

Unregulated power supplies



Unregulated power supplies – compactPower

Compact power supply units are important links in the power supplies for controllers. They are utilised where processes or control voltages are required that vary from the mains voltage. Transformers provide the electrical isolation between the input circuit and the output circuit.

The minimum requirement (to VDE 0550) is 2000 V.

Screw terminals secure the input-side connection to the mains.

The single-phase devices are rated for a nominal voltage of $\sim 230 \pm \sim 15\text{V}$, or $\sim 400 \text{V} \pm \sim 15\text{V}$, 50/60 Hz, the 3-phase devices for $3 \times 400 \text{V} \pm 5\%$. The secondary DC voltage from the transformer is conducted to a bridge rectifier where it is rectified.

The pulsating DC voltage is then fed from the rectifier and filtered to a low residual ripple by means of an electrolytic capacitor.

This DC voltage is then fed to the output terminal. These are designed as pluggable screw terminals. A varistor is integrated in the output circuitry to attenuate voltage peaks. The operating status is indicated by means of a green LED via the output circuit. Devices with 600 W and higher are equipped with a fan.

Well-balanced spectrum for optimum economy

The output currents of these practical products are defined by way of two ambient temperatures.

Size selection is based on the maximum effectiveness of the components.

Adapted to standard voltages in accordance with IEC 38

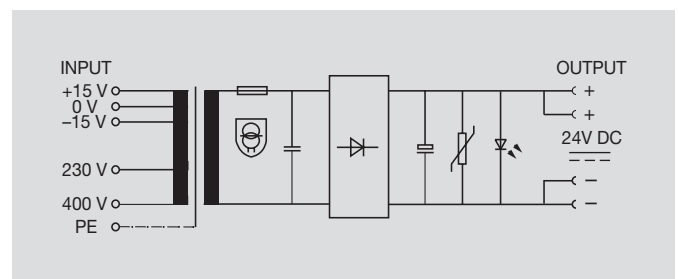
By choosing the appropriate terminals, the $\pm 15 \text{V}$ tapping capability allows the single-phase devices to be connected to six different nominal AC voltages: 215, 230, 245, 385, 400, 415 V.

The $\pm 5\%$ tapping capability allows the 3-phase devices to be connected to three different nominal voltages: 380, 400, 415 V.

Single-phase unregulated power supplies



Block diagram for single-phase devices CP NT



Reliable short-circuit and overload protection

Integrated on the secondary side in device sizes up to CP NT 192W, the FKS fuse protects against overloads and short-circuits. For the devices CP NT 264W and CP NT 432W, this protection is achieved by means of a thermostatic switch built into the transformer.

Easy mounting

Keyhole assembly simplifies mounting and saves time. A snap-on fixing attachment for 35 mm DIN rails is available as an accessory for single-phase devices up to 144 W. Simply plugged into the device and secured with two screws, it ensures easiest possible mounting!

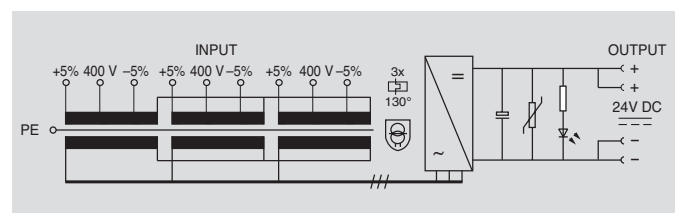
Transformers, vacuum-impregnated, painted black

- No humming
- Moisture cannot ingress into the windings
- Windings mechanically secured
- Improved heat dissipation from the windings
- Good heat dissipation

