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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

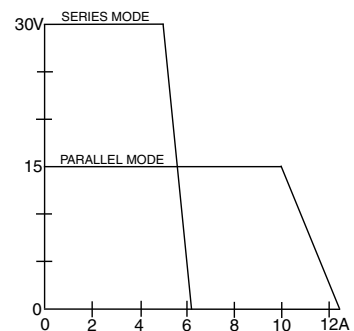
With autoranging input for worldwide use

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

15-15 op

18 V 2 A is pos

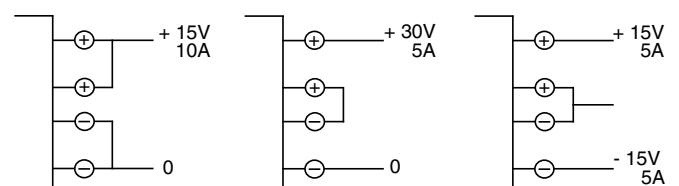


150SX15-15

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.

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

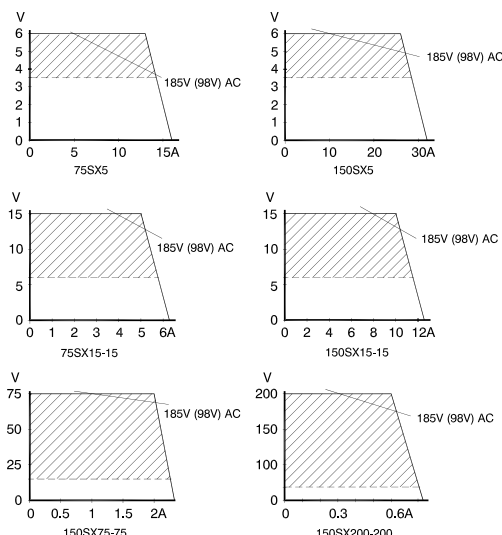
Dual mode

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:

Input

single phase, 48-62 Hz

Autoranging

98 - 132 V AC or 185 - 264 V AC,
for DC or operation at 400 Hz contact factory.

Power derating vs input

	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

Input current

1.3Arms 2.6Arms 2.6Arms

Internal fuses

2 A T 4 A T 4 A T

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 150SX200-200.

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
 Line 225 - 264 V AC : 10 mV (with ext.sense) 200 mV
 : 10 mV 150 mV

Ripple + noise

5 mVrms, max. 20 mVp-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
150SX75-75 and 150SX200-200 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.

Hold-up time

15 ms at full load, 30 ms at half load (230 V AC).

Series operation

Up to 500 V total voltage. Up to 1 kV for 150SX75-75 and 150SX200-200.

Parallel operation

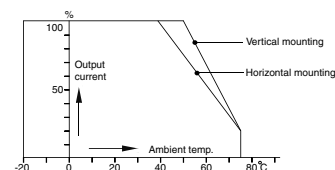
Allowed up to 40 °C ambient temperature

Redundant par. operation

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

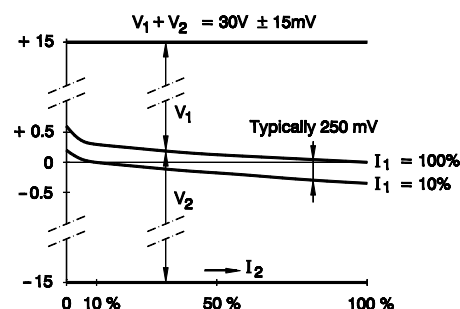
Because the sense points of the regulation are internally connected to the + and -15 V terminals, the total voltage $V_1 + V_2$ is kept constant.

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

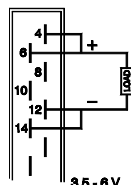
With unequal loads a slight zero shift will occur.

Asymmetrical overloading and shortcircuiting will not damage the unit.

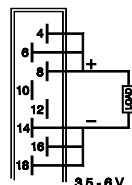
The 150SX75-75 and 150SX200-200 have similar characteristics (relatively better).



