

P.O. Box 27  
4300 AA Zierikzee  
The Netherlands

Tel. +31 111 413656  
Fax. +31 111 416919  
www.deltapowersupplies.com



**DELTA ELEKTRONIKA B.V.**



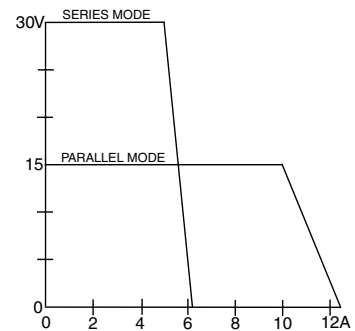
*A mating connector with faston tabs is packed with each power supply*

## **SX-SERIES** EURO CASSETTE SWITCHED MODE POWER SUPPLIES

**With autoranging input for worldwide use**

The SX - series covers the whole output voltage range between 3.5 V and 400 V DC.

Models	Voltage range	Current range
75 SX 5	3.5 - 6 V	13 A
150 SX 5	3.5 - 6 V	26 A
75 SX 15 -15	2 x 6 - 15 V	2.5 A
150 SX 15 -15	2 x 6 - 15 V	5 A
150 SX 75 - 75	2 x 15 - 75 V	1 A
150 SX 200 - 200	2 x 35 - 200 V	0.3 A



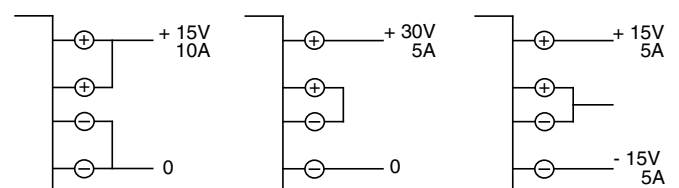
150SX15-15

For 75SX15-15 optional 2x 6-18 V 2 A is possible

For **24 V 2.5 A** use 75SX15-15  
For **24 V 5 A** use 150SX15-15

For **24 V redundant** parallel operation use 240S24 instead of 150SX15-15.

The units with two equal outputs can be used in three different modes, series-, parallel- and dual-mode, simply by connecting the outputs in series or parallel at the mating connector. The two outputs cannot be used separately.



Parallel mode

Series mode

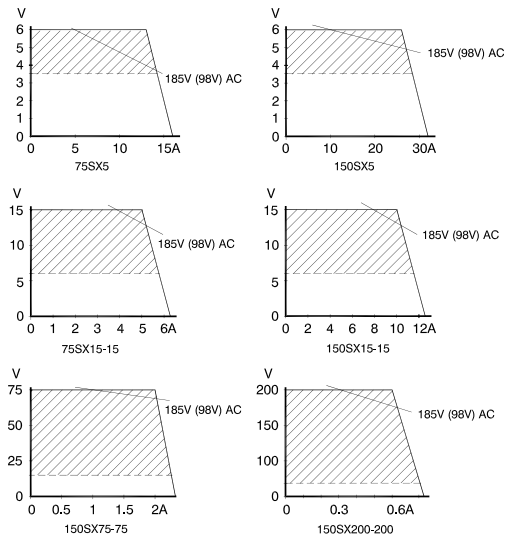
Dual mode

150SX15-15

**Index of possible voltage / current combinations**

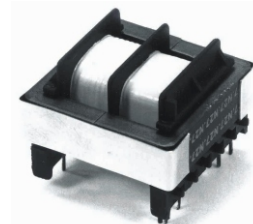
Voltage range	Max. current	Model
3.5 - 6 V	13 A	75SX5
3.5 - 6 V	26 A	150SX5
6 - 15 V	5 A	75SX15-15
6 - 15 V	10 A	150SX15-15
12 - 30 V	2.5 A	75SX15-15
12 - 30 V	5 A	150SX15-15
15 - 75 V	2 A	150SX75-75
30 - 150 V	1 A	150SX75-75
35 - 200 V	0.6 A	150SX200-200
70 - 400 V	0.3 A	150SX200-200
+ and - 6 to 15 V	2.5 A	75SX15-15
+ and - 6 to 15 V	5 A	150SX15-15
+ and - 15 to 75 V	1 A	150SX75-75
+ and - 35 to 200 V	0.3 A	150SX200-200

