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DELTA ELEKTRONIKA B.V.



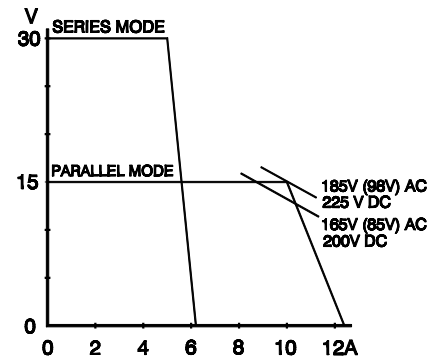
A mating connector with faston tabs is packed with each power supply

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
ST 150	3.5 - 6 V 2 x 6 - 15 V	13 A 2.5 A



150SX15-15

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

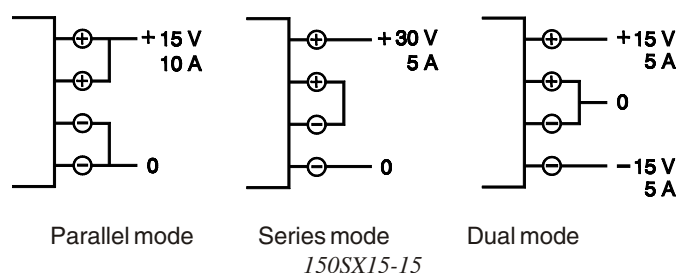
For 24 V **redundant** parallel operation use 240S24 instead of 150SX15-15.

*) option 2x 6-18 V 2 A is possible

The ST150 is a combination of a 75SX5 and a 75SX15-15 in a 150 W case. The 5 V output is isolated from the 2 x 15 V.

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

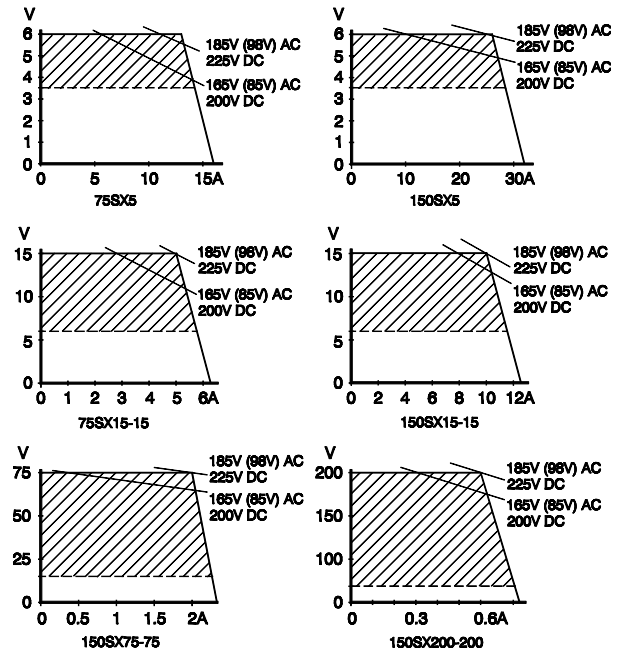
Dual mode

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
3.5 - 6 V	13 A	ST150
6 - 15 V	5 A	
3.5 - 6 V	13 A	ST150
12 - 30 V	2.5 A	
3.5 - 6 V	13 A	ST150
+ and - 6 to 15 V	2.5 A	

Derating of output current at low line voltage



Specifications:

Input	: Autoranging	75 W	150 W	Fuse	75 W	150 W
	: AC 98 - 132 V 48 - 62 Hz	1.3 Arms	2.6 Arms		2 A T	4 A T
	: 185 - 264 V 48 - 62 Hz	0.7 Arms	1.4 Arms			

For DC operation and operation at 400 Hz contact factory.

Inrush current limit : 10 A with NTC resistor 30 Ohms cold resistance.

Insulation
 Input / output : 4 kVrms (1 min.), 8 mm creepage/cl.
 Input / case : 2.5 kVrms (1 min.), 5 mm creepage/cl.
 Output / case : 500 V DC, 1 mm creepage/clearance
 1 kV DC for 150SX75-75 and 200-200.

Safety : EN 60950 EN 61010

EMC : EN 61204-3 Power Supply Standard
 EN 61000-6-3 (EN 55022B) Generic Emission
 EN 61000-6-2 Generic Immunity

Efficiency : 84 % dual units, 80 % 5V units at 230 V AC input.
 81 % and 78 % respectively at 110 V AC input.

Voltage regulation
 Load 0 - 100% : 5 and 15 V models 75 and 200 V models
 : 10 mV (with ext.sense) 200 mV
 Line 185 - 264 V AC : 10 mV 150 mV

Ripple + noise : 5 mVrms, max. 20 mV p-p 70 mVrms, 100 mV p-p

Stability : 5.10^{-4} during 8 hours under constant conditions after 1 hr warm up.

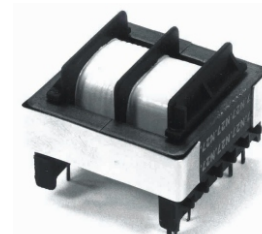
Temp. coefficient : 1.10^{-4} per °C

Output impedance : Max. 0.1 Ohm up to 100 kHz, except 150 SX75-75 and 200-200 max. 1 Ohm.

