY PRODUCT CERTIFICATE ANNEX

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**Product:**

Surge protectors for dataline /telecom

**Model:**

DLC series

**Level (SIL):**

route 1<sub>H</sub>. DLC series Surge protectors for dataline/telecom belongs to Type A safety related elements. In low demand operation mode, the safety integrity level reaches SIL 3 with its HFT (Hardware Fault Tolerance) = 0, and SIL 3 with its HFT = 1.

Model	DLC series	
Application Range	RS422,RS485,CAN, Profibus,4-20mA,LS	Switching Signal
$\lambda_{Total}$	29	29
$\lambda_{NE}$	20.95	19.95
$\lambda_S$	2.1	0
$\lambda_{DU}$ ( PFH )	5.95	9.05
$\lambda_{DD}$	0	0
PFD <sub>avg</sub> ( T1=10Y )	2.606E-04	3.964E-04
SIL ( HFT=0 )	SIL3	SIL3
SIL ( HFT=1 )	SIL3	SIL3
Note: 1. The failure rate unit is FIT, 1FIT=10 <sup>-9</sup> /h. 2. The failure of Surge protectors for dataline /telecom can be detected by downstream logic devices (e.g., DCS), such as through signal out-of-range diagnostics.		

**Specification:**

Proof test and routine inspection should be performed according to Safety Manual.

**Note:**

1. Test Report Numbered 2025SPV16020117-000235 supersedes the previous report J23-095-RZ-CJ, which is now obsolete.

2. This report updates the detailed model specifications of the DLC series, as follows:

Before the change, the covered models of the DLC series were: DLC-06D3, DLC-06DBC, DLC-24D3, DLC-24DBC, DLC-06D3G, DLC-24D2.

After the change, the covered models of the DLC series are detailed in Table 1.

Changes in failure rate data resulting from the product updates are provided in the Hardware Random Failure Assessment Results.

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