**Derating of output current at low line voltage**

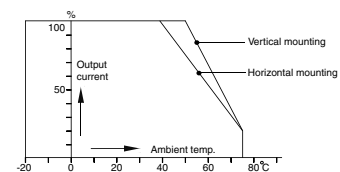


**Specifications:**

<b>Input</b> single phase, 48-62 Hz	<b>Autoranging</b> 98 - 132 V AC or 185 - 264 V AC, for DC or operation at 400 Hz contact factory.																				
<b>Power derating vs input</b>	<table border="1"> <thead> <tr> <th></th> <th>75SX5/15</th> <th>150SX5/15/75</th> <th>150SX200-200</th> </tr> </thead> <tbody> <tr> <td><math>P_{out\ max}</math> @ 110V AC</td> <td>50 W</td> <td>100 W</td> <td>100W</td> </tr> <tr> <td><math>P_{out\ max}</math> @ 125V AC</td> <td>75 W</td> <td>150 W</td> <td>120W</td> </tr> <tr> <td><math>P_{out\ max}</math> @ 210V AC</td> <td>50 W</td> <td>100 W</td> <td>100W</td> </tr> <tr> <td><math>P_{out\ max}</math> @ 225V AC</td> <td>75 W</td> <td>150 W</td> <td>120W</td> </tr> </tbody> </table>		75SX5/15	150SX5/15/75	150SX200-200	$P_{out\ max}$ @ 110V AC	50 W	100 W	100W	$P_{out\ max}$ @ 125V AC	75 W	150 W	120W	$P_{out\ max}$ @ 210V AC	50 W	100 W	100W	$P_{out\ max}$ @ 225V AC	75 W	150 W	120W
	75SX5/15	150SX5/15/75	150SX200-200																		
$P_{out\ max}$ @ 110V AC	50 W	100 W	100W																		
$P_{out\ max}$ @ 125V AC	75 W	150 W	120W																		
$P_{out\ max}$ @ 210V AC	50 W	100 W	100W																		
$P_{out\ max}$ @ 225V AC	75 W	150 W	120W																		
<b>Input current</b>	1.3Arms, 2.6Arms, 2.6Arms																				
<b>Internal fuses</b>	2 A T, 4 A T, 4 A T																				
<b>Inrush current limit</b>	10 A with NTC resistor 30 Ohms, cold resistance.																				
<b>Insulation</b> Input / output Input / case Output / case	4 kVrms (1 min.), 8 mm creepage/cl. 2.5 kVrms (1 min.), 5 mm creepage/cl. 500 V DC, 1 mm creepage/clearance 1 kV DC for 150SX75-75 and 150SX200-200.																				
<b>Safety</b>	EN 60950 EN 61010																				
<b>EMC</b>	EN 61204-3 Power Supply Standard EN 61000-6-3 (EN 55022B) Generic Emission EN 61000-6-2 Generic Immunity																				
<b>Efficiency</b>	84 % dual units, 80 % 5V units at 230 V AC input. 81 % and 78 % respectively at 110 V AC input.																				
<b>Voltage regulation</b> Load 0 - 100% Line 225 - 264 V AC	<b>5 and 15 V models</b> <b>75 and 200 V models</b> 10 mV (with ext.sense)      200 mV 10 mV      150 mV																				
<b>Ripple + noise</b>	5 mVrms, max. 20 mVp-p      70 mVrms, 100 mV p-p (BW = 20 MHz)																				
<b>Stability</b>	$5 \cdot 10^{-4}$ during 8 hours under constant conditions after 1 hr warm up.																				
<b>Temp. coefficient</b>	$1 \cdot 10^{-4}$ per °C																				
<b>Output impedance</b>	Max. 0.1 Ohm up to 100 kHz, except 150SX75-75 and 150SX200-200 max. 1 Ohm.																				
<b>Recovery time</b>	0.1 ms to recover to within 0.1 V after a 50-100% load step. Max. deviation 0.4 V. 0.6 ms / 1.2 V for 75 V and 200 V models.																				
<b>Ambient temperature</b> Storage Operating	-40 to + 85 °C -20 to + 50 °C, derate current linearly to 20% from 50 to 75 °C.																				
<b>Temp. protection</b>	Overtemperature protected.																				
<b>Hold-up time</b>	15 ms at full load, 30 ms at half load (230 V AC).																				
<b>Series operation</b>	Up to 500 V total voltage. Up to 1 kV for 150SX75-75 and 150SX200-200.																				
<b>Parallel operation</b>	Allowed up to 40 °C ambient temperature																				
<b>Redundant par. operation</b>	Is possible with external diodes																				