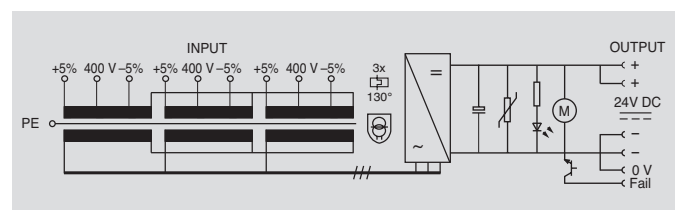
3-phase unregulated power supplies



Block diagram for 3-phase devices CP NT3 250 / 400 / 500 W

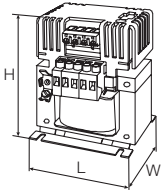


Block diagram for 3-phase devices CP NT3 600 / 750 / 1000 W



Unregulated power supplies

compactPower single phase



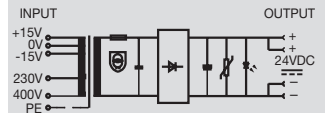
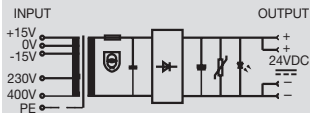
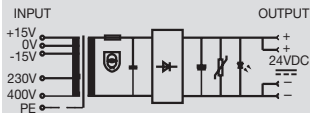
CP NT 36



CP NT 72



CP NT 144



E

Technical data

Input	
Input voltage	230 V/ 400 V ±15V
Input current	0.35 A/ 0.2 A
Input frequency	50/ 60 Hz
No-load input current	0.1A / 0.06A
External back-up fuse	0.63At / 0.315At
Output	
Output voltage	24 V SELV
Output current at 40°C	2 A
Output current at 55°C	1 A
max. output power	36 W
max. residual ripple	< 5 %
Fuse, max.	3 At flat plug-in fuse
Protective circuit	varistor
Insulation coordination	
Electric shock protection	to VBG4
Insulation strength	4 kV
Insulation class	B
Ingress protection class	IP 20
pollution severity	1
General data	
Operating temperature	-20 °C...+55 °C
Storage temperature	-20 °C...+80 °C
Degree of efficiency at max. load	80 %
Mounting position horizontal/arbitrary	1A @ 55 °C; 1.5A @ 40 °C /1A @ 40 °C
Status indication	green LED
Weight	1.5 kg
Standards	EN 60950, EN 61558-2-4, -6, 72/23/EWG
DIN Rail compatibility	Direct mounting, TS 35 with clip-on plate
EMC standards	EN 61000-6 /-2, -3
Approvals	CE;cURus;UL/LIST;

Input	
Input voltage	230 V/ 400 V ±15V
Input current	0.56 A/ 0.32 A
Input frequency	50/ 60 Hz
No-load input current	0.13A / 0.08A
External back-up fuse	0.1 At / 0.63 At
Output	
Output voltage	24 V SELV
Output current at 40°C	3 A
Output current at 55°C	3 A
max. output power	72 W
max. residual ripple	< 5 %
Fuse, max.	7.5 At flat plug-in fuse
Protective circuit	varistor
Insulation coordination	
Electric shock protection	to VBG4
Insulation strength	4 kV
Insulation class	B
Ingress protection class	IP 20
pollution severity	1
General data	
Operating temperature	-20 °C...+55 °C
Storage temperature	-20 °C...+80 °C
Degree of efficiency at max. load	83 %
Mounting position horizontal/arbitrary	2.5A @ 55 °C; 3A @ 40 °C /2.5A @ 40 °C
Status indication	green LED
Weight	2.1 kg
Standards	EN 60950, EN 61558-2-4, -6, 72/23/EWG
DIN Rail compatibility	Direct mounting, TS 35 with clip-on plate
EMC standards	EN 61000-6 /-2, -3
Approvals	CE;cURus;UL/LIST;

Input	
Input voltage	230 V/ 400 V ±15V
Input current	0.95 A/ 0.55 A
Input frequency	50/ 60 Hz
No-load input current	0.33A / 0.19A
External back-up fuse	1.6At / 1.0At
Output	
Output voltage	24 V SELV
Output current at 40°C	6 A
Output current at 55°C	5 A
max. output power	144 W
max. residual ripple	< 5 %
Fuse, max.	10 At flat plug-in fuse
Protective circuit	varistor
Insulation coordination	
Electric shock protection	to VBG4
Insulation strength	4 kV
Insulation class	B
Ingress protection class	IP 20
pollution severity	1
General data	
Operating temperature	-20 °C...+55 °C
Storage temperature	-20 °C...+80 °C
Degree of efficiency at max. load	88 %
Mounting position horizontal/arbitrary	5A @ 55 °C; 6A @ 40 °C /5A @ 40 °C
Status indication	green LED
Weight	3.1 kg
Standards	EN 60950, EN 61558-2-4, -6, 72/23/EWG
DIN Rail compatibility	Direct mounting, TS 35 with clip-on plate
EMC standards	EN 61000-6 /-2, -3
Approvals	CE;cURus;UL/LIST;

