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DELTA ELEKTRONIKA B.V.



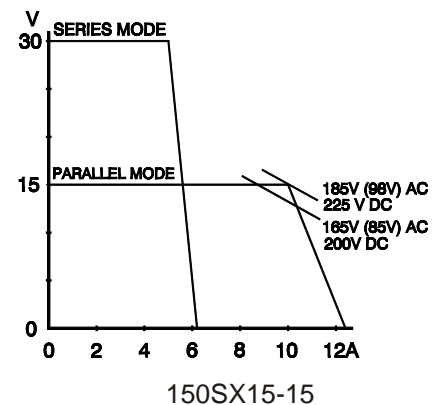
A mating connector with fastontabs is packed with each power supply

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



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

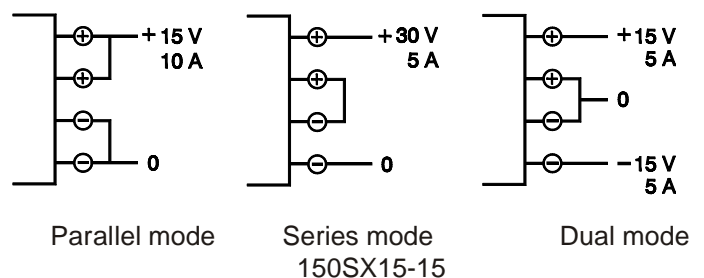
For 24 V redundant parallel operation use 240S24 instead of 150SX15-15.

*) 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.

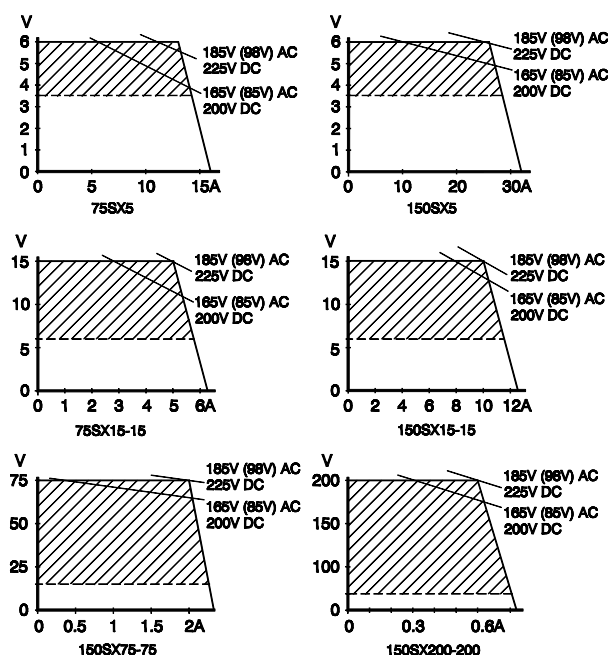
The two outputs cannot be used separately.



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 : 4 kVrms (1 min.), 8 mm creepage/cl.
 Input / output : 2.5 kVrms (1 min.), 5 mm creepage/cl.
 Input / case : 500 V DC, 1 mm creepage/clearance
 Output / case : 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 : 5 and 15 V models 75 and 200 V models
 Load 0 - 100% : 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 (BW = 20 MHz)

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.

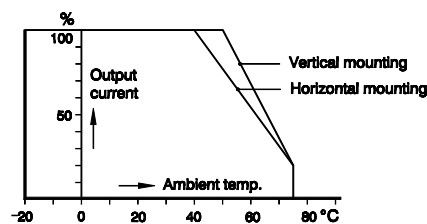
Recovery time : 0.1 ms to recover to within 0.1 V after a
 50-100% load step. Max. deviation 0.4 V.
 0.6 ms / 1.2 V for 75 V and 200 V models.

Ambient temperature : Storage : - 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

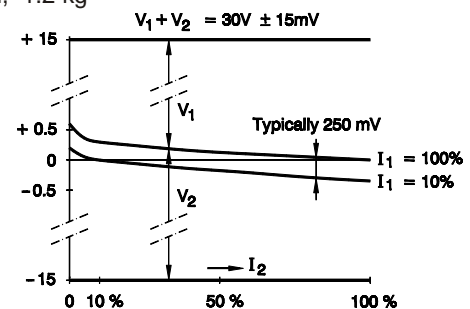
Because the sense points of the regulation are internally connected to the + and -15 V terminals, the total voltage $V_1 + V_2$ is kept constant.

When V_1 and V_2 are equally loaded the zero point will be in the middle.

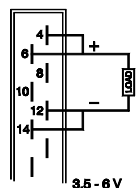
With unequal loads a slight zero shift will occur.

Asymmetrical overloading and shortcircuiting will not damage the unit.

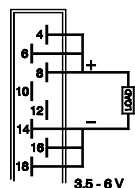
The 150SX75-75 and 200-200 have similar characteristics (relatively better).



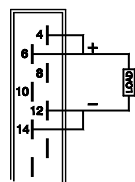
Zero-shift caused by unequal loading of the + and - 15 V



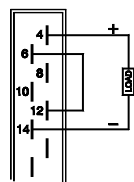
75SX5
use 2 pins
parallel



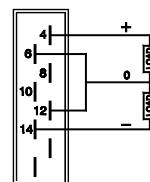
150SX5
use 3 pins
parallel



Parallel mode



Series mode

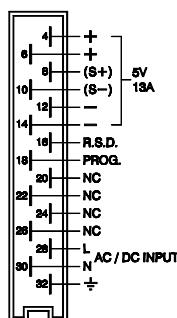


Dual mode

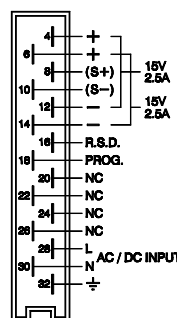
Units with two equal outputs:

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).

