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Datasheet

UDP4303S Programmable Linear DC Power

V 1.0

04.2024

1. Main Features

- UDP4303S: 32 V/3A, 32 V/3 A, 15 V/3 A, 6 V/10 A
- Electric isolation between 4 channels, independent output, with a maximum output power of 297 W
- 4.3 inch TFT-LCD
- Supports internal series and parallel connections for CH1 and CH2
- Hi resolution of 1 μA for current measurement.
- Capability to measure and display dynamic ranges of current
- Outstanding programming and readback accuracy
- Fast transient response time: < 50 μs
- Front and rear panel output terminals
- Supports 2-wire and 4-wire for remote sensing
- Supports a maximum of 512 group serial outputs, with a minimum dwell time of 1 ms, and includes various built-in fundamental waveforms
- Low output ripple and noise: < 350 μV_{rms} /2 mV_{pp} μV_{rms}/2 mV_{pp}
- Command processing time: < 10 ms
- Automatic switchover low and high range measurement
- Supports timing output, energy consumption analysis (IoT), data recording and analysis
- Supports a minimum of 1 ms pulse current waveform
- Supports standard three rack-units (3U), 1/2-rack form factor
- Supports upper computer control
- Multiple protection: OVP/OCP/OTP/Sense; OCP time can be set to 0 ms-1000 ms
- High and low current measurements supports high-speed sampling at 8 kSa/s in full channel mode
- Various standard interfaces: USB Host, USB Device, RS-232, Sense, LAN, and Digital I/O based on SCPI (Standard Commands for Programmable Instruments)

2. Product Introduction

UDP4303S programmable linear DC power supply features two 32V/3A outputs, one 15V/3A output, and one 6V/10A output. It offers extremely low load regulation and low ripple noise output, with each channel isolated from the others. All four channels support remote sensing (4-wire) function. Channels 1 and 2 support internal series and parallel connections, making the device suitable for a wide range of applications.

The product is equipped with an RS232 communication interface, supporting SPI protocol, Ethernet, and multiple Digital I/O interfaces, which facilitate remote control. The 4.3-inch true-color LCD screen provides a rich functional interface, making it easy to use list/delay functions, trigger functions, monitoring functions, recorder functions, waveform display functions, output preset functions, system settings, language selection, and a web server.

3. Product Function

1. LCD Interactive Interface

UDP4303S provides users with a feature-rich, easy-to-operate human-computer interaction interface, and a 4.3-inch high-definition display. This interface displays the power supply's current set output voltage and current, actual output voltage and current, and over-voltage and over-current protection values. The interactive interface for each function is simple, comprehensive, and easy to operate.

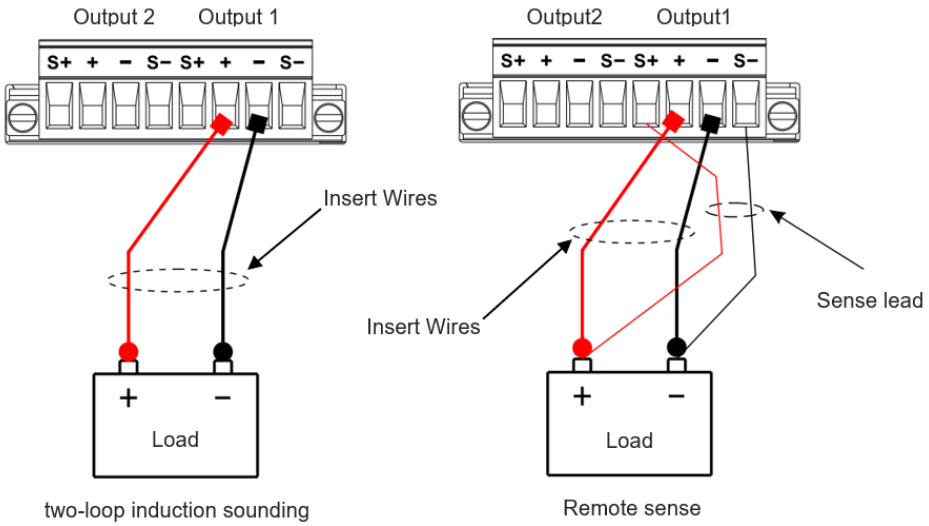
2. Series and Parallel Connections

UDP4303S simplifies wiring and usage by enabling serial and parallel connections between the main channel 1 and channel 2 without the need for external wiring.