Input	
Input voltage	230 V/ 400 V ±15V
Input current	0.95 A/ 0.55 A
Input frequency	50/ 60 Hz
No-load input current	0.33A / 0.19A
External back-up fuse	1.6At / 1.0At
Output	
Output voltage	24 V SELV
Output current at 40°C	6 A
Output current at 55°C	5 A
max. output power	144 W
max. residual ripple	< 5 %
Fuse, max.	10 At flat plug-in fuse
Protective circuit	varistor
Insulation coordination	
Electric shock protection	to VBG4
Insulation strength	4 kV
Insulation class	B
Ingress protection class	IP 20
pollution severity	1
General data	
Operating temperature	-20 °C...+55 °C
Storage temperature	-20 °C...+80 °C
Degree of efficiency at max. load	88 %
Mounting position horizontal/arbitrary	5A @ 55 °C; 6A @ 40 °C /5A @ 40 °C
Status indication	green LED
Weight	3.1 kg
Standards	EN 60950, EN 61558-2-4, -6, 72/23/EWG
DIN Rail compatibility	Direct mounting, TS 35 with clip-on plate
EMC standards	EN 61000-6 /-2, -3
Approvals	CE;cURus;UL/LIST;

Screw connection	
Clamping range In. (rating-/min./max)	mm² 2.5 / 0.13 / 2.5
Clamping range Out. (rating-/ min./max)mm²	2.5 / 0.5 / 4
Length x width x height	mm 68 x 78 x 123
Note	

Screw connection	
Clamping range In. (rating-/min./max)	mm² 2.5 / 0.13 / 2.5
Clamping range Out. (rating-/ min./max)mm²	2.5 / 0.5 / 4
Length x width x height	mm 85 x 84 x 125
Note	

Screw connection	
Clamping range In. (rating-/min./max)	mm² 2.5 / 0.13 / 2.5
Clamping range Out. (rating-/ min./max)mm²	2.5 / 0.5 / 4
Length x width x height	mm 92 x 96 x 135
Note	

Screw connection	
Clamping range In. (rating-/min./max)	mm² 2.5 / 0.13 / 2.5
Clamping range Out. (rating-/ min./max)mm²	2.5 / 0.5 / 4
Length x width x height	mm 92 x 96 x 135
Note	

Ordering data

Type	(Qty.=1)	Order No.
CP NT 36W 24V 1.5A		8575260000
Note		

Type	(Qty.=1)	Order No.
CP NT 72W 24V 3A		8575270000
Note		

Type	(Qty.=1)	Order No.
CP NT 144W 24V 6A		8575280000
Note		

Type	(Qty.=1)	Order No.
CP NT 144W 24V 6A		8575280000
Note		

Accessories

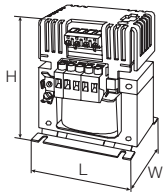
Note	
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Clip-in plate for TS35: 8588900000

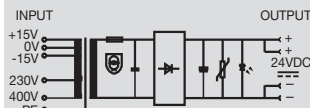
Clip-in plate for TS35: 8588900000

Clip-in plate for TS35: 8588900000

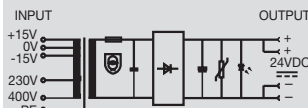
compactPower
single phase



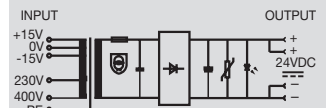
CP NT 192



CP NT 264



CP NT 432



Technical data

Input

Input voltage
Input current
Input frequency
No-load input current
External back-up fuse

