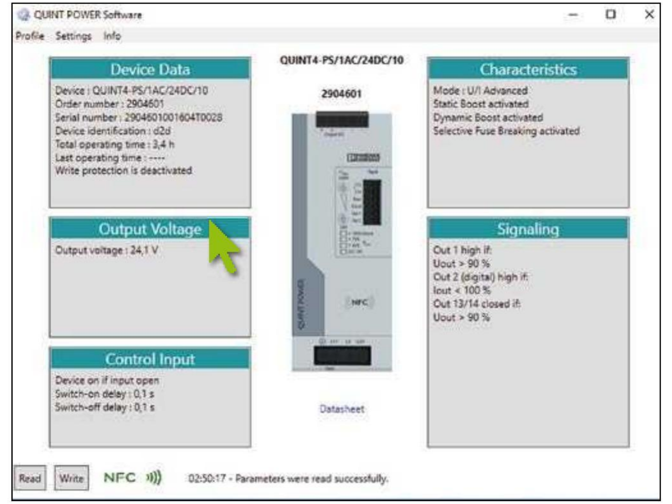
Configuration with QUINT POWER software

The new QUINT POWER power supplies can be configured individually. Utilize this advantage for optimal adjustment of your power supply to your application using QUINT POWER software. Or order the power supply with custom configuration ex works. The following steps demonstrate how to configure the output voltage, parallel operation and current threshold signaling. You can find the free software in the download area for QUINT POWER power supplies.

Output voltage and parallel operation

Step 1:
- Open QUINT POWER software
- Select the field for adjusting the **output voltage**



QUINT4-PS/1AC/24DC/10
2904601

Device Data
Device : QUINT4-PS/1AC/24DC/10
Order number : 2904601
Serial number : 2904601001604T0028
Device identification : d2d
Total operating time : 3,4 h
Last operating time : ----
Write protection is deactivated

Output Voltage
Output voltage : 24,1 V

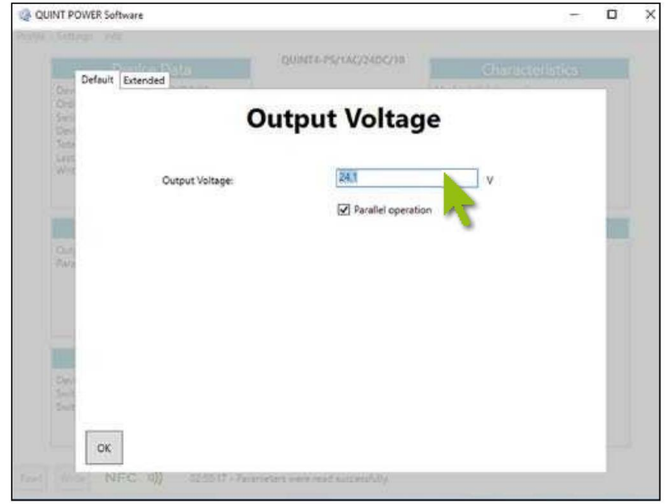
Control Input
Device on if input open
Switch-on delay : 0,1 s
Switch-off delay : 0,1 s

Characteristics
Mode : U/I Advanced
Static Boost activated
Dynamic Boost activated
Selective Fuse Breaking activated

Signaling
Out 1 high if:
Uout > 90 %
Out 2 (digital) high if:
Iout < 100 %
Out 13/14 closed if:
Uout > 90 %

02:50:17 - Parameters were read successfully.

Step 2:
- Set the **output voltage** to the desired value
- Activate **parallel operation**



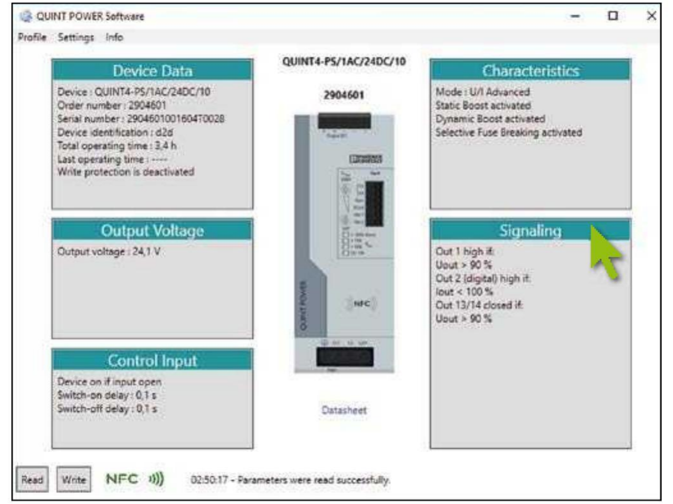
Output Voltage

Output Voltage: 24.1 V

☑ Parallel operation

Signaling current threshold

Step 3:
- Select the field for configuring **signaling**



QUINT4-PS/1AC/24DC/10
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Out 1 high if:
Uout > 90 %
Out 2 (digital) high if:
Iout < 100 %
Out 13/14 closed if:
Uout > 90 %

02:50:17 - Parameters were read successfully.

