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

GB/T 32892-2026

Replacing GB/T 32892-2016

**Model and parameter test regulation for photovoltaic power
systems**

光伏发电系统模型及参数测试规程

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Foreword

GB/T 32892-2026 | Model and parameter test regulation for photovoltaic power system

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12 National Standards of the People's Republic of China Replaces GB/T 32892-2016 Photovoltaic power generation system model and parameter test procedure Published on 2026-04-

30 Implemented on August 1, 2026 State Administration for Market Regulation The State Administration for Standardization issued a statement.

1.Scope This document establishes the methodology and process for testing and verifying photovoltaic power generation system model parameters, including test conditions, model

parameter testing, and model... Parameter identification, model validation and evaluation, etc. This document applies to the electromechanical and electromagnetic transient model and parameter testing of AC grid-connected photovoltaic power generation systems with voltage levels of 380V and above.

1 Scope

GB/T 32892-2026 is the Chinese national standard covering how the model of a PV plant is verified against the plant itself - the tests that establish the parameters a grid study will use, rather than accepting the numbers a manufacturer supplies. It replaces GB/T 32892-2016 and has been in force since 1 August 2026, with the PV modelling guide GB/T 32826-2026. It was issued on 30 April 2026 and has been in force since 1 August 2026, replacing GB/T 32892-2016. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

6.4.2 The voltage control test procedure for the reactive power compensation device is as follows:

- a) Connect the reactive power compensation device to the test system shown in Figure C.1. The signal simulation device should comply with the requirements of C.3.
- b) Close switch K1 to operate the reactive power compensation device in constant voltage control mode, and adjust the AC side voltage to $98\%U_n \sim 102\%U_n$;
- c) Using a signal simulation device, control the voltage reference value of the reactive power compensation device according to the curve shown in Figure 2, so that the AC side voltage changes from... The voltage deviation increases sequentially from $1.0U_n$ to $0.99U_n$, $1.0U_n$, $1.01U_n$, and $1.0U_n$, or sequentially from $0kV$ to $-1kV$. The voltage remained constant for 100 seconds during the $0kV$, $1kV$, and $0kV$ step transitions.
- d) Record the experimental data. The data format is shown in Appendix D.

6.4.3 The grid-side voltage disturbance test of the reactive power compensation device shall be conducted according to the test procedures specified in 6.3.3,

6.3.4 and 6.3.5. The test conditions should be as follows: It complies with the requirements of E.2.

3 Active power control curve

6.5.2 The reactive power control test procedure for the plant-level power control system is as follows:

- a) Connect the plant-level power control system and photovoltaic power generation system to the test system shown in Figure C.2. The signal simulation device should comply with

C.3. Regulations;

b) Close switch K

2. In constant reactive power control mode, set the initial active power $P_0 = 0.5P_n$ and the reactive power of the photovoltaic power generation system. $=0$;

c) Using a signal simulation device, control the reactive power reference value of the photovoltaic power generation system according to the curve shown in Figure 1, so that the reactive power... The reactive power continuously operates for 100 seconds during the step transition from 0 to Q_{min} , 0, and Q_{max} .

d) Record the experimental data. The data format is shown in Appendix D.

6.5.3 The voltage control test procedure for the plant-level power control system is as follows:

a) Connect the plant-level power control system and photovoltaic power generation system to the test system shown in Figure C.2. The signal simulation device should comply with C.3. Regulations;

b) Close switch K to operate the reactive power compensation device in constant voltage control mode, and set the initial active power of the photovoltaic power generation system to $0.7P_n \leq P_0 \leq P_n$;

c) Using a signal simulation device, control the voltage reference value of the photovoltaic power generation system according to the curve shown in Figure 2, so that the AC side voltage changes from... The voltage deviation increases sequentially from $1.0U_n$ to $0.99U_n$, $1.0U_n$, $1.01U_n$, and $1.0U_n$, or sequentially from 0kV to -1kV. The voltage remained constant for 100 seconds during the 0kV, 1kV, and 0kV step transitions.

d) Record the experimental data. The data format is shown in Appendix D.

6.5.4 The frequency disturbance test of the power control system at the plant level shall comply with the provisions of NB/T 11221.

4 General Requirements

4.1 For photovoltaic power generation systems for which no model and parameters are provided, the model structure should be determined and model parameters should be developed in accordance with the requirements of GB/T 32826. test.

4.2 For photovoltaic power generation systems for which models and parameters have been provided in accordance with the requirements of GB/T 32826, model verification should be carried out to check the accuracy of the model. Accuracy.

4.3 The parameter testing of the photovoltaic power generation system model should include the photovoltaic generator set or photovoltaic power generation unit, the power

control system at the plant level, and the reactive power compensation. Model parameter testing of compensation devices and electrochemical energy storage systems (if any). Model parameters of the photovoltaic power generation unit can be obtained through photovoltaic inverters or photovoltaic... The parameters of the generator set model were obtained through testing.

4.4 When a photovoltaic power generation system includes multiple types of inverters, the photovoltaic generator sets or units composed of each type of inverter should be separately tested. Parameter testing or model validation.

4.5 The electromechanical and electromagnetic model parameter testing of electrochemical energy storage equipment in photovoltaic power generation systems shall be carried out in accordance with GB/T 44117.

4.6 For photovoltaic power generation systems containing multiple photovoltaic power generation units, in accordance with the relevant provisions of A.3 in Appendix A, they should be built according to the inverter model. Establish an equivalent model and conduct verification of the equivalent model.

4.7 The model parameter testing procedure for photovoltaic power generation systems shall comply with the relevant provisions of Appendix A, wherein the model parameter test shall be conducted on-site. This is one method used in real-time simulation of controllers in the loop, including type testing, model testing, or controller-in-the-loop simulation.

5 Test conditions

5.1 The following data should be collected before the photovoltaic power generation system model parameter test. See the list of data to be collected for the photovoltaic power generation system model and parameter test. Appendix B.

- a) Design reports and drawings of the primary and secondary photovoltaic power generation systems, and commissioning reports.
- b) Product type test reports for photovoltaic modules, inverters, and reactive power compensation devices.
- c) Photovoltaic array data. Photovoltaic module IV characteristic curve under standard test environment (irradiance 1000W/m², ambient temperature 25°C) Line and its electrical performance parameters, such as open-circuit voltage, short-circuit current, maximum power, maximum power point voltage, and maximum power point current.
- d) Inverter data. Model, rated output power, AC rated voltage, AC maximum allowable output current, AC voltage allowable... Permissible range, power factor range, full-load MPPT DC voltage range, optimal MPPT operating point DC voltage, and DC bus Main circuit parameters such as line capacitance, filter inductor, and filter capacitor, as well as various protection parameters.