230 V/ 400 V ±15V
1.3 A/ 0.7 A
50/ 60 Hz
0.3A / 0.16A
2.0At / 1.25At

Output

Output voltage
Output current at 40°C
Output current at 55°C
max. output power
max. residual ripple
Fuse, max.
Protective circuit

24 V SELV
8 A
7 A
192 W
< 5 %
15 At flat plug-in fuse
varistor

Insulation coordination

Electric shock protection
Insulation strength
Insulation class
Ingress protection class
pollution severity

to VBG4
4 kV
B
IP 20
1

General data

Operating temperature
Storage temperature
Degree of efficiency at max. load
Mounting position horizontal/arbitrary
Status indication
Weight
Standards
DIN Rail compatibility
EMC standards
Approvals

-20 °C...+55 °C
-20 °C...+80 °C
90 %
7A @ 55 °C; 8A @ 40 °C /7A @ 40 °C
green LED
4.3 kg
EN 60950, EN 61558-2-4, -6, 72/23/EWG
Direct mounting
EN 61000-6 /-2, -3
CE;cURus;UL/LIST;

Clamping range In. (rating-/min./max) mm²
Clamping range Out. (rating-/ min./max)mm²
Length x width x height mm

Screw connection

2.5 / 0.13 / 2.5
2.5 / 0.5 / 4
105 x 105 x 145

Note

Ordering data

Type	(Qty.=1)	Order No.
CP NT 192W 24V 8A		8575300000

Note

Accessories

Note

230 V/ 400 V ±15V
1.8 A/ 1 A
50/ 60 Hz
0.5A / 0.28A
3.15At / 1.6At

24 V SELV
11 A
10 A
264 W
< 5 %
Thermal switch
varistor

to VBG4
4 kV
B
IP 20
1

-20 °C...+55 °C
-20 °C...+80 °C
93 %
10A @ 55 °C; 11A @ 40 °C /10A @ 40 °C
green LED
6.1 kg
EN 60950, EN 61558-2-4, -6, 72/23/EWG
Direct mounting
EN 61000-6 /-2, -3
CE;cURus;UL/LIST;

Screw connection

2.5 / 0.13 / 2.5
2.5 / 0.5 / 4
113 x 120 x 165

230 V/ 400 V ±15V
2.5 A/ 1.3 A
50/ 60 Hz
0.54A / 0.31A
4.0At / 2.0At

24 V SELV
18 A
15 A
432 W
< 5 %
Thermal switch
varistor

to VBG4
4 kV
B
IP 20
1

-20 °C...+55 °C
-20 °C...+80 °C
95 %
15A @ 55 °C; 18A @ 40 °C /15A @ 40 °C
green LED
9.1 kg
EN 60950, EN 61558-2-4, -6, 72/23/EWG
Direct mounting
EN 61000-6 /-2, -3
CE;cURus;UL/LIST;

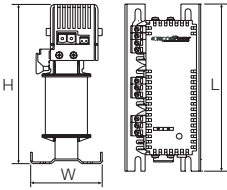
Screw connection

2.5 / 0.13 / 2.5
2.5 / 0.5 / 4
135 x 135 x 185

Type	(Qty.=1)	Order No.
CP NT 432W 24V 18A		8575320000

Unregulated power supplies

compactPower 3-phase



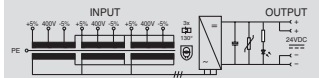
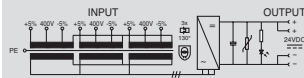
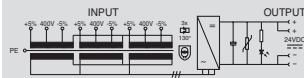
CP NT3 250



CP NT3 400



CP NT3 500



E

Technical data

Input

Input voltage
Input current
Input frequency
No-load input current
Input fuse

External back-up fuse

Output

Output voltage
Output current at 40°C/60°C
max. output power
max. residual ripple
Fuse, max.
Protective circuit

Insulation coordination

Electric shock protection
Insulation strength
Insulation class
Ingress protection class
pollution severity