Step 4:
- Set the **output current** for signaling

Example: Output current $= \frac{I_L}{2} \times 1.25$

I_L … Total load current, condition: the output current must not exceed 50% of the nominal current for the power supply.

Signaling

Out 1
Digital: Output voltage > 90 % 21,7 V High

Out 2
● Digital: Output current < 100 % 10,0 A High
○ Analog

Out 13/14
Relay: Output voltage > 90 % 21,7 V closed

Signaling of the redundant system

Error		System 1				System 2			
		Signaling of the power supply		Signaling of the redundancy module		Signaling of the power supply		Signaling of the redundancy module	
		Relais 13/14 (see step 4)	LED DC OK	Relay 13/14	LED	Relais 13/14 (see step 4)	LED DC OK	Relay 13/14	LED
	Normal operating mode	Closed	🟩	Closed	🟩	Closed	🟩	Closed	🟩
1	Error in one phase	Open	☐	Open	☐	Open	🟩	Closed	🟩
2	Power line of power supply is interrupted or short circuited	Open	☐	Open	☐	Open	🟩	Closed	🟩
3	Error of one power supply	Open	🟩	Closed	🟩	Open	☐	Open	☐
4	Short circuit between power supply and redundancy module	Open	🟩	Closed	🟩	Open	🟩	Open	☐
5	Interruption between power supply and redundancy module	Closed	🟩	Open	☐	Open	🟩	Closed	🟩
6	Error of one redundancy module	X	🟩	Closed	🟩	X	X	Open	🟥
7	Interruption between redundancy module and load	Closed	🟩	Closed	🟩	Open	🟩	Closed	🟩
8	Short circuit between redundancy module and load	Open	🟩	Closed	🟩	Open	🟩	Open	☐
9	Load current is too high for one power supply	Open	🟩	Closed	🟩	Open	🟩	Closed	🟩

Active redundancy module

QUINT S-ORING

PHOENIX CONTACT
INSPIRING INNOVATIONS

Your advantages at a glance

Redundancy modules for superior system availability and maximum operational reliability.

Consistent redundancy
- Separated setup for a redundant wiring up to the load

Preventive function monitoring
- Indicates all critical operation states in a redundant system in combination with QUINT POWER power supplies

Energy savings
- Active decoupling with MOSFETs ensures low energy losses

OVP (Over Voltage Protection)
- The plus version contains a protective circuit for sensitive loads blocking over voltages > 30 V (QUINT4-S-ORING/12-24DC/1x40/+)

QUINT S-ORING

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QUINT4-S-ORING/12-24DC/1x40 2907752	QUINT4-S-ORING/12-24DC/1x40/+ 2907753	Overall width = 32 mm

QUINT POWER power supplies for optimum interaction with QUINT S-ORING

		
1-phase power supply		
QUINT4-PS/1AC/24DC/5 2904600	QUINT4-PS/1AC/24DC/10 2904601	QUINT4-PS/1AC/24DC/20 2904602
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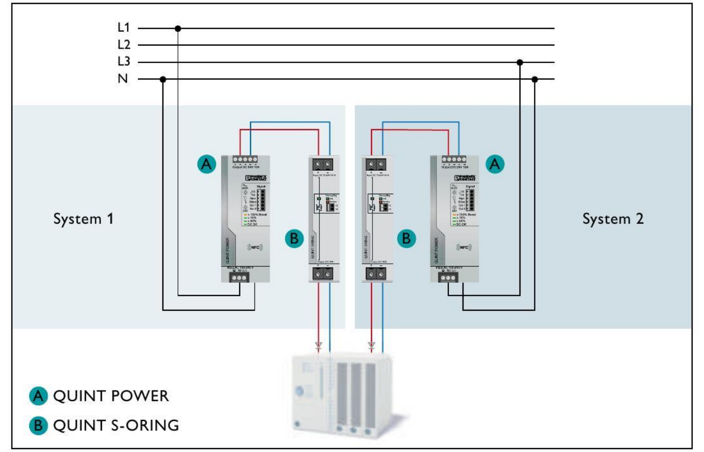
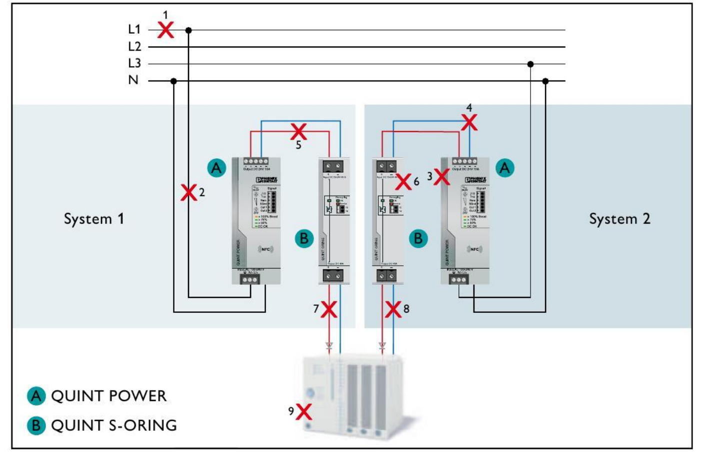
Optimal setup for a redundant system



