

ICS 47.020.60

CCS U 60



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 38329.3-2023

**Utility connections in port - Part 3: Low voltage shore
connection(LVSC) systems - General requirements**

Issued on: August 6, 2023

Implemented on: December 1, 2023

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

Preface	
Introduction	
1 Scope	1
2 Normative reference documents	1
3 Terms and Definitions	3
4 General requirements	4
4.1 System description	4
4.2 Power distribution system	5

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1. Structure and Drafting Rules of Standardization Documents"

Drafting.

This document is Part 3 of GB/T 38329 "Port Ship-Shore Connection". GB/T 38329 has released the following parts.

- Part 1. General requirements for high-voltage shore power connection (HVSC) systems;
- Part 2. Data transmission for monitoring and control of high-voltage and low-voltage shore power connection systems;
- Part 3. General requirements for low-voltage shore power connection (LVSC) systems.

This document is modified to adopt IEC PAS80005-3.2014 "Port Shore Power Connection Part 3. Low Voltage Shore Power Connection (LVSC) System

General requirements".

Compared with IEC PAS80005-3.2014, this document has made the following structural adjustments.

- a) Modify the paragraph content in the main text to have no title bar;
- b) Adjust the note under 3.2.1 term "socket" regarding "Use of plugs, sockets and marine couplers, see Figure 7" to under 3.2;
- c) Adjust the notes containing technical requirements to the main article, see 3.2.1, 4.7.4, 6.1.1.1, 8.4.4;

d) Combine the conditions in 5.1 regarding nominal voltage levels and the use of IEC nominal voltages other than the nominal voltages specified in this document.

Into one line, see 5.1.1;

e) Adjust the requirement that "Low-voltage shore power should include appropriately rated surge arresters" from "5.2 Quality of low-voltage shore power" to "6.3 Shore power

"Air protection system";

f) The positions 8.4 and 8.5 were interchanged.

The technical differences between this document and IEC PAS80005-3:2014 and their reasons are as follows.

---Replaced IEC 60529 with the normatively quoted GB/T 4208 to adapt to my country's technical conditions and increase operability.

---Replaced IEC 60309-1 with normatively quoted GB/T 11918.1 to adapt to my country's technical conditions and increase operability.

---Replaced IEC 60309-5 with normatively quoted GB/T 11918.5 to adapt to my country's technical conditions and increase operability.

---Replaced IEC TR60909-1 with normatively cited GB/T 15544.2 to adapt to my country's technical conditions and increase operability

Doing things.

---Replaced IEC TR60909-2 with normatively quoted GB/T 15544.3 to adapt to my country's technical conditions and increase operability

Doing things.

---Replaced IEC 60332-1-2 with normatively quoted GB/T 18380.12 to adapt to my country's technical conditions and increase operability

Doing things.

---Replaced IEC 60092-401:1980 with normatively quoted GB/T 21065 to adapt to my country's technical conditions and increase operability

Doing things.

---Replaced IEC 61363-1 with normatively quoted GB/T 21066 to adapt to my country's technical conditions and increase operability.

---Replaced IEC 60092-301:1995 with normatively quoted GB/T 35712 to adapt to my country's technical conditions and increase operability

Doing things.

---This document further clarifies the scope of application of the standard as a single connector with a rated current greater than 250A and a nominal voltage greater than or equal to

Low voltage shore power connection system of 400V and less than or equal to 1000V. From the perspective of safety and application conditions, this

The document does not apply to marinas, shipyards and oil, gas and chemical terminals, or to the limits of human-operated systems specified in IEC 61439.

Certainly. As it is clear in the preface that GB/T 38329 is divided into three parts, Part 1 is the high-voltage shore power connection (HVSC) system

general requirements, delete the description of the relevant requirements for high-voltage shore power connection systems in the scope, see GB/T 38329.1 (see Section 1 chapter).

---For ease of understanding, the terms and definitions of "IT power system" and "connector" have been added (see 3.12 and 3.13).

---Because it is clear that this document does not apply to oil, gas and chemical terminals, the content of the compatibility assessment regarding the consideration of hazardous areas has been deleted [see

IEC PAS80005-3.4.3m) in.2014], deleted the requirements for electrical equipment in hazardous areas (see IEC PAS80005-3.

4.6.4 in.2014), the emergency shutdown requirement for ship connection equipment that may move to hazardous areas has been deleted (see IEC PAS

80005-3.4.9 in.2014).

---In order to ensure the effective application of communications in shore power connection operations, compatibility assessment requirements for communications compatibility assessment are added [see

4.3p)].

---Delete from the system design requirements "System integration of shore and ship LVSC systems shall be managed by a single designated party and shall be based on

"Conducted in accordance with procedures that clarify the roles, responsibilities and requirements of relevant parties", this article does not apply to our country (see IEC PAS80005-3.

4.4.1 in.2014).

---In order to ensure good communication channels during shore power connection

operations, it is added that "there should be independent communication between ships and dock shore power facility operators"

"Establish a voice communication channel (such as a walkie-talkie)" (see 4.4.2.3). In order to ensure the standardization of system operation and clarify the responsibilities of relevant parties

Responsibilities, adding "The operation of low-voltage shore power systems on shore and ships should comply with prescribed procedures, and determine the duties and responsibilities of all relevant parties.

and requirements" (see 4.4.2.4).

---Modified the statement of connector rating requirements to maintain coordination with the description of relevant requirements in GB/T 11918.5 (see 4.7.6).

---Because my country's terminals currently provide ships with low-voltage power supply with ungrounded neutral points, the compatibility evaluation of the power distribution system before connection has been deleted.

The content of the evaluation on the neutral point grounding evaluation of the shore transformer [see 4.3i) in IEC PAS80005-3.2014] has been deleted.

Systematic research and calculation on shore power transformer neutral point grounding resistance analysis related content [see IEC PAS80005-3.2014

4.8c) and e)], delete the requirement that the secondary side transformer should be in star configuration with neutral point bushing (see IEC PAS80005-3.

6.2.2 in.2014), the requirement for neutral point grounding resistance is deleted (see 6.2.3 in IEC PAS80005-3.2014), and the ship

The conditions for not requiring a shipboard transformer are determined by "the power grid on the ship is designed according to the shore power supply voltage and the neutral point processing is tied to the ship."

"Unified and consistent" is adjusted to "The power system on board is consistent with the design voltage of shore power access" (see 8.5.2). Delete the special information in the appendix.

Additional requirements for ship neutral point grounding resistors (see C.6.2.3 and D.6.2.3 in IEC PAS80005-3.2014) are specified to suit

In response to my country's technical conditions.

---In the system research and calculation, the short-circuit current calculation adds the short-circuit current calculation "should be in accordance with GB/T 15544.2 and

GB/T 15544.3 stipulates the requirements for "carrying out" and maintains coordination with