General data

Operating temperature
Storage temperature
Degree of efficiency at max. load
Mounting position horizontal/vertical
Fan signal
Status indication
Weight
Standards
EMC standards
DIN Rail compatibility

Clamping range In. (rating-/min./max) mm²
Clamping range Out. (rating-/ min./max)mm²
Length x width x height mm

Note

3 x 400 V ±5 %
0.5 A
50/ 60 Hz
0.1A
3 No. thermostatic switches in primary winding
3 x 1.0AT

24 V SELV
11 A/10 A
250 W
< 2 %
External 10 AT varistor

to VBG4
4 kV
B
IP 20
1

-20 °C...+60 °C
-20 °C...+80 °C
76 %
11A @ 40 °C /10A @ 60 °C
no integral fan
green LED
4.7 kg

EN 60950, EN 61558-2-4, -6, 72/23/EWG
EN 61000-6 /-2, -3
Direct mounting

Screw connection

2.5 / 0.5 / 2.5
6 / 0.5 / 6
185 x 84 x 192

Condensation not allowed

3 x 400 V ±5 %
0.75 A
50/ 60 Hz
0.11 A
3 No. thermostatic switches in primary winding
3 x 1.2 AT

24 V SELV
18 A/16 A
400 W
< 2 %
External 16/18 AT varistor

to VBG4
4 kV
B
IP 20
1

-20 °C...+60 °C
-20 °C...+80 °C
77 %
18A @ 40 °C /16A @ 60 °C
no integral fan
green LED
6.9 kg

EN 60950, EN 61558-2-4, -6, 72/23/EWG
EN 61000-6 /-2, -3
Direct mounting

Screw connection

2.5 / 0.5 / 2.5
6 / 0.5 / 6
220 x 88 x 213

Condensation not allowed

3 x 400 V ±5 %
0.9 A
50/ 60 Hz
0.13 A
3 No. thermostatic switches in primary winding
3 x 1.6 AT

24 V SELV
22 A/20 A
500 W
< 2 %
External 20/22 AT varistor

to VBG4
4 kV
B
IP 20
1

-20 °C...+60 °C
-20 °C...+80 °C
78 %
22A @ 40 °C /20A @ 60 °C
no integral fan
green LED
10 kg

EN 60950, EN 61558-2-4, -6, 72/23/EWG
EN 61000-6 /-2, -3
Direct mounting

Screw connection

2.5 / 0.5 / 2.5
6 / 0.5 / 6
220 x 108 x 215

Condensation not allowed

Ordering data

Type	(Qty.=1)	Order No.
CP NT3 250W 24V 10A		8628620000

Type	(Qty.=1)	Order No.
CP NT3 400W 24V 15A		8628630000

Type	(Qty.=1)	Order No.
CP NT3 500W 24V 20A		8628650000

Note

Accessories

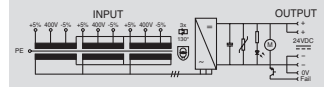
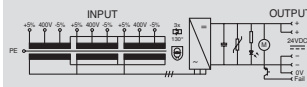
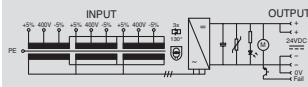
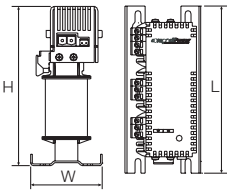
Note

compactPower 3-phase

CP NT3 600

CP NT3 750

CP NT3 1000



Technical data

Input	
Input voltage	3 x 400 V ±5 %
Input current	1.2 A
Input frequency	50/ 60 Hz
No-load input current	0.15 A
Input fuse	3 No. thermostatic switches in primary winding
External back-up fuse	3 x 2 AT
Output	
Output voltage	24 V SELV
Output current at 40°C/60°C	26 A/25 A
max. output power	600 W
max. residual ripple	< 2 %
Fuse, max.	External 25/26 AT
Protective circuit	varistor
Insulation coordination	
Electric shock protection	to VBG4
Insulation strength	4 kV
Insulation class	B
Ingress protection class	IP 20
pollution severity	1
General data	
Operating temperature	-20 °C...+60 °C
Storage temperature	-20 °C...+80 °C
Degree of efficiency at max. load	78 %
Mounting position horizontal/vertical	26A @ 40 °C /25A @ 60 °C
Fan signal	Open collector <30 V/ <5 mA during fault
Status indication	green LED
Weight	11 kg
Standards	EN 60950, EN 61558-2-4, -6, 72/23/EWG
EMC standards	EN 61000-6 /-2, -3
DIN Rail compatibility	Direct mounting