Checklist setup	
Power supplies are connected to different phases	☐
Separate wiring up to the load	☐
Power supplies are adjusted to the same output voltage	☐
Power supplies are switched to parallel operation	☐
Current threshold of the monitoring is adjusted to the load current	☐

Error in a redundant system



Error	
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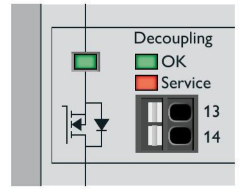
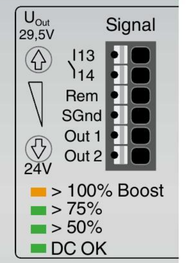
Signaling of the redundant system

Signaling of the QUINT S-ORING redundancy module	**LED** ☐	**Relay 13/14**	
	☐	Open	Input voltage not present or short circuit at output of redundancy module
	🟩	Closed	Input voltage is present
	🟥	Open	Redundancy module needs to be factory tested.
	🟥	Open	OVP in operation, input voltage exceeds the permitted voltage value (only for plus version: QUINT4-S-ORING/12-24DC/1x40+)

DC OK signaling of the QUINT POWER power supply	**LED DC OK** ☐	**Relay 13/14**	
	☐	Open	Input voltage not present or output switched off
	🟩	Closed	Output delivers adjusted output voltage
	🟩	Open	Output voltage lower than 90 % of the adjusted output voltage

Additional signaling options can be found in the QUINT POWER power supply data sheet.

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INSPIRING INNOVATIONS

PS 02-17.001.L5
MNR 1012535/2017-05-15/01

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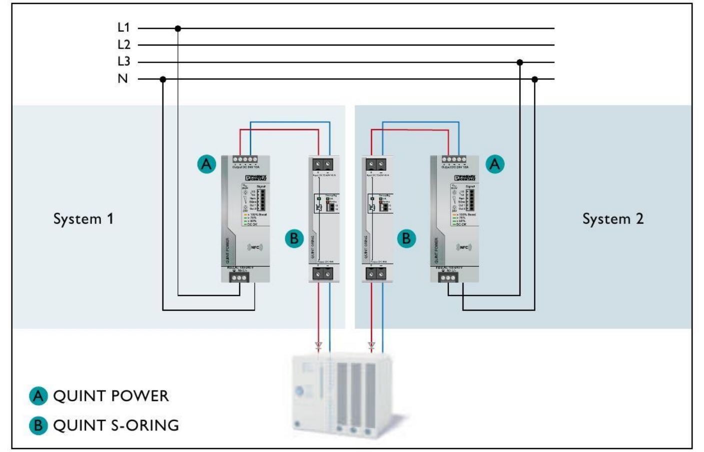

Checklist setup	
Power supplies are connected to different phases	☐
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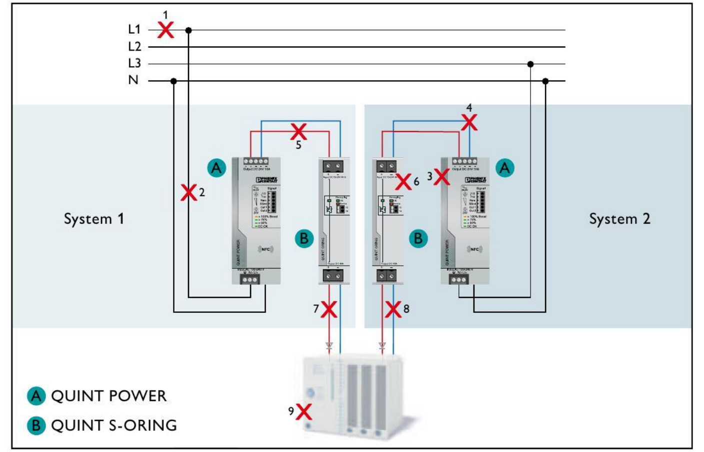
Power supplies are switched to parallel operation	☐
Current threshold of the monitoring is adjusted to the load current	☐

Error in a redundant system



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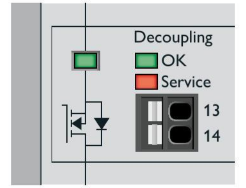
Signaling of the redundant system