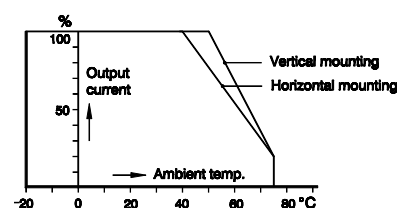
Recovery time : 0.1 ms to recover to within 0.1 V after a 50-100% load step. Max. deviation 0.4 V.
 0.6 ms / 1.2 V for 75 V and 200 V models.

Ambient temperature : Storag : -40 to + 85 °C
 Operating : -20 to + 50 °C, derate current linearly to 20% from 50 to 75 °C.

Temp. protection : Overtemperature protected.



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

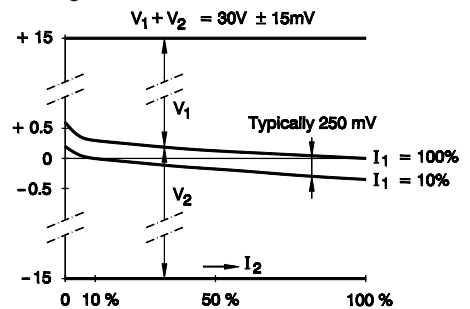


Temperature derating

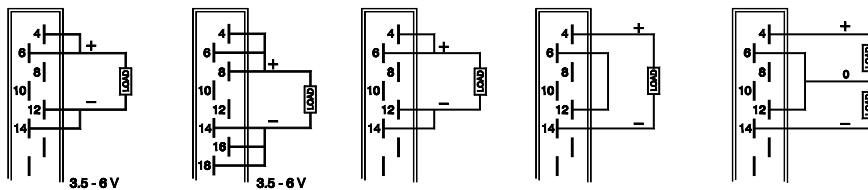
- Hold-up time** : 15 ms at full load, 30 ms at half load (220 V AC).
- Series operation** : Up to 500 V total voltage. Up to 1 kV for 150SX75-75 and 200-200.
- Parallel operation** : Allowed up to 40 °C ambient temperature
- Redundant par. operation** : Is possible with external diodes
- Current limit** : The current limit is fixed and protects the power supply during overloading and short circuiting. 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.
ST150, 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 $V_1 + V_2$ is kept constant.
When V_1 and V_2 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 200-200 have similar characteristics (relatively better).



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



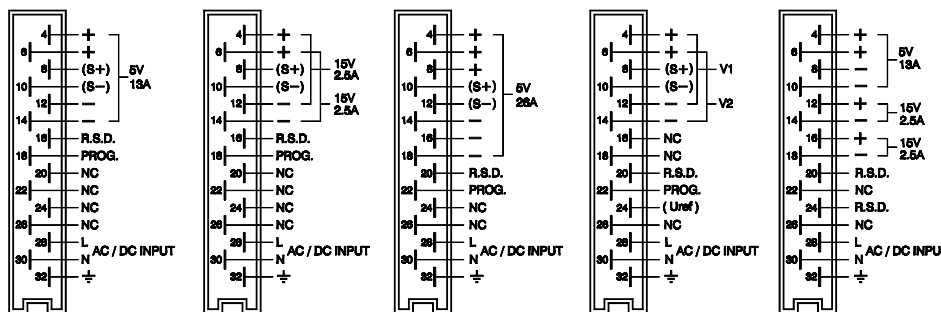
75SX5
use 2 pins
parallel

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, 200 V and triple units).