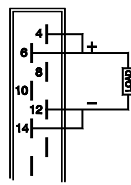
Zero-shift caused by unequal loading of the + and -15 V



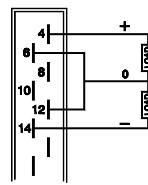
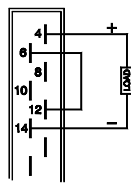
75SX5
use 2 pins
parallel



150SX5
use 3 pins
parallel

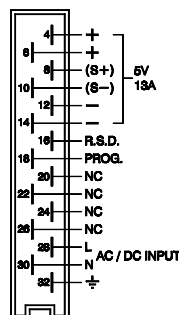


Units with two equal outputs:
Parallel mode Series mode Dual mode

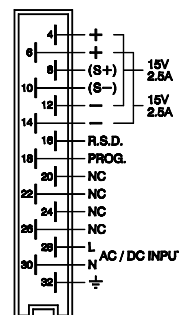


The sense points S+ and S- are internally connected to + and -. If remote sensing is required the internal links have to be removed (not allowed at 75 V and 200 V).

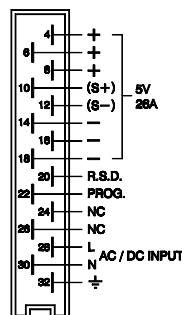
Connections SX-series



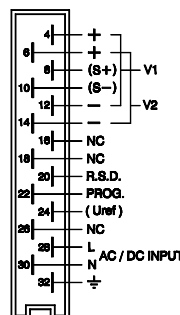
75SX5



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

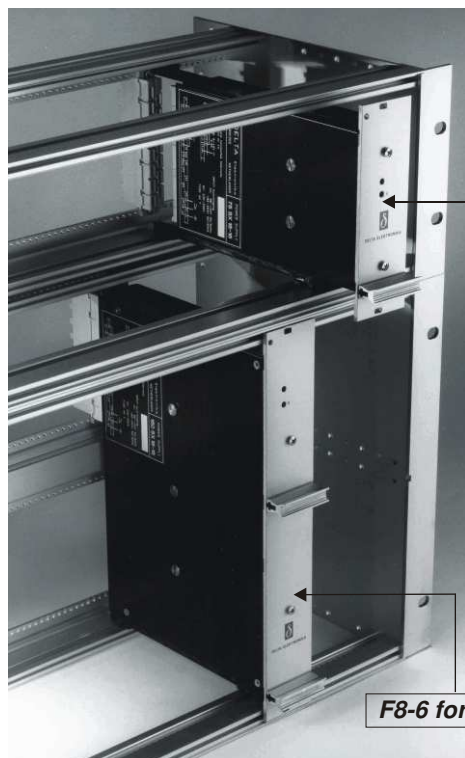


BA 150

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

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

Eurocard rack mounting

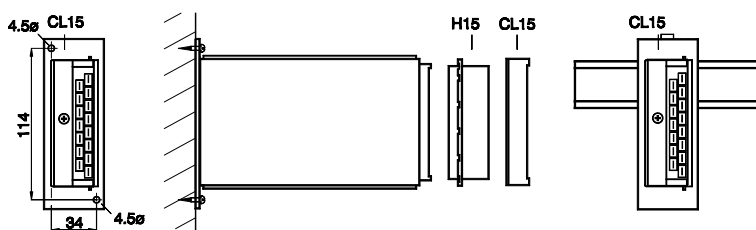


**F8-3
for
75SX**

F8-6 for 150SX

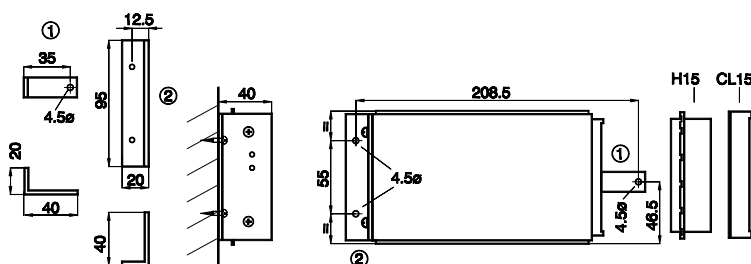
Dimensions acc. to DIN 41494 to fit
into Eurocard racks 3U height
(132.5 mm) or 6U height (265 mm)

