

# RISH FLEX- e 45XXA

Primary Switched Power Supply

## Technical Datasheet

Economical Solution for your Power Requirement



UNIVERSAL AC INPUT RANGE 85-264 V

UNIVERSAL DC INPUT RANGE 120-370 V

HIGH EFFICIENCY UPTO 87%

ISOLATION CLASS-II

SUITABLE FOR INDOOR USE

DIN RAIL MOUNTING

EXTREMELY COMPACT PLASTIC ENCLOSURE

COOLING BY FREE AIR CONVECTION



RISHABH

**RISHABH  
INSTRUMENTS**

Measure, Control & Record with a Difference

RISHABH INSTRUMENTS PVT.LTD.

F-31, MIDC, Satpur, Nashik-422 007, India.

Tel.: +91 253 2202160, 2202202 Fax : +91 253 2351064

E-mail : India :- marketing@rishabh.co.in

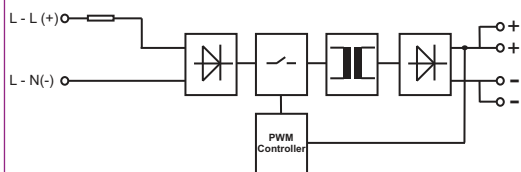
International :- exp.marketing@rishabh.co.in

www.rishabh.co.in

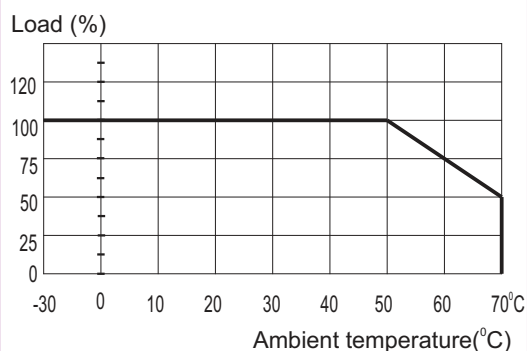
# RISH FLEX- e 45XXA

## Primary Switched Power Supply

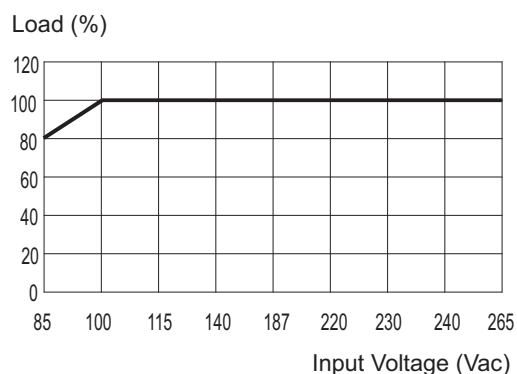
### Block diagram:



### Temperature derating curve:



### Input Voltage derating curve:



### Technical Specifications:

#### INPUT DATA :

AC input voltage range	85 VAC...264 VAC (Refer Derating Curve)
DC input voltage range	120 VDC ... 370 VDC
Nominal input voltage	115 VAC / 230 VAC (165 VDC / 325 VDC)
Inrush current	≤ 36 A typical
AC frequency range	45 Hz ... 65 Hz
Input current	0.95 A (115 VAC) , 0.55 A (230 VAC)
Internal fuse	T4 A
External fuse (recommended)	10A (MCB curve B)

#### OUTPUT DATA :

Nominal output voltage	See Table 1
Adjustment range	See Table 1
Rated current	See Table 1
Power boost current @ 60 °C	See Table 1
Holdup time	≥ 30 msec (230 VAC), 15 msec (115 VAC)
Line regulation	< ± 0.5 %
Load regulation	< ± 0.5 % (change in load, static 10% ... 90%)
Overload	105...160% rated output power
Dissipation power load max	6.2 W
Efficiency	> 87 %
Residual ripple <sup>Note 2</sup>	≤ 150 mVpp
Short circuit protection	Yes
Overload protection	Yes (Hiccup mode)
Overvoltage output protection	Yes (See Table 1)
Parallel connection	No
Series connection	Yes
Turn on Delay	1 Seconds
Rise time	50 msec
Resistance to reverse feed	See Table 1



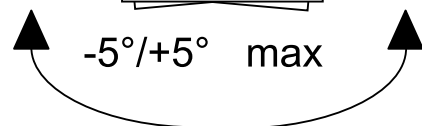
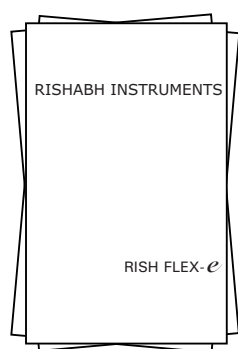
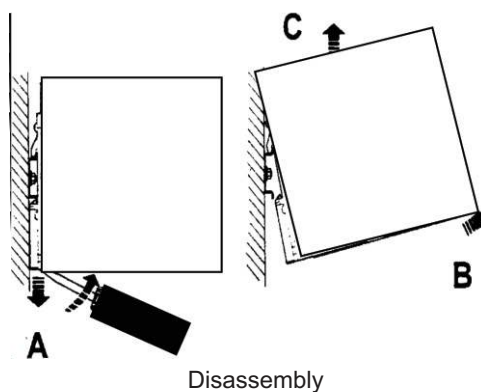
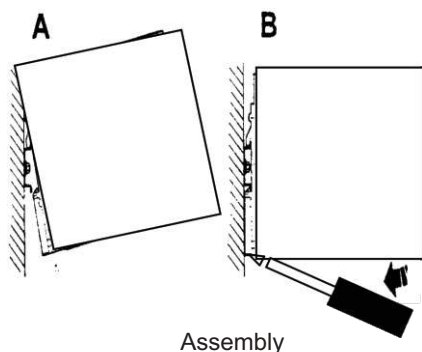
**RISHABH**  
INSTRUMENTS  
Measure, Control & Record with a Difference