Connections SX-series



75SX5

75SX15-15

150SX5

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

ST150

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

Bench adapters

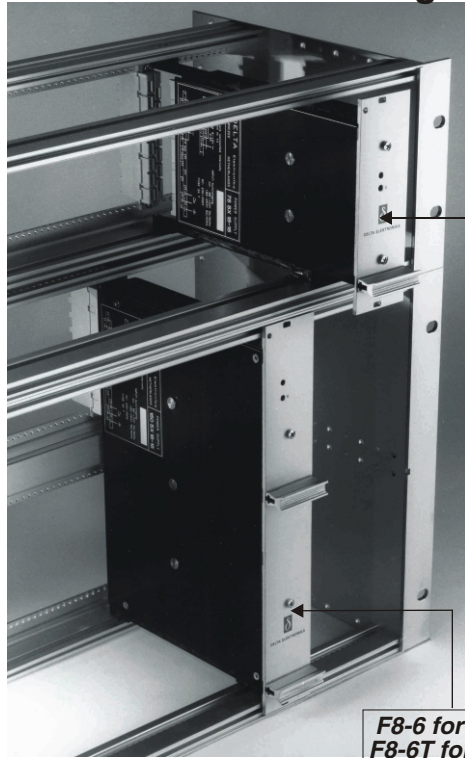


BA 150

BA 150 can be used with:
150SX15-15, ST150
240S24
other 150SX optional

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

Eurocard rack mounting

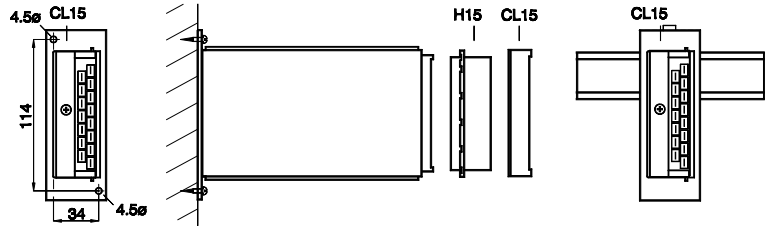


F8-3
for
75SX

F8-6 for 150SX
F8-6T for ST150

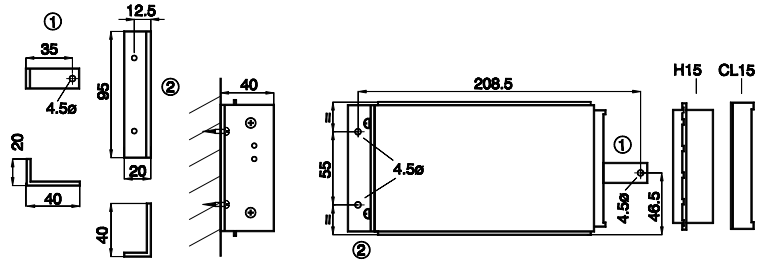
Dimensions acc. to DIN 41494 to fit into Eurocard racks 3U height (132.5 mm) or 6U height (265 mm)

Wall and rail mounting 75 SX



Vertical wall mounting with W8-3 and CL15

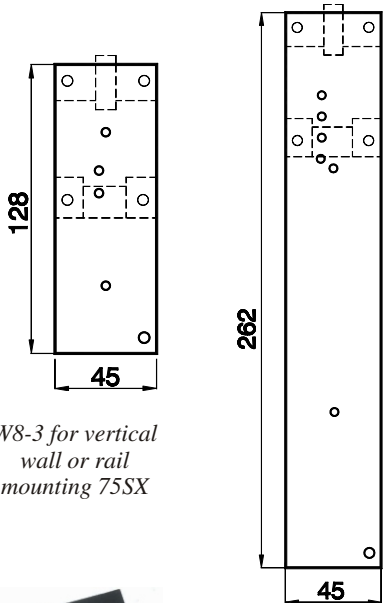
Rail mounting with W8-3, AR1 and CL15



Mounting kit H95 for flat wall mounting

Flat wall mounting with H95 kit and CL15

Adapters

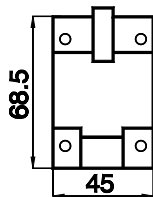


W8-3 for vertical wall or rail mounting 75SX

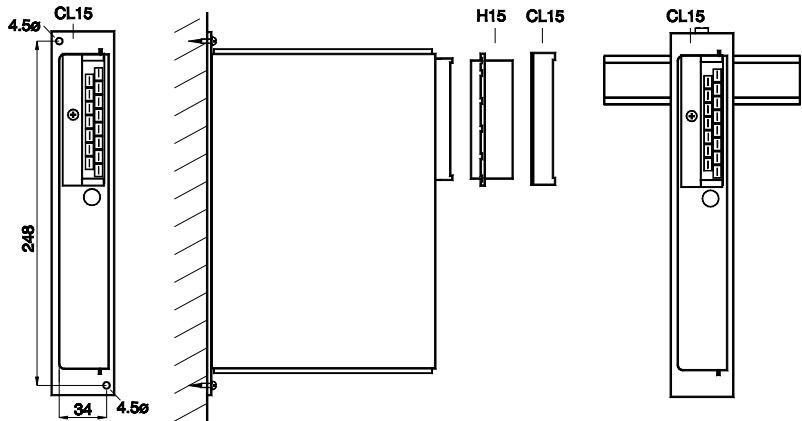
W8-6 for vertical wall or rail



Clamp CL15 to fix the H15 connector when wall mounted

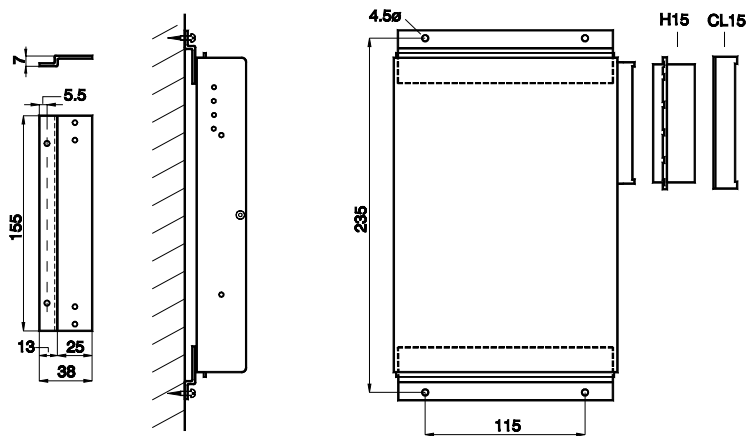


Adapter AR1 for 35 mm rail mounting



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