Signaling of the QUINT S-ORING redundancy module	**LED** ☐	**Relay 13/14**	
	☐	Open	Input voltage not present or short circuit at output of redundancy module
	🟩	Closed	Input voltage is present
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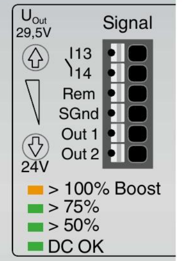
DC OK signaling of the QUINT POWER power supply	**LED DC OK** ☐	**Relay 13/14**	
	☐	Open	Input voltage not present or output switched off
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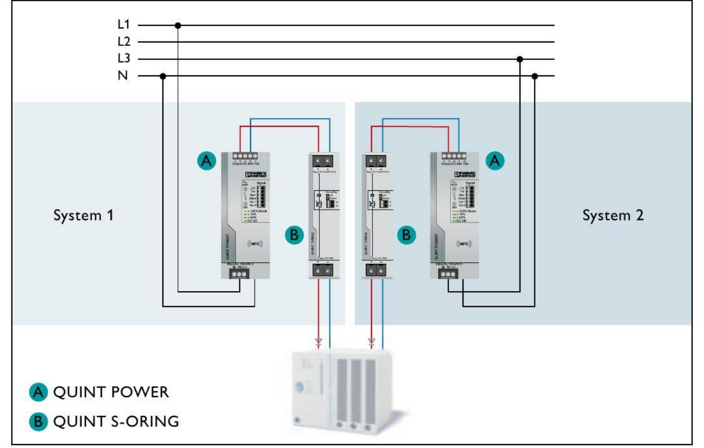
Optimal setup for a redundant system



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Power supplies are adjusted to the same output voltage	☐
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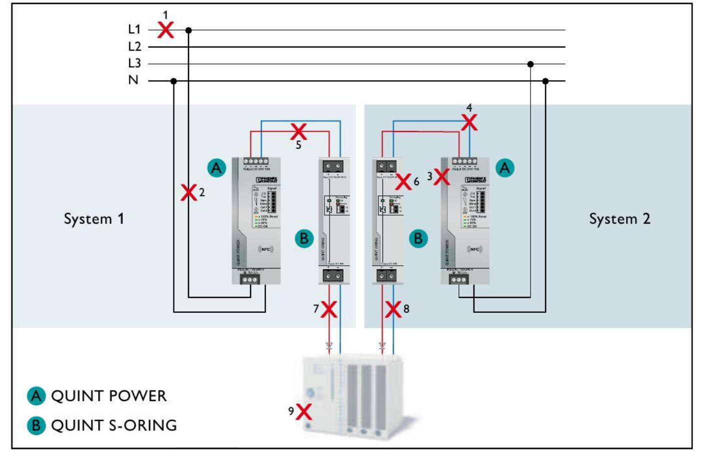
Current threshold of the monitoring is adjusted to the load current	☐

Error in a redundant system



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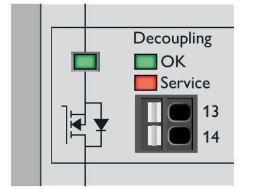
Signaling of the redundant system

Signaling of the QUINT S-ORING redundancy module	LED ☐	Relay 13/14	
	☐	Open	Input voltage not present or short circuit at output of redundancy module
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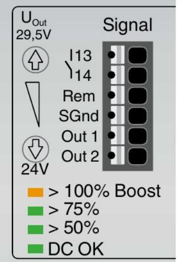	☐	Open	Input voltage not present or output switched off
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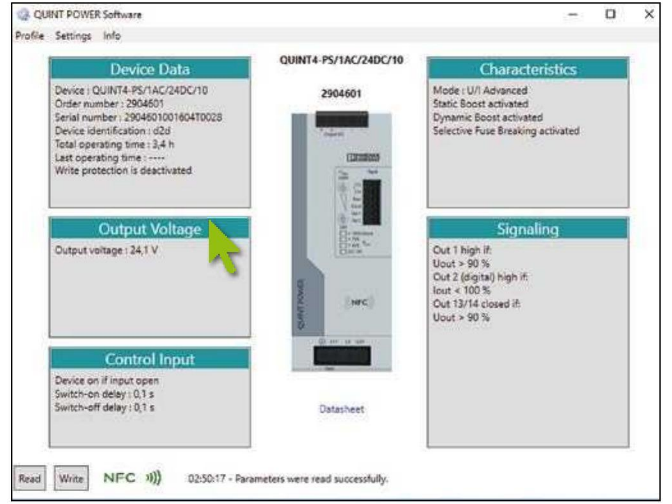