Input	
Input voltage	3 x 400 V ±5 %
Input current	1.4 A
Input frequency	50/ 60 Hz
No-load input current	0.16 A
Input fuse	3 No. thermostatic switches in primary winding
External back-up fuse	3 x 2.5 AT
Output	
Output voltage	24 V SELV
Output current at 40°C/60°C	32 A/30 A
max. output power	750 W
max. residual ripple	< 2 %
Fuse, max.	External 30/32 AT
Protective circuit	varistor
Insulation coordination	
Electric shock protection	to VBG4
Insulation strength	4 kV
Insulation class	B
Ingress protection class	IP 20
pollution severity	1
General data	
Operating temperature	-20 °C...+60 °C
Storage temperature	-20 °C...+80 °C
Degree of efficiency at max. load	77 %
Mounting position horizontal/vertical	32A @ 40 °C /30A @ 60 °C
Fan signal	Open collector <30 V/ <5 mA during fault
Status indication	green LED
Weight	14 kg
Standards	EN 60950, EN 61558-2-4, -6, 72/23/EWG
EMC standards	EN 61000-6 /-2, -3
DIN Rail compatibility	Direct mounting

Input	
Input voltage	3 x 400 V ±5 %
Input current	1.8 A
Input frequency	50/ 60 Hz
No-load input current	0.14 A
Input fuse	3 No. thermostatic switches in primary winding
External back-up fuse	3 x 3.15 AT
Output	
Output voltage	24 V SELV
Output current at 40°C/60°C	42 A/40 A
max. output power	1000 W
max. residual ripple	< 2 %
Fuse, max.	External 40/42 AT
Protective circuit	varistor
Insulation coordination	
Electric shock protection	to VBG4
Insulation strength	4 kV
Insulation class	B
Ingress protection class	IP 20
pollution severity	1
General data	
Operating temperature	-20 °C...+60 °C
Storage temperature	-20 °C...+80 °C
Degree of efficiency at max. load	77 %
Mounting position horizontal/vertical	42A @ 40 °C /40A @ 60 °C
Fan signal	Open collector <30 V/ <5 mA during fault
Status indication	green LED
Weight	18 kg
Standards	EN 60950, EN 61558-2-4, -6, 72/23/EWG
EMC standards	EN 61000-6 /-2, -3
DIN Rail compatibility	Direct mounting

Screw connection	
Clamping range In. (rating-/min./max)	2.5 / 0.5 / 2.5
Clamping range Out. (rating-/ min./max)mm ²	6 / 0.5 / 6
Length x width x height	230 x 108 x 212
Note	
Condensation not allowed	

Screw connection	
Clamping range In. (rating-/min./max)	2.5 / 0.5 / 2.5
Clamping range Out. (rating-/ min./max)mm ²	6 / 0.5 / 6
Length x width x height	270 x 121 x 255
Note	
Condensation not allowed	

Screw connection	
Clamping range In. (rating-/min./max)	2.5 / 0.5 / 2.5
Clamping range Out. (rating-/ min./max)mm ²	10 / 0.5 / 10
Length x width x height	280 x 122 x 275
Note	
Condensation not allowed	

Ordering data

Type	(Qty.=1)	Order No.
CP NT3 600W 24V 25A		8628660000

Type	(Qty.=1)	Order No.
CP NT3 750W 24V 30A		8628670000

Type	(Qty.=1)	Order No.
CP NT3 1000W 24V 40A		8628680000

Note

Accessories

Note