3. Remote Sense

To avoid voltage drops caused by long wires connecting to the load, remote testing allows measurements to be made directly on the terminals of the DUT (Device Under Test), improving measurement accuracy. S+ and S- are the remote sensing terminals, while + and - are the output positive and negative terminals. When using the remote sense function, connect a pair of driver wires from the rear panel + and - terminals to the DUT, and lead S+ and S- to the DUT. Please refer to the

UDP4303S user manual for details.

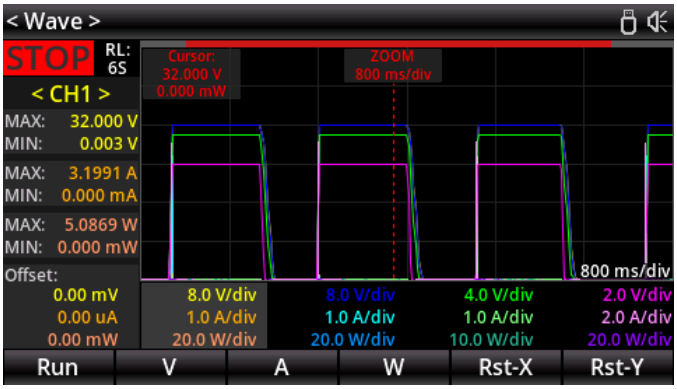


4. OVP/OCP

UDP4303S provides OVP (Over-Voltage Protection) and OCP (Over-Current Protection) functions. OVP and OCP points can be set using the function key on the screen. Once OVP or OCP occurs, the output will be turned off and an alert will pop up on the screen.

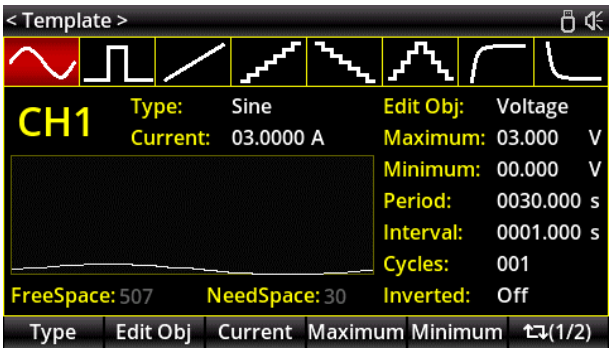
5. Output Waveform Display

UDP4303S provides an output waveform display function for observing the voltage and current output states.



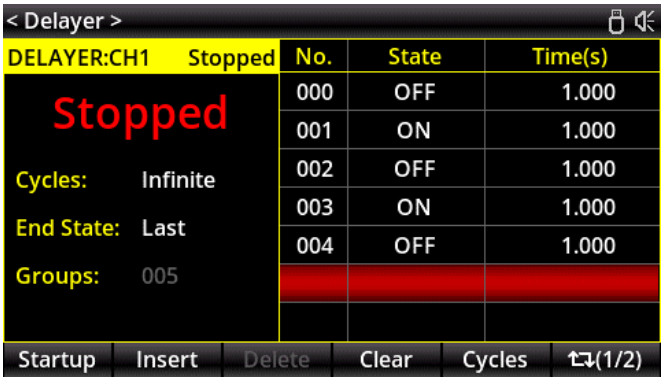
6. List Output

UDP4303S provides a list output function for generating arbitrary waveforms and freely editing programmable waveforms. These waveforms can be reproduced within the limit settings for voltage and current. Users can set the repetition cycle for the arbitrary waveforms, as well as the output voltage, current, and time for each group of data. Additionally, the instrument offers various output templates for selecting and editing arbitrary waveforms. The instrument will output the parameter based on the current settings. All channels, as well as series and parallel connections, support this function.