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Switch-on delay : 0,1 s
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Step 2:
- Set the **output voltage** to the desired value
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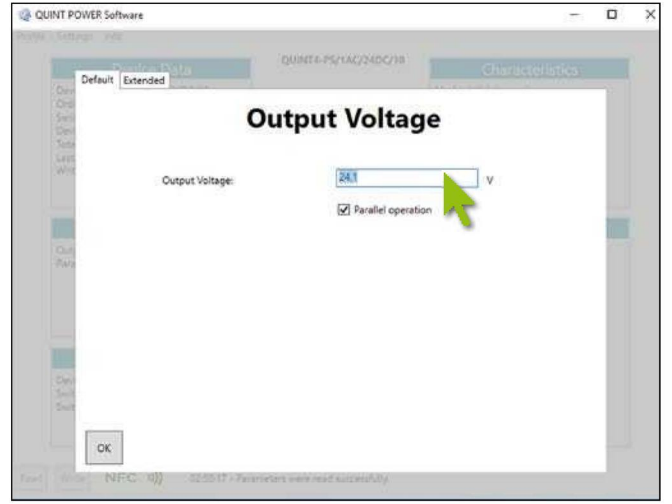
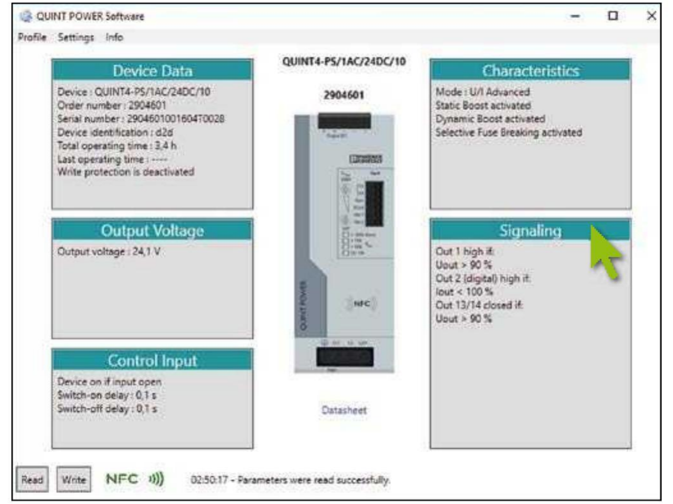


Output Voltage: 24.1 V

☑ Parallel operation

Signaling current threshold

Step 3:
- Select the field for configuring **signaling**



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Active redundancy module

QUINT S-ORING

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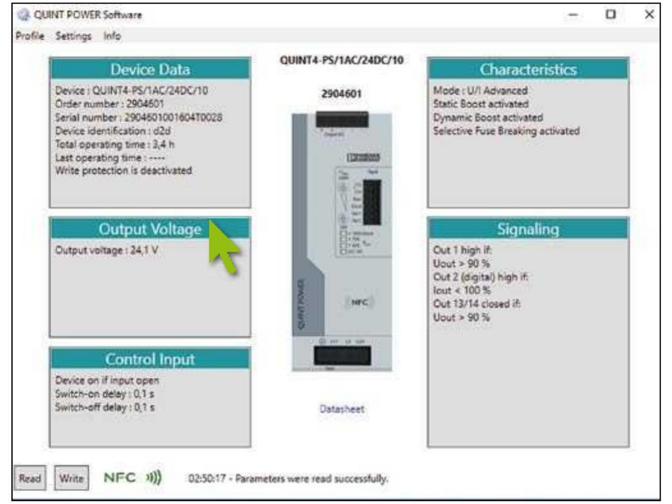

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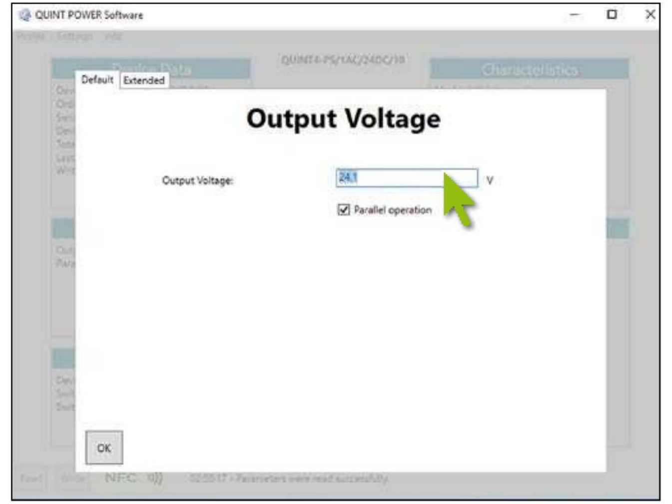

Output Voltage

Output Voltage: 24.1 V

☑ Parallel operation

Signaling current threshold

Step 3:
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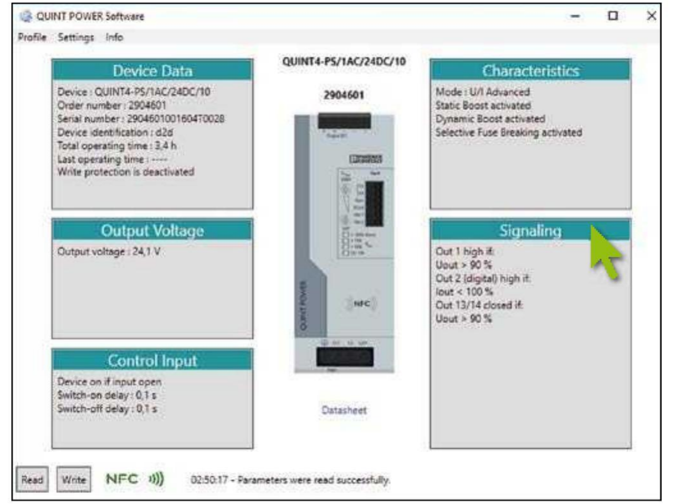

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Out 13/14 closed if:
Uout > 90 %

02:50:17 - Parameters were read successfully.