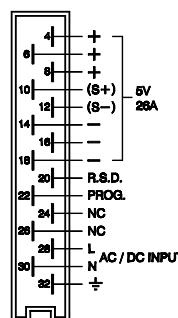
Connections SX-series



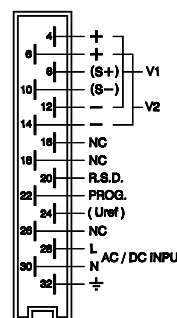
75SX5



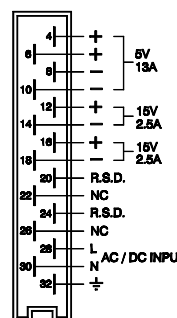
75SX15-15



150SX5



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



ST150

Bench adapters



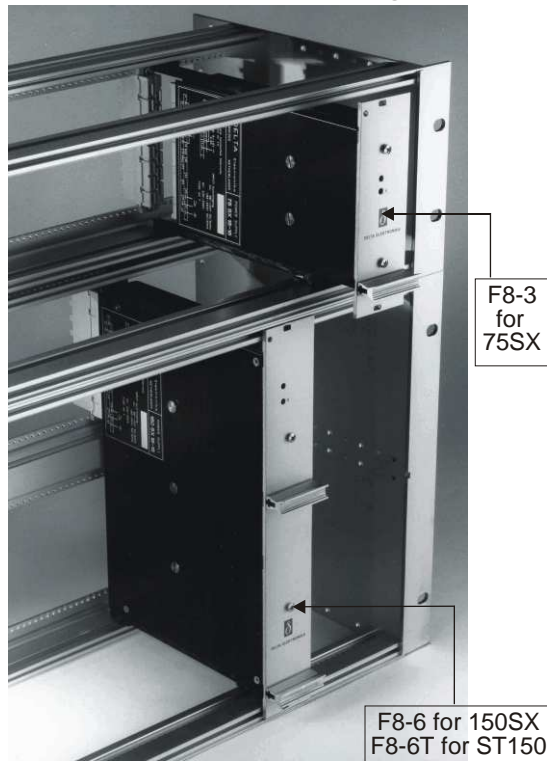
BA 150

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

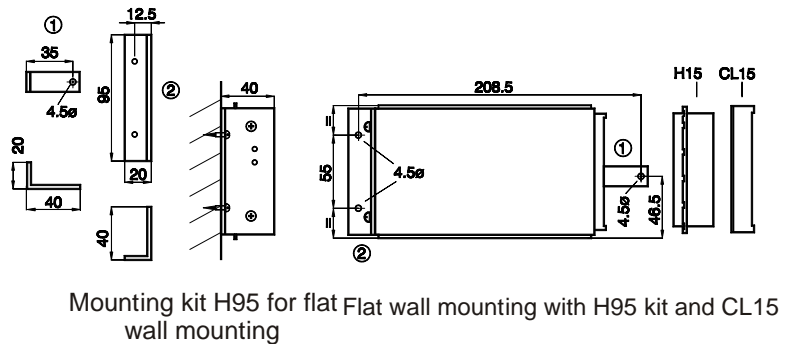
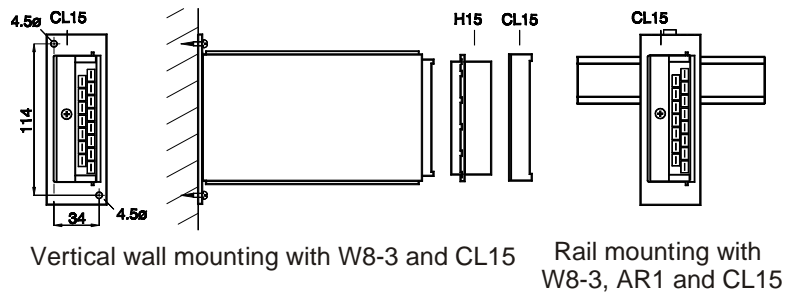
BA 75 can be used with:
75SX5
75SX15-15

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

Eurocard rack mounting

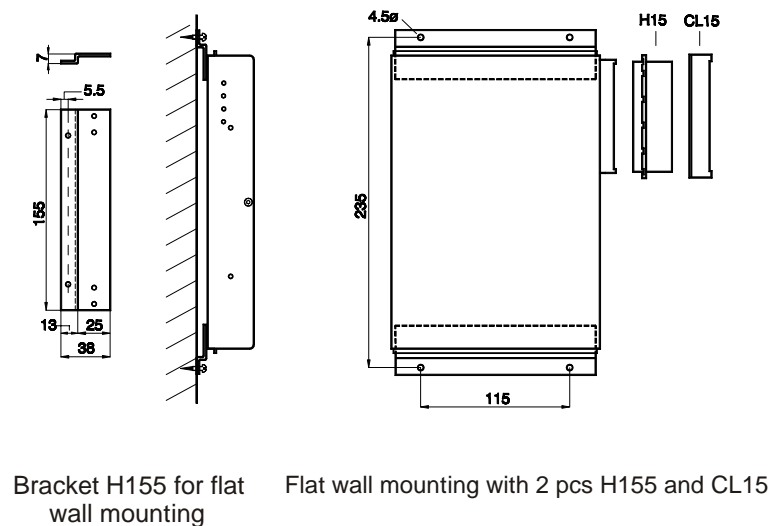
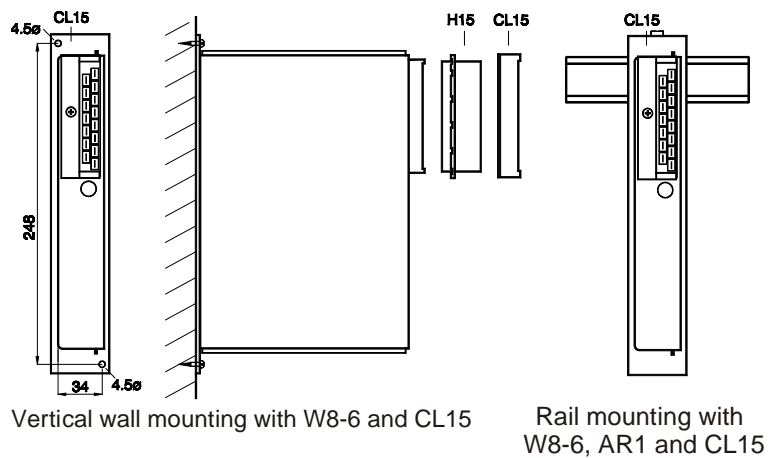


Wall and rail mounting 75 SX



Dimensions acc. to DIN 1494 to fit into Eurocard racks 3U height (132.5 mm) or 6U height (265 mm)

Wall and rail mounting 150 SX, ST 150



Adapters