RISHABH INSTRUMENTS PVT.LTD.  
F-31, MIDC, Satpur, Nashik-422 007, India.  
Tel.: +91 253 2202160, 2202202 Fax : +91 253 2351064  
E-mail : India :- marketing@rishabh.co.in  
International :- exp.marketing@rishabh.co.in  
www.rishabh.co.in

# RISH FLEX-*e* 45XXA

## Primary Switched Power Supply

### Installation:



Maximum angle of Asslembly

### Technical Specifications: (cont.)

#### GENERAL DATA :

Isolation voltage input/output	3000V AC
Degree of protection	IP20 (EN/IEC 60529)
Protection class	II
MTBF	> 5,00,000 Hrs in acc. with IEC 61709 (SN 29500)
Type of housing	Plastic enclosure
Housing material	PC Lexan 940
Dimensions W / H / D	54 mm / 90 mm / 62 mm
Weight	0.25 kg approx.
Connection terminal blocks	Screw type 2.5 mm <sup>2</sup>

#### CLIMATIC DATA :

Ambient temperature (operation)	-30 °C ... +70 °C
Ambient temperature (storage)	-40 °C ... +85 °C
Humidity at 25 °C	95 % (no condensation)
Pollution degree environment	2 (in acc. with EN 50178)
Climatic class	3K3 (in acc. with EN 60721)



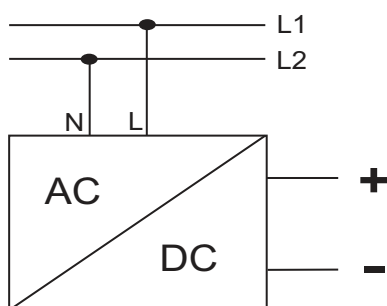
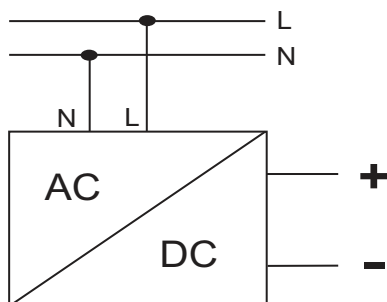
**RISHABH INSTRUMENTS**  
Measure, Control & Record with a Difference

RISHABH INSTRUMENTS PVT.LTD.  
F-31, MIDC, Satpur, Nashik-422 007, India.  
Tel.: +91 253 2202160, 2202202 Fax : +91 253 2351064  
E-mail : India :- marketing@rishabh.co.in  
International :- exp.marketing@rishabh.co.in  
www.rishabh.co.in

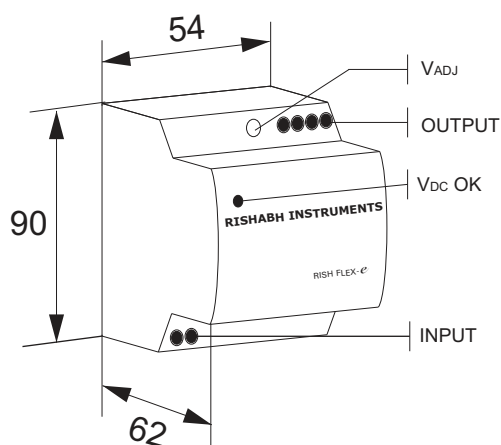
# RISH FLEX- e 45XXA

## Primary Switched Power Supply

### Electrical Connection:



### Layout & Dimensional details:



w x h x d

54 x 90 x 62

all dimensions are in mm

### Technical Specifications: (cont.)

#### STANDARDS :

Electrical safety:

Assembling device	IEC/EN 60950 (VDE 0805) EN 50178 (VDE 0160)
Installation according	IEC/EN 60950
Input/output separation	EN 60950-1(SELV) , EN 60204-1(PELV) Double or reinforced insulation

EMC standards immunity	EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5
------------------------	--

EMC standards emission	EN 61000-6-4 EN 61000-3-2
------------------------	------------------------------

Safety of electrical equipment for machines	EN 60204-1
---	------------

Note:

- 1) All parameters not specifically mentioned are measured at 230VAC input, Rated load and 25°C of ambient temperature.
- 2) Ripple and noise are measured at 20MHz of bandwidth short length lead terminated with a 0.1uF & 47uF parallel capacitor.

Table 1:

Parameter	RISH FLEX - e 4524A	RISH FLEX - e 4512A
Nominal Output Data	24 VDC $\pm$ 3%	12 VDC $\pm$ 3%
Adjustment Range	22 VDC.....27 VDC	10 VDC.....14 VDC
Rated Current	1.875 A @ 50°C 1.41 A @ 60°C 0.94 A @ 70°C	3.75 A @ 50°C 2.81 A @ 60°C 1.875 A @ 70°C
Power Boost current @ 60°C	1.75 A (For $\leq$ 3 Minutes)	3.75 A (For $\leq$ 3 Minutes)
Output Over Voltage Protection	35 VDC Typ.	24 VDC Typ.
Resistance to reverse feed	Max 35 VDC	Max 16 VDC



Measure, Control & Record with a Difference

**RISHABH INSTRUMENTS**

RISHABH INSTRUMENTS PVT.LTD.  
F-31, MIDC, Satpur, Nashik-422 007, India.  
Tel.: +91 253 2202160, 2202202 Fax : +91 253 2351064  
E-mail : India :- marketing@rishabh.co.in  
International :- exp.marketing@rishabh.co.in  
www.rishabh.co.in