Step 4:
- Set the **output current** for signaling

Example: Output current $= \frac{I_L}{2} \times 1.25$

I_L … Total load current, condition: the output current must not exceed 50% of the nominal current for the power supply.

Signaling

Out 1
Digital: Output voltage > 90 % 21,7 V High

Out 2
● Digital: Output current < 100 % 10,0 A High
○ Analog

Out 13/14
Relay: Output voltage > 90 % 21,7 V closed

Signaling of the redundant system

	Error	System 1				System 2			
		Signaling of the power supply		Signaling of the redundancy module		Signaling of the power supply		Signaling of the redundancy module	
		Relais 13/14 (see step 4)	LED DC OK	Relay 13/14	LED	Relais 13/14 (see step 4)	LED DC OK	Relay 13/14	LED
	Normal operating mode	Closed	🟩	Closed	🟩	Closed	🟩	Closed	🟩
1	Error in one phase	Open	☐	Open	☐	Open	🟩	Closed	🟩
2	Power line of power supply is interrupted or short circuited	Open	☐	Open	☐	Open	🟩	Closed	🟩
3	Error of one power supply	Open	🟩	Closed	🟩	Open	☐	Open	☐
4	Short circuit between power supply and redundancy module	Open	🟩	Closed	🟩	Open	✳🟩✳	Open	☐
5	Interruption between power supply and redundancy module	Closed	🟩	Open	☐	Open	🟩	Closed	🟩
6	Error of one redundancy module	X	🟩	Closed	🟩	X	X	Open	🟥
7	Interruption between redundancy module and load	Closed	🟩	Closed	🟩	Open	🟩	Closed	🟩
8	Short circuit between redundancy module and load	Open	🟩	Closed	🟩	Open	✳🟩✳	Open	☐
9	Load current is too high for one power supply	Open	🟩	Closed	🟩	Open	🟩	Closed	🟩

Active redundancy module

QUINT S-ORING

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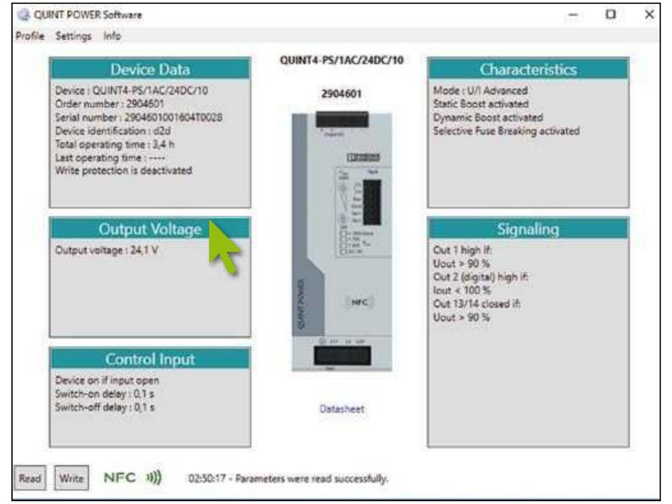
Configuration with QUINT POWER software

The new QUINT POWER power supplies can be configured individually. Utilize this advantage for optimal adjustment of your power supply to your application using QUINT POWER software. Or order the power supply with custom configuration ex works. The following steps demonstrate how to configure the output voltage, parallel operation and current threshold signaling. You can find the free software in the download area for QUINT POWER power supplies.

Output voltage and parallel operation

Step 1:
- Open QUINT POWER software
- Select the field for adjusting the **output voltage**



QUINT4-PS/1AC/24DC/10

2904601

Device Data
Device : QUINT4-PS/1AC/24DC/10
Order number : 2904601
Serial number : 29046010016047T0028
Device identification : d2d
Total operating time : 3,4 h
Last operating time : ----
Write protection is deactivated

Output Voltage
Output voltage : 24,1 V

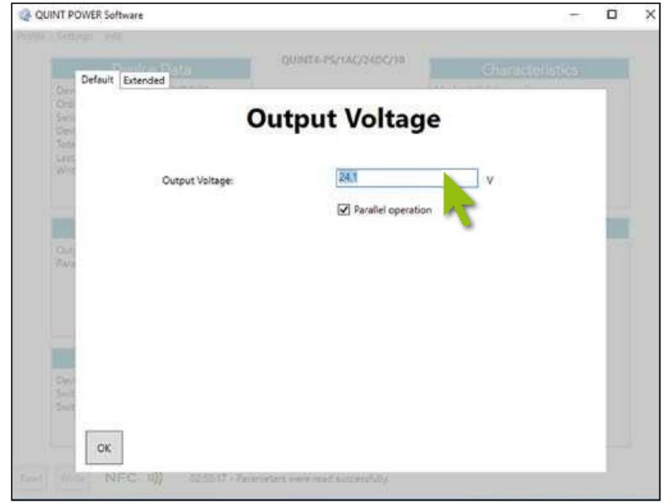
Control Input
Device on if input open
Switch-on delay : 0,1 s
Switch-off delay : 0,1 s

Characteristics
Mode : U/I Advanced
Static Boost activated
Dynamic Boost activated
Selective Fuse Breaking activated

Signaling
Out 1 high if:
Uout > 90 %
Out 2 (digital) high if:
Iout < 100 %
Out 13/14 closed if:
Uout > 90 %

02:50:17 - Parameters were read successfully.