*Transformer with split bobbin provides 4 kV dielectric strength between input and output.*



*Temperature derating*

- Current limit** : The current limit is fixed and protects the power supply during overload and short circuit. Continuous overload and short circuit does not harm the unit. 10% more current can be taken at the low end of the voltage range.
- Voltage limit** : For safety a second regulation circuit limits the output voltage to about 10% above its range in case the normal regulation loop fails.
- Voltage adjustment** : The output voltage is continuously variable over the whole range with a 20 turn screw-driver adjustment through the front panel.
- Remote control** : Voltage control with an external potentiometer is possible after some small internal changes (see manual page 3-2).
- Remote programming** : Remote programming of the output voltage is possible after changing an internal link on the PCB. An analog voltage of 5 V between PROG. and S- corresponds with the max output voltage. Note: In dual mode S- is at a negative polarity.
- Remote sensing** : The sense points are internally connected to + and - output. These links have to be removed when remote sensing is required. The max. sense range is 2 V per load lead for SX15-15 and 0.5 V for SX5. However the voltage across the leads plus the load cannot exceed the supply max. output rating. 150SX75-75 and 200-200 have no remote sensing facility.
- Remote ShutDown** : By +5 V (3.5 - 12 V) between RSD and S- or -. Note: In dual mode S- is at neg.polarity.
- Led lamp** : A green led lamp at the front panel indicates the output.
- MTBF** : 1 000 000 hrs
- Dim. and weight** : 75SX h x w x d = 100 x 35.5 x 172 mm, 0.6 kg  
150SX h x w x d = 233.4 x 35.5 x 172 mm, 1.2 kg

**75SX15-15 or 150SX15-15 used as dual power supply**

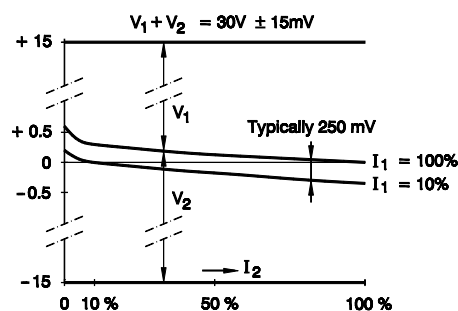
Because the sense points of the regulation are internally connected to the + and -15 V terminals, the total voltage V1 + V2 is kept constant.

When V1 and V2 are equally loaded the zero point will be in the middle.

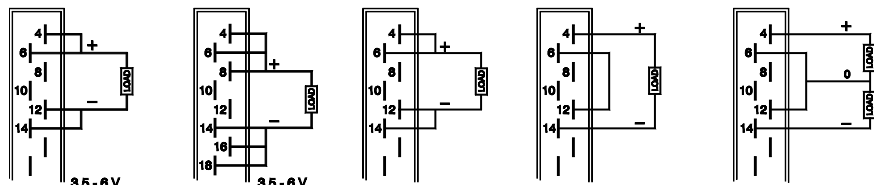
With unequal loads a slight zero shift will occur.

