

## Overview

### 纲要

Protection function is very important  
保护功能至关重要

Genset's control and protection are always the core technology of SmartGen.  
数十年来，发电机组控制保护一直是SmartGen的核心技术优势。

All products of SmartGen from protector to automatic controller  
(Microprocessor-based, integrated a number of protection features  
as standard application) have passed the test of practice.

SmartGen的产品，从简单的功能保护装置到高级的全自动控制器（以微处理器为基础、集成了大量的保护功能作为标准应用）均通过了实践的严格检验。

Solutions of SmartGen Protection  
and Control System:

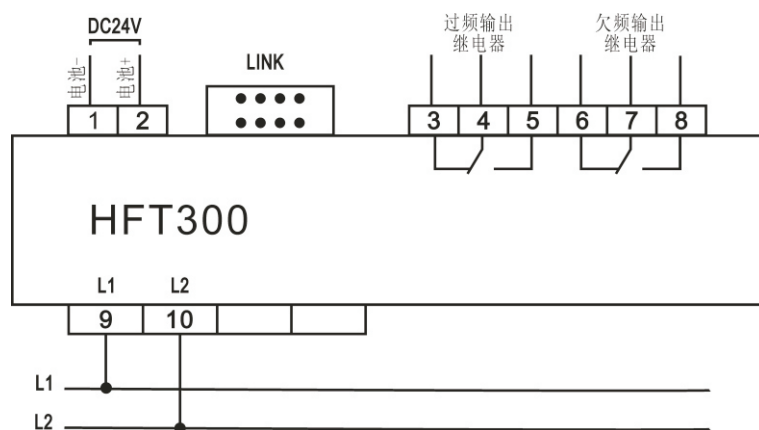
1. Over/Under Frequency Protection
2. Over/Under Voltage Protection
3. Overcurrent Protection
4. Reverse Power Protection

SmartGen保护控制系统，提供了多种  
保护解决方案：

- 1、过频/欠频保护；
- 2、过压/欠压保护；
- 3、过流保护；
- 4、逆功率保护；

## Over/Under Frequency Protection

### 过频/欠频保护



Over/under frequency protection application  
过频/欠频保护应用

## Over/Under Frequency Protection

### 过频/欠频保护

### Characteristics---HFT300

### 产品特点---HFT300



### Characteristics:

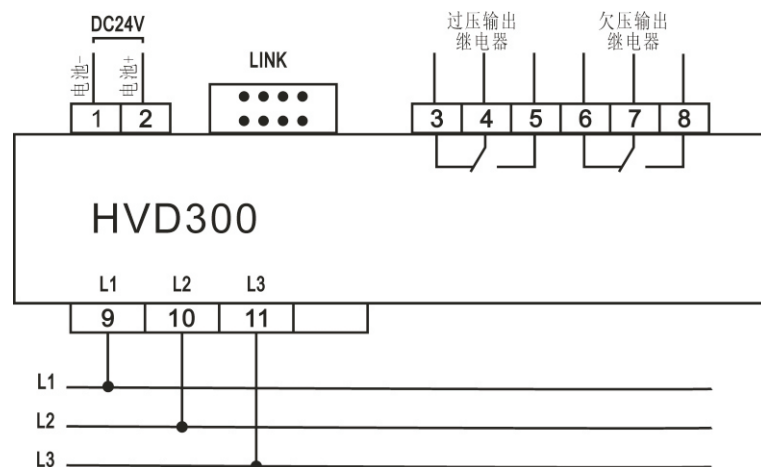
1. Under/Over frequency combination protection
2. Fault LED display
3. Adjustable actuation time
4. Relay output LED display
5.  $\pi$ -type 35mm guide-rail installation
6. CCS certification
7. Apply to 3-phase 4-wire, 3-phase 3-wire, 2-phase 3-wire, single-phase 2-wire power supply and 50Hz, 60Hz, 400Hz system

### 特点:

1. 欠频率/过频率组合保护
2. 故障时LED显示
3. 动作时间可调
4. 输出继电器动作时LED显示
5. 35mm $\pi$ 型导轨安装
6. CCS认证
7. 适用于三相四线、三相三线、两相三线、单相二线电源 50Hz、60Hz、400Hz系统

