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**Power electronics systems and equipment. Operation
conditions and characteristics of active infeed
converter(AIC)applications**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1:1-2009:

The translation method used in this standard is equivalent to IEC 62578:2015 "Application of Active Feed Converter (AIC) for Power Electronic Systems and Equipment

Operating conditions and characteristics (including design recommendations for emission values below 150kHz)":

The Chinese documents that have a consistent correspondence with the international documents cited in this standard are as follows:

---GB/T 2900 (all parts) electrical terminology [IEC 60050 (all parts)];

---GB/T 6113:101-2016 Radio disturbance and immunity measurement equipment and measurement method specification Part 1-1: Radio

Disturbance and immunity measuring equipment measuring equipment (CISPR16-1-1:2010, IDT);

---GB/T 7260:1-2008 Uninterruptible power supply equipment Part 1-1: General rules for UPS used in areas where operators reach

Safety requirements (IEC 62040-1-1:2002, MOD);

---GB/T 7260:4-2008 Uninterruptible power supply equipment Part 1-2: General provisions and regulations for UPS used in restricted areas

Safety requirements (IEC 62040-1-2:2002, MOD);

---GB/T 12668:3-2012 Adjustable speed electric drive system Part 3: Electromagnetic compatibility requirements and specific test methods

(IEC 61800-3:2004, IDT);

---GB/T 12668:501-2013 Adjustable speed electric drive system Part 5-1: Safety requirements for electrical, heat and energy

(IEC 61800-5-1:2007, IDT);

---GB/T 17626:7-2017 Electromagnetic compatibility test and measurement technology Power supply system and the measurement of harmonics and inter-harmonics of connected equipment

Guidelines for Quantity and Measuring Instruments (IEC 61000-4-7:2009, IDT):

This standard also made the following editorial changes:

---Change the standard name to "Operating Conditions and Characteristics of Active Feed Converter (AFC) Applications for Power Electronic Systems and Equipment";

---According to the IEC TC22/314/DL document, the link related to the abolished document IEC 62103 that is normatively cited is deleted (see section

Chapter 2 and 5:6);

--- Correct the "line voltage u_{S1} " in paragraph 5 of 6:2 to "line voltage $u_{(S1-S2)}$ " (see 6:2);

--- Added the titles of Appendix A and Appendix B (see Appendix A and Appendix B):

This standard was proposed by China Electrical Equipment Industry Association:

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1 Scope

This standard describes the operating conditions and typical characteristics of active-fed converters (AFC) using various technologies and topologies, which can be connected

Between the AC side of the power supply network (grid) and the DC side with constant current or voltage, and perform electrical power in both the forward and reverse (feedback) directions

Rate (active and reactive) transformation:

Generally, active-fed converters are compatible with all voltage and power levels of variable speed electric drive systems (PDS), uninterruptible power supply systems

(UPS), active filters, photovoltaic systems, wind power generation systems, battery-supported power management systems, etc: are used together on the DC side:

Active-fed converters are usually connected between the power supply network (AC side) and the DC side of current or voltage: The purpose is to synthesize sinusoidal

Wave AC current to avoid generating low frequency harmonics (for example, the frequency is lower than 1kHz): Some of them can also compensate for the existing

Harmonic distortion: Moreover, they can regulate the power supply network by transferring electrical power (active and reactive) in both the forward and reverse (feedback) directions

This can save energy and stabilize the power supply voltage in the system, or couple renewable energy or electrical energy storage devices with the power supply network: