

triple output
12,5/20/25 Watt

DC/DC converters
with isolation



For railway / road / telecommunication / industry

- Input range 1:4 up to > 1:12
- Transient range up to $3 \times U_{inmax}$
- Excellent protection against shock and vibration
- Extreme good radio interference adjustable
- Suitable for surge and long term transients
- High efficiency
- Independent outputs
- Optional -40°C up to +85°C
- 1,5kV AC Test voltage / 1 Min



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Series SRI - D

Main points

Output:

- Voltage accuracy: $\pm 1\%$
- Regulation: $\Sigma (U_{in} + I_{out} + T_U) \pm 1\%$
- Ripple: $< 5 \text{ mV}_{pp} (T 1:1 / 50\text{MHz})$
- Spikes: $< 100 \text{ mV} (T 1:1/50\text{MHz})$
- Response time: $\Delta I = 50\% \leq 150 \mu\text{s}$
- Current limiting: $< 1,5 I_{outmax}$
- Dynamically and statically protected against short circuit
- Potentially isolated Uout1 to Uout2/3

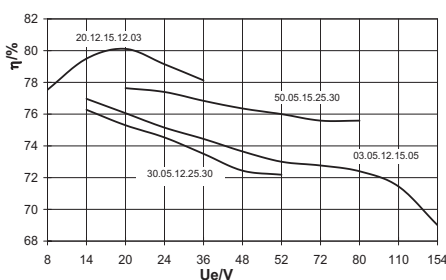
Input:

- Power consumption at no load: 0,9 Watt
- Remote on/off
- Inrush current limited (E.A)
- Radio interference suppression better than EN 55022 A
- Various transient and EMV performance available

General:

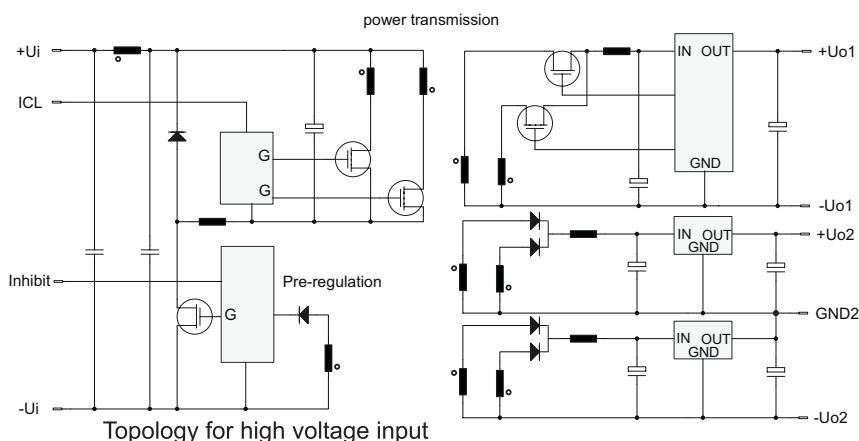
- Overvoltage protection (Logic)
- Isolation voltage: $1,5 \text{ kV}_{AC} / 1 \text{ Min}$
- Ambient temperature: $-25^\circ\text{C} / +70^\circ\text{C}$
- Ambient temperature: $-40^\circ\text{C} / +80^\circ\text{C}$
- Derating $1\% / ^\circ\text{C} > 70^\circ\text{C}$ and current $\geq 2,5\text{A}$ only 1) $> 60^\circ\text{C}$
- Convection cooled
- MTBF: SN29500 2,1 Mio h / 40°C
- Shock / Vibration annex V
- Weight approx. 120 g
- Size: $90 \times 65 \times 22 \text{ mm}^3$
- Other pin-assignments on request

Efficiency:



<u>U_{in}</u> V	<u>U_{out}</u> V	<u>I_{in}</u> A	<u>Eff.</u> %	Model number
8 - 34 50V/100ms	3,3	5,0	77	SRI-D 20-03-12-30-30
	±12	±0,3		
	5,1	2,5	78	SRI-D 20-05-12-25-30
	±12	±0,3		
	12	1,5	79	SRI-D 20-12-05-15-30
	±5,1	±0,3		
16,8 - 34 50V/100ms 1)	5,1	3,0	79	SRI-D 23-05-12-30-40
	±12	±0,4		
	5,1	3,0	80	SRI-D 23-05-15-30-40
	±15	±0,4		
	24	0,8	80	SRI-D 23-24-05-08-40
	±5,1	±0,4		
13,5 - 52 110V/10ms	3,3	3,0	79	SRI-D 30-03-12-30-30
	±12	±0,3		
	5,1	2,5	80	SRI-D 30-05-12-25-30
	±12	±0,3		
	12	1,5	80	SRI-D 30-12-05-15-30
	±5,1	±0,3		
35 - 154 300V/10ms	3,3	3,0	79	SRI-D 80-03-12-30-30
	±12	±0,3		
	5,1	2,5	80	SRI-D 80-05-15-25-30
	±15	±0,3		
	24	0,7	80	SRI-D 80-24-05-07-30
	±5,1	±0,3		
13,5 - 154 300V/10ms	5,1	1,5	76	SRI-D 03-05-12-15-18
	±12	±0,18		
	12	0,7	77	SRI-D 03-12-05-07-30
	±15	±0,3		
Output 1: 2,7-24V / Output 2/3: 5,1-18V				
19 - 85	see above	see above		SRI-D 50-XX-XX-XX-XX
9 - 72	see above	see above		SRI-D 27-XX-XX-XX-XX
(H)	-40°C up to +85°C			On request
Modification costs for possible changes above values				

Modules from the **SRI.D** (triple output) series are not potted. The high and constant efficiency and the in details patented system topologies with the result of high functionality are ideal for the use at extreme requirements. Transients are regulated because of the high dynamical voltage strength and absorbed in accordance to SYKO's application reports respectively (Patent-no. D 38004074 and EU 0402367). The use in accordance to railway, road car as well as standards of special technology (MIL/VG) is given.



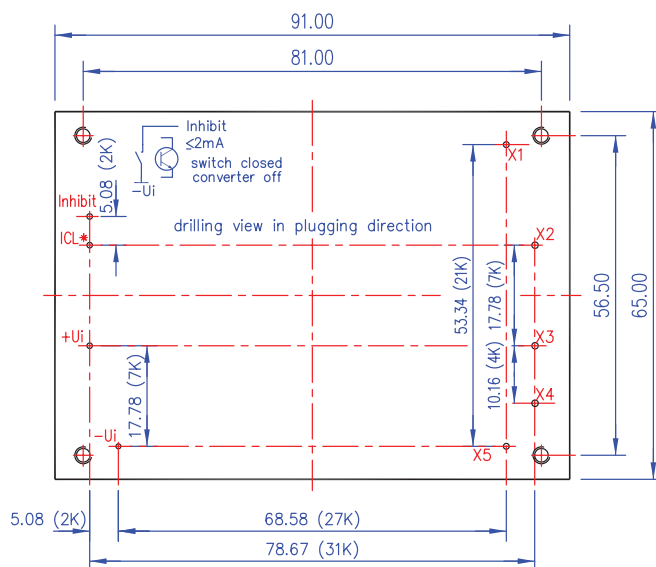
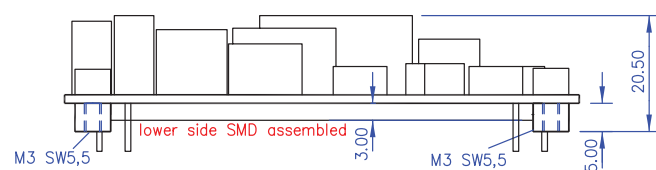
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The outputs are magnetically pre-regulated without re-feeding. Each output is regulated by use of a low drop regulators and is short circuit proof to approx. 1,5 times I_{nom} . The outputs are functionally independent from each other and run-up against a short circuit (high capacitive loads). In the run-up situation and a connected load to $\pm U_{out}$ (series operation) a latch up can occur. The Inhibit-function (Inhibit) switches the input-no-load current to $< 2mA$. The ICL-option (Inrush Current Limiting-SYKO Patent- no. D 3804074 and EU 0402367) can limit the inrush current to any size of capacitors and long term transients can be limited active (application).

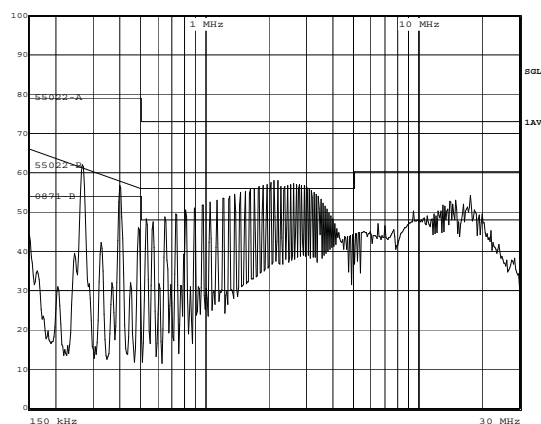
A thermal distribution of the power-hot spots is done with special designed PCB. The whole converter's surface is used for heat emission. An application report for an active reverse polarity protection (minimizing power losses), an active transient protection and inrush-current limiting as well as passive hold up time is available on request.

Pin-assignment

Pin	SRI	E	Z	D
X1	+Uo	+Uo1	+Uo1	
X2	-Uo	-Uo1	-Uo1	
X3	S+	+Uo2	+Uo2	
X4	-	-	GND02	
X5	S-	-Uo2	-Uo2	

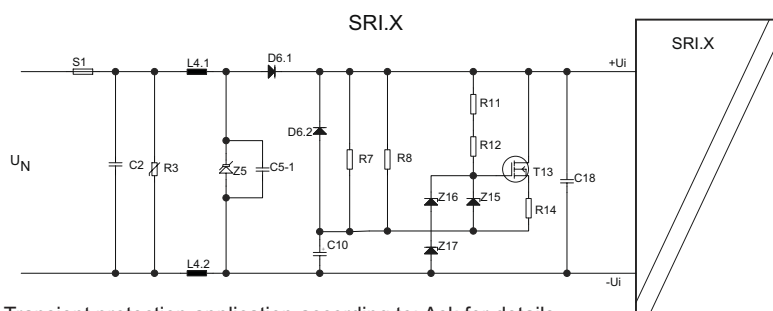


Measurement of radio interference



Application Noise suppression / EMV

with reverse polarity protection, transient protection, hold-up time 10ms



Transient protection application according to: Ask for details
EN 61000-4-5 / RIout12 A-L / VDE 0160 / MIL 461 / VG96916