7. Delayer

UDP4303S provides a delayer function that supports all channels, series, and parallel connections. This function is used to control the output state of the selected channel ON or OFF.



8. Monitor

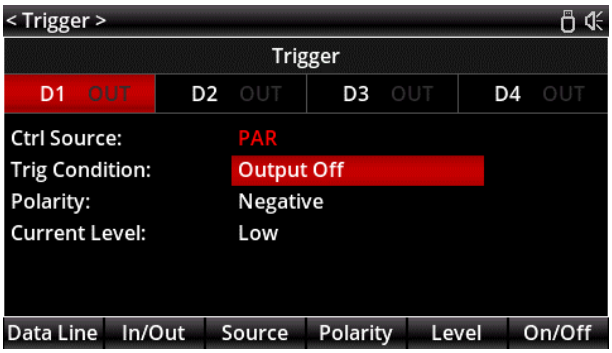
UDP4303S provides a monitor function that supports all channels, series, and parallel connections. The monitor function informs the user whether the voltage, current, or power of the channel meets the set condition by configuring the monitor condition and selecting a response mode. When the condition is met, an alert is triggered according to the selected response mode.

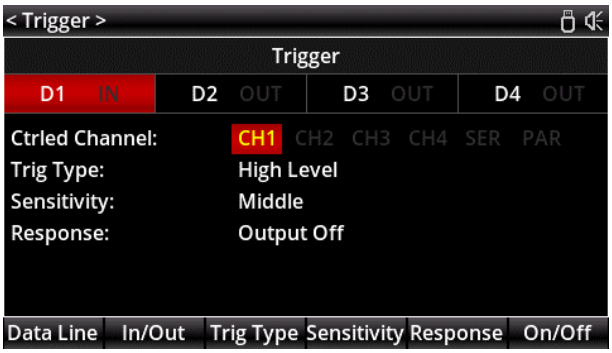
9. Trigger

UDP4303S provides a digital I/O port on the rear panel, supporting trigger input and trigger output. The digital I/O port has four independent data cables. Each can be used for trigger input or trigger output separately.

Trigger input: The digital I/O port can receive a trigger signal form an external source. When the preset trigger condition is met, the controlled source (output channel) will be enabled to turn on/off the output, or the inverse output state.

Trigger output: When the output of the controlled source (output channel) is enabled, the digital I/O port will output a high or low-level signal.



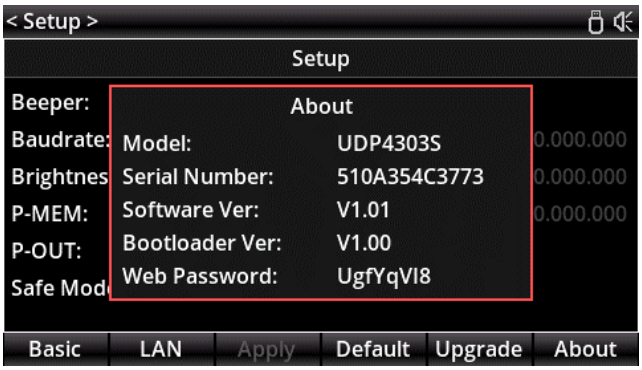


10. Recorder

UDP4303S provides a recorder function that supports all channels, series, and parallel connections. This function allows users to save voltage, current, and power data for all channels to a USB flash drive. The recorded data is saved in a list format on the USB flash drive.

11. WEB Server

UDP4303S has a built-in web server. After opening the instrument's web page in a browser, users can view some basic information and control the instrument (log in with a password before controlling the instrument).