Step 2:
- Set the **output voltage** to the desired value
- Activate **parallel operation**



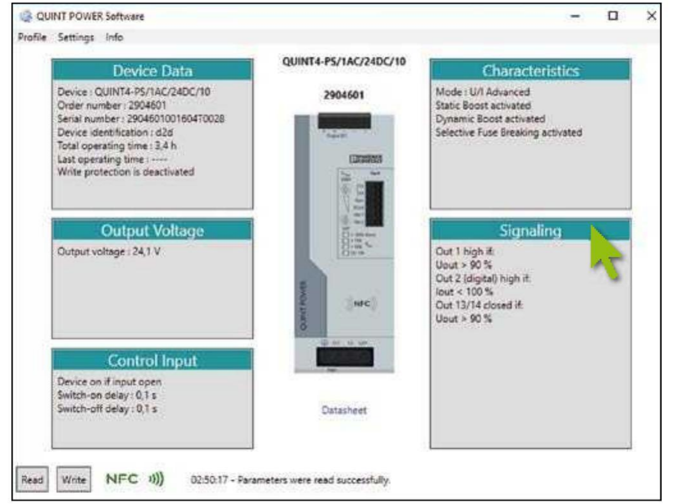
Output Voltage

Output Voltage: 24,1 V

☑ Parallel operation

Signaling current threshold

Step 3:
- Select the field for configuring **signaling**



QUINT4-PS/1AC/24DC/10

2904601

Device Data
Device : QUINT4-PS/1AC/24DC/10
Order number : 2904601
Serial number : 29046010016047T0028
Device identification : d2d
Total operating time : 3,4 h
Last operating time : ----
Write protection is deactivated

Output Voltage
Output voltage : 24,1 V

Control Input
Device on if input open
Switch-on delay : 0,1 s
Switch-off delay : 0,1 s

Characteristics
Mode : U/I Advanced
Static Boost activated
Dynamic Boost activated
Selective Fuse Breaking activated

Signaling
Out 1 high if:
Uout > 90 %
Out 2 (digital) high if:
Iout < 100 %
Out 13/14 closed if:
Uout > 90 %

02:50:17 - Parameters were read successfully.

Step 4:
- Set the **output current** for signaling

Example: Output current $= \frac{I_L}{2} \times 1.25$

I_L … Total load current, condition: the output current must not exceed 50% of the nominal current for the power supply.

Signaling

Out 1
Digital: Output voltage > 90 % 21,7 V High

Out 2
● Digital: Output current < 100 % 10,0 A High
○ Analog

Out 13/14
Relay: Output voltage > 90 % 21,7 V closed

Output voltage
Output current
Output power
Operating hours
Temperature OK

Signaling of the redundant system

Error		System 1				System 2			
		Signaling of the power supply		Signaling of the redundancy module		Signaling of the power supply		Signaling of the redundancy module	
		Relais 13/14 (see step 4)	LED DC OK	Relay 13/14	LED	Relais 13/14 (see step 4)	LED DC OK	Relay 13/14	LED
	Normal operating mode	Closed	🟩	Closed	🟩	Closed	🟩	Closed	🟩
1	Error in one phase	Open	☐	Open	☐	Open	🟩	Closed	🟩
2	Power line of power supply is interrupted or short circuited	Open	☐	Open	☐	Open	🟩	Closed	🟩
3	Error of one power supply	Open	🟩	Closed	🟩	Open	☐	Open	☐
4	Short circuit between power supply and redundancy module	Open	🟩	Closed	🟩	Open	✳	Open	☐
5	Interruption between power supply and redundancy module	Closed	🟩	Open	☐	Open	🟩	Closed	🟩
6	Error of one redundancy module	X	🟩	Closed	🟩	X	X	Open	🟥
7	Interruption between redundancy module and load	Closed	🟩	Closed	🟩	Open	🟩	Closed	🟩
8	Short circuit between redundancy module and load	Open	🟩	Closed	🟩	Open	✳	Open	☐
9	Load current is too high for one power supply	Open	🟩	Closed	🟩	Open	🟩	Closed	🟩

Active redundancy module

QUINT S-ORING

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Your advantages at a glance

Redundancy modules for superior system availability and maximum operational reliability.