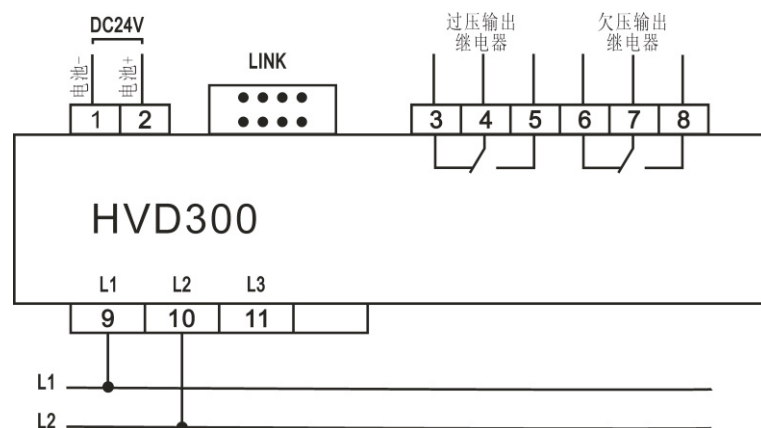
## Over/Under Voltage Protection

### 过压/欠压保护



Over/under voltage protection----application of 3-phase 3-wire and 3-phase 4-wire

过压/欠压保护三相三线、三相四线应用



Over/under voltage protection----application of single-phase 2-wire and 2-phase 3-wire

过压/欠压保护单相两线、两相三线应用

## Over/Under voltage, loss of phase, reverse phase sequence protection

### 欠压/过压/缺相/逆相序保护

Characteristics---HVD300

产品特点---HVD300



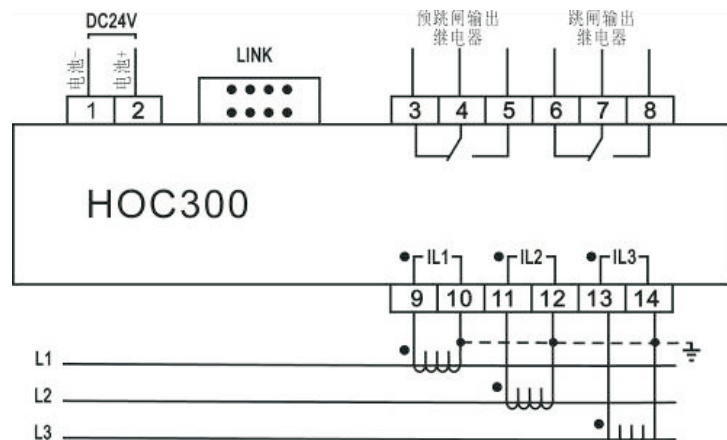
### Characteristics:

1. Over/Under voltage, loss of phase, reverse phase sequence protection
2. Apply to single-phase or 3-phase voltage detection
3. Fault LED display
4. Adjustable actuation time
5. Relay output LED display
7. CCS certification
8. Apply to 3-phase 4-wire, 3-phase 3-wire, 2-phase 3-wire, single-phase 2-wire power supply and 50Hz, 60Hz, 400Hz system

### 特点:

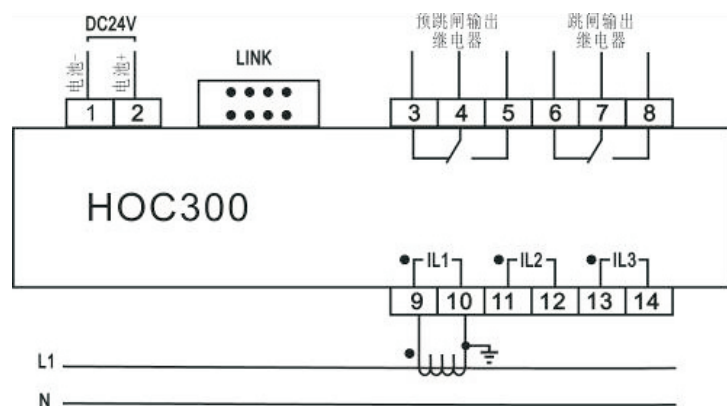
1. 欠电压、过电压、缺相、逆相序保护
2. 用于单相或者三相电压检测
3. 故障时LED显示
4. 动作时间可调
5. 输出继电器动作时LED显示
6. 35mm $\pi$ 型导轨安装
7. CCS认证
8. 适合于三相四线、三相三线、两相三线、单相二线电源 50Hz、60Hz、400Hz系统