Asymmetrical overloading and shortcircuiting will not damage the unit.

The 150SX75-75 and 150SX200-200 have similar characteristics (relatively better).



Zero-shift caused by unequal loading of the + and - 15 V



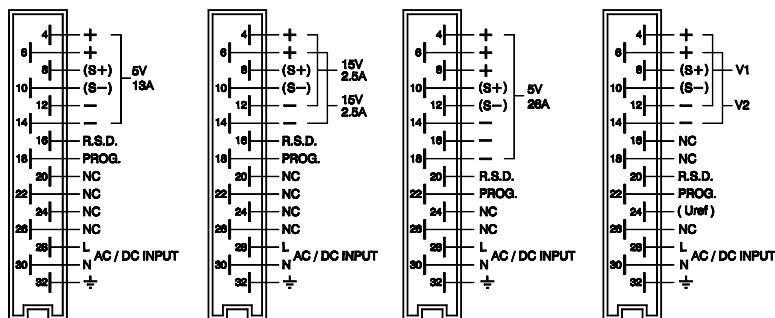
75SX5  
use 2 pins  
parallel

150SX5  
use 3 pins  
parallel

Units with two equal outputs:  
Parallel mode    Series mode    Dual mode

The sense points S+ and S- are internally connected to + and -. If remote sensing is required the internal links have to be removed (not allowed at 75 V and 200 V).

**Connections SX-series**



75SX5

75SX15-15

150SX5

150SX15-15  
150SX75-75  
150SX200-200

The H15 mating connector (DIN 41612) is standard available with *faston tabs*, and optional with *screw terminals* or *solder pins*

**Bench adapters**



BA 150

BA 150 can be used with: 150SX15-15, 240S24, other 150SX optional

BA 75 can be used with: 75SX5, 75SX15-15

### Eurocard rack mounting

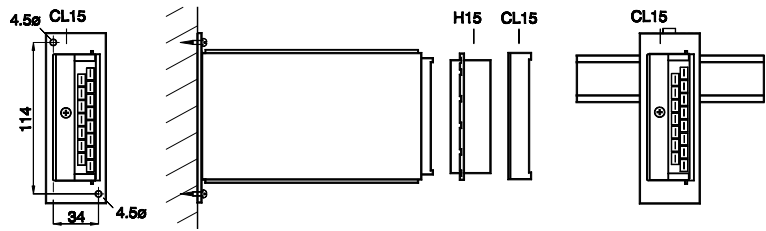


F8-3  
for  
75SX

F8-6 for 150SX

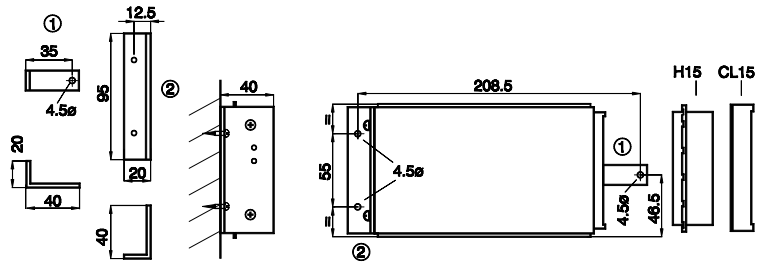
Dimensions acc. to DIN 41494 to fit into Eurocard racks 3U height (132.5 mm) or 6U height (265 mm)