4. Specification

Model		UDP4303S
Rated Output Value	Voltage	CH1 and CH2: 0-32 V×2 CH3: 0-15 V CH4: 0-6 V
	Current	CH1 and CH2: 0-3 A×2 CH3: 0-3 A×1 CH4: 0-10 A
	Power	297 W
Constant Voltage	Regulation Rate	Power regulation rate: < 0.01%+2 mV
		Load regulation rate: < 0.01%+2 mV
	Ripple and Noise	< 350 μV_{rms}/2 mV_{pp}(20 Hz-20 MHz)
	Transient Response Time	< 50 μs (Less than 50 μs of time is required to recover within the ±15 mV settling range following a load change from 50% to 100% of full load. The output voltage error recovers to the stable output value of ±15 mV.)
	Command Processing Time	< 10 ms Continuously adjustable from 0 to rated voltage.
	Output Range	Continuously adjustable from 0 to rated voltage.
Constant Current	Regulation Rate	Power regulation rate: < 0.01%+250 μA
		Load regulation rate: < 0.01%+250 μA
	Ripple Current	< 2 mArms
	Output Range	Continuously adjustable from 0 to rated voltage.
Measurement	Display	Voltage full scale: 5 digit; LCD
		Current full scale: 5 digit; LCD Low current: 5 digitt (CH4 outputs 10 A with 6-digit disply)
	Programming Resolution	Voltage: 1 mV
		Current: 0.1 mA
	Readback Resolution	Voltage: 1 mV
		Current: 0.1 mA (low current: 1 μA), sampling rate: 8 KSA/S
	One-year Accuracy for Programming (25±5℃)	Voltage: CH1-CH3: ±(0.03%+8 mV)/ CH4: ±(0.04%+4 mV)
		Current: CH1-CH3:±(0.15%+5 mA)/CH4: ±(0.15%+10 mA)
	One-year Accuracy for Readback	Voltage: CH1-CH3: ±(0.03%+8 mV)/ CH4: ±(0.08%+3 mV)
		Current: CH1-CH3: ±(0.15%+5 mA)/CH4: ±

	(25±5℃)	(0.15%+10 mA) 0.25%+28 μA (low current measured at constant conditions)
Voltage Programming Response Time (1% of the total variation)	CH1-CH3	Rise: Full load < 50 ms; Empty load <30 ms
		Fall: Full load < 50 ms; Empty load < 400 ms
	CH4	Rise: Full load <15 ms; Empty load < 14 ms
		Fall: Full load <20 ms; Empty load < 100 ms
Temperature Coefficient per℃ (% of output+offset)	CH1	Voltage: 0.01%+4 mV; Current: 0.01%+2 mA
	CH2	Voltage: 0.01%+4 mV; Current: 0.01%+2 mA
	CH3	Voltage: 0.01%+4 mV; Current: 0.01%+2 mA
	CH4	Voltage: 0.01%+4 mV; Current: 0.01%+3 mA
Lock Key		√
Waveform Display		√
Timer		√
Delayer		√
Recorder, Analyzer,Monitor		√
Interface		USB Host, USB Device, LAN, and Digital I/O
Storage Loading		Not less than 10 groups
Screen		4.3-inch TFT LCD, WVGA (480*272)
Input Voltage		AC 100 V/120 V/220 V/230 V ±10%, 50/60 Hz
Operating Temperature		0℃ to + 40℃
Storage Temperature		-10℃ to + 60℃
Humidity		20% to 80% RH.
Altitude		Below 2000 meters
General Specification		
Color		Black
Weight		10.5 kg
Dimension (W×H×D)		225.00 mm × 159.60 mm × 445.00 mm
Packing Quantity		1 set/piece

5. Packing List

Accessories	Quantity	Remarks
UDP4303 Programmable Linear DC Power	1	
3C Power Cord	1	
Factory Calibration Report	1	
USB Cable	1	

6. Contact Us

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