## OverCurrent Protection 过流保护



Overcurrent protection--application of 3-phase 3-wire and 3-phase 4-wire

过流保护三相三线、三相四线应用



Overcurrent protection-- application of single-phase 2-wire and 2-phase 3-wire

过流保护单相二线、两相三线应用

## OverCurrent Protection 过流保护

Characteristics---HOC300  
产品特点---HOC300



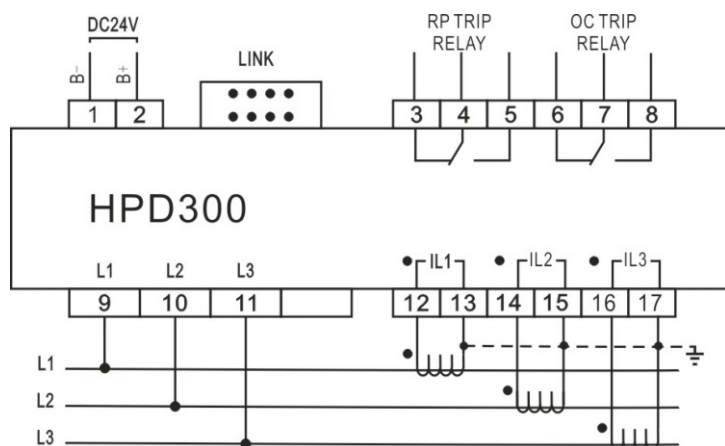
### Characteristics:

1. Overcurrent protection
2. Apply to detect single-phase or three-phase current
3. Fault LED display
4. Adjustable actuation time
5. Relay output LED display
6.  $\Pi$ -type 35mm guide-rail installation
7. CCS certification
8. Apply to 3-phase 4-wire, 3-phase 3-wire, 2-phase 3-wire, single-phase 2-wire power supply and 50Hz, 60Hz, 400Hz system

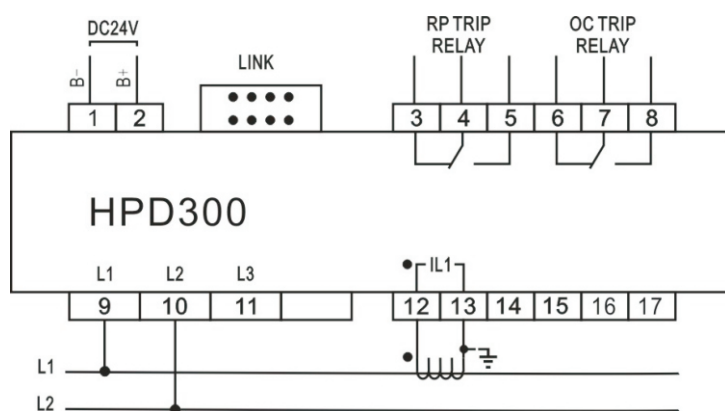
### 特点:

1. 过流保护
2. 用于单相或三相电流测量
3. 故障时LED显示
4. 动作时间可调
5. 输出继电器动作时LED显示
6. 35mm $\Pi$ 型导轨安装
7. CCS认证
8. 适合于三相四线、三相三线、两相三线、单相二线电源 50Hz、60Hz、400Hz系统

## Reverse Power Protection 逆功率保护



Reverse power protection-----application of 3 phase 2-wire  
and 3-phase 4-wire  
逆功率保护三相三线、三相四线应用



Reverse power protection-----application of single phase 2-wire  
and 2-phase 3-wire  
逆功率保护单相两线、两相三线应用

## Reverse Power Protection 逆功率保护

Characteristics---HPD300  
产品特点---HPD300



### Characteristics:

- 1.Reverse power protection
- 2.Fault LED display
- 3.Adjustable actuation time
- 4.Relay output LED display
- 5.Π-type 35mm guide-rail installation
- 6.CCS certification
- 7.Apply to 3-phase 4-wire, 3-phase 3-wire, 2-phase 3-wire, single-phase 2-wire power supply and 50Hz, 60Hz, 400Hz system

### 特点:

- 1.逆功率保护
- 2.故障时LED显示
- 3.动作时间可调
- 4.输出继电器动作时LED显示
- 5.35 mmΠ型导轨安装
- 6.CCS认证
- 7.适合于三相四线、三相三线、两相三线、单相二线电源 50Hz、60Hz、400Hz系统