Wall and rail mounting 75 SX



Vertical wall mounting with W8-3 and CL15

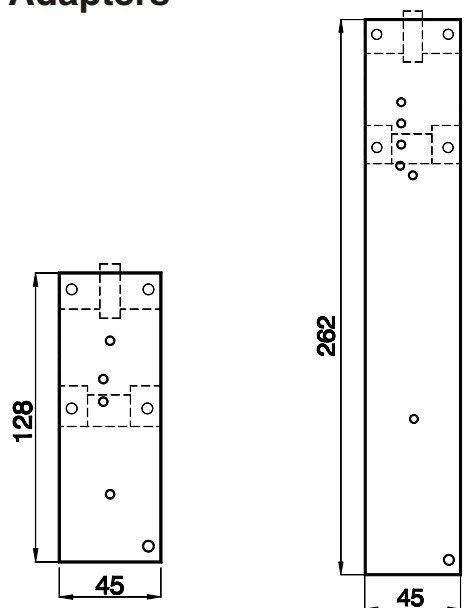
Rail mounting with
W8-3, AR1 and CL15



Mounting kit H95 for flat
wall mounting

Flat wall mounting with H95 kit and CL15

Adapters

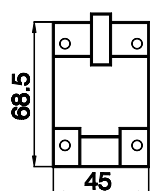


W8-3 for vertical
wall or rail
mounting 75SX

W8-6 for vertical
wall or rail
mounting 150SX

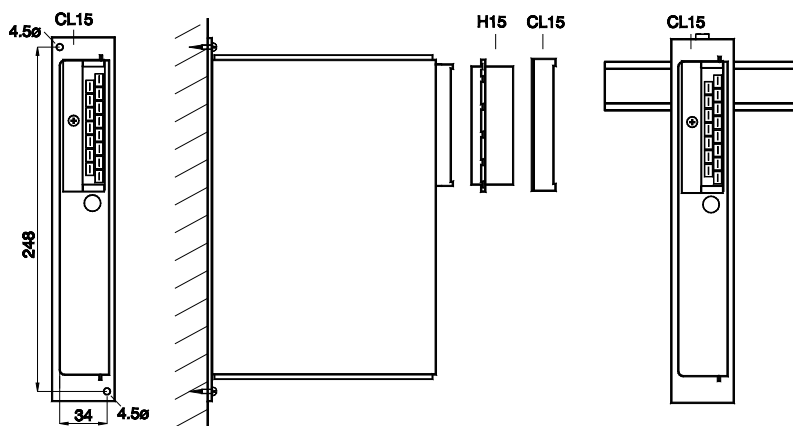


Clamp CL15 to fix the H15
connector when wall
mounted



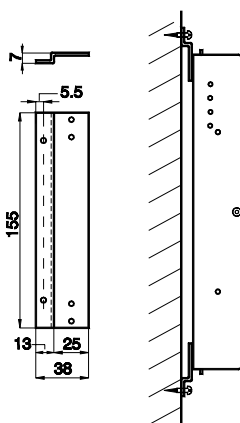
Adapter AR1 for
35 mm
rail mounting

Wall and rail mounting 150 SX

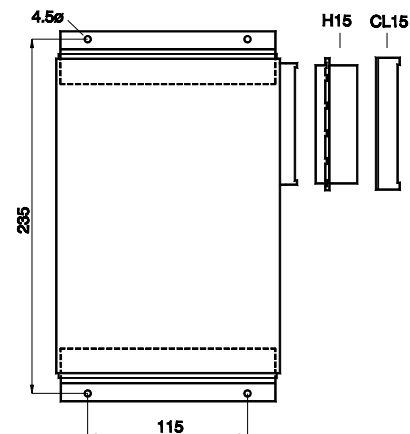


Vertical wall mounting with W8-6 and CL15

Rail mounting with
W8-6, AR1 and CL15



Bracket H155 for flat
wall mounting



Flat wall mounting with 2 pcs H155 and CL15