Consistent redundancy
- Separated setup for a redundant wiring up to the load

Preventive function monitoring
- Indicates all critical operation states in a redundant system in combination with QUINT POWER power supplies

Energy savings
- Active decoupling with MOSFETs ensures low energy losses

OVP (Over Voltage Protection)
- The plus version contains a protective circuit for sensitive loads blocking over voltages > 30 V (QUINT4-S-ORING/12-24DC/1x40/+)

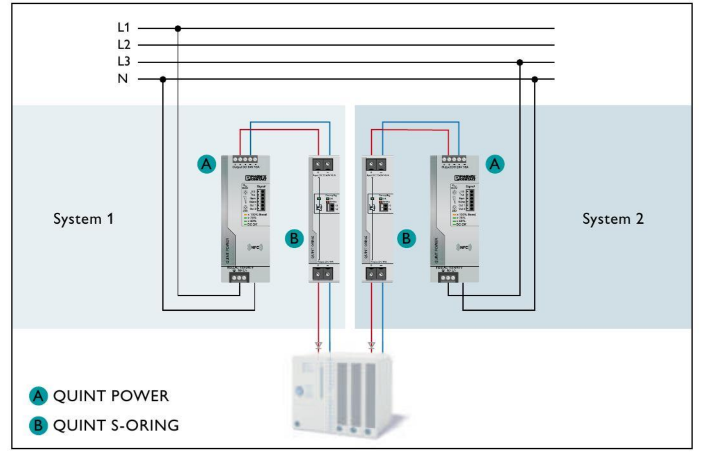
QUINT S-ORING

		U_{in} = 12 V DC ... 24 V DC I_N = 40 A $I_{stat. boost}$ = 45 A $I_{dyn. boost}$ = 60 A (5 s) I_{SFB} = 215 A $T_{Amb.}$ = - 40°C ... + 70°C
QUINT4-S-ORING/ 12-24DC/1x40 2907752	QUINT4-S-ORING/ 12-24DC/1x40/+ 2907753	Overall width = 32 mm

QUINT POWER power supplies for optimum interaction with QUINT S-ORING

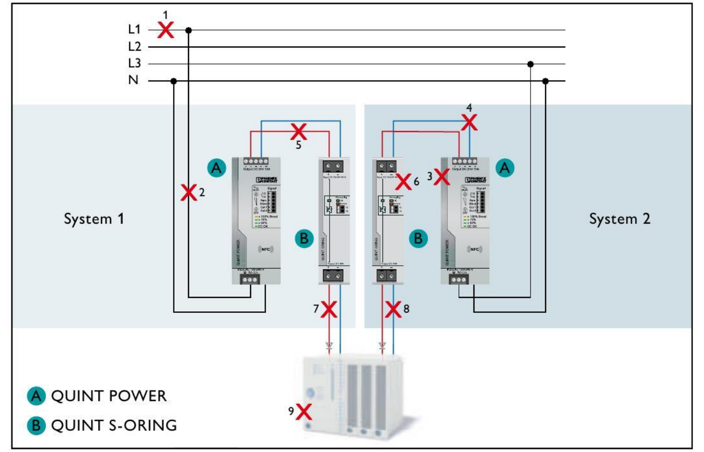
		
1-phase power supply		
QUINT4-PS/ 1AC/24DC/5 2904600	QUINT4-PS/ 1AC/24DC/10 2904601	QUINT4-PS/ 1AC/24DC/20 2904602
3-phase power supply		
QUINT4-PS/ 3AC/24DC/5 2904620	QUINT4-PS/ 3AC/24DC/10 2904621	QUINT4-PS/ 3AC/24DC/20 2904622

Optimal setup for a redundant system



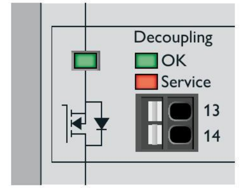
Checklist setup	
Power supplies are connected to different phases	
Separate wiring up to the load	
Power supplies are adjusted to the same output voltage	
Power supplies are switched to parallel operation	
Current threshold of the monitoring is adjusted to the load current	

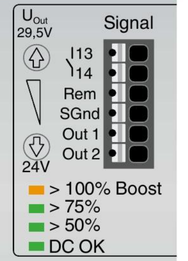
Error in a redundant system



Error	
1	Error in one phase
2	Power line of power supply is interrupted or short circuited
3	Error of one power supply
4	Short circuit between power supply and redundancy module
5	Interruption between power supply and redundancy module
6	Error of one redundancy module
7	Interruption between redundancy module and load
8	Short circuit between redundancy module and load
9	Load current is too high for one power supply

Signaling of the redundant system

Signaling of the QUINT S-ORING redundancy module	**LED** ⬜	**Relay 13/14**	
	⬜	Open	Input voltage not present or short circuit at output of redundancy module
	🟩	Closed	Input voltage is present
	🟥	Open	Redundancy module needs to be factory tested.
	🟥	Open	OVP in operation, input voltage exceeds the permitted voltage value (only for plus version: QUINT4-S-ORING/12-24DC/1x40+)

DC OK signaling of the QUINT POWER power supply	**LED DC OK** ⬜	**Relay 13/14**	
	⬜	Open	Input voltage not present or output switched off
	🟩	Closed	Output delivers adjusted output voltage
	🟩	Open	Output voltage lower than 90 % of the adjusted output voltage

Additional signaling options can be found in the QUINT POWER power supply data sheet.

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