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

GB/T 44802-2024

**Technical specification for insulated-gate bipolar transistor
(IGBT) driver of high-voltage direct current power transmission
using voltage sourced converters**

柔性直流输电用绝缘栅双极晶体管（IGBT）驱动器技术规范

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

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1 Scope

GB/T 44802-2024 specifies the IGBT gate driver for voltage sourced converter HVDC transmission. China operates more VSC-HVDC than anyone, and the gate driver is the component on which the whole converter's reliability rests: it sits at the potential of its own

submodule, it must switch a device carrying thousands of amperes in microseconds, it must detect a short circuit and turn the device off safely within a few microseconds of it occurring, and its own failure takes out a submodule at best and a valve at worst. The standard sets the composition and functions of the driver and then the requirements: the gate drive capability and the switching timing, the power supply and its energy storage, the isolation and the insulation coordination between the driver and its control interface, the protection functions including short circuit detection and active clamping, the status monitoring and reporting to the valve control, the electromagnetic compatibility in a converter hall, and the reliability, followed by the type, routine and site tests. It takes effect on 1 May 2025.

This document specifies the terms and definitions, conditions of use, general requirements, main Parameter selection, technical requirements, testing, as well as packaging, marking, transportation and storage. This document applies to insulated gate bipolar transistors for flexible DC transmission using modular multilevel converter technology at $\pm 800\text{kV}$ and below. The insulated gate bipolar transistor driver is used as a reference for power electronic equipment based on other converter topologies.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 191 Pictorial markings for packaging, storage and transportation

GB/T 2423.1-2008 Environmental testing for electric and electronic products Part

3 Radio frequency electromagnetic field radiated immunity test

GB/T 17626.4-2018 Electromagnetic compatibility test and measurement technology
Electrical fast transient burst immunity test

GB/T 17626.5-2019 Electromagnetic compatibility test and measurement technology surge
(shock) immunity test

GB/T 17626.6-2017 Electromagnetic compatibility test and measurement techniques
Immunity to conducted disturbances induced by radio frequency fields

GB/T 17626.8-2006 Electromagnetic compatibility test and measurement technology Power
frequency magnetic field immunity test

GB/T 17626.9-2011 Electromagnetic compatibility test and measurement technology pulse
magnetic field immunity test

GB/T 17626.10-2017 Electromagnetic compatibility test and measurement techniques
Damped oscillatory magnetic field immunity test

GB/T 17626.12-2023 Electromagnetic compatibility test and measurement techniques Part

12 Ring wave immunity test

GB/T 17626.18-2016 Electromagnetic compatibility test and measurement technology
Damped oscillatory wave immunity test

GB/T 29332-2012 Semiconductor devices-Discrete devices-Part