### Wall and rail mounting 75 SX



Vertical wall mounting with W8-3 and CL15

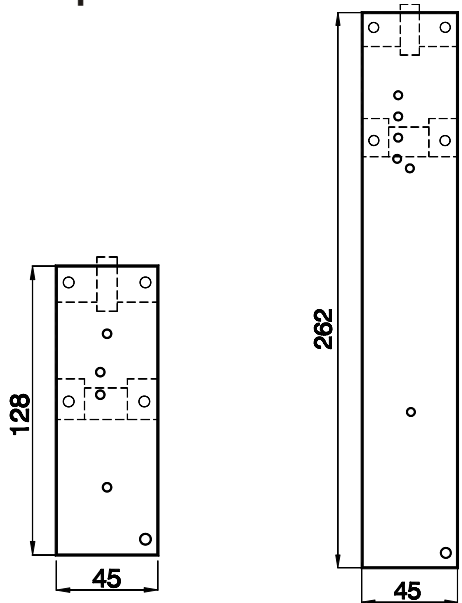
Rail mounting with W8-3, AR1 and CL15



Mounting kit H95 for flat wall mounting

Flat wall mounting with H95 kit and CL15

### Adapters

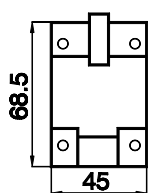


W8-3 for vertical wall or rail mounting 75SX

W8-6 for vertical wall or rail mounting 150SX

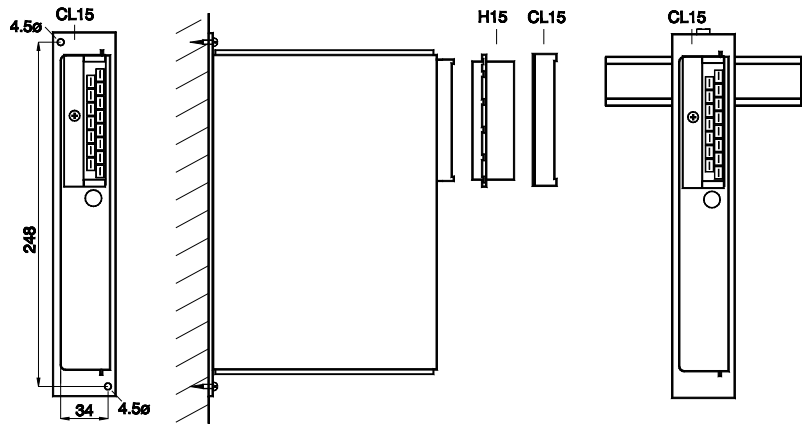


Clamp CL15 to fix the H15 connector when wall mounted



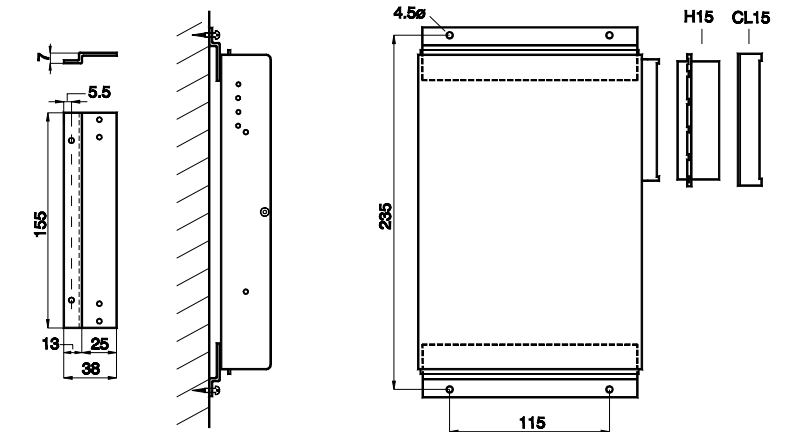
Adapter AR1 for 35 mm rail mounting

### Wall and rail mounting 150 SX



Vertical wall mounting with W8-6 and CL15

Rail mounting with W8-6, AR1 and CL15



Bracket H155 for flat wall mounting

Flat wall mounting with 2 pcs H155 and CL15